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

# POLICY Quarterly

Volume 9 – Issue 4 – November 2013

## SPECIAL ISSUE

# Affording Our Future

## Statement of New Zealand's Long-term Fiscal Position

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

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# Editorial Note

This issue of *Policy Quarterly* explores the Treasury's recently released report, *Affording Our Future: Statement on New Zealand's Long-Term Fiscal Position*, and some of the major policy issues raised by this significant document. To set the scene, the first article (which we have co-authored) examines the nature of long-term fiscal planning, why it is important and why making it a legal requirement is desirable. We also explore some of the common objections to, or concerns about, long-term fiscal planning. While noting the need for caution when trying to assess the likely policy preferences and values of future voters, we argue that long-term fiscal planning can be very helpful in highlighting the kinds of spending pressures on the horizon and how policy makers might best respond. For New Zealand, critical issues over the longer-term will include the funding of pensions, health services and long-term care. The article concludes by considering the case for extending the requirement for long-term fiscal planning to other important policy domains, most notably the social and environmental spheres.

Simon Upton, in the next contribution, argues that the Treasury's review of the long-term fiscal outlook should be viewed as an exercise in managing a wide range of risks under conditions of significant uncertainty. He focuses specifically on the risks associated with demographic change (especially population ageing), global environmental pressures (especially natural disasters and climate change), and financial crises. While maintaining that long-term fiscal reviews should enable 'a more measured trimming of the fiscal sails in advance of acute challenges arising', he observes that New Zealand's relative security has contributed to long periods of policy stagnation. Accordingly, he encourages policy makers to act pre-emptively rather than waiting until they have no choice but to respond due to fiscal pressures – when their options may well be much more limited.

Sir Michael Cullen's contribution is significant, not least because he served as finance minister for nine years and oversaw the passage of the Public Finance Amendment Act which ushered in the requirement for long-term fiscal planning. He analyses some of the main conclusions in *Affording Our Future*, giving particular attention to the greatest opportunities for long-term fiscal adjustment, not least the options for raising additional revenue and the possible ways of reforming New Zealand's current retirement income provisions. His various suggestions with respect to pensions policy deserve careful scrutiny and debate. Above all, he urges policy makers not to leave our children and grandchildren with harder choices than we are prepared to make ourselves. This means engaging now in intelligent debate on how to meet future challenges – not wait another decade or more.

Colin James' contribution considers how adjustments for the future might be made in a representative democracy where politicians are subject to frequent elections and intense short-term pressures. In so doing, he examines the likelihood of generating a parliamentary consensus on the handling of long-term issues, as well as alternative modes of decision-making, namely extra-parliamentary mechanisms for reform. More specifically, he discusses the possible merits of citizen initiated referenda, national conventions, parliamentary petitions and other formal and semi-formal mechanisms of reform. He concludes that a transparently representative citizen's assembly might be the most promising option.

Nicola Kirkup, in her contribution, addresses the long-term fiscal challenge posed by the design of New Zealand superannuation (which provides a universal, taxable pension to all those aged 65 years and over). With the proportion of the population over 65 steadily increasing, the fiscal cost of the current scheme will inevitably increase, rising from around 4% to almost 8% of GDP by mid-century. Accordingly, her paper explores the various options for reducing these costs and assesses their respective merits. While views on which approach is 'best' are bound to differ, it is critical that the debate is informed by the best available evidence and clarity over the implications of the different options.

Funding public health care has always been a challenge, and the future will be no different. In their contribution, Nick Mays and his colleagues discuss the nature and scale of the fiscal challenges posed by rising health expenditures and how these might be addressed. They advocate a shift in priorities away from acute care towards a greater focus on primary care.

Paul Sherrell's contribution scrutinises the conclusions in *Affording Our Future* with particular reference to the justice sector (especially prisons). He notes that while the justice sector has experienced a rapid escalation of costs over the past decade or so, some of these cost pressures are now easing. In particular, the fall in the crime rate and the number of people entering the criminal justice pipeline provides the sector with a chance to modernise service delivery models and free up underutilised resources for redistribution to priority areas. Hopefully, the sector can seize this opportunity and thereby reduce New Zealand's disturbingly high imprisonment rate.

The next article provides a youth perspective on New Zealand's long-term fiscal position by exploring the responses of 27 young people (participants in the 2012 LongTermNZ workshop) to the Treasury's statement. Written by two of these students, it explores how the Treasury can better engage young people in a conversation surrounding the long-term health and viability of the New Zealand economy and outlines some of the policy conclusions reached by the participants in the LongTermNZ workshop.

The penultimate article, by Miriam Chaum, explores the long-term fiscal challenges and opportunities generated by New Zealand's diverse natural resource sector. The paper focuses on three important and controversial policy issues: the mining of fossil fuels; freshwater management; and mitigating climate change. In each case, there are major challenges for policy makers. Failure to address these challenges successfully will have profound implications – and not merely of a fiscal nature; at stake is the well-being of countless generations.

Finally, in the interests of stimulating debate on important contemporary policy matters, this issue of *Policy Quarterly* includes a response by Ernest Albuquerque to an earlier article by Michael Pickford on state highway investment. We are also publishing a short comment by Michael on Ernest's response. We will leave it to readers to assess the merits of their respective arguments.

**Jonathan Boston and Rebecca Prebble**

Jonathan Boston and
Rebecca Prebble

# The Role and Importance of Long-Term Fiscal Planning

Many countries now require the regular publication of long-term fiscal projections, looking at the potential long-term costs of government spending programmes (see Anderson and Sheppard, 2009). In New Zealand, section 26N of the Public Finance Act 1989 (as amended in 2004) requires the Treasury to publish a Statement on the Long-Term Fiscal Position at least every four years. Under the act, such statements must look out at least 40 years.[1] Their contents are the responsibility of the secretary to the Treasury (rather than the minister of finance), and the Treasury is required to use 'its best professional judgments' in assessing the fiscal outlook and potential risks.

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It is also obliged under the act to ensure that 'all significant assumptions underlying any projections' are included in the statement. Aside from these parameters, the act is silent on the matters to be covered, giving the Treasury considerable flexibility over the process employed to produce such documents, including the nature and extent of any consultation with external experts, the wider policy community and interested stakeholders.

Since the requirement for such statements was introduced in 2004 the Treasury has published three reports. The most recent of these – *Affording Our Future* – was released in July 2013. Against this backdrop, this article considers:

- the nature of long-term fiscal planning;
- why long-term fiscal planning is important;
- why a legislative requirement for such planning is desirable;
- whether long-term fiscal planning actually achieves its goals;
- some of the uncertainties involved in long-term fiscal planning; and
- the potential for long-term planning in areas beyond fiscal ones.

**What is long-term fiscal planning?**

This article uses the expression 'long-term fiscal planning' as a general term to refer to the Statements on the Long-Term Fiscal Position that the New Zealand Treasury publishes as well as similar reporting requirements in other jurisdictions. 'Planning' is a word that can mean different things in different contexts, of course. Perhaps most commonly, it tends to imply a clearly sought outcome along with steps to get there. However, we use 'planning' in a looser sense here. Hence, long-term fiscal planning includes projecting what the future might hold given a number of reasonable assumptions; it is not restricted to mapping out what steps might be necessary to reach a particular outcome.

Long-term fiscal planning attempts to get a sense of possible future demands on government resources. It involves looking at current spending programmes and assessing their potential future costs. The methodology for the New Zealand Treasury's production of regular Statements on the Long-Term Fiscal Position involves assuming that current legislative and policy settings will remain the same and that historic per capita growth rates in different spending areas (both operating and capital) will continue. These assumptions are combined with other assumptions about likely future demand for different government spending areas in the future. Factors like the performance of the economy and the age structure of the population affect that future demand. Together, these assumptions give a picture of how different spending areas might grow or shrink in the future if current policy settings do not change. Additionally, they provide guidance on projected trends in aggregate levels of public expenditure.

The Treasury also includes assumptions about revenue, assuming a relatively constant revenue stream (as a share of GDP), based on average historic tax takes relative to GDP. The combination of 'no policy change' scenarios on both the spending and revenue side give a sense of whether, and the extent to which, current policy settings on either the spending or revenue side (or both) may need to change in the future to avoid a funding gap.

In New Zealand there is no explicit requirement for the government to respond to the Treasury's regular Statements on the Long-Term Fiscal Position. In practice, however, governments do tend to respond in some fashion. For example, Bill English, the current minister of finance, released a press statement in response to the Treasury's 2013 statement (English, 2013). More formally, it has become practice for the Fiscal Strategy Report, the government's primary document for communicating the details of its fiscal strategy,[2] to contain a section addressing long-term fiscal pressures as described in the most recent Statement on the Long-Term Fiscal Position. These sections help readers marry the outlook for the next 40+ years with the more medium-term focus of Fiscal Strategy Reports.

As noted above, alluding to the Treasury's long-term fiscal projections in Fiscal Strategy Reports is not mandatory. But a recent addition to the fiscal responsibility principles in part 2 of the Public Finance Act ought to reinforce the practice. The Public Finance (Fiscal Responsibility) Amendment Act 2013 introduced a new principle of responsible fiscal management that governments should, when formulating fiscal strategy, 'consider its likely impacts on present and future generations'. The aim of the new principle is to ensure that governments consider the long-term implications of their fiscal policies and explain those implications.

**Why is long-term fiscal planning important?**

Long-term fiscal planning often reveals that the long-term costs of some government spending programmes are quite different – often more expensive[3] – from their short-term costs. A programme that might have been relatively cheap when it was introduced can have features that mean its costs increase over time. A programme that becomes more expensive in the future implies that other spending areas will need to be squeezed or more revenue will need to be raised if the programme is to continue. Increasing revenue or squeezing other spending areas might not reflect the preferences of the electorate. In that case, changes will be necessary to alter the long-term trajectory of the programme at issue.

In a sense, simply the fact that changes to a programme will eventually be necessary is not a reason for long-term planning. After all, changes can be made when they become necessary and not before. But often the kinds of policy changes necessary will require some lead time to give people time to plan for possible new arrangements. In addition, a government that acknowledges that changes will be needed sends a signal to lenders, households, and firms that it can be trusted to address fiscal pressures appropriately, giving people confidence in that government's future solvency. And changes that are planned well in advance and follow an informed public debate tend to be less disruptive – and less prone to reversal later – than sudden changes.

**And changes that are planned well in advance and follow an informed public debate tend to be less disruptive – and less prone to reversal later – than sudden changes.**

The desirability of long-term planning is particularly clear in the case of state pensions. The Treasury's 2013 Statement on the Long-Term Fiscal Position projects that if current policy settings remain the same, the government will go from spending just over 4% of GDP on New Zealand Superannuation in 2010 to about 8% of GDP in 2060.[4] It does not necessarily follow that we should expect to see policy changes – after all, many OECD countries already spend more than 8% of GDP on state pensions.[5] But assuming that changes to New Zealand Superannuation policy were deemed to be desirable, governments should introduce reforms slowly and after an informed public debate.[6] People rely on having a more or less certain stream of income when they decide to stop working and make decisions about how much to save over the course of their working lives based on that reliance. Any changes to New Zealand Superannuation, therefore, would need to be signalled well in advance of actually coming into effect. Long-term fiscal planning also allows time to build consensus around what kinds of changes are best, leading to less likelihood of policy reversals.

In relation to public health care, the other main area in which the Treasury's long-term fiscal projections show significant pressures,[7] the benefits of early warning are less cut and dried. Even if we decide as a society that the increases in public health care spending the Treasury projects are undesirable, it is not immediately obvious what we might do to avoid them. There are some possibilities, like increasing the use of patient co-payments and limiting the coverage of the public system, as well as trying to find more efficiencies, but the fiscal impacts of these options are difficult to quantify.[8] And the impacts that such changes might have on any one individual's circumstances are impossible to know in advance. Having said that, an understanding of what the public health system is likely to look like in the future could well affect people's short-term decisions, such as whether to buy health insurance.

While their role of helping individuals plan for the future is more limited, projections for future health care spending serve the important task of putting current and future governments on notice that policy changes will be necessary if they do not want to see public health care spending growing significantly as a share of the economy. Of course, some governments may see proportionately higher health care expenditure as desirable, at least relative to the alternatives. But in that case they will need to make trade-offs elsewhere, either by accepting higher taxes or by reprioritising within the existing fiscal pool. If the public is reasonably well-informed about long-term fiscal pressures, it ought to be easier to judge and debate what sorts of trade-offs might accord best with society's preferences.

**Why is a legislative requirement for long-term fiscal planning considered desirable?**

While New Zealand's requirement for the regular production of a Statement on the Long-Term Fiscal Position was introduced in a 2004 amendment to the Public Finance Act, the New Zealand Treasury has in fact had a model capable of producing long-term fiscal projections since well before 2004, and from time to time either the Treasury or the government has published such projections (for example, Janssen, 2002). A legislative requirement is useful, however, for making sure that long-term fiscal planning actually happens. Politics and policy analysis are often taken up with urgent issues, leaving little time or resources for long-term thinking. Despite the usefulness and importance of long-term planning, time and resource constraints can mean that it will not necessarily happen.

Furthermore, governments might have incentives to avoid confronting the issues that long-term planning uncovers. In the context of long-term fiscal planning, often the planning process reveals that certain government spending areas are likely to become more expensive in the future. Governments can then come under pressure to say what they intend to do about these rising costs – an issue that governments might prefer to avoid.

A legislative requirement to carry out long-term fiscal planning on a regular basis both makes sure that work happens even when there are more immediately pressing issues and also removes the temptation to prevent publication for reasons of political convenience. Accordingly, it provides for greater certainty and is likely to increase the overall quality of public debate.

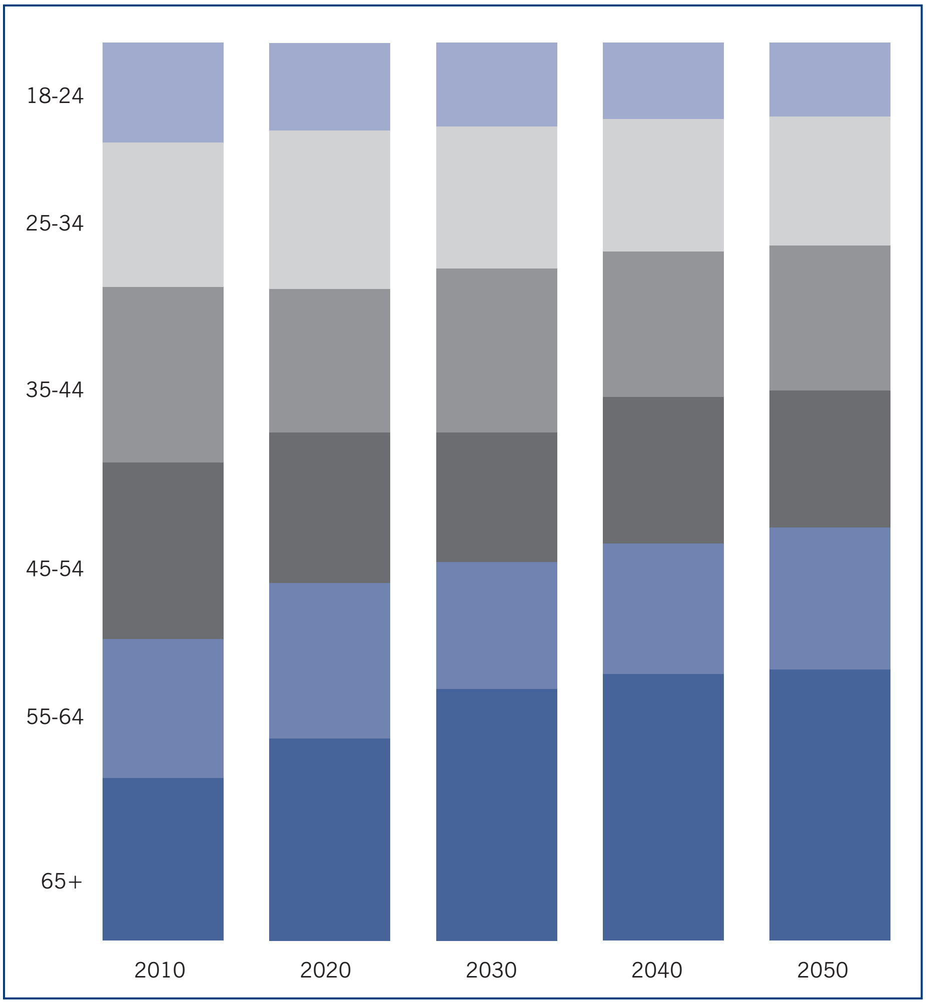
**A core assumption underpinning long-term fiscal planning is that if the facts about possible future trajectories are known, people will make short-term decisions that ought to lead to better long-term outcomes.**

**Does long-term fiscal planning work?**

A core assumption underpinning long-term fiscal planning is that if the facts about possible future trajectories are known, people will make short-term decisions that ought to lead to better long-term outcomes. But this rationale encounters some practical problems and is open to a number of objections. The most significant problem is that the people responsible for making short-term decisions are often not those who will eventually experience the long-term outcomes of those decisions, e.g. 20–40 years later. Taking the interests of people in the future into account often involves some cost to voters now. Even with better information, voters do not necessarily have incentives to support measures that they perceive to be against their own interests.

This problem has been described as a political asymmetry – an imbalance of political power between political actors.[9] There are different kinds of political asymmetry. For instance, a voting

**Figure 1: Projected New Zealand elector count by age group (% of total)**




Source: Treasury (2013), using data from Nolan et al (2012)

asymmetry is essentially the fact that young people and people not yet born cannot vote, so their views are not directly taken into account in a democracy, yet such people will be directly affected in various ways by the choices of those who are currently able to vote and make decisions on public policy matters. In many situations a cost-benefit asymmetry may also be in evidence – namely, the fact that the costs and benefits of different policies may fall on different groups (and/or over different time periods).[10] Together, these asymmetries have obvious implications for long-term fiscal policy. Superannuation policy is a particularly good example. In New Zealand, current superannuation payments to those aged 65 and over are funded by the current cohort of taxpayers: that is, the people who receive superannuation payments are by and large a different group of people from the group who pays for them. (There is some overlap, of course, as many over-65s pay significant amounts of tax.) And any adjustments to New Zealand Superannuation realistically (if not legally) have to be made well in advance, meaning that a cohort of people must vote to reduce what will eventually be their own entitlements, without necessarily any offsetting personal gain. The projected age profile of voters in New Zealand out to 2050 (see Figure 1) gives little comfort in this regard. Simon Upton's and Michael Cullen's contributions to this issue of *Policy Quarterly* also make this point.

The case of New Zealand Superannuation can be extended to long-term fiscal planning more generally. 'Doing something' about long-term fiscal pressures might involve asking a group of voters to accept some cost – perhaps not a huge cost, but still one that people will notice – for a future gain which may largely be enjoyed by others. We can draw an analogy with climate change mitigation policies: initiatives to reduce the likely magnitude and impacts of human-induced climate change tend to require sacrifices on the part of current voters, with the benefits (in the form of reducing ecological damage and lower adaptation costs) being felt by future generations. In such contexts there is legitimate room for scepticism about the extent to which just providing information can be effective. Indeed, with respect to climate change, the international evidence thus far is that very few governments have been willing to impose significant short- to medium-term costs – via some kind of market-based instrument (e.g. an emissions tax or an emissions trading scheme) – on current voters in order to reduce greenhouse gas emissions.

However, in the area of long-term fiscal planning, the problems of political asymmetry might be over-stated. The time horizon over which countries carry out long-term fiscal planning is actually not that long: it is 40 years in New Zealand, and most other countries take comparable time periods. Many of the people who will bear the cost of any short-sighted decisions made in the near term are already both alive and voting. The current cohort of people aged 18–30 is aware of long-term fiscal issues and is making its views felt: Susie Krieble and Finn O'Dwyer-Cunliffe's article in this *Policy Quarterly* issue is an example. Even voters who are unlikely to be significant taxpayers in 40 years' time still have reasons to care about those who will be large taxpayers in future decades. Voting now for policies that, for example, imply much higher taxes for future taxpayers is risky. Future taxpayers are likely to have many options other than living in New Zealand, so there is no guarantee that such people will stay and keep paying taxes they perceive to be unfair. A New Zealand that loses a chunk of its workforce will be unable to maintain high transfer payments, regardless of whether a large proportion of the electorate would vote for them. Thus, even a very narrow-minded voter who cares only about what he or she personally pays to and receives from the government should consider the impacts the policies they favour might have on others.

Furthermore, the picture of a narrow-minded voter who cares only about what he or she personally pays to, and receives from, the government is, in our view, an overly pessimistic representation of most people. Most people care about people other than themselves – they care about their children and grandchildren, for example. There are also many instances in history of societies making decisions that seem to go against the short-term interests of most people in those societies. Colin James, in his paper to the Affording Our Future conference, gave the examples of the abolition of the slave trade, and the British Reform Act of 1832 widening the franchise (James, 2012). The point is that with enough information, people can and do make what seems to them to be the right decision even when it appears to be contrary to their own interests.

That is essentially the rationale behind the publication of long-term fiscal planning documents. Simply providing information does not force anyone to do anything about what the information reveals. But providing information gives people the opportunity to consider what problems are on the horizon, what policy options are available to address these problems, and what the long-term impact of their choices could be.

#### Is long-term fiscal planning accurate enough to be useful?

Long-term fiscal planning can be criticised on the basis that the time horizons it involves – four decades in New Zealand's case – are too long for it to produce any useful information. After all, consider how many unexpected things have happened over the last 40 years, and how much they have changed the course of our lives. Given the inherent unknowability of the future, can long-term fiscal planning really say anything useful about what might happen over the next 40 years?

This critique, however, misunderstands the purpose of long-term fiscal planning. Such planning does not attempt to predict the future, but rather aims to show the likely long-term fiscal implications if current trends continue. The fact that policy settings might change, so that those projections do not eventuate, is explicitly taken into account. In fact, to some extent that is the whole point of such planning.

Having said that, in the process of projecting the potential future fiscal impacts of current policies, long-term fiscal planners need to make some *predictions* about what might happen in the future.[11] In the case of the potential future path of spending on public health care and New Zealand Superannuation, modellers need to incorporate predictions about factors that affect demand for that spending. Here is one place where uncertainty creeps in.

Projecting future demand for New Zealand Superannuation, assuming current policy settings, is relatively mechanical: it is driven by the number of people aged 65 and over in each year between now and 2053 (although the Treasury's projections actually go out to 2060). All of the people who will be 65 or over between now and 2053 are already alive. Certainly, some of those people will die before the end of that period, and we do not know exactly how many, but we have a pretty good idea of the general range.

Projecting the future costs of public health care involves more uncertainty. The Treasury's projections of the possible fiscal path of public health care rely heavily on the rate at which spending on public health care has grown in the past. The future might be quite different from the past. Technological changes might make it easier to treat more people more cheaply; alternatively, some new forms of health treatment might be very expensive, and/or medical conditions such as obesity may become more common across the population, thus generating significant additional demand for health services.

The difficulties in projecting future public health care spending are a specific example of a more general difficulty: that is, there are many things that might affect future demand for spending, whether on education, welfare, law and order or other areas, that we simply cannot predict. Thus the Treasury's projections have significant uncertainty bands around them.

#### Should we be better at long-term planning in areas beyond the fiscal?

Most of the arguments in favour of long-term fiscal planning apply equally well to long-term planning in general. We might not be very good at predicting the future accurately, but by thinking about what it might bring we give ourselves options. But whereas long-term fiscal planning in New Zealand is relatively well-established with the legislative requirement for the Treasury to produce Statements on the Long-Term Fiscal Position, long-term planning in other areas is more piecemeal.

**... long-term fiscal planning in New Zealand is relatively well-established with the legislative requirement for the Treasury ... long-term planning in other areas is more piecemeal.**

Two areas where better long-term planning might be useful in New Zealand are social trends and environmental trends. Neither kind of long-term planning would be exactly like long-term fiscal planning, but they could be beneficial all the same. Long-term social planning might look at current social trends and their likely future impact, assessing how the future role of the government might need to change in order to respond to them. Long-term environmental planning could look at a range of possible long-term environmental outcomes, some of which might depend on actions we take now. Long-term thinking in these areas is admittedly challenging, and risks being wrong, but it is possible. The OECD, for example, recently published its *Environmental Outlook to 2050*, which looks at key social, demographic and economic trends and what these are likely to mean for the natural environment (OECD, 2011).

It is arguable that recent changes to the State Sector Act 1988 nudge government departments towards taking a more long-term view. Departmental chief executives are now responsible for 'the stewardship of a department ... including its long-term sustainability, organisational health, capability, and capacity to offer free and frank advice to successive governments' (section 32(1)(d)). 'Stewardship' is defined as 'active planning and management of medium- and long-term interests, along with associated advice' (section 2). The introduction of the notion of 'stewardship' recognises that while government departments must act primarily in accordance with the wishes of the government of the day, they also have broader responsibilities to the country more generally, both now and in the future. Making sure that they are ready to address the issues of tomorrow as well as today is part of that broader role.

Giving effect to these new stewardship requirements will probably require changes to current practice. As Iain Rennie, the state services commissioner, has pointed out, departments are 'very good at responding to the demands of ministers and the here and now' but 'much less good at thinking about the long term and the various dimensions of that' (Rennie, 2013). Thinking about long-term issues does not necessarily require formal or regular reporting, but examples from other countries or multinational organisations can give some guidance about how to give effect to a stewardship culture.[12]

## Conclusion

Looking at long-term fiscal issues is a well-established practice in New Zealand. Long-term fiscal planning gives us warning about what kind of spending pressures might be on the horizon and what we might do about them. Admittedly, 'doing something' about future spending pressures must confront a political asymmetry problem, as the people making the decisions are not necessarily the same as those who will feel the effects of those decisions. But there is reason to hope that long-term fiscal planning can still be effective. An emerging opportunity for New Zealand will be incorporating the broad techniques employed for long-term fiscal planning into thinking about the future more generally.

1 The expression 'long-term' can have a number of different meanings. Forty years makes sense in the context of the Statement on the Long-Term Fiscal Position, being a long enough time period to get a sense of potential future costs of different programmes, but not so long as to make any projections meaningless. Even within the Public Finance Act, 'long-term' has different definitions, reflecting different purposes. For example, section 26J requires governments to set out their 'long-term fiscal objectives' in the annual Fiscal Strategy Report, where 'long-term' means at least ten years.

2 The government publishes a Fiscal Strategy Report along with each Budget. Fiscal Strategy Reports are required by section 26J of the Public Finance Act 1989.

3 It is not the case that all spending programmes become more expensive over time, however. For example, as discussed in Paul Sherrell's contribution to this issue of *Policy Quarterly*, current projections show expenditure in the justice sector declining as a share of GDP if current trends continue.

4 This number is simply gross New Zealand Superannuation payments; it does not include KiwiSaver contributions from the government and does not net off the tax people pay on New Zealand Superannuation payments.

5 For example, the Euro area average was around 10% of GDP in 2010 (Upton, 2012).

6 Nicola Kirkup's contribution to this *Policy Quarterly* issue describes and assesses some potential changes to pension policy.

7 Treasury's 2013 Statement on the Long-Term Fiscal Position projects public health care spending to grow from 6.8% of GDP in 2010 to 10.8% (approximately) in 2060.

8 Mays et al., 2013, in this *Policy Quarterly* issue, elaborate on the difficulties of predicting the actual impacts of 'cost saving' public health care measures. For example, increasing the use of co-payments could discourage people from seeking certain kinds of care, meaning that they need more expensive care later as their health deteriorates.

9 The concept of political asymmetry is explained in Boston and Lempp (2011).

10 The voting and cost-benefit asymmetries are two of four democratic asymmetries identified by Wolf (1987). The other two are the interest group asymmetry and the accounting asymmetry.

11 A 'prediction' or 'forecast' is the forecaster's best guess about what will probably happen over a particular time period. While forecasters are aware that reality will probably be somewhat different from their forecasts, and maybe wildly different, a forecast is still intended to be a prediction of what will actually happen, given what we know now. In contrast, a projection merely states what *would* happen if certain assumptions turn out to be true. A projection need not bear any close resemblance to what actually unfolds and it is not a criticism of a projection that it turned out to be 'wrong' (whereas a forecast could be criticised on that basis).

12 The controller and auditor-general currently has a work programme that involves helping the public sector plan for New Zealand's future needs, with particular reference to a changing demographic structure but also taking into account other ways in which the future might be different from the present. So far the auditor-general has produced three reports as part of this work programme: *Commentary on Affording Our Future: Statement on the Long-Term Fiscal Position, Public Sector Financial Sustainability* and *Matters arising from the 2012-2022 Local Authority Long-Term Plans.* These reports are available at www.oag.govt.nz. Further publications are planned for 2013.

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Simon Upton

# Fiscal and Other Risks over the Long Term

After 13 years' absence from any involvement in public life in New Zealand it has been a welcome challenge to re-immerse myself in issues with which I used to be familiar. I'd like to focus this article on why we should see the Treasury's review of the government's long-term fiscal outlook as an exercise in managing a wide range of risks under conditions of significant uncertainty; and how, from a political point of view, one might seek to stop the need for fiscal prudence sliding off the radar screen.[1]

## Managing risk and uncertainty

### *Demographic transition*

The issue of retirement income places the demographic transition we're undergoing into sharp relief. The fact that the trajectory of ageing can be so precisely quantified, and the impacts modelled, lends a misleading sense of certainty to this whole debate. The phenomenon is painted as inexorable, quantifiable and manageable. In one sense it is, but we should also reflect on how unfamiliar the future might be. The world has never experienced ageing on the scale we're about to live through.[2]

Demographic ageing is not just a developed-country phenomenon. China will shortly start to age, before ever having fully developed. That ageing will occur in the most urban world we have ever experienced: from 30% urban, 70% rural in 1950 we will by 2050 have exactly reversed those proportions (United Nations, 2011). Excluding political or biological disaster (and those cannot be discounted), it will also be the most mobile world ever, raising profound questions about identity. We all know this but we don't really understand what it will entail, which is why I feel instinctively nervous about telling people that we can engineer particular outcomes.

### *Global environmental pressures*

Geopolitical, social and environmental trends mean that the world in which future taxes and dividends are struck will differ significantly from the context in which current entitlements have been established. While we can describe the plausible direction of a number of these trends, the risks around them are not sensibly quantifiable. That doesn't mean they can be ignored.

A much larger economy will place increasing pressure on the planet's capacity to absorb waste and supply vital ecosystem services.[3] Needless to say, New Zealand will become an even more vanishingly small element of a much less familiar geopolitical world. No country will be immune from the global environmental pressures of such a world, the impacts of which will be transmitted directly (as in the case of climate change) or indirectly (through declining environmental quality affecting global

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supply chains for goods and services).[4] In some cases (notably airborne pollution) the ageing profile of OECD populations will place them at particular risk.

As an open economy, New Zealand can expect to feel the consequences of rising resource scarcity and environmental damage through trade linkages and directly experience the local consequences of globally-induced climate change. Depending on the severity of environmental pressures, New Zealand could become an increasingly desirable destination for migrants, as well as benefit from demand for the biological output of its resource base in a world needing more food.

The global scale of potential climate change has reinforced the impression that environmental change is the most likely source of catastrophic risk. This may not be so. For a carefully measured assessment of the relative orders of magnitude that can reasonably be attached to known risks, Smil (2008) is essential reading. On the basis of a rigorous assessment of the known statistical level of exposure to risk of fatality caused by large-scale catastrophic events, Smil identifies only one risk emanating from the natural world – a viral pandemic – to which a high probability of mortalities in the region of 100,000 can be attached within the next 50 years. He ascribes a similar level of probability to a mega-war (defined as a 'potentially massive armed confrontation').

*Natural disasters and climate change*

Then there are natural hazards. New Zealand's vulnerability to seismic and volcanic events is well known. I barely need to mention this after the Canterbury earthquakes. Natural disasters have the potential to impose economic shocks that knock New Zealand's growth prospects and thereby undermine the government's ability to raise tax revenue. Prudentially, New Zealand's geological endowment requires the government to run its finances on the basis that it will have to face recurrent fiscal burdens in the same way countries like the Netherlands face water management expenditures, or other countries face significant defence expenditures for geopolitical reasons. A similar reasoning applies to New Zealand's relatively high exposure to biological risk given the biological base of the economy.

