Policy Quarterly

The Institute of Policy Studies, School of Government at Victoria University of Wellington

Institute of policy studies

Volume 3 Number 1 2007

Editorial Note

The articles in this issue of *Policy Quarterly* address a diverse range of topics: the funding of political parties and election campaigns in New Zealand; the economics of climate change; the issues surrounding economic transformation; and the contribution of Henry Lang to the public service and the policy community in New Zealand.

Democracy does not come cheap. Somehow political parties and election campaigns need to be funded. Precisely how, by whom and under what conditions are issues of the utmost importance to the integrity of the democratic process. The events surrounding the conduct of the 2005 general election in New Zealand – which included allegations of corruption and a damming report from the Auditor-General on the use of parliamentary funds by political parties – suggest that the rules governing the financing of election campaigns need a serious overhaul. With this context in mind, Andrew Geddis explores the relevant policy issues and options. His analysis deserves careful attention, public debate and prompt governmental action – all the more so given that the next election must be held within two years.

The next two articles consider some of the key issues raised by the *Stern Review on the Economics of Climate Change*, published in London in late October 2006. In the first piece, I explore the issue of what stabilisation targets should be set for greenhouse gas concentrations, and the implications of such targets for emission reductions. Notwithstanding the continuing scientific debates and uncertainties, the risks posed by climate change are sufficiently great – as highlighted by the recently published report of the Intergovernmental on Climate Change – to warrant urgent policy initiatives at all governmental levels. The second article, by Dennis Rose, examines the complex ethical and analytical issues surrounding discount rates. The Stern Review's use of a low discount rate has attracted a good deal of adverse comment from many economists. Rose outlines the rationale behind Stern's assumptions and then considers the policy implications of using a range of different discount rates. Significantly, he concludes that there remains a robust case for early action to reduce greenhouse gas emissions even if one employs a discount rate considerably higher than that used by the Stern team.

The fourth article, by Hon Trevor Mallard (the Minister of Economic Development), outlines the rationale for, and nature of, the Labour-led government's strategy of 'economic transformation'. In the interests of stimulating some debate about the Minister's views, I invited commentaries from two experienced and respected economists, Brian Easton and Sir Frank Holmes. As these commentaries make clear, significant issues remain regarding the precise nature of the 'economic transformation' that New Zealand should be undertaking and the best means of achieving it. And, as Sir Frank highlights, one of the key issues for the future will be how the potentially divergent goals of competitiveness and sustainability are properly reconciled and integrated. In my view, achieving a low-carbon economy should be at the centre of any realistic and credible transformative strategy; whether it will be so, remains to be seen.

Finally, *Policy Quarterly* includes a second piece by Sir Frank – this time on the remarkable career and contribution of Henry Lang, the former Secretary to the Treasury and a founding father of the IPS. While Henry's life and times may seem far removed from many of the current issues of policy debate, he was a friend and mentor of many of those now in senior positions in the Wellington policy community, and through them his wisdom, inspiration and legacy live on.

The views of readers on the articles contained in this and other issues of *Policy Quarterly* are always welcome.

Jonathan Boston
Co-Editor

Rethinking the Funding of New Zealand's Election Campaigns

Andrew Geddis

The 2005 general election campaign was notable not only for its close-fought nature, but also for a range of deeply concerning, and in some cases undoubtedly unlawful, behaviour by various electoral participants. The Labour Party exceeded the statutory maximum on its 'election expenses' by at least $418,603, primarily due to the costs associated with producing and distributing its pledge card to voters. Furthermore, the use of parliamentary funding to pay for this campaign material prompted a post-election review by the auditor-general, which revealed widespread misuse of this source of funds by a range of parties and individual MPs (Auditor-General, 2006). The National Party's negligence in failing to account for GST when booking election broadcast time meant that it was able to screen some $112,000 more in campaign advertising than the law allowed. Both National and Labour, and to a lesser degree some smaller parties, used anonymous donations and trusts to shield the identity of their major donors, allowing hundreds of thousands of dollars to flow into their campaign coffers from hidden sources. An extensive leaflet campaign funded by members of the Exclusive Brethren church and devoted to attacking the Labour and Green parties was carried out with a (still disputed) degree of knowledge on the part of the National Party, and on at least some occasions breached the legal requirement that they identify the 'true identity' of the person publishing them (Hager, 2006, pp.238-40). Other examples of 'third-party' advertising by various trade unions and the racing industry also appeared to contravene the rules requiring the authorisation of such messages and the identification of their source.

Taken alone, any of these matters would be cause for concern. In combination they reveal an urgent need for an extensive overhaul of the rules governing how electoral campaigns can be funded in New Zealand. The Ministry of Justice has completed a review of the present law, with the government signalling its intention to enact legislation dealing with the issue by the end of 2007. The National Party has also indicated that it is prepared to provide bi-partisan support for at least some reform measures. However, the exact nature of any proposals for change is not clear at the time of writing. This article is therefore intended to provide a background to whatever planned reforms may emerge by setting out the underlying problem involved with the issue of funding election campaigns. It then outlines the various regulatory choices available to respond to this problem. The difficulties that the 2005 campaign caused for New Zealand's present regulatory scheme are then recounted, along with some suggestions for how these may be combatted. Shortcomings with the present method of enforcing the rules on election campaign funding are examined. Finally, the article concludes with some suggestions as to how the process of reforming the rules in this area should be approached.

Election campaign funding and its discontents

When viewed in an international context, the events at the 2005 election should not provoke surprise. The funding of election campaigns has created endemic problems for representative democracies (Ewing and Issacharoff, 2006). This fact reflects the Janus-faced nature of money in the electoral context. An adequate supply of cash is essential for running an effective campaign. All the elements of modern electioneering – producing campaign material, distributing advertising messages, conducting opinion polls, hiring campaign staff, candidate travel, etc – come at a cost. Without money to meet these costs, a party or individual candidate simply cannot reach the voters to persuade them of how to cast their ballots. Spending on election campaigns can thus be a positive good, in terms of informing the electorate about the various parties and individuals seeking their support at the polls.

However, money is not distributed equally in our (or any) society. Simply put, some persons and groups have much, much more of it than do others. The importance of money at election time can then give them a great deal of potential influence over the outcome of the contest. At worst this influence may take the form of a direct, *quid pro quo* donation for a desired policy outcome: the outright purchase of public decision-making power through the funding of an election contestant's campaign. Even without such overt corruption, however, the very idea that an individual or group's electoral influence reflects their wealth is still troubling. It sits uneasily with our society's commitment to electoral equality, as made manifest in the 'one person, one vote' standard. The right of the wealthy to cast multiple votes based on their property holdings was abolished well over a century ago precisely because each individual's say about how the country should be run is considered as important as all others', irrespective of how much or little they own. Additionally, should 'money politics' come to be seen to dominate the country's elections, there is a risk that voters will become disillusioned and feel disenfranchised by the process. In an era of already declining turnout rates and falling political party membership, any development that might further decrease popular electoral participation deserves close and critical scrutiny.

Because money is both necessary for and potentially harmful to the electoral process, every democracy requires rules to govern how it can and cannot be used for campaign purposes. The form those rules will take then depends upon a number of factors (Ewing and Issacharoff, 2006, pp.6-7). One is the perceived importance of the issue in a society's particular context. For example, New Zealand's relatively low-cost electioneering environment, generally non-corrupt governing processes, and absence of any galvanising event or scandal has long permitted it to maintain a relatively 'light touch' regulatory environment. A second factor is the perceived political benefit that any particular regulatory regime may provide to the various parties in Parliament. The rules governing election funding are chosen by MPs, who will then campaign for re-election under those rules. It is hardly surprising, therefore, that a degree of partisan calculation will accompany any decision as to what rules ought to be in place. Finally, every regulatory regime must strike a balance between the fundamental freedom of electoral participants to communicate with the voters and the equality concerns that campaign spending can generate. Different democratic societies have come to opposing conclusions as to the most appropriate balance within their particular cultural and constitutional context (Geddis, 2001a).

Furthermore, a range of differing policy tools are available to achieve the appropriate balance between individual freedom and participant equality. These various tools can be grouped under three general categories of regulatory response.

1: Supply side controls on election funding

The first set of regulatory responses can be termed *supply side controls*. These restrict the way that primary participants may raise money from private sources for the purpose of funding their election campaign. By controlling how the electoral participants gain the funds needed to run their campaigns, these measures are intended to mitigate the risk that the interests and policy preferences of those with money to give will receive a disproportionate amount of attention from those seeking election. Such supply side controls include requirements to publicly disclose the sources of an election participant's funding, and restrictions on who may provide donations, as well as on how much may be donated to an election participant by any individual supporter.

2: Demand side controls on election funding

The second set of regulatory responses can be termed *demand side controls*, involving caps on how much the election participants can spend on their election-related activities. The aim of this form of regulation is not to create complete equality between all electoral contestants – a gap will still remain between the resources available to various electoral participants, even with some spending cap in place – but rather to prevent a well-funded participant from 'buying' an election by outspending the competition by a large amount. Furthermore, by controlling overall electoral spending, such caps seek to reduce the 'arms-race' phenomenon, whereby every electoral participant seeks to raise as much funding as is possible in case an opponent proves able to raise and spend substantially more. Demand side controls may apply to the electoral participants' total spending at election time, or to some more limited range of expenses (such as election advertising, or broadcasting). Further, they may apply only to the immediate contestants (i.e. the candidates and their political parties), or to a wider range of interested 'third parties' that involve themselves in the campaign.

3: Public assistance measures for electoral participants

The third set of responses can be termed *public assistance measures*. They complement the egalitarian objective of the previous two forms of regulation by replacing the role that private (and thus unequally distributed) sources of wealth can play in the electoral process with a 'clean' source of funding – the general taxpayer. Further, such measures may be designed to provide funding to parties or candidates which otherwise would struggle to raise private funds, thereby enabling a greater range of voices to participate at the election. A variety of different forms of public assistance measures are available: direct payments to electoral participants on a 'dollar-per-votes' basis; post-election refunds of the expenses incurred in campaigning; matching donations for small, individual donations; tax credits to compensate small donors for their gift; the provision of broadcasting time or other campaign benefits to qualifying contestants.

The need for election funding reform in New Zealand

The events of the 2005 election demonstrate flaws in every aspect of the regulatory regime governing the funding of election campaigns in New Zealand (for a more complete description of the present rules, see Geddis, 2004a).

1: Supply side problems

The lack of transparency involved in the supply of money to electoral participants is perhaps the most serious shortcoming in New Zealand's current regulatory regime (Geddis, 2001b). The Electoral Act 1993 does require that the identity and address of donors giving $10,000 or more to a political party be reported annually to the Electoral Commission.[1] However, where the donor's identity is not 'known' to the party, the contribution is listed only as coming from an anonymous source. In 2005 the Labour Party received $275,000 by way of such 'anonymous' donations. Where a contribution is received via a conduit organisation, such as a trust entity, the party's report need only list that conduit organisation as the donor. In 2005 the National Party received $1,741,793 from such sources. The law also permits a single donation to be split amongst several 'straw donors', thereby causing each purported donor's share to fall beneath the threshold at which disclosure is required. Furthermore, it is entirely legal for a donor and a political party (or individual candidate) to actively plan how one of these stratagems will be used to pass along a contribution 'facelessly' – that is, make a donation in a manner that does not involve the public disclosure of the donor's identity.

These disclosure rules are inadequate in two ways (Geddis, 2001b). First, they require public disclosure only *after* the election has taken place. Consequently, voters remain in the dark during an election campaign as to who is supporting each party financially in its bid to win public power. While an effective post-election disclosure regime has value in respect to tackling undue donor influence, it would be preferable to also allow voters the chance to assess this matter prior to casting their votes. Second, the ability of political parties (as well as individual candidates) to receive 'faceless' donations allows any donor who wishes to avoid publicly disclosing his or her identity to do so, and even permits the intended recipient of a political donation to advise a donor on how to achieve this result. The result is that the current public disclosure regime for political donations is all but voluntary in application.

This state of affairs is indefensible. The basic reason for requiring the disclosure of the identity of a political party's large donors is to combat any potential *quid pro quo* arrangement by enabling the public to judge the extent of the donor's influence on the actions of the party's representatives. A disclosure system that enables large donors to easily (and lawfully) remain 'faceless' hamstrings its very purpose – it is hardly likely that a donor expecting some pay-off for his or her contribution will choose to identify themselves to the public. Further, the present system of disclosure lets the public see that the political parties are receiving hundreds of thousands of dollars from private sources (thus raising concerns about

1 Donations of $1,000 or more to an individual candidate must be disclosed to the chief electoral officer following the election.

what may be expected in exchange for this largesse), but prevents them from checking what effect those donations have on policy. This is hardly a recipe for increasing the public's overall confidence in the political process.

In light of these problems, New Zealand should follow the example of Australia, Canada, the United States and the United Kingdom and require political parties (as well as individual candidates) to ascertain and publicly reveal the true identity of every donor who gives more than a nominal amount (say, $300). This was the approach recommended by the Royal Commission on the Electoral System, which also called for preventing the use of conduit organisations to avoid the disclosure requirements (Royal Commission, 1986, pp.189-90). The splitting of donations amongst 'straw' donors also should be prohibited (although lowering the required level of disclosure would itself undermine this tactic). Furthermore, the regular public disclosure of large donations (say, over $5,000) should be required prior to the election, so that voters are able to ascertain before casting their ballots who is financially backing the parties and individual candidates.

Aside from reforming the disclosure requirements for donations, thought is also needed as to whether limits should be placed on who may fund electoral participants, and how much they may donate. At present, any person or organisation can give as much money as he, she or it wishes to any political party or candidate. Contributors need not be citizens, nor even residents, of New Zealand. The legitimacy of persons who are not eligible to vote in this country's elections funding those who are contesting them is debatable, to say the least. Similar considerations apply to contributions to electoral contestants from organisations such as companies or unions. Finally, it may be questioned whether even individual supporters ought to be permitted to make unlimited donations to parties or candidates. The concern is that reliance on large financial backers can have a detrimental effect on the internal policy development and direction of a party, as well as creating a sense of obligation towards the donor. It is for these reasons that both Canada and the United States have banned donations to electoral participants from foreign citizens, unions and companies, as well as imposed caps on how much individuals may donate in any year.

However, such donation caps raise at least three potential problems. First, they infringe on the right of donors to use their financial resources to promote their political beliefs through supporting particular parties or candidates. What is an appropriate restriction to place on a supporter's ability to contribute money when there is no legal limit on the number of hours an individual may volunteer to work for an electoral contestant? Second, if restrictions are placed upon private sources of funding, it raises the question as to how electoral contestants will raise the money they need to mount effective campaigns. If sufficient funds cannot be raised by lawful means from private sources, then public funding may be required instead, an issue which raises its own set of problems (discussed below). Finally, there is the problem of displacement of political spending. If private donors are prevented from giving money directly to the electoral participants, they may instead use their cash to fund 'third-party' campaigns around the election (an issue further discussed in the next section).

2: Demand side problems

New Zealand traditionally has used demand side controls as its primary form of election funding regulation. A cap applies to the 'election expenses' that political parties and individual candidates may incur in the three months leading up to the election.[2] Similarly, the amount that may be spent on using the broadcast media to screen 'election programmes' (i.e. campaign advertisements) is strictly limited through the broadcast allocation process carried out by the Electoral Commission. Restrictions also apply to election spending by 'third parties': individuals or organisations not directly contesting the election, but with an interest in influencing its outcome. Any advertising paid for by third parties that 'is used or appears to be used to promote or procure the election of a constituency candidate', or 'encourages or persuades or appears to encourage or persuade voters to vote for a party', must be authorised in writing by the party or candidate concerned.[3] The efficacy of each of these forms of demand side control may be questioned following the 2005 election.

2 For individual candidates, the cap is $20,000. For political parties it is $1 million + $20,000 for each electorate contested by the party (i.e. a party contesting all 69 electorates may spend up to $2.38 million on its 'election expenses').

3 Where such authorisation is given, the party or candidate must then count that spending as a part of its own 'election expenses'. In addition, the advertising must carry the 'true name' and address of the person authorising it.

Most obviously, the fact that the Labour Party exceeded the cap on its election expenses by at least $400,000 without facing any legal consequences puts the limit's effectiveness in doubt. The overall issue of enforcing the rules on election campaign funding is discussed later in this article. However, beyond problems with policing the present spending limits, there is also reason to be concerned about their reach. Current restrictions apply only to 'election expenses', which include only advertising activities designed to promote a political party or candidate's chances of being elected. Because activities such as opinion polling, travel, consultant fees, etc do not count as 'election expenses', unlimited sums may be spent on them. In practice, then, the electoral contestants may spend vastly more on their campaigns than the apparently low limits provide. It is not clear, therefore, whether this regulatory control is adequate to stop the development of an 'arms race' in election spending. Certainly, both Canada and the United Kingdom require that electoral contestants include a far wider range of expenditures under their election caps (Ghaleigh, 2006).

The present cap on spending on election broadcasting is also problematic. It is not clear why a separate limit is even required, given the overall limits on 'election expenses'. In addition, because parties may only spend as much on election broadcasting as they are allocated by the Electoral Commission before the election, there is a large discrepancy between the ability of smaller and larger parties to access this medium. In 2005, for instance, Labour was entitled to spend $1.1 million on broadcasting its campaign advertisements, while the ACT, Green, New Zealand First and United Future parties could spend only $200,000 each. Whether it is legitimate for the law to mandate that one party will get five times more direct broadcast media exposure than its competitors is highly debatable (Geddis, 2003).

Finally, the controls placed on third-party election spending present a real difficulty. The current authorisation requirements for messages that appear to promote or encourage support for a political party or candidate only cover 'express advocacy': messages that *explicitly* urge voters to vote for some identified contestant. Consequently, third parties can spend as much as they wish on 'negative advocacy' (messages that attack or criticise a candidate or party) or 'issue advocacy' (messages that purport to discuss issues, even if intended to help a party or candidate).[4] For one thing, this regulatory framework encourages third parties to engage in the kind of negative, attack politics so disliked by the general public and epitomised by the Exclusive Brethren church's leaflets targetting Labour and the Greens. Furthermore, the loophole created by allowing third-party 'issue advocacy' fatally undermines the limits on 'express advocacy', as was also graphically illustrated during the 2005 campaign. For example, various unions distributed leaflets 'comparing' the policy stance of differing parties on matters such as employment and education policy, with the clear intention of encouraging a vote for the Labour, Green or Progressive Coalition parties. Similarly, the racing industry's 'vote for fair tax' campaign was a barely-disguised attempt to increase National's share of the vote (Hager, 2006, ch.13). However, clamping down on this kind of election-related spending brings to the fore the clash between participant freedom and equality outlined earlier. Closing 'loopholes' in the regulatory scheme means limiting individual and group (other than the candidates and political parties) participation during the course of the election campaign. Deciding whether this is a desirable step requires a careful balancing of our commitments to individual freedom and equality (Geddis, 2001a, 2001c; Geddis, 2004b).

