

THE CASE FOR ECONOMIC GROWTH

ERIC CRAMPTON

JENESA JERAM

FOREWORD BY OLIVER HARTWICH



THE
NEW ZEALAND
INITIATIVE

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The New Zealand Initiative is an independent public policy think tank supported by chief executives of major New Zealand businesses. We believe in evidence-based policy and are committed to developing policies that work for all New Zealanders.

Our mission is to help build a better, stronger New Zealand. We are taking the initiative to promote a prosperous, free and fair society with a competitive, open and dynamic economy. We develop and contribute bold ideas that will have a profound, positive, long-term impact.

TABLE OF CONTENTS

| | |
|---|-----|
| FOREWORD | VII |
| CHAPTER ONE: THE WORLD BEFORE GROWTH | 1 |
| CHAPTER TWO: MEASURING GROWTH - GDP AND ITS DISCONTENTS | 7 |
| 2.1: WHAT IS GDP ANYWAY? | 7 |
| 2.2: GDP AND THE THINGS WE CARE ABOUT - HEALTH, WEALTH AND WISDOM | 8 |
| 2.3: BUYING HAPPINESS, LEISURE AND LUXURY | 13 |
| 2.3.1: INCOME AND ABSOLUTE HAPPINESS | 15 |
| 2.3.2: MERE CONSUMERISM? | 17 |
| 2.4: BUYING SAFETY: WEALTH IS THE BEST INSURANCE | 21 |
| CHAPTER THREE: BUT WHAT ABOUT...? | 23 |
| 3.1: GROWTH AND THE ENVIRONMENT: RICHER AND CLEANER | 24 |
| 3.2: GROWTH AND A FINITE PLANET | 27 |
| 3.3: <i>THE LORAX</i> , REVISITED | 31 |
| 3.4: POVERTY AND INEQUALITY | 31 |
| CHAPTER FOUR: A POLICY FOR GROWTH | 39 |
| CONCLUSION: HOW DO WE GET THERE FROM HERE? | 43 |
| ENDNOTES | 45 |
| BIBLIOGRAPHY | 52 |

ABOUT THE AUTHORS



DR ERIC CRAMPTON
HEAD OF RESEARCH

Dr Eric Crampton joined The New Zealand Initiative as Head of Research in August, 2014. He served as Lecturer and Senior Lecturer in Economics at the Department of Economics & Finance at the University of Canterbury from 2003 until 2014. He also blogs at [Offsetting Behaviour](#).



JENESA JERAM
RESEARCH ASSISTANT

Jenesa is a Research Assistant at The New Zealand Initiative. Prior to joining the Initiative, Jenesa completed a research and policy internship with Maxim Institute. She recently completed a Bachelor of Arts with first class Honours from the University of Otago, majoring in Politics, Philosophy and Economics.

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FOREWORD

In self-proclaimed intellectual circles, it has long been fashionable to belittle the idea of economic growth. “GDP is not the same as happiness”, some critics of growth will explain. Others will warn that excessive growth could destroy the environment and leave our planet uninhabitable. Others still will warn that the finite nature of our resources does not allow continuous growth in any case.

This kind of critique has become a pastime of the chattering classes. It is now part of polite conversation in the better suburbs of developed world cities. To question the value of growth at dinner parties in air-conditioned or heated houses while sipping French champagne and eating Italian *prosciutto* presumably adds a sense of intellectual gravitas to one’s physical well-being. These people probably do not even realise the self-contradiction in condemning economic growth while enjoying its blessings.

Politicians and pundits can expect to be praised for their wisdom and providence when they admonish us to respect the limits of growth. They can certainly point to a tradition of growth scepticism to back up their views.

In his book *Small is Beautiful: Economics as if People Mattered*, Ernst F. Schumacher expressed his concerns in great clarity: “An attitude to life which seeks fulfilment in the single-minded pursuit of wealth – in short, materialism – does not fit into this world, because it contains within itself no limiting principle, while the environment in which it is placed is strictly limited.”

Schumacher stands in a long line of thinkers who have refuted the pursuit of wealth (which equates with the promotion of economic growth in modern parlance) as a goal. In ancient Greek philosophy, Plato was the philosopher who most detested economic ambitiousness. In ancient Rome, pursuit of wealth was regarded by many historians as the reason for the decline of the Roman Empire.

Many religions, too, have taken a critical approach to the quest for wealth and often equated with moral decay and deficiencies. There is certainly no shortage of Bible verses condemning materialism, from the Old Testament (“Whoever trusts in his riches will fall, but the righteous will flourish like

a green leaf.” – Proverbs 11:28) to the Gospels (“It is easier for a camel to go through the eye of a needle than for a rich person to enter the kingdom of God.” – Mark 10:25).

Most recently, Pope Francis has joined the anti-growth chorus by opining that: “Some people continue to defend trickle-down theories which assume that economic growth, encouraged by a free market, will inevitably succeed in bringing about greater justice and inclusiveness in the world. This opinion, which has never been confirmed by the facts, expresses a crude and naïve trust in the goodness of those wielding economic power and in the sacralised workings of the prevailing economic system.”

To such crude and usually fact-free statements, Eric Crampton and Jenesa Jeram provide a potent antidote in this paper. They take the most common objections typically levelled against economic growth and assess them for their empirical validity. In doing so, they come to the conclusion that typically economic growth achieves the very opposite of what its critics believe it does:

- Instead of ruining the environment, economic growth helps us to manage and preserve it.
- Instead of making us unhappy, economic growth enables us to lead longer, healthier and more fulfilled lives.
- Instead of depleting our resources, economic growth is helping us find alternative ways of satisfying our needs.

Economic growth is no silver bullet to all the world’s problems. But it comes close. There is overwhelming evidence that the unprecedented economic expansion humanity has experienced roughly over the past three centuries has been a great force for good. It has made our lives better in ways that would have been unimaginable to previous generations.

This should also be the response to the aforementioned critics of growth. At which stage in history do they believe we should have proclaimed the end of economic development? Certainly not in Plato’s time (4th century BC) since that would have prevented the invention of the canal lock (3rd century BC) and paper (2nd century BC). Development should not have stopped at the time the Gospels were written either since otherwise we would not even have invented the wheelbarrow (2nd century AD).