**One specific source of economic vulnerability for New Zealand is its external indebtedness position and the risk of a 'sudden stop' in capital inflows if foreigners turn off New Zealand as an investment destination.**

While not a 'natural' disaster in the same sense, anthropogenic climate change poses unknown but potentially significant economic risks within the horizon under consideration. Significant climate change is already locked in and global emissions trajectories suggest that the chances of holding average global temperature increases to 2 degrees are fast dwindling. The global community faces a choice in the next decade of either acquiescing in significant climatic disruption or costly adjustment because of the failure to take comprehensive measures over the last 20 years.

As with many countries, New Zealand's stated acknowledgement of the risks is not matched by actions that can significantly reduce those risks. While the costs of placing economies at a competitive disadvantage from acting unilaterally are prominently advertised, the costs of a collective failure to act are discounted. This is a long-run challenge that will not go away, and the costs that will be encountered either adapting to the consequences or trying to limit their extent are likely to weigh on future growth. This places a further question mark over future growth scenarios based on benign assumptions about the physical world.

*Financial crises*

One other class of risk to smoothly advancing prosperity deserves comment: financial crises. The financial sector is capable of delivering shocks with every bit as much impact as natural disasters. Such shocks can swiftly impose constraints on a government's fiscal position for many years.

Economic crises are not rare events. A recent study estimates that since 1970 there have been a total of 147 banking crisis, 218 currency crises and 66 sovereign debt crises. As the world is now well aware, this is not just an emerging markets phenomenon. Thirty-one of the 34 current OECD members have experienced at least one systemic banking crisis since 1970, and 32 have experienced at least one of a banking, currency or sovereign debt crisis over that period (Laeven and Valencia, 2012).

Against this backdrop New Zealand is fortunate not to have been among those having experienced a banking crisis, although this may be as much a consequence of prudent Australian regulation governing our largely Australian-owned banking sector as of local conditions. Serial failures by other New Zealand financial intermediaries over the last 30 years have destroyed a significant share of private savings, which suggests that New Zealand has lacked important management skills and has failed to regulate appropriately. There is no room for complacency.

One specific source of economic vulnerability for New Zealand is its external indebtedness position and the risk of a 'sudden stop' in capital inflows if foreigners turn off New Zealand as an investment destination. Encouraged by New Zealand's economic performance and prospects, sound institutions and policy settings, foreign investors have been willing to fund New Zealand's sustained current account deficit. This has seen the net international investment position expand to a net liability of over 70% of GDP (Statistics New Zealand, 2012a). Good management and a bipartisan track record of taking unpalatable political decisions when required has shielded New Zealand from greater investor scepticism. However, investor sentiment cannot be assumed to be unshakeable. A significant and sustained negative reappraisal of New Zealand's risk profile could see GDP and employment fall as activity contracts and the fiscal position deteriorates. Only our institutions (like the policy debate this article is contributing to) and political probity keep those prospects at bay.

**Policy institutions**

New Zealand policy makers are not alone in pondering what long-run trends mean for fiscal sustainability. The demography of OECD countries coupled with the rapidly increasing economic weight of emerging economies means that they are beginning to face competition for capital, resources and skills from a much less advantageous position than they have been accustomed to. What distinguishes New Zealand from many OECD countries is the fact that this enquiry is not taking place in response to an immediate fiscal or economic crisis but as part of an institutionalised process of periodic review. This, combined with the relative intimacy of New Zealand society and its less polarised political landscape, should enable a more measured trimming of the fiscal sails in advance of acute challenges arising.

Whether or not this happens is, of course, another matter. New Zealand's relative security has led to long periods of policy stagnation which, nevertheless, seem able to be surmounted when a crisis threatens. The crisis of the 1980s led to a remarkable policy response and the expenditure of a large amount of political capital (in terms of trust in political institutions). Rebuilding that trust has been a slow, hard-won business.

The temptation now is to consolidate rather than take action. But the future is less accommodating than it was 30 years ago. New Zealand was one of the first OECD economies to promote a radical break with the postwar mixed economy consensus. While all OECD countries faced difficulties in the aftermath of the oil shocks of the 1970s, the crisis of public finances New Zealand faced was exceptional. Structural reform to promote growth played into a global economic outlook that, while difficult, was not plagued by the synchronised resort to austerity measures currently being experienced. There was room for a small open economy to exploit growth opportunities in a global marketplace that was expanding as trade barriers fell. Difficult structural adjustments could be pursued in a less demanding global climate. Many of New Zealand's OECD partners still had relatively strong national balance sheets.

**Retirement income is only one driver of the emerging fiscal pressures and it would be unfortunate if the debate around New Zealand's long-term fiscal outlook became all about retirement income.**

In addition, a demographic 'window' was opening in which the demand for spending on the school-age cohort was moderating without any immediate increase in the population of retirees. Reversing an exceptionally low age of pension entitlement also managed to defer the worsening of the old-age dependency ratio (see note 2) by seven or eight years. That window has now closed. New Zealand faces the need to keep public debt levels under control and ensure that sound policy supports continued access to global capital markets by New Zealand businesses against the backdrop of the worst global economic recession in two generations and worsening demographic trends.

*Retirement income*

A changing demographic structure presents a number of challenges in terms of what the state provides, to whom, and whose taxes fund it. Retirement income – primarily New Zealand Superannuation[5] – has been a particular lightning rod. Because the decision to pay pensions out of taxes relies on expenditure decisions that will be voted by elected officials far in the future, no one can say with certainty how a future parliament will regard any intergenerational bargain purportedly made on its behalf decades before its own election. Encouragement of savings provides a way for people to spread the risks by relying not just on future taxpayers but on returns from privately-invested capital. But again this is not without risk. Thirty or forty years from now, as savers set out to call in their annuities they will, with retirees around the world, find themselves in competition with relatively fewer workers whose bargaining position will be stronger, and the owners of industry whose views about dividend payments may not match those of pension fund managers.

A more numerous retired population might be expected to seek to secure the election of a parliament that broadly represents its interests. But elections are an extremely imperfect mechanism for securing particular preferences. In deciding on the level and incidence of taxation, politicians are at the centre of a contest between the (partially overlapping) interests of the owners of capital (seeking dividends), workers (seeking remuneration) and voters. The outcome of the particular forces at work in some future economic and political setting is simply unknowable. All one can say is that for today's working-age population to assume that rising claims on taxpayers will be met in the future on the basis of current sentiment would be very risky.

The most cautious way to minimise these risks would be through a phased increase in the age of eligibility for

New Zealand Superannuation to match increasing life expectancy. A more ambitious approach would, in addition, consider an element of targeting. It might even seek to progressively establish a somewhat lower level of payment in relation to prevailing wages. Communicating the desirability of savings is an essential element of any such rebalancing of taxpayer risks, although I do not support making saving compulsory and I worry about the practicalities of targeting.

*Other emerging fiscal pressures and potential opportunities*

Retirement income is only one driver of the emerging fiscal pressures and it would be unfortunate if the debate around New Zealand's long-term fiscal outlook became all about retirement income. It is the wider bundle of services that needs to be considered, and the resilience of the economy and the tax system to meet the claims that are likely to be made of elected officials. Taking a wider view would lead one to focus as much concern on the apparently inexorable increase in foreign claims on output (through accumulating balance of payments deficits) as on particular government expenditure trends. As net borrowers, New Zealanders face the real possibility not only that governments may not deliver the social dividends they hope for but that access to the capital needed to generate new streams of income may be significantly limited.

An optimistic forward-looking scenario would see global demographic trends as ultimately playing into New Zealand's hands. A world with two billion more inhabitants within little more than a generation and widespread demand for more food on the part of a growing global middle class can only play to New Zealand's strengths as a food producer. In that case, the rents from increasingly scarce soil and water might be sufficient to sustain rising living standards for the foreseeable future. The interesting political economy question is whether food producers should be allowed to keep the full benefit of those rents. The case for taxing the rents that soil, water and other resources provide cannot be ignored in a world in which capital and labour are so mobile and resources potentially more scarce.

To this optimistic outlook might be added New Zealand's geopolitical proximity to the region where the largest growth prospects are clustered, China and East Asia. It seems reasonably safe to assume an ongoing rise in Chinese influence in both economic and security spheres. But how far that influence will extend, and with what consequences for a tiny trading country like New Zealand, is impossible to say. China faces a multitude of long-term challenges which place a question mark over the inevitability of its ascent, including 'an extraordinarily aberrant gender ratio, serious environmental ills, the increasing inequality of economic rewards, and its weak soft-power appeal' (Smil, 2008).

These risks and uncertainties provide a compelling rationale for placing public finances on a more resilient basis. The Treasury's 2013 review of the government's long-term fiscal position is well timed. New Zealand is neither so rich (like Norway) that it isn't under pressure, nor so fragile that it is forced to take precipitate action. Many OECD countries are being forced to take steps that are inevitably ad hoc and brutal. New Zealand has, for the moment, the opportunity to act pre-emptively on its own terms rather than in response to external pressures. That relatively benign position will not last. The opportunity should be grasped so that change is not precipitate and citizens and taxpayers can adjust their circumstances with time to spare.

If that is to happen we have to turn a deaf ear to some apparently 'easy' solutions. Over the years a variety of 'painless' remedies have been offered as alternatives to either curbing expenditure or raising taxes (or both) to generate the surpluses needed to reduce the stock of debt. The most seductive is to advocate higher rates of economic growth which will lift all boats, including government revenues. There are two problems with this approach. In the first place, there is no historic track record of the New Zealand economy sustaining a rate of growth higher than 2%. But even if such an economic growth rate were achieved, there is no way of ensuring that a significant share of higher tax revenues could be devoted to debt retirement. Economic growth brings with it rising expectations and ensuing distributional claims.

An alternative remedy often advocated is a much more aggressive inward migration policy. There is a belief that a much larger population would underwrite higher productivity. To the extent that we could count on large numbers of (younger) skilled migrants of working age, a more productive workforce might seem a plausible outcome. But again, there are no guarantees. New Zealand cannot assume that it will be able to attract the people it thinks it wants – we have had 25,000 or more net migrants in only four of the past 60 years (Statistics New Zealand, 2012b). New Zealand does not occupy a global crossroads and so it cannot position itself as some sort of global emporium. Many other economies can offer higher densities of intellectual capital and more exciting opportunities.

Human capital is for me the Achilles heel of New Zealand's future ability to stay afloat. Currently we are managing to cover the outward migration of skills

**The review of the government's long-term fiscal position being led by the Treasury has been both sophisticated in its reach and ecumenical in its invited participation.**

with a matching inflow (Ministry of Economic Development et al., 2011). Very simply, if the human capital pipeline were disrupted, all bets are off. Even if we could significantly out-compete other countries for human capital, it is not a sustainable answer. Migrants cannot be held at arm's length from the matrix of expectations and services that drive public expenditure. Migrants will demand health and education services like everyone else. They will also age. A larger, more vibrant population would very likely contribute to productivity growth, but whether it would be sufficient to reverse the public debt trajectory is another matter.

#### So, how do we make progress from here?

The political conditions for making progress will be optimised if the factual boundaries of the policy debate can be broadly agreed upon and internalised. These cannot encompass strongly normative considerations. A very large element of public policy debate is about the distributional consequences of policy change. This is as true of debates over regulatory reform and property rights as it is of taxing and spending decisions. Those debates are evergreen. But it should be possible to agree that any solution set cannot ignore certain facts. Elected officials could make a constructive contribution to New Zealand's future by accepting that policy options are constrained by the following propositions:

- without policy change, demographic momentum will drive the current fiscal imbalance even further from balance, with a consequent build-up in the stock of public debt;
- recourse to policies designed to enhance productivity, however desirable, cannot alone be relied upon to close the spending gap;
- there are sufficient risks, nationally and globally, to assert that the climate for fiscal consolidation in the future is unlikely to be more benign;
- recent events confirm that sovereign borrowers enjoy no special immunity from the requirement of everyone to live within their means, and that low debt levels are essential if governments are to retain the 'firepower' necessary to respond to costly, unforeseen disjunctive events;
- expenditure control and tax increases, in whatever proportions, are the only certain ways of generating the surpluses needed to bring the stock of debt down to a level at which that sovereign 'firepower' can be protected;
- returning to fiscal balance and reducing debt is best done outside of a crisis context, and agreement on a trajectory and timetable need not preclude a vigorous debate about how to stay on that trajectory; and
- given that policy changes are likely to hold spending and taxing consequences that differ across generations, being able to communicate a clear long-term trajectory is not only more economically efficient; it is also fairer to be transparent rather than leave the future permanently veiled in uncertainty.

**... the current exercise provides more than enough evidence that prudence demands credible and durable responses to the fiscal consequences of demographic, financial and geopolitical trends.**

If a multi-party consensus around 'boundaries' of this type could be agreed, New Zealanders could then turn their minds to the range of policy alternatives on offer from political parties, confident that their long-term security, if not guaranteed, was at least being argued within responsible bounds.

But what are the chances of agreement on 'boundaries' today being respected in debate tomorrow? It is here that some institutional innovation might be useful. The review of the government's long-term fiscal position being led by the Treasury has been both sophisticated in its reach and ecumenical in its invited participation. But it has, inevitably, engaged a policy-literate élite and the Treasury, which serves the government of the day, cannot be on permanent referee duties. For that reason it might be worth entrusting the 'guardianship' of the debate to an independent entity which can comment directly on the consistency of policy settings, with the agreed need to keep debt and expenditure on sustainable tracks.

That need not be an expensive or cumbersome business. The Treasury could, through an amendment to the Public Finance Act 1989, be charged with annually assessing the trajectory of policies currently in place against pre-agreed criteria for fiscal sustainability. That analysis could be made available to an independent 'Fiscal Sustainability Committee', whose job it would be to provide a public commentary on the compatibility of policy settings with desired long-run outcomes.

The terms of appointment, tenure and public outreach of such a committee to secure its independence and authority is beyond the scope of this article. New Zealand's record as a public policy innovator gives some confidence that new approaches could be found given the will. That said, politicians have been jealous about infringements on the exercise of executive power. The fact that New Zealand remains a unicameral system with far fewer moving parts than most democracies is evidence of this. The control of fiscal policy lies at the heart of executive power in New Zealand, and going beyond formal scrutiny to some form of limitation or review would indeed be novel.

Let me conclude by saying that the current exercise provides more than enough evidence that prudence demands credible and durable responses to the fiscal consequences of demographic, financial and geopolitical trends. We don't need more papers on the dynamics that compel this conclusion. We need sustained attention to the conditions that will permit our political institutions to deliver those responses.

1 This article is adapted from a presentation given to the Affording Our Future conference held at Victoria University of Wellington, 10–11 December 2012. The full paper contributed to the conference, 'Long-term fiscal rules: New Zealand's case in the context of OECD countries', is available at http://www.victoria.ac.nz/sacl/about/cpf/events/affording-our-future-conference-2012/papers. The Treasury's 2013 long-term fiscal review is available on the Treasury website: http://www.treasury.govt.nz/government/longterm/fiscalposition/2013.

2 The old-age support ratio, which is the number of people of working age (20–64) per person of pension age (65+), across OECD countries is projected to decrease from 4.2 in 2008 to just 2.1 by 2050. The old-age support ratio in New Zealand is projected to decrease from 4.7 in 2008 to 2.4 by 2050 (OECD, 2011).

3 The baseline case (with no policy change) for the OECD *Environmental Outlook to 2050* (OECD 2012) projects the global economy to almost quadruple by 2050, from $75 trillion to $300 trillion. The OECD's share of the global economy will decline from a little over half of global Gross Domestic Product (GDP) (54%) to less than a third (31%).

4 The OECD outlook's baseline case projects that the world is on course for a 3–6 degree increase in global average temperature by the end of the century (2–3 degrees by 2050), a 55% increase in demand for water (with 40% of the world's population living in areas of severe water stress by 2050), a further 10% decline in biodiversity by 2050, and more than double the number of premature deaths from airborne pollution (particulate matter and ground level ozone).

5 New Zealand Superannuation is a fortnightly payment from the government for people aged 65 years and over. For further information about the policy see: http://www.workandincome.govt.nz/individuals/a-z-benefits/nz-superannuation.html.

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Michael Cullen

# The Political Economy of Long-Term Fiscal Planning from a Social Democratic Perspective

## Long-term fiscal projections

Great care and intellectual power have gone into the process of producing the Treasury's 2013 long-term fiscal projections.[1] Those projections will, no doubt, create some controversy. The assumptions will be open to challenge, as will, even more so, some of the policy conclusions that the Treasury may draw from the exercise. Yet no one should be in doubt that this process has been a much more open and considered one than its predecessors. I enjoyed participating in the Treasury's Long-Term Fiscal External Panel and have been impressed by the calibre of the officials involved.[2]

To engage in producing long-term fiscal projections which push out the forecasts of revenue and expenditure 50 or even 100 years might seem an exercise in either hubris or self-delusion, given the inevitable frailty of whatever assumptions are made. That is especially so when we remember that fiscal forecasts are often well in error even after as short a period as one year, let alone 50. Moreover, both the technical assumptions and any assumed policy responses to developing issues are, of course, deeply intermeshed with the realities of politics, as well as the changing nature of the surrounding society and economy. Most political discourse occurs within a relatively short time frame, which is not simply a function of the electoral cycle. The self-interest of individuals and groups frequently creates barriers to sustaining a longer-term focus.

In the modern world of general political debate a healthy scepticism has been replaced all too often by a pervasive low-grade cynicism which attributes base motives to nearly all activities (except those of political commentators, bloggers and the like, of course). In such a world any of the conclusions arising out of such an exercise as this are too easily sensationalised and/or dismissed as we return to discussing whatever the immediate itch of the day is. And if the possible conclusions of the exercise look too worrying, then people may simply turn away and avoid them since it is all well into the future anyway. Most importantly, most people have enough to worry about already and just want to get on with their lives. We always have to remind ourselves that 'policy wonks' are not the normal run of humanity, any more than monks were in the Middle Ages. Given those realities, it is not surprising that the attitude of many politicians can be summed in that famously apocryphal saying: 'What has posterity done for me?' Or, as the prime minister of Luxembourg recently put it, 'We all know what to do, we just don't know how to get re-elected after we've done it.'

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Despite all of these issues, this is no reason to give up. The exercise of producing long-term fiscal projections is an important one which may yet contribute to intelligent debate about some of the long-term challenges we face as a nation and how best to meet them. The projections are not a prediction of what will actually happen. They are projections of what would happen if certain reasonable assumptions based largely on current policies, economic assumptions around growth, inflation and so on and demographic trends are allowed to flow through into the fiscal numbers. We may question some of those assumptions, but it would be a foolish person who would argue that any of them are unreasonable. The results therefore need to be taken seriously.

### Fiscal adjustment from a social democrat perspective

The main, and entirely expected, conclusion of the long-term fiscal projections is that on the current path New Zealand will eventually experience an unsustainable increase in the level of government debt which will, presumably, require drastic corrective action, either voluntarily or imposed from without. From the perspective of a social democrat this matters deeply. At one level it matters because such crises usually mark a significant loss of economic sovereignty, as we are seeing in parts of Europe at the present time.

For me, this is less important than for some social democrats since absolute economic sovereignty in the modern world is perhaps no more than an illusion. What is more important is what happens in such rapid adjustments to a fiscal crisis. The distributional consequences are nearly always severe and can often be long-lasting. It would be hard to find a major fiscal adjustment to a crisis in the last generation or so in which those at the bottom of the heap, and those in the middle, did not come out a lot worse off than those at the top. Revolutions can be different – but these are not envisaged in the Treasury's long-term projections.

In the nature of things such drastic adjustments are seldom well thought through, and are driven by a 'crash through or crash' mentality which pays little regard to the human consequences, or even to evidence-based policies as opposed to ideologically-driven ones. There are people who glory in the possibilities of such crises, casting themselves in the role of a kind of fiscal Abraham Lincoln remarking that the occasion is piled high with difficulty. They need reminding that that was in the context of a brutal civil war.

**... we should not leave to our children and grandchildren harder choices than we are prepared to make ourselves.**

The conclusion I would draw from this is two-fold. The first part is that we should not leave to our children and grandchildren harder choices than we are prepared to make ourselves. The second part is that gradual adjustment over time is preferable to big bang pyrotechnics, however much that may appeal to the odd 'pyrotechnician'. It is far more likely that most people, particularly the more vulnerable, will be able to cope under a scenario of gradual adjustment, especially if transitional assistance is provided where desirable. Moreover, the Treasury's projections also say that gradual adjustments over time should be sufficient to avoid any kind of doomsday scenario.

At a deeper level this all matters because for social democrats the twin concepts of security and *opportunity* lie at the base of political thought and action. It does not take much consideration to see that a policy of allowing a crisis to develop over a long period of time which then forces drastic corrections is antipathetic to such values. Security is obviously threatened, but so too for many is opportunity. Even in New Zealand we can still see in such places as Murupara and Minginui the results, 25 years on, of rapid change unaccompanied by well-managed transitions.

Thus, there is an inherent conflict likely between the longer-term focus, which is likely to be welfare-maximising from a social democratic perspective, and what might be called the mañana principle which tends to dominate much political discourse: never do today what you can put off until tomorrow. This is even more so in the very areas that are central to the long-term fiscal challenges: health and retirement income.

### Health, education, income transfers and the justice sector

#### *Health*

This brings me to a few comments on the Treasury's projections themselves and some of the assumptions underlying them. In the case of health, the historic trends in the growth of expenditure are clear. What is also clear is that attempts to deviate sharply from those trends have fairly quickly come unstuck. In the early 1990s, for example, strong constraint on spending growth led in the first instance to the growth of deficit spending, or what came to be called the 'second chequebook'. This was followed by a significant expansion of the budget allocation which put public health expenditure back on the trend line. The same process occurred with greater rapidity in the early 2000s.

The combination of demographic transition, new drugs and procedures, rising expectations, and international competition for staff all point to inexorable upward cost pressures in the health sector. Stronger economic growth may help with the costs of staff pressures, but will at least in part be offset by the relationship between health spending and gross domestic product (GDP) per capita. And for those tempted in that direction, there is little evidence that shifting spending to the individual actually saves much for the government, while it all but ensures greater inequality of outcomes. In the absence of remarkable changes in health technology, which cannot be discounted, it seems probable that the fiscal risks are still on the upside from current projections.

Because this is an area with so much uncertainty it is also one in which it is nigh on impossible to think in terms of specific long-term pre-funding or insurance approaches. Given that there is always unmet need, or at least unmet demand, any surpluses built up in advance would come under intolerable pressure to be spent. My rather dismal conclusion is that the best we can aspire to is to try to restore a greater emphasis on public and preventative health, in particular spending on the young and the most disadvantaged. That is already increasingly difficult because of the ageing of the population. What is often forgotten, somewhat surprisingly, is that the demographic transition is also an electoral transition. Given the quite strong correlation between age and the propensity to vote, it is possible that the proportion of those actually voting who will be aged 65+ will be as high as 40% by 2060. If we divide the electorate into three blocks – 18–39, 40–64 and 65+ – the last will be possibly be the largest group of those voting and certainly the most focused on a narrow range of common interests.

To put it another way, a political party focused on the interests of the elderly will only need to capture about a fifth of the votes of that group to be in a powerful position as a power broker under a proportional electoral system such as mixed member proportional (MMP). It will thereby be able to protect the interests of the elderly, if need be at the expense of other groups.

*Education*

This might suggest that the Treasury's optimism that a demographic dividend will be able to be garnered from the spending on education due to the decreasing proportion of young people in the population is well founded. Indeed, the Treasury has suggested that the proportion of GDP spent on education could be reduced by increasing class sizes and shifting more of the cost of tertiary education to the individual. This reaffirmation of economics as the dismal science is to be expected, if disappointing.

In my view, the projected 'demographic dividend' in education ignores some powerful countervailing factors. The next half century will see increasing competition to improve both the quality and quantity of education. That will mean further time spent in education and further increases in participation rates at the most expensive end of the system. If we are to seek greater efficiencies, a more positive approach to education would be in taking a more active role in ensuring that the skills we produce better match the opportunities available while avoiding the trap of an overly narrow vocational approach to education.

*Income transfers and justice*

Before turning to the two areas where I see the greatest opportunities for gradual long-term fiscal correction, let me touch very briefly on income transfers and justice. The former will continue to be significant for the simple reason that we cannot foresee an economic transformation which will change the tendency of a market economy under conditions of rapid technological development to create widening income gaps. Those developed countries with greater equality of outcomes maintain much higher revenue and expenditure levels than seem to be acceptable in New Zealand.

As for justice, we may reap a demographic dividend but only if two things happen. One is a move away from the last generation's desire to see an ever more punitive system. The second is a very large upfront investment in remedial measures, which, despite some rhetoric, there is no sign of being implemented. Rather, the rhetoric seems to be more about producing scary numbers about the long-term costs of current beneficiaries as a prelude to measures which are predominantly negative in relation to beneficiaries. The simple and enduring truth is that the most effective way of cutting the costs of benefits is to reduce unemployment, but not at the cost of a race to the bottom in terms of wages and conditions.

**The Treasury data is quite clear that the level of increase in revenue as a proportion of GDP needed over the next 50 years to keep within a reasonable debt constraint, however defined, is well within the levels reached within the last ten years.**

**The greatest opportunities for long-term fiscal adjustment: raising revenue and retirement income provision**

That leaves two big areas: retirement income provision and revenue. For some the latter remains an ideological no-go zone, a slough of despond in which whole economies disappear, or at least, like some kind of science fiction stargate, enter from the First World and emerge into the Third. Perhaps it is time in New Zealand to abandon this kind of Tea Party silliness, which belongs in the realms of creationism and global warming rejection.

*Raising revenue*

The Treasury analysis tells us two things. The first is that while the Treasury still argues that there are strong reasons for believing that a higher level of revenue has a negative impact on economic growth, it has to accept that the empirical evidence for this is weak. The second reinforces the first. The Treasury data is quite clear that the level of increase in revenue as a proportion of GDP needed over the next 50 years to keep within a reasonable debt constraint, however defined, is well within the levels reached within the last ten years. Those levels are well below those of many other developed countries with higher GDP per capita than New Zealand.

Such an increase can be achieved in a number of ways. The easiest is by allowing for some element of 'fiscal drag', which is removed from the long-term fiscal projections. Simply assuming personal income tax brackets are adjusted upwards in line with the consumers price index (CPI) rather than GDP achieves substantially higher revenue to GDP over time, and indeed allows room for further ad hoc adjustments in tax brackets.

The second is by way of broadening out the tax base. We like to describe our system as broad-based, but in a number of ways the base has been narrowed over the last 20 years or so. Obviously, capital gains tax is one option. The Treasury favours a land tax for efficiency reasons, but I have grave doubts about its practicality given the resentment that local body rates already cause. There is also the very considerable problem that it shares with a tax on unrealised capital gains that the amount due may bear a small relation to the ability to pay.

Greater use of 'hypothecated taxes', such as taxes tagged to particular spending areas, like health expenditure, could also be considered, since these may be regarded differently by people than other forms of taxation given a direct relation to benefits they can expect to enjoy. It would be interesting to look further at the considerable overseas experience with hypothecated taxes in that regard.

The essential point is that there is ample scope to close at least part of the longer-term gap between revenue and expenditure on the revenue side. It is tempting to suggest it all could be, quite easily, based on the Treasury projections. However, given my view that the risks on the expenditure side are heavily on the upside, I think that would be unwise.

**It is worth [noting] that the Australian superannuation scheme is both compulsory and 9% of income, soon to rise to 12%, paid for by a payroll tax on employers ... [h]owever, the Australian scheme ... can be withdrawn as a lump sum and all spent.**

*Retirement income provision*

This brings me to the one large remaining area: the funding of retirement income provision. Clearly, there is any number of ways of specifying the objectives of retirement income policy. I think nearly all social democrats would begin with the desire to ensure security; that is, to take away the fear of poverty in old age. Along with that, economic considerations would suggest that the nature of state support should, at the very least, not discourage savings or continued participation in the labour market. This is essentially the *opportunity* element. The third element would be *fiscal sustainability*; the fourth broad *societal acceptance* of the fairness and durability of the arrangements; and the fifth as much *simplicity* as possible.

Obviously there may be trade-offs between these elements. New Zealand Superannuation (NZS)[3] scores well on poverty avoidance and simplicity and reasonably on savings and labour market participation. Any changes should preserve these as much as possible. But it scores much less well on fiscal sustainability and societal acceptance of durability.

Various proposals have been made to address this situation, particularly raising the age of eligibility for NZS; lowering the level of payment over time, in particular by changing the indexation measure from wages to prices; or reintroducing some form of income testing. Of these, only raising the age of eligibility for NZS meets the criteria I have outlined. With life expectancy continuing to rise, some increase in the age of eligibility at some point seems inevitable. An initial phased increase in the age of eligibility for NZS with ample notice followed by periodic reviews seems the most sensible way to make this policy change and the most likely to win broad acceptance.

The other two suggestions, of lowering the level of the NZS payment or income testing the payment, have little merit. Any significant reduction in the relationship of NZS to other incomes will throw many elderly people below the poverty line. Its political half-life would be something under three years. In any case, the current relativity is not some tail on the donkey affair but well rooted in past experience and studies.

As for income testing, it did not survive the first MMP election and would not survive a future one. It clearly discourages work participation and savings, even more because an income test without an assets test, especially for the elderly, would not be very effective in reducing the cost of NZS.

*Option 1: Enhanced KiwiSaver scheme*

The most fruitful avenue to explore, other than raising the age of eligibility for NZS, is to reduce the cost of NZS without reducing the standard of living of the elderly. This change could be brought about through the interaction of an enhanced KiwiSaver scheme and NZS.[4] It is worth beginning with the fact that the Australian superannuation scheme is both compulsory and 9% of income, soon to rise to 12%, paid for by a payroll tax on employers. However, the Australian scheme is coming under criticism for the fact that while their pension is income- and asset-tested, their compulsory superannuation can be withdrawn as a lump sum and all spent. Now that the scheme is maturing, the dynamic instability this creates is becoming obvious.

New Zealand's current arrangements present the same issue in a different way: KiwiSaver may make many more independent of NZS but has no impact on the cost of NZS. With the number of KiwiSavers already far higher than forecast, it is not a long step to make the scheme compulsory, tighten some of the criteria, and, over time, gear it up to a level far closer to that planned in Australia. At that point the relationship between KiwiSaver and NZS becomes one for serious discussion. As an example of what could be considered I have had a number of options modelled.

The models all start from KiwiSaver becoming compulsory from 1 July 2016, with all people signed up as they turn 18 and the opt-out provision on auto-enrolment removed. All remaining adults would be enrolled on 1 July 2020. The contribution rates would be lifted back to 4% of income for employees, matched by 4% from employers, also from 1 July 2016. Employer contributions would then increase by half a per cent per annum until reaching either 8% in one set of models or 6% in the other. As a matter of practicality and individual affordability it may be desirable to begin new entrants on a lower personal contribution rate, say 2%, and gear up over time, but as this has no significant impact on costs or effects over the long term it has been ignored in the modelling.

All of the modelling assumes that, however it is made up, retired people will continue to enjoy a guaranteed retirement income at least equivalent to that of NZS based on the current wage relativity formula. Two basic ways of reducing the fiscal cost over the long term of meeting this criterion have been explored. In the first, it was assumed that half of the accumulated KiwiSaver savings would have to be accessed by way of annuity. Where this was less than the guaranteed retirement income it would be made up to that level. In effect this means that for many people the shift from state funding to private funding would result in half of their KiwiSaver savings being income-tested away.

This could prove difficult to establish and maintain as an acceptable policy position, even though it would certainly have a substantial impact on the long-term fiscal costs of NZS. It also has the usual problems of applying an income test fairly. However, the fiscal outcomes are impressive. Under either higher contribution rate modelling the cost of NZS falls to under 2% of GDP by 2050, all but vanishing by the end of the century. Remember, that is based on only 50% of KiwiSaver accumulations being taken by way of annuity.