3: The issue of increased public assistance

The auditor-general's post-election finding of widespread misuse of parliamentary funding has produced calls to reduce the temptation that political actors will exploit this resource, by expanding the amount of direct public funding available for electoral campaign purposes. At present, direct public funding of the election participants' activities is restricted to the $3.212 million broadcasting allocation. There are several arguments for why this limited form (and level) of funding may be inadequate. The Royal Commission on the Electoral System, for example, recommended that registered political parties should receive a bulk sum based on the number of votes gained by a party at the previous election (Royal Commission, 1986, pp.226-9). It claimed that this measure would alleviate financial inequality between the parties and reduce the risk that large donors might exert unwarranted influence over

4 However, the Electoral Act 1993 does require that such messages identify the 'true identity' and address of the person responsible for them.

a party's policy positions. Increased campaign costs in the following two decades, allied to the overall decline in party membership, only served to strengthen these concerns. In addition, it has been argued that a fall in private funding following any introduction of tighter supply side controls, such as more stringent public disclosure of the identity of individual donors, might require compensatory public funding. Simply put, if the New Zealand public wants to avoid its political parties being dependent upon a few large-scale donors to fund their activities, or even skirting the legal rules in order to obtain the money they need to operate, then it will need to provide the necessary funding through general tax revenue.

However, there are also potential problems involved in establishing any public-funding scheme (Geddis, 2002). Its design will require careful attention, lest it entrench already established political parties against displacement by emerging political movements. Crucial to this issue is the support threshold at which public funding is made available to electoral contestants: a higher threshold privileges established parties, while adopting a lower threshold will increase overall financial costs. On a more principled level, we must ask whether the taxpaying public should be forced into contributing financially to political parties that cannot convince individuals to support them voluntarily. Furthermore, there is a risk that providing a stream of guaranteed funding might contribute to the further 'cartelisation' of the political parties (Miller, 2006). If parties are able to fund their activities substantially through direct grants from the state, then their leadership may become even more insulated from the influence of its grass-roots membership. Such an outcome would be of real concern in an era of already declining levels of party membership.

There are, of course, means of trying to bring about the positive ends promised by public assistance measures while limiting any risks involved in their adoption. One is to combine only partial taxpayer funding for political parties with restrictions on how much private donors may contribute. Political parties would thus be forced to raise the extra campaign funds they may require from an extended pool of supporters, rather than being able to rely on a few large-scale backers. The way in which public assistance is provided can also be tailored to encourage parties to seek (and supporters to give) small, individual donations: by providing a tax write-off in the same way as gifts to charities, or by giving parties a matching amount for small contributions. Finally, there is the more invasive option of requiring that parties wishing to receive public assistance must first agree to a set of standards relating to internal party democracy. These standards could set out an individual member's basic right to participate in choosing the party's office holders and candidates, as well as take part in the development of party policy. However, bringing the regulatory power of the state to bear on the internal workings of the political parties raises its own particular set of problems (Geddis, 2005).

The problem of rule enforcement

Following the 2005 election, New Zealand's electoral administrators reported 17 potential electoral offences to the police. However, the police subsequently declined to prosecute any of these matters, even after accepting that there was strong prima facie evidence that an offence had occurred in some instances (New Zealand Police, 2006). This failure to bring a prosecution even in a situation where the law clearly appeared to have been breached raises the general problem of enforcing the rules around election campaign funding. Simply put, there is little point in having a well designed and comprehensive set of rules to govern how money may be raised and spent at election time if those who break the rules are not held to account for their actions.

One response to this enforcement problem would be to transfer responsibility for investigating and responding to potential breaches of (at least some) matters of electoral law from the police to the electoral administrators.[5] The role played by the commissioner of Canada elections provides a useful template in this regard. The commissioner of Canada elections is a non-partisan official appointed by Canada's chief electoral officer (who is in turn appointed by, and reports directly to, the Canadian House of Commons), with the statutory duty to ensure compliance with Canada's electoral law (Davidson, 2004). In carrying out this responsibility, the commissioner of Canada elections can investigate any alleged breach of the electoral law and decide on an appropriate course of action to remedy any infraction.

5 There may still be some serious criminal matters – such as allegations of bribery or undue influence – for which the police should retain responsibility for investigating and prosecuting.

Therefore, he or she has exclusive responsibility for initiating a prosecution under Canada's electoral law. In addition, the commissioner of Canada elections may negotiate binding compliance agreements with electoral participants to remedy a breach of the electoral law, or seek injunctions from the courts to prevent an ongoing breach of the law.

Alternatively, if enforcement is going to be left in the hands of the police, steps need to be taken to ensure that they take this role more seriously than at present. One means of achieving this would be to raise the potential penalties for a breach of electoral law. At present, 'illegal practices' attract only a fine of up to $3,000, while more serious (but far less commonly alleged) 'corrupt practices' attract a possible sentence of up to one year in prison, a fine of up to $4,000, or both. Consequently, even if a prosecution is successful, the likely penalty at present makes it appear that it is not worth the time and effort involved. Additionally, the police should incorporate a 'harm to the democratic process' component when they are deciding whether to prosecute an electoral offence. That is to say, they should not treat a breach of the rules governing the funding of elections as being a kind of 'victimless crime'. In so far as such breaches undermine the overall integrity of the election process, they threaten the legitimacy of our entire system of government. The enforcement agents' attitude towards pursuing and prosecuting those who have broken the law governing election campaign funding should reflect this fact.

How should reform be implemented?

To return to the beginning of this article, the 2005 election has revealed problems with New Zealand's regulatory scheme that require (and have been promised) urgent attention. At a minimum, the disclosure rules applying to donations, the present controls on third-party advertising and the method of enforcing the election laws all must be tightened considerably. Donations from foreign individuals and companies should also be banned, and serious thought needs to be given to whether companies, unions and wealthy individuals should remain free to make unlimited contributions to those contesting each election. My own view is that it is inconsistent with the broadly egalitarian thrust of our electoral processes to allow such unequal funding practices to continue, and that only donations from individuals should be allowed up to a limit of (say) $20,000. Finally, New Zealand should bite the bullet and accept that taxpayer funds are necessary to ensure that a range of sufficiently well-resourced political parties continue to exist in our MMP environment. The optimum way to distribute this public assistance, I would argue, is by allowing individual donors to registered parties a tax write-off of up to $500, just as is provided to those who give money to charity (Geddis, 2002).

That being said, the final shape of any reform measures will inevitably be fiercely contested. For one thing, any proposal will have partisan political implications, raising the spectre that its intention is to maximise the interests of the parties that designed it. But beyond calculations of electoral gain and loss, any set of new rules will also involve a trade-off between values of freedom and equality, upon which reasonable, well-meaning people may disagree. Consequently, the process of reform must ensure that the chances of partisan manipulation are minimised, while principled disagreements are recognised and debated thoroughly. In an ideal world, a process akin to the Royal Commission on the Electoral System, or the recent Citizens' Assembly on Electoral Reform held in British Columbia, could be adopted. However, such processes are time consuming, and it is perhaps better to address this issue while there is momentum behind it. Furthermore, it is questionable whether parliamentarians would be prepared to allow control over the issue to slip out of their hands.

Therefore, the manner in which Parliament goes about examining and debating changes to the rules governing the funding of election campaigns is going to be particularly important. At a minimum, the process should be approached with the aim of getting as many parties to support as many of the changes as possible. Any rules enacted by a narrow majority will immediately raise concerns about partisanship, as will rules that are supported by the two major parties alone. Furthermore, the scrutiny of proposed changes by the justice and electoral committee will be critical to the overall legitimacy of the reform process. At present only the Labour, National and Green parties have members on this committee. Clearly, the other parties represented in Parliament will need to become involved in the scrutiny process by providing members for this issue. Furthermore, the committee could profitably consider inviting submissions on proposed legislation from a range of international electoral experts. Although every country is somewhat different, and a New Zealand solution is required for New Zealand's problems, the experience of other nations can still be useful and instructive. And finally, there will be a general responsibility on the part of parliamentarians, the media and academics to ensure that the public is kept fully aware of what changes are proposed. For in the end, it is their electoral system that is at stake.

References

Auditor-General (2006), *Advertising Expenditure Incurred by the Parliamentary Service in the Three Months Before the 2005 General Election*, Wellington: Office of the Controller and Auditor-General

Davidson, D. (2004) 'Enforcing campaign finance laws: what others can learn from Canada', *Election Law Journal*, 3, pp.537-50

Ewing, K. and S. Issacharoff (2006) 'Introduction', in K. Ewing and S. Issacharoff (eds), *Party Funding and Campaign Financing in International Perspective*, Oxford: Hart Publishing

Geddis, A. (2001a) 'Democratic visions and third-party independent expenditures: a comparative view', *Tulane Journal of International and Comparative Law*, 9, pp.5-107

Geddis, A. (2001b) 'Hide behind the targets, in front of all the people we serve: New Zealand election law and the problem of "faceless" donations', *Public Law Review*, 12, pp.51-68

Geddis, A. (2001c) 'Confronting the "problem" of third-party expenditures in United Kingdom election law', *Brooklyn Journal of International Law*, 27, pp.103-52

Geddis, A. (2002) 'Towards a system of taxpayer funding for New Zealand elections?', *Otago Law Review*, 10 (2), pp.181-211

Geddis, A. (2003) 'Reforming New Zealand's election broadcasting regime', *Public Law Review*, 14, pp.164-82

Geddis, A. (2004a) 'Regulating the funding of election campaigns in New Zealand: a critical overview', *Otago Law Review*, 10 (4), pp.575-97

Geddis, A. (2004b) 'Liberté, egalité, argent: third-party election spending and the charter', *Alberta Law Review*, 42 (2), pp.429-61

Geddis, A. (2005) 'The unsettled legal status of political parties in New Zealand', *New Zealand Journal of International and Public Law, 3,* pp.170-93

Ghaleigh, N. (2006) 'Expenditure, donations and public funding under the United Kingdom's Political Parties, Elections and Referendums Act 2000 – and beyond?', in K. Ewing and S. Issacharoff (eds), *Party Funding and Campaign Financing in International Perspective*, Oxford: Hart Publishing

Hager, N. (2006) *The Hollow Men: a study in the politics of deception*, Nelson: Craig Potton Publishing

Miller, R. (2006) 'New Zealand's multi-party system: consolidation of the cartel model under proportional representation', in I. Marsh (ed.), *Political Parties in Transition*, Annandale: Federation Press

New Zealand Police (2006) 'No prosecutions for electoral complaints', news release, 17 March, http://www.police.govt.nz/news/release.html?id=2345

Royal Commission on the Electoral System (1986) *Towards a Better Democracy*, Wellington: Government Printer

Andrew Geddis is Associate Professor of Law at the University of Otago. He has written extensively on issues relating to public law and the democratic process, including the funding of political parties and election campaigns. He is the author of *Electoral Law in New Zealand: practice and policy* (Wellington: LexisNexis New Zealand, 2007).

Stern Lessons on Climate Change: Stabilisation Targets and Emission Reductions

Jonathan Boston

Introduction

In mid-2005 the British government commissioned its chief economic adviser, Sir Nicholas Stern, to review the economics of climate change. His report, released in late October 2006, is detailed, comprehensive and sobering. Not surprisingly, given the many controversies surrounding the causes and likely consequences of climate change, the report has sparked vigorous debate. Predictably, various critics have questioned key elements of the scientific evidence upon which the Stern Review is based (see Carter, *et al.*, 2006; Lawson, 2006). Others have challenged some of the main assumptions underpinning the Review's economic analysis, such as the use of a very low discount rate, the focus on total costs and benefits rather than marginal costs and benefits, and the claimed tendency to rely on the most pessimistic studies and estimates of the damage that global warming may cause (see Lomborg, 2006; Nordhaus, 2006; Tol, 2006).[1] For such reasons, it is argued that the Review is likely to have overestimated the environmental, social and economic impacts of climate change, and thus exaggerated the expected benefits of measures to reduce greenhouse gas (GHG) emissions.

Against this, others maintain that the Review underestimates the potential costs and risks of climate change, including the scope and scale of damages likely to be caused at different temperatures and the risks of abrupt climate change (see Stern, 2006b, p.2, and the Technical Annex, p.4). A related concern is that the Review endorses a stabilisation target for GHG concentrations in the atmosphere that, given the cost-benefit estimates reported, is insufficiently stringent (Baer, 2007; Tol and Yohe, 2006), and arguably incompatible with the requirements of the United Nations Framework Convention on Climate Change (UNFCCC). Under article 2 of this Convention, the parties agreed to ensure that GHG concentrations would be stabilised at a level that prevents 'dangerous anthropogenic interference with the climate system'. Stabilisation targets of the kind proposed by Stern, it is argued, are likely to result in an increase in the global mean surface temperature, at equilibrium, of around 3ºC (i.e. above pre-industrial levels). This is well above the cap of 2ºC of warming which has been endorsed by many scientists and the European Union (EU) as being the maximum compatible with the provisions of the UNFCCC. Indeed, Stern readily accepts that the upper end of the Review's proposed stabilisation target range is a 'risky place to be' (2006b, p.3).

The purpose of this brief article is to consider some of the key issues surrounding stabilisation targets. These include the relationship between GHG concentrations in the atmosphere and changes in global mean surface temperatures, the necessary conditions for achieving a stabilisation of GHG concentrations, the magnitude of the GHG emission reductions required to meet particular stabilisation targets, and the reasoning behind the targets proposed by the Stern Review. It must be emphasised that the issues surrounding stabilisation targets are complex and it is only possible to provide a broad summary of the relevant considerations in this article. Furthermore, there are many remaining uncertainties, knowledge gaps and areas of continuing debate, particularly in relation to climate sensitivity, the operation of various feedback mechanisms and the degree of inertia in the climate system. For such reasons, there is a need for caution and humility in addressing the question of what stabilisation target(s) might be appropriate.

1 The issues surrounding the discount rate used by Stern are explored by Dennis Rose in a separate article in this issue of *Policy Quarterly.*

Stabilisation levels and temperature increases

In 2006 the concentration of CO_2 in the atmosphere reached 380 parts per million (ppm), or around 35% above pre-industrial levels. During the past decade, concentrations have been rising at close to 2 ppm per annum, and the rate of increase has accelerated somewhat since the 1960s and 1970s. Taking the six Kyoto GHGs into account (CO_2, CH_4, N_2O, SF_6, HFCs and PFCs), the Stern Review (2006a, p.193) estimates that the concentration of GHGs is presently around 430 ppm CO_2 equivalent (CO_2e). This is close to 50% higher than pre-industrial levels. On a plausible business-as-usual scenario, it is estimated that CO_2e concentations will reach 550 ppm by 2035, and much higher levels later in the century (Stern, 2006a, p.177).[2]

Uncertainty remains over the sensitivity of the climate to increasing concentrations of GHGs in the atmosphere. (The climate sensitivity is defined as the increase in the global mean surface temperature, at equilibrium, as a result of a sustained doubling of CO_2 concentrations.) Hence, as the Stern Review (2006a, p.194) readily acknowledges, 'The relationship between stabilisation levels and temperature rise is not known precisely'. Nevertheless, for over two decades there has been a broad consensus that the climate sensitivity is very likely to fall between 1.5ºC and 4.5ºC, with only a small chance (e.g. around 5–10%) of a rise of a lesser or greater amount.[3] The consensus view is based on evidence from a range of sources, including simulations using global climate models, analysis of the impact of specific events (such as the eruption of Mt Pinatubo in 1991) on global temperatures, assessment of paleo-climate data, and analyses based on observed temperature changes since the mid-19th century. Thus far, most of the analyses have yielded a skewed climate sensitivity probability distribution – with a longer tail on the higher end of the temperature spectrum.

2 Carter et al. (2006, p.197) dispute the proposition that CO_2e concentrations in the atmosphere will increase by as much as 120 ppm by 2035, but given various assumptions (e.g. continued global economic growth, limited action to reduce greenhouse gas emissions, etc.) there can be little doubt that concentrations will continue to increase and are likely to do so at an accelerating rate.

3 According to the recently published 'Summary for Policymakers' of the IPCC's Fourth Assessment Report, climate sensitivity 'is likely to be in the range of 2 to 4.5ºC with a best estimate of about 3ºC' (2007, p.12).

Some very recent analyses have pointed to the climate sensitivity being slightly higher than estimated in the 1990s. Such results reflect, in part, the placing of rather greater weight on the impact of various amplifying feedbacks, such as the release of methane from melting permafrost in the Arctic and the weakening of major carbon sinks (e.g. the Amazon rainforest) (see Steffen, 2006). Nevertheless, most estimates suggest that a sustained doubling of CO_2 concentrations from pre-industrial levels (to around 550 ppm) can be expected (other things being equal) to generate an increase in the global mean surface temperature of approximately 3ºC at equilibrium. Note that equilibrium levels will not be achieved for well over a century.

But what magnitude of temperature increase might be expected if CO_2 concentrations are stabilised at levels lower (or higher) than 550 ppm, and what are the risks of an increase of more than 3ºC if concentrations double? Table 1, which is drawn from the Stern Review, outlines an indicative range of likelihoods of exceeding a certain increase in temperature, at equilibrium, for a series of stabilisation levels measured in CO_2e. The 'maximum' and 'minimum' columns show the maximum and minimum chance of exceeding a particular temperature increase, based on 11 recent studies (see Meinshausen, 2006). The results reported for the 'Hadley Centre' in Table 1 are based on Murphy et al. (2004), while the results of the 'IPCC TAR 2001' (Intergovernmental Panel on Climate Change, Third Assessment Report) are based on Wigley and Raper (2001). Note that the individual values are approximate only.