To move to more modern times, had economic development stopped when Ernst F. Schumacher suggested it should (*Small is Beautiful* was published in 1973), we would have never seen CD-ROMs, the Internet or the first vaccine for meningitis. And even if we had only stopped to grow and develop when Pope Francis told us to in November 2013, we would have never seen the first human clinical trials in the United States for a wearable artificial kidney – or the new iPhone 6.

Economic growth is the driver behind all of these developments because at its core, economic growth is not mainly about the *production of more* but about the *discovery of better* (though often it is both). Economic growth helps us to find new and improved ways of combining resources. The outcomes could be a new medicine, a faster way of travelling, a healthier way of eating or a better way of learning.

As the authors point out in the last chapter, the work of The New Zealand Initiative is all about creating a social, political and economic environment in which such growth can happen. We are committed to the ideal of a competitive, open and dynamic economy and a free, prosperous, fair, and cohesive society. All our work, whether it is in housing, urban affairs, local government, education, trade and investment or resources, ultimately serves this goal: to show pathways towards a better, thriving New Zealand.

This report has the potential to make its readers unpopular at future encounters with members of the chattering classes. That is because the authors provide ample facts to counter the widespread growth pessimism and replace it with an entirely different narrative: It is not growth that we need to be afraid of but the absence of it.

Try explaining it to your friends and colleagues at your next dinner party. That there is an overwhelming case for growth is a message that needs to be heard.

Wellington, February 2015

Dr Oliver Hartwich

Executive Director

The New Zealand Initiative

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CHAPTER ONE

THE WORLD BEFORE GROWTH

For tens of thousands of years, life was pretty simple. Well, it was not very good, or easy, but it was simple.

It was simple because things did not really change very much. For the vast majority of the history of our species, you could write down a set of rules for daily life and expect that your great great grandchildren would be able to pick up that list and run with it. The way that your ancestors lived was the way that you would live, and the way that your descendants would live, for hundreds of years either way.

Sure, things would change a bit from generation to generation. If you were lucky, war or epidemic would be in your parents' or grandparents' memory but not in yours, or you survived those dismal spells. But if we look back over two million years, as economist Robin Hanson did in a recent paper on *very* long-run growth,¹ we find few instances of real economic growth or technological change: improved hunting techniques, the development of farming, and industrialisation. Between those changes, thousands of years passed without much happening.

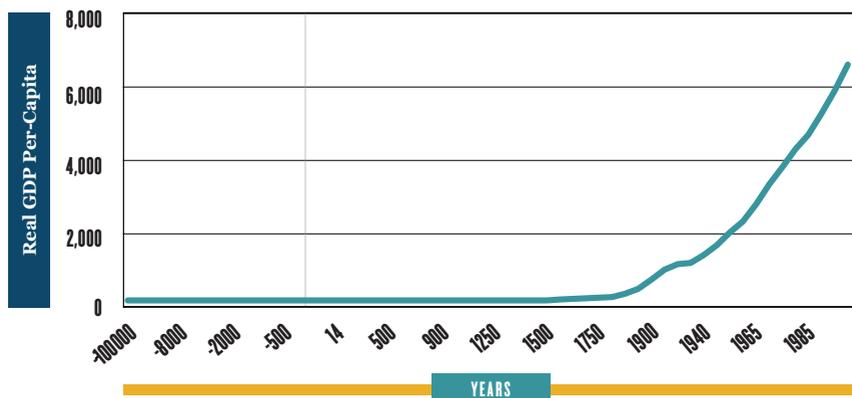
While the move from hunter-gatherer society to farming increased total economic output, individuals' living standards did not much improve.² In the transition period after the adoption of new hunting and farming techniques, living standards improved, infant mortality dropped, and fewer people starved. Population consequently increased to match the increase in available resources – unlike today's trend toward smaller families with increased wealth. As population adjusted, per person living standards retreated back to where they were in the first place.

Thomas Malthus described this process in his 'Essay on the Principle of Population' (1798). Only in the last two hundred or three hundred years has humanity escaped what economists call the 'Malthusian trap'. In the Malthusian trap, any improvement in productivity or technology turns quickly into population increase. And while the technological improvement was great for people who were then able to exist, per capita living standards did not improve much.

Per capita living standards could not improve much because of another Malthusian proposition: the ‘Iron Law of Wages’. In that kind of world, workers’ wages cannot rise above subsistence levels – just enough to live on – for very long. This is because wage increases turn into larger families. In the short run, the family is back at subsistence levels with more children to feed. In the longer run, the increase in labour supply competes wages back to subsistence levels. There were more families and more people after the transition, but they were generally only as well off as their great grandparents’ families. It took much stronger levels of economic growth to escape the Malthusean trap.

Economist Brad DeLong estimated world per capita GDP going back just over a million years.

Figure 1: Average world GDP per capita



Source: J. Bradford De Long. 1998. “Estimates of World GDP, One Million B.C. – Present”, as updated in Max Roser (2014) “GDP Data”. Published online at OurWorldInData.org.

Current measures of international poverty focus on dollar-a-day or two-dollar-per-day thresholds. For all but about 0.02% of history, world per capita GDP was just over 50 cents per day, as shown in the graph above. Real economic growth as we now understand it – regular improvements in each person’s quality of life such that we can all readily see how our lives are better than those of our grandparents and great grandparents – is a recent phenomenon. Economic growth of this sort took off only from about 1820.

The pre-growth environment was pretty terrible. Even by 1900, things were looking fabulous by comparison, at least in North America, much of Europe, Australia and New Zealand. But it did not come without some cost. A Londoner in 1900 reading Dickens’ *Hard Times* and seeing the pea soup fog of a million coal-burning chimneys may have wondered whether industrialisation were such a good idea after all and whether a tea break might be in order. Fifty years later, London would be rich enough to afford to ban urban coal fires, but that would have been hard to anticipate in 1900.