**Figure 1: Enchanced KiwiSaver scheme**

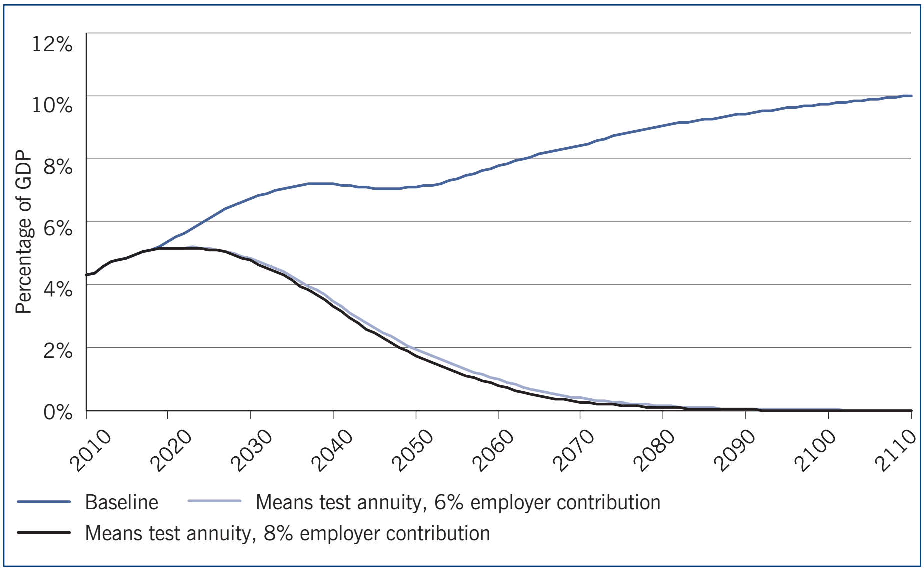
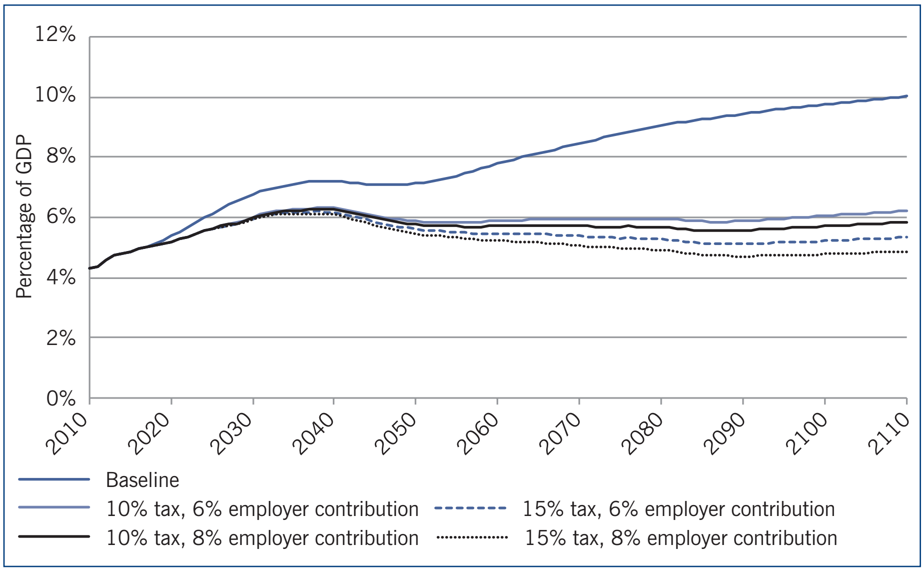



**Figure 2: Tax on KiwiSaver withdrawals**




*Option 2: Tax on KiwiSaver withdrawals*

An alternative which has significant advantages in terms of simplicity and fairness is to deal with the KiwiSaver/NZS interface on the revenue side rather than the expenditure side. Under this proposal, the current NZS scheme would be maintained as is, with the exception of an initial adjustment to the age of eligibility to 67 being phased in starting in, say, 2020. The revenue offset would come from a withdrawal tax being imposed on accumulated KiwiSaver savings of either 10% or 15%. Currently, KiwiSaver is taxed-taxed-exempt, or 'TTE', which means that contributions come out of people's post-tax income, then the income those contributions earn while they are in the fund is taxed, but withdrawals are tax-exempt. The new KiwiSaver withdrawal tax would apply to those permanently emigrating or to the accumulated savings at maturity (assumed to remain at age 65). The tax would only apply to accumulations starting with the introduction of the compulsory scheme.

Such a scheme would be administratively much simpler than the first option and avoids the difficulties of income testing, but by the end of this century would reduce the projected net cost of NZS by about 5% or so of GDP, having kept that net cost at about 5% of GDP over the second half of the century. Could such a scheme be politically feasible?

The answer to that is that anything in this area is fraught with difficulty for obvious reasons. But it does seem to me to have at least as much chance of success as any of the other options that have been discussed publicly.

In order to establish a clear relationship with maintaining the affordability of NZS two simple changes could be made. One would be to name the tax 'NZS Tax'. The other would be to pay the proceeds of the tax directly into the New Zealand Superannuation Fund.[5]

Another change which would help secure confidence in the future of NZS would be to transfer the remaining state asset shares into a holding company owned by the New Zealand Superannuation Fund. This would, in effect, bring forward the resumption of government contributions, at a lower rate than previously, but also bring a welcome focus on long-term wealth creation with respect to the assets.

In the much longer term, some further increase in the age of eligibility for NZS beyond 67 will probably be required, but there is no reason to have to address that now or for some considerable time to come. I mentioned earlier that we should not leave to our children and grandchildren harder decisions than we are prepared to make ourselves. The reverse of that is that we do need to recognise their right to make some decisions and not try to predetermine posterity, even though, as we say, we can do more for posterity than it can do for us.

For me, the crucial point remains, as it has been for a long time, not just making NZS sustainable but convincing people that it is. For that, decisions do have to be taken before too long, despite the reluctance of decision-makers to make them.

1 The Treasury's 2013 long-term fiscal projections are available on the Treasury website: http://www.treasury.govt.nz/government/longterm/fiscalposition/2013.
2 For more information about the Treasury's Long-Term Fiscal External Panel see: http://www.victoria.ac.nz/sacl/about/chair-in-public-finance/events/long-term-fiscal-external-panel.
3 New Zealand Superannuation is a fortnightly payment from the government for people aged 65 years and over. For further information about the policy see: http://www.workandincome.govt.nz/individuals/a-z-benefits/nz-superannuation.html.
4 KiwiSaver is a voluntary work-based savings initiative. For further information about the policy see: http://www.kiwisaver.govt.nz/.
5 The New Zealand Superannuation Fund is a government fund that was established to partly pre-fund the future costs of NZS.

**Acknowledgements**

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A research institute of the School of Government

# Upcoming Events

| Date | Title | Speaker | Venue |
|---|---|---|---|
| Wednesday 13 November 12:30 – 1:30 pm | Labour's Vision for the Future | Hon David Cunliffe *Leader of the Labour Party* | Government Building, Lecture Theatre 1 (Access via Stout Street) |
| Friday 22 November 12:30 – 1:30 pm | Appetite for Destruction: Food – the good, the bad and the fatal | Dr Gareth Morgan | Railway West Wing, Level 5, Room 501 |
| Monday 25 November 2:45 – 5:00 pm | Community and Voluntary Sector Research Forum | Philip Walker, Val Goold, Rachel Baskerville, and Carolyn Cordery | Railway West Wing, Level 5, Room 501 RSVP required |
| Tuesday 3 December 12:30 – 1:30 pm | Climate Change: The Warsaw Whys and Wherefores | Jo Tyndall, John Carnegie, Jacob Anderson, Adrian Macey Chair: Professor Dave Frame | Government Building, Lecture Theatre 1 (Access via Stout Street) |

For further information on IGPS Events visit our website http://igps.victoria.ac.nz/

Colin James

# Making Big Decisions for the Future

The Treasury's long-term fiscal projections are designed to inform present-day policy. They draw attention to existing trends and potential future global and national developments in society, demography, politics, technology and the economy, and the fiscal implications of continuing existing policy unchanged through those changes over the next 40 years and beyond. They highlight that the later action is taken to offset an anticipated impact, the greater the policy change may have to be and also potentially the cost, not just in money but also in social cohesion if unusual intergenerational tensions develop as a consequence. But if large adjustments have to be made, even if over time, how might that be done in a representative democracy in which the ultimate decision-makers, the politicians, are subject to frequent elections in which political folklore tells us the determinant issues are proximate and 'courageous' leaders are sacrificed to short-term voter self-interest?

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In fact, major policy changes have been made here and in other countries of our sort in which voters have submerged their individual interests in the national interest or in the interests of overall economic performance or social cohesion, or for altruistic, ethical or moral motives. To be successful and durable a policy change must be underpinned by consensus, or at least broad public acquiescence amounting to consensus by default. Thus, any policy settings, including fiscal policy settings, must be resilient: that is, have a strong core which endures through shocks and a surrounding flexibility which enables shocks to be absorbed, responded to and transcended or survived, and enables adaptation to changing conditions.

A 40-year projection is also by definition multigenerational (transgenerational and intergenerational). Making multigenerational policy is not straightforward. In a democracy, future generations – those not yet born and those still children – do not vote, except to the extent that living generations take them into account and vote on their behalf (a sort of 'virtual' vote). Past generations – those who have died – also do not vote, except to the extent that tradition influences the votes of living generations (another 'virtual' vote). Among the living and voting generations there are different and competing values and priorities, and thus expectations and hopes of, and needs from, fiscal settings, which in a representative democracy shape and constrain politicians' decisions on policy and can overweight the present at the expense of the future and generate perceptions of intergenerational inequity.[1] Some see this as a breakdown of an implied social contract or partnership.[2]

There are continuities and trends, such as the changing nature of the 'family' and the constitution of households, the role of women, and the nature of education in response to the changing nature of 'work'. Unless there is high inward migration similar to that which occurred after 1840, or there is a highly destructive pandemic or other disaster (both possible), the proportion of older people will likely rise. The geopolitical and geo-economic rebalancing of the past 30 years following the marketisation of the Chinese economy is likely to continue, with changes of direction and speed, and that rebalancing will set fiscal and other economic and social parameters.

**A Māori in 1813 could not have predicted the disjunctive Treaty of Waitangi, and any New Zealander in 1973 might have imagined but not predicted the resurrection of the Treaty of Waitangi and the invention of biculturalism.**

### Disjunctive and transformative events

But long-range projections must also assume the possibility, even probability, of another shock of the size and impact of the global financial crisis, after which the global and local social, economic and political landscape is qualitatively different. The history of the past century or so suggests that in the next 50 years there will be another such disjunctive event. In addition, one or more transformative events are likely, which will also affect the context for policy. These events are unforeseen and unpredicted, though historians in retrospect habitually discern observable forces and pressures preceding a disjunctive event and a transformative event may be theorised, imagined or fantasised in advance.

A disjunctive event suddenly accelerates social, political and economic change, rather as an earthquake suddenly repositions tectonic plates after a long build-up of pressure and reshapes the surface landscape; or irrupts from outside, much as a tsunami does; or results from a sudden breakdown of order in the complex system that is human society. Afterwards, the social and economic landscape looks different, often very different, and while much of what is on the landscape looks familiar, it, too, is often deeply changed.

The standout example in the past 100 years was the First World War, which far exceeded contemporaries' expectations and resulted in the destruction of four empires, the serious weakening of a fifth, the killing of about 10 million soldiers, and the transformation of war, the rise of communism and fascism and a second destructive world war. A second example was the 1929 financial crash which caused worldwide economic depression (contributing to the rise of fascism), drove governments to actively manage their economies and reduce social disparities with far-reaching tax, education, health, housing and income support policies, and led to the creation of the Bretton Woods system of fixed-exchange rates, the International Monetary Fund and the General Agreement on Tariffs and Trade to guard against a repetition. Others are the 1973 oil price crisis, which ended the Bretton Woods regime, the collapse of communism in 1989, which radically changed the world order, and the recent global financial crisis.

Why do these occur? Historian Niall Ferguson, among others, has argued that human society is a complex system, akin to a biological system. Such systems, he argues, are 'made up of a very large number of interacting components that are asymmetrically organised' and 'operate somewhere between order and disorder – on the edge of chaos'; they seem to be in equilibrium until 'there comes a moment when they "go critical" … a very small trigger can set off a "phase transition" from a benign equilibrium to a crisis' (Ferguson, 2012, p.22).[3]

A transformative event is a scientific discovery or technological, political, business, organisational or way-of-thinking innovation. It changes the quality of life or the way people live or see the world around them, often for better but sometimes for worse. Positive transformative events are the work of what United States economist Richard Florida has called the creative class (Florida, 2002, 2007). They can contribute to or trigger disjunctive events.

Transformative events in the 40 years after 1913 included the discovery of penicillin and DNA's double helix; the splitting of the atom; the invention of the transistor and the computer; and a fashion event, the bikini (a symbolic indicator of deep changes in mores to come).[4] All had profound, unpredicted and unpredictable effects on economic and social life. Digital technology – the transistor-computer-internet-newmedia-robotics-3D evolution – may only now in this decade be beginning to realise its true transformative influence on economic, social and political/security trajectories.

A New Zealand forecaster in 1913 would have been star-gazing or daydreaming to predict within 40 years aerial topdressing, social security and a national state health system, and 14 years of a Labour government, all transformative. A Māori in 1813 could not have predicted the disjunctive Treaty of Waitangi, and any New Zealander in 1973 might have imagined but not predicted the resurrection of the Treaty of Waitangi and the invention of biculturalism.

The point for policy makers is that, while there are trends in the evolution of societies, political systems and economies, there are also occasional events which distort, divert, accelerate or stall those trends or open new and out-of-the-ordinary possibilities. Such events in the next 40 years might be generated by the likes of climate change, water shortages, turmoil in the Middle East, a virulent pandemic, a new twist in hyper-globalisation, upsets in China and elsewhere in Asia, the collapse of multilateral rules-based systems such as the World Trade Organisation, new medical technologies and practices, new production methods, a radical generational shift, and New Zealand becoming a highly desirable place to live.

That might suggest focusing on the predictable short term and not trying to plan for or make allowance for more distant events that might or might not happen. Actually, the whiplash in the fiscal parameters in 2008–09 suggests otherwise, as do the Canterbury earthquakes. Anticipating that there are outlier possibilities enables contingency planning, which in turns improves resilience in the face of the unpredicted. Over recent decades it has become more common for firms and some government agencies to scan the possibility of major disruptive – disjunctive or transformative – events and to have thought about it, so that if one happens at least some contingency planning has been done.[5]

At the same time, wise firms and governments also work out what they most expect to happen over three, five, ten or 20 years. They can then take early action to counter adversity or take advantage of opportunity. Government in essence is about risk management and the risks to be managed are distant and proximate, known and unknown, natural and societal.

**... an OECD study of major decisions on pensions and health services ... found that those made in response to a crisis, while easier to promote at the time, are likely to endure only if there are quick pay-offs ...**

### Risk management and anticipatory policy change

One way of looking at this is suggested in a recent paper by the Boston Consulting Group (BCG). The paper argued that: 'Governments have become flexible about *what* they should do but rigid about *how* to do it. Good strategy in government involves doing the opposite: being clear about goals but flexible about how to deliver them.' Societies, BCG argued, 'are identical neither to machines, which can be engineered' – by inference the presumption that underlay the interventionist, planned welfare state – 'nor to biological systems, which evolve by themselves. Instead, they combine aspects of both and hence need a mixture of direction and adaptation'. BCG instanced foresight and scenario planning techniques, which 'can't predict the future but can prepare you for it'; then different types of policies can be applied to prepare for and manage through uncertainties: 'no-regrets initiatives', 'hedges against key risks', 'boundary or handrail issues' and 'core bets' (Baker et al., 2012).

The BCG paper is not the first or last word. But it illustrates the decision-making context for long-term fiscal projections: to prepare for the most likely eventuality well before it happens, and also to keep in mind the possibility of shocks and think about how to manage them if they occur.

The usual default position, by contrast, is to take no action until forced to by a crisis. But an OECD study of major decisions on pensions and health services (detailed in James, 2012, pp.19-20) found that those made in response to a crisis, while easier to promote at the time, are likely to endure only if there are quick pay-offs (OECD, 2010). The OECD warned that while a crisis opens a window of opportunity,[6] that might as a result come when there is less financial scope to meet upfront costs to ensure reforms work, can obscure long-term needs and objectives and can lead to capture by some agencies.

That suggests durable major reforms reflect some combination of deeper currents – demographic, economic, social, psycho-sociological, intellectual, political-sociological, or external (geo-economic, geopolitical or bilateral-national). That was so in major policy changes in Britain through the 19th century and New Zealand in the 1890s, 1930s and 1980s (detailed in James, 2012, pp.11-18). There were a number of drivers, with a different mix in each case: deep change in the demographic or class structure of society and/or in the economy or commercial practice; social distress and humanitarian concerns, including as a result of economic depression; fear of disorder if no action is taken and/or reaction to disorder; a major shift in the prevailing intellectual wisdoms or fashions, picked up by and advocated by political parties and/or officials; courage, leadership or political will and/or strategic thinking and/or visionary ambition exhibited by leading public figures; interest group pressure, especially if there is a change in the balance of interest groups; fiscal pressure; and momentum once action was initiated.

The OECD study also suggests that for major reform to be durable it must either give effect to, anticipate or build consensus, or at least majority support. Most policy change is incremental, and either builds consensus or a majority progressively with each increment, or gives effect to an already existing consensus or majority. Major policy reform will endure if it evokes or reflects a pre-existing latent consensus, as for social security in the 1930s. But if the reform is unexpected or unforeshadowed – that is, a shock – or is in anticipation of events not yet experienced by or evident to the majority (as with climate change), the reform will endure only if consensus can be constructed as the reforms are done or shortly afterwards. Consensus was slow to develop after New Zealand's radical 1984–92 deregulatory reforms: the vote for MMP was essentially a vote against both the Labour and National parties for departing from their social democratic and moderate conservative roots respectively. A quasi-consensus did eventually develop, but it was by way of gradual acquiescence to the new policy settings because Labour and National offered no alternative, rather than positive endorsement (see further James, 2012, pp.22-4).

Climate change is not the only issue which poses the question of whether policy should be anticipatory. Others include (and this is only an indicative list): resource sustainability here and abroad, especially of water (and so food production) and minerals; the impact of new forms of economic globalisation on the distribution of work; the impact of 3D printing and other new forms of production technology for goods and services; the geopolitical and security implications of the rise of China; and the implications of gene technology, among other emerging forms of treatment of illness, disability and physical inequalities. All have the potential to profoundly alter the fiscal trajectory over the next 40 years.

**Increasingly, the public ... expects to participate at some times in decisions on some things in some way or to some degree, or expects at least to be listened to or acknowledged.**

Particularly pertinent to that fiscal trajectory is the 'ageing' of the population – a higher proportion of older people dependent on a smaller proportion of 'working-age' people. The presumption is that health costs and income support (superannuation) for this larger 'aged' group will rise to the point that they are too onerous for those who will be of 'working age'.

The policy argument for anticipatory policy change is that it is less onerous to take early action than to change policy only when the costs begin to mount, and that policy change made deliberately and over time is also more likely to be durable than policy made under fiscal pressure or in crisis. The policy argument against anticipatory policy change is that action may not be necessary because circumstances might change and there is an opportunity cost in taking needless action. Will population projections turn out to be accurate, or too low or high? Will the fact of more older people add to health care costs, or might near-end-of-life health costs fall because baby-boomers have lived a better-fed, healthier and less physically wearing childhood and working-age life and will be healthier for longer, and thus physicians may intervene less vigorously near end of life? Will new technology go on driving up health care options and costs, or might technology, coupled with workforce organisational change and price-reducing innovation in 'emerging' countries, reduce health care costs in net terms and reverse the current net-positive effect? Will 70 be the new 65 and so will more people continue in paid work, thereby lowering pension costs, or might rising capital accumulation costs increase pension costs?

These sorts of questions, unanswerable in advance, underline that any long-term fiscal path chosen or foreshadowed raises issues of transgenerational and intergenerational equity and sustainability: transgenerational as between the generations at any point in the 40 years, and intergenerational as between a particular generation's experience a generation hence and their corresponding age cohort now.

Today's cohort of politicians is trapped in short-term electoral cycles, and their officials are bound to carry out their lawful decisions. In that sense officials are 'state' servants. But those same officials are also 'public' servants, bound to keep in mind, to develop and redevelop and to promote a long and broad view on behalf of the public.

#### Participation and leadership

This dimension of officials' brief highlights that in a modern liberal democracy parliamentary representation is not sufficient.[7] Increasingly, the public (more accurately some of the public) expects to participate at some times in decisions on some things in some way or to some degree, or expects at least to be listened to or acknowledged. Increasingly, mechanisms are being constructed, tested and used to develop, refine and validate policy change. Without that validation, policy change may not be durable (King et al., 1998).

This doesn't diminish the importance of leadership. Any durable major policy change, including anticipatory change, requires leadership, either by political leaders or as a result of their responding to leadership from outside the formal political system through one of a number of mechanisms. The most promising of these mechanisms entail some public involvement. Politicians themselves have generated it through opening up access to information (via the Official Information Act), making Cabinet papers public and consulting on proposed policy in a variety of ways, including discussion papers, parliamentary select committee hearings, meetings with the iwi leaders forum, and advisory and working groups (tax, welfare).

This growing expectation is not a linear growth. People get involved sporadically, issue by issue, and many still never get involved. But there does appear to be a trajectory. This suggests that leaving long-term fiscal matters to officials and politicians (though politicians do the final sign-off of any policy) will not generate the underpinning consensus needed to address those matters durably and to enable adjustments through time.

**Public opinion polls and focus groups are extensively used by political parties and interest groups [but] ... there is a wide variety of other formal and semi-formal mechanisms.**

#### Extra-parliamentary mechanisms for reform

There is a wide range of extra-parliamentary mechanisms, ranging from populist through experimental to prototype.

One experiment initiated by ministers was the Land and Water Forum to develop the basis for water policy through 'collaborative governance'. In 2009 this brought together all 58 organisations with an interest in allocation and management of water and mandated them to reach consensus on the foundations of policy. That took three and a half years and the government is now broadly implementing its report. Labour and the Greens have backed it, too. Its virtue was the broad buy-in by all interest groups, including by iwi, so iwi cultural, economic and other perspectives and needs were explicitly incorporated.

But collaborative governance of this sort does not involve the general public, whose views are not wholly expressed through interest groups any more accurately or completely than through political parties. Nor are all Māori represented by iwi leaders, who in any case have direct access outside the forum (and any other channel) to negotiate with senior ministers as the 'Treaty (of Waitangi) partner'.

An alternative is a binding referendum. Switzerland has the most developed referendum system, deciding a wide range of matters at federal, canton and local level that way, with extensive programmes to inform the public on each issue (though this can hold up progress, as in the fact that women did not get the vote in all elections until 1990). In many states in the United States there are binding citizens-initiated referendums (known as propositions), some of which have had unintended consequences. Here, citizens-initiated referendums are non-binding, and no government has yet acted on one, as the current government has signalled will be the case if the referendum on asset sales goes against sales. Otherwise, referendums are still rare, though it is now close to a constitutional convention that major constitutional or electoral change must be decided by referendum.

Critics say complex issues cannot be reduced to the simple form in which a referendum question must be stated, and that it is impossible, or at least impracticable, to sufficiently educate the general public to elicit an informed decision. The complexity of issues involved in long-term fiscal projections suggest that the necessary decisions would not fit a referendum format.

An alternative is a national convention, as used to draft the original United States constitution, and, in February 1998, in Australia to draft a referendum on whether Australia should abolish the monarchy in favour of a republic. But a national convention tends to be of the 'great and the good'.[8]

A parliamentary petition can involve the wider public, if many sign. This still leaves the decision in the hands of the politicians, but can at times force their hand, as in 1970 over the proposal to raise Lake Manapouri as part of a hydroelectricity project. Public opinion polls and focus groups are extensively used by political parties and interest groups to gauge public opinion, and, within limits, mould it. But polls are in effect referendums without responsibility and usually based on limited knowledge. Moreover, it is becoming increasingly difficult to assemble a fully random sample of voters. A focus group is a sort of 'jury': an issue is discussed for one or two hours, with information progressively inserted into the discussion so that over time the group comes to a more considered opinion than is possible in a poll. But focus groups are not representative.

There is a wide variety of other formal and semi-formal mechanisms.[9] One survey lists citizens juries, planning cells, deliberative polling, consensus conferences and citizens panels (Abelson et al., 2003). Another lists focus groups, citizens juries, consensus conferences, cooperative discourse, dialogue groups, stakeholder workshops, participatory expert workshops, reflection forums, deliberative interviews, voluntary agreements, eco-audits, policy simulation exercises, deliberative foresights, concerted environmental management, mediation, regulatory negotiation, consultative forums, deliberative conflict resolution processes and environmental negotiations (Van den Hove, 2006).

**'Deliberative' and 'participatory' reform**

In those lists there are two important words. One is 'deliberative'. One commentator argues that '[t]he essence of democracy is now widely taken to be deliberation, as opposed to voting, interest aggregation, constitutional rights or even self-government' (Dryzek, 2000, p.1, as quoted in Abelson et al., 2003). This involves, according to another, 'a particular sort of discussion – one that involves the careful and serious weighing of reasons for and against some proposition' (Fearon, 1998, p.1, as quoted in Abelson et al., 2003).

## ... electoral systems, while complex, are not as complex as fiscal issues, especially long-term fiscal issues.

The other important word is 'participatory'. Citizens juries and planning cells have been used in the United States and Germany respectively to examine an issue and present a conclusion to the media, interested groups or a sponsor. Variations have been tried in emerging-economy countries and developing-economy countries. But a criticism is that the juries do not parallel actual courtroom juries: they involve only the jurors and witnesses and do not feature lawyers contesting evidence or judges.

Consensus conferences in Denmark inquire into scientific or technical issues and have been used to develop clinical guidelines. The goal is 'not to reach a kind of objective scientific truth but to feed into the political channels and clarify public opinion'. They have been running for 20 years, 'have received due political recognition ... are closely followed by the media, there is always a great attendance of public and a lively public discussion about the issue and the recommendations of the panel afterwards' (Zurita, 2006, p.21). But note that they are used for tightly defined issues, not large, multi-decadal issues.

Deliberative polling assembles a large, representative, random sample who deliberate over two to three days, usually on a national issue. Again, they are not used to make decisions, but they do present much more considered positions on significant topics: for example, in Britain on crime, the monarchy, the future of Europe and the health service. A Japanese deliberative poll involving 127 people (from a random nationwide sample of 3000) at Keio University on 28–29 May 2011 on the topic 'Pension system, a generational choice' first met in small groups with experts, then in a plenary, totalling ten hours of deliberation. Among the conclusions were that 'the consumption tax should be increased and used for social security' and 'we should take future generations into account more than the current generation' (Nemoti, 2011). Support for both of those propositions was greater when participants were asked after deliberation than before. A Victoria University survey of attitudes to climate change-driven sea-level rise found that different responses were elicited according to whether any information was given, and, if so, whether a reference year of 2050 or 2100 was used and whether projections were moderate or extreme, 'though effects were usually small': 'People were generally more concerned and more supportive when they received information' (Evans et al., 2012, p.3).[10]

A more ambitious version of citizen deliberation is the citizens assembly. Citizens assemblies have been used in British Columbia and Ontario in Canada (mandated by the provincial parliaments) and in Holland (mandated by the government) to come up with recommendations on electoral reform.[11] The British Columbia assembly followed the most exhaustive process of the three, over 11 months: near-random selection of 160 people, one male and one female from each riding; a learning phase over six weekends, involving experts and wide reading, which resulted in 'these ordinary citizens' acquiring 'an extensive knowledge and understanding of electoral systems'; a consultative phase during which members went out to public hearings in 50 meetings, some attended by politicians, coupled with a website which received written submissions and proposals; then deliberation. The process culminated in a recommendation to the parliament, which put the question to a referendum which was narrowly defeated (it required 60% to pass and the vote was 57.7%). Polling found members of the public trusted the assembly as being more like themselves than politicians (though indigenous and ethnic minorities were heavily under-represented). The other two assemblies also resulted in no change, for other reasons (Hayward).

How useful could these mechanisms be in reaching decisions on major policy change, especially anticipatory policy change? One assessment of the British Columbia assembly found that 'citizen political decision-making appeared to be of a remarkably high quality' (Vander Ploeg, 2003, p.222, as quoted in Hayward) and showed that citizens 'have the capacity to shed their apathy, overcome their ignorance and reason conscientiously about an unfamiliar and complex political issue' (Warren and Pearse, 2008, p.6, as quoted in Hayward). After all, politicians are amateurs, too.

But assemblies have not yet been widely tested on national issues, and all three on electoral systems did not result in change. Moreover, electoral systems, while complex, are not as complex as fiscal issues, especially long-term fiscal issues. Hence one observer's assessment that, 'While in theory deliberative processes could be designed to guarantee binding decisions, in reality the stakes are often too high to delegate this authority to a group of citizens and the public may not care to assume this level of decision-making authority' (Abelson et al., 2003, p.247). If they were to be effective on long-term fiscal issues, they would need development.

Where this approach does seem to get closer to decision-making is at the local level. Citizen commissions are widely used in Switzerland to resolve differences over such matters as where to site a waste disposal plant or infrastructure projects (Anonymous, 2012). A New Zealand example that attracted international academic attention was a planning project in Wanaka in 2002 to develop a plan for 2020 (Bond and Thompson-Fawcett, 2007).

Nevertheless, even if a citizens assembly (or jury) is not yet a proven vehicle for decision-making at national level, could it be useful in shaping public opinion? If the media were to take an interest, that might generate wider public interest, and if the assembly was seen to be representative and not beholden to any political party or interest group, its deliberation and recommendations might get traction. At the least, an assembly could open a channel for better communication of, and better education about, policy issues and decisions, at the same time requiring more rigorous explanation to citizens.

An assembly is probably not enough on its own and would need reinforcing. There is a risk that it could be misused by politicians and officials to co-opt or persuade (Roberts, 1997).[12] It can be costly, may not actually engage citizens beyond those directly involved, and may not be any more representative (and perhaps be less representative) than politicians, since the vocations of those involved don't depend on the outcome and might (as with politicians) produce a result reflecting the preoccupations or emotions of those who get involved. One checklist of settings for effective and efficient citizen participation is: 'careful selection of a representative group of stakeholders; a transparent decision-making process to build trust among the participants; clear authority in decision-making; competent and unbiased group facilitators; regular meetings; and adequate financial resources' (Maitlis and Ozcelik, 2004, p.390).

### Addressing the policy tensions

If a citizens assembly did address long-term fiscal issues, it would have to wrestle with three major tensions. One is the balance between PAYGO (paying for government services out of current tax revenue and borrowing) and SAYGO (the government and/or individuals saving and accumulating funds to address current and future service expectations and liabilities). New Zealand has for many decades favoured PAYGO, though the New Zealand Superannuation Fund, KiwiSaver and the Accident Compensation Corporation's future liability funding are public examples of SAYGO.

Related to that is intragenerational equity. The balance between funding services from taxes and from private funding has obvious implications for the spread of income and wealth and so personal well-being (that is, for 'inequality'), and therefore for social cohesion at any given time and potentially, if not addressed, over time. Tied up with this is intergenerational equity, the equity between generations at any one time.

Related to that is transgenerational equity, fairness of contribution and access to services as generations age and new generations arise. Is it right to have sudden shifts between SAYGO and PAYGO or in intragenerational equity, or should any necessary changes be smoothed over time? A liberal-Enlightenment approach based on the primacy of individual liberty and sanctity might argue that it is, that generations and cohorts are separate and costs should lie where they fall. A conservative, Burkean notion of 'contract' or 'partnership', binding generations to each other, might take the opposite view.

Deciding these matters will be in a context in which the countries with which we trade and compete will increasingly be those which have far less developed social support systems and which, as they do build those systems to offset unsustainable inequalities, are unlikely to expand them to 'western' economies' peak levels. That will require New Zealand to recalibrate its assessment of the optimal, desirable and possible levels of taxation and state spending against a different, and less generous, set of comparator countries (see, among others, Tanzi, 2005 and 2011, and McRae, 2011 (reviewing Tanzi, 2011)).[13]

In a democracy these questions are resolved, one way or another, by the people, usually through the crude mechanism of elections, the rise and fall of political parties and their ideologies, the interplay of interest groups, pressure groups and politicians, and, occasionally, mass public action. When affairs are going smoothly these adjustments go fairly smoothly too. But in crisis, or (as now) after a disjunctive shock or facing looming major geopolitical, geo-economic or national changes, some predictable, some unknowable, there is arguably value in developing the means to discover and develop public consensus and, with that, resilience. Given New Zealand's past capacity for inventive policy, in three periods of major change and in a range of policy innovations between those periods, there is no compelling reason why it cannot develop the model for 21st-century democracy.