The data presented in Table 1 highlight a number of significant points. First, the Hadley Centre's results reflect the incorporation of slightly higher climate sensitivity estimates than those used by the IPCC in 2001. It is notable that only a modest increase in such estimates generates a relative large rise in the probability of exceeding particular temperature thresholds. Second, it is interesting to consider the implications if CO_2e concentrations were to be stabilised at 450 ppm – which is only about 20 ppm above current levels. Based on the results in the 'minimum' column, there is at least a 26% chance of the global mean surface temperature rising by more than 2ºC, and a 4% chance of it exceeding 3ºC. At the other extreme (i.e. using the results in the 'maximum' column), there is a 78% chance of exceeding 2ºC, a 50% chance of exceeding 3ºC and even a 21%

Table 1: Likelihood of exceeding a temperature increase at equilibrium

Stabilisation level (CO_2e)	Maximum	Hadley Centre Ensemble	IPCC TAR 2001* Ensemble	Minimum
Probability of exceeding 2˚C (relative to pre-industrial levels)				
400	57%	33%	13%	8%
450	78%	78%	38%	26%
500	96%	96%	61%	48%
550	99%	99%	77%	63%
650	100%	100%	92%	82%
750	100%	100%	97%	90%
Probability of exceeding 3˚C (relative to pre-industrial levels)				
400	34%	3%	1%	1%
450	50%	18%	6%	4%
500	61%	44%	18%	11%
550	69%	69%	32%	21%
650	94%	94%	57%	44%
750	99%	99%	74%	60%
Probability of exceeding 4˚C (relative to pre-industrial levels)				
400	17%	1%	0%	0%
450	34%	3%	1%	0%
500	45%	11%	4%	2%
550	53%	24%	9%	6%
650	66%	58%	25%	16%
750	82%	82%	41%	29%
Probability of exceeding 5˚C (relative to pre-industrial levels)				
400	3%	0%	0%	0%
450	21%	1%	0%	0%
500	32%	3%	1%	0%
550	41%	7%	2%	1%
650	53%	24%	9%	5%
750	62%	47%	19%	11%

* Intergovernmental Panel on Climate Change, Third Assessment Report, 2001.
Source: Stern Review, 2006a, p.195.

chance of a huge 5ºC temperature increase. Third, if CO_2e concentrations exceed 550 ppm for an extended period, there is only a small chance (37% on the most optimistic estimate and 1% using the Hadley results) of staying within the European Union's proposed 2ºC cap, and around a 30–70% chance of exceeding 3ºC. Finally, even stabilising CO_2e concentrations at 400 ppm generates a significant risk (13% for the IPCC TAR and 33% for Hadley) of a temperature increase of more than 2ºC, and there is even a small risk of exceeding 4ºC. Put differently, as Meinshausen (2006, p.264) has observed, 'Only at levels around 400ppm CO_2 equivalent or below, could the probability of staying below 2ºC in equilibrium be termed "likely" for most of the climate sensitivity PDFs [probability density functions]'.

How concerning are such results? If the probability ranges reported in Table 1 are broadly correct (and this, admittedly, remains open to some debate), the results present a stark warning. After all, an increase in the global mean surface temperature of 2º–3ºC will have very significant, and largely negative, environmental, social and economic impacts across the globe. As summarised in the Stern Review and elsewhere (Chapman et al., 2006; Schellnhuber et al., 2006), such impacts include an increase in the sea level of many metres, more severe droughts, floods and storms, the loss of most coral reefs and mountain glaciers, and the extinction of a significant proportion of terrestrial species. Such changes will generate major water shortages in many regions, reduce food production, inundate many coastal settlements and river deltas, and cause huge economic losses. Quite apart from this, sustained high concentrations of GHGs in the atmosphere are likely to have major adverse impacts on oceanic chemistry and marine ecosystems (Turley, 2006).

Achieving stabilisation

In order to stabilise CO_2e concentrations, it will be necessary for global GHG emissions to equal the natural uptake of carbon from the atmosphere. As the Stern Review (2006a, p.194) points out:

> The longer global emissions remain above this level, the higher the stabilisation level will be. It is the *cumulative* emissions of greenhouse gases, less their cumulative removal from the atmosphere, for example by chemical processes or through absorption by the Earth's natural systems, that defines their concentration at stabilisation.

Bear in mind that the natural rate of uptake is at least partly influenced by human actions, such as deforestation, afforestation and other land-use changes. Globally, significant deforestation is occurring, thus reducing the natural uptake of carbon. Achieving stabilisation, therefore, will require action not only to reduce GHG emissions but also to increase carbon sequestration into the biosphere via land-use changes (such as afforestation and reforestation). In developing a global mitigation strategy, the question of the appropriate balance between emission reductions and land-use changes is one of many issues that deserve further attention (see Read, 2006).

On the basis of the estimated current natural uptake of carbon, achieving stabilisation – at whatever the agreed concentration of CO_2e – will require emission reductions of at least 80% from 2005 levels (Stern, 2006a, p.199). What this means for individual countries will depend on a range of technical, ethical and political considerations. In all likelihood, richer countries with high per capita emissions will be expected to reduce their emissions by more than the average. This could well entail *net* emission cuts of over 90% from current levels (with the precise reduction in gross emissions dependent upon the potential for securing offsets).

Other things being equal, the timeframe within which stabilisation occurs, and the eventual stabilisation level that is secured, will depend on how rapidly emissions can be cut. Realistically, of course, any global effort to stabilise CO_2e concentrations is likely to take much of this century to achieve. Leaving aside the cumbersome and time-consuming nature of global negotiations over climate-change policy, there is substantial inertia in the global economy, with the result that it will take considerable time and effort to move towards a low-emissions pathway. This is due to lengthy infrastructure investment processes and long replacement cycles for most capital stock, as well as the sheer magnitude of the task of decarbonising complex and expensive energy and transportation systems (e.g. replacing carbon-intensive capital stock with low-carbon technologies). Equally, the Earth's climate system is characterised by considerable lags. Hence, even if GHG emissions are stabilised and then reduced rapidly over the next few decades (which will be a significant challenge), CO_2e concentrations will take many decades to stabilise, the global mean surface temperature will continue to rise for a much longer period, and the sea level is likely to continue rising for several thousand years.

Importantly, too, there is some uncertainty over the likely natural uptake of carbon during the coming century, and in particular over whether changes in the climate will increase or reduce the natural absorption rate. At this juncture, the available evidence suggests that there is a significant risk that the absorption of CO_2 by the Earth's soils, vegetation and oceans will slow as the mean temperature increases. If this is the case, then even greater reductions in cumulative emissions (and/or expansion of carbon sinks) will be required to achieve any particular stabilisation target. Furthermore, after stabilisation has been achieved it is expected that the level of natural absorption will fall, partly because of the gradual exhaustion of the vegetation sink and partly because of a weakening of the rate of ocean uptake (Stern, 2006a, p.197). Given this situation, GHG emissions will need to keep falling long after stabilisation has been achieved. Indeed, according to the Stern Review, it may be necessary in the long run to reduce annual emissions to less than 1GtCO_2e (gigatonnes of CO_2e) in order to maintain a particular stabilisation level. This would mean cutting emissions to about 2% of current levels – which are close to 45GtCO_2e per annum.

As the Stern Review observes, there is a distinction between 'stabilisation' and 'peaking'. Conceptually, it might be possible for CO_2e concentrations to peak at, say, 470 ppm and then fall gradually, via an effective mitigation strategy, to an intended stabilisation level of, say, 450 ppm. This, however, would require reducing annual emissions below the natural absorption rate for a significant period of time or, alternatively, raising the natural absorption rate 'artificially' for a period through extensive afforestation and reforestation. But such approaches may be very hard to implement, for technical and/or political reasons. Moreover, as highlighted by Meinshausen (2006), the level of the peak, the magnitude of the 'overshooting', and the length of time near the peak are likely to be important – and there is always the risk that the natural rate of carbon absorption may weaken under the impact of higher temperatures and related feedback processes, thus making it all the more difficult to reach the intended stabilisation target. For such reasons, the Stern Review cautions against placing too much reliance upon the idea of overshooting as part of a global mitigation strategy.

Setting stabilisation targets

Stern recommends a stabilisation target of between 450 and 550 ppm CO_2e. This is in line with the recommendations of various scientists, such as Barrie Pittock (2006, p.292). The logic for this particular target range is summarised in the Review as follows:

> stabilisation at levels below 450 ppm CO_2e would require immediate, substantial and rapid cuts in emissions that are likely to be extremely costly, whereas stabilisation above 550 ppm CO_2e would imply climatic risks that are very large and likely to be generally viewed as unacceptable.

There can be little doubt, given the sobering evidence presented by Stern, that a stabilisation target above 550 ppm CO_2e would be unacceptably high – on a range of ethical, environmental and economic criteria. A target of 650 ppm, for instance, would almost certainly result in a mean temperature increase of more than 2°C and would have a relatively high chance of generating an increase of more than 3°C. But is not a target range of 500–550 ppm CO_2e also unacceptable? After all, on the Hadley Centre's estimates, stabilisation at 500 ppm yields a 96% chance of exceeding 2°C and a 44% chance of exceeding 3°C. By almost any standards these are high risks. And, as previously noted, a mean temperature increase of these magnitudes will have serious and pervasive impacts on ecosystems, physical infrastructure, food production, geopolitical stability and human well-being – and many of the impacts will be irreversible.

Yet, as the Stern Review highlights, achieving a stabilisation level of 500 ppm CO_2e, let alone a lower figure, will be a formidable undertaking. Table 2 illustrates the emission paths required to reach three different stabilisation targets: 450 ppm, 500 ppm and 550 ppm CO_2e. As shown in the Table, to have any realistic chance of stabilising at 450 ppm CO_2e, global GHG emissions must peak no later than around 2010 and then fall at a rate of about 7% per annum, with an overall cut in emissions of about 70% below 2005 levels by 2050. According to Stern (2006a, p.193), such rapid, sustained cuts may be unachievable given existing and readily foreseeable technologies (and assuming continuing global economic growth). Stabilising at 500 ppm CO_2e is somewhat less taxing, but nevertheless emissions will need to peak no later than around 2020 (to avoid overshooting), and then fall at around 4–6% per annum, with a decrease of 60–70% by 2050. Such rates of reduction are outside the parameters of what has been achieved thus far in individual states (let alone at the global level), except during periods of serious political and economic upheaval. Even to achieve a stabilisation target of 550 ppm CO_2e will be challenging. As Stern (2006a, p.205) notes, this is likely to require cutting current global average emissions per capita by 50% by 2050, and an even larger reduction in emissions per unit of GDP.

The results presented in Table 2 also highlight the importance of early policy action: the longer that effective measures to curb emissions are delayed, the more substantial the reductions will need to be to meet a particular target. For instance, a delay of even ten years in the date at which emissions peak is likely to mean that emissions will have to fall at a 50–100% faster rate to achieve the agreed target. Moreover, delayed action increases the risks of severe climate impacts and accentuates the potential for triggering abrupt changes in the climate system.

Policy action to stabilise and then reduce emissions in a sustained manner will impose costs – although the magnitude of these should not be exaggerated. Using various methodologies, Stern (2006a, p.xiv) estimates that stabilising CO_2e concentrations at 500–550 ppm will cost about 1% of annual global GDP by 2050 (with a range of between –5% and +1% of GDP). In other words, global GDP will be about 1% lower mid-century than it would have been had there been no mitigation strategy in place. Assuming a global GDP of about US$100 trillion in 2050, the cost would be about US$1 trillion – not a trivial sum, but less than twice what the US currently spends each year on defence (including the 'Global War on Terror'). Beyond 2050 the costs of mitigation are much less certain; but they may well increase if – as might be expected – it becomes necessary to make greater use of the more expensive low-carbon technologies that are available. Overall, Stern's calculations are consistent with much of the recent literature on the costs of decarbonising the global economy (see Hatfield-Dodds, 2006; Metz and van Vuuren, 2006), and are therefore likely to concur with the conclusions of the forthcoming Fourth Assessment Report of the IPCC (Stern, 2006b, p.3).

To date, relatively few studies have examined the technical feasibility and likely costs of achieving a CO_2e stabilisation target at the lower end of Stern's proposed range (i.e. 450 ppm). Such analyses suggest, however, that the costs will be greater than those associated with the pursuit of a target of 550 ppm – perhaps as much as three times higher (Stern, 2006a, p.247). One reason for this is that a lower target will necessitate very sharp reductions in emissions within the next few decades, thus entailing the premature retirement of carbon-intensive capital stock, retrofitting cleaner technologies

Table 2: Illustrative emission paths to stabilisation

Stabilisation level CO_2e	Date of global peak emissions	Global emissions reduction rate (% per year)	Percentage reduction in emissions below 2005 values[a]	
			2050	2100
450ppm	2010	7.0	70	75
500ppm (falling to 450ppm in 2150)	2020	-	-	-
	2010	3.0	50	75
	2020	4.0 – 6.0	60 – 70	75
	2030	5.0[b] – 5.5[c]	50 – 60	75 – 80
550ppm	2040	-	-	-
	2015	1.0	25	50
	2020	1.5 – 2.5	25 – 30	50 – 55
	2030	2.5 – 4.0	25 – 30	50 – 55
	2040	3.0 – 4.5[d]	5 – 15	50 – 60

Notes: a. 2005 emissions taken as 45 $GtCO_2$e/yr; b. overshoot to 520ppm; c. overshoot to 550ppm; d. overshoot to 600ppm. The symbol '-' indicates that stabilisation is not possible given the relevant assumption.

Source: Stern (2006a), p.200.

(which tends to be a more expensive option than starting from scratch), and the adoption of relatively costly low-carbon technologies.

Are such additional costs justifiable? This is a difficult question to answer. As Stern and his critics have repeatedly argued, there are large uncertainties surrounding the economics of climate change. What particular course of action is best, as judged in cost-benefit terms, depends on a large number of assumptions and estimates, all of which are open to question. Hence, in attempting to assess the likely marginal costs and benefits associated with different stabilisation targets one is faced with a huge potential margin of error. Having said this, the available evidence strongly suggests that the higher the stabilisation level, the greater the likely costs to the planet, and hence the greater the risks to human civilisation. Moreover, such costs can be expected to increase in a somewhat unpredictable and non-linear fashion, and many of the impacts are very likely to be serious and irreversible. A further relevant consideration is that there are bound to be significant co-benefits (many of which are difficult to quantify and place a dollar value on) associated with policy action to reduce emissions and improve land management practices. Such co-benefits include enhanced flood protection, improved water quality, greater energy efficiency, new technological breakthroughs, lower pollution levels, better health outcomes and an improved quality of life.

Additionally, adequate attention needs to be given to the precautionary principle. Under article 3.3 of the UNFCCC, the global community has agreed to

> take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.

Given the nature and magnitude of the risks if the global mean surface temperature rises by 2°C or more, there is surely a case, on precautionary grounds, for pursuing a stabilisation target as low as possible, even if this entails significant up-front costs (see Baer, 2007). There is equally a case for a substantial additional public investment in research and development with the aim of generating technologies that enable the pace of decarbonisation to be accelerated – thus making even lower targets technically feasible.

Implications for New Zealand

The New Zealand government has thus far refrained from endorsing any specific, long-term climate change target, whether in the form of a temperature cap (like the EU) or a CO_2e stabilisation level. Nor has it committed itself to a particular long-term target with regard to GHG emission reductions, let alone specific milestones for achieving this target. Elsewhere, a growing number of countries and states/provinces within federal systems are making commitments of various kinds. For instance, Britain is not only a signatory to the EU temperature cap but has also set itself a target of reducing emissions by 60% below 1990 levels by 2050, while California is pursuing an even more ambitious target of 80% cuts by 2050. Within the EU, the environment commissioner, Stavros Dimas, has proposed a 30% cut in emissions by 2020, but this has yet to be agreed by member states.

Importantly, the prime minister, Helen Clark, spoke in late 2006 of the desirability of moving towards carbon neutrality (i.e. zero net emissions) as a long-term, national objective. Thus far, however, the government has been reluctant to associate itself with specific, medium-term targets, whether at an aggregate or sectoral level. Perhaps the only exception is the suggestion that the agricultural sector should consider the possibility of reducing methane and nitrous oxide emissions by at least 20% by 2012 (as compared with the business-as-usual emission levels) (see Ministry of Agriculture and Forestry, 2006, p.24).

In considering the question of what targets New Zealand should endorse (in terms of both the nature of the targets and the timeframe for their achievement), it needs to be borne in mind that on a per capita basis this country's GHG emissions are relatively high (around 12th in the world). On equity grounds, it can be argued that countries with high per capita emissions should be obliged to make a disproportionately large contribution to the global effort to reduce emissions. Against this, almost 50% of New Zealand's emissions are from the agricultural sector (mostly in the form of methane from ruminant animals), and there is currently no technological solution available for reducing the bulk of these emissions (except via cuts in livestock numbers). Accordingly, it might be reasonable for New Zealand to argue that it cannot be expected to cut its agricultural emissions to the extent or at the speed of the reductions possible in the energy and transport sectors.

Nevertheless, there is a good case, based on the available scientific evidence, for New Zealand endorsing the EU temperature cap. If it did so, it would need to consider the implications in terms of a CO_2e stabilisation target and a related emissions pathway (both globally and nationally). In my view, New Zealand should seek international agreement on a CO_2e stabilisation target at the bottom end of the range suggested by the Stern Review (if not lower – at least as an ideal). On the issue of an emissions pathway, New Zealand should set itself appropriately high reduction targets for the energy and transport sectors, probably in the vicinity of 80–90% by 2050, with appropriate milestones over the next four decades. On the issue of agricultural emissions, the government should commit significant additional funds to the challenge of reducing methane production by ruminants, as well as pursuing policies to reduce the rate of deforestation and encourage carbon farming. Above all, the government should take the lead in encouraging public discussion about the kind of long-term domestic targets (and related milestones) to which the country should commit itself, as well as the global targets on which it should seek international agreement. In doing so, every effort should be made to secure a broad, cross-party consensus on the key policy goals and the best means of achieving them.

