Te Kura Kāwanatanga – School of Government, Te Herenga Waka – Victoria University of Wellington

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The Debt Ceiling and its Discontents

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Editorial – Safeguarding Humanity's Long-Term Interests

Safeguarding humanity's long-term interests in a world dominated by geopolitical conflicts, short-term political pressures, powerful vested interests, and frequent crises is an enduring governance challenge. Addressing the urgent demands of today can all too often take precedence over remedying the critical issues of tomorrow. Similarly, narrow nationalistic agendas can thwart global cooperation. Compounding matters, the best available science can be totally ignored or rejected due to ideological dogma and wilful blindness, and large-scale disinformation campaigns can undermine public confidence in evidence-informed policies. The result, as Canadian Prime Minister Mark Carney once put it, is 'the tragedy of the horizon'. Put differently, future interests are sacrificed on the altar of myopic concerns.

There is, of course, no shortage of long-term policy issues – or what Thomas Hale (2024) calls 'long problems'. Many of these have been explored in previous issues of *Policy Quarterly (PQ)*. The August 2025 issue, for instance, focused on the policy issues surrounding retirement incomes. Among these are the growing fiscal costs, distributional effects, and labour market implications of an ageing population. The November 2025 issue of the journal also includes a contribution on retirement income policies, namely from Andrew Coleman. Here, he explores a range of alternative funding and taxation approaches, including the possibility of a compulsory savings scheme (KiwiSaver 2.1).

Aside from population ageing, contributors to the current issue of *PQ* examine many other long-term policy challenges – whether fiscal, ecological, educational, technological or social.

Two articles, for instance, focus on fiscal management, not least the question of what constitutes a sustainable level of public debt. In their contribution, Tayla Forward and Madeleine Foreman (both former New Zealand Treasury analysts) question the Treasury's recommendation of a 50% debt-to-GDP ceiling, claiming that it is based on an asymmetric treatment of fiscal risks. This is because while debt costs are precisely quantified, the benefits of public spending and the risks of underinvestment are typically treated as secondary or speculative. As an alternative, they recommend a more nuanced and balanced fiscal framework – one recognising that fiscal sustainability can be threatened not only by excessive public debt but also by chronic public underinvestment. Without a revised model of fiscal management, future generations risk unwelcome deficits in such areas as public infrastructure, social housing, climate resilience, environmental protection, and social services.

Similarly, in a companion article, Geoff Bertram argues that the principles of fiscal responsibility, as originally legislated in 1994 and subsequently embodied in the Public Finance Act 1989, are based on philosophically contested premises. The result has been three decades of excessive fiscal austerity with negative economic and social consequences. Modified legislative principles, he contends, are thus essential.

The need for more proactive management of long-term risks and enhanced anticipatory governance also figures prominently in this issue of *PQ*. Ken Warren, for instance, explores how New Zealand's public sector can undertake more effective risk management. On a related theme, Matt Boyd and Nick Wilson critique current risk reduction approaches based on their tendency to focus upon symptoms rather than systemic forces. Effective resilience, they argue, requires greater attention to global hazards, such as large-scale (nuclear) conflict, large global volcanic eruptions, and bioengineered pandemics. Equally, risk management must take seriously the growing challenges of compounding and cascading risks.

Are these proposals likely to find favour with contemporary governments? Sadly, in many democracies, the answer appears to be 'no'. In the United States, for example, the Trump Administration is pursuing massive cuts in research, science and technology, dramatically reducing the resources and capabilities of the Federal Emergency Management Agency and the National Oceanic and Atmospheric Administration, and shattering public confidence in the Centres for Disease Control and Prevention. Likewise, the federal government is radically scaling back measures to curb greenhouse gas emissions.

Indeed, President Trump, in a speech to the United Nations in September 2026, referred to climate change as 'the greatest con job ever perpetrated on the world'. Pity those in the future who will suffer more severe climate-related impacts because of his irresponsible and callous disregard for scientific expertise and evidence.

Meanwhile, in Aotearoa New Zealand, the coalition government is implementing multiple measures that will likely harm the long-term interests of current citizens, not to mention future generations. Public investment in research, science and technology has been cut by about 25% in real terms since 2023. Many policies to reduce greenhouse gas emissions have either been abandoned or significantly curtailed. And the Public Service Act is being amended to weaken the current focus on long-term interests, with the number of departmental Long-Term Insight Briefings being reduced to a single report every three years.

Compounding matters, in mid-October 2025, the government announced a new climate adaptation framework. If implemented as proposed, many communities – whether towns or suburbs – at risk of more severe flooding and rising sea levels will likely lack the resources to undertake pre-emptive planned relocations. The potential result: unmanaged retreat and ever worse natural disasters. Correspondingly, property insurance will become increasingly unaffordable and unavailable. The negative impacts on social equity and economic resilience could be severe.

Thankfully, none of this is inevitable. But currently, prudent anticipatory governance is in short supply, both globally and locally.

Jonathan Boston,
Co-Editor

Hale, T. (2024) *Long Problems: Climate Change and the Challenge of Governing Across Time*, Princeton University Press.

Tayla Forward and Madeleine Foreman

The Debt Ceiling and its Discontents

Abstract

This article challenges the New Zealand Treasury's 2022 recommendation of a 50% debt-to-GDP ceiling, arguing that the analysis undertaken does not justify the recommendation, and that it contains structural biases favouring fiscal restraint over productive investment. We demonstrate that the Treasury's conservative assumptions about the macroeconomic environment for debt consolidation, combined with excessive shock buffers, lack sufficient analytical justification. Replicating Treasury's analysis with more realistic assumptions yields substantially higher sustainable debt levels. We discuss the asymmetric treatment of fiscal risks, where debt costs are precisely quantified while the benefits of public spending and risks of underinvestment are treated as secondary or speculative. We argue for balanced fiscal frameworks that recognise both excessive debt and chronic underinvestment as threats to sustainability.

Keywords fiscal sustainability, debt ceiling, public investment, fiscal credibility, sovereign debt

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In New Zealand, the need for fiscal restraint has largely become an article of faith across successive governments. Despite consistently low public debt levels by international standards, recent decades have been characterised by systematic underinvestment in infrastructure, climate resilience, and public goods and services, attended by a deterioration in real economic capacity and productivity which threatens long-term prosperity potentially more than a 'deterioration' in any fiscal indicator is likely to. The National-led coalition government has pursued further fiscal conservatism since 2023, adopting debt and spending targets more restrictive than Treasury's recommendations.

Observing the pressures from housing shortages, transport bottlenecks, underfunded public services and climate adaptation that demand substantial public investment, what is it that 'fiscal sustainability' is sustaining? Justifications for ever-tighter fiscal restraint tend to make appeals to a greater prudence and responsibility necessary in the context of a small open economy vulnerable to natural disasters. Yet investment to mitigate these vulnerabilities, many of them induced by

Box 1: Fiscal indicators and rules

Measure	Current measure and forecasts (Budget Economic and Fiscal Update 2025)	Current rule
Net debt-to-GDP: the Crown's financial liabilities (primarily bonds) minus its financial assets, expressed as a percentage of GDP.	42.7% in 2025 (at BEFU 2025), expected to peak at 46.0% of GDP in 2027/28	Put net core Crown debt as a percentage of GDP on a downward trajectory towards 40%, and maintain it within a range of 20% - 40% of GDP
OBEGAL: operating balance before gains and losses. Core operating revenues minus expenses, excluding gains and losses (such as changes in asset values). OBEGALx refers to OBEGAL with the Accident Compensation Corporation (ACC) excluded.	2.3% OBEGALx deficit in 2025. Remains in deficit across the forecast period, with the first surplus pushed beyond the forecast period (i.e. after 2028/29). In 2027/28, when the Government's short-term intention is to achieve an OBEGALx surplus, a deficit of $2.2 billion is now expected.	Return the operating balance (before gains and losses) to surplus by 2027/28.

emaciated public services, is made to appear impossible. There is a deference, more or less explicit depending on the government of the day, to the private sector to take up our collective challenges and meet collective needs. But conditioning progress towards our collective ambitions on private profitability is no longer viable, if it ever was.

This article critically examines Treasury's analytical approach to determining a reference point for sustainable public debt in New Zealand. First, we trace the analysis leading Treasury to revise its recommended debt ceiling in 2022, and argue that the analysis does not provide a sufficient justification for the recommended debt ceiling. We then discuss an asymmetry in how fiscal sustainability is conceptualised: while the costs of debt are meticulously quantified, the possible productive effects of public spending – and the risks of underspending – are not integrated into macroeconomic and fiscal models. This creates a structural bias towards lower debt levels and higher operating balances than may be economically optimal, while understating the risks and costs of underinvestment.[1] We argue that a fit-for-purpose fiscal framework would recognise both excessive debt and insufficient public investment as equally unsustainable, and would align fiscal strategy with New Zealand's real economic constraints and investment needs.

Fiscal governance in New Zealand – credible commitments rather than rules

The fiscal strategy is the government's plan to manage revenue, expenses and balance sheet position over time. The fiscal framework, set out in the Public Finance Act 1989 and later incorporating the 1994 Fiscal Responsibility Act, describes how a government's fiscal strategy is to be determined and reported.

The Public Finance Act requires governments to specify and transparently communicate their fiscal strategy as long-term objectives and short-term intentions through Budget policy statements and fiscal strategy reports. While the Act's principles for responsible fiscal management (Box 1) provide an accountability framework, they do not include legally binding numerical targets. Governments typically fulfil these requirements through fiscal rules – quantitative targets for fiscal indicators such as debt ratios, operating balances, and expenses as a proportion of GDP – which must align with the Public Finance Act's fiscal responsibility principles (see Table 1). Critique of those principles and their consequences – intended and unintended – is taken up by Bertram (2025).

To recapitulate: a government must commit to a fiscal strategy consistent with the fiscal framework set out in the Public Finance Act. Conventionally these commitments have taken the form of fiscal rules, which it communicates publicly, giving an account of how the approach reconciles with the principles of fiscal responsibility set out in the Act. Fiscal rules have generally taken the form of quantitative targets, levels or goals for particular fiscal indicators – typically debt ratios, operating balances and, more recently, expenses as a proportion of GDP.

New Zealand's fiscal framework relies on the public commitment of each government to its own fiscal strategy, rather than the internationally common approach of legislated or codified fiscal targets and rules.[2] Public communications are to serve as an accountability mechanism, with deviations from the communicated strategy to be punished by voters or market reactions which have an impact on borrowing conditions; there are no disciplinary procedures written into the fiscal framework itself. Departures from the principles are only to be temporary, and impose a potentially high reputational or political cost, even during periods when different policy choices might have been economically justified. In this way, fiscal rules help to operationalise a fiscal strategy by acting as a commitment device for the self-enforcement of a government's fiscal strategy. Setting fiscal rules which lack credibility, or failing to abide by those set, could 'unanchor' confidence in the delivery of the fiscal strategy, leading to a market reaction which raises a government's borrowing costs. This is not dissimilar to the anchoring of inflation expectations by the forward guidance of a central bank. The enduring fiscal framework remains a source of structure and stability, even as fiscal rules themselves may change.

New Zealand's principles-based (rather than rules-based) fiscal framework is designed to provide policy flexibility while maintaining fiscal discipline. There has never been a recognised 'transgression' of the principles of fiscal management since their establishment. It is not clear what this would mean, nor how a transgression would be validated. Fiscal rules carry no legal force or binding obligations. The public accountability mechanism and threat of market reaction have proved to be sufficiently disciplinary to make legal enforcement unnecessary. In fact, governments have often made

commitments that are more constraining than the letter of the Act would require. The Budget responsibility rules agreed by the 2017 Labour–Greens government, for example, committed the parties to reduce net Crown debt from 24.6% to 20% of GDP (on the previous debt measure) within five years and maintain government expenditure within 30% of GDP – targets that are arguably more restrictive than the Public Finance Act principles demand, designed to counter perceptions that fiscal prudence was the exclusive domain of conservative parties.

If fiscal rules change from those communicated previously, governments need to explain how the amended intentions and objectives accord with the principles of responsible fiscal management. Take the current government repeatedly deferring its previously signalled return to surplus, for example, justifying the repeated deferrals by reference to economic headwinds and cyclical considerations not previously forecast, arguing the consistency of the deferrals with long-term fiscal sustainability, and framing the shifts as manifestations of rather than departures from responsible fiscal management.

What is being 'sustained' when we pursue fiscal sustainability? In orthodox terms, a fiscal strategy is considered sustainable when it is unlikely to lead to explosive debt, avoiding debt dynamics that become self-reinforcing, with debt levels escalating beyond what is plausibly serviceable. 'Explosive' has a specific meaning. 'Explosive' does not mean 'high'. Many countries maintain high debt-to-GDP ratios indefinitely without crisis, while others face explosive dynamics at much lower levels. The opposite of explosive is not 'low', it is 'stable'. What, then, destabilises debt? When markets perceive heightened default risk – whether from deteriorating economic fundamentals, political instability or governance failures – they demand higher interest rates. Higher borrowing costs increase debt service burdens, validating initial concerns and potentially triggering further rate increases. Debt ratios matter only in so far as they signal underlying economic weaknesses or governance problems that might trigger this dynamic. Fiscal sustainability in these terms centres on maintaining market confidence to avoid a sudden slip from stable to explosive debt trajectories. What is being sustained is access to financing on reasonable terms. It is not with reference to a legal interpretation of the principles or to economic substance that fiscal responsibility is defined and pursued. Rather, it is post hoc validation: the absence of an escalating market response tells us after the fact whether a fiscal strategy is being deemed sustainable by financial market actors.

The concern for market perceptions permeates fiscal decision-making processes. Treasury analysis frequently highlights potential market responses when evaluating policy options, and consistently refers to the confidence of financial market actors, including credit ratings agencies, going as far as to say:

> While short term deteriorations in the fiscal outlook and a one-notch downgrade in the credit rating would not be expected to generate a noticeable increase in the cost of debt, it is important to bear in mind that confidence is difficult to build and easy to lose. (Treasury, 2023c)

The fiscal framework centring on the Public Finance Act aims to operationalise fiscal sustainability by providing a durable framework for governments to make transparent, credible commitments, signalling sound governance to potential creditors. It is less about the economic substance of any given numerical targets than about the institutional capacity for consistent, predictable policymaking. This credibility – built as governments demonstrate their ability to make and honour commitments – forms the foundation of market confidence, more crucial for fiscal sustainability than the content of any particular set of fiscal rules. There is no necessary economic basis for a reference point for what constitutes a prudent debt-to-GDP ratio; there are only more or less credible claims about what governments can deliver, given prevailing and expected economic conditions.

However, despite the benefits conferred by its durability, the Public Finance Act is an imperfect support for fiscal sustainability, because it subordinates other policy areas to the imperatives of fiscal management. The performance of fiscal responsibility and maintenance of credibility need not accord with real economic substance; indeed, they cannot accord with economic substance while maintaining the faulty neoliberal precept that government is inherently unproductive, production only occurring

Box 2: Public Finance Act, Section 26G: Principles of responsible fiscal management

The Government must pursue its policy objectives in accordance with the following principles (the principles of responsible fiscal management):

a. reducing total debt to prudent levels so as to provide a buffer against factors that may impact adversely on the level of total debt in the future by ensuring that, until those levels have been achieved, total operating expenses in each financial year are less than total operating revenues in the same financial year; and
b. once prudent levels of total debt have been achieved, maintaining those levels by ensuring that, on average, over a reasonable period of time, total operating expenses do not exceed total operating revenues; and
c. achieving and maintaining levels of total net worth that provide a buffer against factors that may impact adversely on total net worth in the future; and
d. managing prudently the fiscal risks facing the Government; and
e. when formulating revenue strategy, having regard to efficiency and fairness, including the predictability and stability of tax rates; and
f. when formulating fiscal strategy, having regard to the interaction between fiscal policy and monetary policy; and
g. when formulating fiscal strategy, having regard to its likely impact on present and future generations

in the private sector (see also Bertram, 2025). Governments are then compelled to maintain superficially healthy fiscal indicators through asset sales, deferred maintenance or cuts to productive spending, while weakening the economic foundations that support long-term fiscal sustainability. The appearance of fiscal prudence becomes more important than making economically sound decisions. This can lead governments to prioritise the appearance of fiscal discipline over policies that would genuinely strengthen the economy's longer-term capacity to service debt. Essential investments in infrastructure, education, health systems and climate resilience may be deferred or abandoned not because they lack economic merit, but because they conflict with short-term fiscal metrics.

This disconnect between fiscal performance and economic substance is particularly problematic when markets themselves recognise that rigid fiscal constraints may foreshadow poor governance. When governments sacrifice necessary services or investments or impose pro-cyclical austerity to meet self-imposed targets, they may increase rather than decrease genuine fiscal risks in the long term, even while appearing to strengthen their fiscal position according to conventional metrics.

Calibrating the debt ceiling

In 2022, Treasury drove advice on the recalibration of the fiscal rules following the immediate Covid-19 response, saying: 'as uncertainty from COVID-19 diminishes, we consider that more definitive fiscal targets should be adopted to enable transparent and robust fiscal management' (Treasury, 2021). Following that advice, and alongside other changes to fiscal indicators,[3] Grant Robertson as finance minister raised the level of the debt ceiling to 50% of GDP (net core Crown debt, excluding the New Zealand Superannuation Fund (NZSF) – equivalent to 30% including NZSF), stating, 'in the past our debt targets have led to underinvestment', and that the new debt ceiling would 'provide fiscal space to fund high quality capital investments that improve productivity and wellbeing' (Robertson, 2022). There was no market reaction, signalling the credibility of higher debt levels from the perspective of financial market actors.

> There is no necessary economic basis for a reference point for what constitutes a prudent debt-to-GDP ratio; there are only more or less credible claims about what governments can deliver, given prevailing and expected economic conditions.

Again, the credibility of the commitment to keeping to a fiscal rule is more important for forestalling market reaction than the levels themselves, and there is no prior economic basis determining what constitutes a prudent debt-to-GDP ratio. There are only credible or non-credible claims about what a government can deliver. How, then, did the Treasury arrive at its recommendations for the debt ceiling, which it has restated consistently in advice since 2022?

Fiscal strategy decisions involve judgements under conditions of significant uncertainty about the economic outlook. There is nothing deterministic about calibrating fiscal rules. In Treasury's words: 'While some fiscal and debt positions will be clearly incompatible with the sustainability and stability criteria, a wide range of fiscal and debt positions may be compatible with them' (Treasury, 2022c).

Tracing the approach to the recommendations through Treasury advice, we can show that varying key assumptions while using the same analytical procedure as was the basis for the 50% recommendation permits far less restrictive fiscal rules. First, we address the excessive conservatism in Treasury's calibration; then we turn to the underlying pessimism towards the productive potential of public spending. The argument in the first instance will not be that a higher debt ceiling is credible, simply that the analysis doesn't provide sufficient grounds for the ceiling we have.

To recommend fiscal rules, Treasury follows a standard, internationally common IMF procedure. The method implicitly considers there to be no benefit to public spending (either through debt-financed investment or through current expenditure), and no differentiation between spending on different things, issues we return to later.[4]

Treasury estimates a level of net debt (excluding the NZSF) as a percentage of GDP that it claims we have very little room to exceed, under threat of financial markets deeming the government likely to default and withdrawing lending. This is, of course, a speculative exercise, not a process of discovering a structural parameter in the New Zealand economy. Following the debt dynamic equations (Box 2), there are two inputs[5] into the computation:

1. Maximum feasible primary balance: the amount by which revenue could exceed expenses, using the difference to pay down debt. This determines the ability of the government to stabilise and reduce net debt when it is at high levels. This is a judgement made in reference to historical experience: Treasury uses a primary surplus of 2–3%. A higher average primary balance was achieved in the period between the global financial crisis and the onset of the Covid-19 pandemic, so such balances can be seen as feasible, though willingness to raise adequate tax revenue is likely to be an important part of doing so in future.
2. Interest rates and GDP growth rates: the difference between the interest rate

on government bonds and the growth rate (r-g: 'r minus g') determines the rate at which debt grows (or reduces) as a percentage of GDP if the primary balance is zero – referred to as 'automatic debt dynamics'. All else being equal, the higher the assumed long-run interest differential, the lower the maximum level of sustainable debt. As we will elaborate on below, Treasury's analysis incorporates a very pessimistic interest differential.

With these assumptions, Treasury estimates a maximum tolerable debt level (excluding the NZSF) of 90% of GDP. A buffer is then subtracted from this level to set the debt ceiling. This buffer reflects an 'extreme but plausible' shock of 40%.

> We consider this adequate to absorb a range of shocks, from an average sized shock of 10 per cent of GDP, which is likely over a decade, to a large shock of 40 per cent of GDP, which has a low likelihood of materialising in any given decade. This buffer assumes a high degree of risk aversion and allows for the larger end of possible shocks, or multiple shocks in a short space of time. (Treasury, 2022b)

The result is the 50% ceiling for the debt-to-GDP ratio Treasury recommended in 2022, saying:

> We recommend a debt ceiling of 50% of GDP (current net debt measure) based on assumptions around risk tolerance, the primary balance required for reducing debt after large shocks and ensuring adequate fiscal space. The framework we introduce here can be used with different judgments and may lead to different results on the level of the debt ceiling, depending on how different factors are weighed. (Treasury, 2022c)

The current government opted to push this further, adopting a long-term objective of debt between 20% and 40% of GDP.

Critique and recalibration

The calibrations Treasury reaches are explicitly 'conservative': 'making assumptions about future economic conditions, which comes with a high degree of uncertainty. Therefore, throughout we drew on evidence and made conservative assumptions … we think making conservative assumptions is a prudent approach' (Treasury, 2022b). Conservative is a slippery term here, because it may be riskier to underinvest (say, in public infrastructure) than to constrain investment excessively. Fiscal policy would look quite different if the same conservative stance were to be taken towards underinvestment as is taken to determine upper limits of fiscal sustainability. Treasury's own description of its approach as 'conservative' reflects an unbalanced consideration of fiscal risks. Treasury 'first aimed to answer the question: what is the highest level of net debt to GDP that could be tolerated before we consider debt to be unsustainable?' (ibid.).

There is a necessary counterpart to this question: what is the *lowest* level of net debt-to-GDP that could be tolerated before we consider debt to be unsustainable?[6] In its own words, Treasury 'set out judgements to support the government in making trade-offs between a prudent level of debt and a prudent level of investment' (ibid.), recognising that underinvestment is in part a consequence of imprudently conservative debt management. Underinvestment threatens longer-term productive capacity in the economy, either by failing to enhance resilience to shocks, or by eroding existing capital (including physical, natural, human and social capital). Falling below a minimum sustainable level of investment is unsustainable, as it precipitates falling economic capacity. They noted: 'our assessment of the amount of public investment needed in the medium-to-long-term is higher than in 2019. Therefore, a 30 per cent net debt target – as recommended in 2019 – would now be likely to overly constrain capital investment in a way that could reduce wellbeing'; 'pursuing very low levels of debt can involve reducing capital investment and passing up on productivity and growth enhancing investments' (ibid.; Treasury, 2022a).

We see that Treasury recognised that previous recommendations had likely constrained investment in a wellbeing-reducing way; hence the upwards revision of its recommended prudent debt levels in 2022. It recognised that too low a debt level is also imprudent. This could be considered a transgression of 'responsible fiscal management' under the Public Finance Act, given that the Act has a one-sided view of sustainability, with no provision for prudent increases in debt, or imprudent decreases in debt. We can reconsider the analyses in a few ways.

Less conservative interest differential

The interest differentials used to arrive at Treasury's maximum sustainable debt levels are higher than historically observed: 'Our analysis had very conservative assumptions of the interest rate exceeding nominal GDP growth (r-g) by three percentage points compared to the long-run average of +0.8 percentage points between 1991 and 2021'; 'a 3 per cent interest rate differential could be considered a tail risk scenario, but to ensure fiscal rules are robust to extreme outcomes, we have used this conservative assumption' (Treasury, 2023b, 2022b).

We demonstrate maximum sustainable debt levels computed with less conservative interest differentials, using a range of 1–2% – still above the 30-year historical average.[7]

Box 3: Debt dynamic equations

Basic debt dynamics are expressed by:

$$\Delta d_{t+1} = \frac{r-g}{1+g} d_t - p_{t+1}$$

Where d is the debt-to-GDP ratio, r is the interest rate the government faces, g is the growth rate of GDP, and p is the primary balance. Approximating by $\Delta d_{t+1} \approx (r-g)d_t - p_{t+1}$ the debt-stabilising primary balance is:

$$p^*_t = (r-g)d_{t-1}$$

Making the stability condition for the operating balance ob:

$$ob^* \approx (r-g)d - rd \approx -gd$$

Or if taking long-run values for r,g, and p, the maximum sustainable debt level d* is:

$$d^* = p\left(\frac{1+g}{r-g}\right)$$

Figure 1: Historic and forecast operating indicators

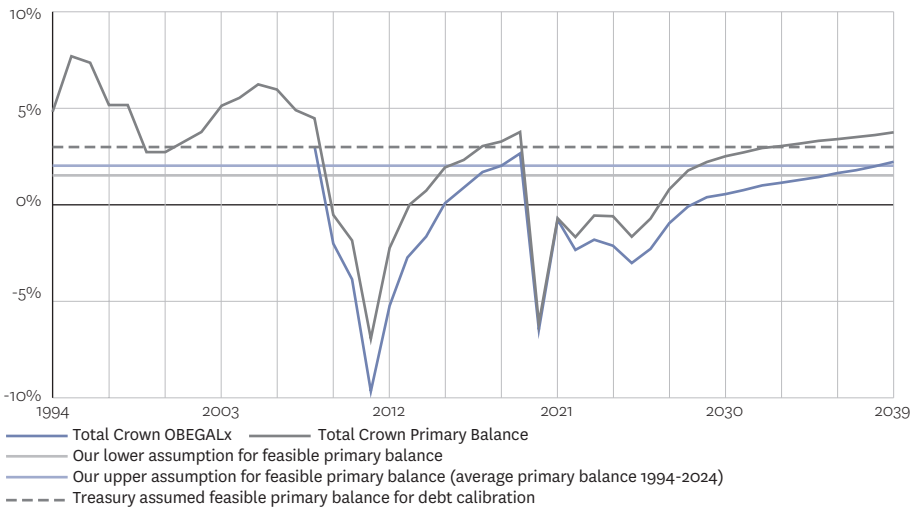
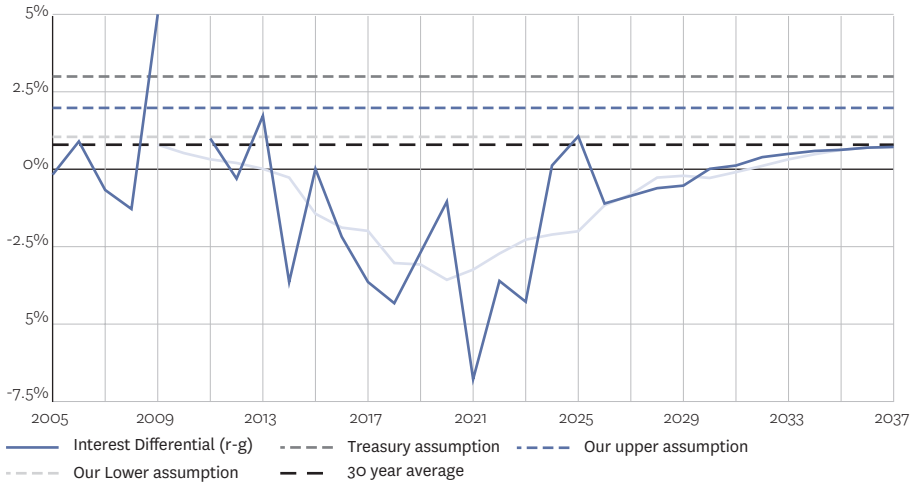


Figure 2: Historic and forecast interest differentials



Treasury's method also takes an assumed maximum feasible primary balance as input. This can be understood as the 'effort' a government is willing and able to put into stabilising debt, by tightening current and future operating expenditure or raising revenue. Table 2 considers debt ceilings corresponding to lower feasible primary balances than those used in Treasury's analysis. These are below balances seen in post-global financial crisis consolidation episodes.

Figures 1 and 2 give historical context to the choice of assumptions concerning the primary balance and interest differential. In Figure 1 we see that high primary balances have been achievable in recent decades, but decreasingly so as the structural deficit (a reflection of tax inadequacy) has emerged. The horizontal lines indicate the demands on primary balances our debt ceiling calibration in Table 2 are premised on – not extreme demands, if the tax system is made adequate. In Figure 2 we see the pessimism of Treasury's assumption (red) on the interest differential – far above the average differential over the last 30 years (grey). It remains low (1% in 2024/25; forecast –0.6% in 2025/26 at BEFU 2025), though Treasury forecasts that it will stabilise at the historical average (0.8%) over the projection period. Our calibrations (blue, gray lines in Figure 2) are based on a macroeconomic environment more conducive to debt consolidation than Treasury assumed, but still more adverse to debt consolidation than the historical average.

Reduce buffers, allow investment in resilience

The 40% buffer, as Toby Moore has recently pointed out, would cover approximately two Covid-19-size shocks occurring simultaneously, more than 23 simultaneous Cyclone Gabrielles, or almost four Canterbury earthquakes (Moore, 2025).

Treasury's August 2025 long-term insights briefing set out to consider 'the appropriate way that fiscal policy could be used in response to future disruptive events to the New Zealand economy and society'. It set out a narrow role for fiscal policy with respect to shocks:

> In the context of higher public debt and increasing fiscal pressures, it is important that the policy choices of governments position New Zealand to weather future shocks by rebuilding and maintaining sustainable fiscal capacity … Key policy choices include constraining public expense growth, improving the efficiency of public expenditure, making more efficient use of the government's balance sheet and increasing revenue through base broadening or higher rates. (Treasury, 2025, pp.13, 79)

They evince no role for strategic, proactive fiscal policy that would reduce the frequency or severity of shocks. The briefing essentially argues that fiscal policy between shocks should focus on fiscal consolidation, debt reduction and building buffers, rather than active investment in productive capacity or resilience. It frames 'normal times' as opportunities to save for the next crisis, rather than periods of strategic investment that might reduce future crisis costs or build economic capacity: merely preparation for the next crisis. We then run into the problem of deciding what constitutes a crisis worth using hard-won fiscal capacity to respond to. This is a judgement; there is no purely technical solution. While Treasury acknowledges that 'building the resilience of the private sector to deal with shocks and cycles may lessen the need for, or the cost of, any fiscal response', it largely does not connect this to fiscal policy levers, suggesting instead that the 'resilience of the private sector' comes from a liberalised market environment: 'Features of New Zealand's economy that keep it flexible and adaptable to change should be maintained' (ibid., p.5).

It appears in the Treasury advice and the long-term insights briefing as though investment has little to do with resilience to shocks. In fact, investment in, say, flood

defences or managed retreat, which has a mechanically 'worse' impact on fiscal indicators, would have a negative impact on resilience as seen by Treasury, because their approach conceives of resilience as financial market accessibility rather than investment in underlying real resilience. This view of investment as a threat to economic resilience, rather than a means to pursue it, fails to take account of the fact that financial markets can and do recognise productive investment in resilience, and are already pricing in the vulnerability induced by underinvestment. It is possible for excessive fiscal buffers themselves to have an adverse impact on borrowing conditions if they contribute to continuing underinvestment in resilience.

The March 2025 S&P downgrade of New Zealand's local government ratings is a concrete example. For decades, councils maintained apparently healthy fiscal metrics while underinvesting in water and other infrastructure, deferring an estimated $120–185 billion in necessary maintenance and improvements, while pointing to balanced budgets and manageable debt levels. However, when this underinvestment culminated in system-wide infrastructure failure – from the Havelock North drinking water contamination to widespread compliance failures – S&P Global Ratings responded by downgrading New Zealand local governments, explicitly citing concerns that councils are not able to cover necessary investment in infrastructure. The downgrade followed the repeal of the Three Waters reform, which had been designed to address the infrastructure deficit. S&P's assessment recognised that fiscal constraint without productive investment creates greater long-term risk than debt-financed infrastructure spending: the rating agency effectively penalised the policy framework that prioritised short-term fiscal metrics over resilience investment. Fiscal constraint maintained through infrastructure neglect eventually led to worsened borrowing conditions, as markets moved to price in the accumulated risks, contingent liabilities and heightened policy uncertainty created by systematic underinvestment.

New Zealand has, from a comparative perspective, a relatively high vulnerability to geophysical and weather-related hazards, and biosecurity risks, that require careful consideration. Risk aversion is reasonable, but that should not be thought of as at odds with proactive fiscal policy. If investment made possible under a higher debt ceiling is able to reduce the frequency or severity of shocks, a buffer less than 40% of GDP would be sufficient, and would not come at the direct expense of financial market accessibility in the event of a shock, as the underlying real economic resources and resilience are looked upon favourably, whereas failure to undertake necessary investment is recognised as a vulnerability, threatening both underlying economic capacity and the stability of the policy environment. Treasury recognised that a 'government may wish to have a buffer towards 30% of GDP … if government wants to attempt to reduce future fiscal pressures or sustainably grow the economy and wellbeing by investing in high value for money initiatives now' (Treasury, 2022c). Having real economic capacity to respond to shocks would support the orderly functioning of financial markets in the event of a major shock. A smaller buffer that allows for better direct preparation for shocks, or reduces the likelihood of a shock of such severity, is better than lying in wait.

Table 1: Recalibrating Treasury's approach to recommending a debt rule

			maximum sustainable debt level (%)			debt ceiling (%)	
			max feasible *pb*			max feasible *pb*	
r (real)	*g* (real)	*r-g*	1.50%	2%	buffer (%)	1.50%	2%
3.00%	1.00%	2.00%	76	101	40	36	61
4.00%	2.00%	2.00%	77	102	40	37	62
3.00%	1.00%	2.00%	76	101	30	46	71
4.00%	2.00%	2.00%	77	102	30	47	72
2.50%	1.00%	1.50%	101	135	40	61	95
3.50%	2.00%	1.50%	102	136	40	62	96
2.50%	1.00%	1.50%	101	135	30	71	105
3.50%	2.00%	1.50%	102	136	30	72	106
2.00%	1.00%	1.00%	152	202	40	112	162
3.00%	2.00%	1.00%	153	204	40	113	164
2.00%	1.00%	1.00%	152	202	30	122	172
3.00%	2.00%	1.00%	153	204	30	123	174

Notes: *r* refers to the interest rate on public debt, *g* is the real GDP growth rate, *pb* is the primary balance

Replicating Treasury's debt sustainability analysis with different assumptions shows that it is not a strong justification for the recommended debt ceiling; as we see in Table 2, the same method delivers far higher sustainable debt levels under plausible and unrestrictive assumptions. This exercise has simply demonstrated the effect of revising the assumed interest differential, feasible primary surplus and required buffer on the estimated maximum sustainable debt level and the debt ceiling, with no further benefits to investment incorporated in the modelling. We have done nothing here other than adjust the assumptions in Treasury's analysis to reflect empirically justified values. The point is not that a sudden leap to a debt ratio of 120% is advisable; it is that we do not find a sufficient account for the current recommendations in the method Treasury used.

If we do not find a strong argument for the current debt ceiling in this particular analysis, what is the reason for it? In advice, Treasury presented a 60% debt ceiling as an option. It noted: 'This assumes higher willingness and credibility of governments to run high primary surpluses to reduce debt back to the ceiling level in response to a tail risk scenario' (ibid.). By the same debt dynamic equations in Box 2, Treasury claims that reducing debt from 100% to 60% of GDP requires an average primary surplus of ~4.5% of GDP over a 20-year period. This calculation relies on the same pessimistic interest differential dispensed with earlier.[8] And, again, no economic benefits from either higher debt-financed capital investment or higher operating expenditures are incorporated in such a computation. Still,

this draws attention to the crucial role of the operating balance in securing the credibility of commitments on debt. The credibility of the debt level relies on the credibility of the operating balance, which relies on the adequacy of the tax system.

Debt for productive investments in long-term growth or credible crisis response is viewed favourably by ratings agencies. Debt reflecting an inability or unwillingness to steward a tax system is not. New Zealand's Covid-19 spending was rewarded with a credit rating upgrade because it demonstrated competent crisis response. When Grant Robertson raised the debt ceiling in 2022, telegraphing intent to pursue higher spending and public investment, ratings agencies didn't blink an eye. Clearly it's not the debt level, but the reason for the debt, and what we get from it, that matters to ratings agencies.

Debt for productive investments in long-term growth or credible crisis response is viewed favourably by ratings agencies. Debt reflecting an inability or unwillingness to steward a tax system is not.

Some would emphasise that sudden shifts in approach signal an unpredictable policy environment, which is inherently destabilising. Some argue that New Zealand's historically conservative fiscal policy has conferred economic benefit, and that confidence built through the enduring fiscal framework is hard-won, easily lost, and should not be undervalued. The price at which lenders provide funding is not independent of the commitments a government makes regarding public debt limits; the interest differential may respond to a change in strategy and so there may be a need to move steadily from one strategy to another, taking market actors along and telegraphing sound reasoning.

There are good reasons to limit public debt. Even if there were no threat of financial market reaction, excessive debt can fuel inflation if government spending exceeds the economy's productive capacity to make use of it. There is only so much that can be delivered, given the real productive capacity in the economy and government's willingness to mobilise it, dispensing with other private claims to the same resources by taxation or by regulation. When government spending pushes beyond these real resource constraints – the availability of specific skills, materials, infrastructure and technological capabilities – inflationary pressure will represent a genuine economic limit on fiscal expansion, independent of financial market sentiment. However, this constraint is not fixed: strategic public investment that expands productive capacity can alleviate these limits over time, making higher sustainable debt levels possible.

Real economic constraints on delivering necessary investment

Treasury recognises an infrastructure gap, and the potential for that gap to be closed by tolerating higher debt levels. However, it warns of delivery constraints on investment, referring to limited 'market capacity' to carry out the necessary activity. This is reiterated over several pieces of advice.

> Available estimates point to the presence of an infrastructure gap in New Zealand … However, there are constraints on the pace and scale of investment that can be delivered by both the public and private sectors. The current pipeline of public investment exceeds our estimates of market capacity and may not represent the best value for money. (Treasury, 2023c)

> [There is] an investment pipeline larger than agencies and the market can deliver, leading to cost increases and delivery delays. A more structured long-term pipeline of investments and capital programmes that we have approved and sequenced will support the market to invest in capability and increase capacity, as well as improve deliverability and avoid future pressures. (Treasury, 2023a)

> A debt ceiling of 50% of GDP offers fiscal space for discretionary capital investment … However, there are significant market capacity and capability constraints. Advice from the Investment Panel identified these market constraints (including availability of labour and supply chain issues) as the most acute issues constraining delivery across the Government's capital portfolio. (Treasury, 2022c)

> Agencies' ability to deliver funded investments is limited by market capacity as demand remains significantly higher than supply. Many of the projects within the investment programmes funded over recent years are only just commencing delivery, and supply pressures are exacerbated by additional demand and regional market capacity posed by the cyclone and flood responses. The over-subscription of the pipeline is leading to cost increases and delivery delays. (Treasury, 2024a)

We can agree that the primary constraint on government spending is not financial, but real: the availability of real resources and capacity to deliver on collective ambitions. True constraints on delivering investment lie in the availability and productivity of labour (incorporating the health, education and care of workers), produced intermediate goods, natural resources (incorporating the impact of emissions and extraction on the degradation of the environment, biodiversity and climate), infrastructure, and technological capabilities.[9]

Above, Treasury finds a larger capital investment pipeline to lack credibility, as it exceeds real capacity for delivery. That real capacity should be the reference point for calibrating fiscal rules, with particular

attention to spending that raises real state capacity. Indeed, in Treasury's own words:

> If the pipeline of investments is managed well, resulting in an ongoing and sustained increase in capacity and therefore capital investment (including the large investments noted above), it is likely that even a net debt ceiling of 50% of GDP would require some prioritisation of capital expenditure. (Treasury, 2022c)

Meaning, if the state's capacity to deliver capital investment is sufficiently high, then the 50% ceiling could become an undue constraint forcing the state to forgo productive and feasible investment opportunities.

Treasury's concern for market capacity to deliver an agreed investment pipeline pays some attention to the real economic constraints on public works, but because the possibility of long-run impacts on potential output is missing in the analytical framework, it fails to integrate dynamic effects of strategic investment on expanding capacity to deliver investment, other than suggestively. If greater real economic capacity is required to deliver necessary capital investment, then it is crucial to build or release the necessary economic capacity over time, to alleviate the constraints on delivering on our social ambitions. As that capacity grows, the debt ceiling is decreasingly conducive to the delivery of public investment.

There are two routes, which can be used in tandem to expand real capacity: strategically sequenced investment in alleviating supply-side constraints; and diversion of resources from other, less socially productive uses, by use of stronger regulation that reduces the private claim on the resources that must be reallocated towards socially agreed projects.

Physical infrastructure investment, for example, addresses binding constraints on economic activity. When transportation bottlenecks limit the movement of people and goods, energy constraints hinder production expansion, or housing shortages restrict labour mobility, targeted public investment can relieve these constraints. Credible spending plans should account for how public investment dynamically enhances productivity and economic capacity, thereby improving long-term capacity to deliver necessary investment, in turn making higher debt levels credible. This is what it means to be strategic with public expenditure.

Conclusion

The suite of fiscal and economic models underpinning the advice provided to the government on setting its fiscal rules incorporate fiscal policy changes asymmetrically: incorporating costs, but not capturing the benefits, leading to systematic pessimism about the potential of fiscal policy. Underestimating the benefits of public expenditure means catastrophically underestimating the damage done by cuts and recommending unduly tight restraints on both taxation and the scope of government. A rebalanced analysis would lead to advice that is more insistent on the need for more revenue and less willing to tolerate expenditure-side consolidation.

Concerns about New Zealand's fiscal reputation are legitimate, but the current approach conflates fiscal credibility with fiscal conservatism. Markets assess sovereign risk based on a government's capacity to service debt, which depends more on underlying economic fundamentals and a stable, transparent policy environment than on adherence to numerical targets that may themselves undermine long-term economic capacity. A truly credible fiscal framework would demonstrate commitment to productive investment within sustainable parameters. Systematic underinvestment in infrastructure, human capability and climate resilience will ultimately pose greater reputational risks by signalling a government's inability to address structural challenges that more acutely threaten debt sustainability. Chaotic adjustments and policy instability are more likely to result from implausible underinvestment, as the local government downgrade discussed earlier demonstrated.

Ratings agencies prioritise political stability, effective governance, and real economic dynamism and resilience above simple debt levels. Real economic deteriorations – not surface-level fiscal indicators – are the genuine risks. Productivity stagnation, brain drain, homelessness and infrastructure decay are stains on our economic record – and slow-burning threats to our fiscal credibility. Addressing New Zealand's real economic decline requires more public spending, not less. These are pernicious problems that deference to private solutions will not solve. True fiscal responsibility means ensuring that governments can deliver the public services that underpin a thriving society. It means recognising that real constraints on prosperity aren't found in debt ratios, but in the health and availability of skilled workers, quality infrastructure, technological capabilities, social cohesion and climate-readiness – areas where public investment makes transformative differences.

This analysis has argued that New Zealand's fiscal framework systematically undervalues public investment through unduly pessimistic assumptions about the productive possibilities of the state, and a

> There are public goods and services that private provision is bound to underprovide. If the state does not deliberately build capacity to deliver the accessible, high-quality public services we collectively aspire to, no one will.

one-sided conception of fiscal responsibility wherein the risks of excessive debt are meticulously quantified, while the costs of underinvestment remain largely invisible. Treasury's approach to calibrating a debt ceiling does not provide sufficient support for its current recommendation; the same approach, under unrestrictive assumptions, can support an argument for a far higher debt ceiling. We do not point this out to argue that we should immediately run headlong towards higher debt levels. Rather, we have aimed to show that what constitutes sustainable debt is a matter of contestation and credible commitment.

Treasury's analytical framework, the Public Finance Act and the literature on sovereign debt theory share a compulsion towards debt reduction and containment, with no provision for prudent, productive increases in debt that enhance economic capacity and resilience. This one-sided view creates an incoherence where fiscal 'prudence' can lead to imprudent underinvestment in public goods and infrastructure, ultimately eroding real economic capacity. A more balanced approach to fiscal sustainability would recognise that:

- Public investment can enhance growth, productivity and resilience, improving rather than undermining long-term fiscal sustainability.
- The costs of underinvestment – in infrastructure gaps, climate resilience and human capital – pose risks as significant as excessive debt: both debt in excess of real economic capacity to deliver investment and chronic underinvestment represent failures of fiscal responsibility.
- Not all debt is of equal value. Debt reflecting an inability or unwillingness to steward a tax system is a greater threat to fiscal credibility than productive public investment is. Tax adequacy underpins stable debt.
- Real economic constraints, alleviated strategically and dynamically, should guide public investment decisions, not financial targets divorced from their economic implications.

Such a framework would enable the strategic investment necessary to address New Zealand's infrastructure deficits, build resilience to growing economic and environmental shocks, and create the foundations for sustainable prosperity. There are public goods and services that private provision is bound to underprovide. If the state does not deliberately build capacity to deliver the accessible, high-quality public services we collectively aspire to, no one will. Any fiscal strategy that fails to equip the state to do so will undermine itself, ceasing to be economically or politically sustainable.

1 Much of the discussion to follow will be focused on debt. We do not wish to make an argument for a less alarmist disposition towards public debt without also making an argument for a less alarmist disposition towards taxation. Any comprehensive fiscal strategy must recognise taxation as more than a revenue-raising mechanism. Taxation can and should be a tool for economic rebalancing – resisting increases in inequality, redistributing resources from areas of excess to areas of need, redirecting productive capacity towards public priorities, and managing aggregate demand to maintain price stability. Moreover, as we have discussed elsewhere, the inadequacies of the current tax system pose a greater risk to any notion of fiscal responsibility than do current debt levels.

2 Australia takes a similar principles-based approach, with the Charter of Budget Honesty fulfilling a similar function to the Public Finance Act. Sweden and Denmark operate on a hybrid model that is more rules-based than New Zealand's, each with an important role for independent fiscal institutions. The European Union, with its Stability and Growth Pact, is a prominent example of a rules-based system, as all Eurozone members must adhere to specific numerical targets. Countries like Germany and Switzerland have also enshrined 'debt brakes' into their constitutions, reflecting a strong commitment to rules-based frameworks.

3 Taken together, these changes were to mean less emphasis on the revised debt rule, which would be secondary to the operating rule – a 'backstop against deficit bias'. Treasury recommended focusing on the operating balance before gains and losses (OBEGAL) position as the main fiscal rule, moving more explicitly towards a 'golden rule', where the government borrows to invest in long-lived assets but does not borrow to fund current spending. Such an approach places less weight on a binding net debt target and more focus on the operating position, to provide more flexibility to undertake long-term investments, with less of a top-down constraint on capital spending (Treasury, 2022c).

4 Criticisms from a diverse range of actors have persisted through continual refinements to the DSA (debt sustainability analysis) framework. In a developing country context, Oduk and Mithia (2024) find the DSA's 'limited scope, coupled with its inherent biases, frequently exacerbates the debt challenges faced by developing countries … the DSA inadvertently reinforces a cycle of dependency that undermines true economic sovereignty', while Erce (2025), writing for the European Parliament, noted that in advanced economies the procedures 'understate the impact of public investment … not only unrealistic but prevent investments and fail to reward good policies'. For Laskaridis (2021), the theoretical grounds guiding the IMF's DSA are disconnected from the discipline of economics. There is a clear need to ask how, and why, the IMF defends such a limited analysis.

For Oduk and Mithia (2025), as for Gill (1993), the IMF has institutionalised the DSA not merely as a technical assessment tool, but as a reflection of and vehicle for a preference for market-centric values that prioritise fiscal consolidation, privatisation and trade liberalisation over state-led development strategies. Through its surveillance functions and policy advisory role, the IMF has historically used the DSA to justify structural adjustment programmes, even when these measures prove counterproductive – as evidenced by instances where fiscal consolidation demands have worsened debt sustainability troubles in vulnerable economies. The IMF's unique position as both analyst and influential market actor means that its DSA assessments become self-reinforcing: they shape sovereign lending markets and debt contract structures, creating conditions that validate the sustainability concerns underlying the framework – a sort of circular legitimacy that allows the IMF to maintain the DSA's authority despite its mechanical approach, inflexibility to circumstances, and tendency to understate the benefits of public investment.

5 These are long-run values; short-term fluctuations do not matter.

6 It is beyond the scope of this article to propose a method to determine a minimum sustainable debt level, but we would urge further work on this. We simply note that recognition of a minimum sustainable debt level, neglected in the current approach, implies an unbalanced consideration of fiscal risks which may result in an imprudently restrictive debt ceiling. (For a good summary of economic implications of underspending, see Hall, 2014; Ashauer, 1989; Beraldo, S., et al. 2009; IMF, 2012a, 2012b.)

7 Recent years near the zero lower bound have seen negative differentials, prompting Olivier Blanchard's statement in his now seminal lecture in 2019 that, 'put bluntly, public debt may have no fiscal cost'. Though long-term growth may, if trends persist, be weak, long-term trajectories for interest rates are also being pulled downwards (notwithstanding shocks). Blanchard's subsequent work suggests that safe interest rates are expected to remain below growth rates for extended periods, as 'more the historical norm than the exception'. Auclert et al. (2024) make a similar argument in demographic terms: though demographic change is likely to slow growth and put upward pressure on public spending, ageing countries' saving behaviour may modify public debt demand, leading to sustained lower rates.

8 At a 2% interest differential, an average primary balance of 3.6% reduces debt to 60% over the same period. At a 1% interest differential, the average primary balance required is 2.8%. As in our replications above, debt can be stabilised from high levels with lower primary balances, under reasonable assumptions on the long-run interest differential.

9 As Bertram puts it in this issue (Bertram, 2025): 'In the long run, the two essential issues in setting fiscal strategy should be, first, what are our aspirations as a society; and second, what is society's willingness and ability to "raise sufficient revenue" to fund those aspirations? Upper and lower bounds on government spending should be based not on rigid adherence to arbitrary ratios, but on the outcome of those strategic choices, with due regard paid to the macroeconomic limits which any New Zealand government has to respect: resource scarcity, full employment (defined in a sensible way – see, for example, Rose, 2019), and the balance-of-payments constraints facing a small open economy.'

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Geoff Bertram

Fiscal Irresponsibility and Non-accountability

Abstract

This is a critical review of the so-called 'principles of fiscal responsibility' first legislated in 1994 and currently forming section 26G of the Public Finance Act 1989. The article argues that the term 'responsibility' has been wrongly applied to what is actually a prescription for fiscal austerity based on philosophically contested premises. Undue deference to that prescription has tied the hands of successive New Zealand governments, with negative consequences for the nation's infrastructure and the population's wellbeing.

Keywords fiscal policy, austerity, wellbeing, debt limit, accrual accounting, neoliberalism

Ruth Richardson's Fiscal Responsibility Act 1994 enshrined into New Zealand law a statement of 'principles of responsible fiscal management', which later (with some additions) became section 26G of the Public Finance Act 1989.[1] Those alleged principles remain on the statute book three decades later, and have played a central role in shrinking the scope and (I would argue) reducing the quality of government expenditure and taxation. Boston and Pallot's comment that 'the budget – and in particular, fiscal considerations – tended to drive the government's policy strategy, rather than [the other way round]' has rung increasingly true as so-called 'principles' have become an effective 'commitment device', leading to self-imposed fiscal straitjackets for both Labour and National governments (Boston and Pallot, 1997, p.384; Boston, 2017, ch.8; Gill, 2018). So, a great deal hinges on the statutory definitions of 'responsibility' in the Fiscal Responsibility Act and the Public Finance Act.

At the start it is worth asking some basic questions. What do we mean by 'responsibility'? Why is keeping debt and spending in check a good idea, and how much restraint is really sensible? What is the meaning of the word 'prudent' when applied to debt levels and management of fiscal risks? What is the case for requiring permanent balance in the operating budget? Why should 'government net worth' be a central concern of fiscal policy? Why do 'efficiency and fairness' include keeping tax rates 'stable'? These are important questions, which go to the heart of the neoliberal experiment into which the New Zealand economy, and the New Zealand government, were plunged in the 1980s and 1990s.

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The neoliberal world view regards government itself as inherently unproductive, and taxation as a burden on the private sector, which is considered the only productive part of the economy. It follows that both taxation and the scope of government are to be restricted as much as possible. To keep government in check, four policy devices are commonly deployed.

The first device is simply to place an arbitrary numerical limit on the size of government spending, usually set as a percentage of GDP. The other three devices comprise the strategy of 'starving the beast' (Friedman, 2003; Niskanen, 2006): tax cuts, which restrain the ability of government to fund expenditures from current revenues; debt limits, which restrain the ability of government to fund expenditure from future revenues; and insistence on 'full funding', which blocks government from funding any of its expenditure by money creation. The government is then forced to attempt to run a balanced (or surplus) operating budget, and is blocked from paying for increased spending unless it can either borrow from the private sector without breaching its debt limit, or raise taxes. Tax increases to relax the straightjacket are, of course, vigorously opposed and politically fraught.

All these restrictions must, nevertheless, be self-inflicted by government on itself. In a democracy, this implies that the voting population must be persuaded that low taxes, small government and tight fiscal constraints are the best way to pursue general wellbeing. It is one of the ironies of contemporary politics that fiscal austerity has become popular with both the public and the media despite its negative consequences for stability and wellbeing when applied in the wrong macroeconomic circumstances (Wren-Lewis, 2018; Blyth, 2013).

The story often told to justify this position is that government is just another small player within the overall economy, akin to a firm or household, so that 'good housekeeping' rules can be applied to government without hurting the wider economy. Consistent with this, the Public Finance Act changed the way the New Zealand government accounts were presented. Central to this was the adoption of an accrual approach in place of the traditional cash-based accounts focused on the old budget table 2 (Newbery, 2020; Dalziel and Lattimore, 1996, pp.50–1; Gibbons, 2017, p.57). From the point of view of neoliberal proponents, this was an unequivocal advance, because they saw government as no more than a large firm or household – an entity whose net worth and balance-sheet structure could be measured and changed without any impact on the economy at large. When the government ran a surplus, this could be equated with a gain in the wealth of the economy as a whole: government saving, and hence net worth, could, in this view, be increased without any countervailing reduction in private sector saving. Several of the key insights of Keynesian macroeconomics were thereby jettisoned, and an ideology of 'responsible fiscal management', based on the false analogy with a microeconomic unit such as a firm or household, was enthroned.

Before 1984, New Zealand governments and voters held a radically different view of the nature and role of government, the sensible limits on its size, and the ways in which government spending could be funded ...

Before 1984, New Zealand governments and voters held a radically different view of the nature and role of government, the sensible limits on its size, and the ways in which government spending could be funded (Bertram, 1997; McAloon, 2013, ch.1; Rose, 2019, 2021; Buckle and Snively, 1979). Far from being just like a firm or household, balancing its budget with no wider economic impacts on society at large, the government was seen as playing a crucial role in providing a wide range of essential and desirable services (including transferring income and wealth from rich to poor), while steering the economy as a whole towards full employment. The constraints within which that activist role was pursued were twofold: the willingness of the voting population to agree on the scale of government services and transfers; and the productive capacity of the New Zealand economy to sustain full employment within a balance of payments constraint.