**Of all the mechanisms canvassed ... , the most promising would be either a national convention or a citizens assembly: a transparently representative citizens assembly would be more appropriate because more democratic.**

Of all the mechanisms canvassed above, the most promising would be either a national convention or a citizens assembly: a transparently representative citizens assembly would be more appropriate because more democratic. Even though fiscal matters, being very complex, may be thought beyond the capability of 'ordinary' citizens, analysis suggests that there is no compelling reason why a well-constituted assembly could not gain a good understanding of the issues and produce a sensible, politically saleable and sustainable outcome.

But there would be no point to calling a citizens assembly unless it was of high quality in its selection, the commitment of its members, the information it was given and the way that information is debated, and its connection with the wider citizenry. Political parties would need to commit to taking its findings seriously. Logically, such an assembly would also not be a singular event but repeated every ten years or so. By the end of 40 years, if the process worked well, it would likely become a workable fixture.

That is a very tall order. It would amount, in short, to setting an international standard, a big challenge to politicians' and officials' capacity for leadership.

1 Bull (2012) presents an interesting discussion of this point in the context of climate change.
2 For example, Ferguson (2012, p.43) quotes Edmund Burke: 'one of the first and most leading principles on which the commonwealth and the laws are consecrated is, lest the temporary possessors and life-renters in it, unmindful of what they have received from their ancestors or of what is due to their posterity, should act as if they were the entire masters, that they should not think it among their rights to cut off the entail or commit waste on the inheritance by destroying at their pleasure the whole original fabric of their society, hazarding to leave to those who come after them a ruin instead of an habitation – and teaching these successors as little to respect their contrivances as they had themselves respected the institutions of their forefathers ... Society is indeed a contract ... the state ... is ... a partnership not only between those who are living but between those who are living, those who are dead and those who are to be born.' Ferguson applied the quote to 'the enormous intergenerational transfers implied by current fiscal policies', which he saw as 'a shocking and perhaps unparalleled breach of precisely that partnership'.
3 Ferguson continues (p.25): 'The political and economic structures made by humans share many of the features of complex adaptive systems ... Whether the canopy of a rain forest or the trading floor of Wall Street, complex systems share certain characteristics. A small input to such a system can produce huge, often unanticipated changes – what scientists call the amplifier effect ... Causal relationships are often nonlinear, which means that traditional methods of generalising through observation (such as trend analysis and sampling) are of little use. Some theorists of complexity ... say that complex systems are wholly non-deterministic, meaning that it is impossible to make predictions about their future behaviour based on existing data. When things go wrong in a complex system the scale of disruption is nearly impossible to anticipate.'
4 If we look out 47 years from 1913 to 1960 (the span from 2013 to 2060), there were also the launching of the first space satellite in 1957 and the contraceptive pill (approved for use in 1960).
5 In an environmental scan looking out ten years I did with Statistics New Zealand through the second half of 2006, I rated as a 25% probability: 'Imbalances unwind messily; recession or sharp slowdown in US triggers world recession', and as a possible 'shock' 'a full-scale world recession, triggered by terrorism, a messy unwinding of the imbalances or natural/medical disasters'. Other possible shocks included: 'The Middle East explodes/implodes and/or revolution in Saudi Arabia', and 'Major earthquake devastates Wellington'; both had some relation to recent actual events. So, too, did another 25% probability: 'Significant earthquake in less populated area'.
6 Roger Douglas as finance minister used to talk explicitly of the window of opportunity, a financial squeeze opened for the 1980s policy changes which he spearheaded. In the wake of the 1987 stockmarket crash he thought he had another window of opportunity, this time for a flat tax, but Prime Minister David Lange, backed by a (silent) majority in the Labour caucus, shut the window.
7 This may be a partial explanation for declining election turnouts over the past 50 years (though there is no hard research evidence that this is so). Voting is more a delegation of authority than a form of participation.
8 This distinguishes a national convention from an unofficial gathering called a 'convention' (such as the women's convention in New Zealand in the 1970s).
9 Valentina Dinica of the School of Government, Victoria University of Wellington, assisted with some pointers in this section of the original paper.
10 Evans et al. (p.3) go on to note that 'When focused on extreme projections, people anticipated greater sea level rise, felt that sea-level rise was a more serious problem for them personally, and showed greater support for adapting to climate change and for individual adaptation options, such as accommodation and retreat. They also perceived sea-level rise as a nearer-term threat when information was framed to focus on 2050 and the more extreme projections. Importantly, more "extreme" information always resulted in more concern and support from respondents.'
11 The British government used what it billed as a citizens assembly to build initial support for raising the superannuation age. But informal comments to me from a participant indicate it was managed by the government and so does not warrant description as a citizens assembly in the sense it is used in this article – certainly not on the British Columbia model, where politicians kept at arm's length except in some of the public hearings.
12 This could be said of the British example cited above.
13 Tanzi has argued an optimal taxation level of 35% of GDP. This compares with around 25% in New Zealand in 1973, a difference which raises questions about the value of setting a precise number on taxation.

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Nicola Kirkup

# The Future Costs of Retirement Income Policy and Ways of Addressing Them

New Zealand Superannuation (NZS) is a universal pension paid at a flat rate. It is effective at poverty prevention among the elderly, relatively inexpensive and simple to administer. However, with the proportion of the population aged over 65 years set to increase rapidly over the next 50 years, there is expected to be a steep rise in the costs of the scheme. The future cost of NZS is therefore a major driver of New Zealand's Longer-term Fiscal Challenge. The Treasury's statement on New Zealand's long-term fiscal position (Treasury, 2013a) examines ways of addressing this cost, as well as other possible responses to the broader fiscal challenge such as higher taxation or reductions in other areas of public spending.

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Options for reducing the future cost of NZS areexamined in more detail, and compared to present settings, in a Treasury background paper, *Future Costs of Retirement Income Policy, and Ways of Addressing Them*, which was published at the same time as the statement. This article takes the analysis in that background paper as its base.

### Assessment criteria

The assessment is based around the Treasury's Living Standards Framework (Treasury, 2012). The present approach and four broad possible alternative approaches to retirement income policy are considered here in terms of their likely impact on the components of that framework. Retirement income policy can, to a greater or lesser extent, affect outcomes under each of those components:

- sustainability for the future: via impacts on direct fiscal costs;

- economic growth: via impacts on labour force participation and national (private and public) saving;
- increasing equity: via impacts on old-age poverty rates and inter- and intragenerational distribution;
- social infrastructure: via confidence engendered by the dependability of political reform, and via public and private administrative and compliance costs;
- reducing risks: via the potential impact of private savings levels on New Zealand's high levels of international indebtedness, and the impact of different approaches to pension funding on individual longevity and investment risk.

**... transitional generations pay both for some proportion of their own pensions and for the full cost of the pension entitlements of earlier generations.**

**Reform options**

New Zealand's present approach is a government-arranged PAYGO (pay-as-you-go) system, using current tax revenue to finance the pensions of current NZS recipients. Any option that shifts away from that approach must move it towards either a privately-arranged PAYGO approach, under which an individual would need to earn more of his or her own keep at later ages, or towards a SAYGO (save-as-you-go) approach, which involves building up funds in advance which are later used to fund pension costs.

Broadly, then, four options are identified for reducing the demand on future taxpayers to fund future pensioners.

- Raising the age of eligibility for New Zealand Superannuation would reduce the overall future cost of NZS, compared to what it is currently expected to be, by reducing the number of individuals that NZS would be payable to. On its own this policy change would not affect the level of payment or the universal, flat-rate nature of NZS.
- Changing the way in which NZS levels are indexed to slow down the rate of increase would reduce the relative value of individual NZS entitlements over time, while retaining the flat-rate, universal nature of the payment. Effectively NZS is currently linked to wage inflation; we model shifts to price inflation and to a composite index.
- Making private saving compulsory and later using some of that saving to part-fund an individual's own NZS would effectively involve applying a means-test to NZS, within a specific and narrow definition of 'means'. Voluntary savings, including those already accumulated under KiwiSaver, would not be included in this approach to means-testing, nor would income earned from other sources, in view of the administrative complexity and unproductive avoidance behaviours that broader means-testing is likely to entail.
- Communal saving could be undertaken through further extension of the New Zealand Superannuation Fund over and above the contributions already intended. This, and the investment returns that the fund would earn, would subsequently be used to cover all, or part, of the costs of NZS, which would continue to be paid at the same level and on the same universal, flat-rate basis.

**Comparing the options**

*Fiscal sustainability*

The extent of the reduction in future PAYGO costs by any given future date would in each case depend on how far the proposed reform goes. However, there is a clear difference in the paths by which the different approaches reach future reduced costs.

Where there is a single new age of eligibility, the fiscal cost eventually settles on a path parallel to and below the current projection. This pattern would be repeated whatever eventual age and rate of change were adopted. An approach based on longevity indexation would be more likely to continue to diverge from the current projected path.

Where the indexation methodology is changed, the total cost reduces indefinitely as a proportion of GDP despite the expected increase in the number of pensioners. In practice it is likely that political pressure arising from increasing levels of old-age poverty as the real value of NZS reduced would at some point prompt a reversion to wage indexation or upward ad hoc adjustments in the level of NZS. In both cases, reductions in the total cost of NZS would be likely to be offset to some extent by an increase in the cost of other welfare benefits claimed by over-65s unable to fund their living costs through continued work, savings or reliance on family resources.[1]

A key feature of any transition towards SAYGO is that economy-wide costs will initially increase before they decrease. In the early years, existing pensioners continue to be paid their NZS entitlements on a PAYGO basis, while working cohorts must at the same time make contributions to the SAYGO fund. Effectively, transitional generations pay both for some proportion of their own pensions and for the full cost of the pension entitlements of earlier generations. The higher the required saving rate, the faster and the higher are the eventual cost savings achieved.

A private SAYGO scheme leads to savings for the government but increases the costs faced by individuals, who must reduce either their consumption or their voluntary saving rate, during a transition period. The subsequent offset to NZS means that this is in part a real cost, not simply a redistribution from earlier to later in an individual's life. Fiscal savings from this approach may be offset to the extent that the government finds it necessary to offer tax breaks or other forms of incentives to encourage saving.

A communal approach intended to fund only the flat-rate universal NZS might be cheaper. This is because if everybody is required to contribute at the same rate, some individuals will contribute more than is needed to fund their own NZS. Under a communal approach, this 'surplus' is then redistributed towards meeting the shortfall for individuals who do not contribute enough to cover their own NZS. Under a private approach, the 'surplus' would remain with the high-income individual and shortfalls would have to be met otherwise.

*Economic growth*

Retirement income policy can have an indirect effect both on national income levels and on external borrowing requirements via its impact on national savings, which is in turn the result of the interaction of private and fiscal savings. However, the mechanisms are complex, depending on internal feedback loops and factors external to retirement income policy, such as risk premiums, interest rates and the exchange rate. We look here at the likely first-order impact on national saving.

Previous increases in the age of eligibility for NZS do not appear to have had much of an impact on private saving behaviour. From the individual's point of view, they now have a longer working life to save for a shorter period of retirement and so the amount they need to save per year reduces. However, empirical evidence suggests that raising the age of eligibility for NZS does seem to encourage higher levels of labour force participation among older workers.

Reducing the real level of entitlement is also likely to encourage greater labour force participation by older people, as they decide to make up at least some of the shortfall by increasing their time in work. However, people are more likely to need to increase their saving as well. While they can work for a few more years to fill the shortfall caused by a delay in their access to full NZS, they are less likely to be able to work, or rely on their families, for the whole of their retirement.

A transition towards a SAYGO system, whether on an individual or a communal basis, would be expected to cause income to be diverted from current consumption to saving to meet future retirement costs, and therefore to produce a transitional reduction in the consumption/GDP ratio. A move to greater pre-funding may also have a negative impact on labour force participation as the immediate rewards for work reduce.

International evidence provides little conclusive evidence on the scale of the increase in private saving under compulsion, but suggests that it is usually directionally positive.[2] The bulk of the savings increase typically comes from lower- and middle-income households. Higher-income households are typically already saving at or above the compulsory rate, and so are more likely to respond to savings compulsion by redirecting their voluntary saving than by forgoing consumption to increase their overall saving rate (Davis and Hu, 2006).

It is even more difficult to know to what extent higher savings will translate into increased productive capital stock in New Zealand. But again our judgement is that it is likely to be directionally positive for capital stock as it is likely that some part of the higher savings will be retained within New Zealand. The effects on productivity and output are uncertain.

It is possible that a public SAYGO approach, involving investment into a single large fund, would deliver higher returns in the long run than a private SAYGO approach involving a large number of individual funds. This is because a large fund will benefit from economies of scale and a longer investment horizon, enabling investment in higher-risk growth-oriented assets, whereas individual accounts face proportionately higher fees and may be more conservatively invested in view of individual investors' shorter time horizons (Dyck and Pomorski, 2011). On the other hand, the labour disincentive effect could perhaps be less in the case of a private SAYGO approach. Contributions are less likely to be perceived as a tax, but rather as an increase in individuals' overall lifetime wealth (Karam et al., 2010).

*Reducing risks: macro*

A higher rate of national saving will be required if the economy is to increase overall investment without increasing overseas debt. The impacts of retirement income policy reforms in this area therefore depend on how individuals adjust their savings behaviour in response, and on broader fiscal policy settings. We have shown that behavioural effects may vary between different approaches, but broadly we would expect that the greater the reduction in lifetime income expectations, the more people are likely to respond by cutting back on consumption and increasing saving. This suggests that the impact on household saving of retirement income policy reform may not depend on what the government does so much as how hard it does it.

Sustained increases in private savings behaviour will contribute positively to reducing New Zealand's macroeconomic vulnerabilities. However, the overall impact on national savings would be significantly greater if the government were to use the fiscal savings to reduce deficits (increase surpluses), rather than using the savings to finance spending elsewhere or to reduce taxes.

**... the overall impact on national savings would be significantly greater if the government were to use the fiscal savings to reduce deficits (increase surpluses), rather than using the savings to finance spending elsewhere or to reduce taxes.**

New Zealand's strong fiscal frameworks, which require the government to take a long-term approach to fiscal strategy, help manage this risk.

*Reducing risks: micro*

The risk that individual will live longer than they had expected, and so run out of savings, is particularly difficult to bear as, by the time they are aware that they will live longer than expected, it may be too late to do anything about it. Therefore, it seems inappropriate for individuals to bear the bulk of longevity risk. The government, however, is well placed to hedge individual longevity by pooling risk across entire cohorts.

Raising the age of eligibility and SAYGO approaches ensure that individuals continue to receive at least as much as they do under the present approach throughout their pensionable lives, and therefore do not change the allocation of longevity risk. Under a compulsory individual saving approach, the Crown may – depending on the finer details of the scheme – be able to transfer some of the longevity risk through annuitisation arrangements.

A slower-growing NZS entitlement is still paid throughout an individual's lifetime after the age of eligibility; but people are more likely to need additional savings to supplement the reduced entitlement, and the consequences are worse if they are not able to manage those savings in a way which delivers them an adequate income throughout their pensionable life. Part of this risk is still retained by government also, since individuals who run into hardship as a result of outliving their savings, or not having enough to sustain themselves, are likely to turn to additional welfare assistance.

None of the options directly addresses the opposite risk – that individuals who live fewer years after retirement receive less NZS in total. While this risk would ideally be addressed through policy interventions aimed directly at the fundamental issue – health-related disparities in life expectancy – this is neither straightforward nor likely to deliver significant improvement in the short term. However, it can also be mitigated to the extent that an individual's retirement wealth is his or her own to consume (or bequeath) at the rate he or she chooses. Options which encourage individuals to build up larger independent retirement savings as well as, or even instead of, a life-long entitlement may therefore be preferable from this perspective.

**Under the present arrangements, younger people can expect to receive more formal pension in total than will older people, due to the former's higher life expectancy.**

Options which increase the share of the costs of pensions met from capital accumulation, rather than from contemporary taxation, help to diversify risk away from dependence on contemporary economic growth levels.

Under compulsory private savings, both the amount of retirement income available to the individual and the NZS payable by the government depend on total accumulations of private savings. This means that the Crown and the individual share investment risk. Individuals have a range of options to manage their investment risks, and allowing them to manage this risk themselves will allow them to select a risk level which is optimal for their individual circumstances. On the other hand, transferring risk to the government allows it to be managed over a greater time horizon, reducing the risks posed by short-term financial market fluctuations. A balance would need to be struck between protecting individuals from risks that they are not well placed or competent to manage, on the one hand, and avoiding the encouragement of inappropriately high-risk investment approaches by individuals relying on government to rescue them if things go wrong on the other.

A publicly managed retirement fund may be at less risk of fraud or theft than individual accounts. Under this option, the Crown takes on a greater level of investment risk: the New Zealand Superannuation Fund may, or may not, deliver the returns on investment necessary to enable it to pay future pensions to the extent intended. International experience shows that large funds managed on behalf of the public do not always deliver good returns, and some have suffered substantial losses. The individual is also indirectly exposed to this risk, with less scope to manage it, as the Crown is likely to pass on the cost of investment underperformance through increased taxes or reduced benefits (Whitehouse et al., 2009).

*Equity: distributional impacts*

Different people will experience different impacts on their total pension wealth under different reform options, depending on their age and their lifetime income. Treasury has undertaken modelling to try to quantify these impacts, but these must come with a heavy caveat as they are so dependent on assumptions, and outcomes are so dependent on many individual variables.

Under the present approach, people who live longer receive more NZS overall. This difference remains about the same under an across-the-board reduction in NZS entitlements under changed indexation. However, the difference in lifetime expectation of pension receipts is exacerbated if the age of eligibility is increased.

Under the present arrangements, younger people can expect to receive more formal pension in total than will older people, due to the former's higher life expectancy. This would remain the case under a 'communal SAYGO' arrangement, which would retain the universal flat-rate nature of NZS entitlements. However, the effect is temporarily reduced if the age of eligibility is increased.

Under a changed method of indexation, younger individuals can expect to receive substantially less than older people will, and less than they would under present arrangements; by the time they reach pensionable age, the value of the pension will be less. This approach would be likely to mean that although the purchasing power of NZS would be maintained, recipients' NZS income would fall relative to wages earned by contemporary workers.

Under a private SAYGO arrangement, younger individuals have more time to build up their own savings and therefore have greater retirement wealth. Older people would be less affected as they would not have time to build up significant mandatory savings.

In terms of the impact on people at different income levels, a private savings approach will establish more of a formal relationship between contributions made and pension received, and hence be more 'actuarially fair' in terms of being a closer match between contributions and total benefits. Notably, in view of the tendency for women to experience lower lifetime earnings due to their greater probability of spending time out of the workforce, such an approach is likely to increase gender inequality in retirement.

The upfront cost of a private SAYGO approach is likely to have quite significant welfare impacts on working-age households, depending on their present approach to saving. Positive welfare effects will (eventually) result from compulsion for those households who could save but are currently 'under-saving' due, for example, to myopia or other cognitive biases. Negative welfare effects will result for those households for which it is optimal to not save in financial assets. For example, there will be some individuals whose lifetime income would be higher if they were to invest in a business or in upskilling, but who will be prevented from doing so by being compelled to save in a prescribed vehicle over their working lives. Similarly, some households may be better off repaying their mortgage more quickly, rather than or before building up financial assets. Low-income households who are financially constrained may also not experience an overall welfare improvement if they are forced to transfer resources from the short term to the long term.

A communal approach to SAYGO has a different intragenerational distributional effect. Broadly, the effect of a shift in this direction would be to redistribute resources from richer people earlier in their lives, to poorer people (within the same age cohort) later in their lives. Once established, therefore, this approach is largely progressive in the same way as the present approach under which higher income individuals pay more through their taxes, but everybody receives the same annual NZS payments.

The transitional generation, in funding part of its own pension as well as that of contemporary pensioners, would get a worse deal than earlier generations, who funded only older people's pensions. However, if we act quickly and impose some of the transitional costs on the generation that is currently at middle age, this generation will still get quite a 'good deal' in absolute terms, because the older cohort that the current generation must fund is relatively small.

This point emphasises the importance of an early start, if this transition is to be made. A taxpayer who is supporting a quarter of a pensioner, as current cohorts are doing, is better placed to contribute towards his or her own pension as well, compared with one who is supporting half a pensioner, as future cohorts are likely to be doing (Coleman, 2012).

*Social institutions*

Any reform is likely to be effective only to the extent that the policy change is sustained through to the long term. Policy change is unlikely to engender confidence and trust, and hence will not bring about the desired behavioural change, if people do not believe that the change is permanent, or cannot see how it will affect them well into the future. Reform therefore needs to be not only fiscally sustainable but also clear, easily understood and seen to command broad political support. For this reason it is important that an approach should be capable of adaptation if outcomes are greatly different from expectations; but in a way which is transparent, predictable and objective so as to reduce the risk of politically-motivated change and the incentive for interest groups to seek to influence it.

**... any system which involves different entitlements for different people will be more complex, require more individual monitoring, and so be more expensive to administer and more prone to administrative error than a flat-rate universal pension.**

In the case of reforms to the age of entitlement, an approach objectively linked to an external factor such as longevity might be more politically sustainable than a revised age of eligibility set at an arbitrary level which may or may not need to be changed again later.

In the case of reforms to the way in which NZS is calculated, one possible variation would be a system under which the relationship between salaries and a new pensioner's entitlement would remain the same (through continued wage indexation), while pension levels for existing pensioners were linked to a greater extent to prices. Each superannuitant would receive weekly NZS payments set relative to the average wage as it stood at the time when they personally reached the age of eligibility. Over time the value of each individual superannuitant's NZS payments would be indexed to keep up with inflation, but would decline relative to the average wage. This would mean that each cohort transitioning from work to pension would continue to experience the same impact on their living standards as previous cohorts, rather than each cohort successively experiencing a greater difference between wage and pensions on transition. However, it would mean different pension levels for pensioners of different ages and this may prove difficult to sustain politically.

In the case of SAYGO options, where a large public fund is built up, it may be difficult to sustain the ring-fencing of increasingly large amounts of resource to fund pensions if more immediate, or politically attractive, requirements emerge. In a system in which Parliament is sovereign and parliaments cannot bind their successors, it would be difficult to design a public SAYGO system that would avoid this risk.

The approach to individual SAYGO described here is intended to minimise avoidance opportunities and compliance and administration costs, compared to an approach under which more or all of an individual's assets and income were included in a means test. But it is nevertheless inevitable that any system which involves different entitlements for different people will be more complex, require more individual monitoring, and so be more expensive to administer and more prone to administrative error than a flat-rate universal pension.

Approaches which rely more on individuals making their own arrangements, either by encouraging or making compulsory a higher personal contribution to total retirement wealth, increase the private administrative cost as well as the risks for those individuals.

### Getting from options to a choice

While the Living Standards Framework enables a systematic comparison of options, it cannot on its own be used to determine which approach, or combination of approaches, is 'best'. Views on that will continue to depend on individual value judgements about what are the general objectives of retirement income policy, and how they are to be prioritised against other calls on public resources; Questions such as the following need to be asked.

- How socially tolerable is old-age poverty, weighed against welfare for other life stages?
- How can the need to lean against poor individual decision-making be balanced with the desirability of individual autonomy and preferences? Is there a public interest in increasing private saving which affects this balance?
- How confident can we be that rates of return on investment are likely to continue to outpace rates of growth in the economy?
- Does greater accumulation of assets on the Crown's balance sheet via public pre-funding increase the risk of looser-than-otherwise fiscal policy?
- Is it acceptable to continue to push costs forward onto future generations?

Treasury hopes, through the publication of the Statement on the Long-Term Fiscal Position and accompanying analysis, to inform and provide a framework for public debate on these and other pertinent questions of public values.

1 About 40% of New Zealand pensioners currently have no income other than NZS. See Ministry of Social Development, 2013, section 1, 'Income trends for older New Zealanders, 1982–2012'.

2 Survey evidence suggests that about a third of private contributions to KiwiSaver represent savings which would not otherwise have been made (see Law et al., 2011).

### Acknowledgements

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# Fiscal Challenges and Changing Patterns of Need for Health and Long-Term Care in New Zealand

New Zealand's health and long-term care system plays an important role in society by improving the length and quality of people's lives and providing dignity for the sick and infirm. It also accounts for a significant proportion of government spending and a rising share of national income. This article discusses some of the challenges that New Zealand faces in managing expenditure growth and repositioning its health and long-term care system to deal more effectively with changing patterns of disease.

**Overview of the current system**

As a proportion of GDP, New Zealand's health expenditure is slightly above average for OECD countries (Figure 1). In 2011, total health expenditure in New Zealand was 10.3% of GDP compared to the OECD average of 9.3%. In dollar terms, New Zealand spends slightly less on health per person than the OECD average, and less than many of the countries we compare ourselves to, such as the United Kingdom and Australia.

A small but significant proportion of health expenditure relates to long-term care. This includes services provided to people with an enduring physical or mental disability who are dependent on assistance with the basic activities of daily living, such as washing, dressing or using the bathroom. It may also include lower-level assistance with activities such as housework, meals or shopping. Long-term care accounts for around 18% of total public spending on health care services, being split about equally between residential care and home care, plus a small proportion spent on day care. Taken together, public and private spending on long-term care in New Zealand stands at approximately 1.4% of GDP, close to the OECD average (Figure 2).

The need for health and long-term care (its timing, duration and intensity) is unpredictable at an individual level, and

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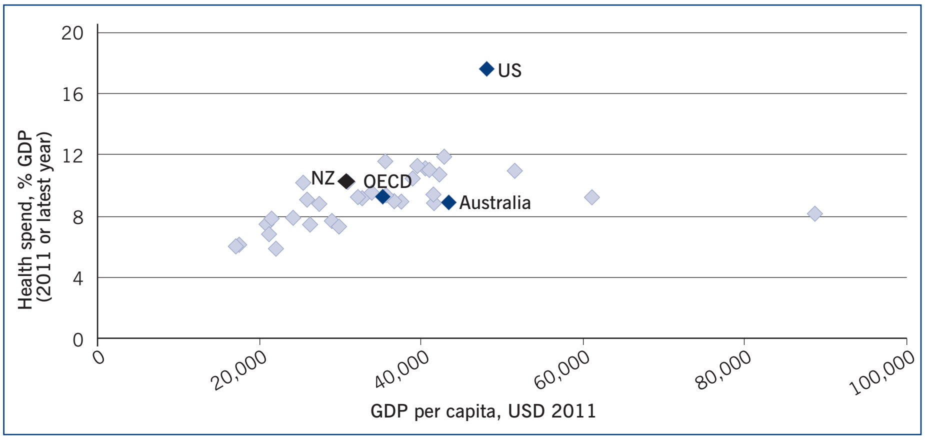
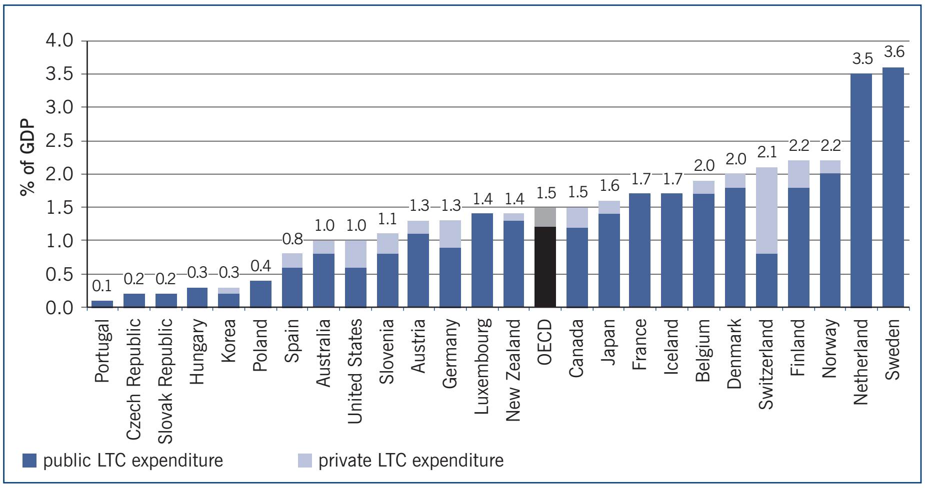
**Figure 1: Total health spending as a percentage of GDP, and GDP per capita in OECD countries (2011)**



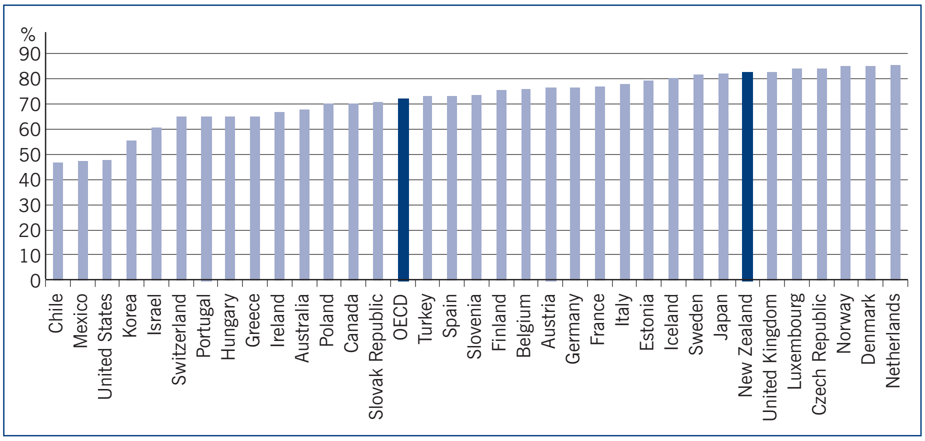

Source: OECD, 2013

**Figure 2: Long-term care expenditure in OECD countries (percentage of GDP, 2008)**




Source: OECD, 2011

**Figure 3: Public expenditure on health, % total expenditure on health (2011 or nearest year)**




Source: OECD, 2013

the costs can be very high. Some form of public or private risk pooling is therefore generally considered desirable. Although private insurance can play this role to some extent, the market tends to cater poorly for certain groups, notably the elderly, the chronically ill and those on low incomes. Individuals at greater risk of poor health, who are typically on lower incomes, face higher insurance premiums where insurers are able to identify them. Insurers also tend to restrict eligibility to people with no pre-existing conditions, limiting coverage.

This creates a strong case for government involvement and has led to significant public financing of health and long-term care services in all OECD countries. In New Zealand, public expenditure accounts for 83% of total health spending (Figure 3) and 92% of spending on long-term care (Figure 2), above the OECD average. Even in the United States the government pays around half of all health care costs, and less than 10% of the population aged 65 or over holds private cover for the costs of long-term care.

**How the system performs**

New Zealand performs well on many commonly-used indicators of overall population health. For example, life expectancy has improved from 71.1 years in 1961 to 81.2 years in 2011, around one year higher than the OECD average (OECD, 2013). However, it is difficult to get an accurate picture of the performance of the health system from these high-level indicators. Health care is just one of a number of factors that influence health status. Tobias and Yeh estimate that health care contributed around one third of the health gains made by the New Zealand population over the 1981–2004 period (Tobias and Yeh, 2009). Other relevant factors include individual characteristics through to wider socio-economic, cultural and environmental conditions (Figure 4).

Certain indicators relate more directly to the performance of the health system. The concept of 'amenable mortality', for example, refers to deaths that should not have occurred given effective and timely care. There is no firm consensus about the list of causes for amenable mortality, so estimated rates vary. According to two recent estimates, age-standardised mortality rates in 31 OECD countries in 2007 ranged from from 59 to 200, or from 62 to 206, deaths per 100,000 people, depending on the list used. In both cases, the amenable mortality rate in New Zealand (85 or 107 deaths) was close to the OECD average (95 or 104 deaths), and had declined by more than the OECD average over the 1997–2007 period (Gay et al., 2011).

Avoidable hospital admissions provide an indication of how well the health system is working. We have low admission rates for uncontrolled diabetes, at less than a fifth of the OECD average, but high rates for both asthma and chronic obstructive pulmonary disease – in both cases at 1.6 times the OECD average (OECD, 2011). In addition, people with below-average incomes are almost twice as likely to forgo medical care due to cost as those with above-average incomes (Figure 5).