References

Baer, P. (2007) *'The worth of an ice-sheet: A critique of the treatment of catastrophic impacts in the Stern Review'*, An EcoEquity discussion paper, www.ecoeuqity.org/docs/WorthOfAnIceSheet.pdf

Chapman, R., J. Boston and M. Schwass (eds) (2006) *Confronting Climate Change: critical issues for New Zealand*, Wellington: Victoria University Press

Carter, R. *et al.*, (2006) 'The Stern Review: A Dual Critique', *World Economics*, 7, 4, pp.165-232

Den Elzen, M. and M. Meinshausen (2006) 'Multi-gas emission pathways for meeting the EU 2°C climate target', in H.J. Schellnhuber, W. Cramer, N. Nakicenovic, T. Wigley and G. Yohe (eds) *Avoiding Dangerous Climate Change*, Cambridge: Cambridge University Press

Hatfield-Dodds, S. (2006) 'Reducing greenhouse emissions: interpreting the economic impacts', in R. Chapman, J. Boston and M. Schwass (eds) *Confronting Climate Change: critical issues for New Zealand*, Wellington: Victoria University Press

Intergovernmental Panel on Climate Change (2007) *Climate Change 2007: The Physical Science Basis – Summary for Policy Makers* Contribution of Working Group 1 to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Geneva., IPCC Secretariat

Lawson, N. (2006) 'The economics and politics of climate change: an appeal to reason', lecture to the Centre of Policy Studies, London, 1 November

Lomborg, B. (2006) 'Stern Review: the dodgy numbers behind the latest warming scare', *Wall Street Journal*, 2 November

Meinshausen, M. (2006) 'What does a 2°C target mean for greenhouse gas concentrations?', in H.J. Schellnhuber et al. (eds) *Avoiding Dangerous Climate Change*, Cambridge: Cambridge University Press

Metz, B. and D. van Vuuren (2006) 'How, and at what costs, can low-level stabilization be achieved? – an overview', in H.J. Schellnhuber et al. (eds) *Avoiding Dangerous Climate Change*, Cambridge: Cambridge University Press

Ministry of Agriculture and Forestry (2006) *Sustainable Land Management and Climate Change: options for a plan of action*, Wellington

Murphy, J. et al. (2004) 'Quantification of modelling uncertainties in a large ensemble of climate change simulations', *Nature*, 430, pp.768-72

Nordhaus, W. (2006) 'The Stern Review on the economics of climate change,' Yale University, 17 November, at http://nordhaus.econ.yale.edu/SternReviewD2.pdf

Pittock, A.B. (2006) *Climate Change: turning up the heat*, London: Earthscan

Read, P. (2006) 'Carbon cycle management with biotic fixation and long-term sinks', in H.J. Schellnhuber et al. (eds) *Avoiding Dangerous Climate Change*, Cambridge: Cambridge University Press

Schellnhuber, H.J., W. Cramer, N. Nakicenovic, T. Wigley and G. Yohe (eds) (2006) *Avoiding Dangerous Climate Change*, Cambridge: Cambridge University Press

Steffen, W. (2006) '"Sleeping giants": surprises in the climate and earth system', in R. Chapman, J. Boston and M. Schwass (eds) *Confronting Climate Change: critical issues for New Zealand*, Wellington: Victoria University Press

Stern, N. (2006a) *Stern Review on the Economics of Climate Change*, London, October

Stern, N. (2006b) *Stern Review – postscript*, London, December

Tol, R. (2006) *'The Stern Review of the economics of climate change: a comment'*, Economic and Social Research Institute, Hamburg, Vrije and Carnegie Mellon Universities, at http://www.fnu.zmaw.de/fileadmin/fnu-files/reports/sternreview.pdf

Tol, R. and G. Yohe (2006) 'A Review of the Stern Review', *World Economics*, 7, 4.

Turley, C. (2006) 'Ocean acidification and its impacts', in R. Chapman, J. Boston and M. Schwass (eds) *Confronting Climate Change: critical issues for New Zealand*, Wellington: Victoria University Press

Wigley, T. and S. Raper (2001) 'Interpretation of high projections for global-mean warming', *Science*, 293, pp.451-4

Jonathan Boston is a Professor of Public Policy and Deputy Director of the Institute of Policy Studies at Victoria University of Wellington. He has authored or edited 20 books on policy-related issues, including *Confronting Climate Change: Critical Issues for New Zealand* (co-edited with Ralph Chapman and Margot Schwass, and published by Victoria University Press, 2006).

Comparing Time Present with Time Future: Discounting in the Stern Review

Dennis Rose

Introduction

What actions should we, as a subset of world citizenry, be contemplating now in response to the likely effects of climate change? That is the fundamental question posed by the Stern Review. As is the case with most large questions, our individual and collective responses are conditioned by our systems of values, by the institutions within which we work, by uncertainties about the facts and by the intellectual frameworks that help structure our understanding of reality.

Diverse values and imperfect institutions accepted, our immediate needs are for greater clarity and broader appreciation of the emerging facts and for continuing dialogue on how we should respond to them. The Stern Review paints a sombre picture. Energy-related CO_2 emissions are now some five times the level prevailing in the 1950s, at which point they were roughly in balance with the globe's annual capacity to re-absorb them. The resulting build-up in atmospheric greenhouse gas concentrations will continue until such time as annual emissions are radically reduced, and will cause significant lifts in global temperatures, of uncertain extent and over a long period. Although warming temperatures will have some beneficial effects, the adverse effects will increasingly predominate at higher temperatures.

The Stern team reviews what is known about the range and likely scale of such effects and adds its own contribution to attempts to model and quantify the annual economic impact of climate change over the horizon to the year 2200. Faced with the uncertainties inherent in forecasting, Stern uses probabilistic modelling to assess the range and associated mean values for annual damage under several scenarios.

Stern also assesses the possible cost of policies designed to reduce levels of greenhouse gas emissions below the levels that would prevail under 'business as usual' conditions. The review surveys attempts to estimate the cost of a wide range of initiatives to reduce greenhouse gas emissions using available technologies and, assuming that these set outer limits on achievable costs, concludes that continuing expenditures equal to 1% of global GDP have the potential to limit greenhouse gas concentrations to acceptable levels.

Stern's estimates of the costs of climate damage and of policies designed to reduce such damage have had a mixed reception (e.g. Carter et al., 2006). Acknowledging the uncertainties in all such projections, and that we are all, Stern and critics included, exposed to error and bias, the likely gravity of the emerging situation and the long leads and lags in the climate system make it imperative to essay such estimates. We have a collective interest in building as clear a picture as we can of the consequences of failing to act and of the costs of action. If we had perfect foreknowledge, we would be able to call up the required time series off the shelf. Lacking that, we can be grateful that Stern has pushed the limits thus far. Accepting these, or more refined future estimates of the costs of climate damage and of policies to reduce greenhouse gas emissions, the problem is to compare them.

Discounting

The costs of climate change will persist long into the future, whilst policies to limit climate change require spending now and over coming decades. How do we, as individuals and as a community, compare costs incurred today with benefits (in the form of reduced costs) occurring far in the future?

The standard tool is discounting. Working on the basis that a given quantum of anything at some point in the future is less valuable than the same quantum in our hands now, it is usual to discount the value of future benefits and costs. At what rate should we discount the future? In some situations, as when borrowing for house purchase, an obvious rate is that at which we borrow. For public investment the discount rate is a given, with the rate being set by the relevant controlling authority.

The most commonly quoted New Zealand rate for public project appraisal is 10%, as prescribed by Treasury and by Transfund for roading projects. The problem with this rate for assessing policies designed to mitigate climate change is that 10% focuses attention very much on the near term and effectively ignores the longer run.

Using Transfund's rule, which also limits the time horizon to 25 years, a constant stream of benefits accruing at $1 million per annum will sum to $9.07 million. Even if we extend our horizon indefinitely, the discounted benefits will never exceed $10 million. The 10% rule effectively removes all but a few of the costs and benefits accruing more than 25 years out from consideration and is thus inappropriate, when our primary focus is on longer-term issues.

Dissatisfaction with the implications of such high discount rates, which were long the international norm, has led to significant changes in practice in some countries. A leading example is the United Kingdom, whose 2002 'Green Book' prescribes a 3.5% discount rate for the first 75 years of a project's life, with declining rates thereafter.

The Stern Review's extensive discussion on discounting, which many have interpreted as advocating a radical lowering of the discount rate to 0.1%, has caused sharp controversy.

Determining a discount rate

Discount rate theory is, in any event, an active and contentious field. Any proposed discount rate depends on some underlying theoretical structure identifying the relevant components and an appeal to empirical evidence or to first principles as a guide to their magnitude.

Suppose we have reasonable estimates of the time streams of costs and benefits associated with proceeding down a particular policy path. Then, the net present value of that policy path can be assessed as

$$NPV = \sum_{t}^{T} \frac{(b_t - c_t)}{(1+r)^t} \qquad (1)$$

i.e., as the sum of the project benefits, *b*, less the costs, *c*, accumulated over the relevant time period and discounted at the rate *r* (e.g., for a 3% discount rate $1+r = 1.03$).

The discount factor *r* is variously derived and with some variation in symbolism, but the following equation brings together the major elements:

$$r = \delta + \eta g + \phi\beta \qquad (2)$$

In this equation δ (delta) is a measure of pure time preference. We discuss it further below.

The second component, ηg, deals with the likelihood that per capita consumption will grow over time so that future consumption will be relatively plentiful and will have lower utility. The first element, η (eta), measures the responsiveness of utility to consumption and *g* measures the rate of growth of per capita consumption.

Taken together, these two components, i.e. ($\delta + \eta g$ comprise the social time preference rate, which is evaluated in the UK Green Book at 3.5%. The social time preference rate depends upon the perceived utility of consumption at different points in time and is risk-free.

The final component, $\phi\beta$, adds risk to the picture. The first element, ϕ (phi), measures the price of risk (approximated by the difference between some measure of average market returns and the risk-free rate), whilst β (beta) measures the quantity of risk, usually measured as the likely variability, and hence riskiness, of the contemplated investment type, expressed relative to the variability and riskiness of a wider reference market.

Taken as a whole, equation 2 provides one measure of the social opportunity cost of capital (often further extended to take account of tax impacts), which stands as a competing discounting norm to the rate of social time preference. The appeal of the opportunity cost measure is that it focuses on the returns that might be secured from investing a block of funds in the private marketplace rather than in a particular public project. Critics of this approach, who argue for use of the alternative, social time preference rate, note that the risks surrounding public sector projects are fundamentally different from those embodied in equity markets (Spackman, 2004; Quiggin, 2005) and that in an open international economy the opportunity cost of public investments can be approximated by the real cost of public borrowing (Lind, 1990).

In my view, risk is generally better modelled, within public sector project appraisal, as an element within the cost and benefit streams than as an add-on within the discount rate. For our purposes, we can leave that issue aside. The questions raised by the Stern Review relate to pure time preference, δ , and the social time preference rate, $(\delta + \eta g)$.

Discount rates in the Stern Review

Chapter 2 of the Stern Review, a technical annex and supporting papers by John Broome and Cameron Hepburn, deal with discounting. The authors argue that whilst standard cost-benefit appraisals are appropriate for analysing marginal projects within stable frameworks, they are inappropriate for comparison of very different economic trajectories involving very long-term and large inter-generational impacts, such as are involved in contemplating climate change.

For example, as we have seen, the social time preference rate, $(\delta + \eta g)$, is itself a function of the rate of growth in per capita consumption, *g*. If we are comparing long-run scenarios in which the rate of growth in consumption is itself sensitive to climatic outcomes, then the appropriate discount rate is scenario specific. Furthermore, stable discount rates are predicated on stable future growth paths. If we expect the rate of growth in consumption to vary through time, then the appropriate discount rate will depend on the time period chosen. Declining per capita consumption could even lead to negative discount rates. Uncertainty about future growth paths also creates a case for discount rates that decline through time.

More fundamentally, the authors ask what are the ethical bases on which we make judgements about the welfare of distant generations. Drawing on the reasoning of a long line of writers, including Ramsey, Pigou and Solow, they argue that we have very little basis for valuing the welfare of future generations as inherently different from that of our own:

> the current generation does not have the right to consume or damage the environment and the planet in a way that gives its successor worse life chances than it itself enjoyed,

and conclude that

> the only sound ethical basis for placing less value on the utility [as opposed to consumption] of future generations [is] the uncertainty over whether or not the world will exist, or whether those generations will all be present. (Stern, pp.42, 45)

Quantification of the uncertainty of the future existence of the human race is not simple, but Stern argues that a value of 0.1% is appropriate for δ , the parameter dealing with pure time preference. Recall that this is only one element within the social rate of time preference. The authors emphasise that using a low value for δ does not imply a low discount rate: 'Growing consumption is a reason for discounting' (Stern, p.48).

It is at this point that confusion has arisen. Much of the review's algebra does indeed suggest that δ is used as the discount rate, rather than as just one component in determining that rate (e.g., Stern, Box 6.3). However that may be, material subsequently posted on the UK Treasury website, including the January 2007 paper 'Frequently asked questions', reports that the discount rate used in the modelling exercise is sensitive to the rate of growth in per capita consumption and the marginal utility of consumption. Documentation for the PAGE2002 model that was used for the cost of climate damage scenarios shows that the default discount rate equation is similarly comprehensive (Alberth and Hope, 2005, p.15).

On this basis, it would appear that the discount rate used by Stern to convert future time streams of climate costs to present values was around 1.4%. Recalling our social time preference rate equation, $\rho = \delta + \eta g$, we have $\delta = 0.1$, $\eta = 1.0$, and $g = 1.3$ (which is the average per capita consumption growth rate as per PAGE2002's baseline projection as given in Stern's Box 6.3). That is, we have 0.1+1.0*1.3=1.4%. By way of contrast, the UK Green Book uses $\delta = 1.5$ (covering both pure time preference and risk of catastrophe), $\eta = 1.0$, and $g = 2.0$, leading to a discount rate of 3.5%. Quite clearly we are dealing with uncertain parameters and the Stern Review could usefully have reported the sensitivity of its results to variation in discount rates.

Cost scenarios in the Stern Review

Part II of the Stern Review assesses the impacts of climate change on growth and development and estimates the likely economic costs associated with temperature increases resulting from increases in greenhouse gas concentrations.

> Modelling work undertaken by the review suggests that the risks and costs of climate change over the next two centuries could be equivalent to an average reduction in global per capita consumption of at least 5% now and forever. The estimated damages would be much higher if non-market impacts, the possibility of greater climate sensitivity, and distributional issues were also taken into account. (Stern, p.55)

Stern frequently acknowledges that all such estimates are surrounded by great uncertainties. The projections have been challenged and need to be critically reviewed, but let us accept them as they are so that we can explore their implications.

Centrally we have two sets of forecasts: first, projections of the likely cost of climate change over the next 200 years, expressed as reductions in GDP as compared with the levels that might be assumed to arise under business as usual. Secondly, we have a set of projections of the possible cost of mitigation programmes designed to limit the extent of climate change.

The climate cost projections are generated through a Monte Carlo-type model in which all the more important uncertainties are represented by probability distributions quantifying the range of possible outcomes. The model, primed with some necessary exogenous assumptions, including rates of growth in population and per capita consumption, is then used to generate a sequence of runs in which, at each decision node, a random choice is made from amongst the relevant probability distributions. The results of 1,000 such runs are then summarised by their mean values and by the fifth and 95th percentiles. Table 1 summarises Stern estimates of mean losses in income per capita, expressed as percentages of GDP, under two scenarios over the period to the year 2200. The numbers are read from Figure 6.5 at page 157 of the review and are approximate.

Three features stand out. First, the initial impacts of climate change are not all that great, amounting to reductions in per capita income of well under 1% in 2050. The Stern models assume continuing increases in per capita income at 1.3% per annum, so that average per capita income is posited to be some 90% higher in 2050 than in 2000. Against this yardstick the early losses seem small.

Secondly, the forecast costs of climate change increase strongly during the 22nd century, reflecting increases in greenhouse gas concentrations that will continue until such time as global emissions are brought back into balance with earth's re-absorptive capacity.

Thirdly, the forecast costs of climate change increase in scenarios that assume higher temperature change, and increase further as the modelled range of possible effects increases.

The model runs incorporate constant rates of growth in population and per capita income. Given the scale of impacts that are being forecast, this assumption becomes increasingly more tenuous as time lengthens. Ideally, as the review acknowledges, these two variables should be forecast endogenously, within the model.

Note, in this connection, that much depends on the underlying rate of technical progress, particularly as it relates to the balance between output and environmental quality. Stern posits a production function where output is a function of capital, labour and environmental quality, $Y(t) = F(K, L, E)$ (p.124). Given any level of technical innovation reducing environmental impact per unit of GDP, there is the potential for a parallel rate of growth in real incomes without damage to the environment. The twin challenges are to secure a sufficient level of innovation and secondly to constrain the rate of growth in real consumption within that limit.

Testing sensitivity to discount rate

As noted earlier, Stern concludes that continuing expenditures equal to 1% of global GDP have the potential to limit greenhouse gas concentrations to acceptable levels. I use this judgement, along with the annual damage cost estimates read from Stern's Figure 6.5 as input to a 200-year cost-benefit analysis which enables us to assess the sensitivity of comparisons

Table 1: Losses in income per capita, % of GDP

	2050	2100	2150	2200
Baseline	0.2	0.9	3.1	5.3
High Climate	0.5	2.9	8.3	13.8

Table 2: Ratios of discounted climate and mitigation costs

Discount rate	0.1%	1.4%	Green Book	5%	10%
Baseline	3.26	2.15	1.18	0.21	0.05
High Climate	8.67	5.80	3.19	0.58	0.12

Source: Author estimates. A supporting workbook is available from dennis.rose@clear.net.nz.

of these costs and benefits to differing discount rate assumptions.

Table 2 reports ratios of discounted time streams of climate costs and mitigation costs as projected by Stern. Ratios greater than 1.0 imply that the discounted present value of mitigation programmes is less than the similarly discounted value of the costs of climate damage resulting from business as usual. A ratio greater than 1.0 implies that, at the quoted discount rate, it would be sensible for society to undertake the mitigation programme rather than suffer the consequences of climate change.

As can be seen, the resulting ratios are greater than unity, over a 200-year time span, not only at a pure time preference discount rate of 0.1% and at the 1.4% rate used by Stern, but also at UK Treasury Green Book rates. But discount rates of 5% and 10% yield ratios less than unity.

Summing up to this point, the Stern Review projections of climate damage and mitigation costs establish a prima facie case for mitigation policies along the lines proposed not only when evaluated in terms of pure time preference, but also when discounted at rates corresponding to more commonly accepted values of social time preference rates.

The costs of business-as-usual climate change 'now and forever'

When reporting modelled estimates of the costs of climate change, the Stern Review frequently refers to costs equivalent to some percentage of global per capita consumption 'now and forever'. Thus, in relation to the high climate scenario, including non-market impacts, where Stern, at page 157, shows annual costs of damage rising from around zero in 2000 to 3% in 2100 and 13.8% in 2200 (unweighted average value for the 200 years less than 5%), Stern estimates total average cost 'now and forever' of 14.4%. Whence the difference? The answer is provided in Stern's Box 6.3, which explains that the utility projections include an allowance for growth in consumption from the year 2200 to infinity. A substantial part of the assessed 'now and forever' cost lies beyond the year 2200.

This contrast highlights the problems inherent in long-range inter-generational comparisons of welfare. Enjoying my eighth decade and knowing that my grandchildren will be interested in the welfare of their grandchildren, I naturally incline to a longer view. I also recall William Blake's musings on 'dark Satanic mills' in 'England's green and pleasant land' just 200 years ago. Nevertheless, realism suggests that when it comes to translating distant fears into practical actions now, it will be difficult to sustain consensus for action on the scale required.