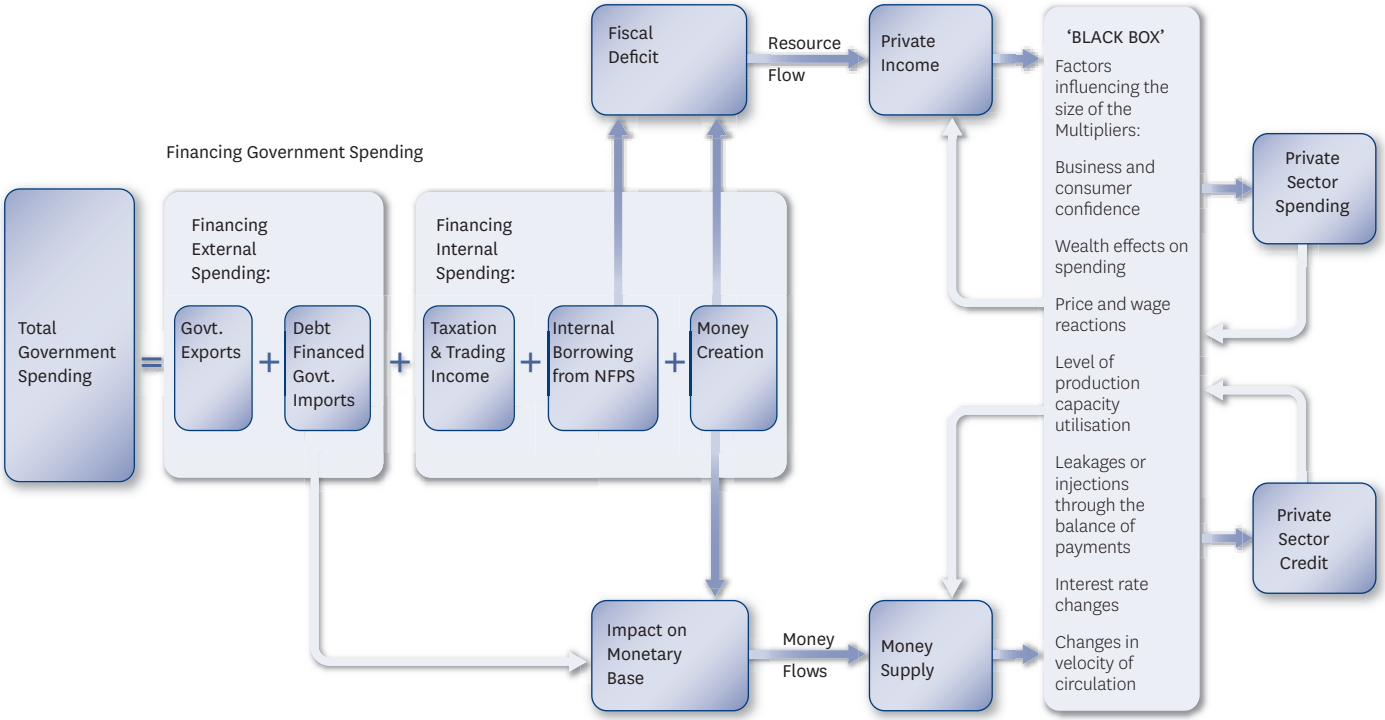
In that pre-neoliberal, Keynesian era, what policymakers aimed most to balance was the country's demand for imports relative to what the export sectors could earn. The size of the government within the economy was determined not by any arbitrary rule, but by the level of democratically agreed need for what government could and should provide. It was well understood that changes in government spending and in the way it was funded would have economy-wide (macroeconomic) effects. The government expected to break even over the long run, but was not aiming at the sort of targets that drive private business – profit, net worth and so on.

As for the funding of government, the pre-1984 position was that money creation (borrowing from the Reserve Bank, within sensible limits) ranked along with tax revenue, trading income, and borrowing from the non-bank private sector as a source of funding for internal spending. See, for example, Figure 1, drawn from Buckle and Snively (1979).

Central to the pre-1984 story was the proposition that democracy worked, in the sense of keeping government honest and trustworthy. Government was expected to exercise sound judgement in its policy settings, and public debate focused on whether particular policy decisions were sensible, not on whether any arbitrary rules were being broken.

It is certainly the case that by the 1970s, cracks were appearing in the post-war economic model (McAloon, 2013; Easton, 2020, Chapter 4; Bertram, 2009), and the

Figure 1: The initial budget impact on aggregate demand and the money supply



Note: These flows indicate the direction of initial impact of budget transactions on private income, the money stock and aggregate spending. The eventual effect on agregate demand and the money stock will depend on the income and money multipliers which, in turn, will depend on a number of factors, some of which are listed in the 'Black Box'. There will, or course, be second round effects whereby economic activity will affect the size of multipliers and also budget transactions

Source: Reconstruction of chart 5 from Buckle and Snively 1979, p.16.

government was under pressure to address a number of looming issues, including the fiscal sustainability of the 'post-war consensus'. A first set of (largely unsuccessful) initiatives to meet this challenge were undertaken by the Muldoon government of 1975–84 (Gould, 1985; Boshier, 2022; Easton, 1997, p.235). An extremist reaction against Muldoon (what Easton (p.237) has described as 'a coup within the establishment') then brought the ascendancy of neoliberal ideas developed within Treasury and the Reserve Bank of New Zealand, which came to include the doctrines of 'constitutional political economy' developed in Brennan and Buchanan (1986) (for background, see MacLean, 2017). The most solid argument in favour of both Muldoon's policies and those of the neoliberal Labour and National regimes that followed is that both were introduced and implemented by democratically elected governments. The central argument from proponents of the neoliberal ideas – that there were no alternative solutions to the economy's problems – was never compelling (see Easton, 1997, chs 15 and 16; Bertram, 1993). But, for better or worse, their legacy remains a fact of life in New Zealand policymaking today.

The change from relying on discretionary decision making to demanding rigid adherence to rules or principles was central to the neoliberal transformation of economic policy, along with the adoption of the view of government as an entity aiming to maximise shareholder (taxpayer) net worth by running surpluses. Both of these propositions, derived from constitutional political economy, ran directly counter to what had previously been two central tenets of mainstream economic thinking:

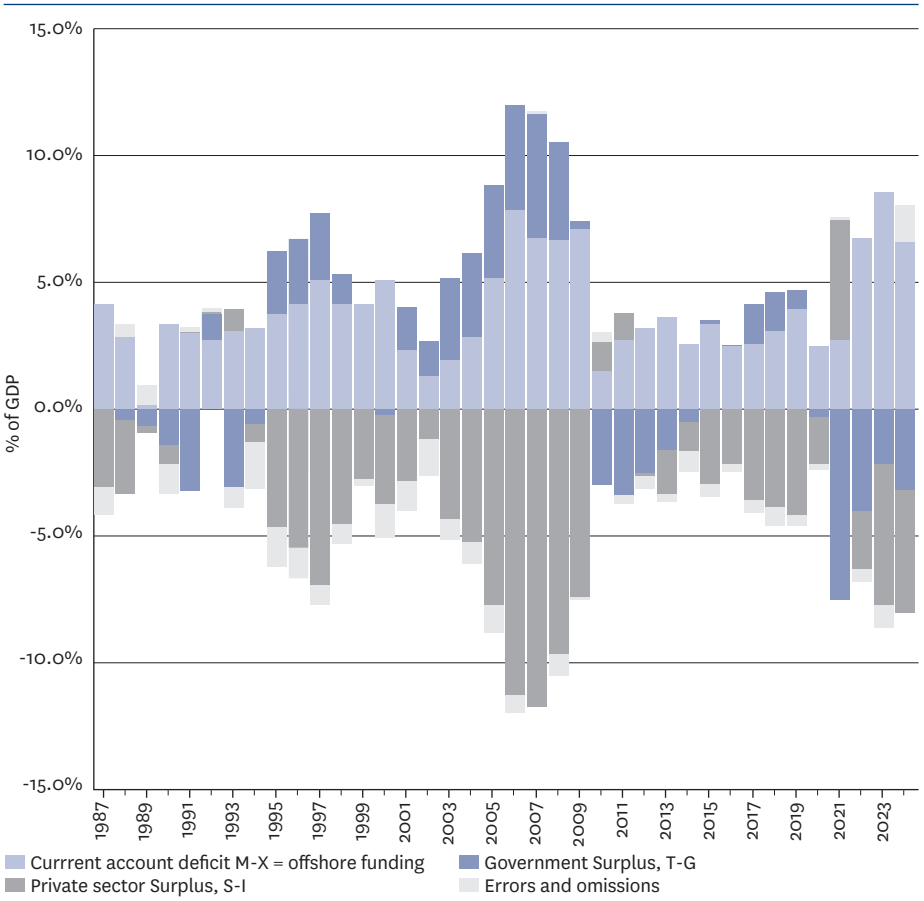
- Because government makes up a large proportion of the aggregate economy, it cannot be analysed using the *ceteris paribus* assumptions that work for microeconomics, because 'other things' do not 'remain equal' when the government changes its policy settings. There are large macroeconomic externalities flowing from the government's taxing and spending activities, which cannot just be ignored when evaluating the fiscal stance. At a full-employment level of aggregate activity in a closed economy, an expansion of government real spending (in the sense of exercising increased command over scarce resources) must displace ('crowd out') some private sector activity, because resources will be diverted from private to public use. In an open economy, besides domestic crowding-out there will be some spillover of increased aggregate demand into an increased balance-of-payments current account deficit. At a level of aggregate activity below full employment, an expansion of government spending can (in principle at least) bring unutilised resources into productive use and so can increase aggregate output and (potentially at least) welfare. Whether at or below full employment, for a given balance-of-payments position an increase in government savings must be matched by a reduction in private savings: only if increasing government savings goes along with a strengthening in the balance of payments can private savings increase or stay constant when fiscal policy tightens. These relationships are shown in Figure 2, where the three sector balances always add up to zero (with allowance for statistical errors and omissions). The list of 'other things not being equal' can be extended, but these are the most important.

- As Adam Smith noted (in *Wealth of Nations*, book IV, chapter ix), one of the key 'duties of the sovereign' is to undertake socially useful projects that would not be privately profitable; in other words, to provide services that do not return a commercial rate of profit (make a loss from an accrual point of view), but that have large positive external effects which are desirable for the wellbeing of the collective citizenry. Because providing these wellbeing-enhancing services at the socially efficient level will make losses, doing so will tend to weaken rather than strengthen the government's balance sheet. Aiming for increases in the government's net worth will mean providing essential services at less than the optimal level, forgoing the social wellbeing gains attainable from greater collective provision of such services. Far from being obviously a good thing, rising government net worth may be a signal of failure to perform one of the key functions of government itself.

The accrual accounting approach in the Public Finance Act effectively sets aside those old insights, treating taxpayers as akin to investors in a commercial venture, and rejecting both the external macroeconomic effects of government spending, taxing and saving behaviour, and the external microeconomic benefits that flow from providing essential public services at prices set below their commercially defined 'cost'. In summary:

- falling government debt appears as an unqualified positive outcome in the accrual world view, whereas in the real world it is often symptomatic of (and a contributor to) rising private sector indebtedness;
- rising government net worth is touted as an unqualified positive outcome in the accrual approach, whereas from a wellbeing perspective it is potentially a symptom of under-provision for social need.

Figure 2: Funding of sectoral balances 1987-2024



Source: Infoshare, author's calculations.

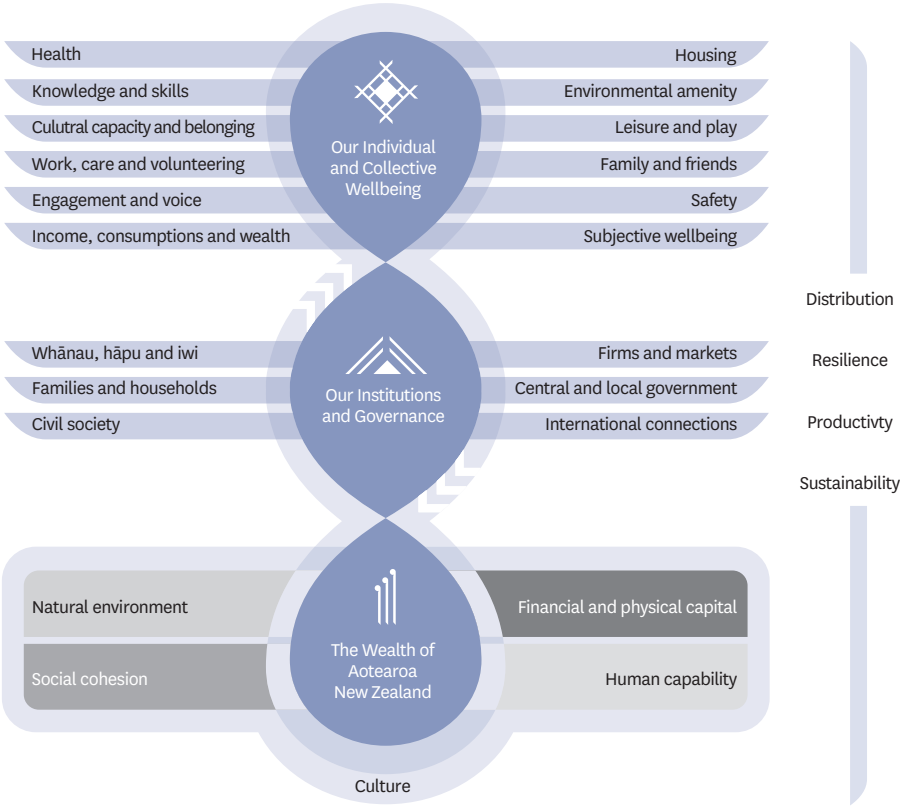
'Responsibility'

The process of wedding accrual accounting to a formally legislated conception of 'fiscal responsibility' was undertaken in 1994 by Ruth Richardson, a former minister of finance who was then chairing Parliament's Finance and Expenditure Committee. The original proposal was simply to drive greater transparency and tighter discipline into the reporting obligations of the minister of finance, but in select committee the bill was 'hijacked' (Michael Cullen's description at the time[2] – Cullen was then opposition spokesperson on finance, and later minister of finance) by neoliberal economists bent on entrenching small government and budget surpluses into statute law, and thereby tying the hands of future governments by embedding into public discourse the notion that 'responsibility' equates to minimising government spending and fully balancing the budget over time.[3] The resulting set of requirements for 'responsibility' were laid out in section 4 of the Fiscal Responsibility Act, and were carried over with only minor changes when it was rolled into the Public Finance Act in 2004 as section 26G.

The 'principles of fiscal responsibility', now embedded within the Public Finance Act, include mention of 'having regard to … likely impact on present and future generations' (s26G(1)(g) – something that was missing from the original Fiscal Responsibility Act but was added in 2004. This stands out as the sole, largely token, concession to the ideas behind the Living Standards Framework produced by the Treasury between 2008 and 2022 (Gleisner, Llewellyn-Fowler and McAlister, 2011; Treasury, 2021, 2022), which is difficult to reconcile with section 26G's tight focus on public finance conceived as housekeeping, virtually stripped of acknowledgement of the wider functions of government.

The Living Standards Framework helps to identify the proper scope of government functions and the purposes towards which fiscal strategy ought to be directed. It defines 'the wealth of Aoteoroa/New Zealand' as spanning four domains, of which the accountant's quantifiable financial/physical capital is only one; the others are human capability, the natural environment and social cohesion. All four are encompassed in the nation's 'culture', providing the foundation for institutions and governance, and individual and collective wellbeing. A responsible fiscal strategy aimed at increasing wellbeing would require all four of those asset categories at the bottom of Figure 3 to be

Figure 3: the Treasury's 2021 Living Standards Framework summary



Source: Treasury (2021) p.10.

sustained and enhanced over time, with policy maintaining a sustainable balance across them. The present framing of the Public Finance Act's 'principles' prioritises narrowly conceived financial issues to the near-exclusion of the other components of the nation's true wealth, and at the cost of the ultimate economic goals at the right-hand side of the figure – distribution, resilience, productivity and sustainability.

Similarly, the Public Finance Act's procedures for reporting against the principles, while ostensibly designed to facilitate and support a government's fiscal strategy, have in practice been allowed to dictate the strategy itself. The focus on the government's financial debt, rather than on the nation's stocks of the four components of wealth and the 12 components of individual and collective wellbeing, puts pressure on the government to pursue budget surpluses by running down public infrastructure and natural, human and social capital. But budgetary austerity that leaves inequality and poverty unchecked to destroy social and human capital is not responsible, and ought not to be described as such.

Having produced the 2021 Living Standards Framework, it is not clear why the sixth Labour government did not rewrite part 2 of the Public Finance Act to incorporate it into the core objectives of fiscal policy, and so overcome section 26G's confusion of financial bean-counting with actual economics. Possibly the fear of a political firestorm driven from the neoliberal Right proved a sufficient deterrent. The unfortunate consequence is that the Living Standards Framework bears the taint of fiscal 'irresponsibility', when the opposite ought to be the case.

The so-called Budget Responsibility Rules adopted by the 2017–23 Labour government (Robertson, 2018) and the fiscal strategy of the present government (Willis, 2025) rely on arbitrary numerical ratios to limit total spending and net debt. Both have aimed to hold 'core spending' at around 30% of GDP, and both have stated targets for 'net core Crown debt' requiring a reduction from the prevailing level. Part 2 of the Public Finance Act, comprising sections 26F to 26Z, does not define either 'core spending' or 'core debt'. It simply states in section 26F that 'references in this Part to total debt, total operating expenses, total operating revenues, and total net worth are references to the total fiscal aggregates of the forecast financial statements prepared in accordance with section 26Q'. Section 26Q just lays out a reporting framework; it does not define these aggregates. The definitions therefore are those imposed by the Treasury in its preparation of reports under the Act.

The spending and debt ratios in successive fiscal strategies were and are simply political artefacts. They have no real economic basis[4] other than their value as commitment devices to provide cover for fiscal austerity measures, and both are open to manipulation by shifting definitional boundaries (for example, inclusion or exclusion of the New Zealand Superannuation Fund from the 'core'). Treasury's definition of 'core spending' (Treasury, 2025a, p.154)[5] is inflated by including welfare transfers, which means that it differs massively from the national accounts concept of government consumption; yet it excludes infrastructure investment, which is surely a core function of government.[6] Revised definitions could bring the government's accounting framework more into line with the national accounts and the IMF's Government Finance Statistics, and new fiscal targets could embody a radically different balance between public and private provision of goods and services.

Definitions matter a lot in a practical sense, even when they don't make macroeconomic sense. The boundaries of the three components of 'total Crown' (core, Crown entities and state-owned enterprises) have in the past been treated as permeable for the purposes of gaming the 'fiscal responsibility rules', and clearly can be again. The treatment of Crown entities and state-owned enterprises as lying outside the 'core' in terms both of spending and of borrowing limits has been a loophole that enables the government to increase investment and net debt without breaking the letter of the principles, but it has the effect of increasing the cost of raising funds for programmes such as state house construction, while forcing policy debate into a distorting frame of reference. It would be more transparent to treat all public debt simply as Crown debt, shifting the focus from 'core Crown' to 'total Crown', with transfers reported separately.

Equally, it would be more transparent to recognise that tax-funded transfers are not

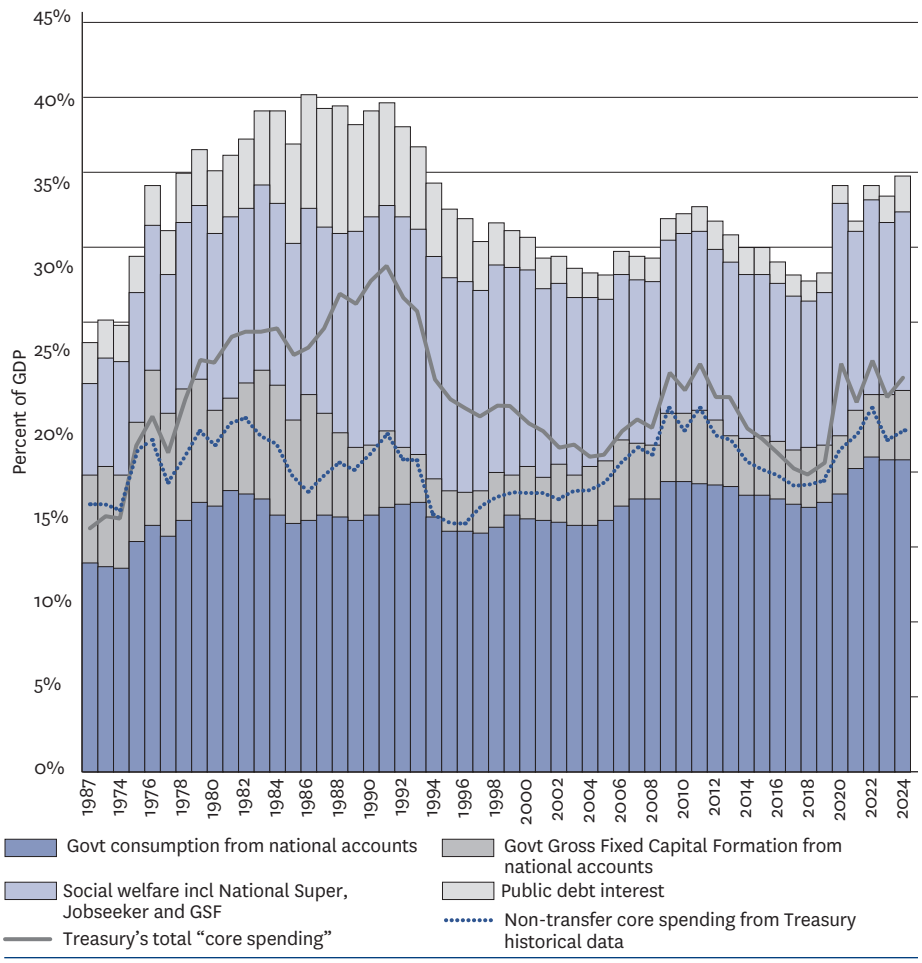
'spending' in the true economic sense; they are simply transfers of spending power from one part of the community to another, with the actual spending remaining in the private sector. The inclusion of transfers in the 'core Crown' numbers makes the government look bigger than it really is, and exaggerates the 'burden' of taxation on the private sector, both of which make the classification scheme more a propaganda device than serious economics.

In the long run, the two essential issues in setting fiscal strategy should be, first, what are our aspirations as a society; and second, what is society's willingness and ability to 'raise sufficient revenue'[7] to fund those aspirations? Upper and lower bounds on government spending should be based not on rigid adherence to arbitrary ratios, but on the outcome of those strategic choices, with due regard paid to the macroeconomic limits which any New Zealand government has to respect: resource scarcity, full employment (defined in a sensible way – see, for example, Rose, 2019), and the balance-of-payments constraints facing a small open economy. These limits will vary in the short to medium term (with economic cycles) and in the longer run.

In allocating spending across the four components of wealth in Figure 3, difficult choices need to be made, and different governments will make different choices. But it is in transparently making and implementing those choices that real fiscal responsibility lies, not in sacrificing genuine wellbeing in the name of preconceived debt or spending ratios.

Figure 4 shows how the Treasury's spending categories map onto the national accounting magnitudes for the government sector. 'Core Crown spending', as already noted, consists of a combination of consumption spending and transfers, which is confusing from a macroeconomic perspective, since Crown gross capital formation lies outside the 'core', while transfers are *within*. The squeeze on transfers since 1990 is clear and accounts for all the achieved shrinkage of the state sector over the past three decades. Between 1990 and 2020, debt servicing fell from 7% to 1% of GDP and benefits from 14% to 9% of GDP; in 2024 they had rebounded only marginally, to 2% and 11% respectively.

Figure 4: New Zealand Central Government total spending by general category, 1972–2024



Source: Infoshare and Treasury, 2025b; author's calculations

The actual claim on real resources by central government consumption and investment was around 23% of GDP in the early 1980s, fell to a low of 18% in 1994, and has since returned to 23%. The composition of that total resources claim has shifted, however, with a substantially lower share for capital formation and a higher share for current spending. The squeeze on investment in the 1990s is especially striking. This corresponds to the evidence from other sources of cumulative underinvestment in public infrastructure in recent decades (Nunns et al., 2025) and is testament to the folly of holding to an arbitrary target ceiling for 'core spending' in the face of inexorably rising needs for government consumption to maintain basic public services.

The small-government framework has been implemented since 1990 without making a long-run dent in government consumption relative to GDP. With incompressible consumption, with investment needs pressing urgently, and with debt servicing beginning to rise again, enforcing the 30% target inescapably puts benefit transfers under increasing pressure, implying a consequent worsening of poverty and deprivation.

The fact that government provision of education, health and other public services is labelled 'consumption' in the national accounts leads to a widespread misconception that the government is 'unproductive', which in turn is often linked to a claim that taxes represent a 'deadweight burden' on the productive economy. In fact, the 19% of GDP described as 'government consumption' in Figure 4 is really production, and is included in GDP on that basis as a productive contribution. So how did it come to be called 'consumption', as if it were a use, rather than a supply, of domestic product?

The problem is that national income accounting, as it developed in the 20th century, relied heavily on recording the money value of goods and services that were sold through markets, and struggled with non-marketed production. Most notoriously, the unpaid housework

performed mostly by women remained entirely outside the statisticians' definition of GDP (Waring, 1988; Federici and Austin, 2017; Cassidy, 2025, ch.24), while the non-marketed rental value of owner-occupied property was included as imputed production. Government services are undeniably produced, in the sense of combining labour, capital and resources to produce output, and so clearly belong within GDP, but because they are not sold through a market, they do not have market-determined prices for the statisticians to add up. Instead, the government implicitly buys its own production from itself – hence the notion that this is a sort of 'consumption' – and the statisticians record just the cost of providing the services. But to treat this part of the total social product as less 'productive' than the rest, or even to describe it as 'unproductive', completely misrepresents the economic reality.

This confusion spills over into the sphere of public–private contracting, because of the false impression that when a public service ceases to be provided on a non-market basis by the government itself and instead is purchased from a private sector provider, this is a more productive means of delivery, when in fact the opposite is frequently the case. The shortcomings of the contractarian approach to providing public services are laid bare in Hart (2017), Hart, Schleifer and Vishny (1997) and Hart and Moore (1999). Contracts are generally incomplete, and information is asymmetrically distributed between the two parties, opening the way to post-contractual opportunism and non-performance of key functions by the provider party, while the funder (the government) is able to abdicate responsibility for the outcomes of the deal.

This misconception about productiveness has been freely exploited by the proponents of small government to give the impression that any increase in the size of government relative to GDP involves a reduction in the productive allocation and use of resources. Adoption of this view of its own activity by the government itself results in a 'self-hating state' (Feffer, 2007) which actively curtails its productive contribution to society in the mistaken belief that this will strengthen the economy at large. There will undoubtedly be an ideal balance between public and private activity in the economy, but there is no reason to believe that setting 'core spending' at 30% bears any relation to that optimum. There seem strong grounds for thinking that 19% is too low a ratio for public services ('government consumption') and that 4% of GDP for public investment is dramatically too low.

… a strong strand in the literature of neoliberalism has been so-called 'constitutional political economy', which proposes that the scope and power of government be tightly constrained by the imposition of rules …

The neoliberal iron cage

As noted earlier, a strong strand in the literature of neoliberalism has been so-called 'constitutional political economy', which proposes that the scope and power of government be tightly constrained by the imposition of rules, ideally imposed by statute, within which politicians and officials are obliged to operate. The Fiscal Responsibility Act 1994 was a classic example of the genre in New Zealand. The Regulatory Standards Bill making its way through Parliament at the time of writing is the latest, and from the same stable. Others have been section 4 of the State-Owned Enterprises Act 1986 (which forced a profit motive onto operations supplying public goods, several of which optimally should run at a loss), the Commerce Act 1986, the Reserve Bank Act 1989 and the State Sector Act 1988.

The changes brought by the last of these have been described as follows:

> These reforms sought to embed the theory of the marketplace and business-like management models in public organisations. They transformed the Public Service from a unified organisation with one employer into separate departments, each with their own chief executive acting as employer of departmental staff. Departments were treated as if they were separate firms in a private sector context. The core principles of the reforms were accountability, contractualism, managerialism and decentralisation. While many other jurisdictions adopted similar practices, New Zealand went further and faster than any other government. (State Services Commission, 2019, p.3)

A key problem from the outset with the new public management model was a shift in focus from 'outcomes' to 'outputs': 'the system incentivises separate agencies to be … focused on the production of outputs, but not incentivised to connect with others or focused on achieving better outcomes' (ibid., p.5). A clear explanation of the process of removing outcomes from the goals of government agencies, and substituting outputs of the kind that could be specified, measured and contracted for in the monetary terms familiar to accountants, is laid out by Scott et al.:

> *Outputs* refer to goods and services delivered, whereas outcomes are impacts on the community that provide the rationale for government action. To illustrate the distinction, a reduction in the incidence of a disease is an outcome (and something which cannot be bought directly), whereas a surgical intervention, an inoculation program, or a health education campaign are all services (outputs) which could be acquired from either public or private sector providers.
>
> … the reformers concluded that to attempt to enhance accountability of

> chief executives in outcome terms would not work in practice ... Instead, it was decided that better performance would be achieved by holding policy advisers accountable for the quality of their outputs (advice) and service providers accountable for delivering the outputs (services) that ministers chose to acquire on the basis of high-quality, transparent policy advice. (Scott, Ball and Dale, 1997, pp.363–4)

The central weaknesses of this approach were apparent to many observers at the time (Boston et al., 1996; Boston and Pallot, 1997; Gregory, 2006). It relied on politicians taking full responsibility for specifying clear outcomes they wished to secure, and then translating those outcomes accurately into precisely defined 'outputs', the delivery of which could be contracted for from government departments and agencies. Yet, as Boston and Pallot observed, the 'definition of objectives was plagued by politicians and bureaucrats unwilling to set goals against which they might later be held accountable' (Boston and Pallot, 1997, p.384).

This separation of strategic thinking from operational responsibilities opened the way for the actual outcomes of policy to be subordinated to arbitrary short-term operational targets, such as the 30%-of-GDP ceiling on 'core spending'. In giving primacy to the target over consideration of the outcomes, the government in effect is able to abdicate from accepting responsibility for those outcomes. Popular distaste for the consequences of fiscal austerity may be disarmed in the short term by appeal to the alleged principles of fiscal responsibility. But in the longer term, unreasonable restraints on the ability of governments to deliver on a democratic mandate are likely to prove politically unsustainable.

In this light, the quest for positive alternatives to the present stance of fiscal policy is now urgent. A critical choice is to either amend, or repeal, section 26G of the Public Finance Act. Each option has its merits, but a proper inspection of each would require much more space than this article allows. However, either option requires at least two central elements to rectify the shortcomings of section 26G. First, any statutory principles need to be clearly grounded in economic needs and challenges and perspectives, rather than the narrow financial framing of the present section 26G.

Second, any principles (or replacement legislation) need to provide an explicitly *economic* objective, to break the Public Finance Act's conflation of finance with economics. Whether the objective is wellbeing (as set out in the Living Standards Framework and other similar documents); macroeconomic balance in terms of productive use of resources, the balance of payments and private sector balance sheets; real resilience in the face of natural disasters (as Forward and Foreman argue elsewhere in this issue); or environmental sustainability and legacy are matters for political and electoral debate and decision making.

A courageous, constructive and important initiative in that direction is the Green Party's alternative budget (Green Party, 2025). Other political parties could usefully follow suit, well in advance of the next general election, to enable fiscal policy to be constructively debated and democratically designed.

1 For a history of this Act written from a sympathetic point of view, see Buckle, 2018. A contemporary description by one of the architects of the measure is Scott, 1995.

2 Hansard, vol.540, 26 May 1994, p.224.

3 Graham Scott and Bryce Wilkinson were singled out in Parliament by Richardson as key advisers in designing the 1994 legislation (ibid., p.223). Roger Kerr's speech in 2004 at the time when the 1994 responsibility rules were incorporated into the Public Finance Act (Kerr, 2004) gives a good feel for the Business Roundtable's intellectual thrust towards smaller government under the principles, and its complaint that not enough restraint on government had been achieved by that time.

4 In particular, there is no solid evidence for the proposition advanced in the Roger Kerr speech (Kerr, 2004) that small government is a necessary condition for economic success.

5 The present definition of 'core Government' first appeared in the 2003 Crown financial statements (https://www.treasury.govt.nz/publications/year-end/financial-statements-government-new-zealand-year-ended-30-june-2003, pp.6–7 and 47–49) as a change in the 'combination' of selected items of revenue and expenditure. The new list of included items is on p.25 of the 2003 financial statements, and the new distinction between 'core Crown' and 'Crown entities' is shown on p.34. No systematic justification was given at the time, so far as I am aware. However, the 2004 financial statements provide the following definitions: 'Core Crown revenues ... are the revenues the Government collects. They are mainly taxes. Core Crown expenses ... represent most of the Government's spending, BUT not all of it. This is the day-to-day spending (salaries, benefit payments, etc) that does not create Government assets' (https://www.treasury.govt.nz/sites/default/files/2007-10/fsgnz-jun04.pdf p.7).

6 For discussion of the conflicts between policy goals and accounting classifications under new public management, with a case study of the Natural Disaster Fund, see Newbery, 2020.

7 More accurately, society's willingness to sacrifice private claims on scarce resources in order to clear fiscal space for government to operate, with taxation as the instrument for constraining private claims.

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Ken Warren

Overcoming Challenges to New Zealand Public Sector Risk Management

Abstract

Risk management in New Zealand's public sector is challenging. The development of proactive, well-informed strategies that bear on risks affecting public policy has obstacles to overcome. The challenges include complexity, uncertainty, heuristic biases, policy debates over the role of government, and how the polity should determine and articulate risk appetites and tolerances. Overcoming these challenges is important. Effective risk management enhances policy resilience and adaptability during crises, whereas poor practices result in inadequate outcomes and missed opportunities for improvement. This article emphasises the need for probabilistic analysis, institutional checks, anticipatory governance and continuous improvement to overcome these challenges. It warns of common traps public servants often fall into.

Keywords risk management, probabilistic models, uncertainty, governance, resilience, policy adaptability

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Risk management done well is worlds away from risk management done badly. Done well, risk management considers the impact of all types of uncertainties that may affect public policies, and proactively puts in place cost-effective mitigations (see Table 1). Decisions to avoid, control, transfer and accept risk are well-informed and under constant review. When shocks or disasters happen, robustness and redundancy in public policy delivery systems absorb much of the impact, and the readiness of public policy to respond and recover means we quickly adapt and thrive.

Done badly, managers' compliance with requirements to maintain risk registers is used to justify previous decisions. Decisions to avoid, control, transfer and accept risk are implicit and of lower importance than public policy development. Risk management is reactive, as public sector organisations scramble to respond to and recover from shocks and disasters. Reviews of what went wrong tend to focus on structural or organisation changes: 'rearranging the deck chairs on the Titanic'.

Table 1: Contrasting good and poor risk management

	Good risk management	Poor risk management
Approach to uncertainty	Proactively considers all uncertainties affecting public policies and implements cost-effective mitigations.	Reactively addresses issues as they arise, often scrambling to respond to shocks and disasters.
Decision- making	Decisions to avoid, control, transfer or accept risks are well-informed and kept updated.	Risk-related decisions are implicit, poorly prioritised, and used merely to justify prior actions.
Preparation and response	Public policy delivery systems have built-in robustness, redundancy, and readiness to quickly adapt and recover from shocks.	Inadequate preparation leads to structural or organisational changes that overlook root causes of poor outcomes.
Use of rules and frameworks	Avoids heuristic biases, employs probability analyses, and maintains institutional checks and balances for sound risk management.	Relies on lazy thinking and defaults to inappropriate decisions or actions during crises.
Governance and strategy	Proactively utilises anticipatory governance structures, ensuring sound policy implementation and risk control.	Focuses on superficial structural changes, often described as 'rearranging the deck chairs on the Titanic'.
Continuous improvement	Committed to ongoing efforts aimed at minimising risk impacts and enhancing strategy effectiveness.	Neglects recommendations from past reviews, repeatedly failing to implement known solutions.

There are examples of both good and bad risk management in the New Zealand public sector, but there is a worryingly large amount of bad. Good risk management is much, much harder than bad risk management. Complexity, uncertainty, heuristic biases, debates about the role of government, the challenges of articulating risk appetites and tolerances and the challenges of developing appropriate responses all get in the way of good risk management.

Recognising these challenges and facing up to them can go a long way towards improving risk management. Good institutions – rules, frameworks and operating procedures – are available to help overcome these challenges and engage in good-quality risk management so that objectives are more likely to be achieved, despite inevitable uncertainties.

The challenge of complexity

Determining probabilities and risks is an area where intuition often lets us down. If we are asked, for example, how many people are needed in a room for it to be likely (probable) that one person shares a birthday with another, most people would not have the maths skill to work that out. They would need to guess, and my guess is they would come to a number higher than 23, which is the number a statistician or actuary would provide.

The human mind is not well equipped to deal with problems involving exponential equations. The chance of tossing a coin and getting heads 10 times in a row is 0.5^{10} or about one in a thousand, a much larger number than many would guess.

But judgements about uncertainty are necessary for any public policy manager. How much unreported crime is there? How many false positives and false negatives can be expected in repeated application of public policy? How much volatility can be expected in forecasts? What is the likelihood of a multi-billion-dollar natural disaster in the next ten years? The uncertainty inherent in all these questions cannot be measured well intuitively, but can be measured in probabilistic models. These probabilistic models can be used and, importantly, can be improved over time as evidence emerges and provides feedback on their performance.

The intuitive approach to measuring risks is a heat map, often touted as a way to clearly present the importance of a risk, but this is a poor solution. Heat maps are a simple diagram, with one axis showing probability, the other showing consequence. One corner of the heat map, where both consequence and probability are low, is coloured green, the opposite corner is coloured red, and there are different shades of amber in-between. If a picture tells a thousand words, then heat maps should surely be a great way to depict a risk.

Alas, our intuition lets us down. For any hazard there will be circumstances where an event will have low consequences and circumstances where an event will have higher consequences. A risk is a line on a chart, not a point, and to depict it as a point is misleading. Furthermore, without numbers, it's likely that risks will always sit where they always have on the heat map despite their dynamic nature. Rather than providing information, risk maps either mess up what is known, or they hide ignorance about the risk (e.g., tipping points, cascading and compounding risks, etc.). They implicitly condone ignorance.

For example, tipping points are a well-known phenomenon since Malcolm Gladwell's popular book on the subject (Gladwell, 2002). A tipping point is a moment of critical mass or threshold when societal transformations occur, and it is not possible to 'go back'. With climate science in particular, a tipping point is a critical threshold that, when crossed, leads to large, accelerating and often irreversible changes in the climate system that, if crossed, will have severe impacts on human society. A number of global tipping points have been identified, and there is significant research into the possible impacts. The risks of crossing tipping points are real, almost impossible to predict, and underappreciated. Overuse of heat maps permits this lack of attention to continue.

If the craving for coloured charts can't be overcome, a better approach is to develop burning embers diagrams developed by the Intergovernmental Panel on Climate Change (Zommers et al., 2020) that make use of probabilistic analysis.

The better solution is to embrace the complexity rather than hide from it. Non-quants (quantitative analysts) should be humble about their ability to measure risk and probability and be eager to employ quants to assist them. It is easy to acknowledge that you may not know the probability that two people in a room full of people share a birthday, but it is also easy to acknowledge that there is an answer to that question and that an actuary will be able to provide it. Probabilistic analysis can be applied to many public policy and

management issues; almost anywhere there is uncertainty, an easy gain to improve risk management is to demand probabilistic analysis, to make use of people skilled in mathematics.[1]

The fun part comes from being a challenging customer of the services of quants. It is possible to look closely and question them on the assumptions they employ. It is possible to apply Bayes' theorem, even if that theorem is not fully understood. Named after 18th-century British mathematician Thomas Bayes, this theorem provides a way of determining the likelihood of an outcome occurring based on a previous outcome in similar circumstances (conditional probability). What is great about Bayes' theorem is that it provides a way to revise existing predictions or theories (update probabilities) given new or additional evidence. It incentivises questions about what new evidence is available, and how that affects things. Risk maps tend to have the opposite effect.

Probabilistic analysis is important because it enables the impact of risk management to be measured. Without it, there is no easy answer to the question: is risk management working? Without it, when the sailing appears smooth, you simply don't know if you are lucky or smart.

That provides the first way to improve risk management and meet the challenge of complexity: check whether probabilistic analysis can be brought to risk analysis, and balance that with being a demanding customer for quants providing that analysis.

The challenge of uncertainty

Usually, the value of information is that it reduces uncertainty. Measurement and assessment provide information and that information provides us with greater assurance in our decision-making. Risk, however, is best defined as 'the effect of uncertainty on objectives, whether positive or negative' (International Organization for Standardisation, 2009). Measuring risk does not, therefore, reduce uncertainty. Rather, it provides greater certainty about our uncertainty. This is still useful, but it is a step removed from its usual function.

The axiom that what gets measured, gets managed is not true. What is more likely to be true is that what is not measured is not managed. So, the nature of risk, and the fact that risk has uncertainty at its core, creates two challenges for those who want to manage risk well. The first is the propensity to undervalue the importance of risk measurement, because, unlike the usual case, measurement does not directly reduce uncertainty in risk management decision-making. The second challenge is to avoid falsely believing that by measuring risk, the risk is reduced, because there is now greater certainty, and therefore less risk.

How best to respond to those challenges? Again, the first and most important step is to be aware of them. Essentially, they represent lazy thinking. Risk measurement is vital in making an assessment as to whether a risk is above your risk tolerance or is under your risk appetite. While there is inevitably still uncertainty about that assessment – for example, whether a planned course of action is too risky – risk measurement will still enable a more accurate assessment of that riskiness. It is doing its job.

The second part of rising to this challenge is simply to recognise that risk management involves actions to avoid, control, transfer or accept the risk. These are the true ways to manage risk. Risk measurement informs us in making those decisions; it does not substitute for them. Writing up a risk register and then sitting back and admiring that work is not risk management.

The challenge of heuristic biases

Individual perceptions and biases affect views on risk tolerability and desired resilience. Cognitive biases influence our decision-making processes.[2] Risks are mostly viewed through the lens of emotions and intuitive reactions, as opposed to applying a strict technical assessment of likelihood and consequence.

These heuristic biases are generally a good thing: a speedy decision for fight or flight without resorting to analysis testing out the pros and cons of either action has probably been influential in saving the human species. Without an optimism bias, we might all be nervous wrecks; without myopia and short-term thinking, we might not give the here and now its due attention; without a bias for group think and herding, collaboration and co-operation would be made a lot harder.

Unfortunately, proactive risk management is about anticipating things that may not happen in the future and doing things now to make us more resilient to them. These intertemporal asymmetries, when costs hit sooner and are more certain, direct and visible than the longer-term benefits from resilience, are not an area where our heuristic biases – or our political systems – serve us well.

… proactive risk management is about anticipating things that may not happen in the future and doing things now to make us more resilient to them.

An excellent economist, who spent most of his career working for the Reserve Bank and the Treasury, once confided in me that, having retired and started contributing more to community and non-profit organisations, he had come to the view that economists think differently from 'normal' people. When faced with an opportunity, he naturally considered the opportunity cost. Only by comparing the opportunity with the costs of alternatives could he be sure he was allocating limited resources wisely. He observed that what came naturally to him seemed to be unnatural to others. For most people, if an opportunity presented itself, and looked to improve things, then it was worth grabbing.

As with opportunities, so with risks. The risk of not mitigating needs to be compared with the risk of mitigating a risk,

and the institutional arrangements, the processes for making those comparisons, need to be required and assured, otherwise the natural impulse to ignore risks will predominate.

So, the public sector establishes institutional rules to lean against these heuristic biases. To meet this challenge we institute:

- operating requirements to consider risks when proposing and implementing policy, in making investments, and in managing assets and liabilities;
- internal audit divisions and other review arrangements to monitor, review and reinforce those operating requirements;
- anticipatory governance arrangements focused on risks. (Boston, 2016)

This is known as the three lines model, a framework for managing risk and control. However, like all institutional arrangements, they need to be stewarded as part of good risk management practice, recognising that a good part of their role is to provide a check and balance against heuristic biases. Letting operational checks and balances entropy over time, letting internal audit divisions fall vacant for extended periods, deferring and cancelling audit and risk committees are red flags that need attending to. These institutions are an all-important part of public sector risk management.

The role of government

Governments are often viewed as the insurers of last resort, accepting catastrophic risk that insurance markets (including reinsurers) are unwilling to cover and that are not under the control of individual households or firms. Jean Tirole argues that this is for the 'common good':

> Risks that are not under the control of those concerned should be fully shared. When, on the other hand, people's actions affect the risks, they must be held partly responsible, to give them an incentive to behave in the collective interest rather than only in their own interest. (Tirole, 2017, pp.409–14)

There is little opportunity for individuals to control large catastrophes or disasters, be they natural disasters or large economic or social shocks, and it is governments that have the power to ensure those risks are fully shared. However, this is complicated. It isn't always easy to distinguish between moral hazard and bad luck, so we can't be sure how far to hold people responsible, and when the government should step in. 'Moral hazard' describes the circumstance where economic actors have an incentive to increase their exposure to risk because they do not bear the full costs of that risk. Insurance companies actively work to avoid covering risks where moral hazard might be at play. For example, medical insurers ask about pre-existing conditions before offering insurance. That is, however, not an option for a government offering national health insurance.

The key distinction between the government and markets is that governments can compel insurance, they can require risks to be shared, and they can tax negative externalities.

So, the government risk management role when the actions of those concerned affect the risks is a contested political space. Often, important public policy questions are over risk transfer, including when risk should be socialised and how to manage the political economy concerns arising, or when risk should stay privatised and how to manage the market regulatory concerns arising. Debates over these settings and changes to them will be ongoing, while at the same time there will be demands for consistency and predictability. Governments have real challenges in setting and adjusting the scope of their role.

The key distinction between the government and markets is that governments can compel insurance, they can require risks to be shared, and they can tax negative externalities. When they do so, they can be comparatively impervious to information on risks, setting a charge or price based on a societal risk tolerance. Private insurers, on the other hand, operating in a competitive market have limited ability to cross-subsidise, as premium levels will migrate to a level reflecting the individual risk characteristics of the insured.

However, with this power come dangers and the need for checks and balances to guard against government failures. Such 'government failure' problems that feature with government provision of insurance are as follows:

- Democratic, representative government is challenged by the influence of organised and mobilised interests through rent seeking. This is a serious issue in the case of New Zealand because the insurance sector is largely overseas-owned and insurers have the option of withdrawing from the local market without significant impact on their bottom lines. After the Canterbury earthquakes in 2010–11, while all the major players stayed, several small insurers exited New Zealand entirely.
- The short electoral cycles combined with public myopia leads to socially excessive discount rates for risk. Money put aside in insurance funds has a high cost compared with money being made available for more pressing needs. For example, prior to the Canterbury earthquakes in 2010–11, there had been an ongoing conflict between EQC (now the Natural Hazards Commission) and the government over whether the built-up investment of the National Disaster Fund should reduce government debt or be invested.
- The political necessity for a government to be 'seen to be doing something' in the wake of a disaster affects claims and has a Ricardian impact[3] on expectations. The countervailing influence of

shareholders of an insurance provider meeting claims in the event of a disaster is much stronger than taxpayer concern in having an impact on claims management decisions – especially given the need for elected officials to show compassion.
- Finally, the limited competition faced by bureaucracies administering insurance means that the dynamic efficiencies that the market exploits are less likely to be as quickly adopted by government bodies.

So, in a sphere of activity where market failure and government failure abound, how do we ensure the best synergy, the best balance between the two?

Joseph Stiglitz (Stiglitz, 2006) has identified an insurance role for governments, using the market failure/government failure paradigm, when there are:

- important risks for which the market does not provide adequate affordable or equitable insurance, such as inflation, floods and crime;
- important risks for which individuals and firms frequently choose not to buy insurance, but which result in significant adverse consequences for those individuals, leading to government bailouts (and because government cannot commit itself not to engage in such bailouts, there is, in fact, an incentive for individuals not to purchase adequate insurance);
- important risks for which the market provides insurance, but inefficiently and/or at a high cost (contributing, of course, to individuals not purchasing adequate insurance); and
- intergenerational risks.

Generally, he ascribes these market failures to adverse selection and moral hazard problems. Given that it is difficult for firms (let alone regulators) to know whether risk has been priced well, and therefore whether, in fact, risks are covered, and given that it is difficult for governments to resist bailing out large numbers of uninsured or underinsured individuals when disasters happen, there is a role for government ex ante. He warns, however, that providing ex post insurance for implicit liabilities is inefficient and inequitable.

So, the most important task for governments is establishing clearly specified, properly justified, and tolerably fair ex ante expectations of government support when misfortune occurs. At their best, ACC and the Natural Hazards Commission do this well; however, where there are gaps in expectations between citizens and these government agencies, and between expectations and actual performance, then those checks and balances have let us down. This can be observed in the amount of costly (for both parties) litigation when expected compensation has not been forthcoming.

Looking to the future, a challenge for the government is getting the same alignment in expectations for pandemics, space weather events, and climate change impacts and responses as it has for accidents and earthquakes.

> … not all behaviour can or should be regulated, and often regulations set markers that individuals may want to live within.

The challenge of articulating risk appetites and tolerances

The theory is simple. If something exceeds our risk appetite, then we should take measures to avoid, control or transfer the risk. Otherwise, we are reckless. However, risks cannot all be eliminated. Some risk must be tolerated. Indeed, whenever the current circumstances (social, economic, environmental) are unsatisfactory and change and innovation is desired, then risks must be embraced and accepted, and the tolerance level will be high. If we don't tolerate risk, then we will also not tolerate opportunity. We will be overly risk averse, and insufficiently adaptable. So, there is a risk management task to set and articulate risk appetites and tolerances and stay within them – to be neither reckless nor overly risk averse.

The practice is hard. It is hard to determine and articulate what is acceptable or tolerable. Risk appetites and risk tolerances are time and space inconsistent. Different decisions may be made over the same choice if it is presented in different forms (Kahneman and Tversky, 1979). Sitting in a casino after a windfall is quite a different experience from checking prices in a supermarket after a job loss. So, what we say about our risk tolerances here and now is likely to be quite different from what we say there and later. Different attitudes to risk co-exist; some will be risk-takers in some areas and conservative in others, and others will take the opposite view. Seeking a societal consensus on risk that can be acted on by governments is clearly in itself a hazardous task.

The main way that government sets risk appetites and tolerances is through regulation, which provides markers of risk appetites and tolerances for society to lead and follow. Society leads through its participation in the due processes of setting regulation; it follows as it complies with established regulation. Examples include an expression of:

- the risk appetite for road safety set by speed limits or traffic cone requirements;
- the risk tolerance of building safety set by engineering and building standards;
- the risk tolerance for limited development in areas subject to high natural hazard risk set in land-use planning;
- the solvency requirements for insurers set at surviving up to 1-in-1,000-year stress tests.

These societal markers are important for individual decision making. It makes little sense to insure against a 1-in-5,000-year event when your insurer is likely to go broke in a 1-in-1,000-year event. The speed limit is an important factor in how fast someone drives.

However, not all behaviour can or should be regulated, and often regulations

set markers that individuals may want to live within. Organisations also must set risk tolerances and appetites where their own actions cause the risks and where they will be held accountable for those actions.

Sometimes these risk appetites are well articulated, as with financial reserves policies. Sometimes they are implicit and revealed through management actions, often described as the 'tone from the top'. For example, if senior management appears unconcerned with risk management and internal control, then employees down the line will be more inclined to feel that appropriate management of risk through effective controls is not a priority.

While a code of conduct can support and enable the desired types of employee behaviour, it is how the principles in such codes are continuously reinforced in word and deed, with training programmes, modelled behaviour, and actions in response to violations that matter for good risk management.

The recent trend by chartered accountants to increase the ethics component of their compulsory professional development requirements, where practical discussion and debate is held about common and credible situations at the edge of risk tolerances and risk appetites, would be a welcome development for policy analysts generally.

The challenge of appropriate response

When problems and disasters strike, it can be challenging to respond appropriately. As noted in the starting section, the crystallisation of risks occurs along a continuum. Often when problems emerge, responses can be characterised as fight or flight:

- Fight involves acknowledging the problem and its causes, taking ownership, and working hard to redress the problem and fix the causes. Change agents are needed. For public sector organisations operating in this mode, the protection of the public being served is paramount.
- Flight involves damage control and seeking to get back to an equilibrium as soon as possible. Lawyers are needed. For public sector organisations operating in this mode, the protection of the public sector entity's capacity to perform is paramount.

The most egregious examples of inappropriate response are when the wrong choice is made. The Royal Commission of Inquiry into Abuse in Care has laid bare the terrible impact of the wrong course of action. Getting the choice right requires a quick and honest assessment of culpability, and the integrity and courage to act accordingly. Getting this right more often requires incentives to encourage appropriate behaviour. It might be useful, for example, to reward and recognise people for their integrity in opening and dealing with 'cans of worms' rather than recognising and rewarding people for being a 'safe pair of hands'.

> Proactively and clearly controlling, avoiding, sharing and transferring and accepting risk in a well-informed way ensures that when shocks or disasters happen, the robustness and redundancy in public policy delivery systems absorbs much of the impact …

When culpability is not so important – for example, with natural hazard crises, pandemics and other economic and social shocks – response activity will be characterised by high stress levels, significant uncertainty and demand for speed. Responses will inevitably be reviewed. These reviews are blessed and cursed with hindsight; there seems to be an inevitability about the past that did not exist at the time. For example, all of the many reviews into the response to the North Island severe weather events around Auckland Anniversary weekend 2023 ignored the *Kaitaki* losing power in Cook Strait with around 900 people on board on 28 January, and the runway excursion at Auckland International Airport of a Boeing 777 with 287 people on board on 27 January. These could have totally changed the complexion of the North Island severe weather events; but, as we now know, these near misses did not cause any fatalities, or loss of assets, and therefore did not feature in those reviews.

Applying some foresight, the next review of a crisis or emergency response is likely to find the following:

- Community resilience is important. Communities fare better if there are strong connections and relationships between community members and leaders, marae, businesses, other community collectives, local authorities and emergency services, and where households and whānau are prepared. Improvements to co-operative arrangements, and public information improvements, including public alerting and making sure the information is understandable, will be recommended.
- Situational awareness is critical. Gaps in intelligence and situational awareness to inform decision making have an impact on the effectiveness of incident management in supporting communities through the response and early recovery stages. Improvements in gathering intelligence for situational awareness will be recommended.
- Response leadership matters. Emergency declaration and activation processes and procedures need to be clear. Leadership behaviours, such as communicating the transfer of leadership, clear tasking and having consistent communication of decisions across shifts, if not done well, have an impact on staff and other agencies knowing who is in charge and what is

expected of them. More clarity and more leadership capability will be recommended.

- Goodwill and flexibility of trained emergency managers and volunteers is invaluable. There may not be enough professional emergency management personnel available for the scale and duration of risks we face. Securing backup and suitable equipment and technology will reduce the impacts, but if these are not readily available, the outcome will not be as good as possible. More training and development for response staff and volunteers, and training for managing complex, large-scale events will be recommended.
- Governance arrangements, if complex and uncertain, cause strain. Incompatible processes and the level of interconnection between local, regional and national levels need work. Large-scale responses inevitably require some centralisation followed by some decentralisation, so roles and responsibilities change over time. Recommendations to manage these transitions will be made.

The above list demonstrates some of the challenges in doing emergency response well.[4] The challenge is not actually knowing what is needed; we have built up enough experience to provide that. Each new disaster merely confirms that knowledge. The challenge is in putting a sufficient priority on implementing these recommendations prior to the next disaster, and avoiding a review that simply repeats the findings of previous reviews.