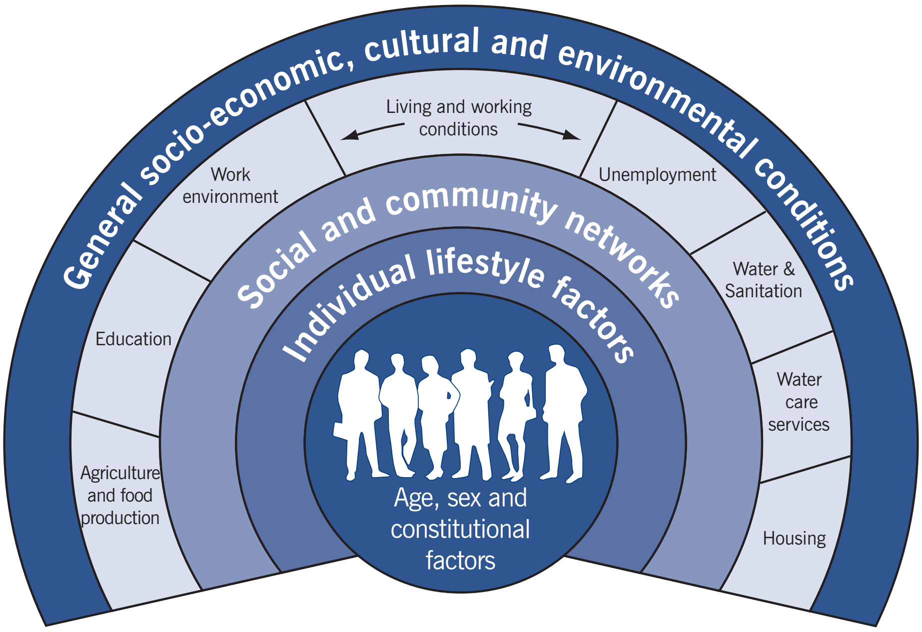
Rates of some infectious diseases are high in New Zealand compared to other developed countries and seem to be increasing. There are clear ethnic and social inequalities in infectious disease rates (Baker et al., 2012). A number of other health indicators also show disparities in health between ethnic groups. The gap between Māori and non-Māori life expectancy at birth is 7.3 years, although this has narrowed from 9.1 years in 1995–97 (Statistics New Zealand, 2013a). Rates of avoidable hospital admission for Māori and Pacific people are significantly higher than the overall rate (about double for Pacific people), suggesting that access barriers are greater for these groups (Ministry of Health, 2012a).

### Increases in health care spending

Government spending on health and long-term care is an important part of New Zealand's long-term fiscal challenge because it is both large and growing. Vote Health accounts for more than a fifth of core Crown expenditure, and spending has been increasing faster than national income for most of the last 60 years (Figure 6). The amount spent by government on these services has risen in real terms from $583 per person in 1950 to $2,987 per person in 2011 (2011 dollars). As a share of GDP, that equates to an increase from 3.1% in 1950 to 6.9% in 2011. This reflects an increase in both the volume of services and the benefits provided, as well as higher unit costs.

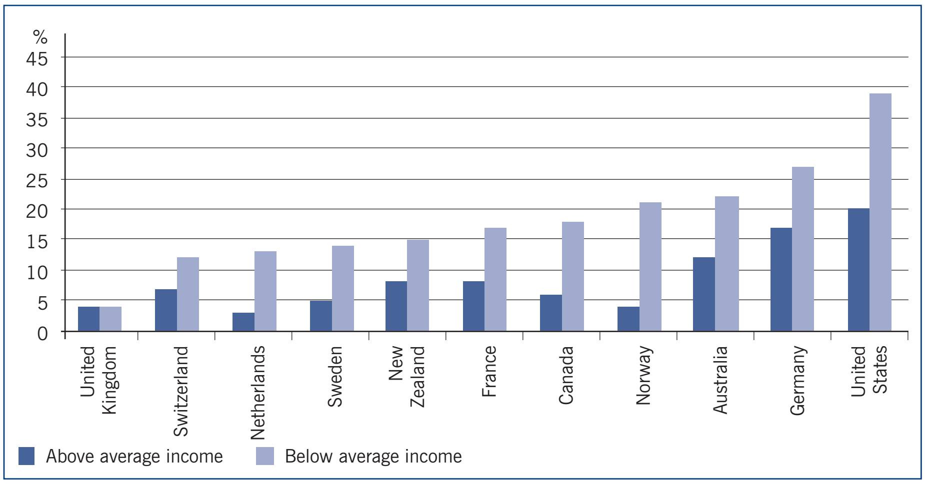
Spending on health and long-term care is driven by a range of interacting demographic and non-demographic factors. Population ageing affects spending, since older people tend to need more care. The contribution of population ageing to past spending growth has, in fact, been quite small: in the international literature, estimates range from 6.5% to 9% of the total over the period 1960–1990 (Dormont, Grignon and Huber, 2006; OECD, 2006; Smith, Newhouse and Freeland, 2009). Figure 7 compares the estimated contribution made by population ageing to total real health expenditure growth (excluding long-term care) in New Zealand with the averages across the OECD and BRIICS countries (Brazil, Russia, In-

**Figure 4: The main determinants of health**



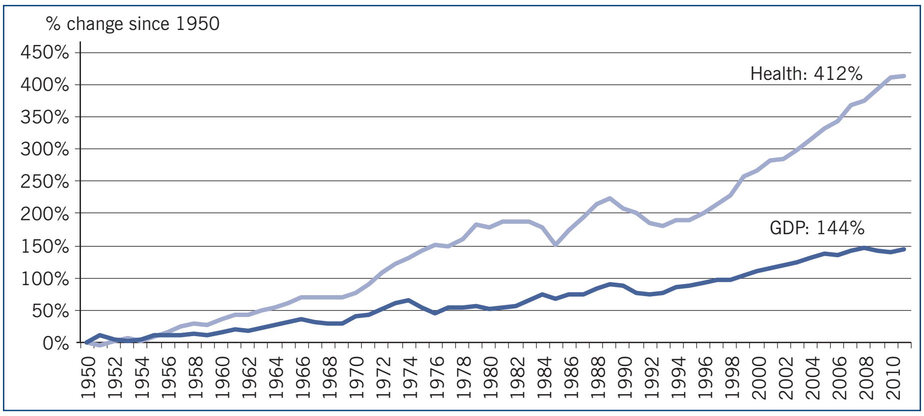

Source: Dahlgren and Whitehead, 1991

**Figure 5: Unmet care need due to cost in eleven OECD countries**



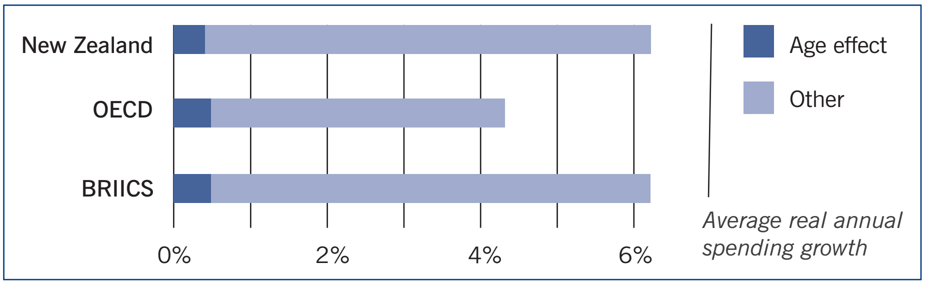

Source: Commonwealth Fund, 2010, included in OECD, 2011

**Figure 6: Core Crown health expenditure per capita and GDP per capita, real growth**



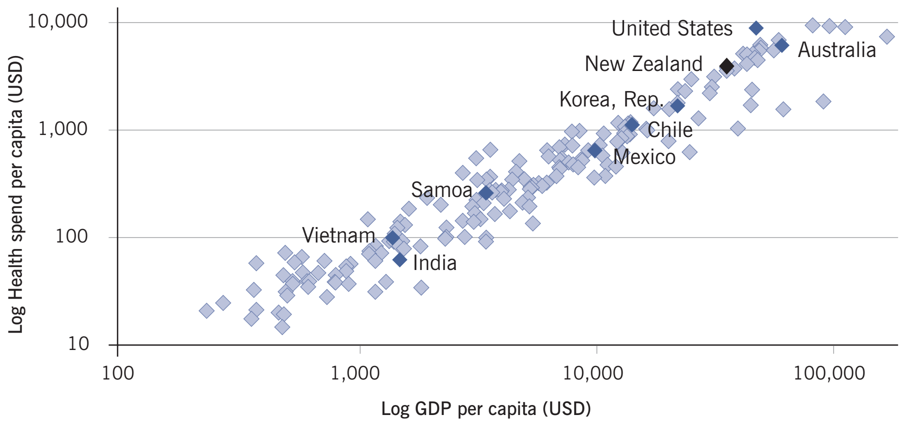

Source: Treasury

**Figure 7: Average real annual change in health spending (1995-2009)**



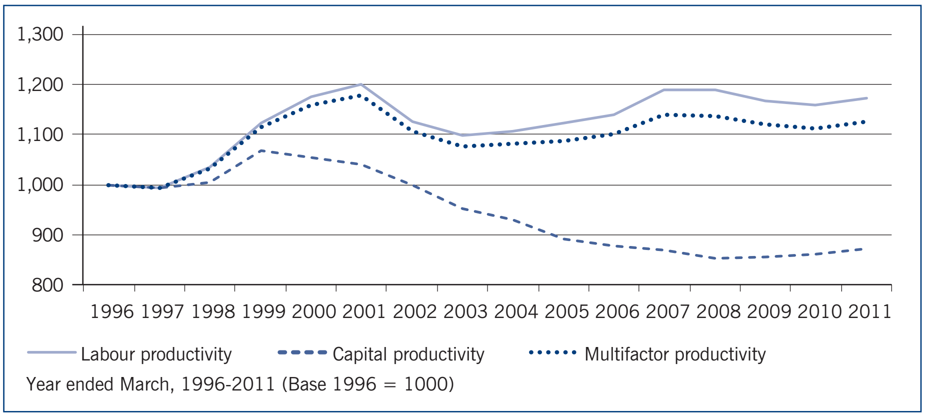

Source: de la Maisonneuve and Martins, 2013 (Table 1); excludes long-term health spending

**Figure 8: Health spend per capita and GDP per capita in different countries (2011)**




Source: World Bank data

**Figure 9: Health care and social assistance productivity indexes**




Source: Statistics New Zealand, 2013b

dia, Indonesia and South Africa) over the period 1995–2009.

Ageing is likely to make a larger contribution to future spending increases, particularly in areas such as long-term care, but its overall impact is still expected to be modest. A large proportion of health care costs come at the end of life (costs of dying, rather than from being old per se). In the US, older people generate over a quarter of their Medicare expenditure in the last 12 months of their lives (Riley and Lubitz, 2010), which equates to approximately a third of their lifetime health care costs. These costs are deferred by increased longevity. There is also evidence that the costs of death decline as age at death increases (Bardsley, 2012). These factors will tend to reduce the contribution that population ageing makes to health spending growth.

If increases in longevity are accompanied by an increase in the number of years lived in good health, this should also help to offset demographic cost pressures to some extent. The international evidence for this is mixed, with recent analyses not able clearly to predict whether dependency levels by age will rise, fall or remain constant as life expectancy increases (European Commission, 2012). It may be that increased longevity results, at least partly, from a decline in the rate at which chronic diseases progress, which may also cause the proportion of life spent with serious illness or disease to stabilise or reduce even as the proportion spent with moderate or less severe conditions expands. Under this scenario of 'dynamic equilibrium', the costs associated with providing people with more years of care may be partially offset by a reduction in the average level of support required (Graham et al., 2004).

A country's health spending is statistically highly dependent on its GDP per capita, regardless of institutional or other characteristics (Mendez, Tabish and de Ferranti, 2012). This is shown in Figure 8. One explanation for this is that higher incomes drive higher public expectations of the range and quality of health services that should be available and, in a broad sense, a greater willingness to pay for these. The strength of this relationship is uncertain. Older studies tend to suggest that health care is a luxury good, with demand increasing faster than income (elasticity greater than one). More recent studies have suggested a weaker causal relationship, although one that is nevertheless significant (European Commission, 2012; de la Maisonneuve and Martins, 2013).

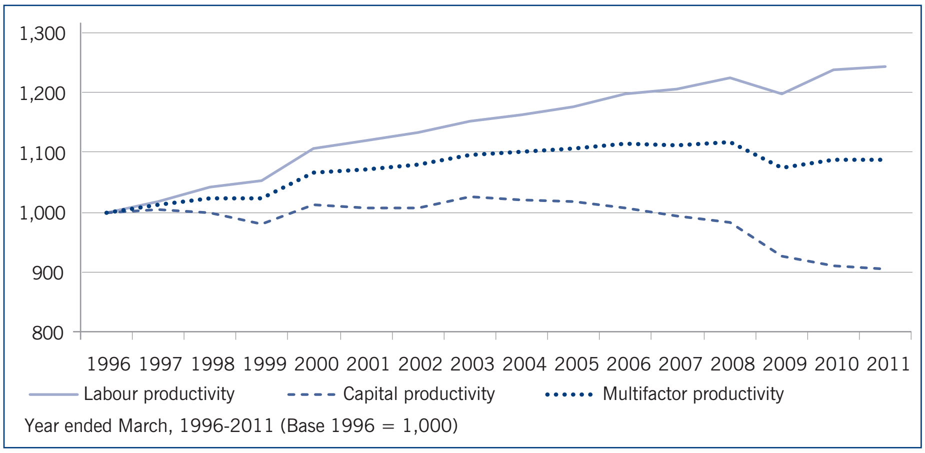
As national income rises, so does the cost of labour, which is the major input into health and long-term care services. Productivity gains tend to be relatively low in labour-intensive service industries such as this. The difference between economy-wide productivity (and wage) growth and the anticipated lower rate of productivity growth in the health and long-term care sector is expected to push up unit costs over time. This effect – known as Baumol's cost disease – is a major driver of the Treasury's projections for rising expenditure over the long term (Treasury, 2013).

Evidence about the rate of public sector productivity growth is limited. Statistics New Zealand recently released its first productivity series for the 'healthcare and social assistance industry' (Statistics New Zealand, 2013b). Figure 9 shows changes over time in the productivity for this industry over the period 1996–2011. By way of comparison, Figure 10 shows changes in the productivity index for the whole measured sector (Statistics New Zealand, 2013c). Figure 9 shows strong productivity growth in the health care and social assistance industry between 1997 and 2001 (about 20% over the period, or 3.7% a year). The decline in labour and multi-factor productivity during the period 2001–03 reflects slowing output growth and strong growth in labour input (particularly in hospitals and residential care). Overall, between 2001 and 2011 labour productivity fell by 2.4% (0.24% a year over the period, but with variations in the rate and direction of change over time). The health care and social assistance industry covered by these statistics is broad, including both market and non-market activity in a range of different sectors. Factors affecting productivity will vary across the sector and changes in quality may not be fully captured (Statistics New Zealand, 2013b).

The contribution made by technological change to expenditure growth is complex (Smith, Newhouse and Freeland, 2009; Thomson et al., 2009). New technologies can reduce costs through efficiency gains, or through health improvements that reduce the need for further care. They can also contribute to higher costs by extending the scope and range of possible treatments, making treatment easier and thereby reducing treatment thresholds, or by replacing cheaper technologies. Medical innovations may contribute to rising costs if people live on to develop other health problems which themselves require expensive treatment.

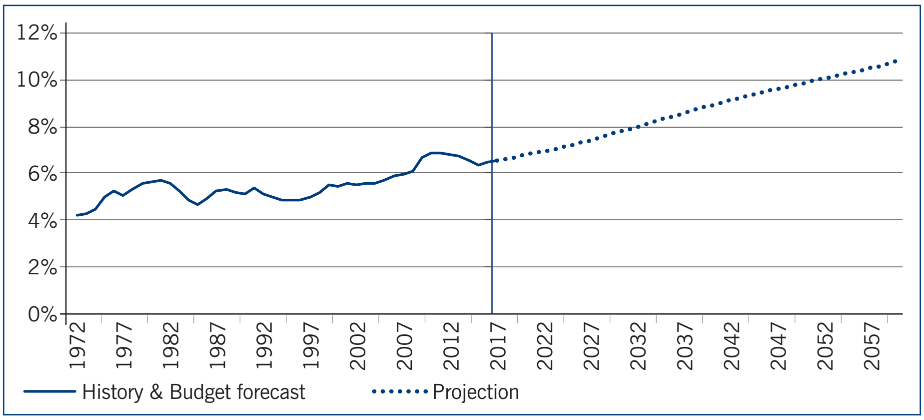
Based on past growth and assumptions about the drivers of future expenditure, the Treasury has projected publicly-financed health and long-term care spending to 2060, using its long-term fiscal model (Treasury, 2013). The projections show spending continuing to rise as a proportion of both national income and government expenditure, to 11.1% of GDP by 2060 (Figure 11), or 31% of all government spending excluding debt financing costs (Figure 12). These are projections, not forecasts or predictions.

**Figure 10: Productivity indexes for the measured sector as a whole**



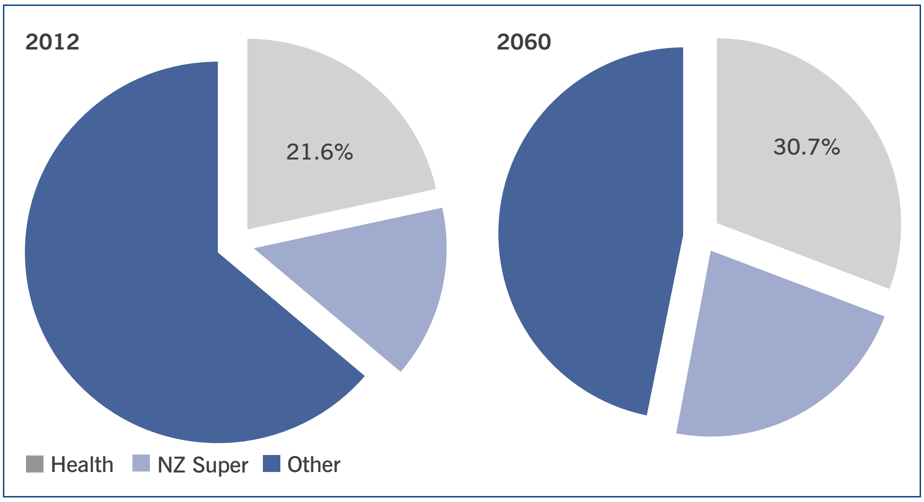

Source: Statistics New Zealand, 2013c

**Figure 11: Core Crown Health expenditure, % GDP, long-term projection**




Source: Treasury, 2013

**Figure 12: Projected change in composition of government expenditure (excl. debt financing costs)**



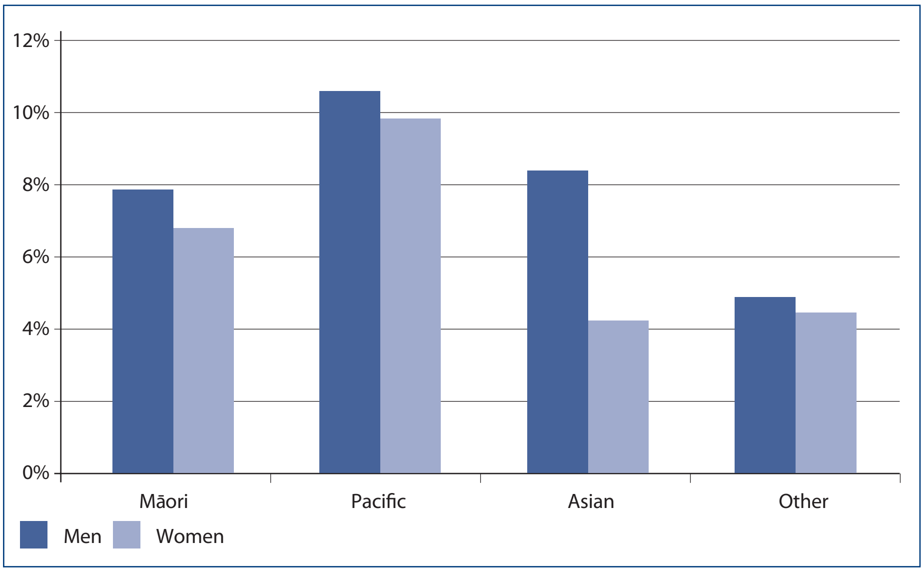

Source: Treasury, 2013

Their purpose is to allow for a better understanding of the scale of the fiscal pressure that future governments may face, as a starting point for thinking about the sustainability of existing arrangements.

**Changing patterns of disease**

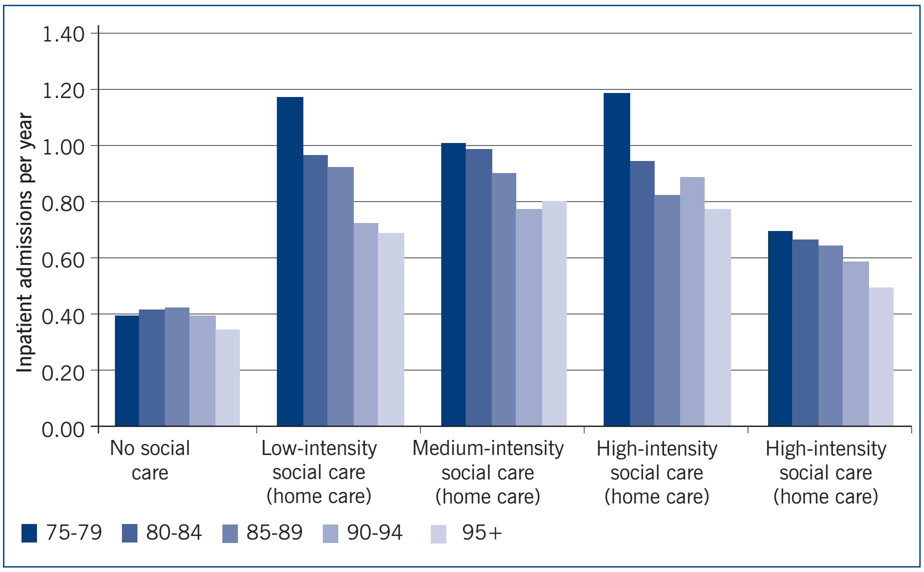
Demands on the health system are changing. While people are living longer and are healthier than their equivalents in earlier decades, many are living with long-term or chronic conditions that are costly to manage. The bulk of these conditions are accounted for by non-communicable diseases (NCDs). These include diabetes, cardiovascular disease, chronic obstructive pulmonary disease,

**Figure 13: Prevalence of diabetes in the New Zealand population**




Source: Ministry of Health, 2012b

**Figure 14: Inpatient admissions per person in England, according to age and intensity of social care**




Source: Nuffield Trust

many cancers, dementia and arthritis. Globally, the prevalence of and share of morbidity that is attributable to NCDs is rising as communicable (infectious) diseases decline in importance as causes of death and morbidity.

The 2011/12 New Zealand Health Survey (Ministry of Health, 2012b) provides detailed information about the prevalence of chronic conditions. Arthritis, asthma and chronic pain each affect more than one in ten New Zealand adults (15%, 11% and 16% respectively). Five per cent of adults have been diagnosed with ischaemic heart disease. Sixteen per cent of adults take medication for high blood pressure, and 10% for high cholesterol (in both cases, a higher rate than in 2006/7).

The diabetes rate has increased gradually over the last 15 years, with around 5% of adults now diagnosed with this condition, and a further 2% of adults estimated to have undiagnosed diabetes (Ministry of Health, 2012b; Coppell et al., 2013). Diabetes is more prevalent among overweight and obese people and among Māori, Pacific and Indian ethnic groups (Figure 13). The prevalence of diabetes also increases with deprivation. It is likely that the variation in the prevalence of diabetes among ethnic groups is linked to deprivation and obesity. As well as generating health problems in its own right, diabetes is a risk factor for later strokes and heart disease.

A fact that has only been fully appreciated fairly recently is that many people with long-term conditions suffer from more than one. In a recent Commonwealth Fund international health care survey of adults with complex health care needs, 34% of New Zealand respondents reported two or more conditions (Schoen and Osborn, 2011).

The health systems of developed countries are typically not well adapted to meet the needs of people with long-term conditions effectively and at reasonable cost. They tend to be organised to deal best with acute, life-threatening conditions, based around hospital-focused, doctor-led services. Care tends to be episodic, reactive and delivered by individual professionals working in parallel. Patients tend to be regarded as passive recipients of care, and their contribution to designing and providing their own care tends to be under-valued, along with the role of their informal carers.

Traditionally, health systems have been organised around individual medical specialties and the management of single conditions. There is a growing consensus that health care systems need to be reoriented and rebalanced to respond better to the changing pattern of need, so that they foster professional team-working and closer relationships between provider organisations, support patient self-care, and place greater emphasis on preventing long-term conditions developing in the first place.

#### Avoidable hospital admissions

The centre of gravity of the New Zealand health system needs to continue to shift away from acute care. Hospitals are costly, and admission is in itself frequently harmful, particularly in the case of older people with complex, multiple conditions. Over a third of older people admitted to hospital leave in a worse functional state than when they were admitted (Edwards, 2012).

It is important to note that simply shifting services from acute hospitals to community settings may not be reliably cost-saving (Sibbald, McDonald and Roland, 2007). In order for such a policy to be successful, it is critical to select the correct services, retain the right level of hospital provision (which may be difficult to estimate), and avoid simply transferring costs to patients. A number of New Zealand studies show that a substituted primary care-driven service can, on occasion, be as effective as but cost considerably less than the same intervention delivered in a hospital setting (Wellingham et al., 2003; Barker, Bryant and Aish, 2006). Less is understood about how a health system as a whole would perform (in terms of demand for hospital care and in financial terms) if significantly more care was delivered outside a hospital environment.

Most high-income countries have taken some steps in this direction, although experience has shown how hard it is to reduce hospital admissions in practice and hospital care remains an essential element in these systems. In part this is because any freed hospital capacity has to be taken out of use for savings to be realised and this can be politically very difficult. A sustained process of change is required, with less reliance on hospitals and doctors, more specialist nurses working outside hospitals, more flexible staff working practices, and more joint decision-making by primary and secondary (specialist) clinicians.

#### Integration of health and long-term care

The health and long-term care system needs to be considered as a whole, rather than as two parallel, separate systems. For example, a recent study in England showed (Figure 14) that people in care homes made significantly less use of all forms of hospital care than other social care users, including people using intensive home care (Bardsley et al., 2012). New Zealand shows a comparable pattern of use. Frail people receiving high levels of support in their own homes use hospital services more than those in residential care, although their total costs of care tend to be lower (Grant Thornton, 2010).

The policy implications of this sort of research are not straightforward, but it is clear that the health and long-term care sectors affect one another. This points to the need for these services to be managed as complements and substitutes, with coordinated planning at the service delivery level to promote health and independence at least long-term cost. Those with long-term conditions should be supported by multidisciplinary teams, operating outside hospitals, which include not just health workers but also social care providers.

New Zealand has an advantage in this regard because its health budget at national level covers both acute services and long-term care. Public funding for aged residential care is allocated to district health boards (DHBs) alongside funding for health care and is not ring-fenced. In principle, therefore, it is possible for DHBs to design care packages that include both health and support services, with a view to minimising costly hospital admissions. In many countries this would involve complex negotiations across separate commissioning and delivery organisations. On the other hand, there are coordination issues even in New Zealand, since around half of all long-term care (mainly for disability support services for the under 65s) is managed centrally by the Ministry of Health.

Residential care for the over 65 is subsidised by DHBs, subject to an asset test. The rationale for asset-testing is targeted allocation of resources, particularly as people typically expect to draw down capital during retirement. Since 2005 the asset test has been substantially relaxed, with the threshold for a single person rising from $15,000 to more than $213,000. This relatively generous approach has narrowed the disparity between health services that are 'free' at the point of use and means-tested long-term care. This reduces the incentive for hospital care to be used inappropriately and inefficiently. It also means that tax revenue is being used (up to a point) to protect accumulated capital and, in effect, facilitate future bequests by some people in long-term care.

#### Purchasing arrangements

DHBs function both as planners and commissioners of services for the population and as owner-operators of district hospitals. This arrangement weakens their incentives in the short to medium term to reduce dependence on hospital care since they would have to manage the consequences for jobs and hospital income. It is notable that the most sustained local efforts to improve care for people with complex long-term conditions have been in places such as south Auckland where the senior clinicians and managers of the local hospital recognise that there is no possibility of continuing to provide an adequate health care system without reducing dependence on the hospital and improving care outside it.

**The OECD has suggested that the role of DHBs as purchasers should be strengthened through greater operational separation of their dual functions (OECD, 2009).**

The OECD has suggested that the role of DHBs as purchasers should be strengthened through greater operational separation of their dual functions (OECD, 2009). A split between purchasers and providers appears to perform well when there is potential for competition between providers, when providers are not tied to specific purchasers, when uncertainty and complexity are low, and when few economies of scale apply (Figueras, Robinson and Jakubowski, 2005). New Zealand's small size and geographically-dispersed population mean that these conditions will often not be met. Furthermore, good services for people with long-term conditions require coordination of care from a range of different providers and types of professionals, rather than supplier competition for individual services. The case for a simple separation is stronger for services such as elective surgery, where purchasers can choose between several providers and it is easier to see how encouraging competition could improve quality and efficiency of care.

The potential contribution of primary health organisations as purchasers to improving the allocation of resources may also need to be considered. Their budgets do not include large parts of primary care expenditure, such as primary medical pharmaceuticals and diagnostics. This limits their ability to shape services and means there is a lack of clarity about where responsibility for primary care ultimately resides. General practices continue to operate largely separately from the rest of the public system through a combination of patient co-payments and capitated subsidy. This funding model restricts the extent to which preventive and chronic care programmes can be integrated into mainstream general practice.

In 2009 the Ministry of Health invited expressions of interest for what was termed 'Better, Sooner, More Convenient' (BSMC) health care, with the aim of providing extended primary care closer to where people live and reducing the demand for secondary care (Ministry of Health, 2009). The programme includes initiatives to co-locate a wider range of primary and community health services in the form of integrated family health centres. Nine initiatives were selected by the Ministry of Health and funded as demonstration programmes (Ministry of Health, 2011). The Health Research Council recently awarded a number of partnership grants to evaluate some of the initiatives. At this stage, however, it is difficult to gauge whether progress is being made and in which areas. Although there is some positive anecdotal evidence, so far there has been no independent, national evaluation of the programme.

There are currently 20 DHBs operating as purchasers of health services, as well as the Accident Compensation Corporation and around 30 primary health organisations. There may be scope to rationalise these arrangements, by moving to fewer purchasers with clearer lines of accountability. As well as reducing administrative costs, this would allow for more systematic planning of services and investment, at both national and local level. It would also help to concentrate management expertise within the system. The case for fewer purchasers is further strengthened if governments prefer national consistency in service provision over local variation.

A new requirement for groups of DHBs to develop regional service plans has been introduced to encourage collaboration and service integration, although this has added to rather than streamlined planning and accountability arrangements for DHBs. At a sub-regional level, three DHBs in the lower North Island (Hutt Valley, Wairarapa and Capital and Coast) have gone further and merged their planning and funding functions with a view to improving the financial and clinical sustainability of their operations (CCDHB, 2013).

**... the evidence in favour of individual health and long-term care budgets is weak and ... likely to increase inequalities in care by favouring better-off and more educated users.**

#### Patient/user-directed care

User-directed arrangements for long-term care are fairly common overseas. The Netherlands, the United Kingdom and the United States all allow care recipients to directly employ their personal care assistants, while a number of Nordic countries operate voucher systems to promote personal choice in the use of long-term care. In Austria, all support for home-based care is provided in cash, with the recipient being able to decide whether or not to purchase formal care. Germany and Luxembourg give people entitled to long-term care a choice between benefits in kind or a cash payment set at a lower level (OECD, 2005). Small numbers of younger disabled people in New Zealand currently have access to individual care budgets.

These funding models are intended to increase consumer direction and choice. This can have a number of different objectives, including empowerment of care users and a better fit between people's needs and their care packages. Another objective is to stimulate competition amongst providers, based on user choice, with a view to improving quality and/or reducing costs. These arrangements may also raise the visibility of the cost of services and increase public understanding of the need for prioritisation.

Critics argue that the evidence in favour of individual health and long-term care budgets is weak and that they are likely to increase inequalities in care by favouring better-off and more educated users. In the Netherlands there appears to have been a loss of spending control over personal budgets, with claims increasing tenfold and spending more than fivefold between 2002 and 2010 (van Ginneken, Groenewegen and McKee, 2012). This has been attributed to raised expectations of what could be provided and difficulties setting reliable budgets at an individual level (White, 2011).