For example, the calculations underlying Table 2 show that the posited 1.0% of GDP spent on mitigation will need to be sustained over long periods before the discounted benefits, in terms of avoided climate damage, begin to exceed the discounted cost of the mitigation programme. Even at a discount rate of 0.1%, break-even is 93 years distant under the high climate scenario and 132 years distant under baseline. Adopt Green Book rules and these stretch out to 122 and 187 years respectively. These are long periods to sustain a policy, particularly when the benefits of such a policy will always depend on a comparison of what actually is with the unknowable counter-factual of what might otherwise have been.

Setting a price on carbon

A central message of the Stern Review is the urgent need to reduce greenhouse gas emissions, either by internalising the costs of emissions into the prices that we face when planning more or less greenhouse gas-intensive activities, or by regulation. The policy messages are that prices offer greater flexibility and are likely to be more efficient, but that they will need to be supplemented and indeed underwritten by regulation.

To be effective, both price and regulatory regimes need to be international in scope.

These will be public policy choices of a high order. They will involve trade-offs between costs at different points in time. To be effective they will also need to emerge from an ongoing debate that clarifies the issues and builds sufficient common understanding of the trade-offs involved to enable public choice to be made, sustained and modified in the light of evolving circumstances and understandings.

The price of carbon provides an interesting illustration of the extent to which such choices are conditional on discounting assumptions.

Chapter 13 of the Stern Review, 'Towards a goal for climate-change policy', is concerned with establishing realistic targets for ultimate atmospheric concentrations of greenhouse gases, taking account of the trade-off between the costs of mitigation, which will be lower the less ambitious the target, and the costs of climate change, which will increase as the target is made less ambitious. Estimates of the cost of climate change and of mitigation are sensitive to discounting assumptions, as therefore is judgement on the implicit price of carbon emissions. Stern reviews the literature on estimates of the social cost of carbon and notes the sensitivity of such estimates to discounting assumptions.

In a 1996 article, William Nordhaus estimated that a shift from a 3% to a 1% discount rate would increase carbon taxes fourfold. He has now explored the sensitivity of carbon prices to discounting assumptions in model runs calibrated to match the Stern Review. Under a reference run of his DICE model using a 3% discount rate, the optimal carbon price is estimated at $17.12 per ton C, in 2005, rising to $84 in 2050 and $270 in 2100. Substituting a 0.1% discount rate implies an optimal carbon price of $159 per ton C in 2005.

Conclusion

The Stern Review establishes a presumption in favour of strong collective action now but, at the same time, evidences ranges of uncertainty on many underlying facts and parameter values that will pose ongoing puzzles for researchers, policy makers and communities as they attempt to frame a response. Two concluding quotations are in order.

Nordhaus, in his 1996 paper, concluded:

> [The] inherent difficulties involved in planning over a horizon of a century or more about so uncertain and complex a phenomenon are compounded by the dispersed nature of the decisions and the strong tendency for free-riding by nonparticipants in any global agreement. Countries may therefore be triply persuaded not to undertake costly efforts today – first because the benefits are so conjectural, secondly because they occur so far in the future, and third because no single country can have a significant impact upon the pace of global warming. (Nordhaus and Yang, 1996, p.763)

Stern, discussing the economics of stabilisation, comments:

> Some of the parameters that modellers have treated as uncertain, such as discount factors and equity weights, reflect societies' preferences. In the process of agreeing an international stabilisation objective, or at least narrowing its range, discussions have to resolve, or at least reduce disagreement over, the issues of social choice lying behind these uncertainties. (Stern, p.292)

The long-standing academic disagreements on discount rates suggest that this necessary opening up of the professional debate into public forums, so that we can all agree on the price at which we should tax our greenhouse gas emissions, is likely to have its fractious moments. *Bon appetit.*

References

Alberth, S. and C. Hope (2005) 'Developing the PAGE2002 model with endogenous technical change', Judge Business School website, University of Cambridge

Blake, W. (1808–10) Preface to *Milton*

Broome, J. (2006) 'Valuing policies in response to climate change: some ethical issues', at www.hm-treasury.gov.uk

Carter, R.M. et al. (2006) 'The Stern Review: a dual critique world', *Economics*, 7 (4), October–December

Hepburn, C. (2006) 'Discounting climate change damages: working note for the Stern Review', at www.hm-treasury.gov.uk

Lind, R.C. (1990) 'Reassessing the government's discount rate policy in light of new theory and data in a world economy with a high degree of capital mobility', *Journal of Environmental Economics and Management*

New Zealand Treasury (2005) *Cost Benefit Analysis Primer*, at www.treasury.govt.nz/costbenefitanalysis/

Nordhaus, W. (2006) 'The Stern Review on the economics of climate change', 17 November, Yale University website

Nordhaus, W.D. and Z. Yang (1996) 'A Regional Dynamic General-Equilibrium model of alternative climate-change strategies', *American Economic Review*, 86 (4), September

Quiggin, J. (2005) 'Risk and discounting in project evaluation', appendix in *Risk in Cost-Benefit Analysis*, Bureau of Transport and Regional Economics report 110, Canberra: Bureau of Transport and Regional Economics

Spackman, M. (2004) 'Time discounting and the cost of capital in government', *Fiscal Studies*, 25 (4)

Stern, N. (2006) *Stern Review on the Economics of Climate Change*, at www.hm-treasury.gov.uk; see also the postscript, technical annex and note on frequently asked questions

Transfund New Zealand (2004) *Project Evaluation Manual*

United Kingdom Treasury (2003) *The Green Book*, at www.hm-treasury.gov.uk

References to Ramsey, Pigou and Solow are given in Hepburn (2006)

Dennis Rose is a research economist working in retirement. His current interests include the determinants of national interest rates and employment policy.

Forging a Kiwi Economic Identity through Economic Transformation

Trevor Mallard

Introduction

This paper sets out in detail what the government's thinking is around its economic transformation agenda, where it comes from, and where we are going with it.[1] First, I discuss the need for policy prescriptions to reflect a distinct Kiwi economic identity. I then discuss the government's vision of economic transformation, before reflecting on the policy agenda and the need for effective partnerships to contribute to success.

Forging a Kiwi economic identity

In 1999 the Labour-led coalition government inherited an economy that had been shaped by a firm belief in the Washington consensus, which held that economic growth prospered only when a particular set of neo-liberal policy prescriptions were followed.[2] Over the last seven years, however, the government has sought to redress the failures of the more narrow and rigid elements of these policies. It is not enough simply to rely on property rights, fiscal stability and non-corrupt institutions – some South American economies are testament to what can happen, or what fails to happen, if such a narrow approach to economic policy is taken. The East Asian, Irish and Scandinavian economies, on the other hand, show what smart policies can achieve (Rodrik, 2006).

Just as there is no single set of rules that needs to be followed, it is also clear that there is no single destination or criterion for what might constitute success. Despite globalisation and the freer flow of capital, finance, technology and labour, economies succeed by doing widely different things (World Bank, 2005). This is comforting for three reasons.

- If the globalisation race was all about who can do the next big thing best, New Zealand would start at a competitive disadvantage given its small size, limited capital base and distance from markets. Indeed, the International Monetary Fund has suggested that up to half of the gap between our growth rate and the OECD average can be attributed to our country being small and far from the world's major markets (IMF, 2005).
- We can be proud of the fact that we can and should do it the Kiwi way when it comes to transforming our economy and lifting people's incomes. We have an abundant natural resource base, we have a hugely innovative culture, and, with a carefully managed environment, we can continue to produce even higher quality primary and biologically-based products thanks to know-how that has been built up over the last 150 years (Smith, 2006).
- Nurturing our national economic personality complements another of the government's key priorities, namely celebrating our national identity. With hindsight it is remarkable that anyone really thought that merely copying the standard economic development prescription for an economy that is distinct from nearly all of the world's developed economies would deliver the growth outcomes New Zealanders want.

None of this means that we can be complacent or that we can simply return to the things we did in the past. No one wants to return New Zealand to being a fortress economy strangled by an overzealous government getting in the way of business.

1 This paper is based on a number of key documents, including two Cabinet papers that outline the government's economic transformation agenda, plus a series of reviews of business assistance programmes.

2 Some of these policy prescriptions, such as fiscal discipline, protection of property rights and market-determined interest and exchange rates, have become uncontroversial as time has gone on. Others, like an emphasis on flat taxes, excessive deregulation, wholesale privatisation and the removal of the state from any role in economic and industry development, have been discredited by experience.

Table I: The government's vision for economic transformation

The New Zealand of the future will exhibit higher productivity and be a more active participant in the global economy, with higher levels of exports and more investment links with the rest of the world.
We will have firms and industries that are smarter in their use of the resources they have, delivering innovative and high-value products and services for businesses and consumers around the world.
Our nation will be fully hooked into the latest technology, ideas, knowledge and market trends through world-class infrastructure, higher levels of investment in science and technology, and strong people-to-people connections.
We will have more globally competitive firms that are nimble, creative and innovative, invest more in science and technology, and link into domestic and global value chains.
We will have a strong, vibrant primary sector and innovative biologically-based industries, and use our natural resources, including those belonging to Māori, efficiently and wisely for maximum long-term effect.
We will also have more high-value upstream and downstream spin-off industries that leverage off our strengths and continue to diversify through the emergence and development of new areas of strength, as we have seen occur in tourism, the screen industry and international education.
Our firms will benefit more from the country's focus on enhancing its natural environment and effective management of the resource base, through both market positioning and new technologies.
New Zealand's people will invest in acquiring new knowledge and skills and these will be effectively applied in the workforce to create ideas and capitalise on them.
Auckland will be an internationally competitive city that has fit-for-purpose infrastructure, is a launch pad for our businesses to internationalise, is New Zealand's gateway to the world, has effective governance, and has strong connections with the rest of the country.
As a country, we will take full advantage of our regional positioning, with greater business and government collaboration with Asia and Australia, creating a seamless trans-Tasman market to seize greater benefits from scale, specialisation and cooperation.

Our vision of economic transformation

Two recently released Cabinet papers outline what the government means by economic transformation and provide an indicative, detailed action plan for addressing the critical issues for achieving this economic transformation vision. This vision is based on New Zealand's unique characteristics, the latest thinking on economic development, and lessons learnt from our key comparator countries (Easton, 2006b). Key features of this vision are summarised in Table 1.

To achieve this economic transformation vision the government is actively pursuing an agenda focusing on five key areas. These areas are: growing globally competitive firms; world-class infrastructure; innovative and productive workplaces underpinned by high standards in education, skills and research; an internationally competitive city – Auckland; and environmental sustainability. This agenda will evolve as we continue to learn more about New Zealand's circumstances and how best to respond to them.

Innovation is at the heart of our economic transformation strategy. Innovation means more than just science or research. Innovation is about creating new products and processes based on new ideas, but also through adopting and absorbing ideas and knowledge from right around the world (Lundvall, 1992). Specifically, new products and processes need to mesh with the changing tastes and values of rapidly changing global markets, leverage the opportunities that new technologies create, and respond to the competitive challenges of emerging competitors. To achieve this it is necessary to recognise that:

- Innovation must be pervasive and occur across all industries, not just ICT, biotechnology and multimedia (Nelson and Winter, 1982; Smith, 2006).
- Innovation needs to build on previous learning, as new industries will typically develop off the back of existing strengths, particularly the primary sector and biologically-based industries (Nelson and Winter, 1982; Smith, 2006).[3]
- As well as continuing to support the development of new industries from our existing strengths, we need to be responsive to unexpected successes that may arise.
- We need to work in a more coherent way across government and better focus and target government resources.

As a country we also need to improve our export performance and our links with the rest of the world. We are, furthermore, reaching the limits of what we can do to get more people into work, with relatively high labour utilisation and the lowest unemployment rate in the OECD (Ministry of Eonomic Development and the Treasury, 2005). That is why we need to lift the productivity of those working if we are to catch up. Doing this is not straightforward. It involves attack across a range of fronts and sustained effort over many years.

Shaping the policy agenda

In moving forward we are listening carefully to the views of business leaders. A key message coming from the business community is the need for better targeting of efforts. It is very difficult for a small economy to take a scatter-gun approach, generating large numbers of new products in the hope that on the law of averages the odd one will hit the target. While taking a more targeted approach is inherently a riskier strategy, the pay-off is potentially much larger, particularly when managed smartly. It was this thinking that was behind the government's recent decision to provide an interest-free US$8 million loan to support Right Hemisphere to establish and support a world-leading 3D digital content and graphics industry in New Zealand (Ministry of Economic Development, 2006).[4]

The government is also revamping its business assistance programmes so they better suit New Zealand's needs. As a result of a recent expenditure review of business assistance, changes will be made so that the Ministry of Economic Development will work with agencies including the Ministry of Research, Science and Technology and the Tertiary Education Commission to review funding for programmes supporting innovation, education and business partnerships between firms, crown research institutes (CRIs) and tertiary education organisations. This will ensure that priorities are more closely aligned. We will also shift the focus of existing programmes to support more explicitly international connections, innovation and investment.

We have increased funding for research, science and technology by 52% over the last six years, from $424 million in 1999/2000 to $646 million in 2006/07. Initiatives such as research consortia and centres of research excellence have forged links between researchers and industry and provide a platform for further engagement. In the future more emphasis will be placed on commercialising what comes out of our research system, and we will continue to seek ways of getting the most out of our public research organisations (MoRST, 2006). This means ensuring that our CRIs are oriented towards meeting the research needs of business and that they make good judgements about the best route to the commercialisation of their research.

Industry training funding has increased from $56 million in 1999 to $146 million in 2007 and is beginning to address the chronic skills shortages faced by many sectors, with more trainees and qualifications being gained by New Zealanders. In the tertiary sector our big push is to improve the relevance of education. Rather than simply churning out more students, tertiary education organisations will be funded according to negotiated three-year plans that will require them to engage with firms and respond to national and regional skill needs (TEC, 2006).

We are also encouraging state owned enterprises (SOEs) to consider expanding their scope of business. SOEs

3 This approach of adding value to the existing resource base through persistent technological upgrading of resource-based and low-tech industries is consistent with the economic development path of a number of western European economies. Denmark, for instance, which has similar natural resource and size characteristics to New Zealand, has by and large become rich by leveraging off its historical growth industries of agriculture, timber products and shipping to produce specialisations in areas such as high-value agriculture, agricultural equipment, domestic and office furniture, transport and ports, electronics and pharmaceuticals.

4 Right Hemisphere has both the scale and technology to be a cornerstone in the development of a world leading 'virtual cluster' or ecosystem of private companies, researchers, and educators in the 3D digital content and graphics area.

are uniquely placed to contribute to New Zealand's economic transformation, given that they have a committed long-term owner, and that a number have significant capacity and commercial capability to diversify. This new policy environment does not, however, provide a mandate for SOEs to be frivolous with taxpayer assets (New Zealand Treasury, 2006).

Over the past six years the government has also made significant inroads into fixing this country's infrastructure. Road transport funding is increasing to $13.4 billion over the next five years, close to a doubling in funding. A massive increase in capital expenditure on the electricity grid is planned, averaging around $470m a year over the next seven years. About 1,500MW of new generating capacity is planned for the next five years and security margins are projected to increase. Management of dry years is improving, with far more information available through the Electricity Commission than in the past, although we still need to see further improvements.

New Zealand's environment underpins much of our economic and export activities – agriculture, horticulture, fisheries and forestry account for 67% of merchandise exports. As well as providing New Zealanders with a unique and enjoyable lifestyle, we see the environment as providing the platform for the economy now and into the future. Our firms need to be using environmental best practices and technologies. This will keep us up with international competitors and provide opportunities for new industries to develop. International developments in areas such as climate change, and local challenges to our natural resource base, have important implications for our economy. These developments and challenges provide an opportunity to implement policies to encourage New Zealand firms to develop and adopt new technologies, thus improving resource efficiency and potentially providing future competitive advantages. There are opportunities to reduce carbon emissions in a number of key sectors, including agriculture, transport and energy. A high priority of government is to prevent irreversible soil loss, enhance carbon sequestration and mitigate flood damage.

Other work under way, including the review of business taxation, refocusing of regional policy and work on Auckland governance, extension of the Market Development Assistance Scheme, and Export Year 2007 are also important steps by government to help achieve our economic transformation vision.

Partnerships contributing to success

In developing the policy approaches that will support New Zealand's economic transformation, the government does not have all the answers. The challenges facing the New Zealand economy are complex. The solutions are also complex and will ultimately rest on businesses rising to the challenge and on effective partnerships operating within the web of interests that contribute to success. To a large extent the challenge is for all New Zealanders to seize – businesses will need to drive innovation and internationalisation, and businesses must take this responsibility on board. Success also flows out of contributions from research and education providers, from the builders and operators of our infrastructure, and from the business and union engagements in raising productivity. It is driven by a shared belief in New Zealand.

It is very easy to play the 'blame and moan' game, but far more satisfying and constructive to be an active part of the solution. The Labour-led government is actively building a partnership model with business and other stakeholders to provide greater engagement and sharing of information so that, together, we can deliver New Zealand's economic transformation. The types of strategic partnerships that we are seeking are not easy to establish. Excessive fear of special pleading by business and other interests contributed to the near elimination of the government–business networks that are now commonplace in most developed economies. To rebuild these networks we have partnered with industries and regions across New Zealand and there has been some productive work through major regional initiatives and government–industry taskforces. We have made good progress in this area, but acknowledge that at times our engagement processes have been slightly 'clunky' and perhaps too high-level.

We have taken on a brokering and co-ordinating role through the economic development agency New Zealand Trade and Enterprise, as needed, to overcome information and co-ordination problems. We have partnered with the ICT, biotechnology, design, screen, wood processing, niche manufacturing, food and beverage, aquaculture, and textile, clothing and footwear sectors. Now all regions have economic development strategies and 21 major regional initiatives have been approved. Through these initiatives the private sector and the government are beginning to discover and identify what can be profitably produced, and establishing the right skills and infrastructure to bring about this development (Easton, 2006a). Through strategic collaboration with the private sector we have sought to uncover where the most significant obstacles lie and what type of intervention would most likely remove them or mitigate their impact.