Conclusion

Risk, the impact of uncertainty on objectives, is everywhere and is hard to manage. The fact that we often seem to get it wrong demonstrates that. This article has identified a number of key challenges that need to be overcome for risk management to be done well. Strategies to meet these challenges have been suggested. They require the application not so much of a silver bullet, but rather of an ongoing effort aimed at continuous improvement. They require avoiding traps associated with the failure to use probability analyses, lazy thinking, heuristic biases, inappropriate government intervention, inappropriate fight or flight responses, and inadequate preparation for responding to emergencies.

The gains to be made are worth it. Proactively and clearly controlling, avoiding, sharing and transferring and accepting risk in a well-informed way ensures that when shocks or disasters happen, the robustness and redundancy in public policy delivery systems absorbs much of the impact, and the readiness of public policy to respond and recover means we quickly adapt and thrive.

1 Hubbard (2020) explains the benefits and methodologies involved in probabilistic analysis as a means of fixing risk management. Stochastic analyses such as Monte Carlo simulations can now be performed on Excel spreadsheets.

2 Peter Gluckman and Anne Bardsley have prepared a useful description of cognitive biases and heuristics that affect human decision making and risk in Gluckman and Bardsle (2016).

3 The Ricardian equivalence proposition is an economic hypothesis holding that consumers are forward-looking and so internalise the government's budget. In the context of disaster insurance, if the government will compensate for disasters, why should citizens spend their own resources to mitigate or transfer risks?

4 The list was compiled from NEMA (2024).

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Dave Frame and Adrian Macey

Geological Net Zero and the Role of Carbon Capture and Storage

new insights from science for global climate change policy

Abstract

International cooperation on climate change mitigation has been insufficient to put the world on track to meet the Paris Agreement's temperature goal, and some interpretations of 'net zero' do not help because they do not achieve what net zero was intended to achieve: climate stabilisation. Nature's capacity to offset warming is less than is often assumed, so reliance on policies such as tree planting could make the temperature goal even more distant; other approaches, such as bioenergy with carbon capture and storage, risk compromising food production. The recently developed concept of 'geological net zero' enables a better alignment of policy and temperature outcomes. In this context, judicious use of carbon capture and storage as a backstop technology would avoid over-taxing natural sinks and, given appropriate regulatory design, could become an essential tool in achieving temperature targets.

Keywords climate change science and policy, mitigation, global warming, Paris Agreement, net zero, geological net zero, carbon capture and storage, international cooperation.

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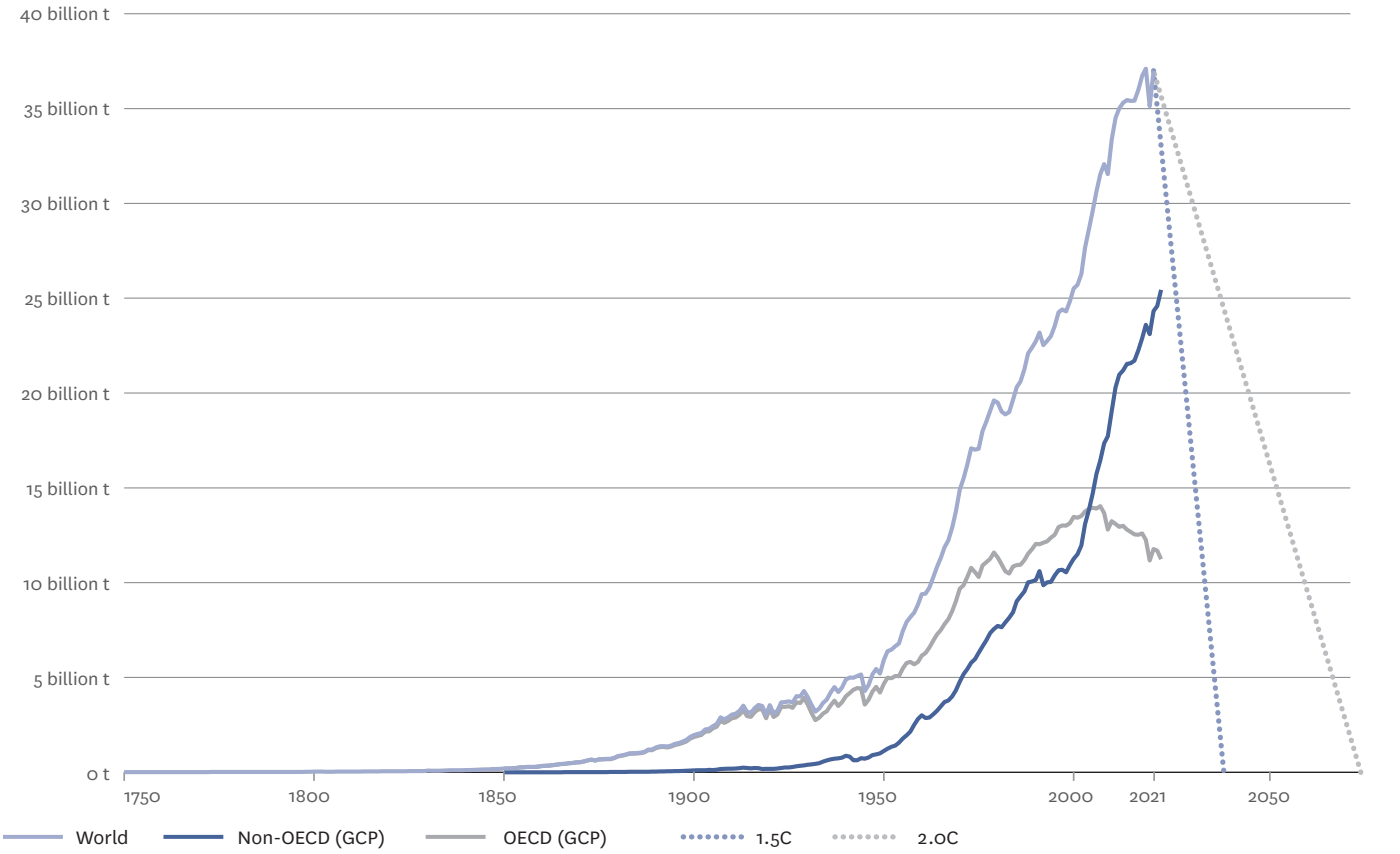
Figure 1: CO_2 emissions and requirements for future net zero CO_2 emissions consistent with the 1.5°C and 2.0°C temperature levels referenced in the Paris Agreement



Source: Ourworldindata. Projections consistent with median TCRE parameters and Canadell et al., 2021

Policy context disconnects

Article 2 of the Paris Agreement sets out the aim of 'holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels'. Article 4 indicates further that to meet the temperature goal requires 'a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century'. These are usually taken as giving some sort of specific scientific context around the objective of the United Nations Framework Convention on Climate Change: 'stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'.

The article 2 target is not as specific as it could be, since its final expression was a product of negotiations among very diverse interests.[1] The range between 1.5°C and 2°C above pre-industrial levels, put another way, is between people being able to dump 140 and 370 gigatonnes of CO_2 into the atmosphere.[2]

In a number of places, New Zealand among them, article 2 has been translated into a commitment to keep warming under 1.5°C. The relevant statement of purpose under the Climate Change Response (Zero Carbon) Amendment Act 2019 is to 'contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels'. As two-term climate change minister James Shaw, the architect of much of the domestic institutional structure around climate change governance, put it in his speech to COP 25, the Act 'enshrines the 1.5°C temperature threshold into primary legislation' (Shaw, 2019). The prime minister clearly saw this reflecting a wish for New Zealand to be world-leading: 'I will not allow this country to be a fast follower, because we damage our country, our environment, and our exporters if we allow that to happen' (Ardern, 2019).

There is no agreed way of deciding how much individual countries should contribute towards this global goal; nor is there agreement that 140GtCO_2 is the collective emissions target. New Zealand has thus far taken the view that 'if everyone did what we did, then what would the consequences be?', resulting in international targets that are entirely independent of domestic capacity to reduce emissions. It is not obvious that other countries reason thus, or indeed what the basis for such an assessment should be. It is also a hiding to nothing. One can brew up in minutes a simple mathematical argument proving that any country that reasons this way awards itself ever-decreasing carbon budgets, even if it meets its own goals, since the global carbon budget, which constrains the domestic budget's rate of change, is decreasing faster than our original plan expected.

Moreover, as time passes, 1.5°C has become a more and more unrealistic goal. Staying under 1.5°C would require CO_2 emissions to plummet at around 9% per annum, with no rebound, for 25 years. The widespread and unprecedented economic shutdown that accompanied the Covid-19 pandemic knocked about 6% off global emissions, which have now fully bounced back. The fastest sustained national decreases in CO_2 emissions have probably

been achieved, through a combination of circumstance and policy, in the UK, and have amounted to about 3% per annum since 1990. The idea of sustained global emissions reductions at Covid-and-a-half levels for a quarter of a century when the fastest any single country has gone is a third of that is very clearly wishful thinking.

Surveys of IPCC lead authors show that they expect we will have between 2.5°C and 3.5°C of warming, relative to pre-industrial levels, by 2100 (Tollefson, 2021). Ultimately, the rate at which we need to stop emitting fossil carbon into the atmosphere to achieve our collective ambition far exceeds the rate at which we are actually stopping emissions. The emissions reductions that are occurring in the OECD are roughly balanced, for now, by increasing emissions outside that group (Figure 1).

Contrary to what the world needs to do for anything like the Paris aims to be met, fossil fuel development continues apace – even in Europe, as evidenced by Norway's granting of dozens of new exploration licences in the Arctic. China, India, Iran and many other developing countries continue to expand fossil production and exploration. China and Iran both have higher per capita CO_2 emissions than New Zealand; India's emissions have doubled since 2007 and, growing at 6% per annum, look set to double again by 2040. India's Paris pledge (NDC) centres on reducing emissions intensity and increasing the renewable share of energy. India has made no commitment to reduce emissions.

So the world is a long way off course; given the collective goals countries have jointly set, ambition is well out of step with reality. This is a reminder that goals should be set cognisant of capabilities, and calls for new thinking regarding how we can bridge the gap.

Irrespective of how countries reconcile the gap, the first goal for developed countries must surely remain to get to net zero CO_2 emissions as quickly as possible. The two problems with this, unfortunately, are: which net? and which zero? (Allen et al., 2022)

In its original conception, the idea of achieving net zero was part of a strategy 'to avoid a dangerous total warming commitment'. This strategy had two parts: 'to limit emission rates of shorter-lived agents to avoid dangerous rates of warming and to use the concept of [cumulative warming commitment] to limit cumulative emissions of CO_2 (and other very-long-lived agents)' (Allen et al., 2009a). Innovatively, New Zealand is acting in accordance with the first part of this strategy by focusing on reducing (but not eliminating) its main shorter-lived agent, methane. The point of net zero, of course, is the second part of the strategy: reducing emissions of long-lived greenhouse gases until any remaining gross emissions are offset by additional carbon sinks. While negotiators could not agree to include the term 'net zero' in the Paris Agreement, article 4 as quoted above is consistent with this understanding of the concept.

> Accepting the practical reality of the continued reliance on fossil fuels in coming decades leads to the fundamental insight that humans need to get to net zero before they are likely to stop emitting carbon from fossil reservoirs.

Recent research, by most of the scientists and researchers behind the initial flurry of 'net zero' research papers (Allen et al., 2025), has shown that greenhouse gas accounting systems often treat 'passive' uptake of carbon – such as increased forest growth caused by CO_2 fertilisation – to count as a carbon sink in the definition of anthropogenic emissions. Yet the original idea of net zero assumed that these were part of the natural system – i.e., that they would happen anyway, and that people should not take credit for enhanced plant growth unless they had done something additional towards that growth. Just as the carbon–climate feedback was assumed to be part of the natural system, so the carbon–carbon feedback was assumed to be part of the natural system, too. (See Canadell et al., 2021 for a readable introduction to these feedbacks.)

New thinking – geological net zero

In response to these issues, the 'geological net zero' research clarifies the relationship between net zero and limiting warming (Allen et al., 2025). It argues that to ensure the integrity of the carbon accounting behind the idea of an effective net zero, it is imperative to: (a) disaggregate land management categories in emissions reporting and targets to better separate the role of passive uptake; (b) ensure that claimed removals are additional to passive uptake; and (c) acknowledge the need for geological net zero, meaning one tonne of CO_2 permanently restored to the solid earth for every tonne still generated from fossil sources.

This last task promises to be important, since ambitions to halt temperature rise at anything like the levels articulated in article 2 of the Paris Agreement would seem to require active carbon drawdown, in view of the poor prospects of reducing global gross emissions of CO_2 to anywhere near zero by the middle years of the century. Global fossil fuel emissions of CO_2 have remained between 9 and 10GtCO_2 since 2010, drifting upwards slightly over that time.

To bridge the large and persistent gap between ambition and reality, climate researchers usually envisage a very significant role for carbon drawdown. In pathways that see warming restricted to less than 2°C above pre-industrial levels, integrated assessment models already assume a large degree of carbon sequestration, usually in the form of bioenergy with carbon capture and storage (BECCS). From a physical perspective, the obvious place to store carbon originating from geological reservoirs is back in other geological reservoirs. This creates the need to develop a notion of geological net zero,

since the active biosphere's capacity to store carbon is finite and way too small to do the job required.

Accepting the practical reality of the continued reliance on fossil fuels in coming decades leads to the fundamental insight that humans need to get to net zero before they are likely to stop emitting carbon from fossil reservoirs. Capturing CO_2 would seem to be the only way to make this budget balance. This could be done in many ways, and there has been considerable focus in the climate change research literature on bioenergy – growing crops for physical energy, rather than the chemical energy associated with food. These are certainly possibilities worth exploring. However, in a world with a growing population, retiring areas from food production seems a counter-intuitive move. Another alternative is air capture. This could take the form of sophisticated air capture devices, or simpler alternatives such as remineralisation using rocks such as olivine, which are both plentiful and cheap. There are many geological sites around the world where olivine is abundant, including New Zealand; Oman has a particularly large supply. There are already start-up companies, in New Zealand and elsewhere, looking to operationalise this as a mitigation technology and to scale up activity (Wannan, 2023).

In climate policy circles, carbon capture and storage (CCS) can be a controversial topic. It has often been associated with fossil fuel-company greenwashing, corporate welfare if subsidies are involved, and a licence to keep on polluting. In common with all carbon drawdown technologies, including BECCS and afforestation, it is vulnerable to the charge of creating a moral hazard by promising to sequester CO_2 tomorrow instead of reducing emissions of it today. But these and other pitfalls seen in CCS can be avoided by appropriate policy and regulatory design.

Net zero gains its force – all of it – from being a necessary and sufficient condition for halting warming from fossil carbon sources. But depending on exactly what is counted, and what is not, and how it is counted, there are versions of net zero emissions that fail to halt warming. Geological net zero is a more robust concept, which recognises the limitations of the capacity of natural systems to absorb CO_2.

Because people fail to internalise the externalities they cause others, individual actions frequently lead to situations where public goods are under-provided by free markets.

The challenge of international cooperation

The fact that CO_2 emissions have to get to net zero before warming stops makes climate change a 'Hotelling' problem of exhaustible natural resources (Hotelling, 1931): for any level of temperature stabilisation, the atmosphere is an exhaustible sink for emissions (Allen et al., 2009b). If CO_2 emissions are held at net zero, and short-lived climate forcings stabilised, then temperatures stabilise.

The simple economic logic suggests a universal cap on carbon emissions (Smith, 1972; Weitzman, 1974), or at least a universal minimum price on CO_2 emissions (Weitzman, 2014). More sophisticated recommendations acknowledge the difficulties with this idea and suggest bundling side-payments in the form of universal access to basic energy services or electricity (Stiglitz et al., 2017). But the current structure of international climate change politics makes it impossible to set a universal price on carbon emissions. As David Victor has written, the 'reality is that universal treaties are a very bad way to get started on serious emissions controls. Global agreements make it easier for governments to hide behind the lowest common denominator' (Victor, 2011).[3]

Because people fail to internalise the externalities they cause others, individual actions frequently lead to situations where public goods are under-provided by free markets. Socially optimal provision of public goods usually involves some sort of intervention to coordinate action. In the current era we look first to governments to provide that coordination, often through price mechanisms, but also through regulation and social pressure. In the international arena we lack an entity that can provide credible coordination in this way: neither the United Nations nor any group of countries can set universal prices or regulations to coordinate global action. The present hybrid of soft and hard law in the Paris Agreement is as far as realistically can be achieved towards global governance of climate change action. Paris at least embodies a global consensus. Expecting anything more constraining on governments is utopian in this context and may not even be desirable.[4] But we are left with problems for the adequate provision of truly global public goods: at least for great powers and other powerful countries, that provision is voluntary.

This does not make the situation hopeless, but it does add complexity. Hirshleifer (1983) describes a range of 'social aggregation functions' which describe different situations in which voluntary collective action provides public goods. The voluntary nature of provision in Hischleifer's examples are relevant because of the constraints on compulsion outlined above: mitigation is essentially voluntary, because the UN lacks a government's ability to compel.

Hirshleifer sketches out three situations in which contributions may aggregate to meet some threshold of provision for public goods. 'Best shot' public goods are situations in which outcomes are determined by the best single effort – like marksmen hitting a target. Technological breakthroughs such as the development of vaccines provide an example: once the problem is solved once, it is solved for all players, assuming deployment costs are low. 'Weakest link' efforts are where what matters is the performance of the worst player. Hirshleifer gives the example of sea walls on a flat, low-lying circular island, on which people own pizza slice-shaped

segments. If any individual fails to build an adequate sea wall, then everyone gets flooded. Quarantine and defensive fortifications like medieval city walls are examples of public goods that have weakest link properties.

These two types of situations can be summarised like this: a best shot public good is one where if anyone succeeds then everyone succeeds, while a weakest link public good is one where if anyone fails then everyone fails. The third type of social aggregation function discussed by Hirshleifer is the 'aggregate efforts' public good: a situation where the joint efforts of everyone determine the outcome, such as people paying taxes or picking up litter on a beach.

In the international arena, to the extent that national interest rules, contributions to the provision of global public goods are voluntary. Barrett (2010) points out that where provision is voluntary there is a rank-ordering in terms of how difficult it is to provide public goods. From easiest to hardest, the list goes: 'best shot'; 'weakest link'; 'aggregate efforts' (Hirshleifer, 1983).

Things are obviously more complicated than that in the real world, where there is much inequality in capabilities, and social aggregation functions are not so simple. The principle of 'common but differentiated responsibilities and respective capabilities' in the climate treaties reflects the expectation that developed countries will take the lead not only in reducing their own emissions, but also in financing and perhaps pioneering climate-friendly technologies, while also helping assist developing countries with the deployment of these technologies. These have sometimes been modelled as hybrid cases, such as the 'better-shot' and 'weaker link' cases, which include aggregative components as well as a role for a strong or weak primary player (Sandler, 2006).

Climate change is an aggregate efforts public good, which makes it particularly hard to solve, since

> global public goods requiring aggregate efforts are particularly susceptible to free riding. Not even the largest and most powerful country can supply [these public goods] unilaterally, and every country's contribution to the overall effort is a perfect substitute for every other country's efforts. If one group of countries supplies more of a global public good requiring aggregate efforts, other countries will not have an incentive to step up their efforts. Indeed, they may have an incentive to pare back. (Barrett, 2010, p.101)

As a backstop, [carbon capture and storage] can replace a stock pollution-generating process with a non-polluting process ... and is likely to have particular relevance to hard-to-abate sectors ..., or where demand is inelastic.

However, within some sectors of fossil fuel carbon-emitting industry, the situation may be less of aggregate efforts, and more of a better shot public good, since industry leaders may be rich and powerful enough to play the sort of leadership role that DuPont played in dealing with ozone depletion, albeit in a far more concentrated sector, through the elimination of CFCs (Maxwell and Briscoe, 1998).

CCS as a backstop technology

In an economic sense, CCS would provide a 'backstop technology' that limits the amount of stock pollutant emitted into the atmosphere. As originally conceived, backstop technology is an idealisation that provides 'a substitute process [for fossil carbon-emitting processes] with infinite resource base' (Nordhaus, 1973). In brief, a technology backstop in this context replaces a depletable resource with a sustainable resource (Heal, 1976). Renewables are, of course, similar in this regard: they provide energy without emitting fossil carbon into the atmosphere, and as the price of renewables comes down, they outcompete fossil-emitting processes in more and more places. The costs associated with developing and deploying renewables are variable, and renewables really ought to be the first port of call for mitigation strategies. But it is unnecessarily constraining, perhaps even naïve, to insist only on renewables as alternatives to fossil-based emissions. Other non-renewable resources, such as nuclear power, and some fossil-based technologies also have constructive roles to play in reducing fossil emissions.

As a backstop, CCS can replace a stock pollution-generating process with a non-polluting process (Löschel and Otto, 2009) and is likely to have particular relevance to hard-to-abate sectors (Paltsev et al., 2021), or where demand is inelastic. Backstop technologies fully substitute for emitting technologies when the price of the backstop technology is less than the price of the emitting technology. In the case of CCS, this would almost certainly involve government intervention in the form of regulation or (more likely) prices, because burning oil is likely to remain cheaper than burning oil and sequestering CO_2. In this case, the CCS technology has to outcompete the combined fossil-emitting price plus the carbon price. In the case of a net zero target, this condition is highly likely to be met at some point, because net zero CO_2 implies no further emissions of CO_2, and this is likely to only happen if the costs of emitting that trillionth tonne are extremely high. In fact, it is often assumed that the price needs to be arbitrarily high for that emission not to occur.

A global carbon price of, say, US$1,000 is politically implausible, no matter how compelling the economic and environmental rationales for it. The odds of developing countries agreeing to such a price are near zero; the odds of voters in developed countries supporting it in the absence of global agreement just as low. This is where

CCS backstops show great promise, because, first, if effective, they cap carbon emissions at a lower price than would be available without the backstop. The price is obtained from the actual cost of sequestering a tonne of CO_2 from the atmosphere, rather than set politically. They also have the potential to transform important public goods dimensions of the problem.

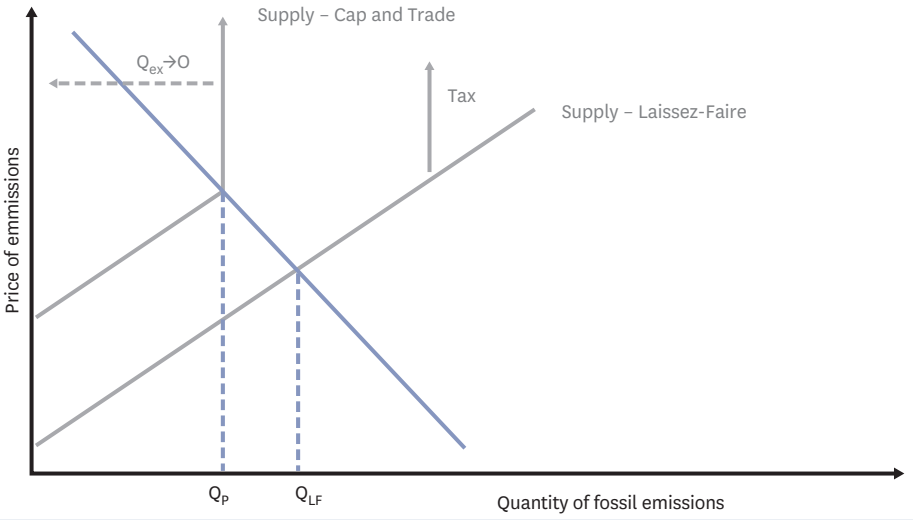
Creating widespread CCS capability and incentivising it through policy transforms the aggregate efforts emissions reductions problem into a better shot problem of CCS development and deployment. An example is how new technologies transformed the ozone destruction problem from an aggregate efforts CFC emissions reductions problem into a better shot technology development and deployment problem. In the case of CCS, providers can, in expensive cases, provide a cheaper alternative for the non-accumulation of CO_2 concentrations than emissions reductions. Physically, there is a clear plausible pathway through which the sequestration of an increasing fraction of fossil fuel emissions can be matched to climate targets (Allen et al., 2009b). Whether this is scalable at the rate required to meet current warming aspirations is a vital question, and one over which reasonable minds may disagree. Nonetheless, CCS is increasingly being seen as an essential part of any mix of policies that keep us anywhere in the ballpark of limiting warming to 2°C or less (IEA, 2025; IPCC, 2024).

This approach has two main advantages over the universal tax: it does not require an arbitrarily high price on the trillionth and first unit; and it does not require full participation. These are important advantages. The first point matters in two ways: first, by limiting the ceiling on the price of carbon (as long as the cost of sequestering tonnes that should not enter the atmosphere is less than the cost of not emitting those tonnes, then sequestration will be the cheaper option); and second, by consequently limiting the political pressure to renege on the policy: if CCS in effect caps the price on carbon, then it caps the pressure to renege.

The second point matters because agreements that turn on universal participation are likely to be limited in effectiveness. 'Under the rules of international law, countries are free to participate in treaties or not as they please, and while there is a customary obligation for countries to comply, there is no world executive that can enforce compliance' (Barrett, 2010). The hybrid legal form of the Paris Agreement is a recognition of this fact. Targets pledged under the agreement are non-binding, a necessary condition to achieve its almost universal participation.

Figure 2: Illustrative supply (Gray) and demand (blue) curves for quantities of emissions.

A no policy or laissez-faire approach leads to some quantity of emissions, Q_{LF}, while adding a tax increases prices and reduces the quantity of emissions (Q_P). The distinctive thing about Hotelling problems, such as fossil carbon emissions and climate change, is that in the long run emissions must fall to zero, i.e. $Q_{ex}P \rightarrow 0$ at whatever price is required. As shown, elimination of the remaining emissions (Q_{ex}) implies very high prices, if price is the only instrument.



CCS also faces limitations, especially around cost, efficiency and scalability. CCS can be deployed either as a point source at the well-head, 'factory-side' post-combustion technology, or as a way of capturing CO_2 from the atmosphere ('direct air capture', or DAC). Point source capture and re-injection is mature technology more commonly known for its ability to enhance field production (and is commonly referred to 'enhanced oil recovery' or EOR). Factory-side or post-combustion technology has been developed, but is itself energy-intensive – around 30–40% of the energy produced by oil plants using CCS has to go to drive the CCS processes, which decreases the amount of energy available for the energy's primary purpose. Requiring widespread factory-side CCS would add significantly to the costs of energy provision where such requirements are in place. Additionally, the technologies that underpin the use of CCS post combustion are nowhere near mature enough to be deployed at the scale required to solve climate change within the next few decades. Furthermore, this technology is just as prone to political and implementation problems as any other environmental policy. Only 15% of carbon capture capacity in the EU planned for 2020 was installed, due to economic declines, political opposition and inadequate investment. As with nuclear power, there is a tendency for some environmental voices to object to CCS and other effective climate mitigation technologies, which is somewhat at odds with the characterisation of climate change as an emergency and an existential threat.

In December 2024 the New Zealand government announced the development of an enabling regime for carbon capture utilisation and storage (CCUS) through the emissions trading scheme (ETS), to 'allow New Zealand's industries to access CCUS technology on a level playing field with other reduction and removal tools' (Ministry for the Environment, 2024). The most likely immediate opportunity is seen as the establishment of sequestration facilities at existing gas fields, though the New Zealand government was premature in counting on 2.7 million tonnes being sequestered in the Kapuni gas field (Gibson, 2025).

Factory-side CCS is yet to fully mature, and DAC is in its infancy. DAC capacity would need to increase something in the order of 10,000 times to meet our 2030 target on the path to net zero. The quantity,

source and costs of the required energy are big issues (Ozkan, 2025). In order for it to be efficient, DAC will require abundant renewable energy. While the price is decreasing, it still costs at least US$130–300 per tonne/$CO_2$ sequestered, often more (Babiker et al., 2023). This is towards the top end of the consistent prices on carbon we have seen today, globally. On the positive side, we have seen those prices fall in some jurisdictions. The prices would need to halve for the technology to begin to play an important role in meeting temperature aspirations.

To show how CCS as backstop policy could work, let's start from the fact that olivine rock remineralises atmospheric CO_2. Suppose that the price of sequestering 1 tonne of CO_2 is currently $1,000, and this declines by $5/year. The most obvious way to place a price on CO_2 mineralised is via the ETS. The curves in Figure 2 show the price of emissions (vertical axis) versus the quantity of emissions (horizontal axis). The demand curve rises very steeply towards the axis; but the axis is exactly where the quantity of emissions needs to go; yet this is just the zone in which political pressure on prices is likely to be unbearable. In these situations, a backstop technology makes perfect sense. Backstop technologies are technologies which are expensive, but which become economically viable at some price level.

While it is unequivocal that CO_2 emissions reductions must remain the cornerstone and sine qua non of climate mitigation, it is hard to imagine how some form of geological CCS will not play a backstop role. This seems all the more certain given the gulf, detailed above, between the aspirations of articles 2 and 4 of the Paris Agreement and the reality of carbon pricing and climate policy, globally. The alternatives to geological CCS would seem to be the following:

- wildly over-shooting the Paris Agreement temperature targets;
- solar radiation management;
- large future investments in BECCS, potentially replacing food production with growing crops for bioenergy;
- massive afforestation, tying up valuable agricultural land, perhaps forever.

None of these is attractive. At the very least, it will be useful for governments and private actors to have CCS in the policy and accounting toolkits – as recently acknowledged by the IPCC and the International Energy Agency (IEA, 2025; IPCC, 2024) – and ensure that the appropriate regulatory environment is in place to enable it to operate effectively as and when it is required.

Conclusion

Geological net zero is a third major insight from science for climate change policy since the beginning of international climate change negotiations in the 1990s. The first (Allen et al., 2009a) was the realisation that global temperatures are dependent on cumulative emissions of long-lived gases. The second was the related fact that the customary metric selected to measure warming relative to CO_2, GWP 100, was inaccurate for assessing the temperature impacts of emissions of short-lived gases, notably methane (Allen et al., 2018; Cain et al., 2019). This was not a new point, scientifically (Wigley, 1998; Shine, 2009), but the reframing of climate targets around cumulative emissions gave the point renewed salience.

The first insight is now reflected in the language of the Paris Agreement and in the concept of net zero. The second has been slower to be assimilated by the policy community, but is gaining more attention as it is recognised as a solution to the misalignment of the measurement of emissions and their actual warming of the atmosphere (Allen et al., 2022). None of these contributions from science is new atmospheric physics, but all three apply the physics to provide important insights and information for policymakers.

Recognition of the need for geological net zero together with the slow phase-out prospect of fossil fuels is likely to give CCS an increasingly important role towards mid-century. This applies first to getting the relevant sort of emissions to net zero so that global temperature stabilises, and subsequently to compensating for overshoot of temperature goals through net negative emissions, where there are fewer options. There is thus a strong case for research and development on CCS technologies, for creating the policy and regulatory frameworks for their use, and for promoting international cooperation in this field.

1 For an explanation of how the Paris target emerged through the negotiations, see Stern, 2024.
2 Using median estimates of the transient response to cumulative emissions, following Canadell et al., 2021.
3 Victor presents a simple summary of the problems facing current diplomatic efforts to address climate change.
4 Most traditions in international relations treat the idea of global government as unattractive. Hedley Bull observes that 'the advocate for world government makes the tacit assumption that it is his own moral and political preferences that will be embodied in it' (Bull, 2012).

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Stuart Brodie and Michelle Pawson

Governance of Our Oceans

an Aotearoa New Zealand perspective

Toitū te marae a Tāne Mahuta, toitū te marae a Tangaroa, toitū te tangata; if the land is well, and the sea is well, the people will thrive.

Abstract

This article investigates Aotearoa New Zealand's ocean governance challenges against a backdrop of competing paradigms and proposes a pathway towards transformative, anticipatory marine stewardship. It is contended that a 'relational paradigm' to ocean governance is essential given the interdependence of ocean health and human wellbeing. This relational paradigm is operationalised through anticipatory governance, and underpinned by four foundational elements: long-term public value creation, adaptive management, multi-layered accountability, and alignment of ambition and execution. The article aims to catalyse public debate about how anticipatory governance can improve current ocean governance systems, while building foundations for deeper transformation when political conditions allow.

Keywords oceans, governance, long-term thinking, relational paradigm, stewardship

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For generations, navigators have traced pathways across the ocean (te moana), yet our collective understanding of the marine environment, from a Western perspective, remains anchored to terrestrial thinking, unable to fathom the ocean's vastness as a system unto itself.

Over the past 25 years, Aotearoa New Zealand has approached ocean governance not as stewardship of a distinct and interconnected marine realm, but as an extension of land-based management frameworks. As a result, we have created a policy system that consistently fails the ocean and the communities that depend upon it, unable to protect declining species or halt the mounting pressures from climate change and our activities on land and at sea (Ministry for the Environment, 2022). The marine environment that once sustained generations now bears the compounded burden of our fragmented approach. Fundamental questions about our relationship with te moana – how we understand its health or life force (mauri),

and honour this intrinsic value – remain unresolved, demanding nothing less than a fundamental shift in how we conceive of ocean governance.

This article explores the opportunity to embed anticipatory governance as a necessary feature of any future oceans management system in Aotearoa New Zealand. Anticipatory governance equips us to navigate the profound uncertainties facing te moana in the Anthropocene, the current geological age, in which human activity is the dominant influence shaping ocean socio-ecological systems. We set out four foundational elements: long-term public value creation that transcends electoral cycles and embraces intergenerational responsibility; multi-layered accountability that weaves together Crown, iwi, community and commercial obligations; adaptive management that embeds learning while maintaining strategic coherence; and aligned execution that bridges ambition and action.

The article does not describe the detailed structural change required to implement anticipatory governance. Rather, after outlining possible pathways, it presents a number of first principle questions that we hope will catalyse public debate about how we manage and govern our oceans.

The role of te Tiriti o Waitangi and te ao Māori values in the management of our oceans is acknowledged. We consider that this is best addressed by those with appropriate expertise and authority to speak to these relationships. Management of our oceans is also shaped by a host of international obligations. This subject is briefly touched on in this article, leaving a more detailed analysis to others to pursue.

Context

Oceans as interconnected systems

Aotearoa New Zealand holds jurisdiction over the fifth-largest exclusive economic zone globally – approximately 430 million hectares, an area 15 times larger than its land mass (Ministry for the Environment, 2007). This expansive marine territory offers significant opportunities for sustainable resource use (from rotational fisheries harvest to aquaculture development and extraction of minerals), but also presents complex challenges which demand coordinated action across local, national and international levels.

There is increasing commercial interest in using previously underutilised marine resources to support innovation and emerging industries, while also addressing global environmental challenges. These include harvesting critical minerals for green technologies, developing renewable energy infrastructure, farming seaweed to reduce methane emissions from livestock, exploring carbon storage and sequestration, and shifting some food production from land to sea through offshore aquaculture. But a tension lies between resource extraction for climate mitigation technologies and the protection of the ocean's health to maintain ecosystem provisioning services (IPCC, 2023; Almeida et al., forthcoming). As oceans play a fundamental role in climate regulation, coordinated policies that ensure the overall health of marine ecosystems are vital to making these opportunities possible.

Environmental reporting clearly indicates continued decline in marine health due to fishing impacts, land-based pollution (including sedimentation) and climate change (Ministry for the Environment, 2022). Evidence of this decline is visible in increased beach closures in the Auckland region, rising frequency and intensity of marine heatwaves (particularly on the west coast), and shifts in species distribution, such as snapper stocks expanding further south.

Competing world views

Knowledge of the individual and cumulative pressures on our oceans has not yet generated appropriate or proportionate governance responses from successive governments. There is, however, no singular world view that defines the challenges confronting the collective management of our oceans, nor indeed the solutions required to address them. This plurality of views reflects the deep values and belief systems that shape how we understand our relationship with the ocean. The relative importance assigned to the natural environment and to economic growth manifests in fundamental tensions over whether mechanisms such as marine protected areas represent essential ecosystem safeguards, or constraints on economic opportunity. This tension surfaces in every major ocean policy decision – from debates over seabed mining rights to allocation of marine space for offshore renewable energy – reflecting deeper philosophical divisions about whether the ocean's primary value lies in its capacity to generate economic returns or its role as a complex life-support system requiring protection from intensive human use.

> … competing values have fundamentally shaped how ocean policy has been designed and implemented in Aotearoa New Zealand, creating a patchwork of legislation rather than coherent stewardship.

These competing values have fundamentally shaped how ocean policy has been designed and implemented in Aotearoa New Zealand, creating a patchwork of legislation rather than coherent stewardship. This contest of ideas is arguably best captured in the form of three paradigms: intrinsic (the right of nature to exist in its own right); instrumental (the use – extraction and pollution – of nature for the benefit of society); and relational (the mutual dependence of people and the natural environment). Each paradigm carries within it different assumptions about responsibility, reciprocity, and the appropriate relationship between humanity and the ocean.

All three paradigms coexist and are represented to a lesser or greater extent in our current ocean management frameworks. The Marine Reserves Act 1996 embodies intrinsic values by establishing areas where nature's right to exist takes precedence, while the Fisheries Act 1996 operates primarily from an instrumental perspective, treating marine resources as economic assets to be allocated and managed as property rights for maximum sustainable yield. The Resource Management Act 1991 attempts to balance these approaches, but often defaults to economic considerations when conflicts arise. This philosophical fragmentation has produced governance systems where agencies operate from fundamentally different value frameworks – the Department of Conservation prioritising ecological protection, the Ministry for Primary Industries focusing on economic productivity, and regional councils struggling to reconcile competing demands without clear guidance on how to weigh environmental against economic outcomes. The result is policy incoherence, where decisions are influenced more by which agency has jurisdiction than by what approach best serves long-term ocean stewardship.

Policy reforms typically place greater emphasis on one paradigm over another at any given time. The debate about paradigms is fundamentally about a change of mindset, a different type of conversation and awareness to make the shift required in how we govern, how we consider information, and how we think about the future. This governance problem is well recognised as an urgent global challenge, with researchers worldwide grappling with how to move beyond fragmented, reactive approaches towards integrated stewardship of our interconnected ocean ecosystem (Erinosho et al., 2022; Le Heron et al., 2020; Kelly, Ellis and Flannery, 2019; McGinnis, 2012; Sustainable Seas, 2024; Watson-Wright and Valdés, 2018).

This article contends that the adoption of a relational world view is essential given the role of the oceans as part of our earth systems, cascading realities of climate change and continued pollution of our oceans, which highlight the interdependence of people and nature. The relational paradigm does not erase intrinsic or instrumental values; rather, it reframes them within a system of reciprocal relationships and mutual responsibility. The critical shift lies not in abandoning other paradigms entirely, but in fundamentally reweighting our governance approach so that relational values guide decision making, while instrumental and intrinsic considerations operate within this broader framework of stewardship and connection.

New Zealand has pledged to meet the United Nations Global Biodiversity Framework's target of protecting 30% of coastal and marine areas by 2030 ...

The common denominator: a failure of governance

Ocean governance is the system of institutions, policies and processes that determine how we collectively make decisions about marine resources and ecosystems. We acknowledge that there is a system in place that delivers operational day-to-day management of our oceans, but it does so in an increasingly uncoordinated and ad hoc manner. From a critical analysis perspective, past ocean-related reform initiatives and the management system as a whole share a common denominator – a failure of governance. Despite extensive research, consultation and policy initiatives over recent decades, governance failures continue to hinder the effective management of Aotearoa New Zealand's oceans.

A pattern of reform failure

A substantial body of work – including from the parliamentary commissioner for the environment (2014), the prime minister's chief science advisor (Office of the Prime Minister's Chief Science Advisor, 2021), the Environmental Defence Society (Severinsen et al., 2022) and the Ministry for the Environment (2022) – has thoroughly canvassed both the challenges and the opportunities facing marine management. Ten years of the Sustainable Seas National Science Challenge (2014–24) has further deepened understanding of marine ecosystems and governance needs.

Yet this knowledge-rich environment has not translated into effective reform. The persistence of well-documented problems reveals a systematic inability to bridge the gap between comprehensive understanding and coordinated action, reflecting deeper structural barriers within our governance frameworks themselves and the consequence of competing world views.

Key reform initiatives over the last 25 years include the following:

Oceans policy, 2000–05

A comprehensive policy initiative was launched in 2000, accompanied by extensive public consultation led by a ministerial advisory committee. Although draft proposals were completed in 2003, the process was suspended to address contentious iwi rights and interests regarding the foreshore and seabed. A later attempt to revive the policy was abandoned following a change of government, with the new government instead prioritising the development of legislation to expand and streamline regulatory frameworks for oil and gas exploration within the exclusive economic zone in 2012. This shift exemplifies a recurring pattern in New Zealand's approach to ocean governance: when faced with the choice between comprehensive environmental stewardship and immediate economic opportunities, policy decisions have consistently favoured extractive industries and short-term economic growth over sustainable prosperity and intergenerational equity.

Marine Reserves Act reform, 2002–12

Efforts to modernise the Marine Reserves Act 1971 culminated in a bill introduced in 2002. However, the bill was withdrawn

in 2012 after an inconclusive select committee process, leaving the legislation outdated and misaligned with current marine conservation needs.

Marine Protected Areas Act proposal, 2016

In 2016 the government released a consultation document proposing new marine protected areas legislation. Despite the consultation, no bill was introduced, and the reform effort stalled. New Zealand has pledged to meet the United Nations Global Biodiversity Framework's target of protecting 30% of coastal and marine areas by 2030; marine reserves currently protect 7% of New Zealand's coastal marine area, and most of these reserves are concentrated around remote offshore islands, leaving large areas of ocean under-protected (Ministry for the Environment, 2008). Achieving this ambitious goal will require significant coordinated effort involving policy development, stakeholder negotiations, legislative reform, comprehensive spatial planning, substantially increased funding, and enhanced enforcement capabilities (Rechberger et al., 2025).

2023 Blueprint for a Better Environment

The National Party's 2023 election manifesto proposed an integrated ocean management framework across government agencies and renewed marine protection efforts. However, this initiative was abandoned during coalition negotiations due to fundamental ideological conflicts between the coalition partners. ACT's deregulatory agenda and New Zealand First's primary industry priorities directly contradicted comprehensive environmental governance, while economic concerns took precedence over environmental issues, which ranked lowest among voter priorities. This outcome further exemplifies the challenges of building lasting policy momentum when environmental governance conflicts with immediate economic and political interests.

Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012

A key reform that was implemented was the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012. It stands as testament to this fragmented approach: borne not from a holistic ocean policy vision, but from the expedient assumption that land-based management tools could simply be stretched across the blue.

These reform failures represent lost opportunities to build a coherent and effective governance framework. Legislative processes have tended to rely heavily on technocratic solutions, such as regulatory fixes, without adequately addressing deeper tensions between resource exploitation and ecological integrity. This reflects what Peters and Nagel term 'zombie ideas': the persistent belief that changing structures will automatically produce better policy results, despite repeated evidence that such approaches fail to address underlying organisational commitments, path dependencies, and the absence of genuine policy alternatives (Peters and Nagel, 2024).

It can be argued that it is New Zealand's international obligations that are proactively driving our domestic management settings, not the converse. In stark contrast to the scope and progress of domestic ocean reforms, New Zealand has been an active participant in international forums. A range of global conventions (inter alia, the United Nations Convention on the Law of the Sea, 1982; the Convention on Biological Diversity, 1992; the International Convention for the Prevention of Pollution from Ships (MARPOL), 1973; the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972) and regional agreements and declarations (such as the Agreement on the Conservation of Albatrosses and Petrels, 2001; the Pacific Regional Declaration on the Prevention of Marine Litter and Plastic Pollution and its Impacts, 2021; and the Apia Commonwealth Ocean Declaration, 2024) create a complex, multi-layered series of obligations and commitments, domestically and internationally (Boyle and Redgwell, 2018; Carlson and Palmer, 2019). Recent trade agreements now include environmental commitments – for example, the New Zealand–United Kingdom free trade agreement, 2022 – further strengthening the status of such commitments.

Due to the vastness of our ocean resources, New Zealand needs to be at the leading edge of responsible management, but at the same time not exceeding our rights and obligations, consistent with international law. We have benefited from the extension of maritime boundaries, but this is with the cooperation of our neighbours and maritime powers. This is a double-edged sword: the scale of jurisdiction that creates opportunity also demands governance systems capable of meeting the responsibilities that accompany such extensive maritime authority.

Our management record, and hence governance, is potentially increasingly vulnerable to market access scrutiny … consumer activism and legal challenge, domestically and internationally …

Our management record, and hence governance, is potentially increasingly vulnerable to market access scrutiny (as evidenced by the debate regarding the implications for free trade agreements of the enactment of fast-track legislation), consumer activism and legal challenge, domestically and internationally (Ministry of Foreign Affairs and Trade, 2024; Bevin, 2025; United States Court of International Trade, 2022). In response to several successful legal reviews of ministerial fisheries decisions, the government announced in August proposals to amend the Fisheries Act to constrain litigants.

What this demonstrates is that ocean governance and management is not immune from tensions between litigation and legislative response; from approaches that provide short-term resolution, but fail to address the more substantive underlying issues.

Systemic issues

A handful of systemic issues have accumulated over decades through incremental and ad hoc decisions by successive governments. Together, they reveal a governance system fundamentally misaligned with the complex, interconnected nature of marine ecosystems.

The absence of a shared vision or agreed outcomes to guide decision making across the complex web of local, national and international governance levels

This manifests in competing ministerial and institutional priorities, including ongoing tension between single-stock fisheries management over ecosystem-based approaches; contested allocation of ocean space for future offshore aquaculture, offshore wind and seabed mining activities; and the relative priority assigned to ocean-related budget bids. Chronic underfunding of ocean-related domestic and international obligations is symptomatic of the lack of vision or strategy.

Short-term economic benefits prioritised over long-term public value

Current ocean management rests on mainstream notions of short-term fiscal value and does not recognise the long-term public value or the ecological significance of the oceans for the prosperity of future generations. This approach treats the ocean as separate from human communities, failing to recognise that healthy ocean ecosystems and thriving human communities are mutually constitutive.

The challenge for ocean governance is that marine ecosystems operate on timescales that far exceed political and fiscal cycles. Yet recent public policy initiatives – including the abandonment of wellbeing budgeting, proposed removal of long-term insights provisions from the Public Service Act, and planned changes to the Resource Management Act – suggest a retreat from institutionalised long-term thinking by the public sector.

Scientific knowledge about marine systems is inherently fragmented across disciplines and agencies, creating siloed understanding rather than integrated insights

Fragmented legislative and institutional settings where agencies operate in silos, preventing effective coordination and integration

Decisions by successive governments have resulted in multiple statutes and agencies responsible for similar functions (with distinct research, data management, compliance, monitoring and enforcement regimes) and subject matter, such as biodiversity (protected species, protected areas, resource management) and resource allocation (Resource Management Act 1991, Crown Minerals Act 1991, Fisheries Act 1996, Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012, Fast-track Approvals Act 2024). While the legislative framework enables specialisation where appropriate, it has resulted in disconnected instruments, inefficiencies, duplication and competing policy initiatives, all of which prevents long-term integrated strategies from taking shape, creating a governance system that responds to immediate pressures rather than strategic vision. The ten-year Sustainable Seas National Science Challenge exemplifies this failure – producing valuable research, but gaining little policy traction across agencies. This is symptomatic of chronic underfunding of marine management.

Competing objectives across legislation and sectors which remain unreconciled, creating ongoing conflicts between different resource users and conservation goals

The fragmented legislative framework enables competing interests to play different regulatory systems against each other, creating fundamental tensions between resource exploitation and ecological integrity, and undermining the ability to develop and implement coherent long-term strategies. A clash of world views is evident in ongoing tensions between fisheries property rights and protected area initiatives in the Hauraki Gulf and the Kermadecs, as well as the continued prominence of self-reported over observed fisheries data despite well-known discrepancies between the two.

The persistent gap between policy ambition and execution, where repeated reform efforts fail to address the complex interplay between customary rights, commercial exploitation and conservation imperatives

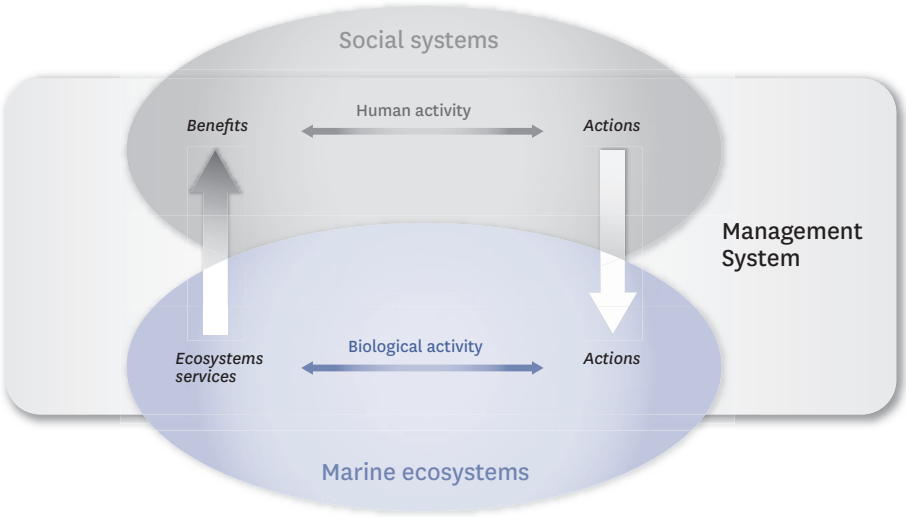
Limited institutional oversight and accountability of regulatory implementation by independent bodies compounds this problem, while lack of institutional capacity at central and local government levels, and within Crown research institutes (now called public research organisations), results in expertise shortfalls, gaps in essential data, and wide variance in policy capability and implementation.

Underlying limitations of evidence-based decision making

Management of our oceans typically operates on the basis of an evidence-based framework which treats facts as if they could speak for themselves, often with insufficient attention given to underlying assumptions, the contested nature of evidence, and the complex political realities that shape how information is interpreted and used. This approach reflects what Cairney (2017) identifies as a persistent myth in policymaking: that rational, transparent processes automatically lead to better outcomes.

In practice, this evidence-centric approach faces significant limitations. Scientific knowledge about marine systems is inherently fragmented across disciplines and agencies, creating siloed understanding rather than integrated insights. Evidence is rarely neutral; it emerges from particular research traditions, funding priorities and institutional perspectives that reflect deeper world views about the relationship between people and te moana. Most critically, the same evidence can support fundamentally different policy conclusions, depending on whether it is interpreted through intrinsic, instrumental or relational paradigms. This approach has significant risks and drawbacks: perfect information remains unattainable; institutional incentives push towards reactive rather than anticipatory responses; overconfidence in predictive models creates false precision over meaningful accuracy; prolonged methodological debates enable indefinite delay; it results in systematic neglect of competing political and economic drivers; and institutional short-termism prioritises immediate outcomes over long-term sustainability.

Figure 1: Interactions that make up the ocean management system



Source: Authors own diagram, 2025

Why structural reform is necessary

The government has a responsibility to be anticipatory, to look beyond the immediate landscape for the betterment of society over multiple generations. Despite repeated efforts, Aotearoa New Zealand has been unable to achieve comprehensive oceans reform that would reconcile competing world views, leaving critical governance gaps unresolved.

Climate change now amplifies this failure. As marine ecosystems face unprecedented pressures – from ocean acidification to shifting species distributions – fragmented governance structures prove increasingly inadequate to manage cascading risks. What were once manageable tensions between customary rights, commercial exploitation and conservation imperatives risk becoming irreconcilable conflicts in a rapidly changing ocean environment.

These issues have accumulated over decades through incremental and ad hoc decisions by successive governments, creating a governance system that cannot match the scale and urgency of contemporary challenges. Overcoming these systemic obstacles is essential to ensure that Aotearoa New Zealand can sustainably manage its marine resources for the long term, balance ecological protection with economic development, and meet its international commitments to biodiversity and climate goals.

We can strive for a better future, even though we cannot know the exact path, choosing to approach the unknown not with trepidation but as an opportunity to reimagine the relationship between people and nature – and how we manage our oceans (Figure 1).

Transformational change does not dictate wholesale repudiation of the status quo, although a detailed understanding of the current paradigm is vital if we are to avoid repeating the mistakes of the past. The current-day fixation on economic development dependent on ever-increasing material and energy use has become a core driver of marine ecosystem degradation, treating oceans primarily as sources of extraction and sinks for waste rather than as complex life-support systems. This approach relies on markets to optimise narrow goals like economic 'efficiency', while systematically ignoring the collective social and environmental outcomes that determine long-term ocean health. The result is governance frameworks that can measure short-term economic returns from fisheries, aquaculture or seabed mining, but discount or underplay the cumulative impacts on marine ecosystem resilience, coastal community wellbeing, and the ocean's capacity to regulate climate systems. Understanding this paradigmatic foundation is essential because attempts at reform that fail to address these deeper assumptions about value and efficiency will inevitably reproduce the same patterns of fragmentation and short-term thinking that characterise current ocean governance failures.

The consequences extend far beyond current political cycles. Decisions made today will shape the state of our oceans for generations to come, yet the tendency to pursue seemingly prudent trade-offs between competing values – such as economic development and environmental protection – constrains future options for sustainable governance. This reflects the path dependency challenges where seemingly reasonable compromises can lock in institutional commitments and policy trajectories that become increasingly difficult to reverse. The long lags between policy choices and their full environmental consequences are often inadequately considered in short-term political cycles. Without shared long-term goals – such as commitments to 30–50-year outcomes – short-term political decisions risk locking in adverse environmental trajectories that degrade marine ecosystems and foreclose more ambitious economic options for future generations. The challenge is not simply improving individual policies, but fundamentally reorienting our governance approach towards anticipatory stewardship of te moana.

Critically, we know that ocean ecosystems can regenerate if given the opportunity, making this a choice about

Box 1

Anticipatory governance is a system of institutions and processes that enables society to systematically anticipate, assess and respond to emerging challenges and opportunities before they become entrenched or irreversible, moving beyond reactive, crisis-driven policymaking towards proactive preparation for future conditions (Guston, 2014; Boyd, 2010; Fuerth, 2009). Anticipatory governance is a tool that can be applied across any system, not just oceans, making it an essential instrument for resolving complex governance problems. In its purest sense it is value-neutral regarding paradigm or policy choices. However, its essential purpose is to enable decisions that deliberately consider long-term implications, rather than being constrained by electoral cycles.

intergenerational stewardship rather than inevitable decline. This is actively highlighted in the Nice Ocean Action Plan (Robinet, 2025; Attenborough, 2025).

Anticipatory governance – an essential pathway forward for oceans governance

Major structural reform opportunities may not arise in the next 5–10 years. This creates a strategic challenge: while comprehensive transformation remains the ultimate goal, we must identify key advances that can be achieved within existing constraints and a limited political appetite for large-scale institutional change.

The Environmental Defence Society and others have outlined comprehensive reform packages that could fundamentally restructure ocean governance. However, if such comprehensive approaches prove politically unattainable in the near term, we face a critical choice about where to focus limited resources and political capital for maximum impact.

Long-term planning and anticipatory governance are increasingly recognised as a means of supporting institutional and policy frameworks to bridge the gap (Craig, 2012; United States Commission on Ocean Policy, 2004; Erinosho et al., 2022; Morgera, 2011; Guimarães et al., 2023; Sustainable Seas, 2024). Anticipatory governance (see Box 1) emerges as an essential pathway forward, regardless of the pace of structural reform. Unlike comprehensive institutional restructuring, anticipatory governance can be implemented within existing frameworks, while building capacity for future transformation.