Studies in some OECD countries have suggested that such arrangements can increase user satisfaction at similar cost to traditional models, provided they are properly targeted, although there seems to have been less impact on the quality of care (Lundsgaard, 2005). The concept has been the subject of a randomised trial in England in relation to social care (disability support). This showed some positive results. Those with budgets seemed to have slightly better outcomes than those without, although relative cost-effectiveness varied by patient sub-group (Glendinning and Moran, 2008).

More recently, evaluations of the use of both personalised care planning and personal budgets in the United Kingdom have been published as part of a series of studies looking at health system reform under the Labour government of 1997–2010 (Mays, 2013). Care planning was intended to link support and services provided by multiple providers to people with chronic conditions through a process of shared decision-making between the patient and a named professional. Take-up was modest and there was no sign that the level and nature of the planning that took place had any impact on health outcomes after six or 12 months of follow-up (Bower, 2013). Personal health budgets were associated with statistically significant improvements in the quality of life and psychological well-being of recipients, although there did not appear to be an impact on health status or mortality rates over the 12-month follow-up period. The cost of inpatient care was lower for people with personal budgets, but this was offset by higher spending on other services, with no significant impact on overall costs. Budgets were nevertheless assessed as being cost-effective given assumptions made about the value of, in particular, quality of life improvements (Jones et al., 2013).

'Telehealth' involves the remote exchange of information between patient and professional in order to help manage a condition. 'Telecare' is the remote monitoring of changes in a person's physical status using alarms and sensors. Both have been widely promoted as ways of enhancing self-management and improving the quality and cost-effectiveness of care for people with long-term conditions. These technologies have been slow to move into routine use due to a mix of professional and patient resistance. They seem to be viewed ambivalently by patients (Lehoux, Saint-Arnaud and Richard, 2004; McCreadie and Tinker, 2005). Evidence for their cost-effectiveness outside rural areas is also less than compelling (Barlow et al., 2007). In the largest and most robust randomised evaluation undertaken to date, a programme in England has so far shown no significant reduction in hospital costs, still less overall net savings. However, there does appear to have been a reduction in hospital admissions and mortality rates during a 12-month follow-up period among a group of patients with chronic obstructive pulmonary disease, diabetes or heart failure (Steventon et al., 2012).

### The health workforce

As noted earlier, productivity gains tend to be relatively low in labour-intensive service industries such as health care. Better use of information technology may provide one way of maximising labour productivity within the health sector. Telehealth and telecare are examples of this, although their impact to date has been limited. Another approach may be to adjust the skill mix of the workforce to ensure that professional skills are put to best use. As doctors are most costly and require the greatest amount of training, allowing other professionals such as nurses and pharmacists to perform some of the tasks previously performed by doctors, or creating new roles, could create efficiencies. The role of physician assistant, for example, has been used in the United States since the 1960s. Physician assistants are trained for a considerably shorter time than doctors and receive lower salaries. However, in primary care settings it has been shown that they have a 'same task' substitution ratio of 0.86 compared with the supervising physician, meaning that they saw the same types of patients and rendered the same care as the physician 86% of the time (Hooker, 2006). New Zealand is currently in the second phase of a physician assistant demonstration project focused on primary care and rural hospital settings.

Workforce issues must be considered in the context of an international labour market in which there is likely to be increased demand for health professionals over the coming decades. New Zealand's health workforce has high levels of inward and outward migration. In 2005/06, foreign-born doctors and nurses made up 25% and 29% of the workforce respectively (Zurn and Dumont, 2008).

### Prevention

Government programmes for health promotion and disease prevention currently represent around 6.4% of health care spending in New Zealand, compared to an average of less than 3% for OECD countries. There are many different kinds of preventive measure and they vary in cost-effectiveness. Some programmes – such as vaccination against communicable diseases – are highly effective (OECD, 2010) and can even be cost-saving (Maciosek et al., 2006). Others, especially those requiring behavioural change, can be difficult to implement and costly. Even when preventive measures are effective in terms of improving health outcomes (and may therefore be worthwhile), they may not necessarily save money for government in the long run. There is no guarantee that programmes delivered across broad population groups will be less expensive than subsequent targeted care, and people who live longer as a result may also develop other conditions, generating further costs.

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Another approach to secondary prevention and cost containment involves risk-profiling. The basic idea is simple: to identify and intervene pre-emptively with those in the population who are at greatest risk of developing or exacerbating an existing long-term condition such as diabetes. While such approaches may seem common sense, only a small minority of preventable, unplanned hospital admissions are of people who are at high risk based on their previous behaviour and characteristics. As a result, risk profiling may not be cost-effective unless the intervention triggered is low-cost. More work needs to be done to investigate the effectiveness of risk-profiling followed by different interventions for patients at different levels of risk of admission or readmission.

As noted above, health care is just one of a number of factors that influence health status. This means that in some cases it may be that the most effective interventions to keep the population healthy and out of hospital are found outside the health system. For example, New Zealand has relatively poor-quality housing. More efficient heating (in particular, through better insulation) can reduce cold and damp, improving health by reducing infectious and non-infectious disease and related hospitalisations. Two randomised controlled trials in New Zealand have shown that retrofitting insulation and installing non-polluting heaters in homes are potentially effective ways of improving the health of occupants, thereby reducing the number of GP visits and hospitalisations, days off school or work, and premature deaths (Howden-Chapman et al., 2007; Howden-Chapman et al., 2008; Chapman et al., 2009).

### The scope of the public system

Greater efficiency and better prevention are important, but fiscal pressures will remain. As discussed earlier, wages are the main cost input for health and long-term care services, and they tend to rise as the economy grows. Scope for productivity gains is limited in service sectors and typically will not compensate entirely for these higher wage costs. This means that the cost of delivering a given amount of care tends to rise over time.

This does not mean that good-quality care will become unaffordable, since 'productivity growth makes a society wealthier, not poorer, and able to afford more of all things' (Baumol, 2012). However, the extent to which spending continues to rise as a proportion of GDP depends on the choices we make as health and long-term care services become relatively more expensive. If we do decide to devote a greater proportion of our future income to buying these services, they will form a larger part of the national economy. We will thus need to consider how much of this enlarged activity should remain within the public sector, and how far it can or should be funded by government through taxation.

## New Zealand achieves good health indicators at a level of spending per person that is slightly below the OECD average, although there are some areas of concern, including infectious disease rates and ethnic disparities in health.

Governments make decisions about the coverage of the public health system that influence spending growth. Health services in New Zealand (as in many OECD countries) are mostly provided free at the point of need, although there are co-payments for GP visits and prescription medicines. The cost of certain services, including optometry and most adult dental care, has to be met privately. The scope of the public system is also defined, less directly, through centrally-imposed budget constraints, which may lead to rationing of services through waiting lists, and perhaps to reductions in quality. These parameters may be adjusted over time.

Health technology assessment is a process by which health purchasers decide which new health technologies are worth investing in and is now widely used by OECD countries (OECD, 2010). It is most well developed in the pharmaceutical sector. New Zealand's Pharmaceutical Management Agency (PHARMAC) is a highly successful example of what can be achieved through good prioritisation. PHARMAC decides which GP-prescribed medicines, hospital medicines and vaccinations are to be subsidised by government, assessing them against a range of economic and clinical criteria. This approach aims to ensure that New Zealanders get the maximum health benefits from a given pharmaceutical budget. PHARMAC estimates that its activities saved DHBs more than $5 billion from 2000 to 2013. It is currently in the process of expanding its operations to cover medical devices, which will yield further savings to DHBs.

Changes to the coverage of the public system, including decisions about prioritisation, may involve difficult trade-offs in terms of fairness and efficiency. For example, co-payments may lower the cost to government of a particular service and, through price signals, reduce overconsumption. However, because individual contributions are not related to income or ability to pay, except perhaps at the margins, they tend to be regressive and may deter people from accessing services when they need them. They may also contribute to inefficiency. In New Zealand, co-payments do not apply to hospital services (a previous attempt to introduce them having been strongly resisted). This difference may cause some patients to forgo primary care in favour of accident and emergency services, with a higher cost to government and no better outcomes. Patient co-payments have also been identified as an important barrier to refocusing the health system so that chronic conditions are effectively managed in the primary care sector (Mays and Blick, 2008). People who do not access care initially because of cost may eventually require more costly inventions that could otherwise have been avoided.

Restricted coverage for the public system would lead to an increased reliance on out-of-pocket payments or private insurance, with more people choosing to purchase additional health care or faster access. While this happens now to some extent, concerns about equity and access could be expected to increase if the types of services available to people on different incomes, or with different risk profiles, started to diverge significantly.

Growth in the private insurance market may generate fiscal pressures of its own. Policies which cover co-payments can increase demand by insulating people from the cost of services, and have been found to increase public expenditure in the United States, France and Spain (OECD, 2004; WHO, 2004). Private insurance may also create new incentives for providers to use the public system to stimulate demand for private services (Thomson et al., 2009). This has led to a regulatory response in a number of countries. Canada, Sweden, Luxembourg, Greece and Italy all prohibit doctors from practising in both the public and private sectors.

Other countries have tried to manage financial pressures by introducing compulsory insurance schemes, particularly in relation to long-term care. These generally involve publicly-managed social insurance arrangements rather than compulsory private insurance. The accident compensation scheme provides an analogous model in New Zealand. Compulsory insurance and other hypothecated taxes may have presentational advantages relative to other forms of taxation, but they also conflate decisions about tax and spending. A hypothecated levy is still effectively a tax, funding current or future expenditure, and may be a less efficient and more complicated way of raising revenue than other forms of taxation.

### Concluding remarks

Health and long-term care spending is projected to grow considerably over the next 50 years, driven upwards by a combination of factors. All OECD countries are facing similar pressures, so this is not an indication of system failure in New Zealand. New Zealand achieves good health indicators at a level of spending per person that is slightly below the OECD average, although there are some areas of concern, including infectious disease rates and ethnic disparities in health. Nevertheless, it seems likely that rising expenditure on health and long-term care will constitute a significant fiscal and political management issue for future governments. The demands on the system are changing, with chronic and long-term conditions increasingly important as a source of morbidity. This has important implications for the organisation and delivery of care. The system needs to continue to be rebalanced away from acute care, with a greater emphasis on reducing hospital admissions and managing conditions in primary care. Even if this is achieved, there will still be difficult choices about how much of New Zealand's future income is devoted to health and long-term care, what proportion of total spending is financed from taxation, and how to adjust the contours of the public system in response to fiscal pressure. Action will be needed on a range of fronts to ensure that New Zealanders get the greatest health gains from every dollar spent and that health spending growth is sustainable for future generations.

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Paul Sherrell

# Window of Opportunity to Deliver Better Justice Sector Outcomes over the Long Term

The justice sector contributes to society by protecting civil and property rights, as well as providing a fair and effective way to resolve disputes. In the criminal justice area, the sector aims to:

- maintain law and order, focusing on minimising harm and victimisation;
- bring perpetrators to justice with appropriate punishment;
- provide rehabilitation for offenders to reduce reoffending.

The question is how to deliver these aims in a way which maximises the benefits to society and efficiency of the sector.

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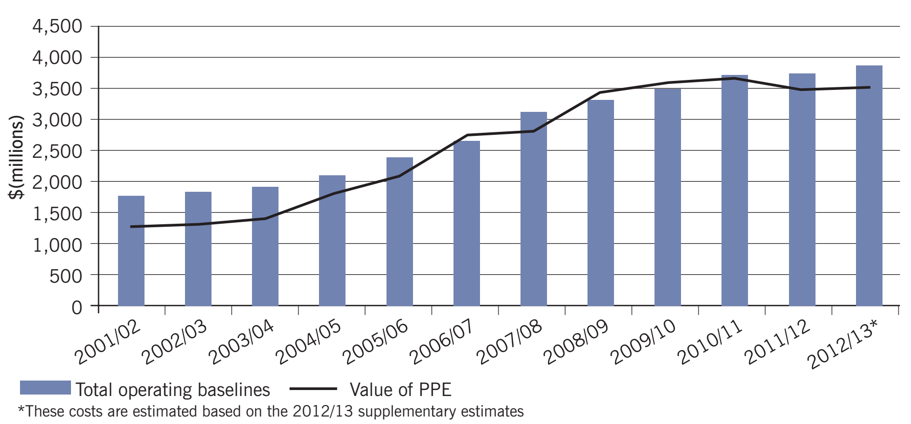
The criminal justice system is a pipeline. Individuals enter into the system once arrested and prosecuted, managed by the police. From there they move into the court system, administered by the Ministry of Justice, and potentially on to the Department of Corrections which manages offenders with prison and community sentences. Decisions by one agency, for example to prosecute more people, have significant operational and resource impacts on other agencies in the system.

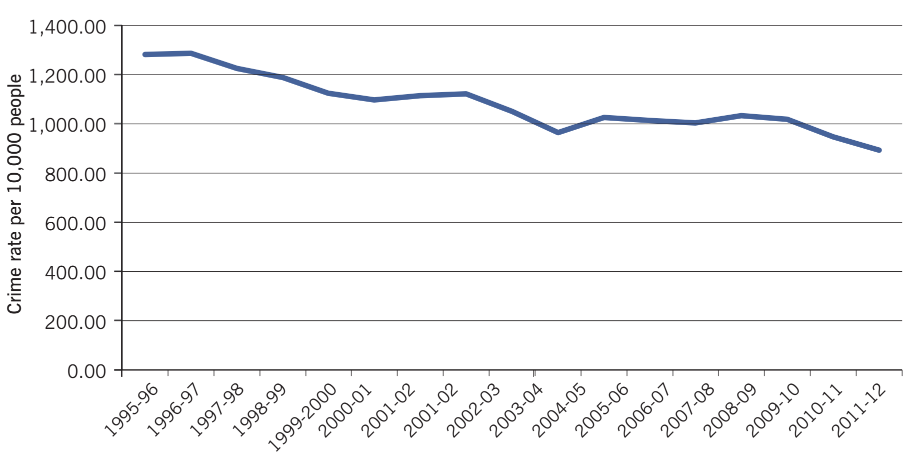
Contrary to what many people might think, New Zealand's recorded crime rate has been falling since the early 1990s (New Zealand Police, 2011/12). This crime rate reduction is similar to trends around the world. We are not sure of the exact reasons for this fall in the crime rate, although a greater focus on crime prevention may have helped. Another factor that appears to be important is the changing age profile of the population. This may have greater impacts into the future as the proportion of young men in the population decreases.

**Figure 1: Justice sector operating costs and value of physical assets (measured by property, plant and equipment (PPE)) since 2001/02**




*These costs are estimated based on the 2012/13 supplementary estimates

**Figure 2: Recorded crime rate per 10,000 people from 1995/6 to 2011/12**




This crime rate reduction has only recently been translated into a reduction in numbers entering the criminal justice pipeline and forecast prisoner numbers. But, as a result, the outlook for the justice sector has dramatically improved in the past three years.

The Treasury's 2009 Statement on the Long-Term Fiscal Position portrayed a justice sector that, despite stable rates of crime, was experiencing rapid cost escalation.[1] The statement argued that the fiscal and social costs of increased imprisonment were not sustainable or acceptable. In contrast, this article presents a very different story. The justice sector now has a window of opportunity to deliver better outcomes for New Zealanders and to become financially sustainable. The key issue facing governments and the justice sector is how best to use the falling crime rate and numbers entering the justice sector pipeline to minimise harm and reduce the real costs of the sector. These considerations need to include investing in interventions before people come into contact with the criminal justice sector. For example, interventions delivered in health, housing, education and welfare could have a significant effect on the justice sector's goals.

### Spending on the justice sector has doubled in the last ten years

Government spending on the justice sector (criminal justice makes up around 80% of total sector expenditure) rose steeply over the last decade, from $1.8 billion in 2001/02 to $3.9 billion in 2012/13 (based on the 2012/13 supplementary estimates). This is a 66% increase when price rises are taken into account (see Figure 1) and represents over 5% of core Crown spending and about 1.8% of GDP. The value of the sector's physical assets (as measured by property, plant and equipment) has increased by 280%, from $1.3 billion to $3.5, billion between 2001/2 and 2012/13. Some of the increased expenditure on property over the last decade has been in response to the growth in numbers entering the criminal justice pipeline, as noted above (for example, four new prisons have been built since 2005).

The rise in spending over the past decade was not due to an increase in recorded crime. According to the New Zealand crime statistics for 2011/12, crime rates actually fell 9.6% between 2001/02 and 2011/12. Figure 2 shows the reduction in crime rate since 1995/6 (New Zealand Police, 2011/12).

In contrast, more people flowed through the justice sector pipeline. The rise in costs appears to be the result of the policy and operational choices made in response to crime, including:

- the introduction of longer prison sentences with higher hurdles to achieve parole (changes to the Parole Act 2002 have increased the proportion of sentences completed from around 66% to 72.5%);
- increases in the number of police officers, with downstream impacts such as higher numbers of criminal court cases;
- high fixed costs associated with an asset-intensive delivery model.

### Numbers entering the criminal justice pipeline are now falling

For the first time in a decade, the numbers entering the criminal justice pipeline fell slightly in 2010/11, and they are forecast to fall by 16.7% to 2022. Prisoner numbers are also expected to fall, albeit less dramatically, to around 8,100 prisoners (a 6.7% reduction) to 2022. Figure 3 shows the turnaround in prisoner number forecasts between 2009 and 2012.

The reduction in numbers entering the pipeline and the flattening of prisoner numbers is a major shift from previous forecasts.

The reason for the reduction in numbers entering the criminal justice pipeline is not entirely clear. However, new crime prevention approaches by the police and choices not to prosecute for some types of low-level offending appear to be having a big impact. Prisoner numbers are forecast to ease by a smaller amount than the fall in prosecutions. This is because many of the offences diverted from court are at the lower end of the spectrum and therefore unlikely to attract a prison sentence. A key question is whether the changes seen over the past two years will be sustained or whether the previous trend of rising numbers entering the criminal justice system and increasing prisoner numbers will return.

Despite the overall reduction in crime, there has been an increase in certain types of crime. For example, illicit drug offences have increased by 5.1% in the last year. This may represent a change in focus and more effective police operations. However, to sustain the overall reduction in crime the sector will need to remain vigilant and adapt its response to match the changing composition of crime.

### Who are the people in the criminal justice system?

Certain groups of New Zealanders are over-represented in the criminal justice system. Figure 4 shows the imprisonment rate by age for Māori and non-Māori.

In 2011, 39% of the prison population was under 30 years of age (Department of Corrections, 2011). Māori are over-represented both as victims and as perpetrators of crime. Over half the prison population identify themselves as Māori, compared to 14.6% in the general population (Statistics New Zealand, 2006).

The prison population also has significantly higher rates of mental illness and substance abuse than the general population. When surveyed in 1999, nearly 60% of inmates had 'at least one personality disorder', and 90% of those with a disorder were also suffering from substance abuse (Department of Corrections, 2007).

### Future population changes may help reduce the rates of crime

Unlike spending on health and retirement income, the demand for spending on criminal justice services is unlikely to increase as the population ages. Indeed, the crime rate may decrease further as the population ages, which should help reduce numbers entering the criminal justice system. Young men are the largest offender group. In 2011, 43.6% of all sentences (custodial and non-custodial) were handed to young men aged 17–30 (for men aged 17–20 it was 12.7% of sentences) (Statistics New Zealand, 2012). The smaller proportion of the population in younger age groups over the next 40 years could see a further reduction in crime rates.

We are uncertain if this fall in crime will reduce justice costs. As noted above, justice sector costs are strongly dependent on policy and operational choices, and less dependent on the levels of crime. However, if the assumed reduction in the crime rate comes to pass, this could reduce justice sector costs – relative to the situation where the population does not age – by a maximum total of $80

**Figure 3: The 2009 and 2012 justice sector prisoner number forecasts**

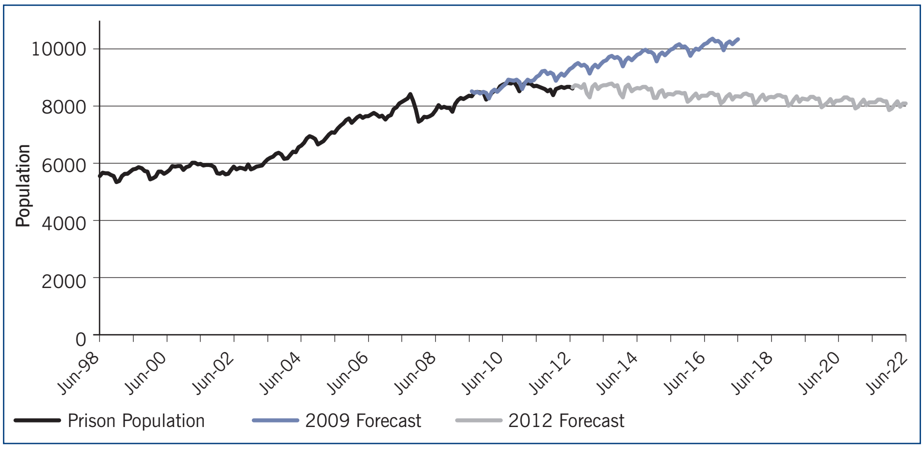
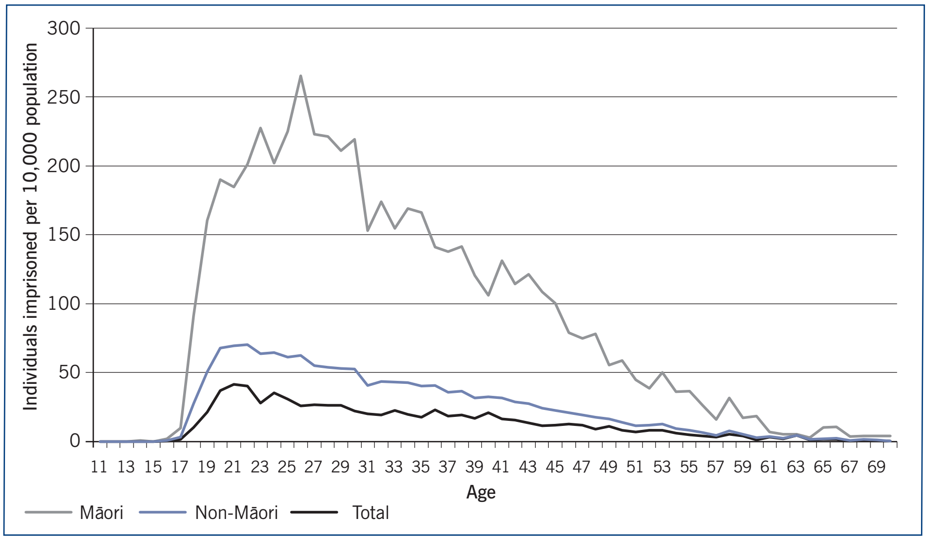
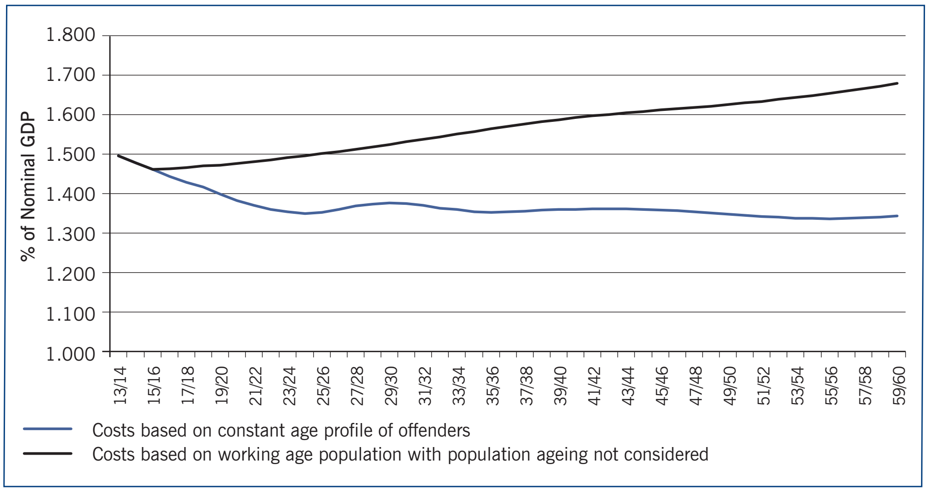



**Figure 4: The imprisonment rate per 10,000 people by age and ethnic group**




Source: Ministry of Justice data

**Figure 5: Cost projections for law and order operating expenditure to 2059/60**



billion between 2011/12 and 2059/60 (the 'demographic dividend').

Figure 5 shows the expenditure on law and order projected to 2060 as a proportion of GDP under two scenarios:

- a constant age profile of offenders as the population ages (blue line);
- costs increase based on spending assumptions aligned to the working-age population (the potential reduced costs from population ageing are not included).

However, the size of this demographic dividend is uncertain. Various factors could reduce it:

- the age profile of offenders may rise in line with the general population: this would result in no reduction in crime due to the changing average age of the population;
- further rural–urban migration may increase crime because of the greater concentration of the population in urban centres;
- income inequality and social deprivation may increase, which could lead to greater crime;
- societal preferences may change: as the population ages, society may place more value on maintaining public safety and therefore seek to increase the amount of spending on law and order;
- wage cost pressures and expensive service delivery models based on fixed assets may reduce the impact of any cost decreases resulting from lower crime rates.

While the factors mentioned above may reduce the potential demographic dividend, the justice sector will not face pressures for increased spending due to an ageing population. If the sector is successful in further reducing crime and numbers entering the criminal justice system, it might be possible to reprioritise spending from law and order to other priority areas, or to reduce taxes or debt.

**Effective policy and operational settings should help to reduce the harm caused by illegal activities. They will also reduce the number of people in each part of the criminal justice pipeline.**

#### Making the most of the current window of opportunity

The current and expected reduction in crime and fall in numbers entering the criminal justice pipeline creates an opportunity for the justice sector. Resources previously needed to keep up with increasing demand can be used to improve services and increase efficiency instead.

The sector can use this opportunity to deliver a 'virtuous cycle' (depicted in Figure 6). The virtuous cycle is the result of two elements:

- *Policy and operational settings that reduce crime and reoffending*
  The sector is thinking about other ways to measure performance other than the number of people flowing through the system. This change of focus may have a significant effect on the policy and operational settings in the sector, as well as spending patterns and interventions delivered. For example, if the sector focused on minimising harm and victimisation prior to and along the criminal justice pipeline, it may choose to spend its resources differently and make changes to prosecution, sentencing and parole policies.

  Looking at how the sector can help support other agencies deliver interventions before contact with the criminal justice system is likely to help them deliver their results. For example, this may include considering how the social sector (e.g. work and income, housing, education and health) can help support people outside a life of crime.
- *Delivering better public services through modernisation and reinvestment*
  The policy and operational settings matter hugely in terms of achieving improved outcomes, including reducing harm and numbers in the criminal justice system. Reduced harm and numbers of victims would be a good result in itself, but the sector would benefit further from translating this into savings – for example, by closing buildings that are under-utilised. The savings and resources freed up can be redeployed into areas that will deliver even better results. If the savings are cashable, they could also be used in other areas of public spending, or to reduce taxes or government debt.

#### The virtuous cycle: policy and operational settings

As discussed above, the costs of the criminal justice sector are strongly influenced by policy and operational settings. The government and justice sector agencies have choices about how these settings are calibrated in order to minimise harm to New Zealanders and maximise the benefits of the sector. Some of these choices include:

- *social sector interventions:* how the social sector can deliver interventions that reduce harm and the demand for criminal justice services;
- *dealing with at-risk groups:* how the sector works with victims to reduce their vulnerability to further offending, and how it manages those at risk of becoming offenders;
- *apprehensions:* when and how police apprehend offenders;
- *prosecutions:* how the police use prosecutions effectively to reduce harm and victimisation as well as delivering the best outcomes for the victim and offender;
- *sentencing:* the court sanctions given to offenders, and the balance between penalties and other expectations or requirements such as participation

in restorative justice and other rehabilitation programmes;

- *rehabilitation:* how much the sector should invest in rehabilitation and which programmes are most effective;
- *parole:* how to ensure that prisoners are prepared for parole hearings and supported upon release to live law-abiding lives.

There is also a need to consider interventions before people come into contact with the criminal justice system.

**How the virtuous cycle works: benefits from reduced numbers in the system**

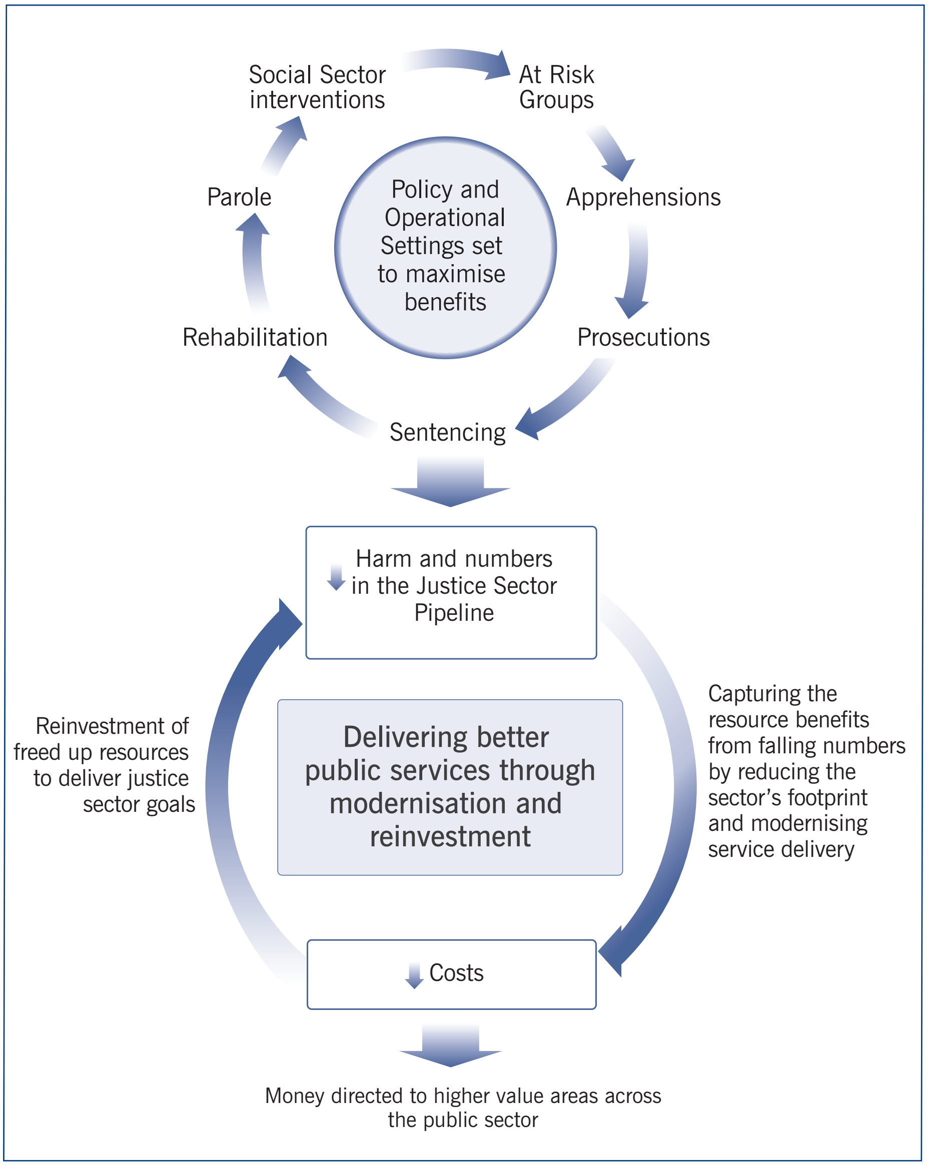
Effective policy and operational settings should help to reduce the harm caused by illegal activities. They will also reduce the number of people in each part of the criminal justice pipeline.

As discussed, however, falling numbers entering the justice sector pipeline will not automatically reduce costs. New Zealand and the sector would benefit from being able to translate reductions in court appearances and prisoner numbers into freed-up resources (e.g. staff who can be redirected to other activities across the sector) and cashable savings (e.g. by closing under-utilised buildings). The government and justice sector have choices about how to use the freed-up resources. They can be reinvested into further improving outcomes within the justice sector. Alternatively, any cash savings could be taken out of the sector and used in other areas of public spending (which may reduce crime indirectly) or to reduce taxes or public debt.