Lucky for us, and even luckier for those in East Asia and India – where real growth improvements came later – there was no tea break in 1900, or in 1972 when the cataclysmic Club of Rome argued that growth needed to stop lest the world run out of everything, or in 2005 when British labour economist Richard Layard argued³ that material wealth stops contributing to happiness after basic needs are fulfilled. Instead, the shift from the Malthusian era into modern economic growth intensified and spread outwards from the Western core to any country whose political and economic institutions allowed it to take root. By 2006, economist Xavier Sala-i-Martin found substantial real drops in poverty all over the world.⁴ A smaller proportion of people are living below the poverty line than ever before.

Figure 2: The world distribution of income



Source: Xavier Sala-i-Martin, ‘The World Distribution of Income: Falling Poverty and ... Convergence, Period’, *The Quarterly Journal of Economics* 121:2 (May 2006).

It is perhaps easy to take things for granted once we get used to them. That, at least, is the argument of recent critics who have been calling for a tea break. Some of the psychological literature argues that ‘hedonic treadmills’ apply – once the novelty of a new acquisition wears off, you are no happier than before buying it – so income growth is like running faster on a treadmill.

While the evidence seems to go the other way – see discussion on the strong relationships between income and happiness in Chapter Two – a different kind of hedonic treadmill might apply to economic growth itself. It has become too easy to take economic growth for granted – to miss the connection between technological advances and the economic conditions that allow them; to put greater weight on current well-being than on continuing the advances that will benefit our grandchildren; to focus on the current income distribution rather than on the continuing decline in poverty; or to see the scars of mining in places like Denniston Plateau while missing that a wealthier society can do more to protect its rivers and lakes.

This essay makes an unabashed case for economic growth. We are vastly better off as consequence of economic growth. The past two centuries have provided an unprecedented explosion in human flourishing. The future is bright – we are living longer and better than ever before, with the strongest gains now being made in many of the places that have needed it most.

We begin, in Chapter Two, by taking a tour through our measures of economic growth. While Gross Domestic Product (GDP) is hardly a perfect measure of any of the things we care about, the things we do care about are linked to GDP. Higher per capita GDP is associated with better health, wealth, happiness, opportunity, leisure and luxury. Richer societies are also better able to prepare for unforeseen calamities, from new diseases to natural disasters.

Chapter Three takes on some of the harder contentions. Does growth necessarily come at great cost to the environment, or can we afford to spend more on all kinds of good things, environmental quality included, in a richer society? Does a finite world mean we will run out of scarce resources in the near future, imposing a strong external constraint on growth? What is the evidence for economic growth and income distribution, both in New Zealand and globally? Real material hardship has been on the decline both here and abroad: it is a myth that economic growth has benefitted only the rich. While the top 1% earn a smaller proportion of total annual output in New Zealand than in the United States, this may not be as unalloyed a good as it might seem.

Chapter Four summarises the economic literature on the causes of economic growth and the importance of economic and political institutions for human progress. Fortunately, New Zealand's institutions are some of the best in the world. Unfortunately, New Zealand's small size and distance have started exerting an increasing cost on the nation, and we will soon have to add population ageing to that list. If we want our grandchildren to prosper here, rather than seek greater fortunes abroad, we need to carefully assess whether existing policies are doing as much as they can to encourage, rather than stymie, economic growth.

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CHAPTER TWO

MEASURING GROWTH – GDP AND ITS DISCONTENTS

The critics are right: GDP is not everything. It fails to measure many things we find valuable, and mismeasures others. But that hardly means that growth in per capita GDP is without value. Indeed, most of the things that we do find to be of value improve with GDP.

2.1 WHAT IS GDP ANYWAY?

Economists talk so much about GDP and GDP growth that it is easy to conclude they do not care much about anything else. This is worrying because so much of what lay people care about is not included in measures of GDP, like the value of family, the cleanliness of our rivers, and the quality of the schools. Worse, in the short run, GDP gets boosted by earthquakes, fires, tsunamis and floods: all the construction activity to fix the mess is aggregated into GDP, while omitting wealth destruction.

It is worth then laying out exactly what GDP measures. If we wanted a measure that somehow tracked all the various good things in the world, this would not be it. But we will later show that growth in per capita GDP is associated with many of the things we do care about, over the longer term.

GDP measurement started when the US Department of Commerce, in the 1930s, wanted better statistics on how the economy was changing. Simon Kuznets was charged with framing a system of national income accounts, which later developed into the current measures of GDP. Kuznets received the Nobel Prize in Economics in 1971 for his work.⁵

GDP tracks within a country the annual value of all the goods and services consumed or produced and that are bought and sold on the market (valued at sale price), and the goods and services provided by the government (valued at cost of production). GDP is a measure of the *flow* of new goods and services rather than of any stock of wealth.

This definition immediately raises reasonable objections.

First, goods and services produced outside markets do not count, so if you buy a sandwich for lunch rather than making one at home, measured GDP goes up a little bit, even though total real national output for the day included one tasty sandwich either way. The restaurant sandwich-maker's labour counts towards GDP; your labour in producing your own sandwich does not.

Second, goods and services provided by the government are valued at their production cost rather than at their value to consumers. For some, the value could be greater; for others, the value could be much less than the cost of production, or even negative. As there is no real market test to establish value, the cost of production is all there is to measure.

Consider the change to measured GDP when New Zealand legalised prostitution. Illegal activities tend not to be counted in GDP figures, so GDP got a boost simply by including something that previously was not measured: the value of the sex workers' services. On the other hand, if police spending dropped when they no longer had to enforce laws against prostitution, measured GDP would fall even though our democratic processes had decided that that particular enforcement service arguably made the country a worse place.

And, finally, because GDP measures a flow of goods and services rather than stocks of wealth and natural resources, it is always important to watch for changes to GDP that might reflect a running-down of the capital stock rather than improvements in productivity. If your house burns down and you are underinsured, you are not better off despite the one-off boost to your annual income when the insurance cheque comes in.

2.2 GDP AND THE THINGS WE CARE ABOUT - HEALTH, WEALTH AND WISDOM

While GDP is far from perfect, it does provide an important overall indicator of economic performance and, perhaps surprisingly, of general well-being – as is well illustrated by Gapminder.