From a relational perspective, anticipatory governance acknowledges the interdependence of nature and people, recognising that systemic changes will occur simultaneously in both natural and social systems. This understanding shapes how we design governance frameworks that can adapt to and anticipate these interconnected changes. Essential elements that comprise the building blocks of an anticipatory governance system for oceans are discussed below. While international examples exist, there are no plug-in-and-play solutions for the Aotearoa New Zealand context; any framework must be tailored to our unique institutional, cultural and geographical circumstances.

In the marine management context in Aotearoa New Zealand, we propose that anticipatory governance needs to encompass four key elements: reimagining longer-term public value creation; adaptive management approaches; multi-layered accountability systems; and alignment between policy ambition and implementation capacity.

Long-term public value creation

The state has a responsibility to be anticipatory, recognising the wellbeing of current and future generations. This demands an ocean management model built on mutual dependence, where human activities actively contribute to ocean regeneration, while ocean health directly supports community resilience across environmental, social, cultural and economic dimensions within defined generational time frames of 50–100 years. Development proposals must demonstrate genuine 'additionality' – measurable contributions to the reciprocal relationship between human and ocean wellbeing – rather than simply extracting value from marine ecosystems. Adopting more dynamic forms of value such as social and environmental additionality, which the OECD identifies as essential for sustainable governance frameworks, is critical (OECD, 2020, 2021).

A relational world view requires development conditions that strengthen rather than weaken these interdependencies: for example, environmental additionality where human activities actively restore ocean capacity through habitat regeneration; or species recovery that directly benefits community resilience and performance accountability through binding commitments that recognise the long-term reciprocal obligations between human activities and marine ecosystem health.

Adaptive management

Adaptive management and planning can be effective when facing increasing climate change impacts on marine biodiversity, through anticipatory zoning and precautionary regulation (Sustainable Seas, 2021). The Arctic Fishery Management Plan (North Pacific Fishery Management Council, 2009) closed federal waters to fishing until ecosystems could be better understood, while Seychelles has used marine spatial planning to proactively balance biodiversity goals with economic needs (Republic of Seychelles, 2025).

While these international examples offer valuable insights, it is difficult to identify a clear blueprint that addresses Aotearoa New Zealand's unique context – a vast exclusive economic zone encompassing numerous inhabited and uninhabited islands in a remote part of the world. Environmental justice litigation is increasingly being deployed as a tool to address the intergenerational burden and inequality of climate change impacts, and may in time become a vehicle for challenging the policy failures evident in ocean governance. Simultaneously, the United Nations is working to strengthen international law to address the systemic global failures in ocean governance, recognising that domestic reform efforts alone cannot resolve the transboundary nature of marine ecosystem challenges that transcend national jurisdictions (Robinet, 2025).

Adaptive ocean planning requires governance that operates at strategic and regional levels, rather than project-by-project decision making. This approach encompasses envisioning future scenarios that account for climate impacts, engaging stakeholders to formulate adaptation strategies, and integrating results into governance frameworks with predetermined response mechanisms.

Critically, adaptive management must be oriented towards achieving long-term environmental outcomes rather than simply enabling activities to proceed despite uncertainty. This requires establishing clear 'what action to what response' protocols in advance, recognising that marine ecosystems often exhibit sudden, non-linear changes rather than gradual transitions. Effective adaptive management expects surprises – including ecological tipping points and threshold responses – and builds capacity to respond quickly when monitoring indicates that conditions are changing.

Rather than treating uncertainty as a barrier, adaptive ocean management embraces it as a design feature, creating governance frameworks that can learn and evolve while maintaining focus on desired environmental outcomes. This moves beyond reactive management towards proactive stewardship that anticipates change and has predetermined responses ready for implementation.

Multi-level accountability

Effective accountability requires clear lines of responsibility from the executive level of government through to regional implementation, with transparent decision making and reporting on how trade-offs and competing priorities are assessed. This demands systems oversight that evaluates whether existing institutions can deliver the accountability required for anticipatory governance.

While long-term insights briefings are an important first step, they represent only the beginning of what is required. The public service has an essential role in translating long-term thinking into practical implications and recognising the extended time frames necessary for ocean stewardship. A persistent challenge is ensuring that ten-year strategies drive priorities and resource allocation, rather than remaining aspirational documents.

Multi-level accountability requires transparent reporting on:

- how ecological and time frame considerations influenced decisions;
- what trade-offs were made between competing priorities;
- how community and iwi values were integrated into decision-making processes; and
- what monitoring and evaluation mechanisms ensure delivery of promised outcomes.

Alignment between ambition and execution

Bridging the persistent gap between policy ambition and implementation requires long-term commitment to adequately resourcing effective monitoring, evaluation and evidence-gathering systems. This alignment requires significant institutional, political and financial investment.

- Institutional capacity will need to be built across levels through training, resources, and institutional support for collaborative decision-making processes. Development of effective feedback loops by way of monitoring, evaluation and learning systems, and monitoring systems that track environmental, social and economic outcomes over generational time frames, with regular reporting and adaptive management processes, are needed. Monitoring and evaluation are ineffective without meaningful enforcement mechanisms, and adequate resources for compliance monitoring and enforcement are required to ensure that development conditions and accountability requirements are met in practice.
- Political bodies need to align to ensure continuity of the ocean agenda. This demands cross-party collaboration mechanisms that maintain strategic direction and resource commitments across electoral cycles, preventing the political disruption that has undermined previous oceans policy reform efforts.
- Financial resources directed towards addressing the core nature of ocean governance problems are urgently required, with coordinated investment that supports system-wide transformation rather than fragmented initiatives.

Together these elements address many of the structural challenges in current ocean management, while helping to refocus institutional attention on a shared understanding of desired future states and realistic long-term outcomes. However, making this shift requires a fundamental change in how we govern, how we consider information, and how we think about the future. A core premise is that securing a sustainable future demands a fundamental shift in mindset and behaviours, alongside a reconfigured socio-economic system. Environmental policy alone is unlikely to realise a sustainable future unless accompanied by genuine systemic change.

> While not starting from a completely blank slate, compared with management of our land, there is ample scope to do things differently in the oceans.

Values that people hold about the environment need to be resurfaced at a system level, dismantling structural barriers that prevent those values from being given effect. Society as we know it today is shaped by social norms, learned behaviours and relationships: these can be recast, enabling a plurality of values and reinvigorating social consent. A new world view, new institutional voices, new policy approaches, new tools, and new ways of understanding policymaking are required,

discarding the dominant theories and practices that have led us down an ideological cul de sac.

Conclusion

'Thinking in systems over longer periods of time is the revolution of our time' (David Orr, quoted in Wahl, 2016). Management of our oceans is at a critical juncture, locally, nationally and globally. Significant change over the next 30–50 years can be foreseen, while other changes fall into the category of the 'unknown unknowns'. Past and present investment in management of our oceans remains inadequate to address current and future risks and opportunities.

While not starting from a completely blank slate, compared with management of our land, there is ample scope to do things differently in the oceans. Decisions we make now, and in the future, can deliver benefits for people and the natural environment. But decisions without a clear sense of direction have the potential to compound existing systematic issues.

Anticipatory governance is a means of ensuring that long-term considerations are appropriately reflected in decision making. Anticipatory governance is a discipline that can support overall ocean governance in an imperfect policy landscape. It offers a pragmatic way forward without requiring wider legislative change. The choice is ours.

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Institutionalising Community-based Adaptation in Aotearoa New Zealand

Abstract

This article reflects on policy-relevant lessons learned through participatory action research to enable community-based adaptation in four community settings in the Manawatū-Whanganui and Taranaki regions of Aotearoa New Zealand. Each setting is distinctive, with specific insights relevant for institutionalising community-based adaptation. Here, we focus on ten overarching policy- and practice-relevant lessons based on our reflections on working with these communities. Adaptation is ultimately a pact-making process which begins with community mobilisation, before proceeding to building shared understanding about risk, identifying plausible adaptation responses and pathways, and negotiating institutionalisation of adaptation actions as an integral part of ongoing, reflexive community-based adaptation.

Keywords community-based adaptation, locally-led adaptation, pact-making, community partnerships, Aotearoa New Zealand

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Extreme weather events and disruptions compounded by climate change are commonplace. Communities along low-lying coasts and near rivers face pronounced, escalating risk (Glavovic et al., 2022; Oppenheimer et al., 2019). Building community-based adaptive capacity and resilience is therefore imperative. However, no single governance actor can enable community-based adaptation on their own. Community-based partnerships need to be built between at-risk residents, tangata whenua, local government, and stakeholders such as ministries, non-governmental organisations, and community-based and private sector organisations. This article outlines policy- and practice-relevant lessons learned through participatory action research in four community settings in Aotearoa New Zealand: the Rōhutu Block at Waitara East beach and Waitōtara village and valley in Taranaki, and Pūtiki and Tangimoana in the Manawatū-Whanganui region. The research was funded and carried out under the Deep South National Science Challenge,[1] with financial and in-kind contributions from Horizons Regional Council and Massey University, along with vital contributions from partners in each setting.[2] This two-year project (mid-2022 to mid-2024) was preceded by a nearly one-year engagement phase to identify candidate case study communities and initiate partnership-building with relevant governance actors.

This article has four main sections. First, we briefly introduce our research aim, approach, methods and practices. Second, we explain what community-based adaptation is and why it is central for real-world adaptation, including the influence of the national adaptation policy setting. Third, each community setting is described and policy- and practice-relevant issues are spotlighted. Finally, ten overarching policy- and practice-relevant lessons are distilled, before conclusions are drawn.

Research aim, approach, methods and practices

Our research aimed to advance understanding about how adaptation governance interactions shape community-based adaptation in a bicultural setting bound by te Tiriti o Waitangi obligations.

The scope of the project was ambitious given the constraints of the Deep South National Science Challenge budget and two-year time frame.

From the vantage point of at-risk residents, however, the more immediate imperative was to identify and initiate actions to reduce risk and strengthen adaptive capacity and community resilience. Therefore, in addition to our 'pure' research aim, our project aimed to support case study communities through adaptation planning and action founded on strengthening relationships between at-risk residents, tangata whenua, local government and relevant stakeholders.

Our research approach involved co-design and participatory action research. We actively sought to involve those potentially affected by the project. The goal of participatory action research is to make a real-world difference by prioritising local knowledge and experience and enabling locally driven transformative change (Baum, 2006; Cornish et al., 2023; Kemmis, McTaggart and Nixon, 2014). From the outset we decided that judging project 'success' would best be determined by: (1) whether or not at-risk residents and community members considered the project engagement and outcomes to be meaningful and empowering; and (2) whether relationships deepened between those 'at risk' and local authorities and tangata whenua during the project, and endured beyond the project's two-year time frame.

The project was subject to rigorous ethics review at Massey University. Systematic recording of activities by team members and team reflections were complemented by extensive key informant interviews, carried out mainly in the last six months of the project. Interviewees included a cross-section of people actively involved in the project, as well as many people who were less directly involved. Interview data was critically evaluated using reflexive thematic analysis. Many intensive team-working sessions helped build shared understanding, track progress, pivot when circumstances required, and co-produce findings relevant for adaptation policy and practice.

At the outset, we sought guidance from local government, tangata whenua and community leaders in both regions about which communities along rivers and/or near the sea were priority candidate case studies, to ensure that the work initiated through this project would continue beyond its lifetime. The Manawatū-Whanganui Climate Action Joint Committee was the ideal forum to guide case study selection in this region. The committee has representation from leaders of each of the region's councils and tangata whenua. Ten candidate community localities were short-listed, and the Climate Action Joint Committee decided that the project should focus on Pūtiki and Tangimoana.

No such regional-level forum was then in place in Taranaki. After consulting staff in iwi liaison, emergency management and policy and planning at the Taranaki Regional Council, New Plymouth District Council and South Taranaki District Council, along with tangata whenua, two priority localities were identified: the Māori freehold Rōhutu Block at Waitara East beach, and Waitōtara village, with linkages into the valley. Consultation with the trustees of the Rōhutu Block Ahu Whenua Trust and Ngā Rauru Kītahi kaumatua affirmed the merit of these candidate case study communities. (See Table 1 for location and demographic details.)

The scope of the project was ambitious given the constraints of the Deep South National Science Challenge budget and two-year time frame. Extensive engagement took place between mid-2021 and the project start date in mid-2022. Three of the

Table 1: Location and demographics of the case study community settings

	Rōhutu Block	Waitōtara village	Pūtiki settlement and marae	Tangimoana village
Location	At Waitara East on the bank of the Waitara River mouth about 17 km north of New Plymouth	On State Highway 3 next to the Waitōtara River about 10 km south of Waverly and 34 km north of Whanganui	At confluence of state highways 3 and 4 next to the Whanganui River; a few kilometres upstream from the river mouth	On the south bank of the Rangitīkei River mouth about 30 km west of Palmerston North
Demographics (from Statistics New Zealand, other than Rōhutu Block)	About 30 homes on a block of Māori freehold land managed by the Rōhutu Ahu Whenua Trust	About 70 residents (circa mid-2024); about 66% Pākehā, 34% Māori	About 770 people (circa mid-2024); about 65% Pākehā, 35% Māori	About 370 residents (circa mid-2024); about 90% Pākehā; 10% Māori

four candidate case study communities ultimately opted to participate in the project: Pūtiki, Tangimoana, and the trustees on behalf of residents of the Rōhutu Block, along with their respective governing authorities. Context-specific circumstances shaped how the project unfolded in each case study locality.

Before recounting these case study experiences, the next section considers what community-based adaptation is and how it is unfolding in Aotearoa New Zealand.

Community-based adaptation: Aotearoa New Zealand setting

Local-level adaptation efforts have proliferated in Aotearoa New Zealand in recent years (Lawrence et al., 2024, 2025; Rouse et al., 2017), and many of them have been initiated and led by local government – for example, on the Kāpiti Coast (Iorns Magallanes, James and Stuart, 2018), in the Coromandel (Schneider and Glavovic, 2019, 2022), in Hawke's Bay (Ryan et al., 2022; Schneider et al., 2020) and South Dunedin (Bond and Barth, 2020). The key role played by local government in building local adaptive capacity has long been recognised (Lawrence et al., 2015). Ministry for the Environment guidance for local government has informed these adaptation efforts for well over a decade (Bell et al., 2017; Ministry for the Environment, 2008). Lessons learned from this experience have shaped adaptation practice and the guidelines continue to be updated to reflect practitioner and local government experiences (Ministry for the Environment, 2024). Increasingly, attention is focused on adaptation led by tangata whenua (Bailey-Winiata et al., 2024; Blackett et al., 2022; Bryant, Allan and Smith, 2017; Mihaere et al., 2024; Reid et al., 2024; Smith, 2020). By contrast, less attention has focused on how at-risk residents and community members might drive adaptation efforts, with some noteworthy exceptions (Simon, Diprose and Thomas, 2020).

What is community-based adaptation?

Community-based adaptation scholarship and practice have burgeoned over the last two decades (Dodman and Mitlin, 2013; Forsyth, 2013; Kirkby, Williams and Huq, 2018; McNamara and Buggy, 2017; Piggott-McKellar et al., 2019; Spires, Shackleton and Cundill, 2014; Vincent, 2023). Community-based adaptation is centred in the communities facing climate-compounded risk. It revolves around a specific community's vision, values and needs; priorities; knowledge and experience; and capabilities to jointly understand and reduce risk and build coping and adaptive capacity and resilience over time. Community-based adaptation posits that those most at risk are well placed to determine how they should adapt and, being directly affected, are incentivised to sustain adaptation efforts over time, with enabling support as necessary. In essence, it empowers communities to adapt in turbulent times.

While it is a truism that adaptation is local, multi-level governance interactions open up or close down opportunities for effective and enduring locally-led adaptation, from local government regulatory provisions and practices to the national policy setting, and prevailing societal norms and praxis. These interactions influence how adaptation planning is embedded or institutionalised in different community settings. How then might CbA be mainstreamed into local planning and decision making?

Mainstreaming or institutionalising community-based adaptation

Mainstreaming CbA involves integrating adaptation into local planning, budgeting, decision making, and day-to-day community activities, and into the processes, practices and structures of relevant governing authorities, including local councils and Māori authorities. Mainstreaming CbA is synonymous with institutionalising community-based adaptation.

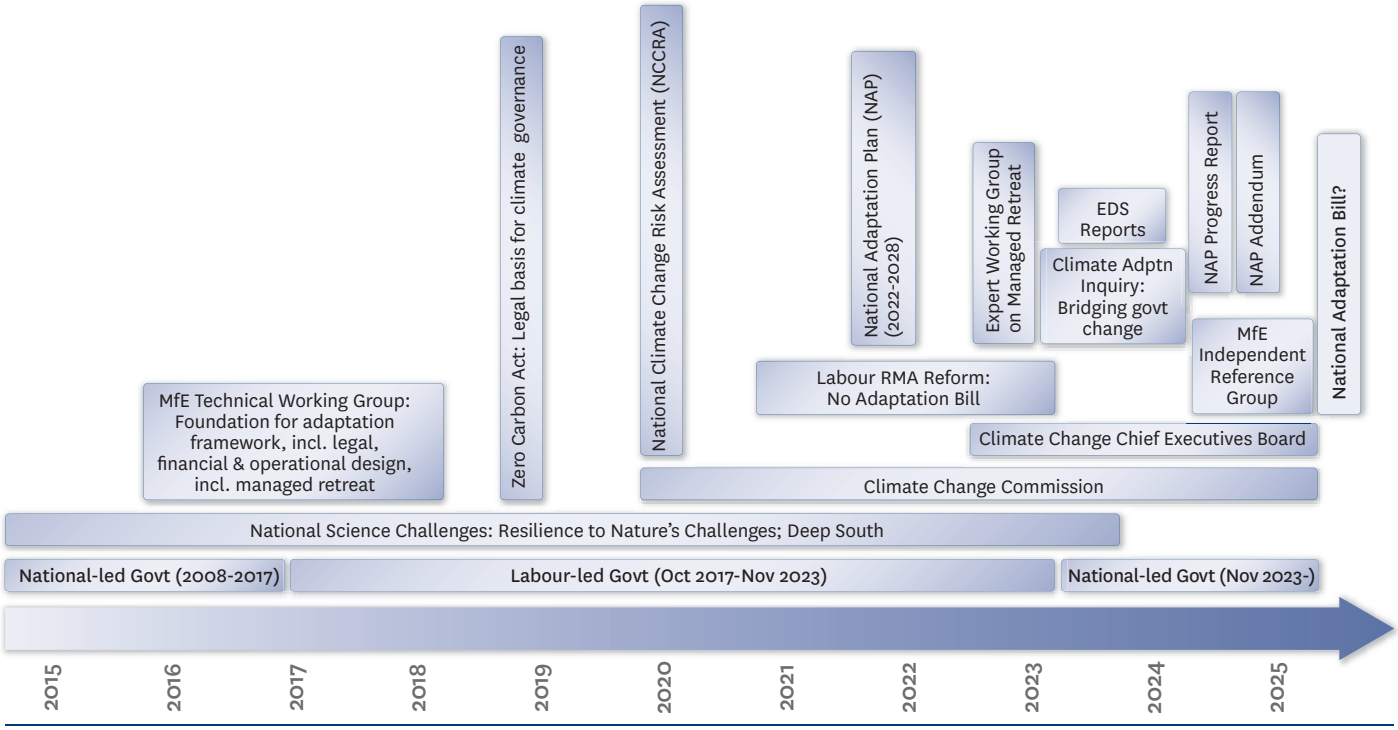
Many formal and informal community-relevant initiatives are underway to future-proof communities across Aotearoa New Zealand, from district plans to iwi management plans, emergency response plans and many more. Dedicated adaptation planning and action is also underway, typically led by local government and often facilitated by independent consultants (Lawrence et al., 2015, 2024, 2025; Ryan et al., 2022; Schneider et al., 2020; Schneider and Glavovic, 2022). While there is a burgeoning portfolio of local adaptation planning, however, mainstreaming has been frustrated by the adaptation policy lacuna – the legislation necessary to establish a coherent national adaptation framework.

Towards a national adaptation regulatory framework

Aotearoa New Zealand produced its first national adaptation plan in 2022. But the promised legislated national adaptation framework necessary to translate the plan into local action has yet to be promulgated. Nonetheless, extensive work has been carried out over the last decade towards this end; some of the key initiatives are depicted in Figure 1.

The adaptation imperative is widely accepted. Foundation stones for adaptation governance have been put in place through, inter alia, the Climate Change Response (Zero Carbon) Amendment Act 2019, which, in addition to its greenhouse gas

Figure 1: Some key initiatives over the last decade that inform a legislated national adaptation framework



emissions provisions, initiated six-yearly national climate change risk assessments and a national adaptation planning and monitoring process. It also established the independent Climate Change Commission, and put in place regular reporting and parliamentary and public disclosure and engagement processes. Extensive work has been done on ways to address vexing issues like cost sharing and roles and responsibilities for long-term adaptation and resilience building. Many adaptation responses, such as sea walls or managed retreat/planned relocation, are prohibitively expensive and only in exceptional circumstances affordable for at-risk local communities, tangata whenua and their governing authorities. Recent climate-compounded disasters like Cyclone Gabrielle and the 2023 Auckland Anniversary weekend floods underscore the urgent need for an enduring, equitable statutory framework that resolves the 'how and who pays' questions about adaptation.

The current government promises a Climate Adaptation Bill by the end of 2025 to address cost sharing, including for post-disaster recovery; clarify governance roles and responsibilities; better understand and share information about climate risk and response options and pathways; and address how to invest in resilient infrastructure. This is urgently needed by those already ramping up adaptation efforts. Implementation of local adaptation planning is stymied by the unaffordable costs of compelling medium- to long-term interventions and the unresolved question of 'who pays'. While closing the adaptation legislation gap is necessary, however, it is not sufficient, because of the continuing policy impasse between National- and Labour-led governments offering divergent ways forward.

Under the previous, Labour-led government, an Expert Working Group on Managed Retreat and a parliamentary Environment Committee inquiry into community-led retreat and adaptation funding (Expert Working Group on Managed Retreat, 2023; Ministry for the Environment, 2023) identified key issues and options and mapped out constructive ways of tackling them. The Expert Working Group made 89 recommendations in its 292-page report, thus providing the government with one of the world's most detailed examinations of managed retreat policy issues, options and recommendations.

Though Labour's promised Climate Adaptation Bill was not forthcoming, the incoming National-led government progressed the work under a cross-party inquiry led by the Finance and Expenditure Committee, which reported at the end of September 2024 (Finance and Expenditure Committee, 2024). The Ministry for the Environment then established an Independent Reference Group, which issued a 16-page report in mid-2025 (Independent Reference Group on Climate Adaptation, 2025). Compared with the detailed analysis and recommendations outlined in Labour's Expert Working Group report, this latest advice to government is devoid of the crucial detail necessary to inform a robust and enduring legislative national adaptation framework.

From a glass-half-full perspective, continued focused work on the national adaptation framework design is welcome. The 2017–23 Labour government put in place key institutional elements for effective adaptation governance through the Zero Carbon Act, the independent Climate Change Commission, and a robust process for climate risk assessment and national adaptation planning informed by Tiriti commitments, science-led risk assessment with community engagement, and guidance to support local adaptation. The current government has continued this work, shifting the focus to operationalising local adaptation by investigating rules for cost sharing and practical implementation, including defining thresholds for interventions like buy-outs, within fiscal constraints. The upshot is expected in the promised Climate Adaptation Bill to be tabled by the end of 2025 – progress, apparently.

From a glass-half-empty point of view, successive governments have divergent approaches that could result in flip-flopping on national policy direction, with a negative impact on local communities, tangata whenua and local government. The Labour approach was Tiriti-led and equity- and justice-focused, and accepted that the Crown needs to be involved in major adaptation and post-disaster situations, including cost sharing. By contrast, given the scale and cost of ongoing adaptation, the current National-led government seems likely to prioritise fiscal responsibility, end post-disaster bailouts and managed retreat funding by the Crown, and shift adaptation incentives and responsibilities onto markets and those at risk in the coming 20 years, based on its advisory group advice. Under this point of view, private property rights are paramount and market incentives override Crown duties and responsibilities, and while Treaty obligations are acknowledged, consultation trumps co-governance. While the bill is yet to be introduced, the current direction is profoundly troubling; it will inevitably result in enduring deleterious impacts on exposed, vulnerable communities, and generate inconsistent, inequitable and unjust adaptation outcomes, especially for Māori.

Flip-flopping from one orientation to the other will be debilitating for all New Zealanders, given the 'forever' nature of global warming. An enduring, genuinely cross-party approach is obviously necessary, one which reconciles Labour's Treaty-led, equity-centred approach and National's fiscal discipline and ex ante rules-based and cost-sharing, burden-shifting logic. As things stand, the country's adaptive capacity is woeful; a sea change is urgently needed (Naish et al., 2024).

Meanwhile, many local communities already face more intense and frequent extreme climate-compounded disruption. Adaptation action is underway now, notwithstanding the absence of a national adaptation framework and policy consensus. How is adaptation unfolding at the local level?

Adaptation in practice: adaptation pathways planning

Adaptation pathways planning has become the core logic for adaptation practice in Aotearoa New Zealand, underpinning Ministry for the Environment guidance and local adaptation efforts (Lawrence et al., 2025; Ministry for the Environment, 2024). Adaptation pathways planning is a structured process to identify and decide on short-term risk reduction and adaptation interventions (e.g., 1–10 years), mindful of plausible medium- (e.g., 10–50 years) to longer-term (50–100+ years) actions that might be needed when initial interventions reach their 'sell-by date', thus enabling affected parties to address risk and realise their aspirations over time. The key construct underpinning early conceptualisation of adaptation pathways planning was how to engage with inherent deep uncertainty when planning for a future layered with inevitable sociopolitical, demographic, economic, technological, environmental and climate change. Structured consideration of prevailing risk and accounting for the implications of unfolding circumstances enable more credible, salient and feasible adaptation interventions to be sequenced and adjusted over time (Haasnoot et al., 2013).

> Efforts to advance the Deep South project with meaningful resident involvement were, however, thwarted by pending legal action to evict a person living unlawfully on the block and safety concerns arising from their history and gang affiliations

In practice, tangata whenua, residents and community members are routinely consulted but seldom proactively engaged as foundational partners in the co-design and institutionalisation of adaptation pathway plans (Ryan et al., 2022; Simon, Diprose and Thomas, 2020). It is difficult to mainstream local adaptation efforts into local government's formal regulatory planning provisions or into relevant hapū and iwi planning and decision-making processes (Stephenson et al., 2020). Binding commitments by relevant governance actors to work together on an ongoing basis are much needed, but seldom achieved. Such commitments necessarily involve at-risk residents, mana whenua, local government and other community stakeholders, and are foundational for advancing CbA in Aotearoa New Zealand (Bond and Barth, 2020; Cradock-Henry and Frame, 2021; Glavovic, 2022, 2025; Simon et al., 2020; Stephenson et al., 2020). How, then, might real-world CbA be achieved? The next section describes how our research explored this question.

Adaptation experiences in case study communities

Rōhutu Block, Waitara East, Taranaki

By 2021, six homes on the Waitara East shoreline had become unsafe due to the impacts of coastal storms and accelerating erosion. The New Plymouth District Council had identified this block of land as a priority concern, and long-term plan funding was allocated to support at-risk residents prior to the start of the Deep South project. A close working relationship developed between the Rōhutu trustees and New Plymouth District Council staff. The opportunity arose for the Deep South project to complement the work already underway to demolish the six unsafe structures and help residents relocate. This enabled the Deep South project to look beyond immediate risk reduction and support medium- to long-term CbA.

Initial partners included the Rōhutu Trust on behalf of the residents, the district council and Massey University. We recognised the imperative to include additional partners, notably Taranaki Regional Council and hapū and iwi, as

soon as possible. Agreement was reached on foundational principles for how the New Plymouth District Council, Rōhutu Trust and the Massey team would work together to align the long-term plan project and the Deep South project. The importance of this initiative was discussed and endorsed by Rōhutu residents at a hui that explored community views on the risks faced and ways forward. The Rōhutu community was mobilised and eager to better understand and address climate-compounded risk and progress adaptation planning and action, and the New Plymouth District Council was committed to supporting them.

Efforts to advance the Deep South project with meaningful resident involvement were, however, thwarted by pending legal action to evict a person living unlawfully on the block and safety concerns arising from their history and gang affiliations (Shaskey, 2023). Progress was also hampered by capacity constraints experienced by project partners, including restructuring and staff turnover at the district council.

Nonetheless, the New Plymouth District Council continued to support the most at-risk residents. Importantly, an additional three years of funding at $100,000 per annum was allocated in mid-2024 to demolish the six red-stickered houses and support the affected households. The council and the Rōhutu trustees decided to reconsider ways to progress medium- to longer-term adaption planning after the Supreme court denied the squatter's application to appeal his eviction (Martin, 2024). But this did not take place until after the closure of the Deep South project. The at-risk homes have since been demolished, appeals by the squatter have now been legally exhausted, and the New Plymouth District Council and Rōhutu Trust are about to explore adaptation planning for the block and surrounding Waitara community.

The core revelation is that adaptation is relational, founded on trust. The strong New Plymouth District Council–Rōhutu Trust partnership was developed to address pressing residents' needs – a practical entry point for initiating CbA planning and action. The council prioritised action on the block in part because those most at risk included especially vulnerable people unable to avoid hazard exposure and relocate safely on their own. But given the costs already incurred, with two tranches of long-term plan funding, it is likely that a Tiriti-based governance approach will be needed, with Crown and hapū and iwi support, to develop and institutionalise a community adaptation plan for the block. Ongoing work by local government staff working with the trust and residents as Tiriti partners continues. But deepening and extending the district council–trust partnership to include hapū and iwi and the Taranaki Regional Council is also necessary.

The need to synchronise externally driven initiatives with tangata whenua priorities and capabilities is key. 'Outsiders' need to build trust, but this takes time.

The Rōhutu experience also demonstrates that adaptation is integral to a community's social life and development prospects. Circumstances that have nothing to do with climate-compounded risk can materially shape adaptation prospects. Mainstreaming CbA into local government and Māori planning and decision-making processes is manifestly complicated, involving contested historical and contemporary governance interactions, but nonetheless crucial for building enduring adaptive capacity. Working together is vital if shared understanding about risk and adaptation possibilities is to be deepened and joint problem-solving capabilities institutionalised.

Waitōtara village and valley, Taranaki

Waitōtara village has flooded many times over the decades, including in 2015, and is consequently an emergency management priority for the South Taranaki District Council. The Massey team was advised to explore Ngā Rauru Kītahi interest in partnering in this project because of the close connections between many people in the village and the Waitōtara valley. Iwi leadership confirmed interest, and it was suggested that a valley-wide perspective would be more meaningful than focusing on the village alone. Light could then be shone on practical challenges and opportunities for people in peril evacuating across district council boundaries, compelling joined-up council and tangata whenua–local government emergency response and adaptation efforts.

Adaptation work was already underway in the valley, with the Ngā Rauru Kītahi climate change strategy developed in partnership with the Ministry for the Environment in place by the end of 2021 (Te Kaahui o Rauru and Ministry for the Environment, 2021). A host of related activities were underway or have since been initiated, from ministry-funded work on water quality and flood warning systems to exploring nature-based solutions, and engagement with two other Deep South projects. After protracted efforts by the Massey team to advance this partnership, however, Ngā Rauru decided not to participate in this project because of capacity constraints and other commitments and priorities. Their adaptation work continues through iwi and hapū initiatives and partnerships with local government, among others.

The need to synchronise externally driven initiatives with tangata whenua priorities and capabilities is key. 'Outsiders' need to build trust, but this takes time. Ngā Rauru is progressing marae, hapū- and iwi-based adaptation planning and action on their terms and time frame, through partnerships with the Crown, the regional council and other parties.

Pūtiki, Manawatū-Whanganui

Initial engagement with the Pūtiki community stemmed from the Manawatū-Whanganui Climate Action Joint Committee endorsement and through

online and face-to-face engagement with tangata whenua leadership, the community, the Whanganui District Council and Horizons Regional Council. Through these interactions, especially guidance from the Pūtiki Wharanui chair and tangata whenua leadership, it was made clear that the immediate priority was to reduce exposure to flooding from the Ngatarua and Awarua streams, especially the risk faced by elderly residents in the kaumātua flats in the lowest-lying area of Pūtiki. Water from the surrounding hills is channelled by these streams through culverts under the state highway that runs through Pūtiki. The culverts, primarily the responsibility of the New Zealand Transport Agency Waka Kotahi, cannot cope with the frequent heavy downpours that expose residents to extreme ponding, which could be exacerbated by the Whanganui River flooding; this risk is compounded by proximity and connection to the sea, with spring high tides and rising sea level. The potential for compounding and cascading flood risk due to interactions between the main river (awa) and streams in the area warranted more focused attention, and initial engagement affirmed the merit of progressing this Deep South project in Pūtiki.

Efforts to build on this initial engagement were, however, frustrated by community dynamics which caused confusion about how best to directly involve at-risk residents and community members, and project progress slowed down. Frustration on the part of some at-risk residents about this slow progress reflected over two decades of cumulative community concerns, council analyses and reports, and repeated evacuations and dismal flood experiences. A concerted effort was made to mobilise the community through local leadership, but it was difficult to gain real traction until a major rainfall event in May 2023 coincided with a hui held to update residents about the project. Residents expressed their pent-up anger, frustration and anxiety about the severe risks they faced and lack of effective local government action. A new group, the Pūtiki Emergency Response Group, emerged to address these concerns and improve the community's emergency preparedness and response capacity.

The Pūtiki Emergency Response Group continued to progress its work on multiple fronts in partnership with local government, Waka Kotahi and other partners and stakeholders, within and beyond the immediate confines of Pūtiki's residential development.

Driven mainly by three community members endorsed by tangata whenua leadership and the community at large, the Pūtiki Emergency Response Group became the pivot around which locally-led risk reduction and adaptation efforts were mobilised. The most constructive way forward was for the Massey team to support the group and tangata whenua leadership as much as possible.

Agreement on how tangata whenua and local government, along with other potential partners, should work together emerged as pivotal for building a robust and enduring partnership to sustain locally-led adaptation. The Te Awa Tupua (Whanganui River Claims Settlement) Act 2017 had established the legal personhood of the Whanganui River and was the foundation for crafting the binding adaptation partnership agreement in Pūtiki. The Act was the first in the world to grant legal personhood to a river, and places the well-being of the awa at the centre of any action affecting the Whanganui River and those it sustains. Te Heke Ngahuru guides implementation of this law: a values-based strategy which places hapū at the centre of decision making in Tiriti-based co-governance with local government and relevant stakeholders. Of fundamental importance are the values – Tupua Te Kawa – underpinning this legislation and strategy. These values were foundational for the indigenised memorandum of understanding – the Tākai Here – that was negotiated and signed to bind the Whanganui District Council, Horizons Regional Council and Waka Kotahi in partnership with the Pūtiki community for CbA planning. Massey University was a signatory to reflect the project team's brokering role in crafting the agreement. The Tākai Here is a 'living agreement' which not only guides the ongoing working relationship, but will be added to and refined as locally-led adaptation unfolds and circumstances change. Importantly, too, this Tākai Here affirms that CbA is an integral part of catchment-wide actions that extend from the mountains to the sea. In essence, the Tākai Here is the foundation stone of the Pūtiki CbA pact that will ultimately document the negotiated plans that partners develop, implement and reconfigure over time.

The Pūtiki Emergency Response Group continued to progress its work on multiple fronts in partnership with local government, Waka Kotahi and other partners and stakeholders, within and beyond the immediate confines of Pūtiki's residential development. This includes securing long-term plan funding to strengthen community-based emergency response capacity, and initiating master planning to address housing and associated papakāinga needs over the next 30 years. With myriad activities underway, and capacity constraints across the board, it became infeasible to complete the envisaged adaptation pathways plan within the Deep South mid-2024 time frame. A high-level risk assessment and initial synopsis of adaptation prospects were completed, and key reflections shared with the community and with the Climate Change Joint Committee that had originally prioritised Pūtiki as a case study.

The Deep South and other government National Science Challenges were wound down in mid-2024. But, with the values-based Tākai Here in place, the Pūtiki community had established a robust foundation and was well placed to lead ongoing adaptation work with the support of local government and Waka Kotahi and other stakeholders. Among other things, the Whanganui District Council, Horizons Regional Council and Waka Kotahi have continued to work closely with Pūtiki leadership and residents to better understand interactions between Whanganui awa flood risk and run-off-induced ponding due to water from surrounding hills. Technical investigations have looked further into flood defences and flood modelling to inform flood protection design and emergency management planning, with particular attention on avoiding worsening flooding of the Ngatarua stream. This work has helped to better align council and Waka Kotahi technical analyses of flood risk and response options, including drainage/culvert upgrades and future flood defence investigations for the benefit of Pūtiki residents.

The Tākai Here institutionalises a co-governance framework founded on spiritual, cultural and ecological values that privilege nature- and community-based interventions and not just hazard-centred engineering solutions. Crucially, agreement on the Tākai Here was not simply a 'lowest common denominator' compromise by governance actors on ways forward for CbA. Rather, this pact symbolises the transformation of long-standing contestation about Tiriti-centred governance related to the Whanganui River. The Te Awa Tupua legislation was transformative in establishing legal personhood for the river and the rights of nature. But it has also reconfigured governance interactions central to CbA, including bringing the authority, identity, voice and agency of mana whenua to the fore in local decision making, establishing values-based relationship building as foundational, and opening up opportunities for governance innovations (Cribb, Macpherson and Borchgrevink, 2024). Whereas conventional conflict resolution tends to focus on resolving immediate concerns and issues, conflict transformation explores ways to fundamentally reconfigure governance interactions, including attitudes, interests and underlying societal structures that fuel persistent conflict (Tafon et al., 2022).

In dialogue with project partners, it was decided to provide a plain-language synthesis of risk information and document Tangimoana Community Committee priority actions and concerns as a platform for future adaptation pathways planning.

Tangimoana, Manawatū-Whanganui

Guidance by the Climate Action Joint Committee led to focused interaction with the Tangimoana Community Committee as the main forum representing at-risk residents and the local community. Such committees can struggle to represent community members effectively. Despite historically challenging and contentious community–council interactions, the Tangimoana Community Committee, the Manawatū District Council and Horizons Regional Council agreed to work together through this Deep South project. To this end, in November 2023 a statement of intent was signed to advance adaptation pathways planning. This signing was more than symbolic, because it signalled the unequivocal intention of community representatives and local government leadership to work together in support of CbA.

Our team used a range of engagement methods to involve stakeholders in Tangimoana in this project. Despite these efforts, it proved very difficult to secure active and extensive resident participation. Additionally, hapū and iwi leaders were over-stretched and opted not to participate directly in the project, preferring to stay informed about progress. Nonetheless, the commitment by the Tangimoana Community Committee and the Manawatū District Council and Horizons Regional Council laid a strong foundation for assessing risk and adaptation planning.

Feedback was sought from residents about their risk perceptions and available risk information was synthesised. Some of the information shared with residents was perceived to be overly technical and difficult for lay people to comprehend. Property-level information about hazard exposure was considered important, but was not available in a format that could readily be distilled and made available. There was sensitivity about how to express vulnerability in a constructive and enabling manner. There was also reluctance to examine medium- to long-term responses, including managed retreat in the face of escalating climate-compounded risk. Ongoing difficulties were experienced in engaging residents to co-design an adaptation pathways plan. Paradoxically, resident interest in participating grew noticeably in the closing months of the project, at which point it was not feasible to complete the envisaged plan before mid-2024.

In dialogue with project partners, it was decided to provide a plain-language synthesis of risk information and document Tangimoana Community Committee priority actions and concerns as a platform for future adaptation pathways planning. A draft addendum to the statement of intent was prepared to synthesise community risk perceptions and list the committee's short-term concerns and priority actions. The document was signed by representatives of the Tangimoana Community Committee, the Manawatū District Council, Horizons Regional Council and Massey University (as the broker of the agreement) on 24 June 2024. This agreement reiterated the commitment to continue working together.

After the Deep South project ended, a Tangimoana Resilience Group, made up of three Tangimoana Community Committee members and representatives from the district council and regional council, was established. A refined risk assessment was prepared in mid-2025 and the Tangimoana Resilience Group is finalising an adaptation/resilience plan for distribution to residents by the end of 2025. Community and local government champions have been central to sustained progress. One member of our research team has continued to work as an independent, trusted 'critical friend', accountable to the Tangimoana Resilience Group, residents and governing authorities, and this has helped to sustain post-Deep South project progress. This work has included giving voice to children at Tangimoana School, whose projects and artwork portray what they love about the village, the perils faced, and how to future-proof the village. The children presented their work at a July 2025 community hui at which the Tangimoana Resilience Group gave a progress report, including a demonstration of a new computer-based hazard mapping tool which visualises different pluvial and fluvial flood scenarios under various sea level rise scenarios and vertical land movement over time.

Ten policy- and practice-relevant findings

Notwithstanding the distinctive features of each of the above experiences, this synopsis reveals overarching policy- and practice-relevant findings that can inform CbA in Aotearoa New Zealand. These findings were distilled through individual and collective critical reflection on each case study, and structured consideration of project-wide lessons through team workshops, project partner feedback, and reflexive thematic analysis of key informant interviews.

Community-based adaptation is a relationship-building process, rooted in trust

Community-based adaptation is stepwise and takes time. It centres on mobilised at-risk residents, with enabling community leadership and supporting partners in local government, tangata whenua, and others as appropriate. Community-based adaptation planning is more than a bureaucratic procedure with a narrow adaptation focus. History casts a long shadow over contemporary adaptation interactions. Building trusting relationships helps address concerns, needs and aspirations over time.

> Aligning adaptation planning and practice within and between territorial local authorities and regional councils is also key to enabling sustained community-based adaptation.

Build shared understanding about natural hazard risk, adaptation options and plausible pathways into the future

Sharing hazard information is necessary, but far from sufficient. Shared understanding about the 'politics of adaptation' enables joint problem solving and builds adaptive capabilities within and between governance actors, especially when mātauranga Māori, local knowledge, and robust science and professional expertise are carefully amalgamated. This understanding deepens and extends through sustained social learning that engages climate cynics and sceptics, as well as residents fearful of insurance premium increases or insurance withdrawal. Climate change is not merely a problem for future generations; it is a 'now and forever' challenge which manifests in more intense and frequent extreme weather events. These can be focusing events that mobilise political will and community action to adapt, provided there is a foundation of shared risk understanding.

Prioritise those most exposed and vulnerable to climate-compounded risks

Risk is a product of exposure to natural hazards and social vulnerability. For too long, attention has centred on the hazard dimension of risk. Attention needs to shift to better understanding and addressing susceptibility to harm and building local adaptation capabilities. This requires understanding and addressing asymmetrical social relations, including how CbA is shaped by political struggles and the uneven distribution of power, equity and justice, and the implications for marginalised people, future generations, and the non-human realm. Clarifying adaptation governance roles and responsibilities from the national to the local level is vital – including national structures and processes for enabling just and equitable cost sharing, because adaptation costs are often beyond what local communities and their governing authorities can afford. The Crown therefore has a vital role to play in institutionalising Tiriti-led, just and equitable adaptation in fiscally responsible ways.

Local government support is foundational for community-based adaptation

This means prioritising strategic and long-term plan funding for CbA, as well as having dedicated staff support, community-specific liaisons, and championing by project sponsors, such as senior officials and elected members, to overcome inertia, climate change cynicism and denialism, short-termism and vested interests. Key to success is having staff and elected members actively involved through regular briefings, awareness raising and building shared understanding, supported by passionate adaptation champions. Aligning adaptation planning and practice within and between territorial local authorities and regional councils is also key to enabling sustained CbA. This means having consistent and complementary information on local hazards and vulnerability, as well as providing enabling and enduring support for locally-led adaptation planning. Working together through CbA helps to translate local government's good intentions into lived reality.

Tangata whenua are foundational partners for community-based adaptation

In predominantly Māori communities, mana whenua should initiate and lead marae-, hapū- and iwi-based adaptation, with the support of other governance actors as appropriate, to enable tino rangatiratanga (self-determination). Under Tiriti obligations, the Crown needs to pay special attention to tangata whenua-led adaptation, given that Māori communities face widely divergent risks and the potential for severely unjust and inequitable outcomes. In predominantly Pākehā communities, tangata whenua are foundational Tiriti partners, along with local government, the Crown, and other locality-specific adaptation partners.

Community-based adaptation is best framed as pact making

Reframing adaptation as pact making is consistent with te Tiriti o Waitangi, and recognises that it is inherently political, inevitably conflict ridden, and advanced through conflict transformation, not merely hazard-centric technical analysis and lowest-common-denominator compromises. Commitments to work together, founded on agreed values and principles, need to be recorded as a statement of intent or memorandum of understanding that, if appropriate, should be indigenised. Signing an agreement is a moment to celebrate. But this is one step in an ongoing journey. This pact is the foundation for crafting and institutionalising an adaptation pathways plan or framework agreement that documents priority short-term actions and plausible pathways into the future, given the risks faced. This living agreement guides partners in how to work together and adapt as circumstances, needs and capabilities change over time.

Enduring community-based adaptation is enabled by institutionalised climate action partnerships

The above-mentioned framework agreement or pact needs to be mainstreamed into the strategic and tactical operations of every partner organisation. For example, the Manawatū-Whanganui region's Climate Action Joint Committee – a representative body of tangata whenua and local government mayors and chief executives – prioritised the region's two case study communities with which the Massey Deep South team partnered, ultimately leading to signed local agreements to work together. These commitments did not falter at the end of the Deep South project but have continued into 2025 and likely beyond. Institutionalising CbA as pact making enables relevant governance actors to continue working together through inevitable change.

> The lack of a national adaptation framework and policy consensus are … a very severe impediment to securing just and sustainable community-based adaptation in Aotearoa New Zealand.

Institutionalising community-based adaptation is convoluted

CbA planning and implementation is not linear and sequential. Rather, it is an entangled mix of planning, action, reflection, adjustment, and yet more action, planning and so on. Moreover, CbA is intertwined with community development and mitigation efforts that together shape the trajectory of climate-resilient development – i.e., community development that advances justice, resilience and sustainability. It is not easy to reconcile community adaptation initiatives with formal local government procedures and tangata whenua processes and practices. Among other things, the three-year election cycle can disrupt nascent, or even long-established, collaborative initiatives. In predominantly Māori communities, marae-, hapū- and iwi-led adaptation planning and action are vital, with outsider involvement dependent on trust and synchronising alignment with Māori priorities, interests and needs. The multi-level character of adaptation governance further complicates the institutionalisation of CbA.

Independent 'critical friends' can play a vital mediation and/or facilitation role in building adaptation partnerships, especially where there is a lack of trust

Independent intermediaries working as 'critical friends' – trusted 'outside-insiders' – can develop strong bonds with those involved in adaptation planning and can play a constructive brokering role. To fulfil this role, brokers need to have real-world experience and expertise in community engagement and conflict transformation, as well as adaptation governance. More generally, CbA proceeds at the pace it takes to build trust between governance actors. Short-term projects are seldom adequate for securing the foundational commitments necessary to establish collaborative partnerships and institutionalise CbA.

A cross-party, legislated national adaptation framework is imperative for empowering community-based adaptation planning and enabling just and equitable action by residents, local government and tangata whenua

The lack of a national adaptation framework and political consensus on climate policy are especially concerning, with escalating risk, rising insurance premiums and the prospect of insurance retreat after many years of government 'talk' about a climate adaptation Act. There is a clear need to share equitably the costs of adaptation interventions in a fiscally responsible manner. While an adaptation Act urgently needs to be promulgated to enable CbA, this will not be a panacea, given the imperatives outlined above that also must be addressed.

Conclusion

This research demonstrates that CbA is a relationship-building process – a

struggle that depends on building trust between partners founded on shared values and robust commitments to work together. Adaptation practice has proliferated in recent years. The lack of a national adaptation framework and policy consensus are, however, a very severe impediment to securing just and sustainable CbA in Aotearoa New Zealand. This self-evident imperative depends largely on resolving not if, but how, the Crown contributes public funding to ongoing adaptation and disaster recovery in turbulent times.

Our research spotlights a core recommendation: put at-risk residents and communities, supported by tangata whenua and local government and other potential enabling partners, at the centre of adaptation policy and practice. How might the ten key findings outlined here be applied in future adaptation policy and practice? Focus on building trust and forge robust values-based 'living agreements' that support locally-led adaptation pathways planning and action. Adaptation is ultimately a community-based, pact-making process which starts with mobilising a community, before proceeding to building shared understanding about risk, identifying plausible adaptation pathways, and negotiating ways to mainstream community adaptation actions as an integral part of ongoing, reflexive adaptation and empowering community-based climate-resilient development.

Postscript

The government released its National Adaptation Framework on 16 October 2025 (see https://environment.govt.nz/publications/national-adaptation-framework/). Regrettably, the four-page, four-pillar framework raises more questions than it answers. First, better climate risk information is indeed a priority. Climate risk is a product of exposure to climate-compounded hazards by vulnerable populations or groups. The framework appears to conflate hazard and risk, as there is no mention of the necessity to better understand climate vulnerabilities and adaptation capabilities. Second, regarding roles and responsibilities, no mention is made of the central government's pivotal role in institutionalising just and equitable adaptation. Third, regarding risk reduction investment, the framework says nothing about nationally consistent provisions to prevent new development in localities highly exposed to climate-compounded hazards. Finally, regarding cost sharing, very few property owners can afford the adaptation interventions necessary to contain climate risk. These concerns need to be resolved – preferably through further authentic independent advice on deepening and extending the National Adaptation Framework. Visionary political leadership is necessary to close the persistent adaptation lacuna and impasse. The starting point is comprehensive, well-designed legislation, with cross-party support, to institutionalise a Crown commitment to enable just and equitable community-based adaptation for generations to come.

1 The Deep South National Science Challenge, focusing on climate change impacts, risks and responses, was one of New Zealand's collaborative research programmes aimed at addressing significant challenges facing the country (see https://deepsouthchallenge.co.nz/).

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Matt Boyd and Nick Wilson

From Disaster Response to Anticipatory Governance

why Aotearoa New Zealand's long-term resilience thinking must address global catastrophic risk and systemic vulnerabilities

Abstract

The Department of the Prime Minister and Cabinet's 2025 draft briefing on long-term hazard resilience is commendable in emphasising anticipatory governance. However, it still exemplifies broader limitations in risk assessment focusing on familiar local natural hazards while excluding global catastrophic risk. We examine how current risk reduction approaches remain trapped within frameworks addressing symptoms rather than systemic forces. Effective resilience requires expanding hazard scope to include global hazards: large-scale (nuclear) conflict, large global volcanic eruptions, and bioengineered pandemics. Building resilience to these and similar risks requires recognising cascade dynamics and implementing transparent approaches to generalised resilience to ensure basic needs.

Keywords anticipatory governance, disaster risk reduction, global catastrophic risk, polycrisis, metacrisis, resilience, systemic risk

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The Department of the Prime Minister and Cabinet (DPMC) and Ministry for the Environment presented the country in August 2025 with a draft long-term insights briefing (LTIB) on building New Zealand's long-term resilience to hazards (Department of the Prime Minister and Cabinet, 2025). This document represented a welcome shift towards proactive thinking on risk management and anticipatory governance, helping to counter the presentist bias described for New Zealand (Boston, 2017). The document is commendable in its recognition of the potential for catastrophe and emphasis on resilience as a foundation for prosperity. However, it is also representative of broader approaches to hazard and risk in Aotearoa New Zealand that reveal fundamental blind spots with the potential to undermine our collective preparedness for the 21st century's most consequential threats.[1]

By focusing primarily on familiar natural hazards and incremental climate risks, New Zealand's risk assessment frameworks are missing an entire category

of global catastrophic risks. These range from large-scale conflict (including nuclear war) and large volcanic eruptions around the world (in extreme cases causing volcanic winters), to bioengineered pandemics and failures with advanced artificial intelligence (AI), any of which could trigger cascading global system collapses. Such threats can begin far beyond our borders, yet seriously harm our island nation through the common consequences of major failures in the supply of goods and services to New Zealand and global systemic or institutional collapses.

Beyond discrete catastrophic events lies an even more fundamental challenge: the world faces rising systemic risk driven by interconnected global stresses.

Our analysis here examines how current disaster risk reduction approaches, both globally and in New Zealand, remain trapped within frameworks that address symptoms rather than the deeper systemic forces driving what scholars term the 'polycrisis', a web of interconnected global stresses that are pushing human systems towards dangerous disequilibrium (Lawrence et al., 2024; Søgaard Jørgensen et al., 2024). We argue that New Zealand must expand its hazard scope, adopt systemic risk frameworks that account for cascade dynamics and evolutionary pressures, and embrace institutional reforms that prioritise transparency, continuity in provision of basic needs, and transformational change over reactive crisis management.

Strengths of the draft long-term insights briefing

The draft LTIB establishes several important foundations. Most significantly, it represents a fundamental shift in thinking from reactive emergency response towards proactive resilience-building. This approach aligns with international best practice and evidence showing that upstream investment consistently produces superior outcomes compared with downstream crisis management; indeed, upstream investment in resilience is the cost-effective choice, delivering 'an average return of $15' per $1 invested (UNDRR, 2025b). The document acknowledges that hazards may have catastrophic consequences and that abrupt crises can occur, which marks a significant advance in New Zealand's risk discourse. That is, it shows movement beyond incremental thinking (e.g., recently predominantly around climate risk) towards recognising the risk of genuine global discontinuities that require coordinated national action (e.g., the Covid-19 pandemic).

Equally important is the draft briefing's explicit connection between resilience and long-term prosperity, rejecting the false economy of austerity leading to repeated disaster–rebuild cycles, in favour of investment in systems designed for stability and growth. The document also begins sketching an anticipatory governance approach, recognising that proactive identification and mitigation is a superior paradigm to reactive crisis management. These elements provide a solid foundation for thinking about more comprehensive reforms, even as they reveal the scope of work still required to address the full spectrum of risks facing New Zealand in an increasingly unstable global system (Arnscheidt et al., 2025; Lawrence et al., 2024; Søgaard Jørgensen et al., 2024).

Wider context: missing global catastrophic risk and systemic vulnerabilities

However, this draft LTIB, representing as it does much thinking at the forefront of risk analysis in the public sector, must be evaluated within a broader global risk landscape that extends far beyond traditional disaster risk reduction frameworks.

Missing from current approaches are global catastrophic risks (Arnscheidt et al., 2025; Bostrom and Cirkovic, 2008). These are risks with the potential to harm the entire world and overwhelm response capabilities. Such risks are often overlooked precisely because many originate from human activities and don't fit neatly within established frameworks like those of New Zealand's civil defence and emergency management apparatus, the Natural Hazards Commission or National Resilience Framework.

Global catastrophic risks include: seldom considered tail risks from climate change (Kemp et al., 2022); extreme pandemics potentially triggered by bioweapon or bioengineering advances (RAND, 2024); severe solar storms capable of disabling electrical grids for weeks or months (NEMA, 2024); nuclear war, nuclear winter, and electromagnetic pulse attacks causing agricultural failures and cascading infrastructure collapse (Blouin et al., 2024; Boyd et al., 2023); potentially climate-altering large magnitude volcanic eruptions comparable to Tambora 1815 (Wilson et al., 2023), particularly those abroad that could have an impact on critical global 'pinch points' (Mani, Tzachor and Cole, 2021); global catastrophic food failures (Wescombe et al., 2025); sophisticated global cyber-attacks targeting critical systems such as telecommunications or energy networks; catastrophic failures associated with deployment of advanced AI (RAND, 2025); or the cascading interactions of any of the above.