Conclusion

When we entered government in 1999 the cupboard was remarkably bare on our knowledge of sectoral and firm performance and constraints, but we now know much more about how to create policies fit for New Zealand and its regions (see Ministry of Economic Development and the Treasury, 2005). We have, for example, a much better understanding of the difficulties New Zealand firms face when establishing offshore production, distribution and marketing networks, and the areas where government intervention can have a lasting impact (Smith, 2006). But there is much more work to be done. While New Zealand has enjoyed one of the highest growth rates in the OECD over the last five years, we need to maintain this impressive growth rate to catch up to the OECD average income per capita. Through the economic transformation agenda the government has committed itself to improving economic outcomes for all New Zealanders. As a young and nimble nation, together we can take on the world and make the most of the opportunities presented to us – and in doing so forge a unique Kiwi economy.

References

Easton, B. (2006a) 'What might New Zealand's economic transformation mean?', available at: http://www.eastonbh.ac.nz/?p=764

Easton, B. (2006b) 'What New Zealand's economic transformation is about', available at: http://www.eastonbh.ac.nz/?p=743

International Monetary Fund (2005) *New Zealand and the IMF*, available at: http://www.imf.org/external/country/NZL/index.htm

Lundvall, B.A. (ed) (1992) *National Systems of Innovation: towards a theory of innovation and interactive learning*, New York: Oxford University Press

Ministry of Economic Development (2006) 'Kiwi 3D industry in the frame with government support – prime minister and minister of economic development media statement', available at: http://www.med.govt.nz/templates/MultipageDocumentTOC_22256.aspx

Ministry of Economic Development and the Treasury (2005) *Growth through Innovation: economic development indicators 2005*, available at: http://www.treasury.govt.nz/nzeconomy/edi2005.asp

Ministry of Research, Science and Technology (MoRST) (2006) *Research and Development in New Zealand: a decade in review*, available at: http://www.morst.govt.nz/publications/statistics/decade-in-review/

Nelson, N.R. and S.G. Winter (1982) *An Evolutionary Theory of Economic Change*, Chicago: Belknap Press

New Zealand Treasury (2006) *Treasury Report 2006/595 – SOEs as tools for promoting economic growth*, available at: http://www.beehive.govt.nz/mallard/soe06/soe1.aspx?PID=52&MID=3

Rodrik, D. (2006) 'Goodbye Washington consensus, hello Washington confusion?', available at: http://ksghome.harvard.edu/~drodrik/Lessons%20of%20the%201990s%20review%20_JEL_.pdf

Smith, K. (2006) *Public Policy Framework for the New Zealand Innovation System*, available at: http://www.med.govt.nz/templates/MultipageDocumentTOC_23027.aspx

Tertiary Education Commission (TEC) (2006) 'Media statement: key decisions to improve tertiary performance', available at: http://www.tec.govt.nz/downloads/a2z_publications/media-release-and-q-a-dr-cullen-27-jul-06-announcement.pdf

World Bank (2005) *Economic Growth in the 1990s: learning from a decade of reform*, available at: http://www1.worldbank.org/prem/lessons1990s/

Trevor Mallard is the member of Parliament for Hutt South. He has been a senior Cabinet minister since 1999 and has held a range of portfolios, including education, energy and state services. He is currently Minister of Economic Development, Minister of Industry and Regional Development, Minister of State Owned Enterprises, Minister for Sport and Recreation and Associate Minister of Finance.

Commentary: Issues in 'Economic Transformation'

Frank Holmes

'Economic transformation' implies a desire to effect significant change in the form or character of the economy. I have lived through several economic transformations, and policies designed to transform the economy, in New Zealand. The most significant transformation was probably the large-scale transfer of manpower and other resources after 1939 from peacetime production to military purposes and the provision of food for armed forces in Europe, the Middle East and the Pacific, and then the return to a very regulated, insulated and corporatised economy, highly dependent on resuming the sale of pastoral commodities to what remained for some years a reasonably assured and profitable market in the United Kingdom. This facilitated the pursuit of policies giving priority to full employment, import substitution, the maintenance of 'fair shares' among the dominant interest groups and the improvement of health, education and welfare.

The next most significant was the transformation initiated by the Labour government elected after the economic crisis of 1984 and carried forward in the first term of the National government elected in 1990. The economy was opened up to greater competition from overseas; the New Zealand dollar was floated; the financial system was deregulated; the tax system was significantly reformed; and enterprises, private and public, were given more freedom to be innovative in competing to provide the goods and services that New Zealanders and customers overseas wanted.

New approaches to inflation targeting and independent administration of monetary policy, enshrined in the Reserve Bank Act of 1989, assisted the more competitive market to undermine the foundations of the old cost-plus economy with its inflationary bias, and selective government interventions which were distorting and put a premium on lobbying for government favours.

The reforms brought radical and beneficial changes in the management of the public sector, through the State Owned Enterprises Act of 1986, the State Sector Act of 1988 and the Public Finance Act of 1989. This legislation was usefully supplemented in 1994 by the Fiscal Responsibility Act, which imposed a medium-term focus on government expenditure, revenue and debt, thus providing a more satisfactory context for the planning and operation of fiscal policy and debt management.

This burst of policy transformation should not be interpreted as some slavish adoption of the 'Washington Consensus'. New Zealand was breaking away from many of the embedded attitudes, institutions and policies that most New Zealand economists had considered for many years needed to be changed, preferably at a well-planned and considered pace, if New Zealand was to adapt effectively to its changing external environment. The manner in which the initial burst of reform was carried out helped to generate considerable financial instability and some undue disruption of production and employment. The full benefits of the reforms in more rapid and stable expansion were not felt until about 1993.

The present government has accepted that most of these reforms should endure as part of the basis for economic transformation. The open economy has been accepted. 'No one', the minister says, 'wants to return New Zealand to being a fortress economy strangled by an overzealous government getting in the way of business.' The minister acknowledges in a footnote that fiscal discipline, protection of property rights and market determined interest and exchange rates are no longer controversial as policy prescriptions. He says that other elements of the 'Washington Consensus', such as an emphasis on flat taxes, excessive deregulation, wholesale privatisation and the removal of the state from any role in economic and industry development, have been discredited by experience.

New Zealand has not in fact tried flat taxes. The government has increased the top rate of personal income tax, which an increasing proportion of taxpayers now have to pay. The ratio of its revenues to gross domestic product has increased to some extent, but the ratio of its expenditures did not in its first two terms. Projections in the Budget Economic and Fiscal Update 2006 indicated that fiscal policy will become quite expansionary in the next two years, through both higher state spending on goods and services and higher transfer payments to households. Both government and opposition seem to agree that the present rates and structure of taxation need to be reviewed as an aspect of a sensible policy for economic transformation, but have differed strongly on what can be afforded, given their expenditure programmes.

As expected, the Labour government's legislation and regulation have moved in the direction of greater protection of employees in the labour market and increased holiday entitlements and minimum wages. It has also intensified industry specific regulation, particularly in electricity and telecommunications. Business continues to have concerns about the Resource Management Act and its administration, particularly inconsistency of decisions by different local bodies, long delays and multi-layered hearings and their cost. The minister's paper indicates awareness that central, regional and local government regulation must not unnecessarily impede the achievement of the worthy objectives set out in the government's vision for economic transformation. A review is in progress. Improvement in the quality of governance in each of those sectors must play an important part in plans and policies to implement the vision.

There would be little debate among most of our political parties that the state in New Zealand has a very important role to play in economic and industry development, but there would be considerable disagreement on how it should play that role.

New Zealand's current economic situation and outlook should make the implementation of a policy to achieve the broad objectives set out by the minister among the highest priorities of the major political parties over the next few years. Our rate of growth of production and productivity has been slowing down appreciably relative to the average of New Zealand's trading partners since 2004. The world expansion has helped to sustain good commodity prices. Our more flexible economy has been helpful in sustaining reasonably stable terms of trade. Nevertheless, our expenditures overseas have been exceeding our receipts by unusually large margins that should cause concern. At the same time, inflationary pressures have been sufficiently strong to create severe labour shortages, especially of skilled workers. We have almost reached the limits of what we can do to get more people into work. The existing stock of business capital is being heavily utilised.

This not only emphasises the importance of greater attention to achieving higher productivity generally. If we wish to be a more active participant in the global economy, policies for economic transformation must give higher priority to ensuring that adequate investment and other resources flow to activities that are significant and effective contributors to earning or saving overseas exchange. In that respect, while recent governments have earned international respect for what appear to be sensible and conservative fiscal and monetary policies, developments in the private sector have led to New Zealand's exchange rate being sustained at levels that give greater incentives to spend overseas exchange than to earn it.

Our tax system and other elements of policy seem to offer unusually favourable incentives for New Zealanders to invest in housing and other perceived sources of capital gain. The banking system, which is the dominant source of finance, concentrates heavily on catering for that investment, considerably supplementing New Zealand sources of funds from relatively short term overseas sources attracted by New Zealand's relatively high interest rates. These high rates have not deterred New Zealanders from substantially increasing the ratio of household debt to household income to finance their spending on housing and equipment for their homes and personal enjoyment.

Their recurrent tendency to drive up the monetary values of residential and rural properties well above the income likely to be derived from them should get more attention in policy making, and not only because of the potential consequences when the bubble bursts. In the context of economic transformation, it would be desirable if a higher proportion of the country's investment were devoted to the sorts of developments outlined in the minister's paper. None of our major political parties seem to consider that the adoption of any form of capital gains tax is politically realistic, but the issue should not be given the status of a sacred cow.

The recent developments in the financial system suggest that more attention should be given to whether New Zealand has the financial services on offer that will best enable the allocation of our resources to the most productive uses. In an important background paper recently issued by the Reserve Bank (Bollard, 2007), the governor and others suggest that there is room for further development of our unique financial market and institutional structure. 'This includes expanding the width and breadth of New Zealand's capital market, enhancing the performance of the non-bank financial sector, and raising the total pool of financial savings and financial literacy.' In doing so, the authors suggest, our financial system could be made more dynamic and sound, potentially helping to raise our sustainable economic growth performance. These considerations deserve attention, not only in their own right, but in the development of policy for the future of our Kiwi Saver and national superannuation programmes.

Our situation suggests that overall constraint will be needed in fiscal policy in the medium term, unless there is significant improvement in New Zealanders' propensity to save and a reduction in their willingness to incur debt. As the OECD pointed out in an Economic Outlook report last year (OECD, 2006), 'additional fiscal stimulus, whether in the form of tax cuts or additional spending, would reduce the room for lower interest rates and inhibit the transition to export-led growth', by making it less likely that monetary policy could be eased and currency depreciation induced.

Budgets will need to make room for the necessary increases of expenditure on infrastructure, the development of research, science and technology and its application to sustainable development and environmental improvement, and the improvements in education and training the minister envisages. Tax policy should give higher priority to fostering the aims of the transformation agenda rather than further stimulating domestic consumption. This will require greater attention to devising more effective means of achieving some of the other objectives of budgetary policy.

One of the greatest problems in planning is to get agreement on reducing expenditure on activities that are no longer of high priority in order to make room to greater attention to activities that are. The 'detailed action plan for economic transformation' foreshadowed by the minister will have to be fitted into the government's overall fiscal planning. He recognises the need to work in a more coherent way across government and to better focus and target government resources as it attempts to foster innovation. Government itself needs to give a lead by more systematically formulating and publishing well-considered plans for the implementation of its own priorities over a period of years ahead.

Strategic leadership in the nation's longer-term interests is not easy for a democratic government with a three-year parliamentary term under the MMP system, especially when some politically unpleasant choices may need to be made. The minister's agenda is obviously influenced by the so-called new growth theory, which sees market forces and private entrepreneurship in the driving seat, but with governments performing a strategic and co-ordinating role in the productive sphere, working together with the private sector to discover the best options for profitable and sustainable economic development. The minister's paper hints that there are still problems for government in getting its own departments to work together constructively on the formulation and implementation of strategic policies. Strong leadership driven from Cabinet level on strategic planning and management in the state sector will be needed if it is to develop effective partnerships with the private sector and other levels of government in effecting transformation.

A severe test of government leadership is imminent because of the need for early, agreed decisions on co-ordinated policies on energy, transport development and land use, and New Zealand's approach to problems of climate change. Recent announcements by the prime minister seem to accord 'sustainability' at least as much weight as 'economic transformation' as an objective of policy. Reconciling these two objectives will be a challenge. For example, can we reconcile a set of policies directed to 'carbon neutrality' with those required to promote upgrading of the competitive strength and global connectedness of our economy? The minister displays a positive attitude in seeing the challenges involved providing opportunities to encourage New Zealand firms to develop and adopt new technologies that will advance both objectives, and potentially provide future competitive advantages in a world facing similar problems.

Richard Prebble has rightly emphasised the importance of the quality of leadership and management in improving the productivity of state-owned enterprises. Shortage of skilled leaders and managers remains a problem that needs to be addressed, not only throughout the public sector but also in other sectors of the economy and society. In forging a Kiwi economic identity that we can celebrate, we need more leaders and managers throughout New Zealand – not just in Auckland – who become more globally connected. Permitting and encouraging state-owned educational institutions to sell their services to people from overseas demonstrated that such institutions could benefit both themselves and the country by internationalising their operations, provided that they were financially sound and sustained high qualities of service for both domestic and overseas participants in their programmes. If we are to make effective use of any success achieved by our government in WTO negotiations or in the partnerships it hopes to develop in the dynamic Asia-Pacific region, New Zealand needs to develop more leaders and managers who can find means of leveraging their capacity to produce goods or services with a competitive advantage on relationships they sustain with customers or associates overseas. Finding better means of attracting, developing and retaining highly talented people, including our own diaspora, in key positions in both the public and the private sectors must be high on the agenda of any effective programme of economic transformation.

References

Bollard, A. (2007) 'Delivering sound and innovative financial services for New Zealand', background paper for an address to the Canterbury Employers' Chamber of Commerce, Reserve Bank of New Zealand, 26 January

OECD (2006) 'New Zealand', in 'Country summaries', *OECD Preliminary Economic Outlook*, 80, Paris: OECD, December, p.99

Sir Frank Holmes is an Emeritus Professor of Victoria University of Wellington.

Commentary: Transforming an Economy

Brian Easton

This paper responds to the minister's paper by providing a context in which the government's economic transformation agenda operates. It argues that it is not a plan but a framework for the coherent organising of government's evolving involvement in the economy. To illustrate how this occurs the latter part of the paper focuses on some Auckland issues, which are yet to be resolved, and mentions some of the other areas for further development.

Perhaps the greatest current puzzle about the New Zealand economy is why it is not growing more quickly. It stagnated from 1985 to 1993 as a result of the liberalisation policies of the time, even though the rest of the world grew strongly. At the beginning of this period New Zealand was a fraction above the OECD average measured by GDP per capita; eight years later it was 15% or so below. The New Zealand economy has since grown slightly faster than the world economy, mainly by utilising the reserves of labour – evident in lower unemployment and higher labour force participation. But productivity growth has been low – lower than the long-term trend. If it continues to be low, economic growth will be low since the potential labour force reserves are now largely exhausted.

We might have expected significant productivity gains as the economy recovered from the shock of the market liberalisation policies, so that, once through the stagnation phase, it would have grown more rapidly until it returned to its pre-liberalisation track. But of that there is no sign. Why not? Any answer is even the more puzzling because export prices have been largely favourable, and an unusually large external (current account) deficit probably accelerated the growth rate. But the boost given by these factors to economic growth and productivity is not evident in the statistics either.

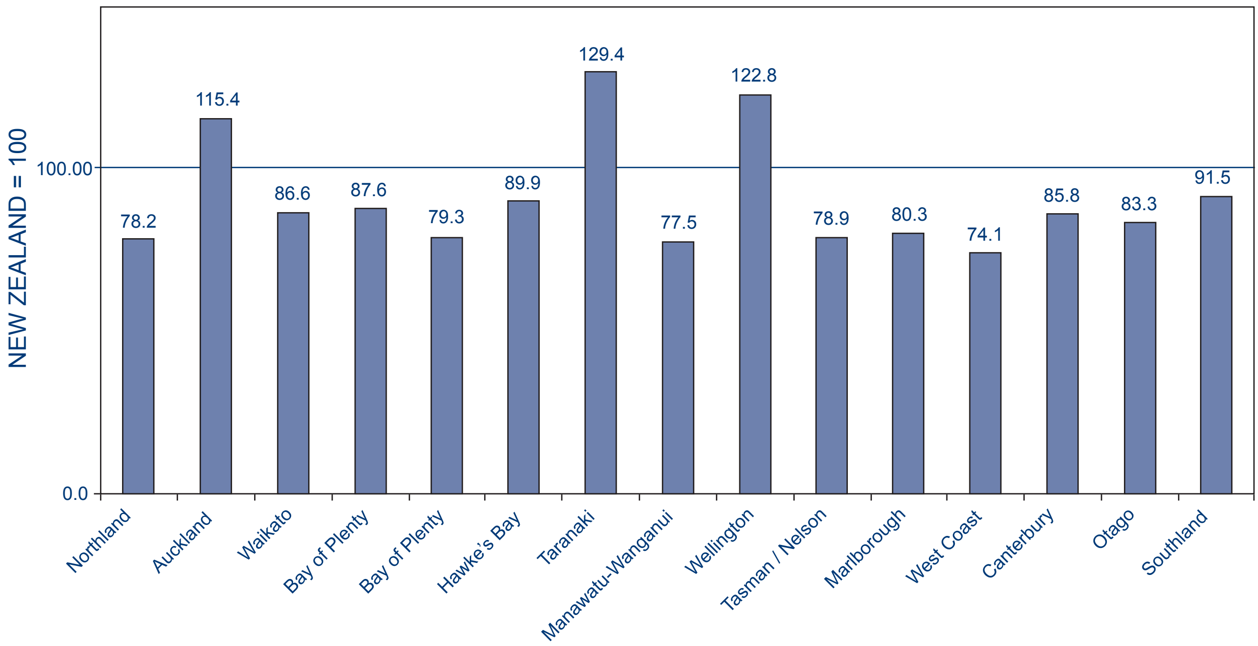
Did the liberalisation policies irrecoverably damage the economy? What about the intensificationist thesis that more extreme liberalisation is needed, as if repeating failures of the past will generate success in the future? In the last seven years the Labour-led government has chosen a different strategy to that of its immediate predecessors, while maintaining some of the central elements of the liberalisation programme.

The current government's Growth and Innovation Framework (GIF) specifically included a 'stable macroeconomic framework', an 'open and competitive microeconomy' and a 'globally connected economy'. A 'highly skilled population' and a 'solid research, development and innovation framework' had already been adopted by the previous, National government in the late 1990s. (New in the GIF was a 'modern cohesive society' and 'sound environmental management'.) Meanwhile, some of the more extremist policy stands have been reversed, replaced by a pragmatic response to public and private ownership, a less conflictual approach to industrial relations, with a broadening and deepening of the social partnership arrangements, and a willingness to tackle monopoly. The government has also given priority to dealing with the public sector and social deficits, even though the additional spending has given it less room for tax cuts.