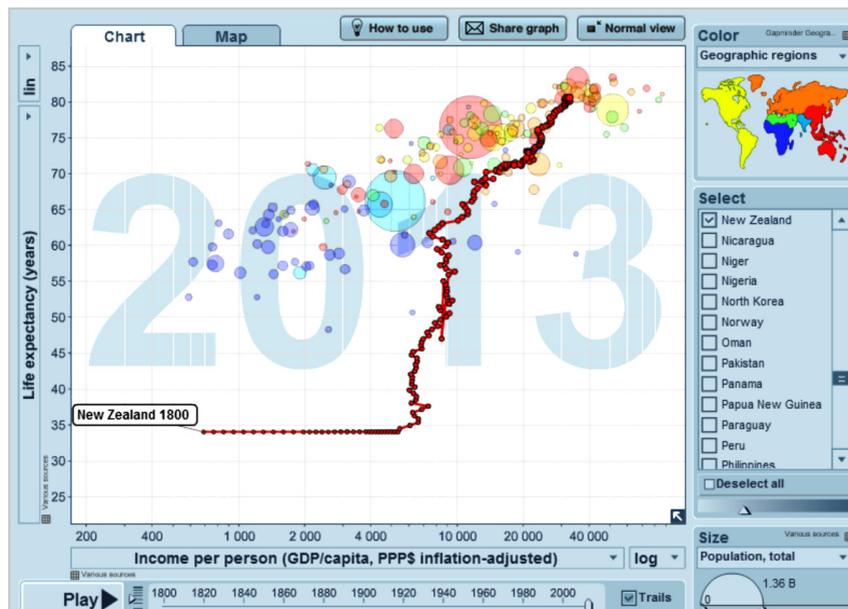
Gapminder, Hans Rosling's wonderful data visualisation project, lets anyone with a web browser see how the world has changed for the better over the past 150 years. Choose a variable to put on the x-axis, such as GDP per capita in inflation-adjusted terms; choose a variable to put on the y-axis, such as life expectancy, infant mortality, education, nutrition or environmental quality; then, push play.

Each country is represented by its own bubble, where different colours indicate different continents and the size of the bubble represents the country's population. When you push play, a year indicator starts counting in the background while each country's bubble moves with that country's changes in the chosen variables. And, with the tick of a box, you can trace New Zealand's path through the years.

The paths trace only how different variables move over time rather than prove that any one variable causes another. But while correlation is not causation, it does sometimes “waggle its eyebrows suggestively and gesture furtively while mouthing ‘look over there’”, as Randall Collins puts it.⁶

With per capita GDP on the x-axis and outcomes on the y-axis, if outcomes improve with per capita GDP growth, generalised moves can be expected from the bottom-left of the chart to the top-right over time for good things such as life expectancy, and from the top-left to the bottom-right for bad things such as infant mortality.

Figure 3: Income and life expectancy



Source: Gapminder. www.gapminder.org

Pushing play, it is clear that a wide range of outcomes have been improving as GDP per capita increased over time. As New Zealand, and the world, got richer, child mortality rates dropped from about 400 per 1,000 to about 6 per 1,000 now: just over a hundredth of what it was. Life expectancy rose from just under 35 in 1800 to over 80 today, much of which comes from the reduction in child mortality. Education has risen sharply, too. In 1970, the average man aged 25–34 had completed eight years of school; that figure rose to 13 by 2009. The rise for women has been even more dramatic, from 7.4 years in 1970 to just under 14 in 2009.

It is also clear this is not simply a function of time moving on. The time-path, from worse to better outcomes as per capita GDP improves within a country, is mirrored in each year's cross-sectional snapshot of richer and poorer countries. Azerbaijan of 2012, with per capita income of \$15,879 and a child mortality rate of 35 per 1,000, looks a lot like New Zealand of 1950, which had a per capita income of \$14,593 and a child mortality rate of 36 per 1,000. Meanwhile, New Zealand of 2012, with per capita GDP of \$32,160, and child mortality rates of 5.7 per 1,000, looks like Singapore of 1993 with child mortality rates of 5.8 per 1,000 and per capita GDP of \$39,423. If the Azerbaijan of 2012 is 60 years behind New Zealand, Singapore is 20 years ahead of us. Singapore's per capita GDP was \$71,884 and child mortality rate 2.9 per 1,000 in 2012.

Finally, technological progress in richer countries is making it cheaper for poorer countries to achieve better outcomes. Leading-edge countries got to better life expectancy, lower child mortality, and higher education rates first. But, by and large, poorer countries are achieving those milestones at lower per capita income levels than the trailblazers needed. You have to be richer to invent MRI machines than to import and use them. Life expectancy and infant mortality rates in the world's very poorest countries, today, compare favourably to those in New Zealand when New Zealand had comparable per capita GDP.

Nobel laureate in economics Robert W. Fogel demonstrated the effects of improvements in health on general well-being and mortality in recent centuries.⁷ He argues the changes are so great since industrialisation that we have effectively undergone “a form of evolution that is unique not only to humankind, but unique among the 7,000 or so generations of humans who have ever inhabited the earth”.⁸

These changes have manifested themselves in obvious ways, such as greater height and longer lives. But Fogel also documents the less obvious manifestations of improvements. Both life expectancy and the quality of life in general have improved. After all, if extensions in life expectancy meant only an additional decade of senility, it would not be worth overly celebrating. Instead, medical science has pushed back the onset of the diseases of old age. Heart disease, lung disease and arthritis still do come, but at a later stage in life. Elder disability is also on the decline, meaning older people enjoy greater health and independence than before.

Yet, it is rarely acknowledged that these improvements are due to economic growth.

To a large extent, these changes in health and mortality are due to improvements in medicine and medical technology. Economic growth was necessary not only to fuel capital expenditure to create these technologies, but also foster an environment of research and innovation to develop the same. Moreover, economic growth spurs the widespread dispersion of medicine and technology, so greater health and mortality is achievable not just for the privileged elite but also across society.