These risks (and others like them) share critical characteristics that distinguish them from conventional hazards. They typically originate elsewhere, probably outside New Zealand, yet spread via cascading impacts to cause global catastrophe, plausibly overcoming the capacity of response systems. External assistance may be unavailable when needed most, and such risk could threaten global critical infrastructure destruction rather than mere disruption, preventing rapid recovery. While individually unlikely in any given year, collectively these risks represent

Table 1: 14 Global Systemic Stresses: Illustrative Potential Impacts on New Zealand and Examples of Resilience Options*

Global Systemic Stress (chronic underlying processes)	Illustrative Potential Impact on NZ (chronic or abrupt hazards and crises)	Example Resilience Options for NZ (what could be done in anticipation)
Great Power Hegemonic Transition	Risk of great power (nuclear) war, trade route disruption, loss of security guarantees, forced alignment with competing powers, direct military involvement, critical shortage of industrial inputs and spare parts for essential infrastructure maintenance	Planning for nuclear war; diversify trade partnerships; develop sovereign trade infrastructure; strengthen regional cooperation with Australia; establish strategic stockpiles; develop domestic manufacturing capacity in key domains; build agricultural resilience to potential nuclear winter impacts (also relevant to 'volcanic winter' from large eruptions)
Zoonotic Disease Transfer	Increasing likelihood of potentially severe pandemic, mass death and disruption to society and economy, healthcare system overload/collapse, agricultural sector impacts from novel plant and animal diseases	Cooperate with Australia on vaccine manufacturing capacity; strengthen border management systems, biosecurity, health system, and exclusion/elimination plans
Propagation of Artificial Intelligence	Abrupt critical system failures in interconnected infrastructure (electricity, communications, transport, finance), loss of human decision-making capacity, potential for rapid cascading failures, irreversible changes to society (eg, surveillance/ totalitarianism)	Invest in research to understand transformations and safety options; develop AI governance frameworks; maintain human oversight of critical systems with 'kill switches'; invest in domestic technological capabilities; modular systems that resist synchronous failure; leverage useful AI for solution finding amid complexity
Climate Heating	More frequent extreme weather events disrupting critical infrastructure, agricultural productivity decline, coastal inundation of key ports and cities	Adaptation to agricultural challenges; accelerate renewable energy transition with distributed generation; implement managed retreat from vulnerable coastal areas; urban design for hotter/wetter cities ('sponge cities')
Political-Institutional Decay	Trade disputes, contagion of anti-institutional sentiment to NZ, inability to coordinate effective responses to global shocks, loss of public trust undermining policy implementation, broad societal failures	Resist global institutional decay by strengthening NZ institutional transparency and accountability; strengthen NZ local government (resourcing and scope of activities); invest in citizen-driven democratic engagement and decision-making to sustain trust; consider independent risk governance mechanisms such as Parliamentary Commissioner for Catastrophic Risk/Chief Risk Officer to ensure government accountability
Ideological Fragmentation & Polarisation	Breakdown of cooperative governance during crises, mis/ dis-information hampering effective responses, social fragmentation and uprising or conflict	Invest in civic education and democratic institutions; develop trusted information systems for crisis communication, invest in nurturing social cohesion rather than division
Concentrated Industrial Food Production	Global overdependence on few large food exporters. Local NZ vulnerability to supply chain disruption for imported agricultural inputs (liquid fuel, fertiliser, seeds, machinery), synchronous failure of global breadbaskets radically reconfiguring trade, massive price spike in foods imported to NZ	Develop a National Food Security Strategy (encompassing nuclear winter, volcanic winter, and catastrophic electricity loss); diversify crop production and reduce dependence on imported food and agricultural inputs; develop flexible export/ import pivot capability
Changing Energy Supply	Liquid fuel import disruption causing transport and agricultural collapse, renewable energy intermittency during nuclear/volcanic winter, risk of catastrophic electrical failure (solar storms)	Develop biofuel production capacity from local feedstocks (eg, canola, tallow, wood); establish minimum liquid fuel reserves for critical sectors (agriculture, transport); maintain non-electric alternatives (for solar storms)
Economic Headwinds	Nationalist and protectionist measures and trade wars close markets to NZ, international underinvestment in critical global infrastructure increases risk of failures (eg, trade disrupted by piracy), resource scarcity and choke points risk sudden supply failures, downturn in tourism to NZ	Develop diverse trade relationships (especially regionally), negotiate resource access agreements - eg, with Australia, disengage from volatile markets, invest in reliable resilient local public services for basic needs
Financial Interconnected-ness	Overdependence on few monolithic densely connected systems. Risk of digital payment system collapse, inability to conduct trade, economic contagion across financial markets, economic isolation from global financial networks	Create offline digital currency system; develop plans for manual/cash-based economic transactions during digital failures; stabilise NZ banks
Ecological Degradation	Loss of agricultural productivity, loss of ecosystem services, disruption to primary export industries (dairy, meat, apples, forestry)	Invest in agricultural diversity and regenerative farming practices; establish comprehensive biodiversity protection corridors

Global Systemic Stress (chronic underlying processes)	Illustrative Potential Impact on NZ (chronic or abrupt hazards and crises)	Example Resilience Options for NZ (what could be done in anticipation)
Toxicity	Contamination of water supplies and agricultural land (eg, microplastics and 'forever chemicals' [PFAS]), export market access restrictions due to contamination, changes in global human migration patterns as land/water availability shifts.	Develop comprehensive chemical monitoring and remediation capabilities; ensure strategic reserves of clean water; anticipate migration from degraded regions
Demographic Divergence	Strain and risk of failure of public services and infrastructure, labour shortages in key sectors, increased migration pressures	Plan infrastructure for anticipated population size; strategic immigration policies; invest in automation and productivity in critical sectors
Economic Inequality	Social revolution in major trading partner (eg, China, US), social unrest during crises, reduced social cohesion undermining collective response capability, political instability	Diversify export markets; strengthen community resilience programmes; ensure equitable distribution of essential resources during emergencies

*Note: The impacts and resilience measures in this table are illustrative only. We argue that a lot more work needs to be done so that New Zealand can understand these global stresses, the hazards they will trigger, the likely cascading consequences and the risk of irreversible systemic failures.
Cross-cutting principles:
Most important systemic vulnerability: trade isolation causing cascading failures across all critical sectors (food, energy, transport, communications).
Most critical resilience investment: all-hazards approach to global catastrophic risk governance, with systematic national risk assessment and public engagement.
Greatest resilience assets: New Zealand's geographic isolation, renewable energy capacity and potential, agricultural capacity, social capital and democratic institutions – if properly nurtured and leveraged through anticipatory planning.
Stress–trigger–crisis: under the stress–trigger–crisis model, any of the above stresses could trigger amplification of harms across any or all the other stresses, or could be triggered or compounded by global natural hazards such as major volcanic eruptions, asteroid impacts, solar storms and the like.

high-probability events over longer time frames – i.e., decades, or this century (Karger et al., 2023) – with some, such as severe solar storms, large magnitude volcanic eruptions and severe pandemics, being practically inevitable (Gluckman and Bardsley, 2021).

Beyond discrete catastrophic events lies an even more fundamental challenge: the world faces rising systemic risk driven by interconnected global stresses. At least 14 major chronic systemic stresses are simultaneously pushing human systems towards dangerous disequilibrium (see Table 1): great-power hegemonic transition, zoonotic disease transfer, propagation of AI, climate heating, political-institutional decay, ideological fragmentation and polarisation, concentrated industrial food production, changing energy supply, economic headwinds, fragile financial interconnectedness, ecological degradation, toxicity, demographic divergence, and economic inequality (Cascade Institute, n.d.). Although Table 1 is structured according to the Cascade Institute's list, several other organisations – for example, Policy Horizons Canada – have produced similar lists of systemic stresses (including, for example, severe risk from mis/disinformation, ecosystem collapse, cyber-attacks, AI, democratic breakdown), as well as expressing the expectation that these could overwhelm the world within the next decade (Policy Horizons Canada, 2024).

These stresses interact through what some researchers term the 'stress–trigger–crisis' model (Lawrence et al., 2024), where any major trigger event, whether a volcanic eruption in Indonesia blanketing south-east Asian ports with ash, catastrophic electricity loss disabling GPS and shipping operations, or nuclear conflict over Taiwan, could tip already-stressed global systems into cascading failure.

For New Zealand, this creates a paradox: while our geography, natural resources and social systems position us relatively well to weather such storms (Boyd and Wilson, 2021b; King and Jones, 2021), our greatest vulnerability lies precisely in the trade and supply chain collapse that represents the downstream consequence of virtually all global catastrophic risks (Boyd et al., 2023). For example, our Aotearoa New Zealand Catastrophe Resilience Project (NZCat) concluded that the major risk to New Zealand of northern hemisphere nuclear war is a protracted breakdown in trade threatening the supply of fuel for farm machinery, and other industrial inputs, and a nuclear winter that cools the climate and reduces agricultural yield (Boyd et al., 2023; Boyd et al., 2024; Boyd and Wilson, 2022).

Understanding these dynamics (and those of other major global hazards) and what to do to build long-term resilience requires examining five critical themes that reveal both the limitations of current approaches to risk management and pathways towards more robust preparedness: (1) the evolving landscape of disaster risk reduction and its constraints; (2) the blind spots in national risk assessment frameworks; (3) the dynamics of interacting crises and polycrisis; (4) the imperative to address systemic risk rather than just isolated hazards; (5) the underlying causes driving repeated global crises and the role of evolutionary dynamics in shaping both competitive behaviours and cooperative solutions. Only by grappling with these interconnected challenges can New Zealand develop the anticipatory governance capabilities necessary for long-term resilience in an era of accelerating global instability.

Limitations of contemporary disaster risk reduction

Disaster risk reduction has evolved considerably since the adoption of the Sendai Framework for Disaster Risk Reduction in 2015 (United Nations, 2015). This framework established comprehensive approaches across 187 countries through four priority areas: understanding disaster risk; strengthening governance; investing in resilience; and enhancing preparedness for recovery. The framework's ambitious targets include substantially reducing disaster mortality, economic losses and infrastructure damage by 2030. Yet recent assessments reveal fundamental limitations that mirror those evident in New Zealand's current approach (UNDRR, 2023, 2025b).

The 2025 United Nations Global Assessment Report on Disaster Risk Reduction demonstrates these constraints starkly (UNDRR, 2025b). While five hazards – earthquakes, floods, storms, droughts and heatwaves – account for 95% of recorded economic losses, this figure notably excludes pandemics, which tend to cause more harm than all other disasters

combined (Mamuji and Etkin, 2019). More troubling, the 2023 Sendai Midterm Review found that disaster impacts, in terms of costs, are actually increasing despite policy advances, with response still prioritised over prevention and significant shortfalls persisting in funding, stakeholder inclusion and international cooperation (UNDRR, 2023). According to the Global Assessment Report, global direct disaster losses reached $200 billion annually by 2020, but when cascading and ecosystem impacts are included, true costs balloon to an estimated $2 trillion.

Most critically, current frameworks exhibit what the report identifies as a fundamental blind spot: the failure to account for '1-in-100 or even 1-in-1,000-year events – those that, while having a low probability of occurring can cause catastrophic impacts when they do' (UNDRR, 2025b). Notably, the Covid-19 pandemic caused 27 million excess deaths as at June 2023 (Giattino et al., 2024), and many trillions of dollars in harm.

This systematic underestimation of tail risks reflects deeper conceptual limitations. The UN's new Hazard Information Profiles (UNDRR, 2025a), while including asteroid impacts and large volcanic eruptions, omit nuclear war, despite listing 'armed conflict' elsewhere. These profiles also ignore food system failures despite historical evidence linking major eruptions to famine (Büntgen et al., 2025; Wilson et al., 2023), and the likelihood of regional production shortfalls, or even synchronous global food failure (Wescombe et al., 2025), affecting trade and supply relations (Jehn et al., 2025). Even the recent UN Pact for the Future (UN General Assembly, 2024), which acknowledges that humanity faces 'rising catastrophic and existential risks', including nuclear war, lacks developed implementation mechanisms. These gaps reflect disaster risk reduction's continued focus on familiar, observable, generally local hazards rather than the low-probability, high-impact events. It is the latter that have repeatedly and fundamentally reshaped global systems, and which are precisely the risks that New Zealand's island geography makes it most vulnerable to through supply chain disruption (Boyd et al., 2023; Boyd et al., 2024; Boyd and Wilson, 2022; Skilling, 2022). The impact of external shocks was visible throughout the 20th century, including the 1918 influenza pandemic, the Great Depression and the first and second world wars, and worse has been seen throughout human history, with societal collapse being a (if not the) recurrent feature of human civilisations (Kemp, 2025).

National risk assessment blind spots and methodological shortcomings

New Zealand's approach to national risk assessment lacks several critical analytical outputs that have become standard practice among comparable nations grappling with complex risk landscapes. The United Kingdom maintains a detailed, publicly accessible National Risk Register (HM Government, 2025), alongside comprehensive chronic risks analysis (Cabinet Office and Government Office for Science, 2025), substantial parliamentary inquiry reports, including the House of Lords' examination of preparing for extreme risks (House of Lords Select Committee, 2021), and a National Resilience Action Plan (UK Government, 2025). The United States has commissioned RAND Corporation assessments of global catastrophic risks (RAND, 2024), enacted the Global Catastrophic Risk Management Act 2022, and established dedicated institutional frameworks for extreme risks. Even when such comprehensive approaches exist, significant methodological problems persist, as demonstrated by research showing that cross-border risk assessments vary dramatically even among neighbouring European Union countries (Kohler, 2023), revealing fundamental inconsistencies in how similar threats are characterised across borders and a need for cross-border collaboration. New Zealand's obvious partners in this are Australia and Pacific nations.

More fundamentally, national risk assessment methodologies historically suffer from two critical shortcomings that undermine their effectiveness regardless of scope or institutional support (Boyd and Wilson, 2023). First, they typically lack justification and transparency around foundational assumptions regarding time horizons, discount rates, scenario selection and decision rules, choices that have a dramatic impact on risk characterisation and subsequent resource allocation priorities. Second, they systematically omit the largest-scale risks facing humanity, namely global catastrophic risks and existential threats, despite these risks having expected annualised harms that may exceed the combined impact of conventional hazards by orders of magnitude (ibid.; Graham et al., 2025). Research demonstrates that even under highly conservative assumptions, considering only simple probability and impact metrics, applying significant discount rates, and limiting analysis to harms affecting only current populations, these omitted risks possess salience far greater than their absence from national risk registers would suggest (Boyd and Wilson, 2023).

> The institutional aversion to 'scaring the public' must be overcome, so that democratic resource allocation decisions can be collectively made.

All this points to a more fundamental challenge: the substantial uncertainty inherent in risk assessment processes requires much greater engagement with stakeholders and experts to legitimise key assumptions, encourage critique of existing knowledge, and address methodological shortcomings through deliberative public processes that support informed dialogue between citizens and government decision makers. The institutional aversion to 'scaring the public' must be overcome, so that democratic resource allocation

decisions can be collectively made. There is even the chance that such collective processes might build social cohesion against shared risks.

The DPMC's draft long-term insights briefing exemplifies these broader limitations through its narrow hazard framing. While the document identifies major natural hazards and some biological and technological threats, it notably excludes several risks that international research identifies as potentially catastrophic including many, if not most, of the global catastrophic risks listed above.

These hazards share a critical characteristic that places them outside New Zealand's traditional risk management frameworks: they typically originate elsewhere, yet spread globally through cascading impacts, potentially amplifying the global stresses in Table 1, and rendering external assistance unavailable precisely when needed most. Most conspicuously absent from those risk management frameworks are conflict risks, despite war (alongside infectious disease and major volcanic eruptions) being a defining feature of human history and New Zealand's remote island geography making it extraordinarily vulnerable to trade disruption from geopolitical instability. The omission is particularly concerning given recent UN resolutions prioritising nuclear war impact studies (United Nations, 2025), and the US National Academy of Sciences' 2025 report on nuclear conflict (National Academies, 2025). For an island nation whose resilience depends fundamentally on global trade stability (Boyd and Wilson, 2022; Green, Cairns and Wright, 1987), the exclusion of conflict scenarios from publicly facing national risk thinking represents a dangerous blind spot that could leave New Zealand unprepared for supply chain collapse triggered by distant conflicts, precisely the mechanism through which global catastrophic risks would most likely affect domestic wellbeing (Boyd et al., 2023; Boyd and Wilson, 2022).

Polycrisis: the interconnection of contemporary crises

Moving beyond individual hazard assessment reveals a more fundamental challenge: contemporary global crises are interconnected, potentially amplifying each other in ways greater than the 'sum of their parts', and in ways that demand approaches transcending traditional risk categorisation and assessment. Thomas Homer-Dixon, founder of the Cascade Institute, identifies four meta-processes underlying this dynamic: increasing global energy consumption; disruption to Earth's energy balance; rising human biomass; and expanding connectivity among populations (Homer-Dixon, 2023).

These processes create conditions where failures are more likely to cascade across highly connected, homogeneous systems, which are precisely the infrastructure networks characterising contemporary smart cities, global supply chains, industrial food systems and digital financial networks. As connectivity increases without corresponding diversity, systemic vulnerabilities multiply exponentially, creating a world where each crisis becomes a trigger for others: pandemics spread globally within weeks, cyber-attacks cascade across interconnected financial systems, supply chain disruptions ripple through just-in-time production networks, and climate impacts affect agricultural systems worldwide simultaneously.

> New Zealand's planning remains largely focused on localised natural hazards and incremental climate change, despite these many other global systemic stresses creating 'polycrisis' conditions.

Systemic risk: when stressed systems reach breaking points

This interconnectedness creates what researchers define as systemic risk, or the potential for multiple, interconnected system failures that can trigger more widespread collapse (Gambhir et al., 2025). The existence of at least 14 global stresses (Table 1) means any single hazard may serve as a trigger, but those underlying systemic stresses determine whether systems tip into crisis as per the 'stress–trigger–crisis' model (Lawrence et al., 2024).

This framework reveals why most current risk management approaches prove inadequate: they focus myopically on individual stressors, predominantly climate change, so prominent in public sector risk management at present, rather than examining how multiple stresses interact to create vulnerability. While positive interventions exist, including systems thinking, mapping systemic interactions, developing anticipatory governance and conducting preparedness exercises, addressing systemic risk requires confronting the deeper forces driving stress accumulation. These include: rivalrous dynamics preventing coordination; exponential technological advancement creating risks faster than assessment and response capabilities; and resource degradation amid coordination failures. Without addressing these underlying dynamics, societies remain trapped in strategies where aggressive, exploitative behaviours outcompete cooperative, long-term alternatives, even when cooperation would ensure collective survival.

This reality demands fundamental shifts in thinking about long-term resilience, and even the nature of 'hazards'. While the draft LTIB acknowledges the interconnectedness of hazards, it overlooks robust frameworks for systemic and cascading risks, continuing to treat hazards as largely discrete events rather than examining the generator mechanisms driving global stresses and an ongoing accumulation of global risk. New Zealand's planning remains largely focused on localised natural hazards and incremental

climate change, despite these many other global systemic stresses creating 'polycrisis' conditions. Addressing this requires adopting systemic risk frameworks that analyse cascade pathways, stakeholder interactions and power structures, while incorporating evolutionary and game-theoretic perspectives that can identify both maladaptive responses and transformational opportunities. Such approaches shift focus from responding to individual crises towards understanding and modifying the systemic rules that encourage or discourage risk generation, the difference between treating symptoms and addressing root causes.

The UK government's Resilience Action Plan specifically states:

> To respond to risks, we need to better understand their long-term drivers and systemic interdependencies. A key step is mapping our chronic risks, which are risks that pose continuous challenges, generally over a longer timeframe, that gradually erode our economy, community, way of life, and/or national security. (UK Government, 2025, p.12)

Given the cross-border nature of global catastrophic risk, this thinking, and the associated action, must be applied globally, including considering the various abrupt hazards to which these chronic risks give rise.

Metacrisis and human cultural evolution

While comprehensive approaches to polycrisis and systemic risk provide essential analytical frameworks, they may still miss deeper generative mechanisms that warrant acknowledgement, even if their full exploration exceeds this article's scope. What philosopher Daniel Schmachtenberger terms the 'metacrisis' encompasses underlying dynamics that generate global systemic stresses: rivalrous competition preventing coordination on collective threats; exponential technological advancement creating risks faster than assessment capabilities can respond; and resource degradation amid coordination failures. These dynamics may create what he identifies as a 'sensemaking crisis', where humanity cannot perceive problems at appropriate analytical levels, remaining trapped in frameworks designed for simpler challenges within human groups rather than contemporary interconnected risks at global scale.

Human cultural evolution offers relevant insights here. Cultural adaptation has historically produced robust solutions to complex challenges through incremental, collective processes whereby adaptive institutions and norms emerge gradually (Henrich, 2016; Richerson and Boyd, 2004). However, rapid contemporary change may undermine these solution-finding processes, potentially leading to maladaptive responses that compound rather than resolve global stresses (Merz et al., 2023). Game theory illuminates how individually rational decisions can collectively produce hazards. Exemplifying this dynamic is dairy conversion of farms, which benefits individual New Zealand farmers while potentially degrading collective water quality.

Understanding these deeper patterns suggests that effective 'long-term resilience to hazards' will require addressing root causes rather than symptoms, emphasising diversity over efficiency in critical systems, ensuring evolvable modularity rather than homogenisation, and governing 'vulnerability creating actors' appropriately (Arnscheidt et al., 2025). While full treatment of these metacrisis dynamics lies beyond this analysis, their existence implies that New Zealand's anticipatory governance approach should acknowledge and prepare for the possibility that current global systems may continue generating risks faster than conventional interventions can manage them, regardless of policy sophistication.

Recommendations for transformational resilience

Given all the foregoing, we now turn to what can be done to build long-term resilience for Aotearoa New Zealand. This analysis of contemporary risk dynamics, from narrow hazard framing, through polycrisis and systemic risk, to metacrisis generators, reveals both the limitations of current approaches and pathways towards more robust preparedness. The DPMC's draft LTIB, while commendable in its recognition of catastrophic potential and emphasis on anticipatory governance, exemplifies broader shortcomings that characterise risk management across the public sector. Addressing these limitations requires fundamental shifts spanning hazard scope, analytical frameworks, institutional design and public engagement approaches.

While it is not possible, and perhaps not even desirable, to prepare specifically for every hazard, there are common features of global catastrophic risks and resilience measures the benefit of which generalises across risks.

While it is not possible, and perhaps not even desirable, to prepare specifically for every hazard, there are common features of global catastrophic risks and resilience measures the benefit of which generalises across risks. As noted above, a critical common feature of global systemic failure, and a core driver of historical societal collapses (Kemp, 2025), is a shutdown in the flow of goods and services. No matter how this happens, it would have an impact on the provision of basic needs, such as clean water, nutritious food, energy for heating and transport, the maintenance of communications systems, and so on (Boyd et al., 2023). Generalisable, crisis- or scenario-agnostic resilience measures are noted in a recent futures report by the Finnish government, which mapped four

scenarios for the world in 2045. These measures include economic security, defence capability, investment in education and skills, and a sustainability transition, all coordinated through anticipatory governance that is mindful of systemic risk (Government of Finland, 2025). These generalities underscore the need for cross-silo and integrated cross-society risk assessment and long-term resilience-building.

Short political cycles systematically undermine long-term resilience planning, which requires dedicated independent institutions insulated from short-term electoral pressures.

Expand hazard coverage to include global catastrophic risk

The most immediate requirement involves expanding hazard coverage to include the global catastrophic and existential risks mentioned above that traditional frameworks systematically exclude (Boyd and Wilson, 2023). These collectively represent low-probability, high-impact events that could trigger supply chain collapse, which is New Zealand's primary vulnerability. Some of these risks are near-certainties over longer time frames and potentially dwarf conventional disaster impacts in expected annualised harm (Graham et al., 2025; UNDRR, 2025b). International precedents including the US Global Catastrophic Risk Management Act, RAND Corporation assessments and the UK's more comprehensive National Risk Register demonstrate that treating such risks seriously has become standard practice among comparable nations, though much more can be done.

Systemic analytical frameworks using stress–trigger–crisis models

Beyond expanded scope, effective resilience requires adopting systemic analytical frameworks that recognise interdependencies, cascade pathways, and the evolutionary dynamics underlying risk generation. The likes of the stress–trigger–crisis model provides a foundation for understanding how global systemic stresses interact to create polycrisis conditions where any single trigger can propagate across interconnected systems. This demands moving beyond sectoral silos towards integrated approaches that examine how competitive dynamics, technological acceleration and resource degradation create the underlying conditions generating continuous crisis. Resilience think pieces and actions in New Zealand should explicitly address this.

Strengthen forces that build resilience (geography, institutions, social capital)

A critical shift involves recognising forces that build resilience rather than focusing exclusively on risk drivers (notably, the draft LTIB did not address resilience factors in its section on risk and resilience). New Zealand possesses substantial advantages that current frameworks underutilise: geographic isolation, low urban density, plentiful food production capacity, abundant renewable energy potential, relatively strong democratic institutions, and established social capital. These assets require deliberate cultivation, including through regional cooperation initiatives, particularly with Australia and Pacific neighbours, on shared preparedness challenges, potentially including, for example, vaccine manufacturing and shipping resilience. Egalitarian institutions and transparent governance structures have demonstrated superior adaptive capacity in the face of historical collapses compared with hierarchical alternatives (Peregrine, 2021), and it appears that widening inequality and extractive hierarchies are a key driver of historical societal collapse (Kemp, 2025). This suggests that democratic and egalitarian deepening through citizens' assemblies and deliberative forums represents both a values commitment and pragmatic resilience strategy.

Public engagement and transparency through democratic deliberation

The question of public engagement reveals a fundamental tension between technocratic approaches that limit risk disclosure and democratic imperatives requiring informed consent for both action and inaction. Internationally, the UK House of Lords' report on extreme risks (mentioned above) included a presumption towards publication of security information, and stated that 'only through transparency and a healthy culture of challenge can we provide society with a reliable foundation to respond to emerging risks' (House of Lords Select Committee, 2021, p.5).

Citizens require access to comprehensive risk information spanning the full spectrum from conventional hazards to global catastrophic threats, supported by government-facilitated forums enabling structured public deliberation. But more importantly, information sharing needs to be solutions focused, including transparent information about resilience investment options, their costs, benefits and trade-offs across different time frames and scenarios. This could involve presenting alternative financing models through citizen assemblies or deliberative forums. This approach empowers rather than alarms populations, enabling discourse over the 'tough decisions' the draft LTIB acknowledges, in the context of opportunities, while ensuring that democratic legitimacy is sustained to stabilise long-term resilience investments.

Institutional reforms, including dedicated risk officers and cross-sector collaboration

Institutional reforms represent perhaps the most crucial component of transformational change for long-term resilience. Short political cycles systematically undermine long-term resilience planning, which requires

dedicated independent institutions insulated from short-term electoral pressures. Options include establishing a chief risk officer or parliamentary commissioner for extreme risks (Boyd and Wilson, 2021a), implementing three-lines-of-defence approaches that are standard in private sector risk management, all contributing to coordinating assessment and planning across all hazard categories. More immediate mechanisms include developing cross-sector collaboration mandates for information sharing, and especially joint exercises spanning government agencies, private sector actors and civil society organisations, enabling integrated understanding and prioritisation for resilience across, rather than within, institutional silos. Our own recent research found majority public support (56–63%) in New Zealand, across the political spectrum, for institutional reforms to manage global catastrophic risk (Kerr, Boyd and Wilson, 2025).

Basic needs continuity and 'Plan B' infrastructure

The challenge of ensuring continuity of basic needs (water, food, shelter, energy, transport, communications) under any scenario requires both strengthening existing systems and developing alternative 'Plan B' infrastructures and processes capable of functioning at a bare minimum level when primary systems fail. Basic needs should be defined in legislation, and their provision mandated and ensured indefinitely during global catastrophe. This is not just about hardening primary infrastructure; it involves distributed food production and transport capabilities, local energy generation (e.g., liquid biofuels), resilient inter-island transport, and backup communications systems (Boyd et al., 2023). Such redundancy represents not inefficiency, but essential insurance against the cascading failures that characterise contemporary risk landscapes. International models, including the US Global Catastrophic Risk Management Act, demonstrate explicit focus on basic needs continuity under catastrophic scenarios, providing templates New Zealand could adapt to local circumstances.

Intergenerational fairness in financing

Financing resilience investments (including plans, strategies and infrastructure) raises questions of intergenerational fairness that traditional cost–benefit analysis handles poorly. A potentially appropriate approach involves borrowing now to build resilience immediately while ensuring that both current and future citizens contribute according to benefits received. The aim is to avoid disadvantaging current populations through delayed action (abrupt hazards can strike at any moment), while preventing unfair burden-shifting to future generations. Resilience investment should align with national infrastructure planning, requiring the likes of the Infrastructure Commission's (and other agencies') current climate-focused mandate to expand towards comprehensive global risk consideration. Financing resilience could also be linked to excise taxes that protect human and social capital (e.g., taxes on tobacco, alcohol, gambling and junk food), and to risk mitigation measures such as using revenues from higher carbon charges. Given the above risks, the commodities and expertise needed for resilience should be sourced soon, as they may not be easily obtainable in some of the futures described.

Conclusion

These recommendations extend far beyond critiquing the Department of the Prime Minister and Cabinet's draft long-term insights briefing towards establishing principles applicable across all public sector risk and resilience thinking. The fundamental insight involves recognising that traditional approaches, whether focused on individual hazards, conventional disaster risk reduction (as per the Sendai Framework), or even systematic risk assessment, remain reactive to underlying forces generating continuous crisis. Building long-term resilience amid the metacrisis requires understanding how competitive dynamics, technological acceleration and coordination failures create the conditions necessitating resilience in the first place. That said, fixing root causes is hard, and so building resilience to the underestimated and non-linear threat of global systemic and catastrophic risk remains a necessity and requires an integrative approach across risk and resilience silos.

There is both sobering pause and strategic opportunity. New Zealand's geographic advantages, renewable energy potential, democratic institutions and social capital position it uniquely well to model anticipatory governance that addresses global catastrophic risk and resulting abrupt hazards, but also root causes, rather than merely managing symptoms. Regional cooperation with Australia and Pacific neighbours offers additional strategic opportunities to build collective resilience to global risk that is inherently cross-border. The result would be good for the wellbeing of New Zealanders, for populations depending on our food exports, and for humanity should some catastrophe ever threaten a global collapse.

By embedding systemic thinking, expanding the considered hazards, ensuring transparency, and implementing institutional reforms oriented towards management of risk rather than reaction to hazards, New Zealand can establish itself as a global leader in building resilience to 21st-century challenges through genuine democratic engagement with citizens and not technocratic solutions alone. The alternative of continuing reactive approaches that address symptoms while global stresses and underlying generators remain unchanged ensures that risks will continue to emerge faster than any intervention can manage them, potentially undermining the prosperity and security that resilience investments aim to protect.

1 This article extends the authors' submission to the New Zealand government on the DPMC and Ministry for the Environment's long-term insights briefing on building New Zealand's long-term resilience to hazards. The original submission can be accessed at https://adaptresearchwriting.com/wp-content/uploads/2025/08/250825-response-to-dpmc-draft-ltib_islands-for-the-future-of-humanity.pdf.

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Andrew Coleman

Escaping Muldoon's Shadow
tax and retirement options for 21st-century New Zealanders

Abstract

New Zealand has the most unusual tax arrangements for providing public retirement incomes and taxing private retirement incomes in the OECD. The key differences are: (1) public retirement incomes are funded from general taxation, not social security taxes or contributions to a compulsory savings scheme; and (2) private savings are taxed on an income rather than expenditure basis. These arrangements distort investment decisions, reduce income levels, raise long-run tax rates, and artificially inflate property prices. Change is feasible, even if New Zealand Superannuation is not changed, and may be the key to reversing New Zealand's long-term economic underperformance.

Keywords tax distortions, social security taxes, compulsory savings schemes, inequality

Fifty years ago a Labour government headed by Norman Kirk introduced a contributory retirement savings scheme. Working people were required to pay 8% of their wages and salaries to the government and in return they were to receive a pension based on the size of their contributions (Tracy, 1975). The scheme did not last. It was scrapped within a year by a National government led by Robert Muldoon, and replaced by a universal retirement income scheme that ultimately evolved into New Zealand Superannuation.

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New Zealand Superannuation has two features that make it fundamentally different from the retirement income schemes adopted in almost all other OECD countries. First, it does not have a contributary component. Most OECD countries combine a contributory system with a welfare-based pension for those whose contributory pensions are very small, but New Zealand only has a welfare-based system (Overbye, 1997). All people over 65 meeting eligibility requirements have the same pension entitlement, which is independent of their wealth, their previous earnings or how much they currently earn.[1] Second, it is funded from general tax revenues, not social security taxes or contributions to compulsory savings schemes.

Different, of course, does not mean bad. Nonetheless, despite some attractive features, New Zealand Superannuation has two major downsides. It imposes very high costs on current and future generations of young New Zealanders, who will pay much more in taxes than is necessary to provide them with the pensions they will receive (Coleman, 2016, 2024). And it relies on unnecessarily distortionary taxes to raise funds, adversely affecting the wider

economy and exacerbating some dimensions of inequality.

New Zealand also has an unusual way of taxing private retirement incomes. In 1989 it disregarded the practices of most OECD countries – countries as diverse as Germany, Great Britain, Norway, Singapore, Sweden and the United States – and began taxing private retirement savings schemes in an unorthodox manner (Yoo and de Serres, 2004).

If New Zealanders could boast that their two different tax arrangements generated a high-wage, high-productivity and equitable economy, this would be some achievement. But it hasn't achieved even one of these things. Rather, New Zealand has chosen to tax capital incomes at high and variable rates, distorting investment decisions, reducing income levels, and artificially inflating property prices.

Moreover, even though labour incomes are taxed at low rates by OECD standards, it uses more distortionary taxes than those used in other countries, because there is no link between the taxes paid and the benefits received (Diamond, 2011). There are good reasons why none of the high-income, low-inequality countries of northern Europe, or any other countries for that matter, have adopted the New Zealand tax model.

This article outlines the consequences of New Zealand's unusual retirement income taxes. It is a strangely ignored topic. For example, even though the lack of social security taxes (or contributions to a compulsory savings scheme) is by far the most distinctive feature of New Zealand's tax system, this issue was almost entirely ignored by the 2001 Tax Review, and the 2010 Victoria University of Wellington Tax Working Group and 2018 Tax Working Group. When Robert Muldoon abolished the compulsory savings scheme in 1976, he cast a very long shadow over New Zealand's tax system. Fortunately, this shadow need not last much longer.

The case for social security taxes

A social security tax is a special tax on labour incomes that is used to fund social security benefits, particularly old age pensions.[2] Most OECD countries use social security taxes or compulsory contributions to retirement savings schemes to fund the contributory components of their government pensions (Whitehouse, 1999). The amount someone pays each year is recorded, and their lifetime tax payments are used to determine the pension they receive. It is not paid on capital incomes such as interest, dividends or rents. This means that different types of income are taxed at different rates.

Most countries have decided that the best response is to tax labour incomes at higher rates than capital incomes to ensure that wages can be as high as possible.

Many New Zealanders find it surprising that most countries tax different types of income at different rates. Surely, they say, all types of income ought to be taxed in the same way. Whether you earn $50,000 from working in a shop or on a farm or from interest from the bank, shouldn't the tax be the same? How can it be fair for people to pay higher taxes on labour incomes than on capital incomes?

It turns out that this is not the right question, as fairness is only one characteristic of a tax system, along with effectiveness and simplicity. A better question is: how do you design a tax system that is simple, effective and fair? Economists call this question the 'optimal tax' problem, following two Nobel prize-winning economists, Peter Diamond and James Mirrlees (Diamoand and Mirrlees, 1971a, 1971b).

Diamond and Mirrlees argued that it is often efficient to tax activities people can easily change at low rates, and to tax other activities at higher rates, even if this does not seem fair. It can make sense to tax labour incomes at higher rates than capital incomes, for example, since most people go to work no matter the tax rate, but they can easily change their investments if tax rates are high. This grates against the fairness principle, particularly as investment income tends to be concentrated among rich people. On the other hand, business people may be less willing to expand profitable businesses if capital incomes are taxed at high rates, or they may relocate their firms to other countries. This means that firms will typically be less productive, as they will have fewer resources in terms of machinery and capital.

There is clear evidence that some of the incidence of capital income taxes falls on wage earners: in Germany and the US, for example, evidence suggests that about half of the taxes on business profits fall on workers, because their wages are lowered (Suárez Serrato and Zidar, 2016; Fuest, Peichl and Siegloch, 2018). As a consequence, ordinary wage earners might find they are better off if the government taxes labour incomes at higher rates than capital incomes, because the higher wages they receive may more than offset the higher taxes they pay.

There is no easy way around this conundrum. Taxes that are fair may not be effective, and taxes that are effective may not be fair. Most countries have decided that the best response is to tax labour incomes at higher rates than capital incomes to ensure that wages can be as high as possible. One solution pioneered by Norway, Sweden and Finland – countries that are widely regarded as some of the most progressive and equitable nations in the world – is to tax labour incomes on a steeply progressive scale, but tax capital incomes at a lower rate. In the 1990s these countries were so concerned that their businesses would invest too little or move to other countries if they taxed capital and business incomes too heavily that they decided to tax all capital income at the bottom labour income tax rate. However, labour income taxes are steeply progressive. That means that people earning high labour incomes not only have higher average tax rates than people on low incomes, but have higher tax rates than people who have high capital incomes.

Whether or not you think this Nordic tax system is fair, Scandinavian countries have adopted it because they think it is an effective way to have an equitable and high-income economy. The US tax experts Joel

Slemrod and Jon Bakija argue that the Nordic tax system is probably the largest advance in tax practice in the last 30 years, and note that Scandinavian countries have some of the least inequality despite this tax system (Slemrod and Bakija, 2017).

Most OECD countries do something similar to the Nordic tax system by levying social security taxes on labour earnings but not on capital earnings. Many countries raise 25–30% of their tax revenue from the social security taxes that are used to fund retirement incomes and some other forms of social assistance (ibid.). This allows lower income taxes, which reduces some of the distortionary effects of taxes on saving and investment.

In contrast, New Zealand has chosen to have high average income tax rates as it collects only 3–4% of its taxes as social security taxes, to fund the Accident Compensation Corporation. As a result, it has some of the highest taxes on capital incomes in the OECD – even though capital gains are largely exempt from tax.[3] However, it has some of the lowest 'combined' labour income tax rates in the world (income tax plus social security tax). This combination is not only the opposite of that chosen by the highly productive and equitable countries of Scandinavia, but it is opposite to the choices made by most other OECD countries as well.

Social security taxes or contributions to compulsory savings schemes have a second benefit. Income taxes applied to labour incomes may be less distortionary than income taxes applied to capital incomes, but they are still distortionary. Because many people have jobs that are unpleasant or boring, they are tempted to work less when the government collects a large fraction of their earnings as tax, or they may avoid well-paid but unpleasant work in favour of less demanding and less well-paid jobs. They may also refrain from moving from one city to another to take advantage of better paying jobs, because they only keep a fraction of the pay increase. Why not live near the beach in Tauranga on $80,000 per year rather than move to Auckland for $100,000 per year if the government takes 33% of the extra $20,000 as income tax, and 15% as GST?

When retirement benefits are linked to the amount of social security taxes someone has paid, or their contributions to a compulsory savings scheme, these taxes or contributions have a smaller effect on labour market participation decisions than ordinary income taxes because people know they will be getting some of their taxes or contributions back as higher retirement incomes. Ask any Australian whether they treat their contributions to their personal retirement account the same as the money they pay in taxes and they will say 'No'.

[In 1989 New Zealand] ceased taxing dedicated retirement savings products by the standard international method and created one of the most distortionary taxation environments for retirement savings – and housing markets – in the OECD.

It is not possible to be precise about the relative distortionary effects of income taxes and social security taxes, as there is not much statistical evidence on the topic. Nonetheless, most evidence from cross-country research programmes supports the common-sense position that people behave differently when the taxes they pay increase their retirement incomes than when the taxes they pay are gone forever (Disney, 2004; Liebman, Luttmer and Seif, 2009; Börsch-Supan and Cole, 2020).

Some people object that social security taxes tend to be regressive. This is true, but it does not mean that the tax system overall must be regressive. Most countries with social security taxes reduce other income taxes on low-income people, and raise top marginal income tax rates on high-income workers. New Zealand could do this as well if it were to adopt social security taxes or a compulsory savings scheme to fund retirement incomes. Low-income individuals would be required to pay social security taxes on their labour incomes, but might not need to pay income taxes until they reached a high income threshold. A social security tax could also be combined with a family tax credit, so low-income households would get an income tax refund while paying social security taxes or making contributions to a compulsory savings scheme.

As many European countries show, it is possible to have a tax system that is both more redistributive and less distortionary than the one used in New Zealand. Gustafsson (2023) provides an extensive discussion of the ways that a retirement scheme that provides individual pensions that are proportional to the social security taxes each person pays can simultaneously increase aggregate labour supply and reduce life-cycle inequality. Indeed, European countries with the largest governments and the most redistribution are most likely to use social security taxes precisely because they are most fearful of the bad effects that can occur if they use poorly designed taxes to raise revenue (Lindert, 2004, pp.235–45).

The taxation of private retirement savings

In 1989 New Zealand made a second major change to its tax system. It ceased taxing dedicated retirement savings products by the standard international method and created one of the most distortionary taxation environments for retirement savings – and housing markets – in the OECD. The first effect was to induce a partial collapse of the structured retirement savings scheme industry. The introduction of KiwiSaver in 2007 rejuvenated the sector, but the 1989 tax regime continues to create large distortions. It lowers returns to savers, it raises average tax rates in the long run, it penalises people who invest in interest-earning assets when there is inflation, and it artificially increases house prices.

The peculiarities of our tax system revolve around the differences between income taxes and expenditure (or consumption) taxes. Income taxes are paid

in the year when income is first earned. In contrast, expenditure taxes are paid when income is spent rather than when it is earned. This is the same thing if you spend everything as you earn it, but if you save some of your income, the tax is delayed. One of the main disadvantages of income taxes is that they reduce the rate at which the returns on savings compound, which distorts saving and investment decisions by more than expenditure taxes (Banks and Diamond, 2010).

EET and TTE

To reduce the distortionary effects of taxes on saving and investment, most OECD countries tax the income earned in special retirement savings accounts such as KiwiSaver differently from the income earned from other assets. The system they use is called an EET (exempt, exempt, tax) system. EET was first proposed in the 1930s by Irving Fisher and was widely adopted in the 1950s and 1960s (Fisher, 1937). It is considered an expenditure tax, as income saved for retirement is not taxed when it is first earned, but when it is spent in retirement. Under EET:

- income put into a retirement fund is exempt from tax when it is earned;
- interest and dividends and capital gains earned on this money are exempt from tax as they accumulate; and
- tax is paid on all of the money when it is withdrawn.

In contrast, most income in New Zealand, including the earnings in KiwiSaver and other retirement income accounts, is taxed on a 'TTE' basis:

- all income is taxed as you earn it, with no exemptions for income that is saved;
- interest and dividends are taxed as they accrue; and
- savings and accumulated earnings are exempt from further direct taxation when they are withdrawn or the investments are sold.

This small difference in taxation can have large effects on accumulated savings. Suppose a person pays tax on interest at 33% and the interest rate is 5%. If they were to place $1,000 of after-tax income in a savings account at the start of every year from age 25 to age 65, and then withdraw it slowly in equal instalments until it is all spent by the time they are 90, they would have 75% more to spend every year in retirement under an EET system than under a TTE system.[4]

Unfortunately, New Zealanders who save by accumulating interest-earning assets pay much higher taxes on their real interest income than the taxes paid on almost any other class of investments.

EET taxes also have a second benefit: they significantly reduce the tax advantage enjoyed by owner-occupied housing. In fact, an EET system for retirement savings reduces the tax on savings to a similar, although not identical, level to the tax on owner-occupied housing. This reduces the incentives for people to build bigger houses or bid property prices to artificially high levels, and it does so without increasing taxes on housing.

Why is this? In most countries, including New Zealand, housing income is taxed on a 'TEE' basis.

- houses are purchased and/or paid off from income that has already been taxed when it was earned;
- imputed rent (the value of rental services obtained by the owner-occupier) is tax exempt; and
- the value of the house, including any capital gains that accrue when it is sold, are also exempt from tax.

It turns out that there is not that much difference between TEE (housing) and EET (retirement savings) because the annual returns (either housing services, or interest and dividends) are not taxed each year but are only taxed when income is first earned (TEE) or when savings are realised and withdrawn (EET). This result was first demonstrated by Lord Kaldor in the 1950s (Kaldor, 1955). However, when housing is taxed on a TEE basis and investment income is taxed on a TTE basis, there is a big difference, as retirement savings are more heavily taxed than housing. This difference creates incentives to build larger houses and pay more for owner-occupied property to the extent that housing is equity financed.[5]

Who in New Zealand doesn't know that the best way to have saved for retirement in the last 30 years has been to buy the most expensive house they could afford and wait for it to appreciate? When everyone has these artificial tax incentives, the result is artificially large houses and artificially high land prices. It also means many households have highly concentrated investment portfolios, often comprising one or two residential properties in the same city, rather than a diverse range of assets across sectors or countries.

A third desirable aspect of EET tax schemes is that they are neutral with respect to inflation. This is not the case with a TTE (income tax) scheme, which raises the effective tax rate on real interest income above the statutory rate in an inflationary environment, sometimes to more than 100% (Viner, 1923). Unfortunately, New Zealanders who save by accumulating interest-earning assets pay much higher taxes on their real interest income than the taxes paid on almost any other class of investments. In contrast, the EET tax schemes used in most OECD countries tax real interest income at the statutory rate, irrespective of the inflation rate. Since interest-earning assets tend to be favoured by less sophisticated, more risk-averse and older investors, the 1989 tax change means that New Zealand now taxes the simplest savings products and the least sophisticated savers at higher rates than other investment products or investors.

Since EET taxes have many desirable properties, it is reasonable to ask why all capital income is not taxed in this manner. One reason is that EET requires people to pay tax to the government when they spend their savings. Governments suspect people may 'forget' to pay their taxes when they spend their savings, so they restrict EET taxes to easily monitored accounts.

Retirement savings accounts are easily monitored, and in most countries they are peoples' biggest asset after their house. If a country taxes these assets on an EET basis, it covers a big fraction of savings. But other savings products can be taxed on an EET basis to reduce the distortionary consequences of income taxes, as is the case in Great Britain.

The change made in 1989 occurred for two reasons. First, the government wanted to tax retirement savings in the same way as other investments. Rather than reduce distortionary income taxes on other investments, however, they chose to increase them on retirement savings. Arguably, this made the whole tax system more distortionary, as it increased the fraction of savings subject to the more distortionary effects of income rather than consumption taxes, and it increased the tax advantage enjoyed by owner-occupied housing over other asset classes. This increased incentive to invest in residential property most likely inflated house prices by an artificial amount, imposing unnecessary costs on subsequent generations. Strangely, the government's advisors didn't even consider the effects of the tax change on house prices, even though housing is the biggest asset class in New Zealand (New Zealand Government, 1988; Todd Task Force, 1992).

Second, the government wished to bring forward the time when taxes were collected on dedicated retiring savings schemes. This helped reduce the government deficit in the short term, and reduced the level of government debt in the medium term. Unfortunately, the reduction in government debt levels comes at a considerable long-term cost. First, it reduces the long-term returns to private investors, who have lower returns under a TTE system than under an EET system, and thus lower wealth for any level of savings. Second, it raises tax rates in the long term, so long as the average return on the investments held in KiwiSaver accounts exceeds the government bond rate. This is because when a government taxes retirement savings on an EET basis it has a claim on an asset that is compounding at a higher rate than the government interest rate, and thus when the taxes are ultimately paid it will be able to pay all interest accumulated on its debt and have extra money left over.

> Since 1976 New Zealand has adopted a highly unusual set of taxes to fund public retirement incomes and tax private incomes. No other country does what New Zealand does.

The New Zealand government often boasts that it has lower government debt levels than most foreign governments, but it ignores the large offsetting claims these governments have on EET-taxed private retirement savings accounts (see Isaksen et al., 2014). So, while the 'benefit' from taxing retirement savings on a TTE basis is a lower government debt level, it comes at the expense of lower private wealth and higher average tax rates – a bargain that few other countries have found attractive.

Hurihia to aroaro ki te ra, tukuna to ātārangi ki muri i a koe[6]

Do New Zealanders have to retain the peculiar set of taxes used to fund public retirement incomes, or the taxes they pay on KiwiSaver or other dedicated private retirement income accounts? The answer is 'No'. A range of alternatives exist. The nature of these alternatives depends on whether New Zealanders want to reform New Zealand Superannuation or adopt a compulsory savings scheme, as well as change taxes.

There are two key issues. First, any decision on the taxes used to fund public retirement incomes can largely be made independently of the decisions on how to tax private retirement savings schemes such as KiwiSaver. Both, one or neither can be changed.

Second, it is not necessary to make changes for all New Zealanders. In particular, it is possible for younger New Zealanders to adopt a different retirement scheme and a different set of taxes than older New Zealanders. This is possible for the simple reason that a person cannot change their birthdate, so it is possible to have different systems without creating incentives to switch from one to another. Since New Zealand Superannuation is an inefficient way of providing retirement incomes to younger New Zealanders, they may wish to choose a different system, one designed for people who will live their adult lives in the 21st century, not the 20th century. Since no New Zealanders aged under 45 voted in the 1997 compulsory retirement savings referendum, let alone the 1975 or 1987 elections, democratic principles suggest younger New Zealanders should be allowed to choose a different system if that is what they want.

Nor is it necessary for older New Zealanders to change the type of taxes they pay if young people want to change the retirement income systems or types of taxes they use. But they could change them. It is straightforward to allow income and social security tax rates to vary by age as well as income, as Switzerland already demonstrates. Older people may wish to adopt different taxes even if they do not change the structure of New Zealand Superannuation. For example, they could adopt social security taxes to partly fund New Zealand Superannuation, even though taxes they pay do not affect the retirement benefits they obtain. Ireland already does this. And it would reduce the distortionary nature of New Zealand's current tax system.

In other work I have argued that since the New Zealand economy is dynamically efficient, young New Zealanders could adopt a compulsory savings scheme – KiwiSaver 2.1 – that partially replaces New Zealand Superannuation and which delivers retirement benefits that are at least as large as New Zealand Superannuation, at lower cost (Coleman, 2024). Such a scheme would allow a long-term reduction in the tax distortions that afflict New Zealand, as well as providing additional benefits in terms of higher retirement benefits and reduced wealth inequality. When you start with a flawed system, big improvements are possible.

Tax decisions ultimately involve a trade-off between equity, efficiency and administrative simplicity. Since 1976 New Zealand has adopted a highly unusual set of taxes to fund public retirement incomes and tax private incomes. No other country does what New Zealand does. There is very little reason to suspect that New Zealand has a system that achieves either its equity or efficiency goals, and good reasons to suspect it does not. Indeed, there is a joke told in tax circles that New Zealand politicians and bureaucrats have the 'Wellington syndrome' – they have fallen in love with the income tax system that abuses them. Whether New Zealand decides to change its retirement system, a re-examination of New Zealand's retirement income funding and tax mechanisms is long overdue.

1 Pension entitlements are identical, but actual payments depend on whether a person lives by themselves or with other people.

2 Social security taxes are levied on self-employed people as well as employees in most countries. Among the G7 countries, for example, most self-employed people are liable for social security taxes in the US, UK, Germany, France, Canada and Italy, although in some cases there are special rules giving exemptions to some classes of self-employed people (e.g., freelancers). The situation is more complex in Japan, where the social security obligations of employees and the self-employed are different.

3 International comparisons of tax rates on capital income are difficult to make, as definitions of capital income vary across countries. Much of the work is done by the OECD and the World Bank to ensure consistency of sources and methodologies. Coleman (2019, appendix 1) summarises many of these results, and shows that New Zealand is often recorded as having some of the highest taxes on capital income in the OECD, particularly amongst smaller OECD countries. (See also Hanappi, 2018, from which much of this data was sourced.)

4 Under TTE, the person accumulates $84,410 by age 65, which allows after-tax withdrawals of $4,875 every year until they are 90. Under EET the person can place $1,492 into the account every year and still have the same after-tax income. This accumulates to $189,310 by age 65. This allows annual withdrawals of $12,792, which reduces to $8,570 after tax.

5 New houses have become much larger and land prices have gone up significantly since New Zealand switched to a TTE retirement saving tax regime; in fact, between 1990 and 2020 New Zealand had a faster increase in house prices than any other OECD country. Tax is not the only reason for both of these changes, and it is difficult if not impossible to establish empirically how much of this was due to the tax changes because of all the other changes that occurred in the economy in that period. (See Coleman, 2017, 2019.)

6 Turn and face the sun and let the shadows fall behind you.

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Conal Smith, Luisa Beltran-Castillon,
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Occupation and Subjective Wellbeing in Aotearoa New Zealand

Abstract

This article investigates the relationship between occupation and wellbeing in New Zealand, using data from the New Zealand General Social Survey (NZGSS), the New Zealand Household Economic Survey (HES) and administrative records. It addresses a gap in information available to inform career decisions beyond pay and working conditions. Findings reveal that while higher incomes generally correlate with higher life satisfaction, this isn't always the case, with some occupations reporting higher or lower life satisfaction than expected based on income alone. 'Defence force, firefighters and police officers', 'teachers', and 'air and marine transport professionals' all have an average level of life satisfaction that is well above what might be expected based on their incomes. By contrast, while 'legal professionals' (lawyers) have the second-highest average income in the dataset, their life satisfaction is below average and well below what might be expected based on their income. This information on the relationship between occupation and wellbeing can aid career decision making, as well as help to identify occupations needing support to improve worker wellbeing.

Keywords wellbeing, occupation, labour market, job satisfaction, gender equity

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The choice of career is one of the most important decisions a person makes in their life. In OECD countries, people spend around a third of their waking hours in paid work, while employment and workplace quality rank among the most important drivers of happiness (De Neve et al., 2018). Our occupation affects not only how much we earn, but also how we allocate our time, what we do during our days, and who we socialise with (Viñas-Bardolet, Guillen-Royo and Torrent-Sellens, 2018). While changing career is possible, it comes with significant costs in time, effort and forgone opportunities. For all of these reasons, deciding on a career is a decision where it is important to choose wisely.

Despite the significant impact of career choices on people's lives, limited information is available to inform career decisions. Labour market analysis typically emphasises pay and hours of work as the main characteristics of job quality. In addition, job advertisements often mention fringe benefits, such as flexible work arrangements, health insurance and annual leave. Yet information on pay, working hours and fringe benefits present only a partial picture of how choosing a particular job will affect a person's life. Much less

widespread is information on the overall level of wellbeing associated with different types of occupations (Tenaglia, 2022).

This article aims to address this gap by exploring the relationship between occupation and wellbeing, as measured through life satisfaction (a widely used subjective wellbeing measure), in the New Zealand context. At an individual level, this information can help school leavers and those changing careers make more informed decisions. At an aggregate level, it provides insights into which occupations are characterised by lower subjective wellbeing outcomes and may be in need of support. Promoting workplace wellbeing across occupations is important because happy employees are more engaged, productive and successful in their careers (Bryson, Forth and Stokes, 2017; Walsh, Boehm and Lyubomirsky, 2018). Moreover, research shows that work experiences can spill over into home life and influence the quality of family life and relationships (Ford, Wang and Huh, 2018).