Less noticed is the government's commitment to sectoral engagement, dealing with each sector on a pragmatic rather than ideologically uniform basis. Many industrial sectors do not require much engagement, but, where they do, the government has got involved.

The approach involves a rejection both of the implicit model of the market liberalisers of the 1980s, and also of much of the recent research paradigms of various agencies (including the Treasury). They treat economic output as a homogeneous single commodity, as if the composition of output does not matter. That makes no sense for the medium term because sectors grow at different rates, while many undergo significant

Figure 1: Regional Labour Productivity (2003)



internal change. Sectoral engagement rejects the single commodity approach.

The rest of this article will focus on the Auckland strategy, the government's most interesting sectoral engagement. Figure 1, based on recently released estimates of regional GDP, gives a measure of productivity per worker by region (using full-time employment equivalents). There is considerable variation. With the highest productivity is Taranaki, reflecting the contribution from its (depleting) hydrocarbon fields and capital intensive petrochemical plants. Not far behind is the Wellington region with its highly paid public servants.

(Any ranking by region reflects sectoral composition, rather than some inherent merit of the region. Nor do the figures indicate the relative regional incomes, because they ignore tax and social security flows and (net) payments to asset owners outside the region. Moreover, if, say, the price of exports is higher (or the exchange rate lower), the relativities of rural regions would rise, without changes in real productivity.)

The third (and only other) region with above-average productivity is Auckland, strong in the business and transport sectors, and weak in primary production. It is not especially strong in manufacturing, and is slightly below average in tourism and education, health and community services. The data emphasise Auckland as New Zealand's 'gateway' city and headquarters city. Is it a global city?

The government has two major immediate concerns. Auckland has poorly functioning city governance and severe infrastructural problems – most evidently in its internal transport network. The government is tackling them – politically courageously for the first, and fiscally courageously for the second. Given the size of the infrastructural deficit, significant gains are a decade out. Effective local authority reform may take longer.

These are necessary and urgent reforms, but they are not sufficient. Not far from the government's thinking is a structural change strategy which began 70 years ago. The Depression exposed New Zealand's over-dependence on the pastoral sector and on the British export market. There has been much diversification since, into other primary industries and post-farm gate processing, and into other export markets. The strategy of import-substituting industrialisation which began in the late 1930s unravelled in the 1980s, although it led to some export manufacturing.

In a globalising world, New Zealand import substitution faces tradeable goods and services from low wage countries (notably China for manufactures and India for services). It may be that Auckland is not a particularly significant manufacturer because its import-substituting manufacturing has wound down. Some of the rural regions are more intensive manufacturers because the processing of primary products cannot be so easily carried out offshore.

Other rich economies face similar challenges. They (often reluctantly) offshore routine activities and instead focus on the innovation, design and development stages of tradeable manufacturing and services, and on production so sophisticated that it takes a highly skilled workforce, not yet available in poorer countries. Can New Zealand? Such high-productivity production occurs in large, vibrant urban centres, as a result of agglomeration effects – economies of scale for clusters of industries. Is Auckland large enough to be such a centre?

The facts are that Auckland is about the 350th city in the world in population size, and 150th in terms of regional GDP. Some economists think it is big enough to generate the required economies of agglomeration (it is certainly big enough to generate the congestion). Others think it too small.

My view comes from considering the biotech industry. There is no 'US' biotech industry. Rather, there are vigorous industries in about a dozen American urban agglomerations, each of which is bigger than Greater Auckland.

So what Auckland biotech area should we think about? Surely we should add Hamilton, which is making a significant contribution to the Greater Auckland biotech industry. The motorway between the two cities is to be completed this year. It makes sense to see the two cities as a single economic unit.

If Hamilton is a part of Greater Auckland, where else is? There is an obvious node at the isthmus, with secondary nodes at Hamilton, Tauranga, Whangarei and Rotorua. But in the US just-in-time businesses are an overnight trucking away from their customers. In which case the entire North Island can be 'Greater Auckland' if the transport network is sufficiently integrated. (Air links could add Christchurch and Dunedin for light valuable products, while broadband connections bring in anywhere for electronic transportable services.)

Despite the pride the government takes in doubling spending on roading, it is probably not enough, while the rail system upgrade seems to have got lost. We need a national goal of a four-lane highway network connecting the seven major urban centres by, say, 2030, with an effective freight railway system to accompany it.

At the moment local Auckland is too concerned with its own problems to think about Greater Auckland. (An impatient outsider might think their focus is on 'Petty Auckland'.) Even the central government is so involved with the isthmus's problems that it has not yet thought enough about the wider issue. It may be forced to, since the rest of the country will not take kindly to the apparent privileging of Auckland, not only with political attention and infrastructural spending: its education, health and recreational sectors also need upgrading to global city standards. The New Zealand economy cannot succeed without Auckland succeeding, but the reverse is equally true.

What about the South Island? My guess is that there is probably a case for developing Christchurch as a second hub, not in competition with Auckland but as a complement. Outside Christchurch and Dunedin, the South Island will remain primary product export (including tourism) focused, as will much of the rural North Island. But broadband may generate service business for those who prefer the rural lifestyle.

The last few paragraphs go beyond the current economic transformation agenda. The government is incrementalist in its policy approach, in part because it eschews the big thinking of Rogernomics, but also because it is embarking on a much more intellectually complex policy development than market liberalisation, with (probably) fewer able advisers, given the damage Rogernomics did to the government bureaucracy. But I shall not be surprised if eventually it adopts a strategy of an integrated North Island with Auckland as a hub, and a South Island hub at Christchurch.

One could write similarly on other policy areas which need further development:

- private saving requires further boosting;
- the innovation strategy needs to pay more attention to international technology transfer;
- the energy strategy is only on the way to sustainability after oil production peaks (and needs to be integrated with the transport and climate change strategies);
- the funding arrangements for tertiary education continue to distort and inhibit that sector's performance;

- the tax system is neither optimal nor equitable;
- the implications for social cohesion remain unaddressed.

Until recently I would have grumbled about the lack of connection between economic transformation and national identity. However, the minister's paper indicates that this challenge is beginning to be addressed.

Other sectoral strategy issues will arise as the economic transformation agenda evolves. (I have a concern about our not effectively utilising our water resources, while the success or failure of the Doha Round will present considerable challenges to our trade negotiators, to exporters and, ultimately, to the economy as a whole.)

That is the point of the economic transformation agenda. It is not a fixed plan, but a framework by which to organise the government involvement in the structural evolution of the New Zealand economy. The evolution has always been occurring, even though it was unnecessarily inhibited by the policies of the 1980s and 1990s. The involvement should not slow our economic growth rate. It may even accelerate it.

Brian Easton is an independent scholar who researches, writes and teaches in economics, social statistics, public policy and New Zealand studies. His book *Globalisation and the Wealth of Nations*, the research for which was sponsored by the Marsden Fund, will be published this year. He currently holds a Claude McCarthy Fellowship to work on an economic history of New Zealand. He is a member of the Growth and Innovation Advisory Board, which is the government's chief private sector adviser on the Growth and Innovation Framework and the Economic Transformation Agenda. It should be noted that the views expressed in this article are not those of the board, and may not reflect the views of other board members. He can be contacted at the Economic and Social Trust on New Zealand, 18 Talavera Terrace, Wellington, www.eastonbh.ac.nz.

Remembering Henry – Father of the IPS

Frank Holmes

Ten years after his death, it is fitting to remember the life and work of Henry Lang in this journal. He can be regarded as the father of the Institute of Policy Studies. The honorary doctorate the university bestowed on him in 1984 acknowledged the great contribution he had made to his alma mater and to university education in the course of his distinguished career.

Born Heinrich in Vienna on 3 March 1919, Henry George Lang died in Wellington on 17 April 1997, as one of the small group first admitted to the new Order of New Zealand, designed to be New Zealand's highest honour, in 1989. The award recognised what he had done to transform the Treasury, strengthen the public service and contribute in many ways to the economic, social and cultural development of New Zealand.

He escaped to New Zealand with his mother, who was Jewish, and his stepfather, Ernst Plischke, after the German occupation of his home country, arriving here in May 1939. The New Zealand to which they came was very British-oriented and on the brink of participating in the Second World War. Those from other backgrounds had to overcome a good deal of suspicion and discrimination (Tyler, 2000).

Henry Lang readily adapted to the New Zealand environment. As John Martin observed in his excellent entry on him in the *Dictionary of New Zealand Biography*, he had 'an extraordinary gift for friendship extending across generations, occupations and location' (Martin, 2000, p.279). He quickly obtained employment, first in a prune canning factory, and later successively as bookkeeper, accountant and acting secretary of Warner Brothers Pictures. He married Octavia (Tup) Turton in 1942. He had met her on a skiing trip. Henry was already accomplished in the sport, which became one of many shared interests with Tup during a long and happy marriage, from which three daughters and a son survive.[1]

He arrived with a good foundation from his Austrian education. He studied part time in the 1940s at Victoria University College, completing a BCom in accountancy and economics in 1945 and a BA in philosophy in 1947.

After serving in the air force between 1944 and 1946, Lang was appointed to the investigating staff of the Economic Stabilisation Commission. This commission, which was chaired by the then secretary to the Treasury, Bernard Ashwin, had been the heart of New Zealand's wartime economic policy making. It remained very influential in New Zealand's highly regulated economic system in the early postwar period. Its staff contained more economic expertise during this period than the Treasury. Lang's work enabled him to develop constructive links with leaders of the major interest groups that interacted with government in negotiating 'fair shares' in the development of fiscal and incomes policy at the time.

While Lang never took a postgraduate degree in economics, he achieved a deep understanding of the discipline, both through his work at the commission and through a secondment to do postgraduate work full time, including study of public economics, at Victoria University College for the Diploma of Public Administration in 1949 and 1950. Some joint work done during this period on national income with John Baker, who went on to become government statistician, was published in the 1950 *New Zealand Official Yearbook* (Baker and Lang, 1950). On completion of the DPA, Lang was transferred to the Treasury as an investigating officer, joining a few colleagues from the Economic Stabilisation Commission who had preceded him. He was promoted to senior research officer in 1954.

1 The Langs were devastated by the death of their daughter Fran, with her husband, in an air crash shortly after their marriage in England.

Another important milestone in his progress in the public service was his secondment as economic counsellor in the New Zealand High Commission in London, where he served between 1955 and early 1958. It was typical of Lang's approach to getting things done that, when he discovered that I was setting out to work at Chatham House on the implications for New Zealand, Britain and the Commonwealth of likely developments in European integration, he suggested that we should work together on issues rather than in isolation from one another.

Britain remained by far New Zealand's major market. My discussions with British agriculture and trade officials indicated that Lang was building very effectively on the legacy of interaction that Ashwin in particular had developed in negotiations on bulk purchase agreements. It was a very useful complement to my own interviews and studies to be involved with the High Commission work that Lang was leading. His secondment to London equipped him to serve the government well in its endeavours to secure a special arrangement to protect New Zealand's interests when Britain decided to apply for membership of the European Economic Community. (A British official apparently dubbed him 'the Hapsburg diplomat'.)

He became increasingly influential in the policy-making process after his return from London, first as chief research officer at the Treasury, and later as assistant secretary in 1965, deputy secretary in 1966 and secretary between 1968 and his retirement early in 1977. (In his history of the Treasury, Malcolm McKinnon (McKinnon, 2003) notes that it was necessary for anyone aspiring to be the secretary of the Treasury to have had experience as finance officer. Henry obtained that experience in 1962–63.)

Some obituary writers called Lang 'the father of the modern Treasury'. Ashwin had earned similar mana and served longer in the top job than Lang.[2] But Lang did more in deliberately building up a strong team of economists and policy analysts in the Treasury by good selection and management. The research division languished after the retirement of Ashwin and while Lang was away. One significant appointment, of Bernard Galvin, was made during that period, but few economists were recruited until the influence of Henry Lang was felt from the early 1960s onwards. He was determined to ensure that the Treasury acquired and retained people with first-class minds and communication skills so that it could earn a central position in the advisory system. He was always asking me and other university professors if we could recommend intelligent young graduates who might be persuaded to join the Treasury. As his friend, colleague and successor as secretary, Noel Lough, said at the memorial service for him,

> he sought an ability to think clearly, critically, and to write well. He deliberately sought graduates in all disciplines so that the Treasury did not become too narrowly focused on accounting and economics. In recruitment, and in allocation of work and promotion, women were given equal opportunity to rise up the ladder on their merit.

He was more successful than other departments in attracting and retaining good people. His staff enjoyed the early responsibility delegated to them, and Lang's personal interest in their contribution, including their active participation in vigorous debate within the institution. McKinnon's history of the Treasury emphasises his importance in engineering a shift in the pecking order of responsibility, from those engaged in 'saving candle ends' to those focused on providing advice on New Zealand's economic and social development (McKinnon, 2003, especially pp.226-73). In the process, he significantly increased the influence of the Treasury in the official committees that were established to co-ordinate public service advice to Cabinet. (A Treasury signature was required on all such reports before they went to Cabinet.)

Henry Lang served three ministers of finance during his term as secretary: Robert Muldoon (twice), Bill Rowling and Bob Tizard. Even before he attained the office of secretary he represented the Treasury often in high-level discussions with ministers on policy, and therefore exerted influence greater than his position might have suggested. According to one of his most respected colleagues at the Treasury, Jas McKenzie, 'his skill with ministers was truly formidable. Watching

2 According to Geoff Schmitt, Ashwin was more of a loner in establishing the power and influence of the Treasury during most of his time at the top. His decision to increase the numbers of those with economic expertise in his department was a reaction to an advertisement by the Ministry of Works for three economists as research officers. Ashwin persuaded the Public Service Commission that these positions should be relocated to the Treasury. Albert McGregor, Lou Durbin and Geoff Schmitt were appointed. Henry Lang joined soon afterwards, as did others like Jim Moriarty when the Stabilisation Commission was disbanded.

Henry take a complex brief and lay it out for a Cabinet committee, quietly but incisively, was both a delight and a great learning experience. No wonder ministers always valued his counsel' (McKenzie, 1997)

The 1960s and 1970s were dominated by widespread debate on how best to improve New Zealand's lagging rate of growth, reduce its dependence on the British market and on a narrow range of relatively unprocessed commodities, and bring inflation and instability under better control. Treasury advice reflected Lang's belief, which I shared, that it was important to aim for a more open and adaptable economy, to move away from excessive protection behind a wall of import licensing and to reduce reliance on administrative controls in stabilisation policy (Lang, 1973). This would require greater emphasis on the tools of monetary, fiscal and exchange-rate policy that worked through markets.

Even politicians who agreed in principle with this philosophy found it politically difficult to put it into practice. Protected manufacturers and unions were politically influential and wedded to retaining import licensing. They were supported by some within the public service, especially in the Department of Industries and Commerce when led by significant figures such as W.B. Sutch and Jack Lewin. Leading members of the National Party rightly or wrongly believed that their qualified support for a move away from import licensing to a more uniform and less protective tariff was an important factor in their loss of the 1972 election. This belief coloured their attitude to the development of a genuine free trade area with Australia; in the agreement for CER introduced in 1983 they insisted on a 15-year period for the phasing out of import licensing.

The Treasury also faced political resistance, and divided opinions within the economics profession, if it was suggested that governments should consider increasing taxation or interest rates or altering the exchange rate as instruments of stabilisation or development policy. The papers produced by people from the research division of the Treasury, including Henry Lang, reflect the efforts that they were making to apply the principles of Keynesian analysis to the issues confronting New Zealand society. The politicians were happy to accept these principles as a means of avoiding any downswings in the rates of growth of production and employment. They were reluctant to apply the principles to countering the inflationary pressures which were so strong in the 1960s and 1970s. Accordingly, the history of this period is replete with instances of economists jousting with politicians on how best to stabilise fluctuations in the New Zealand economy. The adverse public reaction to the so-called 'black budget' introduced by the Nash–Nordmeyer administration in 1958 exerted a restraining influence on tax policy for many years afterwards.

The conventional wisdom also favoured fixed exchange rates. The exchange rate established by the Labour government after a large revaluation in 1948 began to look increasingly unsuitable in the early 1960s. Many economists might have advocated greater flexibility in less inflationary circumstances, but there were strong cost-plus influences in the heavily protected New Zealand economy that could quickly dissipate the beneficial effects of devaluation or depreciation.

The debate within the Treasury team was producing increasingly more market-oriented advice on strategy for more rapid and stable development. Lang strongly believed in maintaining the independence and integrity of Treasury advice to ministers and Cabinet. He also accepted that, as a public servant, he must assist the elected government to implement its policies to the best of his ability. This required him and the Treasury from time to time to devise policy instruments that they would regard as 'second-best' compromise means of achieving the government's objectives. Such compromises included tax incentives directed at the earning of overseas exchange and various forms of incomes policy.

The Holyoake government was persuaded after the 1966 election that budgetary restraint was required to reduce inflationary pressure in the economy. Lang found Robert Muldoon, as a relatively new minister of finance, effective in his capacity to utilise new means of communication to 'sell' to the electorate what was probably as 'black' a budget as that of 1958. This set the stage for him to take advantage of a devaluation of the pound sterling to devalue the New Zealand dollar by a greater percentage, thus restoring the parity with Australia that had existed prior to 1948.

In the early 1960s I had been advocating that government should promote more market-oriented consultative planning of development. The Holyoake government supported the idea and held a number of development conferences, culminating in the National

Development Conference (NDC) of 1968–69. Lang saw these as an opportunity to promote discussion and debate on strategic issues within the public sector and among the various interest groups. He became the dominant figure in enabling the Treasury team to play a leading role in co-ordinating consultations among the public sector, representatives of private enterprise and research institutions on how best to improve New Zealand's economic and social development.

The Treasury required considerable strengthening in its own expertise and the co-operation of experts in other institutions if it was to be successful in this role. Lang provided outstanding leadership in fostering Treasury's own capacity for analysis and research. He was adept at securing co-operation from others in the task. He was so charming and persuasive that it was almost impossible to refuse requests from him to help. For example, he persuaded Jim Rowe, then the director of the Institute of Economic Research, and me to assist in the establishment of a planning unit in the Treasury and in producing a section on planning and government in the 1966 *Economic Review*. Several other academics felt obliged to accede to pleas from Henry that he needed them to help him develop his ideas or to get the outcome of your mutual efforts across to a wider audience. When my wife sometimes protested at the effects of one of these pleas, he would have the gall to tell her that she should stop me working so hard.