While lifestyle changes have helped, those changes too can be traced in part to higher incomes. The link between incomes and health should not be surprising. Greater incomes permit the purchase of more and better food and medical services.⁹ Perhaps more surprisingly, there is good evidence that individuals buy more health, and are less willing to do risky things for money, as they get richer.

Work now is much less labour intensive, with safer working conditions and generally shorter hours.

Increased job safety and better working conditions flow from two channels, both of which depend on economic growth. A richer society can afford stronger norms and regulations mandating greater safety. But even in the absence of more direct regulatory measures, stronger growth generally means higher incomes, and that brings greater worker demands for safety improvements.

Imagine a job that comes with a 0.008% risk, in any given year, of on-the-job accident causing death. That is a risky job: New Zealand averages four work-related fatalities per 100,000 people, on average, or 0.004%.¹⁰ To attract workers to riskier jobs, employers have to pay a bit more or risk workers

choosing less perilous occupations. And how much more employers have to pay workers to take on those risks depends on how much those workers could earn elsewhere.

By current best estimates, a 10% increase in income means that employers have to increase workers' 'danger pay' by about 6%.¹¹ As danger pay gets more and more expensive, more employers find it cheaper instead to improve health and safety standards. It is easy to see the improvement in safety standards that comes with workplace regulation; we take too much for granted the improvements that come automatically through economic growth and rising incomes.

Improvements in health and mortality have resulted in what Lotte van der Vleuten and Jan Kok call a 'virtuous cycle'.¹² As child mortality decreased, children were raised with less investment of the mother's time. This gave women more time to join the workforce, decreasing the dependency ratio so fewer people now depend on the working population, leading to increased household income. Van der Vleuten and Kok also argue that with growing confidence in children's survival, parents could invest more in raising the human capital of their children through high quality education and parental time and care. This in turn promoted a 'virtuous cycle', where "stimulating low dependency ratios, women's labour market participation, migration, human capital, social mobility, agency and even democracy, the demographic transition can be seen as part and parcel of a 'virtuous cycle' of beneficial economic and social developments".

Evidence also suggests that as economies grow, people become smarter. For the last century, scores on IQ tests roughly have been improving by about three points per decade. As formal intelligence tests only began a century ago, it is hard to tell when the effect began. But over the past century, psychologists have had to keep adjusting intelligence tests to keep up with the increasing intelligence in the general population.

Rising intelligence over time was discovered by the University of Otago's Professor James Flynn and bears his name: the Flynn Effect.¹³

We've gone from people who confronted a concrete world and analyzed that world primarily in terms of how much it would benefit them to people who confront a very complex world, and it's a world where we've had to develop new mental habits, new habits of mind.¹⁴

While many factors can explain the Flynn Effect, most – if not all – come back to economic growth. Growth brings better education and nutrition, reduced disease burden; growth also lets us choose more intellectually stimulating environments than that found following a mule behind a plow. Childhood malnutrition stymies intellectual development, as does exposure to disease, parasites and malaria; reductions in hunger and disease let children develop to their potential. Longer formal schooling keeps children in intellectually stimulating environments for longer. And in richer societies, fewer intelligent children are starved of intellectual enrichment.¹⁵

The pinnacles of earlier centuries were very high indeed: David Hume could, with a brief lesson on the events of the past 250 years, easily step into a chaired professorship in any top university’s economics, history or philosophy department – or all three at once. But the troughs between those peaks were deeper and wider when absolute poverty cut more deeply into childhood development.

The Flynn Effect then provides another virtuous circle. Economic growth brings better childhood nutrition and a reduced disease burden. Richer societies can provide better schools and more intellectually enriching environments. These reinforce each other in improving intelligence, which in turn improves not only potential technological innovation but also moral reasoning. As Flynn argues in his TED Talk, it is hard to get moral arguments off the ground if people are not able to reason about situations far removed from their own experience to look for logical connections and to universalise principles.

2.3 BUYING HAPPINESS, LEISURE AND LUXURY

Economic growth does not just buy us health, safety and longevity. Money, and income growth, also buys us happiness. Surprisingly, this is more contentious than it seems on first glance.

Suppose the key to happiness were not simply to do well but rather, to paraphrase H.L. Mencken’s observation, to have a slightly flashier car than your spouse’s brother. If happiness depended primarily on relative positioning rather than on absolute living standards, then a perfectly reasonable argument against economic growth would be that it is little more than an arms race. If additional bits of happiness can only be earned

by getting a bit ahead of the next person, then we could all be better off by agreeing to slow down a little.

Taken too literally, the argument that all happiness is relative is nonsense. In conditions of absolute poverty, meeting basic needs matters more than relative positioning. If your family were the least badly hit in a famine and likely to lose only one child rather than several, would you really turn down famine relief for the village to maintain your relative position? After basic needs are met, though, it becomes more of an empirical argument. Consequently, a sub-branch of economics, colloquially termed happiness economics, has developed to measure happiness and national well-being.¹⁶

While GDP measures have well-documented problems, measuring happiness is, if anything, even more problematic.

Government statistics agencies are good at measuring the final value of goods and services produced for sale in a year: GDP. But statisticians have no gauges to measure happiness and are instead restricted to using cruder measures: typically, survey responses to questions like ‘On a scale from 1 to 10, how strongly do you agree that you are satisfied with your life as a whole these days?’ or ‘How happy are you: very happy, rather happy, not very happy, or not at all happy?’

Imagine the world’s happiest person. No matter how happy that person is, it is impossible for that person to be more than 10 points happier than you are on a 10-point scale. And as most people tend to give a 7 or an 8 on a 10-point scale, it would be surprising if the world’s happiest person were more than 2 points happier than the median respondent.¹⁷ And can we ever really tell whether an 8 on that scale in 1914 is higher or lower than an 8 in 2014? Or would you be willing to trade positions with somebody who, in 1914, reported being one point happier than you would report today?