Occupation and subjective wellbeing

Subjective wellbeing refers to people's subjective experiences of their wellbeing. It is usually measured through self-reported responses in a survey asking how the individual feels and thinks about his or her life. One such measure is overall life satisfaction, which captures people's responses to survey questions on how they evaluate their lives overall. Life satisfaction data has been shown to be meaningfully associated with the things we would expect to be important to wellbeing, such as good health, secure incomes and strong social relationships, as well as being able to predict people's behaviour in real-world settings (OECD, 2013).

There is well-established evidence that having a job has a strong positive impact on life satisfaction (Clark and Oswald, 1994, Winkelmann and Winkelmann, 1998; Kassenboehmer and Haisken-DeNew, 2009). Being employed enables people to meet their financial needs (Diener and Oishi, 2000; Schyns, 2000). However, studies show that there is much more to employment than income alone (Ray, 2021). Jobs influence people's wellbeing in a variety of ways, including through needs gratification (e.g., enabling people to meet their financial and interpersonal needs), offering opportunities for personal growth and providing meaning in one's life, as well as through the existence of work-related stressors (Erdogan et al., 2012).

For example, having learning and development opportunities at work has been shown to be associated with greater life satisfaction (Perrone, Webb and Blalock; 2005; Rice et al., 1985). Similarly, people who experience a supportive environment at work generally report higher levels of life satisfaction (Michel et al., 2009). Having a sense of autonomy is also important. Employees who can freely choose their work activities or the way in which they perform their tasks are more likely to find their work meaningful and enjoy higher satisfaction with life (De Cuyper, Notelaers and De Witte, 2009; Day and Jreige, 2002).

At the same time, work-related stressors, such as job-related tension and work–non-work conflict, can negatively affect people's experiences of wellbeing. Research in this area shows that daily hassles, such as problems with one's supervisor, unfair treatment, or disliking one's daily activities, are associated with lower life satisfaction (Maybery et al., 2007; Gadermann and Zumbo, 2007; Rochlen, Good and Carver, 2009).

Aspects of work can also have an impact on non-work domains – for example, through the spillover of work stress into family and other social relationships, the time available to meet obligations in the non-work domain, or the ability to make ends meet (Carlson and Kacmar, 2000; Matthews and Barnes-Farrell, 2010). Conversely, the skills learned at work (e.g., time management, planning and problem-solving skills) may enhance non-work experiences, including family life (Ayres and Malouff, 2007). Given the spillover effects of work on non-work outcomes, the main focus of this study is to provide information on the relationship between occupation and New Zealanders' overall life satisfaction.[1] In turn, additional information is provided on how this relates to their incomes as well as their job satisfaction.

Similar studies in the UK have shown how life satisfaction differs between people in different types of occupations. For example, analysing data from the UK annual population survey, 2012–22 by occupation, Tenaglia (2022) found that managers and directors showed the highest mean levels of life satisfaction. They were also those with the highest percentage of permanent jobs, highest median gross annual earnings, and those who enjoyed more autonomy (as measured by opportunities to work from home). In Tenaglia's study, caring and leisure[2] occupations presented the highest level of feeling that life is worthwhile, but also presented a high risk of stress and less financial stability. Those in elementary occupations,[3] as well as sales and customer service occupations, were more likely to experience low life satisfaction and worthwhileness. Using the same dataset, Fujiwara, Dolan and Lawton (2015) found that creative occupations (for which they constructed their own occupational code) generally had higher than average levels of life satisfaction, worthwhileness and happiness than employment in general, although most creative occupations are

> Making subjective wellbeing data by occupation available for the New Zealand context can help school leavers and those intending to make a career change make more informed decisions ...

also characterised by higher levels of anxiety.

Making subjective wellbeing data available by occupation for the New Zealand context can help school leavers and those intending to make a career change make more informed decisions, as well as identify the need for specific policy intervention to help support the wellbeing of workers in certain types of occupations. To that end, this study seeks to answer the following questions:

- What is the average life satisfaction of New Zealanders by occupation at age 40 (mid-career) and how does this relate to their income?
- What is the relationship between income and job satisfaction in New Zealand and how is people's job satisfaction related to their overall life satisfaction?
- Does women's experienced life satisfaction across occupations differ from that of men?

Sales support workers have among the lowest average incomes of any occupation and also have one of the lowest average levels of life satisfaction, similar to the findings by Tenaglia ...

Data and measurement

The analysis in this study is based on data collected by Statistics New Zealand on the life satisfaction, job satisfaction, incomes, occupation and demographic characteristics of approximately 20,000 New Zealanders. Information on life satisfaction, job satisfaction, occupation and demographic characteristics comes from the New Zealand General Social Survey (NZGSS, 2014, 2016 and 2018) and the New Zealand Household Economic Survey (HES, 2018). Pooling and Z-standardising data on these indicators across multiple waves of the NZGSS and the HES ensured a larger number of observations and enabled more granular analysis across occupations.

Life satisfaction is measured on an 11-point scale using the following question in the NZGSS: 'Where zero is completely dissatisfied, and ten is completely satisfied, how do you feel about your life as a whole?' (0, completely dissatisfied – 10, completely satisfied). In the 2018 HES a 5-point labelled Likert scale was used (very dissatisfied, dissatisfied, no feeling either way, satisfied, very satisfied). Both the NZGSS and HES responses were Z-standardised to a mean of 0 and a standard deviation of 1 to allow for the data to be analysed jointly. Job satisfaction is available only in the NZGSS and is measured on a 5-point scale, with respondents asked: 'Please think about the last four weeks in your job. How do you feel about your job?' (1, very satisfied – 5, very dissatisfied). Incomes are calculated from administrative records. Estimated mean incomes are reported relative to 2014 wages and salaries and are adjusted by the consumers price index to reflect constant 2017 New Zealand dollars.

Occupational classification is based on the Australian and New Zealand Standard Classification of Occupations (ANZSCO) (Statistics New Zealand, 2019). ANZSCO (Version 1.3) consists of nine overarching categories: managers, professionals, technicians and trades workers, community and personal service workers, clerical and administrative workers, sales workers, machinery operators and drivers, labourers, and residual categories. The analysis in this article started from the level 4 classification, which is the most granular classification of occupations. Subsequently, occupations were grouped together to ensure a minimum of 50 observations per occupation, resulting in a total of 83 occupations in the final dataset.

The above information was analysed through the Integrated Data Infrastructure (IDI), an anonymised New Zealand dataset that allows researchers to access Statistics New Zealand information without being able to identify specific people in the data.[4] Only aggregate results – such as the averages reported here – can be released from the IDI. Regression analysis was used to obtain the average life satisfaction and income for each occupation after controlling for demographic effects. These estimates were then used to generate predicted values for life satisfaction and income for a representative person at age 40.

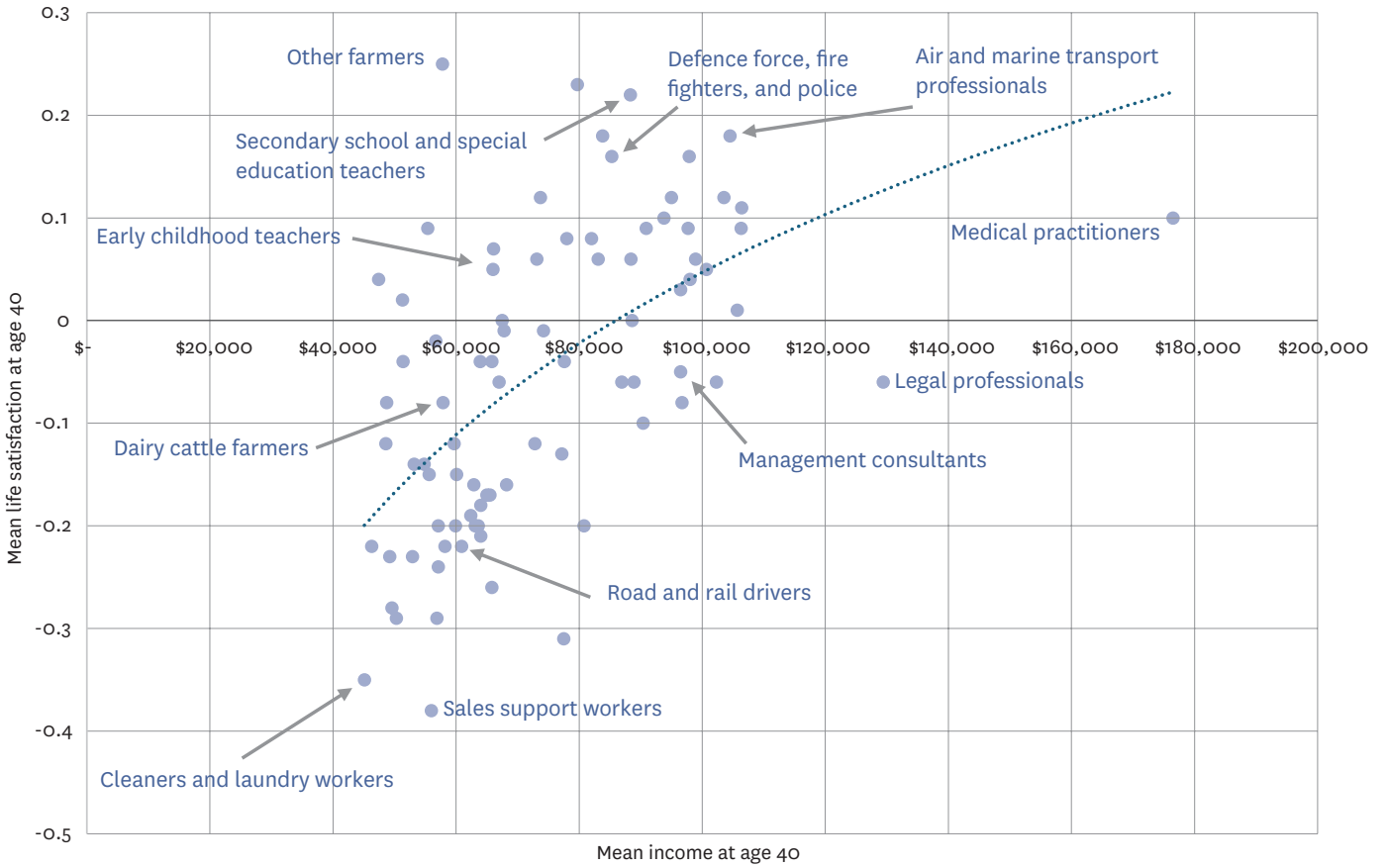
The results described below are based on three rounds of analysis. The first round of analysis explores the average life satisfaction of New Zealanders by occupation at age 40 (mid-career), in relation to their income. The second round of analysis takes a narrower view of the relationship between income and job satisfaction in New Zealand and explores how people's job satisfaction is related to their overall life satisfaction. The third round of analysis examines whether women's subjective wellbeing across occupation differs from that of men. All analyses were controlled for differences between occupations in age, sex and ethnicity.

Results

Occupation, income and life satisfaction

Figure 1 shows the average life satisfaction and average income for people in different occupations based on data from the NZGSS and HES together with administrative income data. After controlling for differences between occupations in age, sex and ethnicity, the expected life satisfaction and income of a person at age 40 (mid-career) for 83 different occupations was estimated. Each point plotted in Figure 1 represents a different occupation, with the height of the point on the vertical axis indicating the average life satisfaction of people in that occupation and the distance of the point on the horizontal axis showing the average income. Only a handful of examples are labelled in Figure 1, but Table 1 in the statistical appendix provides an overview of the expected income and life

Figure 1: Life satisfaction and income by occupation at age 40



Source: New Zealand General Social Survey, 2014–18, Household Economic Survey 2018, and IDI

satisfaction of a person at age 40 for all 83 occupations in the dataset.

The dotted line through the middle of Figure 1 shows the relationship between life satisfaction and income implicit in the data used to produce the chart. As expected, occupations with higher average incomes tend to have higher average life satisfaction. For example, air and marine transport professionals (pilots) have both a high average income and high life satisfaction. Sales support workers have among the lowest average incomes of any occupation and also have one of the lowest average levels of life satisfaction, similar to the findings by Tenaglia (2022).

However, it is also clear that income is not the only thing that counts for subjective wellbeing. There are many occupations where the life satisfaction point is plotted above the dotted line, indicating jobs where people are more satisfied with their lives than one would expect based on income. Defence force workers, fire fighters and police officers all have an average level of life satisfaction that is well above what might be expected from their incomes, as do teachers, which may be explained by the perceived societal value of their work (Dur and Van Lent, 2019). Occupations that fall below the dotted line are those where people are less satisfied with their lives than would be expected from their income. For example, medical practitioners and legal professionals (lawyers) have the highest and second-highest average income in the dataset but their life satisfaction is below average, and well below what might be expected based on their income (the blue dotted line).

Figure 1 also shows that sometimes jobs in relatively similar industries can have very different subjective wellbeing outcomes. For example, dairy cattle farmers in Figure 1 have similar incomes to other farmers, but much lower life satisfaction. The poor wellbeing of dairy farmers is in line with earlier reports on their mental health, with half (48%) of dairy farmers indicating they had experienced a mental health issue in 2023 (Dairy NZ, 2023). Contributing factors to these low levels of subjective wellbeing among dairy farmers might include negative public perceptions of their occupation due to environmental concerns, a demanding work schedule, financial pressures, and potential feelings of isolation and limited social interaction (Renews, 2021), as well as high average debt levels (Ma, Renwick and Zhou, 2020).

Another example where jobs in a similar industry can have very different subjective wellbeing outcomes is the field of management. As Figure 1 shows, management consultants are less satisfied with their lives than might be expected given their incomes. In fact, referring to Table 1, it is evident that management consultants have a lower average life satisfaction than any other occupation with management in the title except retail managers.[5] This highlights the degree to which specific job characteristics are associated with people's experienced wellbeing.

Job satisfaction, income and life satisfaction

The second round of analysis zoomed in more specifically on the relationship between income and job satisfaction in New Zealand and how people's job satisfaction is related to their overall life satisfaction.

Figure 2: Job satisfaction, income and life satisfaction by occupation at age 40

Figure 2a: Job satisfaction and income

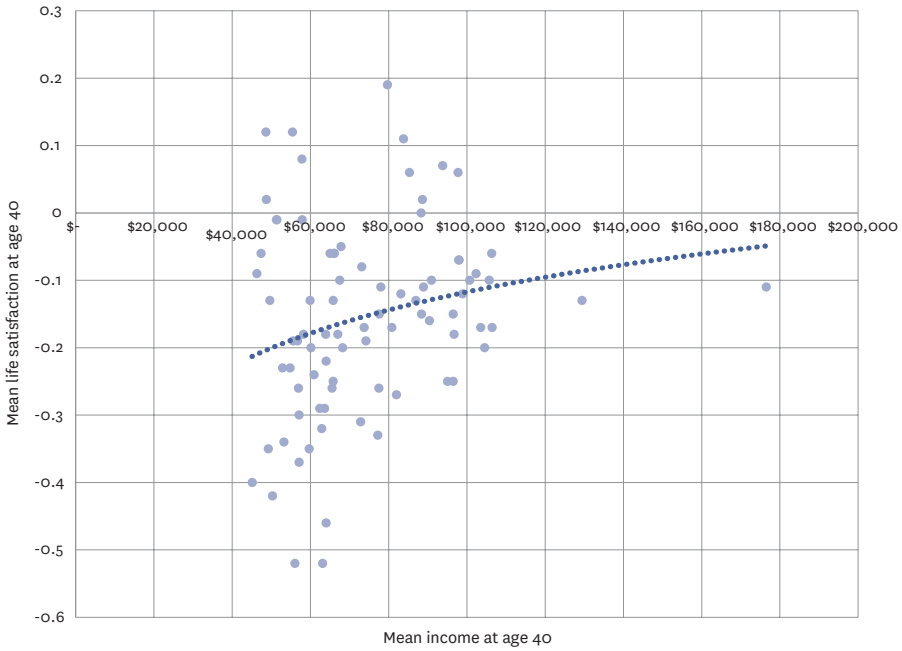
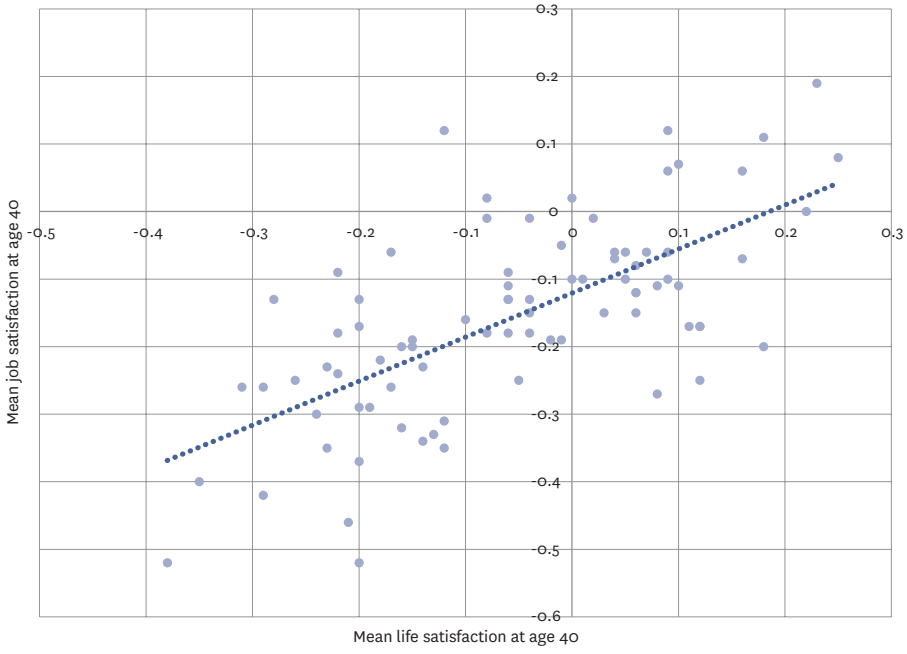


Figure 2b: Job satisfaction and life satisfaction



Source: New Zealand General Social Survey, 2014–18, Household Economic Survey 2018, and IDI

Many studies have demonstrated a positive correlation between job satisfaction and overall life satisfaction, with an average observed correlation of about 0.40 (Bowling, Eschleman and Wang, 2010). Some of this correlation may be inflated, as job satisfaction and life satisfaction tend to be measured using similar questions (Schimmack, Schupp and Wagner, 2008). Yet, also in studies of the relationship between job satisfaction and spousal reports on life satisfaction (i.e., where the two measures are reported by different people), the correlation between the two variables remained greater than 0.27 (Judge et al., 1998). Moreover, studies show that there is meaningful variation between job satisfaction and life satisfaction depending on context. For example, the reported correlation between job satisfaction and life satisfaction has been shown to be particularly high for jobs that may be regarded as a lifestyle choice and where high demands on personal life are placed, such as for people who are self-employed (Thompson, Kopelman and Schriesheim, 1992), flight attendants (Ayres and Malouff, 2007) and physicians (Judge et al., 1998).

Figure 2 shows the relationship between average job satisfaction (on the vertical axis) and average income (Figure 2a) and between average job satisfaction and average life satisfaction (Figure 2b) in our sample, with each point on the charts again representing a specific occupation. Figure 2a shows that the relationship between income and job satisfaction among occupational classes in New Zealand is relatively weak ($r^2 = 0.32$). Although job satisfaction increases somewhat as income rises, this effect is small compared with the relationship between income and life satisfaction that is evident in Figure 1. This highlights the importance of financial needs gratification for life satisfaction compared with job satisfaction. Although the relationship discussed here is a cross-section across occupations, the strong statistical association between income and life satisfaction is also found in other New Zealand studies at the individual level (e.g., Brown, Woolf and Smith, 2012; Carver and Grimes, 2019; Smith and Davies, 2020). In contrast, Figure 2b shows that across occupations there is a strong relationship between job satisfaction and life satisfaction (r2 = 0.45), in line with the meta-analysis by Bowling and colleagues (2010). This suggests that job satisfaction captures aspects of job quality other than income that are relevant to people's overall subjective wellbeing, as measured by life satisfaction.

The subjective wellbeing of men and women across occupations

The third round of analysis explored whether experiences of women in the workforce may differ from what the overall findings on the relationship between occupation, income and subjective wellbeing suggest. We were only able to do this for 57 occupations, because the survey sample was too small to produce meaningful estimates for some jobs after dropping male respondents. The results of this analysis are presented in Figure 3 and in detail in Table 2, which includes results for both men and women separately.

Figure 3a shows the average life satisfaction of women in a specific occupation on the vertical axis compared with the average life satisfaction for men and women combined on the horizontal

axis. There is a lot of consistency between women and the overall population with regard to which jobs are associated with high life satisfaction. Nonetheless, there are some occupations where large differences can be observed. For example, average life satisfaction is lower than expected for female road and rail drivers and for female natural or physical scientists. This may point to the challenges that women experience in professions that are traditionally male-dominated (Martin and Barnard, 2013). Conversely, average life satisfaction is higher than expected for female accommodation and hospitality managers and for female general managers and legislators, which have a higher proportion of female workers.

Interestingly, there is much less variation across occupations in the relationship between average female income and average income for the total population (Figure 3b). While there is some variation – with female financial brokers and investment advisors having particularly low incomes relative to the average for their profession – overall there is consistency across occupations. Nonetheless, the average income for women in any given occupation is about 76% of the average for the total population. The gap between average female and average total incomes in the data used here is greater than the official gender pay gap because we measure total income, not hourly pay rates, and have made no attempt to control for difference in career stage by sex within occupations.

Figure 3: Life satisfaction and income by occupation, women vs total population

Figure 3a: Life satisfaction

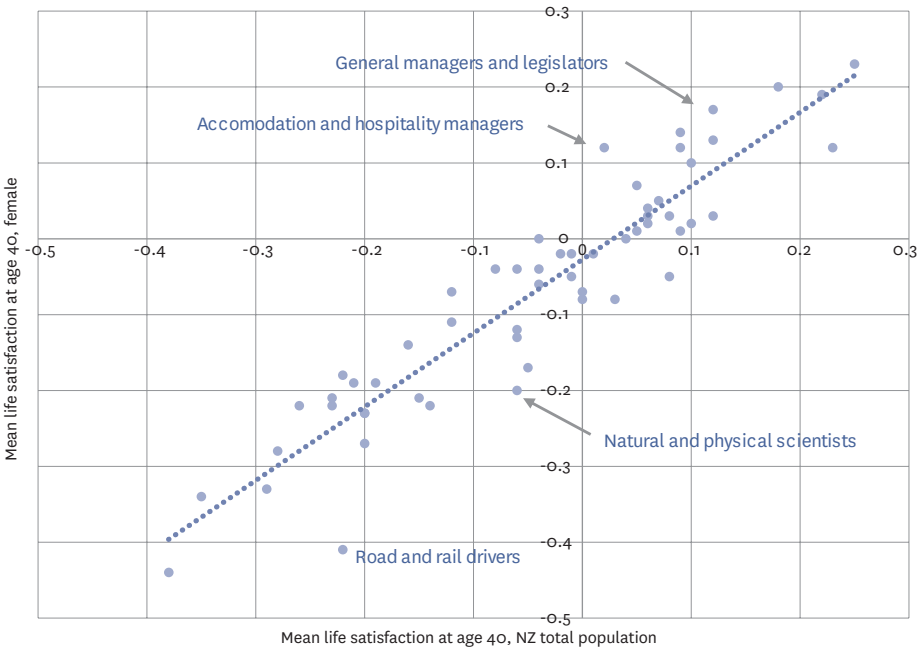
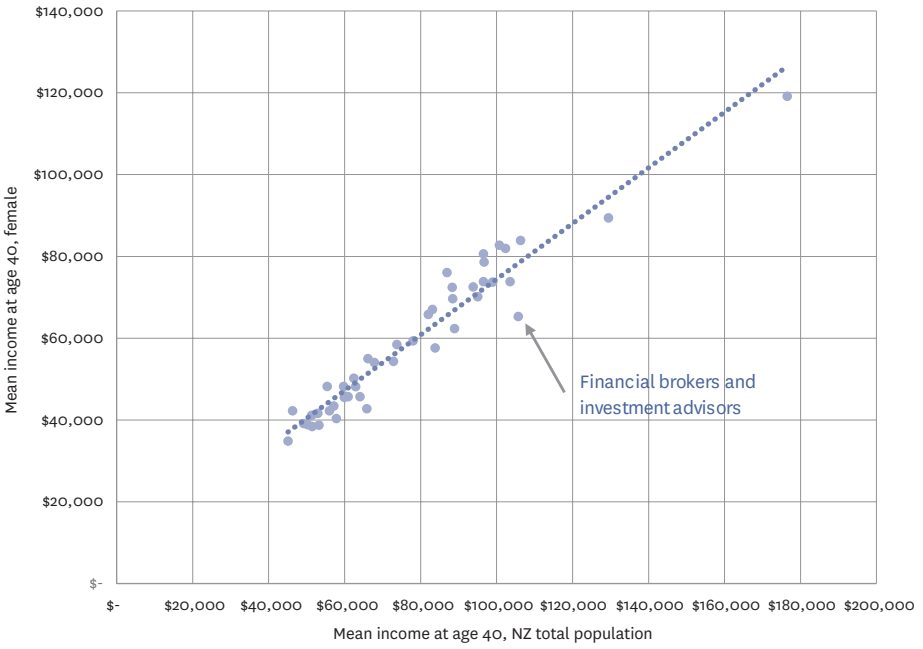


Figure 3b: Income



Source: New Zealand General Social Survey, 2014–18, Household Economic Survey 2018, and IDI

Discussion

The results presented in this article highlight the relevance of looking at factors other than income when evaluating different career choices and demonstrate that there is more to jobs than income alone. This raises important questions as to why certain occupations are associated with lower average wellbeing and others coincide with higher average wellbeing than one might expect based on income alone. In practice there is no one-size-fits-all, and job characteristics that may be disadvantageous to some (e.g., working alone, working late, or working in a high-intensity job), may work well for others. The results nonetheless offer relevant information for people to reflect on in relation to career choices and the reasons why subjective wellbeing differs across people in different occupations.

For policymakers and others – such as employers, professional bodies or trade unions – who have an interest in the wellbeing of people in different occupations, the results offer important insights into which jobs are associated with high non-pecuniary costs or benefits. For those occupations in New Zealand where subjective wellbeing is lower than might be expected based on income (e.g., medical practitioners and legal professionals), this signals a case for exploring the reasons why this is so. On the other hand, for those occupations that are associated with relatively high levels of wellbeing compared to income (e.g., early childhood teachers, secondary and special education teachers, defence force workers, firefighters and police officers), it is important to ensure that low levels of income do not become a barrier for people to continue to do their work with passion, especially given the high perceived societal value of many of these occupations (Dur and Van Lent, 2019).

The values presented in this article are averages for each occupation and do not in themselves tell us the causal impact of choosing a particular career on a person's wellbeing. It is likely that people with different personalities tend towards different jobs and that this accounts for some of the differences in life satisfaction between occupation groups. For example, people choosing to work in sports and personal service might be more optimistic than people in other careers. Similarly, some professions that seem to have high life satisfaction relative to their income (e.g., farmers or chief executives) might have a higher income in reality than is reflected in the administrative income data used here. For example, a vehicle owned by the farm rather than the farmer is not paid for out of the farmer's taxable income, but still contributes to the farmer's overall consumption.

An additional limitation is that some occupations have been clustered together to achieve an acceptable sample size for statistical analysis. For example, the category of sports and personal service workers includes fitness instructors and sports coaches on the one hand, as well as funeral directors and beauty therapists. The values presented in Table 1 are the average for the category, and the specific jobs within the category may be quite different. Future studies can build on additional waves of NZGSS, HES, and potentially Household Labour Force Survey data to further increase the sample size and allow for additional granularity in the analysis.

Future studies could also explore the relationship between occupation and other subjective wellbeing measures, such as experiences of anxiety or stress and feeling a sense of meaning and purpose in life. Existing research suggests that the relationship between occupation and subjective wellbeing may differ depending on which measure is used (Tenaglia, 2022; Fujiwara, Dolan and Lawton, 2015). For example, in their research on the relationship between creative jobs and wellbeing, Fujiwara, Dolan and Lawton found that creative occupations have higher than average levels of life satisfaction, worthwhileness and happiness than employment in general, while at the same time being characterised by higher than average levels of anxiety.

Compared with much of the public policy debate in New Zealand, the focus of this article could be seen as quite narrowly descriptive. There is little discussion here of implications for either labour market regulation or allocation of government resources. However, most of the choices that matter for people's wellbeing are made by individuals, families and whānau. Efficient markets and effective public policy are built on the assumption that people are relatively well informed about decisions that affect their welfare. Good public policy requires well informed citizens and this is not always the case.

One important route to better public policy – and better outcomes for people – is providing information that informs people about the consequences of actions for their wellbeing. O'Donnell et al. (2014) characterise this sort of activity as 'de-shrouding' and identify it as one of the most significant public policy uses of wellbeing data. While interventions of this sort will obviously focus on public communication of the data in non-technical contexts, the credibility of such public-facing documents also depends crucially on the credibility of the underlying data and methodology used to develop it. The primary purpose of the analysis in this article is to contribute to 'de-shrouding' career decisions in New Zealand by making the relevant information publicly available in a credible source. However, there is also a broader goal: to illustrate the potential value of 'de-shrouding' activities in a New Zealand public policy context.

1 The approach taken here is largely descriptive and focuses on the provision of information for groups interested in the relationship between occupation and wellbeing. For a more detailed analysis of the theoretical drivers of aspects of the working environment, we recommend the OECD overview of the subject (OECD, 2017).

2 Leisure occupations include jobs in hospitality, sport, leisure and tourism.

3 Elementary occupations usually involve manual labour, such as cleaning services or physical labour.

4 IDI disclaimer: Access to the data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Data and Statistics Act 2022. The results presented in this study are the work of the author, not Statistics New Zealand or individual data suppliers. These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI), which is carefully managed by Statistics New Zealand. For more information about the IDI, please visit https://www.stats.govt.nz/integrated-data/.

5 This includes general managers and legislators; ICT managers; miscellaneous hospitality, retail and service managers; advertising, public relations and sales managers; miscellaneous specialist managers; business administration managers; education, health and welfare services managers; construction, distribution and production managers; accommodation and hospitality managers; and office and practice managers.

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Statistical appendix

Table 1: Mean life satisfaction and income by occupation at age 40

Occupation	Sample	Rank			Predicted value at 40			Proportion female	Mean age	ANZSCO code
		Life Satisfaction	Job Satisfaction	Income	Life Satisfaction	Job Satisfaction	Income			
Other farmers	219	1	5	63	0.25	0.08	$57,800	23%	43.6	121
Health therapy professionals	84	2	1	31	0.23	0.19	$79,700	71%	43.1	252
Secondary school and special education teachers	228	3	11	24	0.22	0	$88,300	64%	43.8	2414
Air and marine transport professionals	60	4	55	6	0.18	−0.2	$104,500	<10%	42.2	231
Chief executives and managing directors	276	5	4	27	0.18	0.11	$83,800	35%	48.1	1111
Defence Force members, fire fighters and police	192	6	7	26	0.16	0.06	$85,300	19%	41.3	441
Policy analyst	87	7	21	12	0.16	−0.07	$97,900	45%	41.8	224412
Accountants, auditors and company secretaries	348	8	62	17	0.12	−0.25	$95,000	55%	42.6	221
Miscellaneous education professionals	78	9	44	37	0.12	−0.17	$73,700	69%	47.7	249
General managers and legislators	339	10	45	7	0.12	−0.17	$103,500	40%	45.3	1112
ICT managers	99	11	46	3	0.11	−0.17	$106,400	24%	43.2	135
Miscellaneous hospitality, retail and service managers	207	12	6	18	0.1	0.07	$93,800	52%	42.4	149
Medical practitioners	126	13	30	1	0.1	−0.11	$176,500	43%	40.7	253
Sports and personal service workers	204	14	2	70	0.09	0.12	$55,400	59%	38.6	45
Advertising, public relations and sales managers	324	15	16	4	0.09	−0.06	$106,300	38%	42.9	131
Miscellaneous specialist managers	93	16	26	19	0.09	−0.1	$90,900	45%	43.8	139
Health diagnostic and promotion professionals	120	17	8	13	0.09	0.06	$97,700	65%	41	251
Sales, marketing and public relations professionals	213	18	68	29	0.08	−0.27	$82,000	55%	39	225
Financial and insurance clerks	159	19	31	32	0.08	−0.11	$78,000	62%	41.6	552
Social and welfare professionals	300	20	17	44	0.07	−0.06	$66,100	70%	45.8	272
Business administration managers	762	21	33	10	0.06	−0.12	$98,900	48%	44.4	132
Midwifery and nursing professionals	531	22	40	23	0.06	−0.15	$88,400	88%	43.3	254
Plumbers	123	23	23	38	0.06	−0.08	$73,100	< 5%	37.3	334
Primary and intermediate school teachers	351	24	34	28	0.06	−0.12	$83,100	80%	43.4	2412
Early childhood (pre-primary school) teachers	351	25	18	45	0.05	−0.06	$66,000	91%	41	2411
ICT business and systems analysts	165	26	27	9	0.05	−0.1	$100,700	36%	40.1	2611
Education, health and welfare services managers	150	27	22	11	0.04	−0.07	$98,000	74%	49.6	134
Floor finishers and painting trades workers	135	28	19	81	0.04	−0.06	$47,400	< 4%	41.3	332
Construction, distribution and production managers	270	29	41	15	0.03	−0.15	$96,500	20%	43.9	133
Accommodation and hospitality managers	123	30	12	75	0.02	−0.01	$51,300	56%	40.8	141
Financial brokers and dealers, and investment advisers	138	31	28	5	0.01	−0.1	$105,700	54%	42.5	222
Human resource and training professionals	153	32	9	22	0	0.02	$88,600	73%	41.7	223
Office and practice managers	279	33	29	42	0	−0.1	$67,500	87%	45.9	512
Architects, designers, planners and surveyors	216	34	15	41	−0.01	−0.05	$67,800	44%	38.8	232
Contract, programme and project administrators	183	35	52	36	−0.01	−0.19	$74,200	74%	43.1	511
Inquiry clerks and receptionists	189	36	53	67	−0.02	−0.19	$56,700	86%	40.2	54
Other ICT professionals	150	37	42	33	−0.04	−0.15	$77,600	24%	40.9	26
Personal assistants and secretaries	162	38	35	46	−0.04	−0.13	$65,800	96%	44.2	521
Accounting clerks and bookkeepers	219	39	48	52	−0.04	−0.18	$63,900	86%	44.5	551
Farm, forestry and garden workers	291	40	13	74	−0.04	−0.01	$51,400	30%	41.6	841
Management consultant	150	41	63	16	−0.05	−0.25	$96,500	46%	42.2	224711
Other information and organisation professionals	144	42	32	21	−0.06	−0.11	$88,900	56%	45.3	224

Occupation	Sample	Rank			Predicted value at 40			Proportion female	Mean age	ANZSCO code
		Life Satisfaction	Job Satisfaction	Income	Life Satisfaction	Job Satisfaction	Income			
Natural and physical science professionals	156	43	36	25	−0.06	−0.13	$86,900	37%	42.2	234
Tertiary education teachers	171	44	24	8	−0.06	−0.09	$102,300	49%	49.4	242
Legal professionals	144	45	37	2	−0.06	−0.13	$129,400	54%	41.8	271
Automotive electricians and mechanics	189	46	49	43	−0.06	−0.18	$67,000	< 3%	39.3	321
Software and applications programmers	312	47	50	14	−0.08	−0.18	$96,700	22%	39.5	2613
Dairy cattle farmer	177	48	14	62	−0.08	−0.01	$57,900	22%	35.7	121313
Project builder	255	49	10	79	−0.08	0.02	$48,700	< 2%	37.7	133112
Engineering professionals	375	50	43	20	−0.1	−0.16	$90,400	10%	41.6	233
Arts and media professionals	120	51	3	80	−0.12	0.12	$48,600	40%	43.8	21
General clerical workers	480	52	76	60	−0.12	−0.35	$59,700	81%	44.5	53
Agricultural, medical and science technicians	144	53	72	39	−0.12	−0.31	$72,800	50%	44.2	311
Electronics and telecommunications trades	105	54	74	35	-0.13	-0.33	$77,200	9%	43.3	342
Other factory process workers	225	55	75	72	−0.14	−0.34	$53,200	44%	42.2	83
Panel beaters, and vehicle body builders, trimmers and painters	57	56	59	71	−0.14	−0.23	$54,800	< 11%	43.4	324
Retail managers	285	57	56	58	−0.15	−0.2	$60,100	55%	41.2	142
Construction and mining labourers	180	58	54	69	−0.15	−0.19	$55,600	3%	41	821
Sales representatives and agents	549	59	73	55	−0.16	−0.32	$62,900	60%	40.7	61
Electricians	177	60	57	40	−0.16	-0.2	$68,200	< 3%	39.7	341
ICT and telecommunications technicians	111	61	65	48	−0.17	−0.26	$65,500	19%	38.4	313
Mobile plant operators	213	62	20	49	−0.17	−0.06	$65,000	7%	41.2	721
Fabrication engineering trades workers	141	63	58	50	−0.18	−0.22	$64,000	< 4%	40.9	322
Other clerical and administrative workers	570	64	69	56	−0.19	−0.29	$62,400	51%	42.9	59
Other technicians and trades workers	249	65	38	59	−0.2	−0.13	$59,900	34%	40.3	39
Building and engineering technicians	213	66	47	30	−0.2	−0.17	$80,800	15%	42.8	312
Food trades workers	309	67	78	65	−0.2	−0.37	$57,100	36%	38.3	351
Health and welfare support workers	228	68	70	53	−0.2	−0.29	$63,600	79%	45.8	411
Prison and security officers	138	69	82	54	−0.2	−0.52	$63,100	24%	42.7	442
Food process workers	279	70	81	51	−0.21	−0.46	$64,000	30%	43.4	831
Skilled animal and horticultural workers	189	71	25	82	−0.22	−0.09	$46,300	37%	40.3	36
Road and rail drivers	552	72	61	57	−0.22	−0.24	$60,900	11%	47.3	73
Bricklayers, carpenters and joiners	171	73	51	61	−0.22	−0.18	$58,200	< 4%	38.9	331
Hospitality workers	210	74	77	78	−0.23	−0.35	$49,200	70%	34.8	431
Sales assistants and salespersons	648	75	60	73	−0.23	−0.23	$52,900	56%	41	621
Store persons	240	76	71	64	−0.24	−0.3	$57,100	13%	41.5	74
Machine and stationary plant operators	387	77	64	47	−0.26	−0.25	$65,800	23%	42.8	71
Carers and aides	486	78	39	77	−0.28	−0.13	$49,600	88%	44.9	42
Other labourers	450	79	80	76	−0.29	−0.42	$50,300	28%	41.7	89
Glaziers, plasterers and tilers	108	80	66	66	−0.29	−0.26	$56,900	< 6%	38	333
Mechanical engineering trades workers	192	81	67	34	−0.31	−0.26	$77,500	< 3%	43.9	323
Cleaners and laundry workers	219	82	79	83	−0.35	−0.4	$45,100	64%	45.5	811
Sales support workers	111	83	83	68	−0.38	−0.52	$56,000	73%	40.6	63

Table 2: Female and male mean life satisfaction and income by occupation at age 40

	Mean life satisfaction at 40		Mean income at 40		Mean female-male gap at 40
Occupation	Female	Male	Female	Male	Life satisfaction
Other farmers	0.23	0.27	$40,300	$63,700	-0.04
Chief executives and managing directors	0.20	0.09	$57,600	$115,700	0.11
Secondary school and special education teachers	0.19	0.04	$72,400	$103,300	0.15
General managers and legislators	0.17	s	$73,800	s	s
Sports and personal service workers	0.14	0.00	$48,200	$50,400	0.14
Miscellaneous education professionals	0.13	s	$58,400	s	s
Accommodation and hospitality managers	0.12	−0.09	$41,100	$65,600	0.21
Advertising, public relations and sales managers	0.12	0.07	$83,900	$111,900	0.05
Health therapy professionals	0.12	0.15	$59,300	$209,000	−0.03
Miscellaneous hospitality, retail and service managers	0.10	0.23	$72,500	$108,000	−0.13
ICT business and systems analysts	0.07	−0.09	$82,700	$101,100	0.16
Social and welfare professionals	0.05	−0.14	$55,000	$79,800	0.19
Midwifery and nursing professionals	0.04	−0.10	$69,600	$159,500	0.14
Accountants, auditors and company secretaries	0.03	0.05	$70,100	$150,500	−0.02
Business administration managers	0.03	0.06	$73,700	$102,400	−0.03
Financial and insurance clerks	0.03	−0.25	$59,300	$55,100	0.28
Medical practitioners	0.02	0.09	$119,100	$83,300	−0.07
Primary and intermediate school teachers	0.02	0.25	$67,000	$85,800	−0.23
Early childhood (pre-primary school) teachers	0.01	0.18	$51,900	$78,000	−0.17
Health diagnostic and promotion professionals	0.01	s	$78,400	s	s
Education, health and welfare services managers	0.00	0.11	$76,000	$111,400	−0.11
Farm, forestry and garden workers	0.00	0.17	$38,400	$95,100	−0.17
Contract, programme and project administrators	−0.02	0.18	$58,300	$78,000	−0.20
Financial brokers and dealers, and investment advisers	−0.02	s	$65,300	s	s
Inquiry clerks and receptionists	−0.02	s	$44,200	s	s
Legal professionals	−0.04	0.11	$89,400	$59,900	−0.15
Personal assistants and secretaries	-0.04	s	$51,600	s	s
Software and applications programmers	−0.04	−0.10	$78,600	$60,400	0.06
Architects, designers, planners and surveyors	−0.05	−0.09	$54,000	$93,200	0.04
Sales, marketing and public relations professionals	−0.05	0.18	$65,800	$111,200	−0.23
Accounting clerks and bookkeepers	−0.06	0.15	$48,900	$86,000	−0.21
General clerical workers	−0.07	−0.39	$48,200	$53,700	0.32
Office and practice managers	−0.07	s	$52,200	s	s
Construction, distribution and production managers	−0.08	s	$73,800	s	s
Human resource and training professionals	−0.08	0.00	$72,300	$106,900	−0.08
Agricultural, medical and science technicians	−0.11	−0.18	$54,300	$85,400	0.07
Tertiary education teachers	−0.12	s	$81,900	s	s
Other information and organisation professionals	−0.13	0.23	$62,300	$83,800	−0.36
Sales representatives and agents	−0.14	−0.22	$48,100	$68,200	0.08
Management consultant	−0.17	s	$80,600	s	s
Skilled animal and horticultural workers	−0.18	−0.25	$42,200	$45,100	0.07
Food process workers	−0.19	−0.05	$45,700	$55,800	−0.14
Other clerical and administrative workers	−0.19	−0.20	$50,200	$64,100	0.01
Natural and physical science professionals	−0.20	0.00	$76,000	$105,500	−0.20
Retail managers	−0.21	0.08	$45,800	$100,100	−0.29

Occupation	Mean life satisfaction at 40		Mean income at 40		Mean female-male gap at 40
	Female	Male	Female	Male	Life satisfaction
Sales assistants and salespersons	−0.21	−0.14	$41,600	$69,500	−0.07
Hospitality workers	−0.22	0.10	$39,100	$91,900	−0.32
Machine and stationary plant operators	−0.22	−0.26	$42,700	$73,900	0.04
Other factory process workers	−0.22	−0.08	$38,700	$58,800	−0.14
Health and welfare support workers	−0.23	−0.31	$48,200	$48,500	0.08
Other technicians and trades workers	−0.23	−0.19	$45,500	$64,400	−0.04
Food trades workers	−0.27	s	$43,400	s	s
Carers and aides	−0.28	−0.39	$39,400	$42,700	0.11
Other labourers	−0.33	−0.27	$38,800	$53,700	−0.06
Cleaners and laundry workers	−0.34	−0.12	$34,800	$59,300	−0.22
Road and rail drivers	−0.41	−0.19	$45,700	$65,100	−0.22
Sales support workers	−0.44	s	$42,200	s	s

Note: s indicates fewer than 50 male respondents

Rob Warner and Grant Pink

Regulated Experience (Rx)

a concept for navigating the tensions between service delivery and regulatory delivery

Abstract

This article introduces regulated experience (Rx) as an emerging concept for managing regulatory agencies' position on the spectrum between customer service and enforcement. Drawing on regulatory scholarship and case examples from Australia and New Zealand, we demonstrate how customer service frameworks can create unconscious organisational drift towards accommodation, undermining regulatory effectiveness and public value. Rx provides structured guidance through three operational dimensions – governance clarity, differentiated engagement, and systems alignment – for managing inherent regulatory tensions and trade-offs. Analysis of regulatory failures reveals the consequences of inappropriate positioning, while successful regulatory transformations demonstrate how conscious repositioning can improve regulatory outcomes. Though requiring empirical validation, Rx augments existing frameworks through intentional relationship management that preserves regulatory mandate while maintaining accessibility.

Keywords regulated experience, regulatory relationships, regulatory spectrum, regulatory effectiveness, regulatory stewardship

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Introduction: the reality of regulatory balance

Every regulatory agency faces the same fundamental challenge: where to position themselves on the spectrum between enforcement authority and service provider. This isn't a binary choice, but a continuous balancing act that shifts across different activities, contexts and relationships. An environmental regulator might operate as an educator when helping small businesses understand new requirements, shift towards collaborative problem-solving with companies developing innovative solutions, and move to strict enforcement when dealing with wilful and egregious violators. Each position on this spectrum serves legitimate purposes, yet agencies can drift unconsciously towards 'customer first' orientations, with serious consequences for regulatory effectiveness, delivery of regulatory outcomes, and achieving the very public value they are established to create.

The pressure to adopt customer service approaches has intensified across government agencies globally, driven by legitimate desires to reduce regulatory burden and improve business engagement. New Zealand's Better Public Services reforms, Australia's Regulatory Performance Framework, and similar initiatives internationally have encouraged regulators to demonstrate service excellence. When applied without careful consideration of regulatory purposes, and regulatory systems, these frameworks can fundamentally compromise agencies' ability to protect public interests and generate the public value that justifies their existence.

Consider the practical reality facing a building inspector. On Monday morning, she patiently explains earthquake-strengthening requirements to a small business owner, helping identify cost-effective compliance approaches. That afternoon she issues formal notices to a developer who has repeatedly ignored safety standards. By Friday, she's providing evidence in court that will likely bankrupt a builder who knowingly used substandard materials. Each interaction requires a different position on the customer–regulatory–enforcement spectrum, yet many agencies lack structured approaches for managing these transitions while maintaining the legitimacy that democratic mandate provides.

> Understanding why relationship frameworks profoundly influence regulatory effectiveness requires examining established scholarship on regulatory theory, institutional behaviour and public value creation.

This scenario reflects what Pink (2021, p.99) describes as the 'engage, educate, and enforce' approach characterising modern regulatory practice. The challenge goes beyond role confusion to the heart of regulatory effectiveness. When we call regulated entities 'customers' or 'clients', we create expectations and dynamics that conflict with our statutory obligations.

This article introduces regulated experience (Rx) as an emerging concept for consciously managing one's position on this spectrum. We don't claim that existing regulatory frameworks are inadequate or that agencies operate at extremes of pure enforcement or pure service. Rather, we observe that agencies often lack operational guidance for translating high-level frameworks into daily relationship management while preserving their fundamental purpose: creating public value through proactive harm prevention, active compliance monitoring, and, when necessary, market correction through the use of enforcement. Rx provides structured approaches for this translation, helping agencies position themselves appropriately for different regulatory activities, while maintaining coherence across various regulatory systems and operations.

We define Rx as an emerging approach for designing and managing regulatory relationships through three interconnected dimensions, which we refer to as:

- *governance clarity* – about where the agency sits on the spectrum;
- *differentiated engagement* – which varies position based on context; and
- *systems alignment* – ensuring that all operational elements support chosen positions.

These three interconnected dimensions help agencies operationalise established frameworks such as responsive regulation and risk-based approaches into their actual interactions with regulated entities, while never losing sight of their democratic mandate to protect public interests. In our initial exploration of the Rx concept, we defined regulated experience as:

> the experience that a regulated entity has when they are involved in or subject to regulatory processes, activities, and oversight, where they or others have specific regulatory duties and obligations – as distinct from the experiences that a person or entity has when they are a customer or client. (Pink and Warner, 2025, p.2)

This article proceeds through six sections. First, we outline theoretical foundations, explaining why relationship frameworks matter for regulatory effectiveness and public value creation. Second, we present the Rx concept, showing how it provides operational guidance missing from existing frameworks. Third, we analyse regulatory failures, demonstrating consequences of inappropriate positioning on the customer–regulatory spectrum. Fourth, we examine successful transformations, showing how conscious repositioning improves outcomes. Fifth, we offer expanded implementation guidance for practitioners. Finally, we acknowledge current limitations while identifying priorities for further development.

Theoretical foundations: why relationship frameworks matter

Understanding why relationship frameworks profoundly influence regulatory

effectiveness requires examining established scholarship on regulatory theory, institutional behaviour and public value creation. This literature reveals that the frameworks agencies use to conceptualise relationships don't merely describe reality; they actively construct it, shaping everything from daily decisions to long-term outcomes, and ultimately determining whether regulation creates or destroys public value.

Malcolm Sparrow's foundational insight that regulatory agencies 'deliver obligations, rather than services' establishes the fundamental distinction (Sparrow, 2000, p.17). Service delivery assumes voluntary transactions, where providers compete for customer preference and success means satisfaction. Obligation delivery involves mandatory relationships, where agencies exercise state power and success means achieving statutory objectives regardless of participant preferences. This distinction matters because it determines where on the spectrum between accommodation and enforcement an agency positions itself, and whether it fulfils its democratic mandate.

The public value dimension requires particular emphasis. As Moore established in his seminal work on public value creation (Moore, 1995), government agencies justify their existence through creating value that markets cannot or will not provide. For regulatory agencies, this value emerges through preventing harms, correcting market failures, and ensuring fair competition. When agencies adopt customer service frameworks, they risk privileging individual satisfaction over collective benefit, undermining the very rationale for their existence.

Ayres and Braithwaite's (1992) responsive regulation pyramid provides the canonical framework for understanding how regulatory relationships must function across this spectrum. Their model elegantly demonstrates that effective regulation requires movement from cooperative base to coercive peak based on regulated entity behaviour. The pyramid assumes that agencies can maintain relationships that transform radically – from education through warning to prosecution – while preserving legitimacy and effectiveness.

> … analysis of New Zealand environmental regulation identifies multiple pathways through which relationships become compromised, from linguistic choices that frame regulated entities as clients to performance metrics that reward accommodation over enforcement.

Yet the pyramid presents an operational challenge it doesn't fully address: how do agencies actually manage relationships that must span such dramatic transformations? Customer service frameworks, with their emphasis on consistent warmth and accommodation, cannot support these transitions. An agency measuring success through satisfaction scores struggles to shift towards enforcement when necessary, even when the pyramid clearly indicates that escalation is required.

More contemporary scholarship from Cary Coglianese at the University of Pennsylvania's Program on Regulation provides crucial insights here. Coglianese's work on regulatory excellence emphasises that effective regulation requires 'empathic engagement' balanced with 'stellar competence' and 'utmost integrity' (Coglianese, 2015). This framework explicitly acknowledges that regulatory relationships must maintain professional boundaries while remaining accessible – precisely the balance that customer frameworks undermine by prioritising satisfaction over competence and integrity.

Baldwin and Black's 'really responsive regulation' model (Baldwin and Black, 2008) extends this analysis by examining how institutional environments shape regulatory behaviour. Their research reveals that performance assessment regimes exert powerful influence regardless of formal policies or stated intentions. When agencies incorporate customer satisfaction metrics alongside compliance measures, staff receive mixed signals about priorities. Since career progression, resource allocation and organisational reputation often depend more on measurable metrics than statutory obligations, as the saying goes, 'what gets measured inevitably shapes what gets done'.

This dynamic connects directly to regulatory capture theory. Dal Bó's comprehensive review (Dal Bó, 2006) distinguishes between traditional capture through corruption and cognitive capture through gradual perspective shifts. Customer service frameworks accelerate cognitive capture by explicitly prioritising regulated entity satisfaction as an organisational goal. The capture occurs through multiple reinforcing mechanisms: language shapes conceptual frameworks, metrics drive behavioural choices, training embeds cultural assumptions, recruitment favours particular orientations, and accumulated changes solidify into organisational culture.

Christopher Hodges' extensive work at Oxford on ethical business regulation provides additional theoretical grounding. Hodges argues that effective regulation requires 'ethical infrastructure' that maintains clear boundaries while enabling cooperation. His research demonstrates that trust emerges not from accommodation, but from consistency, predictability and fairness – qualities undermined when agencies position themselves as service providers rather than democratic institutions exercising delegated authority (Hodges, 2015, 2022).

Recent scholarship provides additional insights into these mechanisms. Doole, Stephens and Bertram (2024) present a conceptual framework showing how capture operates through incremental

shifts in organisational culture, language and practice, rather than dramatic corruption. Their analysis of New Zealand environmental regulation identifies multiple pathways through which relationships become compromised, from linguistic choices that frame regulated entities as clients to performance metrics that reward accommodation over enforcement.

Building on this, Doole and Stephens (2025) propose interventions for addressing regulatory capture, emphasising the importance of maintaining professional boundaries while enabling necessary engagement with regulated entities. This prescription aligns with what Rx attempts to provide – structured approaches for managing position on the customer–regulatory–enforcement spectrum while maintaining relationship integrity and democratic legitimacy.

The UK's Professional Standards Authority, which oversees health profession regulators, provides practical evidence of these theoretical insights. Their 'Right-touch' regulation framework explicitly rejects customer service models, arguing that regulation must be proportionate, consistent, targeted, transparent, accountable and agile, without becoming subservient to regulated entity preferences. The 2025 update of this framework particularly emphasises the importance of maintaining regulatory independence while adapting to new challenges, including technological change and evolving understandings of harm (Professional Standards Authority, 2025).

There is international evidence to support the theoretical underpinnings. Parker's 20-year review of responsive regulation implementation found that businesses actually prefer predictable enforcement over inconsistent accommodation (Parker, 2013). Her surveys revealed that regulatory uncertainty – not knowing where an agency sits on the spectrum – creates costs exceeding compliance expenses. This finding challenges the assumption that customer service approaches benefit even those they purport to serve.

We also note that the OECD's evolving position reflects growing recognition of these dynamics. The 2021 *Regulatory Policy Outlook* highlighted challenges in balancing stakeholder engagement with regulatory independence, while the 2025 update emphasises the need for sophisticated approaches to managing regulatory relationships in increasingly complex environments (OECD, 2021, 2025). This progression suggests emerging international consensus that regulatory relationships require distinct conceptual frameworks.

> Design flexibility is infinite because businesses can customise offerings to match preferences, and failure consequences remain limited to lost revenue.

The New Zealand context provides particularly valuable insights. Treasury's regulatory stewardship framework establishes sophisticated expectations for system maintenance (Treasury, 2017), yet implementation reveals persistent confusion about relationship management. Wauchop and Manch (2017) documented how customer frameworks created role confusion, with staff feeling 'disenfranchised and limited in their ability to do their jobs effectively' when caught between service expectations and enforcement obligations (Wauchop and Manch, 2017, p.10). Their analysis explicitly challenges the notion that regulated parties are customers, arguing that this framing fundamentally misunderstands the nature of regulatory relationships and undermines public value creation.