He used his persuasive skills effectively in harnessing the skills of good people in the universities, the Reserve Bank, the Institute of Economic Research and the Meat and Wool Board Economic Service in joint efforts to serve the NDC institutions while improving the basis of research, statistics and other information required. He also led significant improvements in the way the public accounts were prepared, laying better foundations for decision making in the public sector by clarifying objectives, recording costs and requiring more forward-looking programming of expenditure as a better basis for determining priorities.

While public servants at the time were considerably inhibited from revealing their views in public, Lang did as much as he could to foster informed public discussion of major issues of public policy. Those of us who served on the Monetary and Economic Council found him very supportive of our 'public watchdog' functions. He had always been ready to accept invitations to share his knowledge and experience in programmes like the DPA at Victoria University, and in many other continuing education activities, such as the work of the Institute of Public Administration. He was president of the institute in 1960/61 and played a significant role in the establishment of the Administrative Staff College (later the College of Management.)[3]

The NDC planning mechanisms atrophied and lost touch with government decisions after 1972. After Muldoon's success in the 1975 election, Lang persuaded him not to try to resurrect the old NDC institutions, but to commission a wide-ranging strategic audit by a task force, under me as an independent chair, encompassing economic, social, cultural and regional issues. Through the Treasury he organised a competent secretariat for the task force from several government departments and the Reserve Bank. The report of the task force became the basis for the creation of a New Zealand Planning Council of able individuals, not dominated by representatives of interest groups and government. Although the minister of national development and secretary of the Treasury were members, the council was given considerable independence to publish its collective views on policy options to deal with issues it considered to be strategically important in the medium term. Lang was very supportive of these arrangements.

Lang's relationship with Muldoon appeared to have been reasonably good during the latter's apprenticeship as minister of finance from 1967 to 1972. During that period, Muldoon, with Holyoake's support, displayed greater readiness than his predecessors in the postwar period to utilise and sell to the public firmer fiscal measures and some adjustment of the exchange rate to help stabilise the New Zealand economy. He also found Lang and the Treasury helpful to him in carrying out the role he was allocated in the proceedings of the NDC.

Lang had a very good professional and personal relationship with Bill Rowling as minister of finance in the Labour government which took office in 1972. This continued in a modified way when Rowling became prime minister.[4] Together they faced considerable difficulties as a result of the commodity boom that

3 He was also influential in the setting up of the Royal Commission on the State Services during his presidency.

4 They also continued a friendly relationship in later years, including as colleagues on the board of the Musueum of New Zealand Te Papa Tongarewa.

prevailed in the early stages of this administration. Norman Kirk, as prime minister, was suspicious of intellectuals generally and the sorts of adviser employed in the Treasury in particular. His government wanted to spend heavily on health, education and welfare. After the first oil crisis, Rowling, Tizard and Lang had to lead an agonising reappraisal of expectations and policies. The policies adopted put considerable emphasis on liberalising the import licensing system in the first instance, some attempts to stabilise pay-outs to exporters, on monetary more than fiscal measures to restrain excessive spending, and on increasing recourse to overseas borrowing in an endeavour to sustain output and employment – always a priority in Lang's personal policy objectives.

Muldoon had a sweeping victory in the 1975 election. Lang kept a confidential diary of the transition.[5] When he called on Muldoon on 3 December he was received 'most cordially. For the first time in my association with him, he got up from his desk, came towards me and shook my hand and offered me a seat.' However, at a long session on 4 December, Muldoon 'returned to his more normal abrasive manner'. This change probably stemmed from discussion of the prime minister's intention to abolish Labour's New Zealand Superannuation (NZS) scheme. Lang advised Muldoon that he did not want to be involved in the NZS discussions. He had had some acrimonious exchanges with Muldoon when the latter was leader of the opposition because Muldoon considered that, as an official, Lang had become excessively supportive of the Labour scheme. Lang drew attention to some of the problems of its abolition, for example in equity between employees in NZS and those in other schemes, and the economic impact to be expected from the return of $50 million of past contributions and the loss of an inflow of $100 million in new contributions. Muldoon said that these could easily be handled. He was impatient with administrative delays. While objections from actuaries could be expected, 'they were barely useful people'. In his diary Henry commented, 'his ignorance was exceeded only by his breathtaking arrogance'.

Lang was disturbed to find that Muldoon intended to release part of a secret report of the Treasury on economic strategy, believing this would be damaging to the government and unhelpful to the Treasury. He asked to see Muldoon and had a half-hour meeting 'which can be described in a variety of ways but amicable is not among them'. He told Muldoon that the tradition was for confidential advice by the Treasury not to be published. The only previous occasion had been a mistake. Muldoon replied that he had criticised the Labour Party for not publishing and said he intended to publish; Lang reserved the right to respond publicly. Behind the scenes he apparently managed to get the prime minster's chief press secretary to amend the release so that it was 'damaging but not disastrous'.

Muldoon wanted to have a small Prime Minister's Department, independent of Foreign Affairs. After some discussion about its composition and functions, Lang was gratified that his Treasury colleague, Bernard Galvin, was generally approved as the most suitable person for the job of heading the Prime Minister's Office and Advisory Group. Later in the month Lang discovered that the prime minister had told a television audience that the secretary of Treasury was entirely happy with arrangements in the Prime Minister's Department. Lang's diary entry observes that 'he had not consulted me ... but made the usual presumption that whatever suited him had to bring joy to his slaves'.

After the election Muldoon decided to move quickly to curb consumer spending by increasing charges for public services and prices for petrol, milk and bread. Lang thought this was too deflationary and was concerned about the possible effects on unemployment. He was becoming concerned that, as both prime minister and minister of finance, Muldoon could be trying to drive a wedge between him and Galvin. He had concluded that the prime minister was becoming a one-man band who had no faith in the overwhelming majority of his ministers.

According to Barry Gustafson, when Lang, at a time of considerable economic difficulty, decided to retire early in 1977 (at the age of 58), Muldoon was annoyed (Gustafson, 2000, p.179).[6] He felt Lang had put his own interests ahead of his public service duty in not staying on as secretary of the Treasury until he reached 60.[7] Although Lang had been a very effective head of the Treasury for eight difficult years, Muldoon opposed a

5 This is included among his papers in the Alexander Turnbull Library.

6 Gustafson wrongly reports that Lang retired at 56.

7 Lang was reported in an interview published in the Evening Post on 1 April 1996 to have said, 'I did n't like Muldoon, but he was a very effective minister. I respected him and he respected me, and he would have preferred me to stay.'

knighthood for him and the Cabinet honours committee concurred with a lesser honour. Accordingly, Ashwin remained the only Treasury secretary to have been, as McKinnon put it, 'encumbered' with a knighthood (McKinnon, 2003, p.216). Easton considers that Lang would have refused a knighthood anyway – for him to be called 'Sir Henry' was 'unthinkable' (Easton, 2001). I believe that he would have accepted and carried the honour with humble pride and grace, as he did the more prestigious award of the ONZ many years later.

Was Lang 'a regulator like his Minister', as Roderick Deane is quoted as describing him in Michael and Judith Bassett's biography of Deane (Bassett and Bassett, 2006)?[8] Lang's 1973 paper on economic and foreign policy indicates that he was opposed to 'fortress New Zealand' policies, and considered that industries should be able to adapt to lower protection as part of a policy of structural change to promote growth and diversify trade (Lang, 1973). But that policy should include effective and innovative industrial policies embracing research and development, fiscal incentives, tariff reform, adjustment assistance and active labour market measures. Thus he saw the state playing a very active role in moving towards a more open and competitive economy.

He also revealed a bias towards using a substantial proportion of the benefits of faster growth in the improvement of the social environment rather than in the provision of additional material goods. At his memorial service, many of his friends commented on how much he hoped that New Zealand would remain a relatively egalitarian society.

While he was sceptical of the effectiveness of incomes policies, there is some evidence that he was more pragmatic than some of his colleagues, especially an increasing number of younger ones, in his approach to the return to direct controls on incomes and prices to counter the 'stagflation' that beset the protected, cost-plus economy from the late 1960s. While approving of much of the radical reform programme of the Labour government of 1984–90, Lang considered that it had paid inadequate attention to trying to avoid high unemployment and the social problems and racial tension associated with it. It is not surprising that he was regarded as 'interventionist' by some of those who believed that rapid and radical market-oriented reform was vital for New Zealand's future economic and social development.

In the late 1980s Lang was concerned by what he saw as the collapse of the pre-1984 system of interdepartmental co-ordination and co-operation in the public service and the reduced consultation with the private sector, which increased policy uncertainty. He considered that the Treasury had become a monolithic institution of high quality, dedicated to a framework of advice based on a free-market creed, but paying little attention to the foregoing problems and the impact of the policies on people adversely affected by them. The Treasury, he believed, faced insufficient intellectual checks and balances on its dominance within the public service. If a return to a more collegiate policy-making process by senior officials and ministers were not deemed practicable, he would advocate building up a more powerful Department of Prime Minister and Cabinet as an alternative designed to ensure more adequate, forward-looking policy co-ordination.

After his retirement from the Treasury early in 1977, Lang became a visiting professor of economics and convenor of the Master of Public Policy programme at Victoria University. He had all the qualities of an excellent teacher. Such people bring out the best in their students; always recognise that there is much more to learn even in fields in which they are supposed to be expert; enjoy discussion and debate with people whose views differ from their own; and expect younger people to be able to bring fresh perspectives to bear on issues with which they are dealing. That was Henry's natural style.

He continued to take an active interest in the Planning Council after he left the Treasury, and was influential in its work on taxation, income maintenance and the welfare state. When it came under threat of abolition by Muldoon in 1982, Lang played a leading role with John Roberts, myself and some senior public servants in successfully negotiating for the creation of an Institute of Policy Studies at Victoria University. His experience with the NDC and the Planning Council had persuaded him that an Institute of Policy Studies in the university in the capital city would have the best chance of

8 In the Bassetts' biography, Lang is said to have protested to Governor Alan Low about one of Deane's speeches advocating the need for monetary policy to influence both the supply and cost of credit and to work through market forces. Such advocacy would not have been welcomed by Muldoon, Lang's minister. The governor did not dissuade Deane from continuing to publish his views (Bassett and Bassett, 2006, p.50).

independently anticipating and exploring potentially contentious strategic policy issues, and bringing them out for public discussion without fear or favour. But he also saw that its success would depend on its ability to attract and retain a director and staff of quality, and on the support of far-sighted top officials and business people as well as the university community. As the first chairman of the institute, Lang was most influential in generating the necessary support. He worked hard for many years to ensure that the quality of its work justified continuation. His abiding interest in its future was reflected in his generous bequest to endow the Henry Lang Fellowship to enable scholars of high quality to devote time to independent research into important policy issues.

Lang also made significant contributions to the development of the Diploma of Community Medicine at the Wellington Clinical School, and chaired government reviews of the health workforce and cardiac surgery. He earned great respect as a director of several companies, and as the chair of the board of a major insurance company. He continued to be a source of wise counsel to public servants in his university positions and privately to some politicians.

Henry and Tup Lang shared wide interests in physical recreation, books, theatre and the performing arts. Henry was a member of the board of the Museum of New Zealand, and a leader in the development of public sculpture in Wellington. Appropriately, a group of sculptures entitled 'Kaiwhakatere: the Navigator' was commissioned in his honour and located on a piece of land between Parliament buildings and the Treasury.

In education, health and cultural activities, as in his public service career, Henry Lang served his fellow New Zealanders with zest and energy. He was always seeking opportunities to break down artificial barriers and stereotypes dividing different groups in the community by getting them to look ahead and focus on how best to deal with issues of mutual concern. It was fitting that both the university and the government should have conferred on this remarkable man the highest distinctions that they were able to bestow. In everything he did, he showed us how to live life well, enjoy it to the full and make friends and admirers in all walks of life.

References

Baker, J.V.T. and H.G. Lang (1950) 'Economic policy and national income', *New Zealand Official Yearbook*, Wellington: Government Printer, pp.1033-89

Bassett, M. and J. Bassett (2006) *Roderick Deane: his life and times*, Auckland: Viking

Easton, B.H. (2001) *The Nationbuilders*, Auckland: Auckland University Press, pp.255-70

Gustafson, B. (2000) *My Way: a biography of Robert Muldoon*, Auckland: Auckland University Press

Lang, H.G. (1973) 'The relationship between economic and foreign policy', *New Zealand Foreign Affairs Review*, 23 (8), pp.16-25

Martin, J.R. (2000) 'Lang,

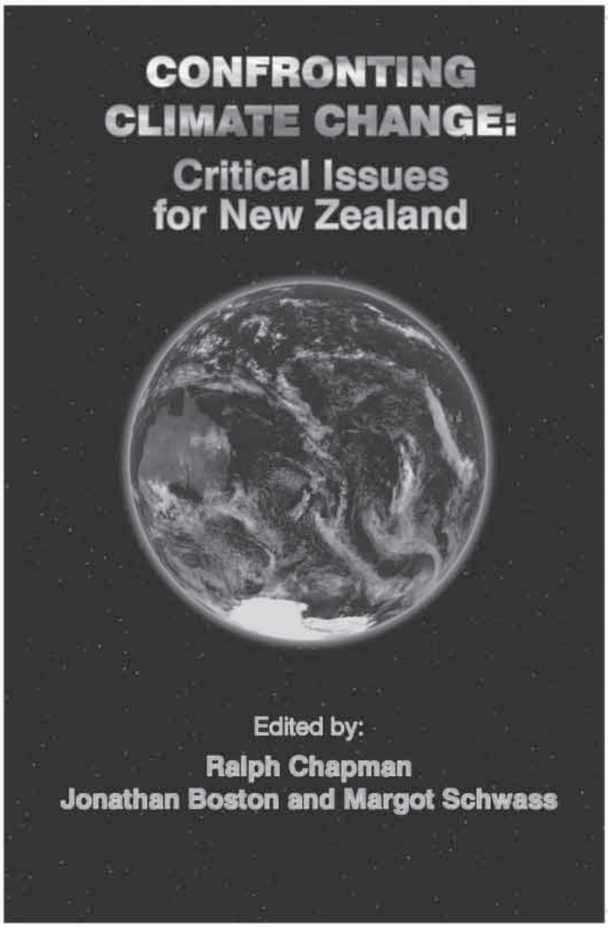
George Henry, 1919–1997', *Dictionary of New Zealand Biography*, volume 5, Auckland: Auckland University Press, 2000

McKenzie, J. (1997), article in *Dominion*, 22 April, p.9

McKinnon, M. (2003), *Treasury: the New Zealand Treasury, 1840–2000*, Auckland: Auckland University Press

Tyler, L. (2000) 'Plischke, Ernest Anton, 1903–1992', *Dictionary of New Zealand Biography*, volume 5, Auckland: Auckland University Press, 2000

Sir Frank Holmes is an Emeritus Professor of Victoria University of Wellington.



The debate on the science is over. Climate change is real; it is happening even faster than previously thought and it is powerfully influenced by human activities. As events like Hurricane Katrina, the shrinking of ice-caps and the calamitous 2003 European heatwave remind us, climate change is not a future threat: it already profoundly affects the world we live in.

Scientific evidence shows that dangerous climate change can only be averted through concerted global action – not in 30 years' time, but over the coming decade. Bold policies, informed public debate and decisive political leadership are critical, yet many countries – New Zealand among them – have been slow to act.

With contributions by more than 30 leading scientists and policy experts, from New Zealand and elsewhere, this book will increase public understanding about climate change and help to develop robust, effective policies. It presents the latest scientific evidence, examines the likely impacts of climate change on New Zealand and the Pacific, and outlines a range of policy solutions. It is based on a major Climate Change and Governance Conference held in Wellington in March 2006.

The overwhelming message is one of urgency, but also optimism: it is not too late to make a difference.

Published in November 2006 by Victoria University Press in association with the Institute of Policy Studies, School of Government and the School of Geography, Environment and Earth Sciences at Victoria University of Wellington.

Paperback, 350 pages, $39.95
To obtain a copy of *Confronting Climate Change: Critical Issues for New Zealand* with an invoice please email, phone, fax or mail your order to Institute of Policy Studies, Victoria University of Wellington, PO Box 600, Wellington, New Zealand, email ipos@vuw.ac.nz, telephone +64 4 463 5307, fax +64 4 463 7413

This journal is produced as a publication of the School of Government, through the Institute of Policy Studies (IPS). The IPS was established in 1983 as part of Victoria University of Wellington, New Zealand, and is now situated in the VUW School of Government. The Institute exists to promote study, research and discussion of current issues of public policy, both international and domestic. As a link between academic research and public policy, it provides opportunities for independent, detached study and for neutral and informed discussion of issues that are important to New Zealand. This process needs to engage the broadest possible range of informed opinion, and to this end we draw together people from the universities, the public service and the business and voluntary sectors.

ISSN:	1176 - 8797 Volume 3, Number 1 2007

Policy Quarterly (PQ) is targeted at readers in the public sector, including politicians and their staff, public servants and a wide variety of professions, together with others interested in public issues. Its length and style are intended to make the journal accessible to busy readers.

The Co-Editors welcome contributions of about 4,000 words, written on any topic relating to public policy and management. Articles submitted will be reviewed by members of the journal's Editorial Board and/or by selected reviewers, depending on the topic. Although issues will not usually have single themes, special issues may be published from time to time on specific or general themes, perhaps to mark a significant event. In such cases, and on other occasions, contributions may be invited from particular people.

Subscriptions: The journal is available in PDF format on the IPS website: www.vuw.ac.nz/ips/pq. Readers who wish to receive it by email should register as *PQ* subcribers editor-pq@vuw.ac.nz. This service is free.

Those readers wishing to receive *PQ* in hard copy can have it mailed (within Australia and NZ) for a charge of $50 per annum.

Readers may also become Members of the IPS, for an annual fee of $50 (including GST). In addition to email copies of *PQ*, all paid-up members will receive notification of new IPS publications and forthcoming seminars, together with an entitlement to a 25% discount on books and monographs.

For all subscription and membership enquiries please e-mail editor-pq@vuw.ac.nz or post to Institute of Policy Studies, P.O. Box 600, Wellington.

Electronic Access: The IPS directs interested individuals to its website: www.vuw.ac.nz/ips/index.aspx where details of the Institute's publications and upcoming events can be found.

Institute of policy studies

Victoria
UNIVERSITY OF WELLINGTON
Te Whare Wānanga o te Ūpoko o te Ika a Māui

SCHOOL OF GOVERNMENT
Te Kura Kāwanatanga