Nevertheless, the King of Bhutan’s suggestion to stop using GDP as a measure of progress, and to focus on happiness instead, has enjoyed some support. The Centre for Bhutan Studies and GNH [Gross National Happiness] Research deems Gross National Happiness a more holistic and sustainable approach to measuring progress. They note the equal importance the framework places on non-economic aspects of well-being: good governance, sustainable socio-economic development, cultural preservation, and environmental conservation.¹⁸

The push to supplement or replace GDP with happiness-based measures or broader measures of well-being has spread beyond Bhutan's borders. Robert Costanza and co-authors, including Kate Pickett and Richard Wilkinson, argued that the 2015 revision to the UN's Sustainable Development Goals should 'dethrone GDP' and replace it with alternative measures incorporating happiness.¹⁹

Closer to home, the New Zealand Treasury's 2012 'Living Standards Framework' – calling for policy assessment across a broader set of measures of well-being that include economic growth, sustainability for the future, increasing equity, social infrastructure, and risk management²⁰ – seems consistent with the Bhutanese model.

Tshering Tobgay, Prime Minister of Bhutan, has since cast doubt on the Gross National Happiness Index, arguing that the concept is overused and masks problems with corruption and low standards of living. He believes it could be a distraction for the government, when there are more pressing concerns such as "our ballooning debt that if we're not careful will not be sustainable; the big rupee shortage; unemployment, in particular youth unemployment; and a perception of growing corruption".²¹ Economist Oliver Hartwich agrees, noting that almost a quarter of the Bhutanese population lives below the poverty line of approximately \$25 per month.²²

2.3.1: Income and absolute happiness

The trouble with happiness began with economist Richard Easterlin's seminal work into whether economic growth makes us happier, or the Easterlin Paradox. Easterlin found that while richer people are happier than poorer people, average happiness in rich countries is similar to that in poorer countries – although the poorest countries report lower average happiness. Further, despite income increases from 1960 to 1970, reported happiness in America declined over the period.²³

One potential explanation for the Easterlin Paradox is that happiness is relative and increases in income only have short-term effects on happiness. In the longer term, people adapt to their new wealth and fall back to their earlier level of happiness. This relationship between income and happiness is then a bit like being on a treadmill to nowhere, chasing a target that keeps moving out of reach. Easterlin and others after him have argued that increasing average income does not raise average well-being, or at least not much.

Since its publication in 1974, however, there has been a plethora of evidence to challenge the Easterlin Paradox.

In *The Economics of Enough*, economist Diane Coyle argues that expecting happiness to grow on par with GDP is like expecting people to grow even taller as the economy grows.²⁴ While there may be an indirect link between the economy and average height via better nutrition, there are limits to how far this can go.

Coyle argues we should not be hasty to toss out economic growth, given the benefits it has provided over a period of decades. She notes further that economic growth not only provides material benefits, but also the potential to develop the capabilities to shape people's lives in meaningful ways. Economic growth is not just about physical products but also services, experiences and creativity. It increases leisure time by making previously labour-intensive tasks less consuming time-wise and physically. It also creates opportunities for people to work in jobs they find meaningful and fulfilling by diversifying demand for goods and services.

And for countries where respondents report high initial levels of happiness or life satisfaction, it is hard for measured happiness to increase on a 4-point or 10-point scale, regardless of any real increase in happiness: We can always imagine being even happier, so we are reluctant to report being as happy as a scale allows. The move from 8 to 9 on a 10-point scale can consequently be larger than the move from 5 to 6.

Economists Betsey Stevenson and Justin Wolfers examined the happiness data more closely and found the Easterlin Paradox did not stand up to scrutiny. Increases in income do increase reported happiness among richer people – just not by quite as much as the same increase in income increases reported happiness among poorer people.²⁵

An earlier study by Daniel Sacks, Stevenson and Wolfers found a clear correlation between economic growth and well-being: People in rich countries experience greater well-being than people in poor countries, and richer people within a country experience greater well-being than poorer people.²⁶

In their series of papers, Sacks et al. examined the relationship between subjective well-being and income, finding that well-being rises with income, with no observed satiation point. They found that differences in GDP accounted for more than half the reported cross-country differences in average measures

of well-being. Differences between rich and poor peoples' reported well-being within a country were similar to average differences in well-being across rich and poor countries.²⁷

So what has changed so radically since the Easterlin Paradox? Sacks et al. argue that their findings differ from the Easterlin Paradox because when scholars began studying comparative well-being in the 1970s, data was only available for a handful of countries. Consequently Easterlin (1974) failed to find a statistically significant relationship between well-being and GDP – although the estimated relationship was positive. This failure to obtain statistically significant findings therefore reflected the small sample, rather than a finding of a precisely estimated nil relationship.

What this also shows is that although reported happiness and life satisfaction increase more slowly when rich countries get richer, there is no observable satiation point.

If, however, economic growth were to stagnate, or even decrease, it would be at the cost of happiness. Political economist Benjamin Friedman points out that if happiness is at least in part relative, the most important comparison point is neither a very rich person nor a very poor person in very different circumstances but rather one's own prior situation.²⁸ Thus, most people judge their subjective well-being based on changes in their personal income and wealth, rather than in relation to others. Continued economic growth then does the most to help ensure continued happiness.

2.3.2: Mere consumerism?

Other critics of economic growth argue that while growth might improve happiness, the gains are hollow.

Economist Tim Jackson argues that increased consumption hurts well-being. While increased income can be good, the consumerist culture has been designed to evoke insecurity and anxiety, rather than to make us happy. Jackson argues that we are all in a never-ending competition to outspend each other, and that we are simply too blinded by our obsession with consumerism to admit that it is not bringing us the contentment we hoped for. Rather than use our increased income to consume things that would really make us happier, Jackson argues that we waste our time pursuing status goods.²⁹

If this were true, the Stevenson and Wolfers results noted above would be truly puzzling. If people in richer countries waste all their gains on status goods to keep up with the neighbours, why do they report greater average happiness than people in poorer countries?

Further, critiques of status-goods competition are hardly critiques of economic growth. Very poor communities have been found to spend enormous amounts of money on status goods. One study of the economic lives of the world's truly poor – those living on less than \$1 per day – found spending on festivals quite substantial. The median household in one poor region spends 10% of its annual budget on weddings, funerals and festivals.³⁰ Some of this spending is in place of other forms of entertainment, but some of it is to maintain social standing.