From these collective theoretical foundations, three critical themes emerge:

- relationship frameworks powerfully shape regulatory behaviour through multiple reinforcing mechanisms;
- customer service frameworks systematically bias agencies towards accommodation over enforcement, undermining public value creation; and
- existing regulatory frameworks provide strategic guidance, but lack operational tools for managing actual relationships.

Collectively, these themes frame the conceptual space for Rx, and highlight the gaps for regulatory agencies to address.

The Rx concept: providing operational guidance missing from existing frameworks

Given these theoretical insights, Rx emerges as an approach for helping agencies consciously manage their position on the customer–regulatory–enforcement spectrum while preserving their democratic mandate to create public value. Rather than replacing existing regulatory frameworks, Rx provides operational guidance for implementing them in daily relationship management.

The concept acknowledges that all regulators operate somewhere between pure enforcement and pure service. Rx provides a way for regulators to intentionally position themselves across different contexts without losing sight of their fundamental purpose or identity – i.e., their regulatory 'bottom lines' or non-negotiables.

Understanding the fundamental distinctions

Before detailing Rx's operational dimensions, we think it is helpful to compare and contrast how Rx fundamentally differs from the customer experience (Cx) and user experience (Ux) frameworks that dominate current public sector thinking. These distinctions go beyond semantic preferences to reflect incompatible assumptions about participation, power and purpose.

Customer experience (Cx) emerged from commercial contexts where voluntary exchange defines relationships. Customers choose whether to engage, select among alternatives, and withdraw if dissatisfied. Success means creating satisfaction sufficient to generate loyalty and repeat business. The entire framework assumes customer

sovereignty – the 'customer is always right' because they hold ultimate power through choice. Design flexibility is infinite because businesses can customise offerings to match preferences, and failure consequences remain limited to lost revenue.

User experience (Ux) developed from human–computer interaction design, focusing on making systems intuitive and efficient. Users willingly engage with systems to accomplish specific tasks, maintaining control over their interaction level. Success means enabling task completion with minimal friction. While less commercially oriented than Cx, Ux still assumes voluntary participation and user control. Design adapts to user needs and capabilities, with failure resulting in abandonment rather than harm.

Regulated experience (Rx) operates from fundamentally different premises. Participation is mandatory – regulated entities cannot opt out of regulatory oversight without abandoning regulated activities entirely. The relationship exists not through choice, but through democratic decisions that certain activities require (regulatory) oversight to prevent harm and ensure fairness. Success means achieving statutory objectives regardless of regulated entity preferences. Design flexibility is constrained by legal requirements that cannot be negotiated away. Failure consequences extend beyond individual dissatisfaction to public harm across economic, environmental and social domains, with examples including financial collapse, environmental damage and workplace deaths respectively.

These distinctions manifest operationally in profound ways. When an environmental agency adopts Cx frameworks, it begins measuring success through polluter satisfaction, rather than pollution reduction and public health. When a financial regulator embraces Ux principles, it focuses on making compliance easy rather than effective. Both approaches can subordinate public value to participant preference, and by doing so risk undermining the democratic mandate that justifies regulatory authority.

Three interconnected dimensions

The Rx concept operates through three mutually reinforcing dimensions that translate strategic frameworks into operational reality.

An agency might articulate sophisticated positioning strategies, but if performance reviews reward customer satisfaction regardless of context, staff will drift towards accommodation even when enforcement is appropriate for public protection.

Governance clarity establishes organisational understanding about where the agency positions itself on the spectrum for different regulatory activities, and why these positions serve public value. This dimension involves fundamental choices about identity and purpose, reflected throughout governance structures. It includes mission statements that articulate the balance between support and enforcement, strategic documents that explicitly address spectrum positioning in terms of public benefit, performance frameworks that measure effectiveness across the spectrum rather than at one end, and reporting that demonstrates conscious positioning decisions linked to outcomes.

When an agency has governance clarity, board papers discuss where on the spectrum different regulatory activities should sit to maximise public value. Strategic plans and statements of intent can explicitly address how the organisation balances accommodation with enforcement to achieve statutory objectives and/or regulatory outcomes. Performance reports show not just compliance rates or satisfaction scores, but evidence of appropriate positioning for different contexts and resulting public benefits.

Differentiated engagement recognises that position on the spectrum should vary based on operating context, risk, and behaviour change necessary to optimise public value creation. A sophisticated regulator doesn't maintain one position, but consciously shifts based on circumstances. This dimension involves developing clear criteria for spectrum positioning linked to risk assessment, creating protocols for position transitions that maintain legitimacy, training staff to recognise when shifts are needed, and maintaining consistency within differentiation to ensure fairness.

For instance, across the spectrum, the same inspector might position themself towards the 'service end' when helping a struggling small business understand requirements, shift towards the 'mid-point' when reviewing plans from an experienced operator, and move towards the 'enforcement end' when discovering wilful violations. Each position serves legitimate purposes in protecting public interests. The key lies in conscious, and justified, movement rather than unconscious drift.

Systems alignment ensures that all operational elements support conscious spectrum positioning and optimising public value creation. This often-overlooked dimension addresses the infrastructure that either enables or undermines positioning choices. It includes HR systems that recognise and reward appropriate positioning rather than favouring one end of the spectrum, IT platforms that support different interaction modes for different positions, training that builds capability across the spectrum, not just at one end, and physical spaces that enable position transitions.

Without systems alignment and governance clarity and differentiated engagement cannot succeed. An agency might articulate sophisticated positioning strategies, but if performance reviews reward customer satisfaction regardless of

Table 1: How Rx provides operational guidance for existing frameworks

Existing framework	Strategic guidance provided	Operational gap	How Rx helps operationalise
Responsive regulation	When to escalate from cooperation to coercion (pyramid model)	How to manage relationships during escalation	Provides protocols for position transitions that maintain legitimacy and public trust
Risk-based regulation	Where to allocate limited resources based on assessed risk	How to engage differently without seeming arbitrary	Offers criteria for varying spectrum position based on risk to public value
Regulatory stewardship	System-level expectations for long-term effectiveness	How to translate system goals into daily interactions	Connects governance objectives to operational positioning for public benefit
Better regulation	Principles for regulatory quality and effectiveness	How to implement principles in actual relationships	Translates principles into positioning guidance that preserves mandate
Right-touch regulation	Proportionality in regulatory intervention	How to maintain proportionality in relationships	Provides framework for matching relationship intensity to risk

Table 2: Comparing customer, user and regulated experience frameworks

Dimension	Customer experience (Cx)	User experience (Ux)	Regulated experience (Rx)
Participation basis	Voluntary commercial choice	Willing task engagement	Mandatory legal obligation
Primary objective	Customer satisfaction and loyalty	Task completion efficiency	Public protection and fairness
Success metrics	Net Promoter Score (NPS), satisfaction scores, retention	Completion rates, time on task	Compliance effectiveness, harm reduction
Power dynamic	Customer sovereignty ('always right')	User control over interaction	Democratic authority exercised fairly
Design flexibility	Infinite customisation possible	Moderate adaptation to user needs	Constrained by statutory requirements
Failure consequences	Lost revenue, poor reviews	User frustration, abandonment	Public harm, democratic deficit
Value creation	Private value through exchange	Individual value through efficiency	Public value through protection
Relationship duration	Transaction-based, episodic	Task-based, time-limited	Ongoing obligation, continuous
Communication focus	Persuasion, attraction, retention	Instruction, guidance, support	Requirements, consequences, fairness
Feedback purpose	Service improvement, product development	Interface refinement	Risk identification, system improvement

context, staff will drift towards accommodation even when enforcement is appropriate for public protection.

How Rx complements existing frameworks

Table 1 demonstrates how Rx addresses specific operational and implementation gaps in established regulatory approaches. The intent of Table 1 is to demonstrate that Rx doesn't compete with these existing frameworks, but instead provides the additional operational layer needed for more effective implementation. This is because:

- responsive regulation indicates when agencies might escalate, but not how to manage relationships during an escalation;
- risk-based regulation identifies resource priorities, but not engagement approaches;
- Rx can help bridge and address these gaps by providing structured guidance for spectrum positioning that maintains focus on public value.

Distinguishing relationship approaches

Table 2 clarifies how different relationship approaches imply different spectrum positions and public value orientations. The intent of Table 2 is to demonstrate that position on the spectrum fundamentally shapes operational reality and value creation. This is because an agency:

- positioned towards the Cx end, will naturally accommodate preferences, measure satisfaction and treat non-compliance as service failure, potentially sacrificing public value for individual satisfaction;
- positioned appropriately using Rx principles, will maintain authority while remaining accessible, measure public benefit rather than satisfaction, and treat violations as requiring a proportionate response to protect collective interests.

Regulatory failures: demonstrating consequences of inappropriate positioning

Three major regulatory failures demonstrate what happens when agencies drift unconsciously towards the customer service end of the spectrum, and either compromise or abandon their public value mandate. These cases don't represent extremes – none of the agencies operated as pure service providers – but rather show how incremental drift creates systematic dysfunction that undermines democratic purposes.

EPA Victoria: environmental protection compromised

The Environment Protection Authority Victoria provides a textbook case of unconscious drift along the spectrum away from public value creation. In 2006, EPA Victoria adopted a more 'client focused' language as part of government-wide service

improvements. This seemed reasonable, given that environmental protection could benefit from better stakeholder engagement. Yet this linguistic shift triggered comprehensive repositioning towards the service end of the spectrum, with profound consequences for environmental protection and public health.

The Krpan Review into EPA compliance and enforcement (Krpan, 2011) found that client language 'brought with it language that further diminished the importance of EPA's regulatory and enforcement roles' (p.vii). Within four years, enforcement actions declined 38%, while violations increased 22% (p.23). The review traced how client language shifted the organisation along multiple dimensions simultaneously. Strategic documents emphasised service delivery over environmental protection, performance metrics weighted satisfaction equally with compliance, position descriptions valued relationship management over technical expertise, and training focused on engagement rather than investigation.

EPA hadn't abandoned enforcement entirely: it still conducted inspections and issued notices. But its position on the spectrum had shifted far enough towards service that enforcement became less frequent, potentially sacrificing public health for stakeholder comfort. This created a potential for major polluters to 'game the system' and exploit the positioning of the regulator, which overly focused on relationship management as opposed to compliance monitoring.

NZTA: safety compromised for satisfaction

The MartinJenkins review of the New Zealand Transport Agency revealed similar drift with potentially catastrophic consequences for public safety. Between 2012 and 2018, NZTA developed 'a powerful focus on customer service, without clarity as to what that means when delivering regulatory functions' (MartinJenkins, 2019, p.3). This ambiguity about spectrum positioning created systematic pressure towards accommodation that prioritised individual satisfaction over collective safety.

The review documented how positioning towards service compromised safety decisions. Technical staff raised concerns about operator certifications, only to have management override recommendations to maintain satisfaction; by 2018, 67% of regulatory staff reported pressure to accommodate industry preferences over safety requirements (ibid., pp.51, 73). NZTA hadn't abandoned safety, but had drifted far enough towards service that satisfaction metrics competed with safety imperatives in daily decisions, potentially sacrificing lives for satisfaction scores.

The 29 deaths in the Pike River mine in 2010 triggered comprehensive repositioning of workplace safety regulation towards public protection.

ASIC: systematic misconduct enabled

The Royal Commission into Misconduct in the Banking, Superannuation and Financial Services Industry in Australia revealed the endpoint of prolonged drift towards service, showing how abandoning public value orientation enables widespread harm. Commissioner Kenneth Hayne's report traced the 15-year journey of the Australian Securities and Investments Commission (ASIC) along the spectrum from enforcement agency to industry partner. Each step seemed reasonable: stakeholder engagement frameworks (2009), satisfaction metrics (2011), and a collaborative compliance emphasis (2013). By 2015, ASIC described itself as working 'with' rather than regulating finance.

This positioning enabled systematic misconduct affecting hundreds of thousands of people. Hayne found that ASIC's 'orientation toward service rather than enforcement undermined its effectiveness', with the agency rarely going 'to court to have the defaulting party penalised' (Hayne, 2018, p.271). Financial institutions learned that serious violations would trigger negotiation rather than prosecution. ASIC hadn't completely abandoned enforcement, but had positioned itself so far towards service that enforcement became extraordinary rather than ordinary, allowing massive destruction of public value through financial exploitation of vulnerable citizens.

Successful transformations: how conscious repositioning improves outcomes

Three successful transformations demonstrate how conscious repositioning on the spectrum improves regulatory outcomes and restores public value creation. These cases show agencies explicitly applying principles aligned with Rx dimensions, though not necessarily using that terminology.

WorkSafe New Zealand: legislative clarity drives repositioning

The 29 deaths in the Pike River mine in 2010 triggered comprehensive repositioning of workplace safety regulation towards public protection. The royal commission found that the previous regulator had positioned too far towards education and voluntary compliance, prioritising business satisfaction over worker safety (Royal Commission on the Pike River Coal Mine Tragedy, 2012). The Health and Safety at Work Act 2015 deliberately shifted positioning through language, replacing 'customer' with 'person conducting business or undertaking'.

This exemplifies Rx's governance clarity dimension – using language to signal spectrum position and public value priority. The transformation cascaded through all three dimensions. Governance clarity came through legislative language and strategic documents prioritising safety over satisfaction. Differentiated engagement emerged through risk-based programmes treating high-hazard industries differently. Systems alignment involved comprehensive changes, from performance metrics to office layouts.

Serious injury rates decreased from 16.2 to 11.8 per 100,000 workers between 2015 and 2023; WorkSafe attributes improvement partly to clear understanding of regulatory role and purpose throughout the organisation (WorkSafe New Zealand, 2023). The organisation hadn't moved to

pure enforcement, but had consciously repositioned towards the centre, maintaining support while strengthening enforcement to protect workers – creating public value through harm prevention.

Maritime New Zealand: systematic repositioning without crisis

Maritime New Zealand demonstrates that crisis isn't necessary for conscious repositioning towards public value. From 2016, the agency systematically shifted its spectrum position, replacing customer language with 'regulated party' throughout operations. This change exemplified all three Rx dimensions operating together to restore focus on maritime safety and environmental protection.

The transformation was evident across all three dimensions. Governance clarity came through revised strategic documents explicitly addressing the balance between support and enforcement for public benefit. Differentiated engagement appeared in new protocols varying interaction modes based on operator risk profiles. Systems alignment included rewriting position descriptions, changing performance metrics to focus on safety outcomes, and redesigning office spaces to support position transitions.

The agency's 2024 statement of intent reports improved compliance and reduced incidents despite initial resistance (Maritime New Zealand, 2024, pp.12–15). The agency hadn't abandoned stakeholder engagement, but had consciously repositioned to balance support with authority more effectively, creating public value through enhanced maritime safety.

APRA: post-crisis repositioning

The Australian Prudential Regulation Authority (APRA) provides a third example of conscious repositioning to restore public value focus. Following the banking royal commission, APRA explicitly acknowledged that it had drifted too far towards collaborative supervision, compromising financial system stability for industry comfort. The organisation underwent comprehensive transformation to reposition towards more assertive oversight while maintaining necessary dialogue.

APRA's transformation demonstrated all three Rx dimensions oriented towards public value. Governance clarity came through new strategic statements explicitly addressing supervision intensity and enforcement appetite for system stability. Differentiated engagement appeared in revised supervision methodologies which varied positioning based on entity risk and behaviour. Systems alignment included restructuring supervision teams, revising performance frameworks to measure prudential outcomes, and rebuilding enforcement capabilities.

> There is evidence from failures and successes demonstrating that unconscious drift towards either spectrum end undermines effectiveness and public value.

APRA's 2022–3 annual report documents the results: targeted enforcement actions, including capital overlays and enforceable undertakings for major institutions, improved governance and risk culture practices across the sector, enhanced financial system resilience, and, notably, industry feedback about improved regulatory certainty (APRA, 2023, pp.6, 21, 35, 40, 44–5). The authority hadn't become purely enforcement-focused, but had consciously repositioned to balance engagement with assertiveness for public benefit.

Expanded implementation: guidance for practitioners

Most regulators will begin an Rx journey by establishing and understanding the current state. This involves reviewing and documenting language used throughout the organisation, analysing metrics and what they incentivise, reviewing recent enforcement patterns against risk profiles, surveying staff about role clarity and mandate understanding, and assessing stakeholder perceptions versus public expectations. Some agencies will discover they are positioned differently across various regulatory systems, regulatory activities, regulatory functions, or even regulatory roles, often unconsciously or inadvertently sacrificing public value for stakeholder satisfaction.

Intentional repositioning of regulatory language and relationships requires sustained commitment, extending beyond document updates or training delivery. This type of transformation touches every operational aspect and challenges deeply held beliefs about public service, and it equating primarily to service delivery.

Agencies implementing Rx can quickly identify incorrect or problematic language in their regulatory systems. This language may have inadvertently become embedded in the agency over time. For example, procurement documents can require 'customer focus'; IT systems can measure ' client satisfaction'; HR frameworks can emphasise 'stakeholder satisfaction'. In the absence of intentional design, each instance may reinforce inappropriate frameworks that took years to embed and will take years to change.

Political management presents perhaps the greatest challenge. Ministers favour customer service improvements that generate positive coverage. Explaining why declining satisfaction might indicate improving effectiveness requires sophisticated communication and considerable courage. Evidence-based examples make abstract concepts concrete: the restaurant that caused food poisoning while fighting safety requirements; the builder whose substandard houses collapsed; the transport operator whose safety shortcuts caused car accidents. These consequences make customer service risks tangible for political leaders.

Staff transitioning between regulatory roles need particular support. A regulatory officer might need to be collaborative when providing Monday's guidance, switch to being professionally distant during Wednesday's inspection, then find themselves in a more confrontational and adversarial role in Friday's prosecution. These aren't personality changes, but instead are reflective of the requirements of the regulatory role, for which staff need clear frameworks and organisational support. Without role clarity,[1] staff experience moral distress, which can then

Box 1: Rx implementation tips

Practical insights for agencies considering Rx:

Start with language stocktake: Audit instances of 'customer' in operational documents, assess for consistency with regulatory mandate

Articulate public value clearly: Connect positioning decisions to public benefit and democratic purpose, not stakeholder preference

Expect resistance: Industry push-back will be immediate. Communicate how changes support fair competition and collective benefit

Support staff transition: Role clarity workshops help staff understand their democratic mandate and navigate identity shifts

Monitor unintended consequences: Watch for over-correction. Rx means professional and fair, not hostile or inflexible

Measure what matters: Shift from satisfaction to public value metrics: harm prevention, compliance effectiveness, system integrity

Maintain political courage: Brief ministers regularly on how temporary satisfaction declines indicate long-term public value gains

Table 3: Common Rx misconceptions

Concern	Response
'Isn't Rx anti-business?'	No. Rx is pro-clarity and pro-predictability. It supports legitimate enterprise by making expectations explicit and consequences credible, reducing uncertainty and levelling the playing field (Parker, 2013).
'Won't Rx reduce engagement?'	No. Rx changes engagement's basis. It preserves problem-solving and support within statutory boundaries. Hodges' work indicates effective collaboration depends on clarity and accountability, not accommodation (Hodges, 2022).
'Should we abandon satisfaction metrics?'	No. Continue measuring accessibility of information and processes for mandated tasks. Label it explicitly as accessibility rather than treating it as the primary success metric (Better Regulation Victoria, 2022).

result in the loss and turnover of experienced regulators.

Performance metrics matter too, because measurement drives behaviour, shapes culture and determines outcomes. If satisfaction scores influence remuneration, staff prioritise accommodation. If enforcement numbers alone drive reviews, staff might prosecute unnecessarily. Sophisticated indicators must capture effectiveness without creating perverse incentives.

Current limitations: identifying priorities for further development

Digital transformation presents new challenges for spectrum positioning and public value preservation. Online portals embed positioning assumptions in their design: a system treating applications as 'service requests' positions an agency differently from one framing them as 'compliance assessments'. Artificial intelligence trained on customer service models can skew and perpetuate inappropriate positioning unless carefully designed to preserve the regulatory mandate. These technological dimensions require conscious attention to how digital interfaces shape spectrum position and public value orientation.

In the New Zealand context, the establishment of a Ministry for Regulation is a signal that regulatory relationships require distinct approaches that preserve democratic purposes. While such ministries vary considerably in focus and impact internationally, the ministry is well positioned to support regulatory reform alongside the promulgation of better regulatory practice.[2] Emerging concepts like Rx may help with both the continuing professionalisation of New Zealand regulators, and growing maturity and capability through an expanded 'toolbox'.

We acknowledge that Rx remains an emerging concept requiring development through ongoing practice and research. For example, there is currently:

- limited empirical validation of positioning strategies;
- a need for refined measurement and evaluation; and
- questions about optimal positions for different contexts.

Some obvious research priorities include comparative studies of positioning strategies across regulatory domains, regulated sectors/industries, and even possibly regulated commodities. Equally, the development of diagnostic tools for assessing how regulators are positioned and engage with regulated parties relative to achieving their regulatory outcomes would be useful.

Addressing some common concerns

Implementation inevitably raises questions from regulatory practitioners, ministers and regulated entities alike. These concerns often stem from either misunderstanding Rx or interpreting it as a rigid enforcement-focused approach, rather than what it offers, which is a framework for maintaining both accessibility and authority, across what are understood to be and variously described as regulatory, compliance and enforcement elements.

Table 3 addresses the most common misconceptions, showing how Rx can enhance rather than diminish effective regulatory engagement.

Concluding comments: the role of Rx and the path forward

Rx offers precise vocabulary and purposeful structure for what many effective regulators already do intuitively – consciously manage their position on the customer-regulatory-enforcement spectrum, while maintaining focus on public value creation. There is evidence from failures and successes demonstrating that unconscious drift towards either spectrum end undermines effectiveness and public value. The examples of EPA Victoria, NZTA and ASIC show how drift towards customer service enables non-compliance and harm, with collective benefit sacrificed for individual satisfaction. WorkSafe, Maritime New Zealand and APRA illustrate how

conscious repositioning can improve regulatory outcomes without abandoning stakeholder engagement, restoring focus on public protection and fairness.

Rx's three dimensions – governance clarity, differentiated engagement, and systems alignment – provide structure for managing spectrum position coherently across organisational operations while maintaining democratic legitimacy. This operational guidance helps agencies implement existing and established regulatory frameworks such as responsive regulation and risk-based approaches in their daily relationship management, without losing sight of why they exist: to create public value that markets cannot or will not provide.

Current and future regulatory challenges require sophisticated positioning strategies that preserve agencies' democratic mandate while remaining accessible. Agencies must support innovation while managing risks, reduce burden while maintaining protections, engage stakeholders while preserving independence – all in service of public value. These challenges and associated tensions cannot be resolved by embracing simplistic customer-centric mantras or playbooks. They require intentional navigation by regulators reflecting context, changes and choices to prevent harms.

We recognise Rx as an emerging concept rather than a comprehensive framework at this point. Its value lies not in prescriptive solutions, but in providing precision around vocabulary and purposive structures for the conversations that regulators need to have (and, in fact, must have) about their fundamental regulatory relationships.

Two knowledge gaps warrant immediate attention: comparative evidence across sectors on how relationship settings affect compliance outcomes; and validation of metrics that capture effectiveness without creating perverse incentives. Once these theoretical underpinnings are fully established, we anticipate that Rx will continue to evolve, mature and become practitioner-led.

1 Notably, a 'lack of role clarity' is listed as a psychosocial hazard on the Safe Work Australia website.

2 In September 2025 the Ministry for Regulation established RegRoom. RegRoom provides a platform for regulatory practitioners, managers, and executives to connect and collaborate to advance regulatory practice and regulatory capability at and across individual, regulatory function and regulatory system level (Ministry for Regulation, n.d.).

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Sharon Brownie, Leith Comer, Catherine Cooney and Patrick Broman

Silos, Competition and Fragmentation

in New Zealand's Vocational Education System

Abstract

New Zealand persistently underperforms in productivity compared with many comparator nations. Solutions require active upskilling of the nation's domestic population. Piecemeal funding across competing vocational education providers, and over-reliance on internationally qualified migrants, are contributors to fundamental failures in domestic skills development and employment. Informing this analysis are notable failures in governance and delivery in three high population-growth regions.

A cohesive vocational educational system with intentional investment in domestic skills development is critical. Clear, multi-level governance, attention to the place of learning, strong regional voice, iwi/Māori partnership, and industry alignment are required if New Zealand is to achieve the productivity gains needed to lift overall economic performance.

Keywords productivity, tertiary education, regional development, workforce, governance, collaboration

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New Zealand has a longstanding history of challenges in respect to productivity and GDP growth, factors critical to the country's future prosperity and well-being (Cook, Devine and Janssen, 2024; Productivity Commission, 2024; OECD, 2025; Petrescu, 2025). Solutions to improve productivity include the well-recognised requirement to build human capital (Kokkinopoulou, Vrontis and Thrassou, 2025; OECD, 2006), something understood by New Zealand's coalition government and noted in the finance minister's 2024 Budget speech: 'Lifting productivity will be our Government's focus, whether that be through raising educational achievement, delivering better infrastructure, enabling investment, or any of the multitude of areas that need addressing' (Willis, 2024).

Encouragingly, 'developing talent' has been identified as the first of five pillars within the government's Going for Growth strategy, recently released for public consultation (Ministry of Business, Innovation and Employment, 2025). 'Raising educational achievement' is recognised internationally as key to lifting national productivity, with education described as a 'transmission channel between inequality and growth'

(Kokkinopoulou, Vrontis and Thrassou, 2025; Benavides et al., 2012; Cerra, Lama and Loayza, 2024; Holden and Zhang, 2018). But New Zealand relies increasingly on migrants to fill skill and workforce gaps (Buchan et al., 2025; Productivity Commission, 2021a), importing skills from other countries while not adequately supporting human capital potential within the domestic population (Productivity Commission, 2021a; Rankin, 2023). This arguably 'free rider' labour market policy is reflected at differing educational and skill levels (Erwin et al., 2020): 51% of overseas-born people in New Zealand aged 25–64 hold a diploma or higher qualification, compared with only 36% of New Zealand-born people in the same age range, one of the largest among OECD countries. This points to the need for the country to better support skills development in its own people (Scott and Ali, 2024; Hanga-Aro-Rau, 2022; NZES, 2024).

Scott and Ali (2024) summarise the latest learner-related findings within the OECD, where New Zealand's participation continues to be lower than average among 15–19-year-olds. Relatedly, it has one of the highest proportions of adult learners completing level 4 qualifications, with an average age of over 30 – the highest age average in the OECD alongside Australia and Ireland (ibid.). This suggests that early school leavers return to acquire basic qualifications later in life. Furthermore, New Zealand is also challenged by a skills retention issue, with many foreign-born workers using New Zealand as a stepping stone to Australia, as demonstrated empirically in a recent report about the flow of internationally qualified nurses to Australia (Buchan et al., 2025).

In this article, we seek to demonstrate how improvements in national productivity require increased attention to vocational education and skills development, particularly in regions with high population growth and with known gaps in educational access and delivery (Brownie et al., 2024). Information to support this assertion, and our conclusions around current shortcomings, are drawn from a range of sources, including published literature, government websites, stakeholder blogs and policy submissions, responses to Official Information Act requests, and work undertaken by the New Zealand Productivity Commission (New Zealand Government, 2021; Productivity Commission, 2024). In exploring these sources, we gained deeper insights into current challenges within New Zealand and considered the issues in the light of global best practices in national and regional skill-building and workforce retention.

The critical imperative: what is at stake?

Cross-national studies make clear the extent to which inequality negatively affects factors such as welfare spending, health status, crime and economic growth (Brookes, 2023; Guillemette et al., 2017). Factors such as non-participation in training or employment, intergenerational unemployment, and disparity between

Figure 1: Waikato, Northland, and BOP population growth, youth, Māori and Pacific profiles

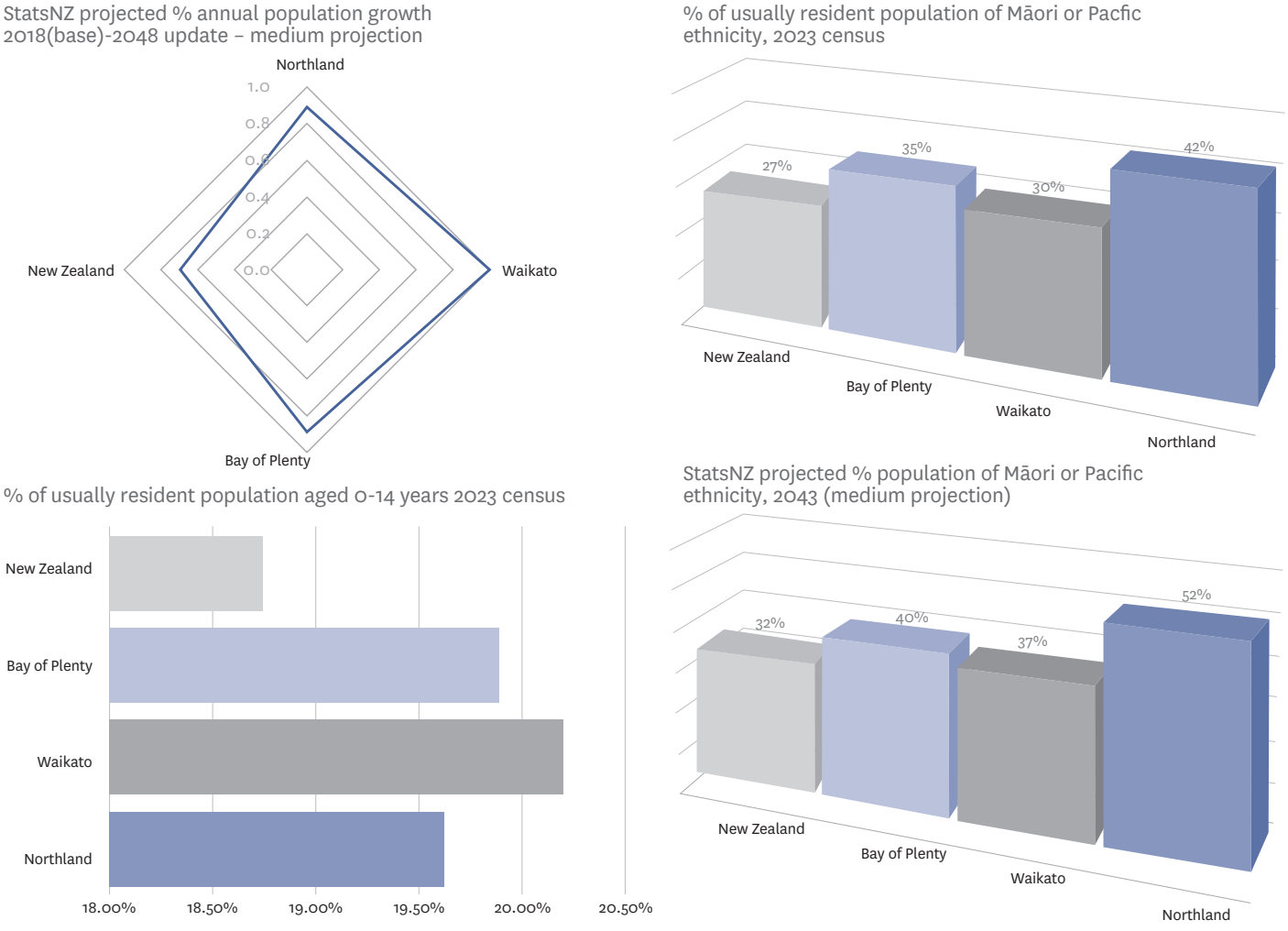
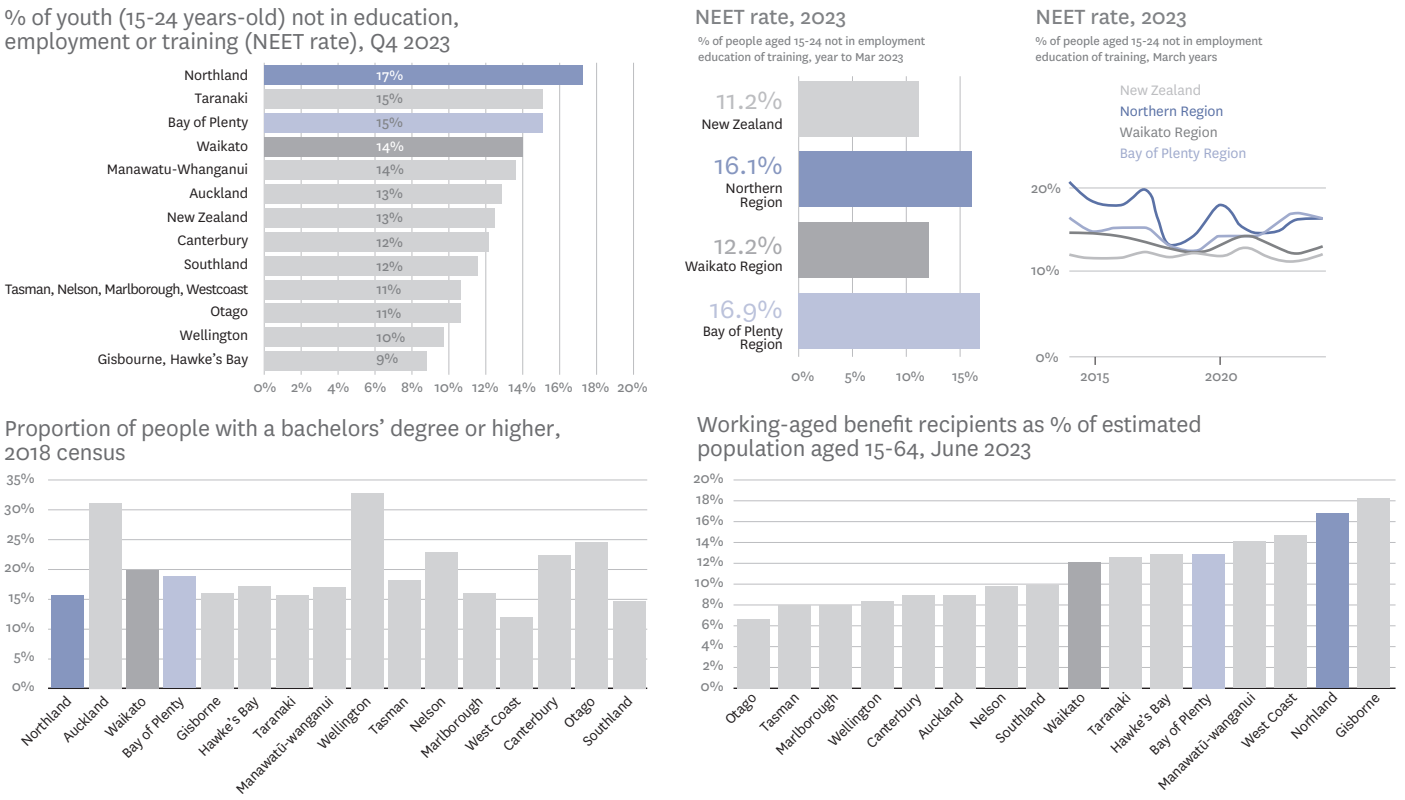


Figure 2: Regional socio-economic profiles of the Waikato, Northland, and Bay of Plenty



Sourced: Informatics, 2023, 2024

domestic and foreign-born workers show a critical need for effective and accessible education. A challenging future exists unless benefit utilisation, and especially NEET (not in employment, education or training) patterns for New Zealand-born youth, can be markedly improved – challenging not just for those young people, but for the nation's wider social and economic future.

The national social and economic risks of current system failures in domestic skills development is well-illustrated by the Northland, Waikato and Bay of Plenty regions, our key focus in this article. As authors we give voice to these regions in which we respectively work and reside and share commitment in advocating for accessible educational opportunities for learners. As the regions with the fastest population growth (Statistics New Zealand, 2022), these areas are high-potential engine rooms for national economic development and growth. Each has a significantly younger population than New Zealand as a whole, with relatively high Māori and Pacific populations (Figure 1), reflective of the potential within the nation's future (Spoonley, 2024). As such, our argument that these regions require improved efforts is well-founded, based on equity and regional need (Brownie et al., 2024; Erwin et al., 2020).

Concerningly, these three regions are among the regions with the highest NEET rates among 15–24-year-olds, as well as higher than average percentages of the working-age population in receipt of a benefit (Figure 2): Northland leads the country with 10.9% of the working-age population receiving jobseeker support, with Bay of Plenty 8.3% and Waikato 7.2%, against a national average of 6.3% (Ministry of Social Development, 2024a). The need to do better is illustrated in Waikato, where geographic inequity in vocational education and training delivery has resulted in 'educational deserts' with very low learner participation rates (Brownie et al., 2024).

In short, these rapidly growing, youthful and ethnically rich regions hold significant potential for New Zealand's future workforce and skill base. But their current workforce situation is far from promising. Given the known negative impacts of lack of educational participation on multiple societal outcomes (Brookes, 2023; Guillemette et al., 2017), this paints a bleak picture of the nation's future. Understanding why this is the case is a complex matter which, as a start, requires an understanding of the current structure, to which we now turn.

Current status: what patterns are visible in New Zealand?

Currently available information overwhelming points to a fragmented system of vocational and broader tertiary education provision, with no clear path for the future. Some key problems are apparent.

Continuous change

The roll-out of vocational education reforms (RoVE) (Tertiary Education Commission, 2018, 2019a) has seen New Zealand's vocational education system subjected to unprecedented levels of change, resulting in confusion, unrest and reduced capacity (Diester, 2024; Watene et al., 2024). The Ardern Labour government implemented RoVE following a long history of service duplication, financial loss and education/industry disconnect. The reforms aimed at achieving improvements by centralising functions with a view to lifting quality and improving education/industry connection, bringing the two rival strands of vocational education and training – workplace-based and provider-led – together in a single framework

(Diester, 2024; Tertiary Education Commission, 2019b; Tertiary Education Union, 2019). A new national institute – Te Pūkenga – combined polytechnic and industry training organisations, and workforce development councils and regional strategic leadership groups were established. However, criticism was levelled regarding the slowness and effectiveness of implementation (Ryan, 2022, 2023).

The current National-led government campaigned on disestablishing Te Pūkenga and a return to regional decision making within its first 100 days in office (New Zealand National Party, 2023). This was not achieved, subsequently explained as being due to the overly complex change process and requirements (Fallow, 2024). Timelines were reset, with operational decision-making powers to be retained by Te Pūkenga until January 2026 (Simmonds, 2024). The time frames highlight the complexity of the change process, including the required legislative change, detailed viability reviews, change management plans, processes for the appointment of local transition boards, and the alleged $157 million cost of dismantlement (McConnell, 2025). Meanwhile, various questions remain unanswered, such as how the advantages of the Te Pūkenga model should be and will be retained – for example, the benefits of national library services, finance systems, and accreditation of national curricula across a small island nation of fewer than 5.5 million people. It is difficult to see how a return to fragmentation and duplication of such services provides the most efficient use of taxpayer resources.

A narrow focus on financial performance

The need to improve financial performance was a key driver of the 2019 RoVE reforms (Tertiary Education Commission, 2017; Tertiary Education Union, 2019). By mid-2024, with savings not having materialised to any meaningful degree, the Tertiary Education Commission served written notice under the Education and Training Act 2020 that Te Pūkenga must source specialist help in disestablishing the entity and identifying options for the formation of viable regional entities. It was directed to appoint four specialist insolvency firms, suggesting that financial criteria were to be the key consideration in the disestablishment process (Fowler, 2024).

Shortcomings with this approach were two-fold. First, the appointment of different insolvency firms for different Te Pūkenga entities rather than a whole-of-sector approach created segmentation, militating against a broad system-wide analysis of issues in the tertiary education system (such as duplication and competition).[1] Second, the narrow focus on financial imperatives appeared to counter instructions within the minister's letter of expectation directing Te Pūkenga to 'support as much regional decision-making as possible' and to 'ensure vocational education and training continues and staff and learners are supported' – decisions rested with receivers rather than regional decision makers (Simmonds, 2023). The narrow focus saw major decisions proceeding without comprehensive cost–benefit analysis and little, if any, stakeholder consultation. Of further concern, the narrow focus on financial viability shifted focus from other RoVE goals, such as better aligning work-based ITO (industry training organisation) and education-based ITP (institutes of technology and polytechnics) functions.

Silenced regional voices

The slowness of progress towards a regionally empowered model has been worrisome. Te Pūkenga has remained operational for two years post-election, retaining operational powers across the sector until 2026. Until recently, centralised decisions, with major cost-cutting and a reduction of options and supports for domestic learners, proceeded without local industry and stakeholder input. With decisions made by insolvency practitioners behind closed doors, no obvious mechanism existed for community leaders to identify possible solutions and partner in decision making (Fowler, 2024). In the face of community unrest, in May 2025 Te Pūkenga appointed sole 'community advisors' for each ITP, but by this stage many decisions had already been made.

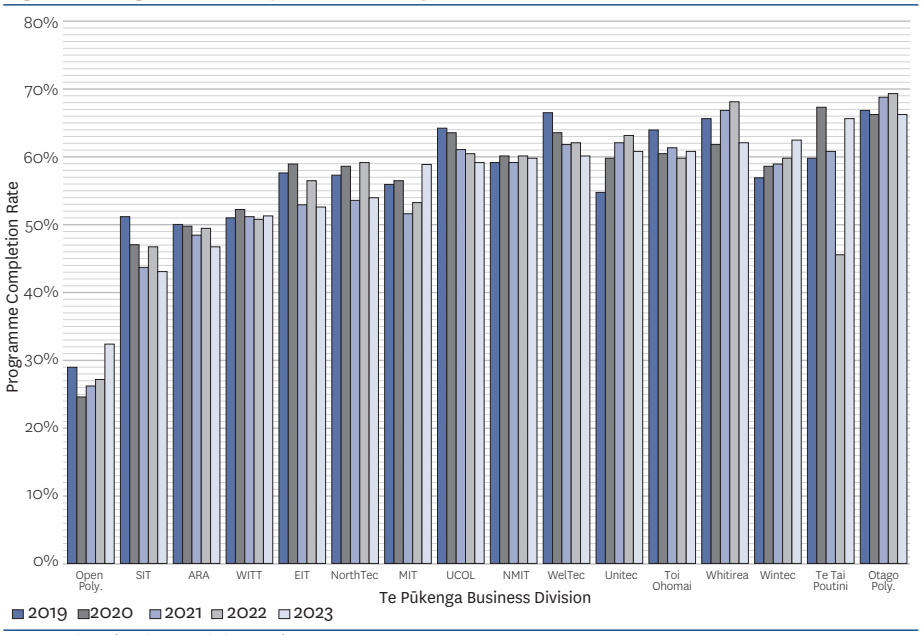
Interim local boards with even basic advisory functions could well have been a useful solution to ensure regional voice and provide advice pending legislative changes needed to formally re-establish regional delivery entities. Early establishment of interim boards at a regional level could have provided local guidance to Te Pūkenga viability reviews, mitigating ill-informed cuts and assisting with community-based solutions in areas where marginally viable programmes may have been salvageable and joined-up solutions may have been identified.

Interim local boards with even basic advisory functions could well have been a useful solution to ensure regional voice and provide advice pending legislative changes needed to formally re-establish regional delivery entities.

Fragmented and inadequate funding

January 2023 saw the introduction of a new, unified funding system for the vocational education sector (Tertiary Education Commission, 2024c). This unified funding for NZQA study from level 3 to level 7 (non-degree) only, and is based on the number of students in a class. Funding does not consider the actual cost of delivery in different contexts. The number of students in a class and thus income received funds not just the cost of delivery, but also the support and infrastructure to

Figure 3: Programme completion rates by ITP, 2019–23



Source: Tertiary Education Commission, 2024b

enable delivery, irrespective of geography. Regional delivery incurs higher delivery costs than main campuses. Viability is linked to scale (Smyth, 2024), and regional campuses lack economies of scale.

In a country of fewer than 5.5 million, a whole-of-government focus is sorely needed. Total government spending for higher education activities is currently spread across several agencies, with appropriations in Vote Tertiary Education (funding for tertiary education institutions), Vote Social Development (student allowances and student loan payments), Vote Revenue (the final-year fees free policy, and fair-value write-down on the student loan asset), and Vote Business, Science and Innovation (research-related funding). Total government expenditure is reported each year in the half-year and annual fiscal updates and estimates appropriation data.

In addition to these allocations, our team have identified education spends via health, immigration, corrections and other entities and found it difficult to accurately identify total spend. Of note, 2024 Official Information Act requests identified significant funding flows via the Ministry of Social Development to 1,579 private providers in receipt of 2,856 contracts, with a significant number providing skills development programmes (Ministry of Social Development, 2024b, 2024d). For example, $4,927,000 was paid to a private provider to develop curricula for health support workers (Ministry of Social Development, 2024c), even though such curricula already exist within the Te Pūkenga network; $25 million was paid to Career Force to support growth in the number of health support workers, and a total of $655 million via the apprenticeship boost scheme between 2020 and 2024 (Ministry of Social Development, 2024b, 2024c). Significant expenditure of $52.3 million was also identified to Te Whatu Ora (Te Whatu Ora, 2024b, 2025).

Identified payments suggest significant sector fragmentation, with little apparent strategic cross-government collaboration, a point of concern given that local divisions of the nationally critical, state-owned provider (Te Pūkenga) were concurrently operating in deficit and with underutilised capacity. The quality of this spend is also far from certain: when asked to provide the evaluation framework guiding contracting and funding decisions, the Ministry of Social Development responded that performance indicators and/or outcome measures relate to specific contracts, most frequently agreed at a regional level, and no clear answer was possible in respect to overall outcomes (Ministry of Social Development, 2024c).

Discussions related to funding fragmentation and calls for better alignment are not new (Productivity Commission, 2017) and are key to the intent of the RoVE reforms and establishment of Te Pūkenga. The issue is also seen in the Frontiers Firms review (2021) and follow-up review (2023), which discussed the impact of fragmented science and research funding, the need better for investment in the workforce and improved connection with industry (Productivity Commission, 2021b, 2023). The need to address fragmented funding systems is also noted across the Tasman, where research funding systems and complicated rules are being simplified on the basis that fragmentation is holding back national development and innovation (Universities Australia, 2025). Funds held across different agencies with common interests is not necessarily a problem, but issues certainly arise when silos become embedded and effective whole-of-government oversight and collaboration is missing (Scott and Gong, 2021).

Educational deserts and suboptimal results from distance learning provision

Educational deserts emerge if services are overly centralised rather than being delivered regionally (Brownie et al., 2024). Online or distance education may seem to be a plausible option; however, it is not a panacea. International research has shown that distance learning via virtual classrooms consistently delivers significantly lower course-completion outcomes than face-to-face or blended models (Bettinger et al., 2017). Analysis of New Zealand outcomes data supports this assertion, showing the Open Polytechnic to consistently experience the lowest course-completion rates (Figure 3). Over-reliance on online delivery to the detriment of accessible face-to-face learning opportunities increases the risk of further embedding existing inequalities for regional learners.

Multiple competitors

The viability of tertiary education organisations is closely linked to scale (Smyth, 2024), with the critical point difficult to reach in New Zealand given low barriers to entry and the number of competing providers. Analysis of information released by Te Pūkenga, the Ministry of Social Development and other government entities highlights a crowded market with a high, and perhaps unsustainable, level of competition. Market share information released by Te Pūkenga

(Te Pūkenga, 2024a) details the number of tertiary education organisations operating in the three regions of interest to this study (see Table 1).

In response to this data, Rob Heyes, lead economist at Informatics, reasonably asks whether New Zealand needs so many providers given its small population (Heyes, 2024). Heyes' analysis shows surprisingly small regional population sizes per local tertiary education organisation (Table 1), and asks whether a given regional ITP would have a better chance of turning a profit if it were able to increase the scale of its operations by taking on learners currently serviced by others operating locally. He also notes wide variation in this measure across regions – for example, as low as one tertiary education organisation per 1,274 people on the West Coast – suggesting that this shows a lack of standardisation in how tertiary education is delivered regionally.

Ministry of Education data shows that within this competitive market, student enrolments in tertiary education nationally rose by 2.3% in 2023, but the distribution between competing providers shifted markedly. Wānanga enrolments rose by 4.3% and PTE (private training establishment) enrolments by 22%, while Te Pūkenga enrolment fell by 3.3%, with a 5.7% decline in domestic enrolments (Education Counts, 2023). This trend suggests declining learner confidence in Te Pūkenga, to the benefit of the private sector (i.e., PTEs). A response from the Tertiary Education Commission to an Official Information Act request about provider numbers suggests that it funds 298 PTEs (Tertiary Eduation Commission, 2024b), while Independent Tertiary Education New Zealand reports that in 2022, government-funded PTEs offered 1,665 different programmes contributing to 800 qualifications for 52,440 enrolled learners (Independent Tertiary Education New Zealand, 2024). The extent of private sector provision relative to other providers is illustrated in Figure 4.

We consider that it is worth considering how appropriate it is that the government focuses attention on cost-reduction and asset stripping primarily in the state-owned vocational education sector (i.e., Te Pūkenga), which at this point holds only 15–20% of the tertiary education market share (Te Pūkenga, 2024a), while ignoring large-scale shifts to highly fragmented private sector provision. A major driver of the RoVE reforms centred on the administrative costs and inefficiency across 16 ITPs and 11 ITOs, while simultaneously establishing workforce development councils and regional strategic leadership groups. However, seemingly no attention has been given to the heavy administrative burden and size of back-office teams needed to engage with this number of providers and effectively link ITPs, ITOs and the new workforce development councils and regional strategic leadership groups. We note here that effective monitoring and quality control across multiple smaller-scale private providers is almost impossible, as seen in the UK where many acknowledge that the system has gone too far with privatisation (Naz, 2024).

Table 1: Market share of tertiary education organisations (TEOs), 2023

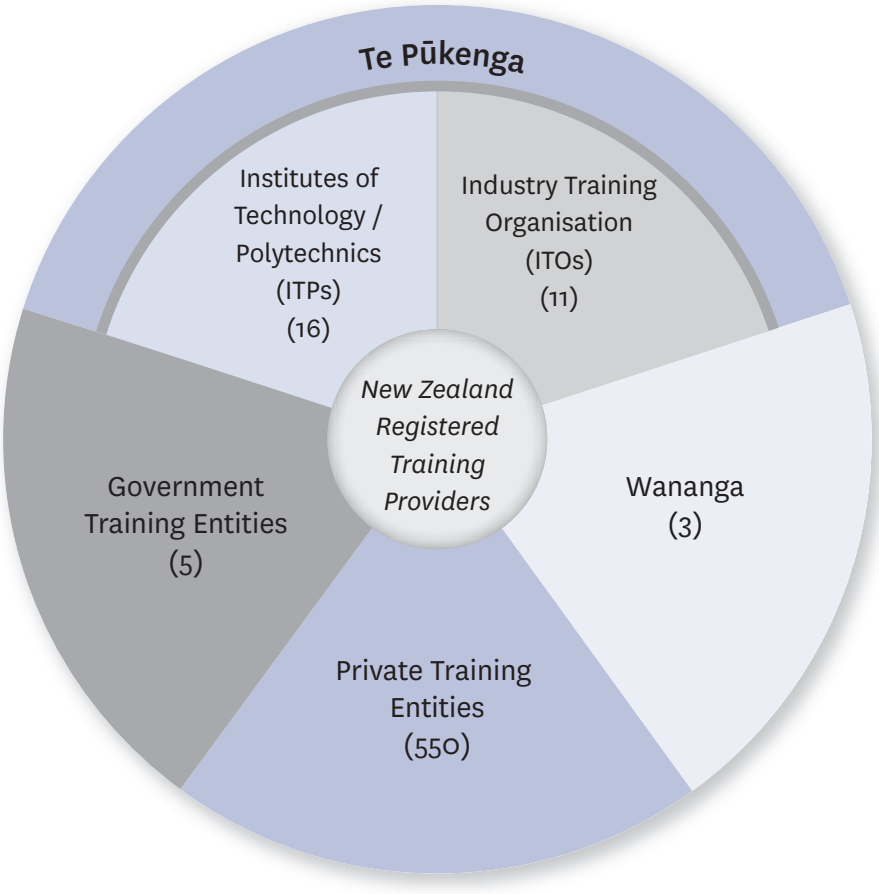
Region	Regional Population	Number of TEOs	Regional population per TEO	Learners % of regional population	Te Pūkenga market share
Northland	203,900	66	3,064	3.3%	21%
Bay of Plenty	354,100	73	4,790	4.1%	25%
Waikato	522,600	88	5,964	4.4%	21%

Source: Heyes, 2024

Data inconsistencies

Accurate and timely data is essential for effective planning across government services (Brownie and Broman, 2024; Brownie et al., 2014). In preparing this article, the authors reviewed publicly available data and requested a large amount of information from agencies. Inability to reconcile data, contradictory responses from agencies, and incomplete and non-matching data sets were consistent issues. Examples of incomplete data sets include a Ministry of Social Development response to a question about expenditure specific to

Figure 4: Number of registered training providers in the New Zealand vocational



Source: Skills Consulting Group, 2020

Table 2: Costs incurred by Te Whatu Ora for recruitment and education of internationally qualified nurses, March 2023–July 2024

Activity	Cost
CAP fees reimbursements	
· March 2023-March 2024 (3350 IQNs)	$26,543,562.36
· April 2024-July 2024 (935 IQNs)	$7,649,450.79
Additional staff costs to process re-imbursements	$141,576.70
Staff attendance at international recruitment fairs	
· 9 staff -Intensive Care Congress UK	$62,110.63
· 4 staff UK – Critical Care Association UK	$27,432.74
· 6 staff UK – London Careers Fair UK	$34,985.05
· 2 staff Scotland – Glasgow Nursing Fair	$7,684.01
· Birmingham Down Under Live, United Kingdom (14 October 2023)	Cost info refused
· Dublin Down Under Live, United Kingdom (18 October 2023)	Cost info refused
· London Down Under Live, United Kingdom (21 October 2023)	Cost info refused
· Melbourne HealthCare Job Fair, Australia (16 March 2024)	Cost info refused
· Brisbane ANZICS Conference, Australia (10-12 April 2024)	Cost info refused
· Sydney ICU Critical Care Health NZ Job Fair, Australia (8-9 May 2024)	Cost info refused
Recruitment Agents Fees	$17,827,053.00
Total	$52,293,855.28

Source: Te Whatu Ora 2024b, 2024c

the Northland, Bay of Plenty and Waikato regions which stated that 'The Ministry is unable to provide expenditure data by region' (Ministry of Social Development, 2024c). A question to Te Whatu Ora regarding the amount of revenue received from educational providers for clinical placements received the following reply:

> We have identified a gap in our knowledge and the lack of national visibility of placement revenue and are working to better standardise and collect this information in a systematic way across Health NZ to enable us to make this data available in the future. (Te Whatu Ora, 2025)

Other examples include the authors' failed attempt to confirm the whole-of-government total spend on tertiary education: questions submitted to Treasury were transferred to the Ministry of Education, with resubmitted questions either misunderstood, refused under various provisions of the Act (Treasury, 2025), or transferred for a second and third time. We consider that there is no single source of truth across available data and that the difficulty is a longstanding one (Brownie and Broman, 2024; Ministry of Health, 2016; North and Hughes, 2006).