**Potential actions to help deliver on the opportunities**

The virtuous cycle will not happen automatically. The decisions in each part of the cycle involve a number of different players, some of whom are outside the sector (e.g. charity groups and other social sector departments) or independent (e.g. judges), and may involve competing priorities and interests. Consensus across the justice sector, the social sector and the wider public about how best to deliver the sector's aims of a safe and just society is required. To help produce the virtuous cycle, the sector could benefit from:

**Figure 6: The virtuous cycle**




*Collaborating even more to achieve results*

The sector has come a long way over the past three years in terms of working together more closely to deliver better services to the public. Staff in the justice sector agencies work well together on the front line, sharing information and coordinating activities to improve local results. At the senior level, the chief executives of the three large sector agencies (the New Zealand Police, Ministry of Justice and Department of Corrections) have established a Justice Sector Leadership Board that is responsible for setting overall strategy and goals for the sector and monitoring progress towards these. This collaboration improves decision-making and can facilitate better prioritisation of resources across the sector.

There is a strong appetite to achieve further collaboration, including on the front line: for example, justice sector agencies will co-locate in a justice and emergency services precinct in Christchurch. There are additional opportunities to embed a more collaborative sector approach, including establishing shared goals for capital investment and joint capital planning, more collaboration amongst the sector's policy groups, and prioritisation of funding across the sector to where it achieves the best return.

*Focusing on the most effective interventions to reduce crime, based on evidence*

By better exploiting information the sector already has about who commits particular types of crimes, when and where it is already achieving better outcomes for society. However, there is potential to improve outcomes even further by adopting an approach which ensures that the benefits realised from falling volumes are re-invested across the criminal justice pipeline to areas that provide the greatest benefits. This may include measuring 'harm', and seeking interventions that minimise harm through:

- *Knowing which crimes to target to reduce social harm, and when and how to intervene to deliver these reductions.* This will help prioritisation of resources across the sector. When deciding on the crimes to target, the reduction in social harm should be weighed up against the resources required to deliver it: for example, providing more support for people who are at the greatest risk of becoming offenders, or investing more in rehabilitation services for those who have already committed an offence which may give a better return.
- *Understanding how the organisations outside the justice sector can help.* Agencies outside the core criminal justice sector (including charities, iwi and other public sector agencies) can help the sector deliver its results. The justice sector is already working closely with these organisations, but there is potential to build on this, and to use outcomes-based approaches to contracting.
- *Choosing the policy and operational settings that may reduce harm and improve outcomes.* The sector may also benefit from revisiting policy and operational settings to ensure that they are geared towards reducing harm and improving outcomes. This may include the prosecution, sentencing and parole policies, as well as what should be considered a crime and put through a civil or criminal procedure.

*Telling a clear and compelling story on justice sector performance, focusing more on what is being achieved and less on how services are provided*

Public perception of the quality of justice services is often linked to having a visible presence in the community. This often means service performance gets measured by inputs (for example, the number of courthouses, police stations and officers). What really matters, however, is the quality of service the public experiences: for example, how quickly police respond, how safe we are, and how easily we can access justice services. This matters more than the number of buildings or people used to provide the service.

Measuring what is achieved will remove a critical handbrake on service improvements and will mean the sector can redesign operating models to provide better services to New Zealanders. They will be able to take advantage of productivity gains from technological advances and better operating practices, such as police using mobile communications technology.

**Conclusion**

The justice sector's long-term outlook is promising. The number of people flowing through the criminal justice pipeline is falling. This is likely to continue with an aging population, which may deliver a demographic dividend.

The sector has a window of opportunity to deliver a virtuous cycle of improved performance and financial sustainability. To help with this, it is starting to consider different measures of performance: for example, focusing on harm minimisation instead of numbers in the pipeline, and other interventions within and outside the criminal justice pipeline to achieve better results. The sector architecture is in place to deliver results in a coordinated way across the justice and social sectors.

However, delivering the virtuous cycle will not happen automatically: the sector will need to modernise service delivery models and free up under-utilised resources for redeployment in priority areas. To help deliver its goals, the sector may benefit from collaborating even more on the front line and towards shared sector objectives; focusing resources on the most effective interventions to reduce harm and crime, in the short and long term; and telling a compelling performance story, focusing more on what the sector is achieving, to help the sector modernise service delivery.

1 For a discussion of the issues facing the justice sector then see Sonerson and O'Connell (2011).

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Susie Krieble and
Finn O'Dwyer-Cunliffe

# Engaging Youth on New Zealand's Long-Term Fiscal Position

It would be fair to assume that the majority of the country's young people have not read the Treasury's most recent statement on New Zealand's long-term fiscal position. However, for the 27 young people who participated in the 2012 LongTermNZ workshop the release of the document was a matter of eager anticipation. This article is written by two of those who took part in the workshop. It explores the group's response to the Treasury's 2013 Statement on the Long-Term Fiscal Position, and the participants' thoughts on how the Treasury can further its commitment to engaging young people in a conversation surrounding the long-term health and viability of the New Zealand economy.

**Susie Krieble** and **Finn O'Dwyer-Cunliffe** were participants in the LongTermNZ workshop. Susie is a student at the University of Otago, and is currently completing her degree, majoring in economics and finance, on exchange at Université Jean Moulin in Lyon 3, in France. Finn graduated from the University of Otago in 2011 with a BA (Hons) majoring in politics and economics. He is currently undertaking a Masters in Politics at Victoria University of Wellington.

While more needs to be done to bring the country's most apathetic voting bloc to the table, together the LongTermNZ initiative – made possible by the McGuinness Institute,[1] the Treasury and Victoria University of Wellington – and the Treasury's recently published statement have produced the biggest step forward to date.

### The LongTermNZ workshop

The December 2012 LongTermNZ workshop, hosted by the McGuinness Institute with support from the Treasury and Victoria University, saw 27 politics and economics students take on the task of producing a 'youth statement on New

Zealand's long-term fiscal position'. The process involved the group – referred to here as 'the Long-termers' – attending the Treasury/Victoria University Affording Our Future conference and meeting with a number of key players in public policy before preparing the document over two long, hectic, thoroughly enjoyable but painstaking and sleep-deprived days. The aim of the 2012 Youth Statement on New Zealand's Long-Term Fiscal Position was to communicate the key issues discussed at the conference and workshop to other young people, especially those not previously engaged in this discussion. Presenting the document to the minister of finance during the final stages of the workshop was a valuable exercise for the Long-termers, particularly as it provided an opportunity to put forward opinions from the perspective of their generation, the generation with the greatest stake in these decisions.

In April 2013 the group was invited to give an additional presentation to a wider assembly of Treasury officials, focusing on youth engagement and communication. This enabled them to reunite and collaborate further on ideas obtained from the conference. The aim was to show how, with the right approach, this information could in fact resonate with youth from all over New Zealand.

The presentation certainly resonated with the Treasury people. For the Long-termers, it was a unique opportunity to express their perspectives and concerns to the leaders of New Zealand's pre-eminent source of economic analysis and advice. There was plenty of interaction with the Treasury crowd, and it was particularly encouraging to see the Treasury's chief economist, Dr Girol Karacaoglu, enthusiastically taking notes. The group's suggestions for improving youth engagement focused on high schools, and included the introduction of Treasury staff dedicated to youth affairs and a 'beat the bank' strategy involving the creation of a 'fiscal policy challenge' to rival the Reserve Bank's monetary policy challenge. This last suggestion in particular seemed to pique the interest of the organisation's movers and shakers.

From the Long-termers' perspective, the Treasury's 2013 *Affording Our Future: Statement on New Zealand's Long-Term Fiscal Position* (published on 11 July) is an enormous improvement on past efforts. At first glance the statement appears bolder, brighter and more appealing in its design than its predecessors, and throughout the 71-page document there is an obvious effort to provide a greater level of accessibility. As is the case with any publication looking to broaden its appeal, the authors of *Affording Our Future* have aimed to moderate the depth and sheer volume of the content without significantly compromising the level of information and analysis.

**While the Long-termers' reactions to the document were overwhelmingly positive, a glaring majority reported that they had not shared the statement with people outside the group.**

#### The survey: a youth reaction to the statement

To test whether the Treasury had realised its goal of increasing the appeal and accessibility of the statement, Long-termer Susie Krieble put together a four-question mini-survey seeking feedback from the other participants.[2] Two key questions were asked: 1) had they actually read the statement, and, if so, what were their initial reactions to it, and 2) had they shared the document or discussed its implications with anyone outside the workshop group? The Long-termers were also asked to comment on their motivations for reading or avoiding the statement, who they had shared the document with, and what reaction it had received from their peers.

Not surprisingly, the vast majority of the participants confirmed that they had read the statement. While there was a range of reactions to it, the overwhelming consensus was a stamp of approval for the crafting of the document. The Long-termers almost universally noted the improved layout, design, formatting and imagery, and there was a sense that the clear and concise use of language made it a more engaging read than earlier versions. Many remarked on the value of the 'Quick Guide' – a ten-page summary which briefly but distinctly sets out the challenges faced and options to address them. One Long-termer summarised the improvements by stating that the 2013 statement was '100 times easier to read than the last two'.

There was also a positive response to the extent to which the Treasury had incorporated the points raised at the December 2012 Affording Our Future conference. Long-termers were asked to identify issues that had been missed, and while there was very little criticism, a concern emerged regarding the lack of coverage on environmental issues. One respondent argued that it 'treaded the government's line of not wanting to do anything' on climate change.

While the Long-termers' reactions to the document were overwhelmingly positive, a glaring majority reported that they had not shared the statement with people outside the group. Furthermore, over 50% of those who hadn't shared it said they did not plan to do so. The common theme was an assumption that those who did not have a core interest in fiscal policy would find the document uninteresting and difficult to read. The Long-termers felt that 'the average bloke' wouldn't have too much time for the material, and cited the length of the document as a problem for those who did not 'have a prior interest in the subject'. The results conveyed the inescapable feeling within the group that the average university-aged student didn't have much time for 'fiscal issues', a sentiment that certainly reflected the tenor of discussion during the LongTermNZ workshop. However, it is possible that the Long-termers have underestimated their peers, as the survey also showed that those who did share the material with friends and family received largely encouraging feedback. One Long-termer reported satisfaction that a friend who did not study politics or economics had found the statement particularly interesting.

#### The survey: New Zealand's economic prospects and initiatives for youth engagement

In the second part of the survey the participants were asked to answer, on a more personal level, exactly what effect the workshop process and the Treasury's statement had had on them and how it had influenced their perspective on New Zealand's prospects in the long term. Given that, like most people, the Long-termers had previously been largely unaware of the fiscal challenges that need addressing, a gauge of the change in attitudes brought about by the process was particularly useful. In addition, they gave their frank opinions on how the Treasury could further improve youth engagement when preparing for future statements, and how long-term thinking might become a natural part of everyday conversation.

While the experience may have led to 'some awkward conversations about superannuation at Christmas dinner', the Long-termers applauded the process as providing special insight and increased understanding of the situation, and expressed their passion for tackling the country's fiscal difficulties. While most had at least a solid grounding in fiscal policy and a reasonably strong knowledge of the New Zealand economy, it was consistently noted that this opportunity had given them a better appreciation of the issues and challenges faced, the stakeholders involved, and the trade-offs or 'unintended consequences' of various policy directions. A few Long-termers noted their appreciation for the individuals and institutions who are steadily working towards a solution, and the Treasury was praised for 'opening up to the public and becoming more transparent and accessible'.

As a group it appears the Long-termers are not short on ideas on how the Treasury should continue to improve its efforts to engage young New Zealanders. The dominant sentiment was that, despite the considerable value of the conference and workshop, much more needed to be done to reach youth beyond those who were fortunate enough to take part in these events. As a group the Long-termers believe that the Treasury should start young by targeting high school students through outreach programmes and essay competitions. Many expressed the hope that Treasury would put more resources into youth-targeted marketing, including an improved social media strategy. Overall it was felt that the statement contained 'a lot of technical terms … [which] could be a barrier to understanding', and a common response was that 'something different' was needed for youth engagement. Suggestions included more interaction with the Ministry of Youth Development, an online 'Stabilise the Debt' game similar to the one developed by a non-profit organisation in the United States, publishing articles in student magazines, creating quizzes or polls with spot prizes, setting up stalls on campuses, and even getting a well-known personality to endorse long-term fiscal thinking as a means of removing 'the stigma surrounding finance and politics'.

#### The need to act now: a conversation on change

Throughout the workshop process and the creation of the statement, Treasury officials emphasised that their mandate was to provide advice. The organisation was not looking to back the government into a corner over the adoption of certain policy choices, nor did it necessarily seek to recommend how policy makers could find a compromise between efforts to cut expenditure and increase revenue when tackling the country's long-term fiscal imbalances. While the Treasury's goal of a 20% debt/GDP ratio by 2020 is echoed in the government's strategy for fiscal consolidation (Treasury, 2013, p.5), the statement was less about praising or criticising policy pursuits than it was a means to start a conversation.

As a conversation starter, it certainly succeeds. While natural economic fluctuations mean the fiscal projection goalposts are constantly being shifted, the true value in the 2013 statement lies in its articulation of the worrying trends that could lead the New Zealand economy past the point of no return. The issue of intergenerational inequity, a recurring theme at the Affording Our Future conference, became the prime concern of the Long-termers. Each additional chart, graph, diagram or statistic used to explain the imbalance simply reinforced the view within the group that urgent and significant action is needed. The Long-termers learnt that spending on superannuation will significantly increase over time. In the 2011 Budget, 43% of social assistance spending was on New Zealand Superannuation. This is expected to increase to 51% by 2016, and will continue to rise if policy settings remain unchanged (Treasury, 2012, p.31).

These trends were reflected in the Long-termers' fears for the future. One Long-termer cited 'a massive student loan which means home ownership is out of the question for the next decade', and understandably asked, 'If I was to have children where would they live?' Another noted the 'misalignment of expectations' over tertiary funding, believing they would have to lend significant financial

**One Long-termer cited 'a massive student loan which means home ownership is out of the question for the next decade', and understandably asked, 'If I was to have children where would they live?'**

support towards their children's education despite the fact that the majority of parents currently taking on the same task had had the benefit of free university education. In an earlier survey of the 27 LongTermNZ participants, conducted directly after the Affording Our Future conference, 59% said they believed they would not own a home by the time they were 30; 63% believed health care would not be free and of the same quality in 40 years' time; and a resounding 89% of respondents said they did not expect to be entitled to a universal pension by the time they retired. The Long-termers had come to the realisation that significant changes were needed, and that expectations for their future could not be the same as for those who had gone before them. They could not help but wonder, though, whether their peers outside the bubble had any idea that their dreams were slowly being eroded away.

Since the members of the LongTermNZ group first convened in Wellington on Sunday, 9 December 2012, it has become clear that the long-term fiscal position of New Zealand has weighed heavily on the participants' minds. They were the 27 young Kiwis who were fortunate enough to be given a platform from which to speak out and articulate their hopes for the future. The group's interaction with the Treasury truly opened their eyes to the fact that costs are increasing, risks and shocks are inevitable, and difficult trade-offs will need to be made. But why stop at 27? Why not continue to shape and educate all New Zealanders who are uninformed on the issue of long-term fiscal sustainability? The LongTermNZ workshop led the group to realise that the most immediate and crucial challenge is to find a way to engage youth in a matter that will determine the nature of their future in New Zealand. To protect coming generations and to promote long-term thinking, this conversation must take place within families, between friends and colleagues throughout the country. Fiscal sustainability and superannuation should be words to understand and embrace, not avoid and underweigh.

The Treasury's statement sought to carry this message to youth by making accessibility a principal aim. The organisation has succeeded in creating a well-designed, clear and readable document, particularly with the inclusion of the Quick Guide. While ongoing efforts to engage young New Zealanders will require more innovation and greater devotion of resources, the Treasury's commitment to the issue should lead us to believe the solutions to the country's economic imbalances may be found on the horizon and are not simply distant delusions of grandeur.

> **The [LongTermNZ] interaction with the Treasury truly opened their eyes to the fact that costs are increasing, risks and shocks are inevitable, and difficult trade-offs will need to be made**

1 The McGuinness Institute is a non-partisan think tank based in Wellington, specialising in strategic foresight, research and policy analysis.
2 Susie completed a month-long internship at the McGuinness Institute in June/July 2013.


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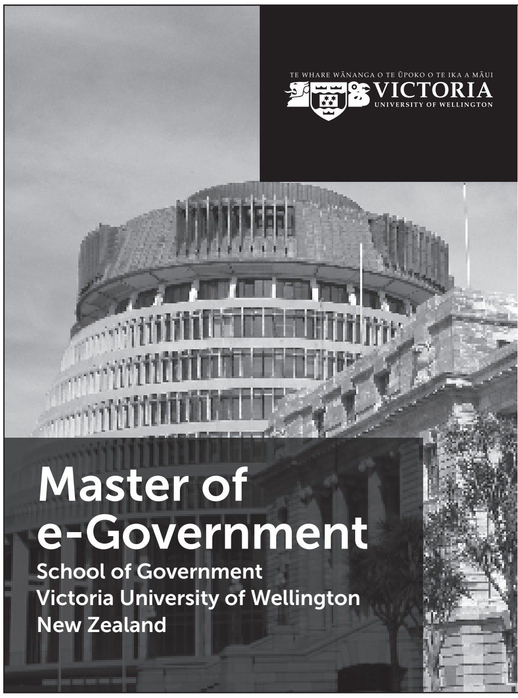


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Miriam Chaum

# Long-Term Challenges and Opportunities in the Natural Resource Sector

**Introduction: New Zealand's natural capital**

New Zealand's cultural, social and economic prospects are inextricably intertwined with the health and sustenance of our natural capital.

New Zealand is wealthy in natural resources. We have plentiful, clean water; clean air; fertile soil and a climate well-suited to humans, trees, livestock and agriculture; long coastlines and significant aquaculture resources; significant mineral and petroleum reserves; and extraordinary biodiversity on our land and in our water bodies. The World Bank estimates that New Zealand ranks eighth out of 120 countries and second out of OECD countries in natural capital per capita; we are outranked only by petroleum-exporting countries (World Bank, 2011). While it is still substantial, natural capital in New Zealand has been reduced since the arrival of humans, however, including losses to our lowland forest and reductions in native biodiversity.

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Our natural resources are central to New Zealand's cultural heritage, both for Pākehā and Māori. Māori draw identity and whakapapa from the environment and exercise kaitiaki responsibilities over land and resources. We have a responsibility to recognise this cultural relationship in accordance with the principles of the Treaty of Waitangi.

Natural resources such as land, water and fish provide a large proportion of the inputs to our economic system in 2011:

- export in 2011, export revenue from the primary industries amounted to over $31.5 billion or over 70% of total merchandise export revenue (Ministry for Primary Industries, 2011);
- agriculture and primary industries contribute dover 17% to our gross domestic product (GDP) (Statistics New Zealand, 2011);
- over 70% of our electricity was generated by renewable energies (Ministry of Business, Innovation and Employment, 2013).

The New Zealand economy has grown on the basis of its natural capital stocks and flows and our ability to generate wealth will be dependent on this stock for the foreseeable future.

Strong income growth in emerging markets will support demand for natural resources in the short to mid-term, underpinning demand for New Zealand's exports and reinforcing the importance of the productive sectors for our growth, wealth and living standards. Should we fail to plan to and manage within biophysical resource limits we will undermine the productivity of our primary sector in the long term and limit our growth potential. This will in turn constrain the government's ability to provide for the needs of a growing and ageing population.

**Natural capital in the Crown accounts**

In New Zealand natural resource stocks and flows have both direct and indirect impacts on the government's revenues, expenses, assets and liabilities.

*Direct impacts*

The Crown incurs expenses for natural resource management and regulation, including the cost of managing public conservation areas, regulating fisheries, and cleaning up lakes and rivers with deteriorating water quality. In limited cases the Crown collects revenues from natural resources, including royalties for petroleum and minerals extraction, proceeds from radio spectrum auctions, and taxes on petrol and diesel fuels. In these instances the Crown has asserted a right to manage a resource or regime on behalf of all New Zealanders, including the redistribution of any accrued economic benefits.

The Crown carries liabilities associated with natural resources, including contingent liabilities for our current obligation under the Kyoto Protocol. The Crown also possesses a number of natural resource-related assets, including physical assets such as the conservation estate, Crown-owned forestry and agricultural assets, and non-physical assets such as the stock of international carbon units collected through the emissions trading scheme (ETS).

*Indirect impacts*

Given the importance of natural resources to our economy, changes in the availability or quality of natural resources for extraction and use will have a significant impact on New Zealand's economic performance, which, commodity prices and all else being equal, will affect government tax revenue. For the same reason, changes to resource management and conservation policies may have indirect impacts on the government's finances in so far as they affect the productivity or profitability of resource-dependent sectors.

## The goal of natural resource management and environmental policy is to put in place incentives for efficient resource use by communicating the true value of those resources where feasible

*Policy options*

Some of New Zealand's resources are non-renewable, or finite (e.g. petroleum, minerals); in some cases the benefits of extracting these resources and the risks associated with their extraction may be best managed by the Crown on behalf of all New Zealanders, including future generations. These resources represent wealth that New Zealand already holds: policies should be aimed at realising those assets at a rate and in a manner that will provide the greatest return to the economy as a whole, over time.[1]

Some of our resources are conditionally renewable, meaning that they become degraded, scarce or extinct if they are not valued and managed appropriately (e.g. fisheries, fresh water); some of our resources are unconditionally renewable and our actions will not jeopardise or otherwise affect their flow of goods and services (e.g. solar, tidal energy). If the aim is to manage within various biophysical limits and protect ecosystem values, renewable resource management should aim to draw down the resource at a rate and in a manner that will not exceed the rate at which the resource renews or replenishes. In practice, communities may choose to manage renewable resources so as to protect additional values, such as recreational and cultural uses.

In some cases New Zealand may be called upon to do its part to manage within global biophysical limits for natural resources, as we are bound by the United Nations Framework Convention on Climate Change and the Montreal Protocol on Substances that Deplete the Ozone Layer.

The goal of natural resource management and environmental policy is to put in place incentives for efficient resource use by communicating the true value of those resources where feasible.[2] Advanced natural resource management and environmental policies facilitate better long-term investment decisions, prevent stranded capital, and avoid disputes over ownership and governance. Early non-regulatory policies that build capability for measurement and monitoring can ease the transition to later regulatory policies or market-based mechanisms.

**Case studies**

The following section of this article present three case studies, intended to illustrate the diversity of New Zealand's natural resource base and, therefore, the challenges we face in designing effective management regimes for its sustenance.

*Oil and gas*

Petroleum already represents a significant revenue stream to the Crown, with significant upside potential. To maximise the benefits of petroleum production, the Crown needs to carefully consider fiscal terms and ensure robust regulatory settings to maximise economic and fiscal benefits while managing potential environmental and health and safety risks.

*Introduction*

In New Zealand the Crown owns the subsurface petroleum resources; any company wanting to prospect, explore or mine petroleum must obtain a permit from New Zealand Petroleum and Minerals (NZPAM). In 2011/12 the Crown collected $335 million in royalties and levies on petroleum, excluding associated corporate tax revenue or indirect taxation revenue – or 0.2% of GDP. However, most of New Zealand's territory is yet to be explored and the potential for further development of petroleum resources may be significant.

Today all petroleum mining and production in New Zealand occurs in the Taranaki basin. Gas generated over 20% of New Zealand's electricity in 2010 (Ministry of Business, Innovation and Employment, 2012).[3] The Ministry of Business, Innovation and Employment estimates that in 2009 the oil and gas industry, including exploration, production and the supply chain, directly contributed $1.9 billion (1.5%) to national GDP (ibid.). In 2011 crude oil was New Zealand's fourth largest merchandise export at $2.0 billion, or over 4% of total exports (Statistics New Zealand, 2012).

*Fiscal sustainability – price*

From the Crown perspective, the economics of petroleum exploration and production depend on three interrelated factors: price, quantity and risk.

An optimal taxation regime for petroleum is one that is targeted on economic rents, related to profits so as to allow for cost recovery plus an adequate return, and flexible to variations in prices and production and operational costs (AUPEC, 2009). In New Zealand the Crown collects the higher of either a 5% royalty on gross revenues or a 20% accounting profits royalty. Ultimately, the Crown receives approximately 42% of the accounting profit from petroleum field developments as royalty and company tax (Ministry of Economic Development, 2012b).

A study by AUPEC completed in 2009 showed that the New Zealand petroleum fiscal regime is highly competitive against comparator countries, based on data from currently producing fields (Aupec, 2009). Similarly, the *Journal of World Energy and Business* has ranked New Zealand the fourth most fiscally attractive jurisdiction between 1998 and 2007 (Ministry of Economic Development, 2012b). A highly competitive royalties and taxation regime makes New Zealand more attractive than other oil-producing jurisdictions, where all other factors, including distance to markets, are held constant.

Changes to the fiscal regime for petroleum could be reviewed, particularly in the event that future discoveries increase demand for petroleum exploration in New Zealand.

*Fiscal sustainability – quantity*

Woodward Partners has valued the royalties arising from currently producing fields and further discoveries based on estimates of in-place oil and gas reserves and a scenario analysis of commercially viable discoveries (Woodward Partners, 2011).[4] The discounted total value between 2011 and 2050 of the Crown's royalty stream from currently producing fields in the oil and gas estate may be estimated at $3.2 billion and from potential future discoveries at $5.3 billion. The valuation of royalties from future discoveries could be as low as $1.6 billion and as high as $10.3 billion, depending on the assumed rate of future industry activity, projected petroleum prices and projected exchange rates (Woodward Partners, 2011).[5]

These discounted valuation figures veil the potentially significant future production and associated real tax revenue in the lower probability scenarios and should be treated as hypothetical only.

*Risk*

A high degree of aversion to health, safety and environmental risks may effectively limit the extent to which resources can be discovered and extracted by prescribing certain methods that must be used or areas where exploration and production cannot be undertaken.

**A highly competitive royalties and taxation regime makes New Zealand more attractive than other oil-producing jurisdictions, where all other factors, including distance to markets, are held constant.**

*Environmental risks*

Oil and gas exploration and production operations have the potential for a variety of impacts on the environment, including noise; spills, emissions and other discharges; site access and footprint; socio-economic and cultural issues; and interference with other resource users. Offshore, where the majority of New Zealand's potential oil fields lie, exploratory operations may harm benthic and pelagic organisms and marine birds and reduce water and air quality. Development and production processes carry increased risks of soil and water contamination from spills and leaks and ongoing disruption to the local economy (E&P Forum and United Nations Environment Programme, 1997).

The frequency and severity of significant environmental disturbances in New Zealand, including oil spills, has been low historically. According to Maritime New Zealand, fewer than ten 'more significant' marine oil spills have occurred in New Zealand since 1990 and none of these incidents were the result of petroleum exploration or production activities (Maritime New Zealand, 2013).

In addition to these more localised environmental impacts, oil and gas productiuon and use emits carbon dioxide ($CO_2$), which contributes to climate change. Were limits or charges on production of greenhouse gases put in place globally, demand for oil internationally would be expected to decrease significantly and we would expect that the economic attractiveness of prospecting in New Zealand would similarly reduce.

*Health and safety risks*

Workplace health and safety legislation plays a key role in ensuring that operators prevent the uncontrolled release of oil and gas at their operations. While an uncontrolled release of oil and gas can result in substantial environmental damage, it can also lead to a major accident, resulting in multiple injuries and fatalities. An external review of New Zealand's health, safety and environmental legislation for offshore petroleum operations conducted in 2010 revealed a number of gaps in the regulatory framework, the majority of which will be addressed by the Exclusive Economic Zone and Continental Shelf Act (Environmental Effects) 2012 and proposed changes to the health and safety provisions under the Crown Minerals Act (Atkins Holm Joseph Majurey Ltd, 2010).

*Economic growth and efficiency*

The economic benefits of enhanced petroleum exploration and production can be observed in terms of GDP, direct royalty and taxation returns, more and higher-paying jobs, investment, regional development and exports.

General equilibrium modelling by New Zealand Institute of Economic Research has shown that a South Island basin development scenario including the discovery of ten new oil and gas fields over 2010–2040 could drive an increase in gross national disposable income of 0.77%, and in GDP of 1.2% on average per annum. The increase in export values results in higher income and improved living standards for New Zealanders, an improvement in the balance of trade, and indirect tax revenues. The upside is restricted by a number of counterbalancing effects, including an appreciation in the exchange rate, which could disadvantage competing exporters, and an increase in net foreign liabilities (Ministry of Business, Innovation and Employment, 2012c; Zuccollo and Ballingall, 2012).

**The OECD ranks New Zealand fourth among OECD countries for volume of fresh water per capita and third for water withdrawal as a percentage of gross annual availability. We currently extract less than 5% of the freshwater resource ...**

*'Dutch Disease' and macroeconomic policy*

A significant increase in oil and gas production as a result of new discoveries can have material impacts on the economy. Overall increased wealth can be offset by an exchange rate appreciation that reduces the competitiveness of other sectors, such as import-competing or non-petroleum export industries (e.g. manufacturing, agriculture, tourism). These effects are sometimes collectively referred to as 'Dutch Disease'.

The literature suggests that the optimal policy response to Dutch Disease effects may consist of avoiding pro-cyclicality by preventing increased revenues from flowing through into tax reductions or increased spending; promoting ongoing structural reform; and improving financial regulation and supervision to contain credit booms and asset bubbles (Cordon, 2012; Garton, 2012; Magud and Sosa, 2010; IMF, 2012; OECD, 2012).

Even the lowest probability scenario modelled by Woodward Partners is unlikely to be large enough to trigger these macroeconomic effects. However, in the event of a significant petroleum resource discovery New Zealand should be prepared to consider such measures.

*Equity and distribution*

Because they are finite, exhaustible resources, the extraction of oil and gas entails obvious intergenerational equity issues: oil and gas should be produced so as to realise the highest returns and those maximised returns should benefit current and future generations. As explained, these characteristics of natural resource rents have encouraged many oil-producing nations to establish sovereign wealth or oil funds, which are designed to manage and invest a nation's wealth accumulated through the sale of natural resources, both to manage macroeconomic effects and the effects of exchange rate appreciation, and to distribute both the benefit of oil wealth accumulated and the risk of price volatility and extraction uncertainty across generations.

*Fresh water*

While New Zealand has a very large freshwater resource, the quality and the availability of water are deteriorating at the regional and catchment level. Once regions set objectives and limits for the quantity and quality of the water in their catchments, it will be important that they have the regulatory and legislative tools they need to manage within those limits and maximise the value they obtain from the water available for use. Market-based mechanisms, such as tradable water permits and water charges, may be needed in some jurisdictions.

*Introduction*

Fresh water provides an essential, life-supporting service to our communities and adds significant value to our economy. In 2004, charges for water supply by local authorities, value-added from irrigation, and value-added from water in hydroelectric power generation amounted to nearly 1.4% of GDP (Statistics New Zealand, 2004).

By international standards fresh water in New Zealand is both clean and plentiful in supply. The OECD ranks New Zealand fourth among OECD countries for volume of fresh water per capita and third for water withdrawal as a percentage of gross annual availability. We currently extract less than 5% of the freshwater resource, primarily drawn from surface waters.

*Quality*

The state of water quality in New Zealand's rivers is highly variable, and declining in some places. Rivers in urban and rural areas generally have poorer water quality compared to rivers in native forest. Catchment features, such as land cover, climate and geology, have a large influence on water quality, which highlights the significant contribution of non-point sources, such as run-off from agriculture, to poor water quality. Water quality is degraded in some lowland areas of Northland, Auckland, Waikato, the east coast of the North Island, Taranaki, Manawatu–Wanganui, Canterbury and Southland, where nutrients could stimulate plants and algae to grow to excessive levels in some rivers, lakes and coastal areas.

*Quantity*

Quantity pressures are generally a catchment or regional rather than a national issue. In 85% of large catchments there is low allocation pressure on the available water relative to mean annual low flow (MALF); in 8% of catchments, current allocations are greater than the modelled MALF.[6] These allocation bands are modelled on consented water use. This is an important distinction, as the average national actual water use for consumptive takes is estimated to be 65% of consented volume, meaning that consent holders are entitled to use more water under their permit than they are actually using (Aqualinc, 2010).