If spending on status goods is costly in rich societies, it is even more costly in poor societies. As economists Abhijit Banerjee and Esther Duflo put it:

Poor people in the developing world spend large amounts on weddings, dowries, and christenings. Part of the reason is probably that they don't want to lose face, when the social custom is to spend a lot on those occasions. In South Africa, poor families often spend so lavishly on funerals that they skimp on food for months afterward.³¹

Further, if people are status-seeking animals, why should we assume that money and consumption are the only ways we seek status? People can compete to be the richest or to have the flashiest car, but they can also compete to be the strongest lifter at the gym; to have the best fashion sense; to display valour and skill on the sports field or the battlefield; to be the most intimidating in business; to be the most effective demagogue; or to win the most arguments on Twitter. Not all those are better, all things considered, than competing to earn the most by providing goods and services of value to others.

It is even more incorrect to dismiss spending on consumer goods as 'mere consumerism'. Go back only 60 years ago, when automated washing machines started replacing wringer-washers. Maybe the cultural critics of the day viewed the first families getting washing machines as seeking status, and later-adopters as being forced to keep up with their neighbours for the sake of appearances, but these consumer household goods provided tangible benefits.

In one of his brilliant TED addresses, statistician Hans Rosling talks of his mother's first use of the washing machine³² – as well as saving her from physical toil, the washing machine also freed Rosling's mother to take him to the library. Domestic activities could now be replaced with culture and leisure activities. Rosling praises the evolution of modern technology that led to the invention of the washing machine, exclaiming, "Thank you industrialization. Thank you steel mill. Thank you power station. And thank you chemical processing industry that gave us time to read books!"

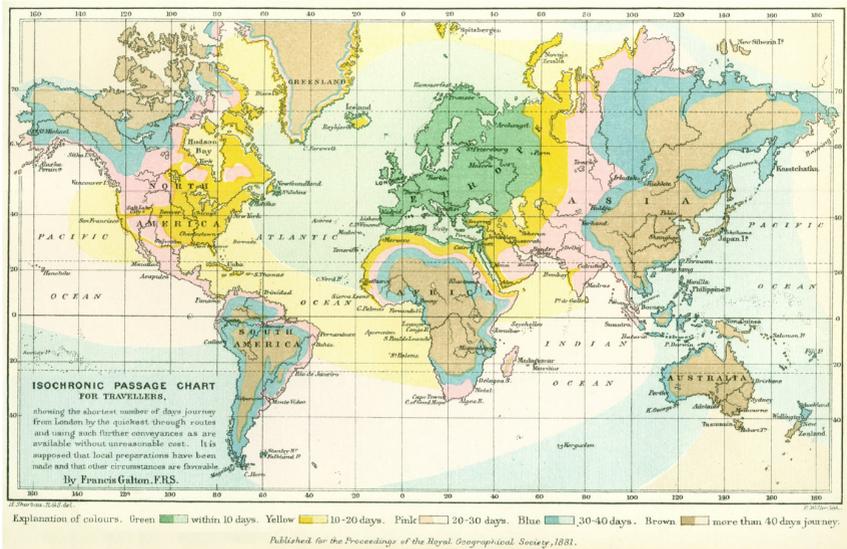
Rosling then excoriates those who would deny the benefits of economic growth – and of the washing machine – to those in the developing world who will soon be able to afford them.

Just as the washing machine has diffused its way to most middle- and lower-income homes in developed economies, other consumer goods that would have once been considered 'luxury goods' also spread in a similar way. This is sometimes called the 'democratisation of luxury'. Products and features developed for the luxury market, some of which may only come into existence because demand for status-seeking among richer cohorts provides developers with profits sufficient to cover development costs, quickly filter down into broader consumer markets. The anti-lock brakes and anti-skid systems that existed only in luxury cars decades ago are now standard equipment in new cars, along with CD players, air bags, better safety mechanisms, and a host of other improvements.

Remember the 'Jet Set'? In the late 1950s and 1960s, the mark of true wealth was the ability to fly, ideally by jet rather than by turbo-prop, at a whim. Statistics New Zealand reports that in 2010, the real inflation-adjusted cost of international air travel was about 30% of what it was in the early 1980s.³³ Far more of us are now a part of the jet set.

Fewer than 80 years before the first passenger jet plane took off, travel time was measured in weeks or even months. Statistician Francis Galton's 1881 'isochronic passage-chart' shows the points of the globe that could be reached from London within 10 days, within 10 to 20 days, within 20 to 30 days, within 30 to 40 days, and in more than 40 days – assuming that local preparations had been made and the weather was favourable. New Zealand's North Island could be reached in 30 to 40 days; Christchurch and the rest of the South Island were more than 40 days' journey from London.

Figure 4: The Tyranny of Distance, 1881



Source: Francis Galton. “On the Construction of Isochronic Passage-Charts”, Proceedings of the Royal Geographical Society and Monthly Record of Geography 3:11 (November 1881).

Going back to London from Christchurch 130 years later, by Air New Zealand, takes 31 hours of travel time and costs about \$1,000, which is less than two weeks’ work at the minimum wage. Economy class long-haul travel might not be luxurious, but it is a vast improvement over more than 40 days of travel across rough seas. Six months in a leaky boat might be an exciting adventure for Split Enz; regular, affordable, and rapid air travel has its benefits.

Rather than celebrate the innovations that have brought far more people into the Jet Set, sociologist Beth Berman decries the increased in-air inequality;³⁴ first class and business class passengers get relatively more space, while economy class passengers are more cramped than they were in the 1970s. But many of the passengers now crowded into economy would have been riding long intercity buses, or not travelling overseas at all, in the 1970s. Perhaps richer cohorts prefer to go back to the air travel of the 1970s when airports were less congested and only the rich could fly – the rich would not be taking the bus in either era. But the rest of us can be thankful that economic growth meant airlines could find profit opportunities in flying us to London and other destinations.