Policy disparities and disconnects

Policy disconnects are apparent across New Zealand's government entities. One example is the recent over-recruitment of internationally qualified nurses. New Zealand has a long history of underinvestment in its domestic nursing pipeline and heavy reliance on international recruitment: prior to the Covid-19 pandemic, New Zealand reported among the highest percentage of internationally qualified nurses (27.25%) in the world (World Health Organization, 2020). With the pandemic having disrupted usual inward migration, health bodies invoked various rapid-response strategies to address post-pandemic shortages. Migration settings were loosened, with nurses moved to a tier 1 'straight to residency' pathway (OET, 2023), and Te Whatu Ora established a fund for new internationally qualified nurses to have their competency assessment programme (CAP) fees refunded (Nursing Council of New Zealand, 2023). Simultaneously, many New Zealanders sought to retrain, especially those whose existing jobs had been affected by the pandemic. In contrast to new internationally qualified nurses, people entering a two-year graduate-entry programme to become a registered nurse found very limited support. Students in these programmes face two years without government-supported income (but may borrow to cover living costs within the student loan scheme), and are required to pay hefty fees of around $8,000 per annum.[2] Student loans of $40–50,000 on graduation are a common scenario.

Predictably, internationally qualified nurses flocked to New Zealand, attracted by the promises of jobs accompanied by immediate tier 1 residency and refund of CAP fees: 18,843 internationally qualified nurses obtained a New Zealand licence in the year to September 2024 (Nursing Council of New Zealand, 2024), constituting 86% of all new registrations and approximately ten times the annual volume of domestic graduates. These nurses now constitute 46.3% of the 83,951 nurses holding an annual practicing certificate. Facilitating this unprecedented level of international recruitment into the country cost almost $52.3 million between March 2023 and July 2024 alone (see Table 2).

The policy incongruities in this scenario are obvious. Extraordinarily, the $52.3 million spent by a single agency on this single issue exceeds Te Pūkenga's remaining deficit, which New Zealand's central vocational education and training delivery agency is yet to fully resolve (Te Pūkenga, 2024b). Actions undertaken by health agencies arguably ran counter to government priorities in education and have caused a major oversupply of nurses and a situation in which both internationally qualified nurses and domestic graduates are unemployed and financially distressed (Brownie and Jackson, 2024). Worse, the investment in international recruitment and education seems to have yielded very limited long-term return, with the Nursing Council of New Zealand reporting that 45.5% internationally qualified nurses declared a New Zealand residential address in December 2023, dropping to 22.2% in September 2024 (Nursing Council of New Zealand, 2024), and recent research showing an almost total loss of internationally qualified nurses within 30 months (Ram et al., 2025). Meanwhile, the cost of domestically qualified graduates either in receipt of jobseeker support, leaving nursing or leaving the country is yet to be calculated.

Complexity, lack of clear governance structures and suboptimal outcomes

All this points to insufficient cross-government collaboration, missing and non-matching data, and a complex, tangled ball of policy and funding disconnect.

Siloed portfolios, competition and funding fragmentation in an extensively crowded market are evident, along with an absence of clear whole-of-government coordination. The scale of unfettered competition between and within government-owned entities and between the public and private sectors are illustrative of a floundering system in which data matching and programme evaluation are exceptionally difficult, and in which multiple providers struggle for viability as they compete for money within a limited funding pool. Given the discovery of significant spending allocations across the various government agencies (see Table 2), we suspect that there may well be sufficient funds across existing vote allocations to sufficiently fund an effective and sustainable tertiary education for New Zealand's domestic learners. Our low domestic skill levels and reliance on inward migration show an urgent need for policy improvements and for a whole-of government approach and coordination across the currently highly fragmented system

Policy solutions

The documented link between the population skill base, regional productivity and economic well-being is well-known (Productivity Commission, 2024; Radcliffe, 2024; Wesselbaum, 2024). Economic productivity rises as the number of educated and skilled workers increases, and economies are more productive when embedded disparities are effectively addressed (UNESCO, 2024). Lifting productivity in New Zealand's fastest-growing regions requires a focus on those not currently in education, training and employment and those facing geographic, cultural and socio-economic barriers. A well-functioning tertiary education system which supports domestic skills development is critical in improving social and economic performance.

International examples of good practice

Global best-practice examples are clustered in Europe, with many people pointing to the success of the vocational education and training system in Germany, Austria, Switzerland and Liechtenstein. In differing ways, each is a global leader in vocational education, work-based training and entry to work (employability) and often referred to as illustrative of a 'gold standard' in 'career-connected learning' (European Centre for the Development of Vocational Training, 2025). As an example, vocational education and training is so attractive in Sweden that 60% of 15–19-year-olds choose to go through this pathway: vocational qualifications enable them to secure lucrative graduate employment opportunities while continuing to obtain bachelor's and master's level qualifications via collaboratively connected universities (Phillips, 2023).

Tertiary education in Slovenia features a fully integrated education system across high school, vocational education and training and university. The system also features implementation of a major development project involving a skills forecasting platform. The platform identifies short-, medium- and long-term competency gaps in the labour market and predicts skill needs based on the information obtained. The platform development models cross-government collaboration through partnership with the Ministry of Labour, Family, Social Affairs and Equal Opportunities (Cedefop, 2021). The commonality of these European-based systems involves roots in a centuries-old guild system of work-based learning which is deeply embedded within the culture of those countries. Collaboration is also evident between the vocational education and training and university sectors.

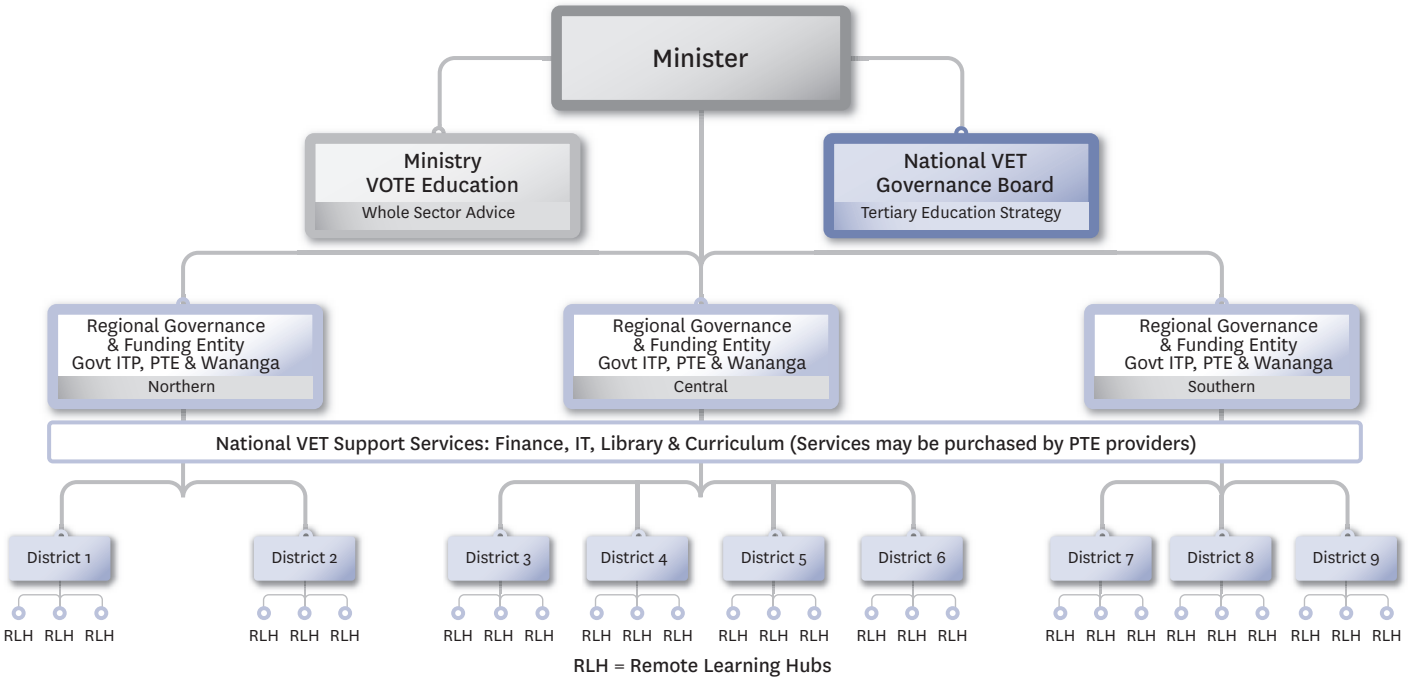
Collaborative models are also seen in the Australian context, with five 'dual-sector' university/vocational education (TAFE) providers established following the 2009–11 Dual-Sector Collaboration Project (Matthews and Murphy, 2011). The imperative to further enhance cross-sector collaboration (and reduce competition) has also been well-recognised in current policy directives in the Australian Universities Accord (Nous Group, 2023) and the establishment of collaborative and institutionally agnostic learning hubs in regional areas (Australian Government, 2024). Further collaboration is seen in Australia in the 'TAFE at School' initiatives (Victorian Government, 2025); and in New Zealand in the successful 'trade academy' model, where students spend some days at school and some days at work each week (Ministry of Education, 2025).

Best-practice features

These industry-connected systems have consistent features. They include well-defined multi-level governance systems with coordinated cross-government structures which encourage collaboration, along with a strong focus on domestic learners, with every learner positioned as a contributor to the health and well-being of the country. Industry engagement is consistently present, along with extensive interaction and localised delivery. Public versus private sector provision is purposefully managed and balanced. Systems are student-centred, with accessible place-based work-integrated learning and clear pathways across the entire education spectrum, particularly from school through higher education to employment. Leading-edge infrastructure supports learning for all key industries, with infrastructure increasingly provided via cost-effective collaborative hub models. Adequate investment with appropriate,

> Multi-level governance models with priority and commitment for research and innovation and a focus on equitable domestic skills development are highlighted as features of excellence in educational systems design ...

Figure 5: Multi-level vocational education governance and delivery model



needs-based financing is aligned with the specific needs of industry employers. Educationally experienced leadership is present in key roles.

Governance

Multi-level governance models with priority and commitment for research and innovation and a focus on equitable domestic skills development are highlighted as features of excellence in educational systems design (OECD, 2024). National governance boards provide whole-of-government guidance and strategic direction. Locally empowered governance ensures strong industry engagement and a focus on local skill requirements. Regionally-based funding and purchasing entities bring purchase decisions closer to regions, in contrast to New Zealand's current Wellington-centric funding model. Figure 5 models how this could be designed within the New Zealand context: the various levels of governance would bring funding decisions closer to regions and would ensure appropriate representation and voice of both iwi/Māori and the wider community at all levels.

Regional empowerment

A multi-level governance framework as proposed, with three regional governance and funding entities aligned with existing Ministry of Education regions, would bring consultation and funding-related decision making closer to regions (Figures 5 and 6).[3] Alignment with the existing Ministry of Education regions could reduce sector fragmentation and maximise functional pathways and collaboration across early childhood, primary, secondary and tertiary education, while minimising confusing reporting jurisdictions.

Establishment of three regional governance and funding entities is consistent with the model proposed for the health sector (Reti, 2024). The health minister's announcement in 2024 pointed to the benefits of local leadership and accountability, providing authority to allocate resources to improve outcomes and deliver against targets (MySkill, 2024). Funding decisions must not be overly centralised, without ability to identify and address local industry and community needs. Further, a system in which each region is configured to maximise the ease of establishing collaborative arrangements and learner pathways with university providers is key to regional empowerment. Rationalisation and strategic alignment are also needed across the multitude of private sector providers, a process more able to be handled on a regional basis.

Financing – money matters

Access to vocational education in the regions is critical for local skills development, healthy communities, productivity and national GDP (Benavides et al., 2012; Holden and Zhang, 2018). However, New Zealand is reported to be underinvesting in tertiary-level education and not delivering it where needed. Delivering education into regions is often more costly than urban areas. Therefore, needs-based funding provisions with funding decisions made closer to the regions is critical to success. The historic Australian-based Gonski review detailed the necessity of needs-based funding across the entire education system (Gonski et al., 2011) to address gaps between the highest and lowest achievers across the nation's education systems. Gonski's recommendations were in line with the OECD's historically consistent message that effectively addressing disadvantage requires increased investment in educational systems (Benavides et al., 2012). However, successive governments failed to establish the policy and fundings settings needed to bring Gonski's needs-based funding recommendations to life and so Australia has had to revisit reform processes (Kelsey-Sugg, 2022; Nous Group, 2023).

In 2021 the Nobel Prize in economic sciences was awarded jointly to David Card for his 'empirical contributions to labour economics', and Joshua Angrist and Guido Imbens for their 'methodological research contributions to the analysis of causal

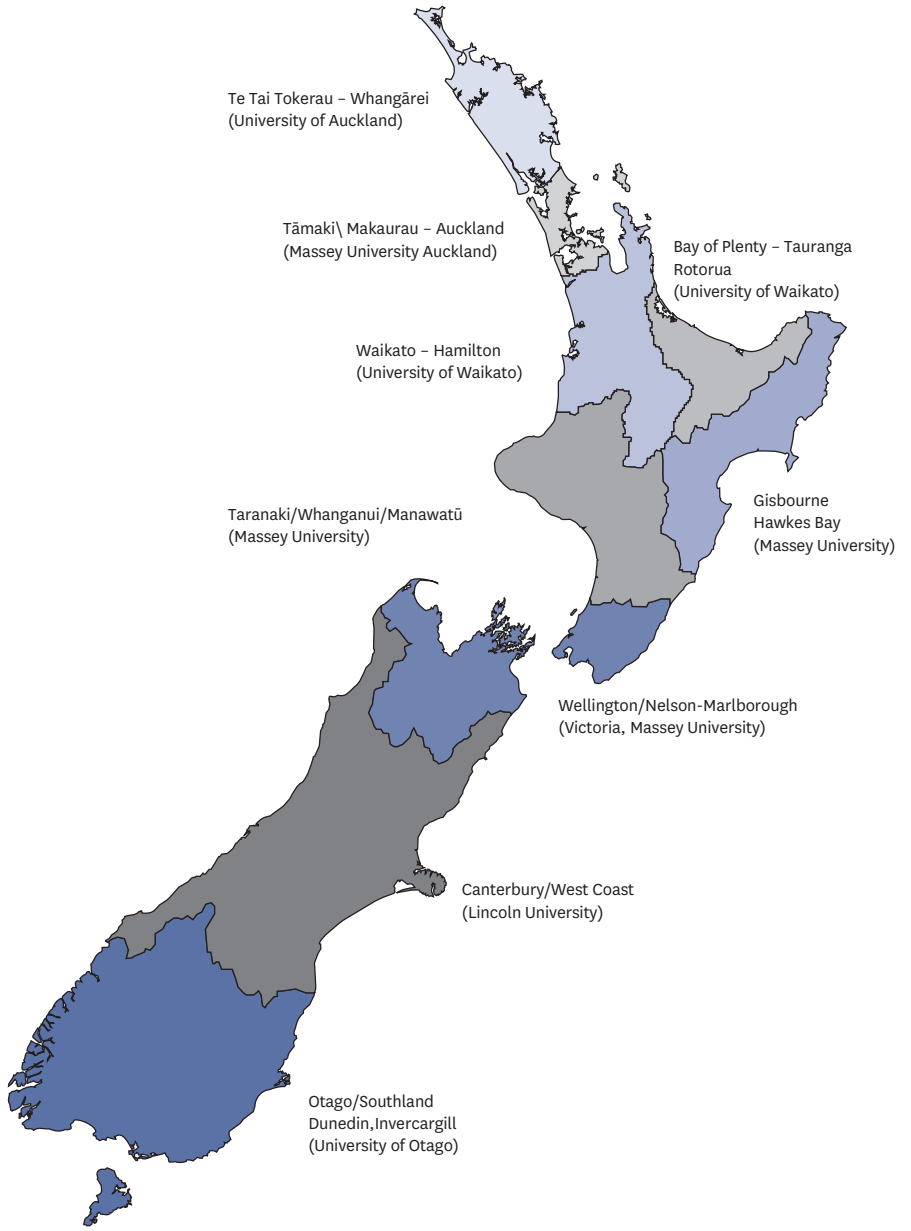
relationships' within labour markets (Nobel Prize Organization, 2021). Their combined efforts confirmed the finding that levels of investment in education have a direct influence on educational outcomes, including students' entry to and later success in the labour market (Sahlberg and Piccoli, 2022). Card, Angrist and Imbens provide overwhelming evidence that money matters a great deal in education, and that the causal relationship between education expenditure and student achievement is very strong, especially for disadvantaged and marginalised students.

Hope for the future

While the status quo may be gloomy, early indications give rise to hope that the new coalition government understands the issues and is attempting to reset policy and direction. For example, the Social Investment Agency has a mandate to resolve longstanding issues and is designed to work across agencies to achieve rigorous, consistent and systematic collection and use of data. Whole-of-government coordination of data is intended to provide an improved evidence base on which investment decisions can be made earlier and with better effect. Early identification and clearer understanding of current investment and the drivers of poor outcomes will allow for earlier investment in 'what works' (Treasury, 2024). While more work is needed, New Zealand has models which have proven to be effective – for example, the 'trades academy' model (Gerritsen, 2025). Places are currently rationed and many students miss out on this opportunity, but potential exists to contextualise and systemise the approach, as seen in Europe.

Positive signals are present in the coalition government's 'Going for Growth' strategy, with 'developing talent' listed as the first of five pillars supporting economic recovery and growth (Ministry of Business, Innovation and Employment, 2025). The government has also released an Employment Action Plan (New Zealand Government, 2024), a cross-government plan with the key players being the Ministry of Social Development, Ministry of Education, the Tertiary Education Commission and the Ministry of Business, Innovation and Employment. The plan is built around collaboration between agencies, along with partnership-based commitments to industry, regions and communities.

Figure 6: Proposal for whole-of-tertiary education alignment across regions



Encouragingly, national health workforce planning has been identified as providing the greatest opportunity to improve the New Zealand healthcare system, and commitment to improved workforce planning is increasingly apparent. A New Zealand Health Workforce Plan has been developed for 2024, with encouraging content regarding better support for growth in the domestic workforce and the provision of facilities such as simulation centres, and a focus on interprofessional teams and telehealth delivery (Te Whatu Ora, 2024a). These are much needed developments.

In establishing these entities and signalling improved governance over key decisions, the current government understands that overly centralised models, siloed approaches and data misalignment issues have got in the way of effectively targeting expenditure. However, the introduction of a siloed ministerial appointment for universities does not bode well, as it is unclear at this point what mechanisms are in place to ensure collaboration and clear learner pathways. Greater articulation is needed in respect to the cross-sector engagement with education, immigration, regulatory authorities and others on which successful planning outcomes depend (Te Whatu Ora, 2024d). Recent news of possible dual-sector

(university/vocational education) provision, while greeted with scepticism by some (RNZ, 2025), is, in our view, encouraging, with useful examples seen in other jurisdictions, including Australia (Moodie, 2009).

The telling point will be whether culture can be changed within and between large government agencies so that genuine cross-government collaboration can occur. In addition, the complex issue of increased privatisation versus government-funded delivery must be openly examined and occur under deliberate policy direction rather than through free market proliferation alone. Well-coordinated and carefully constructed public policy is central to success (Miller and Pradeep, 2024). However, policy resets are commonly derailed and policy implementation failure is common. New Zealand is not immune to this risk, with the RoVE failures being a textbook example. With so much at stake, how will the future story be different for the talent and potential within New Zealand's fastest-growing regions?

Limitations of this study

This study has been limited to publicly available data and information obtained through Official Information Act requests. These limitations were compounded by the known data gaps, along with significant delays and difficulties in obtaining clear answers via OIA request. The study focuses on Northland, Waikato and the Bay of Plenty, regions with high population growth and where the authors work and reside. The authors acknowledge that similar issues exist in other high-growth regions, such South Auckland. The focus is on the vocational education and training sector only, and it is acknowledged that similar fragmentation could be identified across New Zealand's higher education university sector.

Policy implications

The work associated with this study has highlighted an unsustainable level of fragmentation and complexity across the existing vocational education and training system. Given the limitations outlined above, accurate evaluation is beyond the capacity of interested researchers and policy advisors alone. Lifting productivity is a major focus of the current government. With education being a major 'transmission channel between inequality and growth' (Benavides et al., 2012; Cerra, Lama and Loayza, 2024; Holden and Zhang, 2018; Productivity Commission, 2024), our recommendation is that priority be given to:

- strengthening access to vocational education provision for the nation's domestic workforce;
- ensuring collaboration across the three ministerial portfolios of education, vocational education and universities, with recognition of the 'unique' characteristics of universities and other degree-level providers in respect to academic independence and research functions;
- prioritising analysis of current whole-of-government investment in vocational education and training and broader tertiary education within the work schedule of the Social Investment Agency, including better understanding and streamlining of current funding flows across the higher education sectors;
- strengthening whole-of-system governance, regional voice, partnership with iwi/Māori, and industry participation across the vocational and higher education system to
  - address and resolve issues of sector fragmentation;
  - establish clear learner pathways and ensure the development of domestic workforce capability aligned with both industry and regional need.

A strategically governed, joined-up system committed to the pursuit of shared aims is urgently required if New Zealand is to effectively upskill its population and achieve the productivity gains needed to lift economic performance.

Conclusion

The strong causal relationship between the level of investment in education and student achievement and skills development, especially for disadvantaged and marginalised students, is well known. Equally well known is the negative impact of factors such as socio-economic status, welfare spend, health status, crime and economic growth on inequalities in educational access (Brookes, 2023). As such, it is critical that strategically cohesive, whole-of-government mechanisms are in place to effectively support skills development across New Zealand's domestic workforce. This has been acknowledged by successive governments, yet policy settings continue to undermine the plan (Doe, 2025). New Zealand continues to take a 'free rider' approach, poaching skilled people from other countries without regionally equitable attention to the skills development and employment of New Zealanders.

The current vocational education system, characterised by sector fragmentation, gaps in national and regional governance, a centralised funding model, siloed departmental actions, unfettered competition, and an over-reliance on an internationally qualified workforce is not a recipe for lifting national productivity. A strategically governed, joined-up system committed to the pursuit of shared aims is urgently required if New Zealand is to effectively upskill its population and achieve the productivity gains needed to lift economic performance. Our investigations highlight that, to do

better, attention must be paid to strong multi-level governance, clear regional voice and cross-sector collaboration which recognises the importance of place (Ram et al., 2025) and successful learning outcomes. Needs-based funding and industry alignment for domestic learners are critical in lifting national productivity and mitigating current inequities. While hope glimmers within revised policy directions and newly established cross-agency functions, cohesive, long-term whole-of-government planning with non-fragmented investment is yet to be achieved.

1 The tertiary education ministerial portfolio was divided in January 2025, with separate roles for a minister of vocational education and minister for universities. Separation carries the risk of increasing silo effects, as does a current strategic review of universities being undertaken separately from work on the future configuration of the vocational education sector. At the time of writing (February 2025), it was not clear which minister was for responsible boundary-crossing areas such as degree-based study, the performance-based research fund (PBRF) and wānanga.

2 Policy disconnects are evident in that graduate-entry master's students are not eligible for financial support, as student allowances are not available for postgraduate study. They are also ineligible for jobseeker support while studying.

3 Note here that the Education and Training Act 2020 establishes a key function of the Tertiary Education Commission as being 'to facilitate and strengthen the connections between schools, employers, and tertiary education organisations to ensure that students are prepared for employment and further education or training, or both'. These connections plainly require close alignment with the compulsory schooling sector and Ministry of Education.

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Amara Anyanwu

Competition and Profitability in New Zealand's General Insurance Sector: emerging policy issues

Abstract

This article examines competition and profitability in New Zealand's general insurance market. Given the country's high exposure to earthquakes, severe weather and climate risks, effective competition is vital for ensuring that insurance markets deliver efficient risk pricing, protect consumers from excessive costs, and safeguard financial stability. Benchmarking against international peers using combined ratios, returns on equity and net profit margins shows that New Zealand insurers consistently report higher profitability. Although differences in data and scope limit the precision of these comparisons, the overall pattern is evident. While catastrophe exposure explains part of the divergence, the scale and persistence of 'excess profits' point to structural weaknesses in competition. Strengthening competition and improving affordability will be critical to protect households and support financial resilience.

Keywords general insurance, property insurance, competition, profitability, climate risk, New Zealand

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Insurance has become one of the fastest-rising costs for New Zealand households. According to Consumer NZ (2025), house insurance costs have risen more than ninefold since 2000, far outpacing household income growth and forcing many households to reduce or drop cover. Yet insurers remain persistently profitable – a paradox that raises questions about market power and competition. The core question is why New Zealand's general insurance sector has sustained profitability well above international norms, whether this reflects unavoidable risk factors or weaknesses in competition, and what this implies for competition policy.

Both domestic and global pressures lie behind these increases. Natural hazard events such as the Canterbury earthquakes (2010–11), the Kaikōura earthquake (2016), record weather-related losses (2017), and more recently the Auckland Anniversary weekend floods and Cyclone Gabrielle (2023) exposed insurers to billions of dollars in claims. These shocks drove premium hikes and accelerated the move towards risk-based pricing. In addition, rising reinsurance costs, construction inflation, and climate adaptation uncertainty have added upward pressure on premiums.

The implications are significant. Affordability challenges are already evident: in 2022, 7% of households who cancelled their house insurance cited cost as the reason; today that figure has climbed to 17%. If these trends persist, large parts of New Zealand risk becoming effectively uninsurable within the next decade, with consequences for household resilience, financial stability, housing markets and social equity. Insurance remains a cornerstone of security, but escalating costs and reduced availability raise concerns about whether the market delivers outcomes consistent with effective competition and fairness.

This article applies the structure–conduct–performance (SCP) framework to assess how market structure, firm behaviour and profitability shape competition, affordability and resilience. It also aims to shed more light on the extent to which observed profitability reflects structural market power or unavoidable risk factors.

Structure

As of 2023, New Zealand's private insurance sector held about $27 billion in assets (7.5% of GDP), modest compared with the banking system's $667 billion. Although 89 insurers are licensed, the market is highly concentrated and largely foreign-owned: around 55% of insurers are foreign-owned, controlling about 85% of assets (Reserve Bank of New Zealand, 2024). Australian groups IAG and Suncorp dominate through multiple brands and trans-Tasman reinsurance arrangements. Nearly nine in ten insurer assets are controlled offshore, meaning strategic decisions and profits are largely shaped abroad. This heavy foreign ownership frames the market's structure and gives a small number of large players significant influence over outcomes.

The industry is divided into three segments: general, life, and health, which differ in structure, regulatory requirements, and risk profiles. In 2023 it generated about $13 billion in premiums, dominated by general insurance ($8.1 billion, 62%), followed by life ($2.8 billion, 22%) and health ($2.1 billion, 16%). Within general insurance, property (residential and commercial) accounted for 43% of gross written premiums, followed by motor (33%), commercial (15%), earthquake (11%) and liability (9%), with marine and other niche products contributing only marginally (Insurance Council of New Zealand, 2024). General insurance dominates revenues and policy debates, making it the natural focus for competition analysis.

… the mix of licensing, governance, capital and risk requirements illustrates how prudential standards safeguard stability while also constraining entry.

Concentration metrics highlight how this structure shapes outcomes. The Herfindahl–Hirschman Index (HHI), which ranges from 0 to 10,000, places New Zealand's general insurance sector in the 'moderately concentrated' range. The HHI fell from just over 2,100 in 2018 to around 1,857 in 2022, suggesting that while a few large firms still dominate, competitive pressures have modestly increased. The three-firm concentration ratio provides another lens: levels above 80% typically signal collusion risk, while in New Zealand the top three insurers account for about 66% of revenue. At the firm level, IAG remains the largest with a 38% share in 2022 (down from 41% in 2018), followed by Vero (16%), AA Insurance and QBE (7% each), FMG (5%) and Tower (4%) (Reserve Bank of New Zealand, 2024). Although not extreme by international standards, this degree of dominance still shapes competitive discipline and helps explain high returns.

While formal measures classify the sector as 'moderately concentrated', the small market size and dominance of IAG and Suncorp mean competitive pressure resembles that of a highly concentrated market. In addition, the aggregate HHI (1,857) masks variation across product lines: for house, contents and motor insurance, concentration is much higher, often at or above 2,500, because of the dominance of IAG and Suncorp. In this context, describing the sector as only moderately concentrated risks understating the weakness of competition.

Elevated profits also reflect barriers to entry. In competitive markets, high returns attract new entrants, pushing down margins. Where barriers are strong, incumbents can sustain profitability well above competitive levels. In New Zealand, prudential regulation is often cited as one such barrier, although its effects are more nuanced. A distinctive feature of the Reserve Bank's framework is the catastrophe risk charge, which requires insurers to withstand a 1-in-1,000-year event, a far more conservative standard than the 1-in-200 or 1-in-250 standards common elsewhere (Insurance Council of New Zealand, 2024). While S&P Global Ratings describes entry barriers as moderate, the licensing regime is seen as reasonably onerous. Importantly, the catastrophe risk charge is not insurmountable, since it applies mainly to seismic risk and is typically managed via global reinsurance markets. More broadly, the mix of licensing, governance, capital and risk requirements illustrates how prudential standards safeguard stability while also constraining entry. This trade-off bolsters resilience but sustains elevated profitability, underscoring the persistent tension between stability, efficiency and affordability in the insurance sector.

While structure shapes the boundaries of competition, firm behaviour determines how that structure translates into market outcomes. The next section examines how insurer conduct reflects and reinforces these competitive dynamics.

Conduct

How firms behave under concentration reveals whether competition disciplines them or entrenches market power. In

New Zealand's insurance sector, conduct offers this lens. It can be assessed through customer satisfaction, switching behaviour, innovation and marketing activity, each showing how competitive pressures or their absence affect consumers.

In competitive markets, firms improve price and service to retain customers. Where rivalry is weak, these incentives fade. Consumer NZ (2023) found that 60% of households were worried about house insurance and 52% about contents, and concerns may have grown since then. The most common complaints involved declined claims and poor service. Only 29% of consumers were satisfied with outcomes, compared with 55% across other sectors, such as utilities and groceries (Commerce Commission and Ministry of Business, Innovation and Employment, 2024). Such low satisfaction suggests systemic weaknesses, yet these concerns rarely create competitive pressure, because switching remains limited.

In competitive markets, exit threats discipline firms. Yet Consumer NZ (2024) found that only one fifth of policyholders considered switching. Complexity, bundling and perceptions of disruption dampen mobility, while opaque product features and loyalty discounts often function as lock-in. Low mobility allows insurers to maintain poor service without losing customers, a hallmark of oligopolistic markets. This inertia is not unique to insurance. Switching rates are also low in banking (3%), mobile services (8%) and electricity (10%), suggesting structural barriers across New Zealand's consumer markets. Limited mobility helps explain why dissatisfaction persists: weak exit threats reduce pressure to cut prices or improve service, allowing margins to remain high and rivalry to remain self-reinforcing.

This weak competitive discipline also affects how insurers approach innovation. Competitive pressure typically drives firms to innovate, but weak rivalry slows adoption. New Zealand insurers have been incremental adopters, with few transformative initiatives. Tower's 'trust both ways' policy is a rare example of using transparency as a differentiator. Some firms have experimented with digital tools, sustainability branding and customer engagement, but progress remains patchy. Deloitte (2024) notes that New Zealand lags behind Australia in telematics, usage-based insurance and digital claims platforms, reflecting subdued competition more than technological inertia. Underinvestment in innovation reduces consumer choice, weakens adaptation to climate and digital risks, and entrenches inefficiency in claims handling, with direct costs for households.

Weak innovation incentives also feed into how insurers use marketing. In competitive markets, firms advertise heavily to win customers. In concentrated markets, reliance on inertia weakens this incentive. International evidence shows that churn and advertising intensity rise as concentration falls. In New Zealand, insurer advertising expenditure is undisclosed, reducing transparency. Whether this is a reporting gap or an attempt to avoid scrutiny, the effect is the same: limited advertising reduces consumer choice, raises barriers for new entrants, and entrenches incumbents' market power.

Taken together, poor customer satisfaction, low switching, modest innovation and limited marketing are not isolated shortcomings. They are likely mechanisms through which market power is exercised. Conduct therefore reinforces concentrated structure and helps explain why New Zealand insurers have sustained relatively higher profitability compared with international benchmarks.

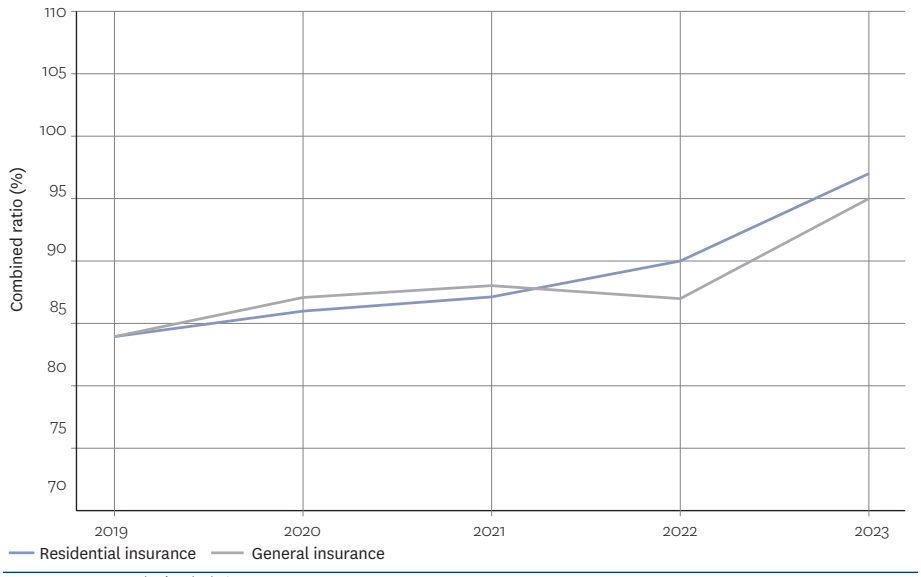
Performance

The behavioural dynamics outlined above feed directly into profitability indicators, making visible the extent to which market power is exercised. These indicators provide a concrete way of benchmarking outcomes, beginning with the combined ratio, which is a key measure of insurer profitability. It is calculated as incurred losses and expenses divided by earned premiums. A ratio below 100% indicates profitability, while a ratio above 100% signals an underwriting loss.

In 2022, the combined ratio for New Zealand's general insurance sector was around 86%, well below international benchmarks. For comparison, combined ratios were 102.4% in the United States, 93% in Australia, 97% in the United Kingdom, 95% in Germany, 90% in Japan, 94% in France and 96% in Italy. Although year-to-year results can fluctuate, especially in catastrophe-exposed markets, the gap in 2022 is nonetheless significant and points to strong profitability in New Zealand.

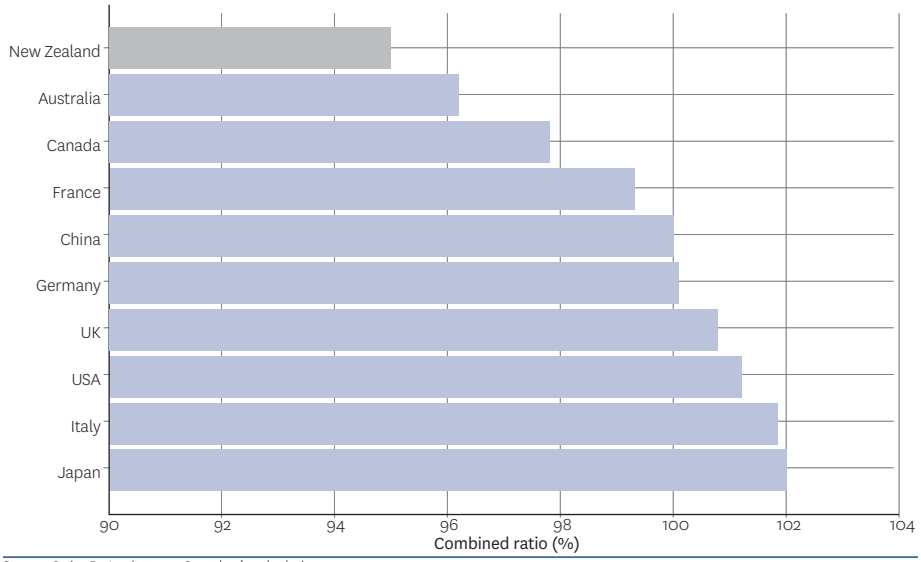
Data for New Zealand's general insurance sector is limited for 2008–17, so property insurance, which accounts for nearly half of premiums, is used as a proxy. The two measures track closely (Figure 1), providing a reasonable basis for comparison over time. Using property insurance as a proxy shows that New Zealand's sector has been consistently more profitable than many international peers (Figure 2). The Canterbury earthquakes in 2010–11

Figure 1: Combined ratio for New Zealand



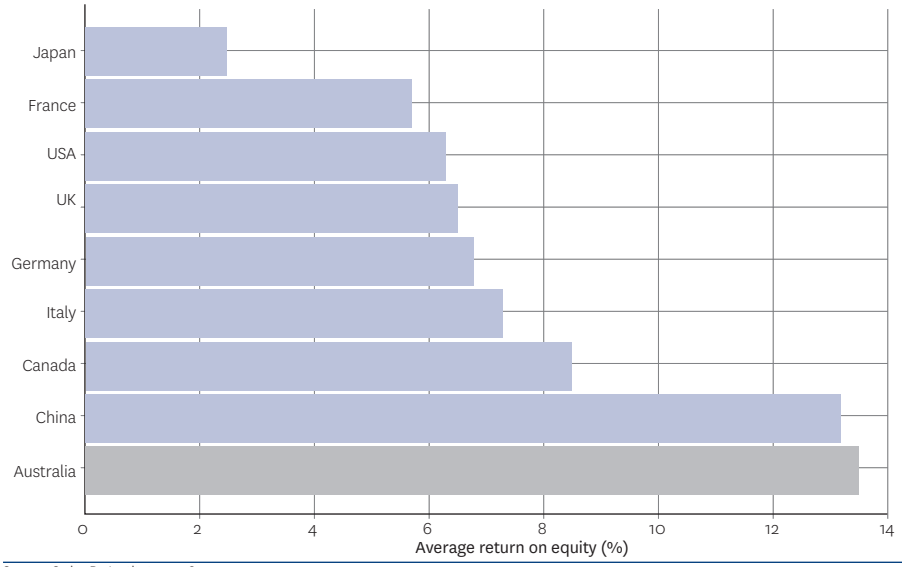
Source: ICNZ 2024; author's calculations

Figure 2: Average combined ratio, general insurance, 2008-2017



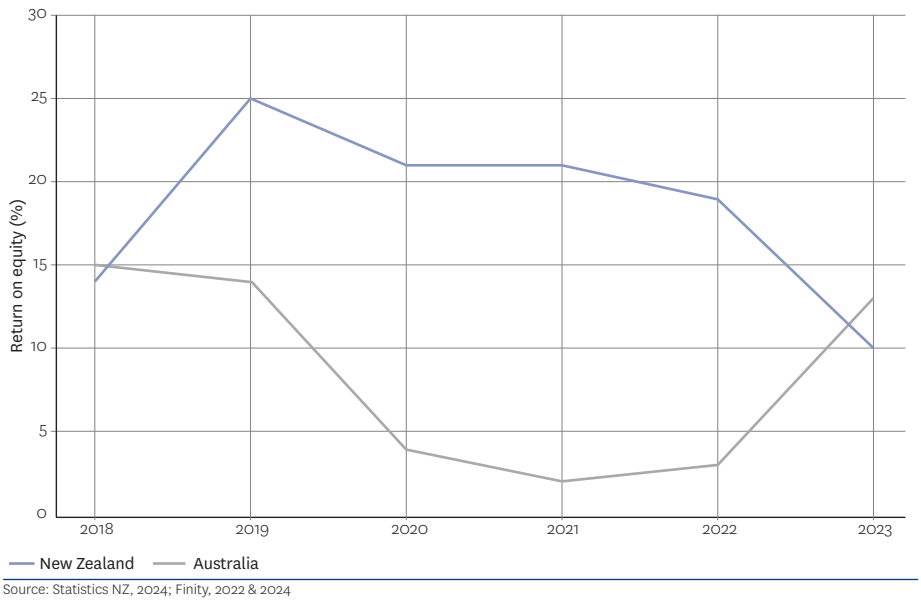
Source: Swiss Re Institute 2018; author's calculations

Figure 3: Average return on equity, general insurance, 2008-2017



Source: Swiss Re Institute, 2018

Figure 4: Return on equity, general insurance



Source: Statistics NZ, 2024; Finity, 2022 & 2024

complicate this picture: large claims initially pushed the ratio upwards, reducing measured profitability, but subsequent premium increases and reinsurance recoveries drove the ratio downwards, amplifying profitability. This sequence illustrates how catastrophic events can distort conventional performance indicators.

More recently, the combined ratio averaged about 86% between 2020 and 2024, underscoring sustained high returns. Over the longer period from 2008 to 2024, the average combined ratio was around 92%. This pattern is consistent with limited competition, allowing firms to exercise market power.

Return on equity is a standard measure of insurer performance, indicating how efficiently profits are generated from shareholders' equity. It provides insight not only into profitability, but also into how capital is deployed and rewarded in the market. In 2022, New Zealand's general insurance sector recorded a return on equity of about 19%, far above major international peers: 8% in the United States, 3% in Australia,[1] 7% in the United Kingdom, 5% in Germany, 4% in Japan and 7% in Canada (Figure 3). While single-year results can reflect temporary shocks, the scale of divergence remains striking, suggesting a pattern that cannot be explained by volatility alone.

The longer view reinforces this conclusion. Between 2013 and 2022, New Zealand insurers achieved an average return on equity of 14.1%, compared with a global average of around 9–10%. More recently, between 2018 and 2023, the gap widened: New Zealand insurers averaged 18% compared with just 9% in Australia (Figure 4). Notwithstanding the dip in 2023, a rebound was observed in 2024 and 2025. This persistent divergence indicates that the sector's profitability advantage is not cyclical, but embedded in the structure of the market.

International comparisons underscore the point further. During 2020–22, average return on equity for New Zealand insurers remained well above global benchmarks (Figure 5). In addition, over 2010–19 average returns on equity for non-life insurers in North America, Europe and Asia-Pacific were 9.9%, 10.7% and 9.0%

respectively (Swiss Re Institute, 2023). In other words, while returns in most major markets have hovered around a global 'normal' of 9–10%, New Zealand has consistently generated returns well above this range, regardless of the time period examined. Although differences in scope and reporting exist across datasets, the weight of evidence points in one direction: New Zealand's general insurance sector has sustained profitability significantly above international norms.

Net profit margin, or insurance profit margin, measures overall profitability by combining underwriting performance (premiums minus claims and expenses) with investment income from premium flows. It reflects both operational efficiency and cost management.

For New Zealand's general insurance sector, comparable cross-country data is limited, so property insurance margins are again used as a proxy, given that property accounts for a large share of premiums. Between 2008 and 2017, New Zealand's net profit margin averaged 11%, slightly below Australia's 12.5% (Figure 6). However, this comparison may have been distorted by the Canterbury earthquakes, which temporarily depressed profitability. Excluding those years, underlying margins would likely have been materially higher.

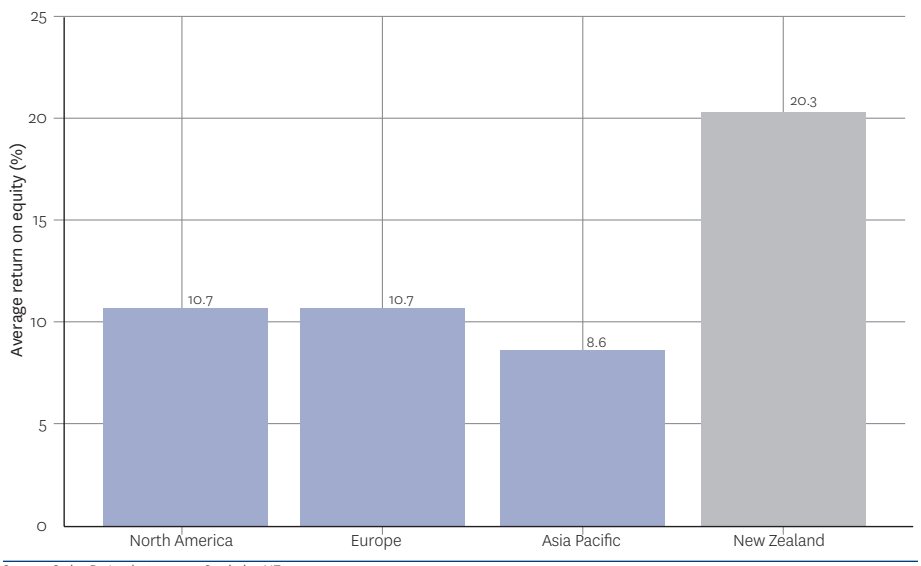
More recent trans-Tasman comparisons highlight New Zealand's structural advantage. Between 2018 and 2022, both IAG and Suncorp consistently generated higher net profit margins in their New Zealand operations than in Australia. For example, in the year to June 2020, IAG derived just 23% of gross written premiums from New Zealand but over 40% of group profit. Similarly, Suncorp's New Zealand business accounted for 17% of premiums yet delivered 36% of profits. This disproportionate contribution has persisted through 2024 and 2025, pointing to a sustained profitability gap that appears linked to structural market dynamics rather than a temporary cycle.

A longer-run view confirms the shift. Between 2011 and 2017 (Figure 7), IAG consistently earned higher net profit margins in Australia. Since then, the gap has shifted decisively in New Zealand's favour and has endured. The timing aligns with sharp repricing episodes at the household level. Statistics New Zealand data (Figure 8) shows three major step-ups in house insurance costs: after the Canterbury earthquakes in 2010–11,[2] the Kaikōura quake in 2016, and again in 2022–23. Each episode ratcheted premiums to a higher baseline, reinforcing the profitability gap.

The second wave marked a decisive break, with insurance prices rising faster than both construction costs and the CPI. The latest surge reflects construction inflation, successive climate disasters such as Cyclone Gabrielle and the Auckland floods, and a global reinsurance crunch. Premiums have increasingly decoupled from underlying costs or general inflation. Instead, each catastrophe and reinsurance shock ratchets prices to a higher baseline, widening profit margins over time. This ratchet effect signals a structural shift in pricing dynamics, with implications not only for insurer behaviour and resilience, but also for affordability and competitive discipline.

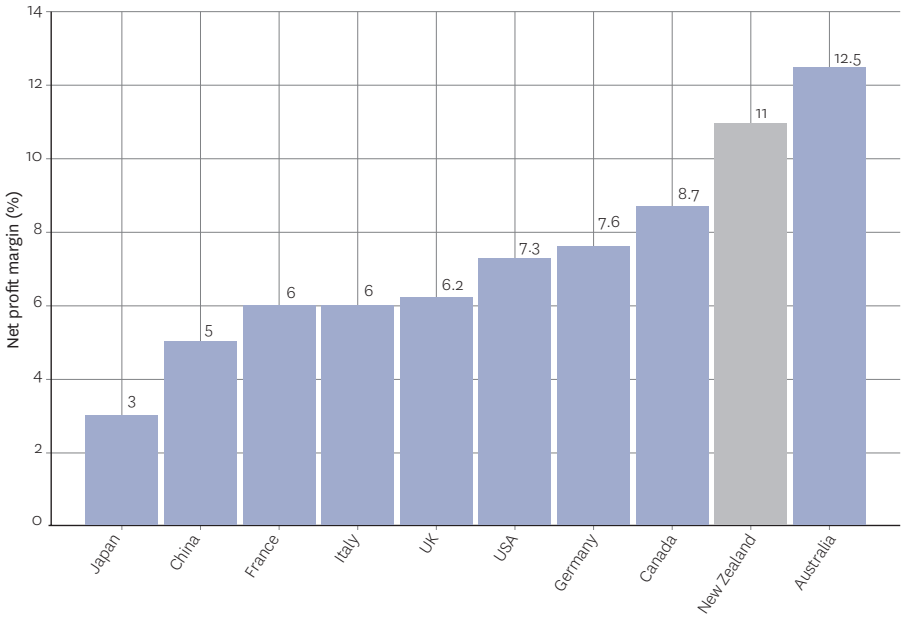
Evidence across combined ratios, ROEs, and profit margins paint a consistent picture: New Zealand insurers have earned sustained returns well above international norms. While catastrophe risk explains some volatility, the durability of high margins reflects structural features of the market – concentrated market power, low switching, and a pricing ratchet effect after

Figure 5: Average return on equity, non-life, 2020–22



Source: Swiss Re Institute, 2023; Statistics NZ, 2024

Figure 6: Net profit margin, general insurance, 2008-2017

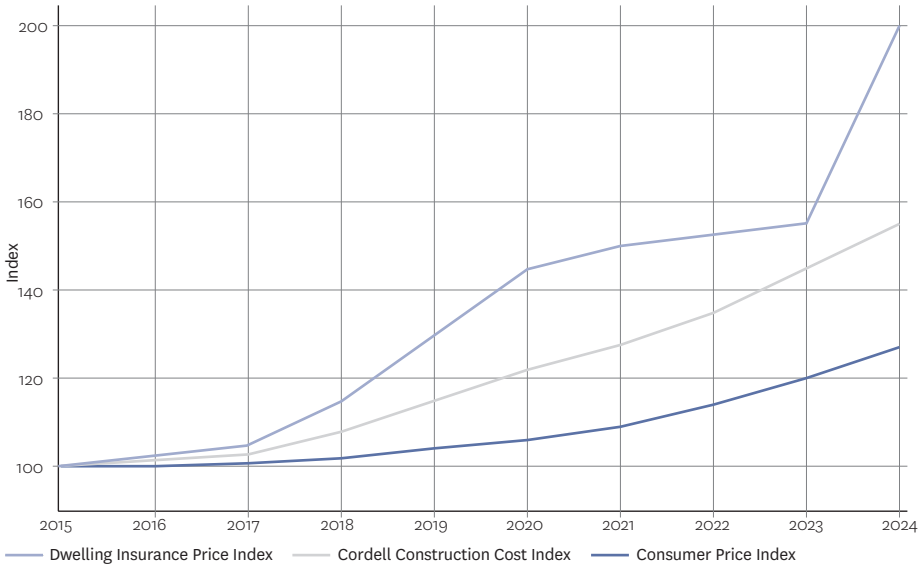


Source: Swiss Re Institute, 2018; author's calculations

Figure 7: IAG New Zealand and Australia net profit margin, general insurance

Source: author's calculations

Figure 8: Dwelling insurance and construction cost indices



Source: Statistics; CoreLogic

major shocks. These dynamics weaken competitive pressure, reinforce pricing power, and raise affordability concerns for households and businesses.

Why is New Zealand's insurance sector so profitable?

Several factors explain why insurers in New Zealand have remained so profitable. The market is dominated by two large firms, with only a handful of smaller competitors, limiting competitive pressure. Customers rarely switch providers, new entrants are scarce, and past studies have found weak pricing discipline. The most recent detailed analysis, up to 2016, showed price–cost margins in the finance and insurance industry around 50% above variable costs, with competition indicators placing the sector in the lowest quartile. While newer estimates are lacking, the industry's concentrated structure and sustained profitability suggest that these conditions still hold. High concentration, limited entry frictions and consumer inertia continue to protect margins, making it easier for insurers to pass on shocks without fear of losing customers.

Reinsurance dynamics reinforce this picture through a 'ratchet effect'. When global reinsurance costs surge after disasters, insurers quickly pass these increases on to customers. But when costs ease, premiums rarely fall; instead, they are reset at a higher baseline. After the Canterbury earthquakes in 2010–11, premiums roughly doubled. The Kaikōura earthquake in 2016 lifted them again, and the 2023 floods added another 20–40% in some regions. Insurers justify premium hikes on cost grounds, but the evidence shows that premium growth has persistently outpaced claims. This suggests that margins are being supported not only by higher risk costs, but also by weak competitive pressure. With customers effectively locked in and rivals reluctant to compete aggressively, premiums ratchet upwards, reinforcing the sustained profitability and elevated margins seen in the insurance market.

Catastrophe risk and prudential rules add a further layer. Insurers must hold capital or reinsurance sufficient to withstand a 1-in-1,000-year event, a higher standard than in most jurisdictions. While this strengthens resilience, the costs are fully priced into premiums, and in practice often more. Since 2017/18, the shift to granular risk-based pricing has raised costs further for high-risk properties, potentially improving portfolio profitability. Tightened prudential standards may deter new entrants, entrenching incumbents and sustaining elevated returns, though it remains difficult to disentangle how much of this premium inflation reflects genuine risk versus market power.

Non-competitive cost pressures also contribute to affordability stress. Government-imposed levies and taxes – including the Earthquake Commission (EQC) levy, the Fire and Emergency New Zealand levy and GST – now account for close to half of total house insurance premiums (Insurance Council of New Zealand, 2024). These charges are uniform across all insurers and are passed directly to policyholders, meaning they have no impact on competitive dynamics or profitability. Nevertheless, they substantially raise household costs and compound affordability pressures. Distinguishing these statutory charges from market-driven pricing is essential: while levies clearly add to premiums, the persistence of strong returns and margins suggests that structural and competitive factors remain central to elevated profitability.

Demand-side dynamics matter too. Mortgage cover is often mandatory, and, even when optional, many households see it as essential. Low switching rates, bundling

and entry barriers reduce consumer mobility, allowing higher premiums to stick. While some households are now dropping cover due to cost, most who remain insured face few alternatives. Elevated returns therefore reflect not just risk, but weak competitive discipline, raising policy concerns about affordability and fairness. Addressing these dynamics may require stronger regulation, new entry, or measures to enhance consumer choice.

Overall, these factors show that profitability is shaped by a mix of risk-driven and structural drivers. Risk-driven factors, such as catastrophe exposure, conservative prudential rules, and the cost of global reinsurance reflect New Zealand's distinctive hazard profile and are difficult to avoid. Structural drivers, by contrast, include high market concentration, weak switching and limited new entry, which are competition issues that sustain elevated margins. Distinguishing between the two is essential for assessing what policy levers are available, since risk-driven factors are largely unavoidable, while structural factors can be addressed through competition policy. This distinction frames the central policy challenge: if profitability reflects both unavoidable risk and structural competition weaknesses, which interventions can restore balance?

Conclusions

Profitability indicators such as combined ratios, returns on equity, and net profit margins are consistently stronger in New Zealand than in comparable international markets, suggesting insurers may be exercising significant market power. While part of this reflects the country's unique risk environment, the persistence and scale of the profit gap point to structural weaknesses in competition. Large insurers have repeatedly raised premiums faster than claims costs and maintained margins at levels typical of oligopolistic markets.

Cross-country comparisons should nonetheless be treated with caution. Property insurance is often used as a proxy, coverage and reporting differ across jurisdictions, and data sources vary in scope. Not all of New Zealand's high profits are "excess": catastrophe risk and the capital required to cover it explain part of the margin. Timing also matters, as a major disaster can push the combined ratio above 100 percent in a single year. However, once extreme events are excluded, insurers have maintained strong returns and passed costs on to consumers beyond what risk alone would justify—suggesting weak competitive discipline

Consumers face rising premiums while insurers remain among the most profitable globally. This paradox raises fundamental questions about competitive discipline and market power. It points to potential policy responses: a Commerce Commission market study, measures that support efficient entry and scaling (including insurtechs), improved switching tools and data portability, and greater transparency in pricing and claims handling. More fundamentally, the challenge is to distinguish between margins that are unavoidable and those sustained by weak competition. Even though premium growth has moderated, levels remain high; without reform, elevated profitability will persist, entrenching affordability pressures and weakening market resilience.

1 ROE estimates may differ across sources: APRA sometimes publishes statutory, industry-wide returns, while Finity reports normalised figures that adjust for catastrophes, investment volatility or scope.

2 From 1992 until around 2010, dwelling insurance premiums moved broadly in line with the consumers price index.

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