In 2009 the government commissioned advice from the Land and Water Forum, which ran a stakeholder-led collaborative process to build a consensus view on shared outcomes, goals and long-term strategies for fresh water in New Zealand. Drawing on the advice of the forum, the government introduced a National Policy Statement on freshwater management in 2011 which directs local government to manage water in an integrated and sustainable way while providing for economic growth within set water quantity and quality limits. The government is now in the process of further responding to the recommendations of the Forum and has proposed a number of potential reforms to the freshwater management system (Ministry for the Environment, 2013). Later reforms could include further central government direction and guidance on management approaches, including tools to promote efficient use and alternative allocation models.

**Coming decades will be characterised by increasing water scarcity and reduced reliability of water supply and quality in key catchments and regions, at the times of year and in the places where water is in highest demand.**

*Fiscal sustainability and economic growth and efficiency*

Coming decades will be characterised by increasing water scarcity and reduced reliability of water supply and quality in key catchments and regions, at the times of year and in the places where water is in highest demand. Failure to plan for these challenges may entail significant fiscal costs, in the form of both decreased tax revenue from the agriculture sector and increased expenses for ex post clean-up resulting from over-use and under-management. Since 2008, approximately $340 million in Crown funding has been committed to the clean-up of just eight lakes and rivers.

The OECD has suggested that New Zealand continue to encourage the development of market-based mechanisms where possible to manage the supply and quality of fresh water (OECD, 2013). Market-based policies assign, either implicitly or explicitly, a price for water or discharge of contaminants that reflects supply, economic or full costs associated with that use or discharge. These policies include quantity-based controls, such as trading of water permits, rights or quotas, and direct price interventions such as water charges, rent taxes or royalties.

The application of market-based tools to fresh water will be informed by the particular scarcity or quality challenges relevant to the locality. A number of market-based tools are already being employed in New Zealand to manage demand and reduce pollution.

*Market-based mechanisms for managing water quality*

There is some experience with market-based mechanisms for managing water quality in New Zealand. To address local and national concerns over the potential for decreased water quality in Lake Taupo, the Waikato Regional Council has implemented a cap-and-trade scheme for nitrogen discharges in the catchment. The scheme aims to reduce total annual anthropogenic nitrogen discharges to the lake by 20% by 2020; this target will largely be accomplished through the buy-back of nitrogen discharge allowances by the Lake Taupo Protection Trust at a rate of $0.4 million per tonne.

*Trading*

There is substantial international evidence that demonstrates that water markets can reveal the value of water to existing and potential users, generating short-term incentives to use water more efficiently and longer-term incentives to shift water to higher-value uses. Water trading in the southern Murray-Darling Basin contributed over 2% to Australia's GDP in 2009. The total benefits were even greater within the southern Murray-Darling Basin itself, where water trading increased gross regional product by over $A370 million in that year, indicating that water trading maintained productive capacity within the southern Murray-Darling Basin, rather than shifting it to other areas of Australia.

In the New Zealand context, there may be only a few regions that will surpass limits for water takes and otherwise possess the prerequisites for trading. Trading has taken place in a number of regions experiencing water shortages, including Canterbury, Hawkes Bay and Otago, often as shares within irrigation schemes that have a single consent or bilaterally between farmers or brokers.

*Charging*

Water taxes have been successfully implemented in other jurisdictions with significant success. A study undertaken by the European Commission in 2011 found that volumetric charges on drinking and industrial water in the Netherlands and Cyprus have reduced consumption by between 8% and 40%, depending on user group (European Commission, 2011).

Six of 66 New Zealand local authorities meter and volumetrically charge across the whole of their jurisdictions,[7] and an additional eight meter and volumetrically charge across parts of their jurisdictions.

*Equity and distribution*

Generally speaking, the most significant market benefits of water extraction and contamination accrue privately to businesses, like manufacturers and farms, which require water as an input to production or rely on the ability of water bodies to absorb contaminants that are by-products of production processes. These firms have a significant incentive to secure consents to take and discharge to water. As a result, more passive recreational and cultural users, whose water use isn't monetised or easily valued, have relatively less influence over the availability and quality of freshwater resources.

Decisions about policy for managing fresh water quality have implications for intergenerational equity, as some discharges take years or even decades to reach water bodies and affect the water's quality, and costs incurred by current taxpayers may not realise water-quality-state benefits for many years. Good planning now, which imposes lower-level costs over longer transition timelines, can avoid damage to water bodies which may be either too costly or impossible to correct in the future.

**New Zealand emits only 0.2% of global greenhouse gas emissions. For this reason, our mitigation policies will be most effective in contributing to a global solution to the extent that they encourage larger-emitting nations to take action.**

*Climate change*

New Zealand faces challenges and information barriers in reducing its greenhouse emissions and adapting to climate change. *While the shape of international policy post-2020 remains unclear, it will be economically important that New Zealand contributes its 'fair share' of global mitigation in step with other countries and maintains its competitive advantage in those areas where our production is less emissions-intensive.*

*Introduction*

As an island nation with a long coastline and an economy reliant on primary production, New Zealand is vulnerable to changes in the climate. While New Zealand may not be as severely affected by climate change as some countries, impacts may include an increased frequency and intensity of natural hazards and extreme events, such as floods, landslides droughts, hot days, storms and coastal erosion (Joshi et al., 2011; Ministry for the Environment, 2008).

New Zealand emits only 0.2% of global greenhouse gas emissions. For this reason, our mitigation policies will be most effective in contributing to a global solution to the extent that they encourage larger-emitting nations to take action.

New Zealand faces significant challenges in reducing its greenhouse gas emissions. Nearly 50% of our emissions come from the agriculture sector, where fewer abatement options are available. The forestry sector has large potential for carbon sequestration in the short term, but carbon stored in wood products is emitted at or over time after harvest.

Our non-agricultural sectors are relatively carbon-efficient: New Zealand's emissions intensity – emissions of fossil $CO_2$ per unit of economic output – is close to the OECD mean and far below that of the rapidly developing Asian economies. New Zealand's electricity is over 70% renewable, including hydroelectric, geothermal and wind power, and may reach nearly 90% renewable by 2040 (MBIE, 2013).

Transport-related emissions comprise a high proportion of our total emissions from fuel combustion relative to other countries and the OECD mean. There are currently few lost-cost emissions reduction options in the transport sector, and consumer demand tends to be more price-inelastic.[8]

Unlike many other developed nations, New Zealand has a growing population: between 1990 and 2009 the population rose by 30%, making New Zealand the second fastest-growing developed country. The population is expected to be have grown more than 60% from 1990 by 2050 (Statistics New Zealand, 2009). A larger population drives increases in total emissions.

The nature of future international climate change commitments, and their relation to domestic action, is unclear. Negotiations under the United Nations Framework Convention on Climate Change have recently agreed that a global deal should be negotiated by 2015, to enter into force from 2020. New Zealand has recently announced a target to reduce emissions to 5% below 1990 levels by 2020.

Opportunities do exist for New Zealand firms to realise lower-carbon growth while staying globally competitive. Government and the private sector can tailor investments in energy and transportation infrastructure in coming decades towards lower-emitting outcomes. It may be possible to realise growth while avoiding emissions increases by making smarter, longer-view investment and research and development decisions in the short to medium term.

*Fiscal sustainability*

Both domestic greenhouse gas mitigation policies and international commitments to reduce emissions have financial implications, which are both driven by and in turn have an impact on New Zealand's emissions profile. New Zealand's emissions profile is cyclical as a result of our large plantation forestry industry: as forests grow they absorb or sequester carbon, and as they are harvested the carbon stored in the trees over their lifetime is released.

*Domestic mitigation policies*

New Zealand has already taken action in adopting and implementing the ETS. The ETS was designed to assist New Zealand in meeting international climate change commitments at least cost and to reduce New Zealand's net emissions below business-as-usual levels by placing obligations on emitters to surrender units in relation to their emissions.

While the ETS is a useful tool for delivering international emissions reduction units, New Zealand's limited low-cost mitigation potential effectively restricts the scheme's ability to drive significant domestic emissions reductions. Economic modelling has shown that an increase in the price of carbon from \$0 to \$25 may reduce gross emissions by only 6 million tonnes of carbon dioxide equivalent ($CO_2e$) by 2040, or 5% below business as usual.[9]

The ETS can be calibrated to be fiscally neutral to the Crown over the long term. On this basis, emitters would surrender in aggregate no more than the number of units and/or cash necessary to satisfy New Zealand's international commitments.

*International commitments*

When New Zealand made its commitment under the Kyoto Protocol, the commitment was treated as a financial liability equivalent to the difference between the total projected emissions over 2008–2012 and the target level. New Zealand has recently committed to reducing emissions to 5% below 1990 levels by 2020, and this commitment will likely entail fiscal costs to the extent that our net emissions exceed the target over the period.

If ETS settings are attuned to deliver international commitments, climate change policy will be fiscally sustainable over the long term as business and consumers pay the emissions tab. However, this tax burden will have growth implications and associated longer-term fiscal implications, particularly in the event that New Zealand takes earlier, more aggressive action than its competitors.

*Adaptation policy*

As New Zealand's emissions are such a low percentage of the global whole, it will not be possible for our actions to meaningfully decrease the probability of catastrophic events. In the long term, large-scale events entailing high global damages may impact on New Zealand economically and fiscally, suggesting the increasing importance of maintaining prudent debt levels and investing in resilient infrastructure.

The importance of the primary industries in New Zealand makes our economy relatively more susceptible to shifting weather patterns and changing climatic conditions, suggesting a need for better and more information on the likely impacts of climate change and early investment where viable infrastructural and preparedness options exist (Treasury, 2002). Likewise, the proximity of significant infrastructural assets, urban centres and residential properties to the coastline gives rise to fiscal risks.

*Economic growth and efficiency*

Decisions about whether and how to reduce greenhouse gas emissions have real implications for New Zealand's economic growth, in both the short term and the longer term.

> **Decisions about whether and how to reduce greenhouse gas emissions have real implications for New Zealand's economic growth, in both the short term and the longer term.**

Studies have suggested that, at a global level, the benefits of strong, early action far outweigh the potential long-term combined costs of climate change damage and mitigation required to avoid dangerous climate change (Clarke et al., 2009; Stern, 2006). In the context of concerted global action, under which developed and large-emitting developing economies alike provide comparable, clear incentives to their domestic industries to reduce the greenhouse gas intensity of production, ambitious climate change policy in New Zealand will encourage innovation, fuel economic growth, and ensure that our goods and services remain competitive in the global marketplace.

At present, however, concerted international action is still under negotiation. In this context, aggressive, unilateral policies will entail negative effects on productivity growth and income for developed countries in the short term, primarily as shifting human and capital resources to work on mitigation reduces the resources available for producing other goods and services (Garnaut, 2011; Mendelsohn, 2009; OECD, 2008).

The closer in step we are with competitors, the lesser the relative impact on our growth. Modelling has suggested that consistent action across the rest of the world reduces GDP impact relative to business-as-usual by between 30% and 50%, compared to a scenario under which New Zealand takes strong action to reduce emissions ahead of the rest of the world (Ballingal, Schilling and Stroombergen, 2011).

*Equity and distribution*

The distribution of the ETS tax burden will remain, in the near-term, highly differential by sector, as the ETS assigns varying degrees of responsibility for emissions to various industries, taking into account the availability and cost of mitigation options and exposure to international markets. This distribution is relevant within generations.

When designing and implementing climate change policies we must also consider the distribution of costs between generations. Early, ambitious action ahead of international competitors will be highly costly to current generations and may yield only marginal cost savings for future generations. Conversely, action that is behind international competitors could save costs now, but to the detriment of future generations.

**Conclusion**

New Zealand is wealthy in natural resources, and these resources will be a determinant of our social, cultural and economic development. Our resource endowment is very diverse and resources should be managed in ways that reflect this diversity.

In order to use and protect this natural resource advantage we need to:

- *Know more about what resources we have.* The more and better-detailed information we have about the resources we have, their current use and their future demand, the better able we will be to assess and value our natural capital stocks and flows, conduct an informed public debate on the use of our resources, and design effective management frameworks to protect and utilise them sustainably.
- *Think carefully and creatively about how and when we use them.* As non-renewable resources are consumed and demand for renewable resources increases, we need to improve environmental management tools and financial mechanisms. These improvements will ensure resources flow to their highest-value uses and promote sustainable long-term growth.

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1 The literature on 'strong' and 'weak' sustainability has introduced the concept of 'critical natural capital', or capital which performs important ecosystem services and that cannot be substituted for other types of non-natural capital (e.g. fresh water, climate, and soil). This natural capital may be considered non-renewable when its consumption or use surpasses a threshold, as its degradation beyond this point gives rise to exceptional economic, social or ecological costs (de Groot et al., 2003; Dietz and Neumayer, 2007).

2 It is often true that ascertaining the true and comprehensive value of natural resources can be difficult or impossible in practice, as the values derived are both market and non-market values, which are sometimes in conflict with one another.

3 This analysis assumes $100 per tonne carbon dioxide ($CO_2$).

4 The valuation of forecast royalties from future discoveries draws on a complex model of forecast future discoveries and production developed by the Ministry of Business, Innovation and Employment. The model performs a Monte Carlo analysis, using a number of probability-weighted inputs to generate several hundred scenarios, where each scenario sets out a unique forecast of the total producing fields in each of the eight frontier basins, their revenues, profits and royalties.

5 Valuations are derived using a discounted cash flow approach with a weighted average cost of capital of 8.89% for current basins and 11.85% for future discoveries. Estimates exclude any corporate tax revenue. Estimates for future discoveries based on the mid scenario with probabilities of 10%, 50% and 90% are combined according to Swanson's Rule, which assumes constant or slightly reducing industry exploratory activity and slowly increasing petroleum prices. Six oil price paths and three gas price paths were applied; oil prices in 2030 across the scenarios range from $US50 to $US200 per barrel by 2030. Gas is assumed to be sold domestically in NZ dollars; oil is assumed to be sold internationally in US dollars at a long-run average exchange rate of 0.600.

6 Water availability is based on mean annual low flow (MALF), which assesses the surface water-level conditions during the driest part of the year and assumes that all allocated water is taken. The MALF is modelled for stream segments by NIWA, and the most downstream value in each catchment is assigned to the catchment. The consented water allocation includes consumptive surface water sources (i.e. it excludes storage, groundwater and non-consumptive takes), which captures 60% of all consented consumptive allocation in New Zealand in 2010.

7 These are Whangarei District, Auckland Council, Tauranga City, Carterton District, Nelson City and Tasman District.

8 Note that these costs are technology-dependent and that technological breakthrough could significantly decrease the costs of abatement and increase the economic viability of various mitigation options.

9 Emissions projections sourced from the Ministry for the Environment; assumptions include AR4 global warming potential values and central GDP, oil price and exchange rate forecasts.

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Ernest Albuquerque

# The NZ Transport Agency's Transport Appraisal Framework

## Introduction

In a recent article in *Policy Quarterly* (August 2013) Michael Pickford claimed that economic efficiency (as determined by social cost-benefit analysis) has declined in importance as a factor in determining investment in state highways. He claims that this has led to the NZ Transport Agency investing in state highway projects with low benefit-cost ratios, such as the roads of national significance. This reply explains why Pickford's assertions are not correct.

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### Standard cost-benefit analysis theory

A conceptually correct transport cost-benefit analysis is very demanding: it requires a travel demand curve derived to incorporate the reorganisation and output effects as travel costs change. This implies that it requires knowledge of the relevant conditions in all markets likely to be affected by a transport scheme, so that the required demand curve can be correctly estimated and equilibrated with transport supply. In practice, simplifying assumptions are made, the most significant of which is that there is perfect competition in all transport-using markets (Vickerman, 2007).

This assumption implies that in all transport-using markets price equals marginal social costs, such that the demand curve completely measures all the benefits associated with the use of transport. Thus, any change in the perceived price of transport will be completely and directly reflected in decisions concerning the activities using transport. Hence, a transport cost-benefit analysis is a partial equilibrium method. Prices are taken to equal or at least broadly approximate marginal social costs in secondary markets (labour, land, etc).

**Table 1: NZ Transport Agency scheme benefit matrix**

| | Road | Demand management | Services | Walking and cycling | Education, promotion and marketing | Parking and land use | Private sector financing and road tolls |
|---|---|---|---|---|---|---|---|
| Travel time and cost savings | • | • | • | • | • | • | |
| Vehicle operating cost savings | • | • | • | • | • | • | |
| Accident cost savings | • | • | | • | • | • | |
| Seal extension benefits | • | | | | | | |
| Driver frustration benefits | • | | | | | | |
| Risk reduction benefits | • | • | • | | • | | • |
| Vehicle emission benefits | • | | | | | • | |
| Other external benefits | • | • | • | • | • | • | • |
| Mode change benefits | | • | • | • | | | |
| Walking and cycling health benefits | | • | | • | • | | |
| Transport service user benefits | | | • | | | • | |
| Parking user cost savings | | • | | | • | • | |
| National strategic factors | • | • | • | | • | | |

Source: NZTA (2010)

The implication is that surpluses occurring in the secondary market double count surpluses in the primary transport market. Such secondary markets are therefore excluded from the cost-benefit analysis. However, if prices do not equal marginal social costs in the secondary markets, the primary transport market surpluses do not capture all the benefits of the project. This shortcoming of standard cost-benefit analysis has long been understood. Much progress has been made with conceptualising and quantifying the impacts ignored or not taken into account by standard cost-benefit analysis.

### Approach adopted by the NZ Transport Agency

The Transport Agency methodology for standard cost-benefit analysis accords with best international practice. It also assumes perfect competition. The standard appraisal methodology, as set out in the Transport Agency's *Economic Evaluation Manual*, focuses on savings in travel time, operating costs, accident costs, and some external costs such as pollution and health effects.

Table 1 shows the Transport Agency's existing scheme benefit matrix, including the different types of benefits attributable to each scheme type. These costs and benefits are valued using shadow pricing to adjust for the differences in the perceived market price and the true resource costs. The latter often diverges because of taxes and subsidies. For example, when an individual purchases a good in New Zealand they perceive the price as the resource cost plus goods and services tax (GST); however, when the government purchases a good the price is merely the resource cost, because indirect taxes are ultimately returned to its pocket.

The approach used by the NZ Transport Agency provides valuation of the main impacts of transport in a comprehensive way. However, in recognition that the standard cost-benefit approach has limitations (as discussed), it includes additional criteria, such as strategic fit and effectiveness.

The standard cost-benefit approach also fails to account for some of the developments in economic theory and evidence over the past 10 years. These have significantly improved understanding of the interactions between transport and the economy. These interactions are referred to as the wider economic benefits or wider economic impacts of transport.

### Limitations of standard cost-benefit analysis

In line with overseas agencies, the NZ Transport Agency recognises that there are limitations to standard cost-benefit analysis, as not all positive and negative impacts are captured. These limitations include difficulties in assessing the land-use changes and traffic changes that can occur as the result of transformational transport projects. Grimes (2011) used the example of the Auckland Harbour Bridge to show how significant changes in land-use activities are often not captured in conventional cost-benefit analysis. He states that the royal commission report to Parliament which recommended the construction of a harbour bridge was very conservative in its estimates of traffic build-up and the population growth of the North Shore. A truly accurate estimate was difficult. While a bridge itself would be the biggest incentive for population growth on the North Shore, nobody could quantify the incentive. The (tolled) bridge opened in May 1959 and its effects were immediate. In McLauchlan (1989) it is stated:

> The rate of traffic vastly exceeded forecasts. In the first ten months, 4,092,307 vehicles used the bridge. The total was 5, 543,973 in the year to 31 March 1961, 15, 153,659 in the year to 31 March 1970 and exceeded 32 million by the mid-1980s … The bridge triggered an explosion of development on the North Shore and the early traffic growth at more than 13 percent led to the decision in 1964 to add two more lanes on each side of the bridge.

More recently, the New Zealand Institute of Economic Research raised concern that current conventional cost-benefit analysis generally ignores any induced changes to transport demand that occurs over a period of time. It states that:

> the assumption seems to be that transport-induced land-use change in the longer term either does not happen, or if it does happen, it is immaterial to the CBA result. This is in stark contrast to the discussion

> in the previous section, showing that transport can have a large effect on long-term land use development, which makes it a strong assumption. (NZIER, 2013)

**A more balanced approach**

Large transport schemes can have a marked impact on land-use development in the long term. Furthermore, induced traffic effects can be a primary long-term characteristic of major transport schemes (such as the roads of national significance). For these reasons the Transport Agency has incorporated two other criteria – strategic fit and effectiveness – into its project selection process. Investment proposals are assessed as 'high', 'medium' or 'low' against three criteria:

- strategic fit: how policies align with the government policy statement priorities (economic growth and productivity, value for money and road safety);
- effectiveness criteria: ensuring that whole-of-system options have been considered and have been given appropriate considerations;
- efficiency criteria: the value of the solution in relation to the resources used (based on cost-benefit analysis calculation in the Transport Agency's *Economic Evaluation Manual*).

Michael Pickford (2013) takes issue with the use of strategic fit and effectiveness, and claims that the matters listed are already incorporated in the efficiency criteria using cost-benefit analysis. This assertion is not correct. Standard cost-benefit analysis adopts a restrictive assumption that there is little or no impact of a scheme on the distribution and growth of population and employment, or on the sectoral make-up of employment. Rather, it assumes that population and employment are static between the do-minimum option and the proposed activity, and that economic gains arise mainly because of increased efficiency from travel time savings.

Transport investments which are focused principally on securing economic development through supporting and facilitating structural changes in the make-up of population and employment do not necessarily deliver a strong benefit stream in the standard framework. By incorporating two additional criteria in its assessment framework, the Transport Agency has adopted a more balanced approach. This ensures that the appraisals of transport schemes (including non-road alternatives) do not over- or underestimate the total economic impact of the proposed activity.

## Transport investments which are focused principally on securing economic development through supporting and facilitating structural changes in the make-up of population and employment do not necessarily deliver a strong benefit stream in the standard framework.

Similar approaches are adopted by transport agencies overseas. For example, the UK Department for Transport also recognises the shortcomings of standard cost-benefit analysis. Its multi-criteria framework, the New Approach to Appraisal (NATA), allows qualitative and non-monetised quantitative impacts of a scheme to be captured. Projects are also considered using the UK Treasury's five-case model:

- strategic fit;
- value for money;
- ability of the promoter to deliver the project;
- project affordability and financial stability;
- evidence that the project can be satisfactorily procured.

Likewise, Australia's Austroads cost-benefit analysis manual requires other criteria to be taken into account, including a strategic alignment assessment. This requires assessments against broader strategies, policies and plans. Many Australian states have adopted this approach by including multi-criteria analysis in their transport assessment framework.

The NZ Transport Agency also recognises that transport schemes cannot be considered in isolation. A package approach should be used which takes into account the relevant regional land transport strategies, regional land transport programmes and long-term council community plans. Guidance is provided in the Transport Agency's *Economic Evaluation Manual* to encourage approved organisations (where appropriate) to develop packages of interrelated and complementary activities, either individually or in association with other approved organisations. An example of a package approach would be where a major state highway upgrade is combined with traffic calming on adjacent local roads to improve safety on the adjacent local road network. When considered individually, neither activity may represent an efficient use of resources. Travel time and capacity issues may reduce the benefits of the traffic calming when considered as an isolated activity. Similarly, main road traffic volumes may not be sufficient to warrant the highway upgrade as an isolated activity. However, the combined activity will benefit from the complementary nature of the two activities.

To manage the investigation, design and construction of the roads of national significance effectively, the total corridors have been split into smaller projects. However, the benefit-cost ratios of each of the smaller projects cannot be considered in isolation. The most appropriate measure is the package cost-benefit ratio. This is because the benefits of and the synergies between complementary activities cannot be fully realised without each component being implemented. Pickford's claim that each individual component of the corridor, developed solely for administrative and construction management purposes, should be taken into account is contrary to good project appraisal practice.

Like other road projects, the individual segments which comprise the Wellington Northern Corridor are designed to work as a whole corridor. To selectively examine benefit-cost ratios for individual segments of the corridor in isolation – such as the Otaki expressway – does not tell the whole story, as people's journeys are seldom limited to the arbitrary boundaries of single sections chosen for management purposes. Collectively, the improvements to individual sections will unlock benefits along the whole corridor. This is in accordance with best practice.

The Transport Agency is in the process of incorporating aspects of the Treasury's Better Business Case framework into its decision-making process. The Treasury's framework is based on the UK Treasury framework, but also takes into account some elements from the Investment Management Standard produced by the State of Victoria Department of Treasury and Finance (Mackie and Worsley, 2013). Under the Treasury's Better Business Case framework, a project is assessed on the following matters:

- is it supported by a robust case for change – the strategic case;
- does it maximise value for money – the economic case;
- is it commercially viable – the commercial case;
- is it financially affordable – the financial case;
- is it achievable – the management case.

The Treasury's Better Business Case framework is being adapted to ensure that it is fit for purpose when evaluating transport projects. This will require some minor changes to existing Transport Agency procedures, including developing a strategic case for change first, followed by a detailed economic appraisal.

**Wider economic impacts**

In line with international best practice, the Transport Agency has also strengthened the way it evaluates economic efficiency by including agglomeration impacts in its *Economic Evaluation Manual*. Agglomeration economies describe the productive advantages that arise from the close spatial concentration of economic activity. The *Economic Evaluation Manual* operates with two types of agglomeration economies:

- Localisation economies: the efficiency gains that arise from the increased scale of a particular industry operating in close proximity. These economies are external to organisations but internal to the industry.
- Urbanisation economies: the productive advantages that accrue to organisations by being located in large population centres. These economies are external to the organisation and the industry but internal to large population centres. Organisations derive benefits from the scale of markets (including labour markets), from the proximity of market areas for inputs and outputs, and from good infrastructure and public service.

Pickford claims that the Transport Agency was quick to embrace the concept of agglomeration benefits despite the concept not being free from controversy. The concept of agglomeration is not new. Economic literature has identified a range of possible sources for higher productivity in densely populated areas. Marshall (1920), for example, discussed the advantages of thick labour markets, ease of linkages to input and output markets, and knowledge spill-overs arising from proximity to others in the same industry (localisation). Each of these potential sources is consistent with agglomeration effects – the observed positive relationship between agglomeration and productivity (Maré and Graham, 2009).

In 2008 the Transport Agency commissioned David Maré and Daniel Graham to carry out research to derive agglomeration elasticity estimates on an aggregate, one-digit industry and on a regional level. Prior to this, considerable research had been carried out overseas, such as that by Graham (2006a, 2006b, 2007; Graham, Gibbons and Martin, 2009), Venables (2007) and Ciccone and Hall (1996). The UK Department for Transport had also carried out development and testing work on the agglomeration methodology (Department for Transport, 2005).

In a paper published in the *Journal of Urban Economics*, Maré and Graham concluded that:

- Our preferred overall agglomeration elasticity estimate of 0.066 indicates that a 10% increase in effective density is associated with a 0.66% increase in firm productivity. The overall estimate is well within the consensus range of 0.01–0.10 identified by Graham (2005) though slightly above the median estimate of 0.041 documented by Melo et al. (2009).
- The preference for this estimate reflects a tradeoff between reducing the upward bias due to sorting of high-productivity firms into dense areas, and the downward attenuation bias due to limited within-enterprise variation in effective density when we control for firm heterogeneity using enterprise fixed effects. (Maré and Graham, 2013).

The Transport Agency is satisfied that the agglomeration estimates derived accord with studies carried out and that the methodology adopted in its *Economic Evaluation Manual* is line with best practice adopted overseas.

Pickford's comment that the agglomeration concept and methodology

**The Transport Agency has a continuous improvement programme for its *Economic Evaluation Manual* and an active programme to research such matters.**

is far from settled could apply to many economic theories and concepts, including those used in standard cost-benefit analysis such as travel time, travel time reliability and safety impacts. The Transport Agency has a continuous improvement programme for its *Economic Evaluation Manual* and an active programme to research such matters.

### Summary and conclusions

The Transport Agency's review of the Pickford article concludes that the article fails to take into account the limitations of standard cost-benefit analysis and the development of cost-benefit theory and practice. The criteria of strategic fit and effectiveness seek to ensure that a more balances approach is achieved and that appraisals of transport schemes do not over- or underestimate the total economic impact of the proposed activity.

The Transport Agency has also adopted a package approach when assessing transport schemes to ensure that benefits of and synergies between complementary activities are fully realised. Rigorous cost-benefit analysis is the cornerstone of our economic appraisal for investment, but it is not the only aspect relevant to the decision-making process for transport projects and programmes.

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Michael Pickford

# A Brief Reply to Ernest Albuquerque

Mr Albuquerque challenges my article in *Policy Quarterly* (Volume 9, Issue 3, 2013) on three main grounds. Firstly, he uses the well-known limitations of standard cost-benefit analysis (CBA) in transport project appraisals as the basis for claiming that the 'strategic fit' and 'effectiveness' criteria adopted by the NZTA lead to a better estimation of the total economic impact of the proposed activity than using the 'efficiency' criterion alone. He implies that these criteria attempt to capture the impact of large transport schemes on long-term land use development and on induced traffic effects. However, he does not substantiate this claim, and it is unclear how use of these criteria could achieve that goal.

A better argument would be that the NZTA is addressing the limitations of conventional CBA by including the wider economic benefits (WEBs) in the appraisal. In doing so, NZTA is implicitly no longer assuming perfect competition in markets, and so this limitation can no longer be held against CBA.

Mr Albuquerque disagrees with my contention that the 'strategic fit' and 'effectiveness' criteria lead to a double-counting of the benefits already included in the 'efficiency' evaluation. However, the double-counting is obvious. For example, the Wellington Northern Corridor RoNS was given a 'high' rating for strategic fit on two grounds: that it was identified as a RoNS in the GPS of May 2009, and that it was an important freight route.[1] The first adds no new information other than that the Government wanted the road built, and the second was based on a benefit already included in the efficiency analysis. The road got a 'high' effectiveness rating on similar grounds.

Mr Albuquerque's second main criticism relates to NZTA's view that a RoNS should be viewed as a 'package', because of the interrelations between the component road sections. He argues that evaluating each individual component of the RoNS separately would be 'contrary to good project appraisal practice'.

I disagree. It would be economic folly to focus only on the best cost ratio (BCR) for an arbitrarily-defined RoNS, and to ignore the low BCRs of individual components. A component project's BCR can be developed using a base case which assumes that the rest of the package is implemented. If the incremental benefit added by a component relative to its incremental cost is low, then that component should be excluded from the package. His argument about interrelationships provides no defence. This incremental approach is consistent with section 2.10 of the NZTA's *Economic Evaluation Manual*, Volume 1.

The NZTA does not always act in the way that Mr Albuquerque advocates, for it sometimes focuses on incremental BCRs in the refinement of packages of work. In 2009 the Wellington RoNS was defined as the expressway from Wellington airport to Levin. In 2012 the Otaki-Levin section was abandoned in favour of a lower cost road upgrade because the BCR was re-estimated to be only 0.29.[2]

Finally, Mr Albuquerque challenges my view that the WEBs are controversial. He cites the building of the Auckland Harbour Bridge, which facilitated the city's expansion on the North Shore, as an example of the development benefits that can result from major transport projects. However, it is perhaps not surprising that the bridge had this effect, as it facilitated the first direct road connection. The RoNS are different, because they generally involve replacing existing state highways with expressways, which offer only incremental improvements on the existing connections. Consequently, the benefits are limited, and combined with high costs, result in only modest BCRs.

Further, even accepting the NZTA's WEB estimates, the numbers are often relatively small. For example, the Wellington RoNS's conventional BCR of 1.0 increases to 1.2 with agglomeration benefits added, and to 1.4 with WEBs (2009 figures). These BCRs still fall well below the average of about 4.0 for state highway projects in the recent past (even though WEB assessments were not then included).

My view remains that even with the WEBs included, the BCRs of NZTA's state highway projects are suffering because the goals of 'strategic fit' and 'effectiveness' are given greater weight than economic efficiency, resulting in hundreds of millions of dollars of benefits annually being sacrificed.

1 See: NZTA, "NZ Transport Agency: (SH1) Wellington Northern Corridor RoNS Endorsement and Funding for Investigation, Design and Property Purchase", Board paper 09/11/0292, 27 November 2009.

2 See: NZTA, 'Otaki to Levin Staging Options', DMT Paper, 12 January 2012, page 4.


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