Further, the quality of produced goods improves as consumers get richer – and this happens in ways that mean official statistics understate real economic growth. As economist Don Boudreaux likes to ask, would you be happier living in 1970 with today’s real median income but limited to the range and quality of goods and services available in 1970, or would you prefer to live today with the lower real median income of the 1970s but able to purchase the full range of goods and services now on offer?³⁵ If the question gives you pause, then official income growth figures fail to account for the benefits consumers enjoy with improvements in product quality and diversity.

Even the wealthy of 1990 could not afford the simple luxuries broadly available in 2014: access to a large fraction of the world’s music catalogue, streaming, at a monthly subscription fee on par with the hourly minimum wage and available on a phone costing fewer than three days’ wages for a minimum wage worker. While it might be tempting to dismiss this too as mere consumerism, consider the parents using Spotify, and free online audiobooks,³⁶ to give their children musical and cultural literacy the likes of which were far more difficult, if not impossible, even 20 years ago.

2.4 BUYING SAFETY: WEALTH IS THE BEST INSURANCE

Wealth cannot stop an earthquake, but it can make natural disasters more manageable. As terrible as Christchurch’s earthquakes were, the human fallout could have been much worse. The February 2011 earthquake killed 185 people, mostly in two buildings that failed very badly. Haiti’s contemporaneous earthquake killed about 100,000 people.³⁷ Wealthier countries can afford buildings constructed to higher standards.

Environmental economist Matthew Kahn’s survey of natural disasters in 73 countries from 1980 to 2002 found that natural disasters are slightly more common in richer countries – with the United States having the highest average number of annual disasters.³⁸

While wealth cannot reduce the number of earthquakes, it can stop floods. Kahn found that an extra \$1,000 in per capita GDP reduces the chances of a flood by 1 percentage point, correcting statistically for a host of other relevant factors. Wealth does not make the rain go away, but it can build better

drainage systems, dykes and even vast diversion channels like the floodway that protects Winnipeg, Canada, from the Red River.

Kahn also shows that a 10% increase in per capita GDP reduces the expected number of deaths in an earthquake by 5.3%. That means per capita GDP needs to increase by just under 19% to reduce the expected number of deaths in an earthquake by 10%. If Wellington gets its long-predicted earthquake in 2034, economic growth between now and then would reduce the number of people killed as compared to an earthquake hitting tomorrow. At a 1% real GDP growth rate, 12% fewer people would die. At a 4% growth rate, 63% fewer people would die. A higher growth rate can save hundreds of lives.

**THE
NEW ZEALAND
INITIATIVE**

CHAPTER THREE

BUT WHAT ABOUT...?

So far, the story has been positive. Economic growth makes us healthier, wealthier, wiser and happier – and it also saves lives. But what about the downsides of economic growth? Does economic growth come at the expense of the environment and the poor? If resources are finite, does growth mean we will use up everything faster?

Dr Seuss' *The Lorax* provides a concise summary of the popular case against growth's effects on the environment. In the beginning, Seuss' Bar-ba-loots, Swomee-Swans and Humming-Fish frolicked in pristine pre-industrial environments. Then, an evil industrialist, the Once-ler, discovered the region and started cutting down the trees. His factory grew in size, despoiling the environment, despite the Lorax's strenuous pleading. Moments after pronouncing that he intended to expand production, the Once-ler's axemen cut down the last Truffula tree. The limits to growth in a finite world stopped the Once-ler, but only after he had ruined it.

In the popular rendition, economic growth always comes at environmental cost, and running out of Truffula trees is always just around the corner.

The 1970s brought not only Seuss' *The Lorax* but also the Club of Rome's *The Limits to Growth*.³⁹ The latter book's urgent appeal, based on fairly radical forecasts of resource depletion, brought it influence – but decade after decade of failed predictions saw its forecasts lose their authority.

Benjamin Friedman argues that the authors of *The Limits to Growth* underestimated the power of technological advances and ignored the role of initially higher prices in encouraging substitution by users and stimulating new supplies.⁴⁰ But it was just one part of a wider movement that imagined the planet hurtling towards an imminent disaster due to resource depletion.

Evidence shows that economic growth tends to improve environmental quality, once a country is rich enough. This effect, in which economic development first worsens then improves environmental quality, is known in economics literature as the Environmental Kuznets Curve. Once growth has built a baseline level of wealth, further growth brings improvements in

technology that make it cheaper to be cleaner, increases consumer demand for more environmentally friendly products as consumers get richer, and intensifies voter pressure for stronger environmental quality when economic growth makes other problems less pressing. It came as a surprise to Western philanthropists that poor fishermen in Zambia might use insecticide-laden malaria nets for fishing, wrecking fish stocks, rather than for avoiding malaria. But hunger trumps both environmental sustainability and disease risk.⁴¹

Further, while physical resources are finite, that hardly means we should cast out standard economic methods and tools. Economics, after all, is “the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses”.⁴² As early as 1931, economist Harold Hotelling explained how markets deal with non-renewable resources such as oil, gold or iron. But there are still a few cases, like the Once-ler and the Lorax, where growth does hurt the environment: When nobody owns the Truffula trees, the last one is more likely to be chopped.

3.1 GROWTH AND THE ENVIRONMENT: RICHER AND CLEANER

For most pollutants, it got worse before it got better.

Before the Industrial Revolution, the environment was far from pristine. Rivers were used as sewers. Indoor air pollution was particularly bad. Chimneys were not always particularly efficient, and open fires made for very smoky interiors. Rather than find a time machine, we can look to Tibetan nomadic tribes who use yak dung as winter fuel. Traditional cookstoves there make indoor air a health hazard and an underappreciated source of black carbon, which contributes to global warming.⁴³ Early industrialisation made things worse: the outdoor air became smokier and rivers bore more sewage and waste to the sea. Economic growth brought greater prosperity but worse environmental conditions – especially in the cities. London’s pea-soup fogs became legendary but were not fantasy. Coal fires within the city, combined with industrial smoke, made for deadly conditions.

Poor conditions were not limited to London. *The New York Times* of 9 December 1900 quotes Dr A.R. Edwards as being able to discern Chicago residents from those in the countryside, in post-mortem examination, by the condition of

the lungs: “To lay the hand across the new-cut surface ... of the lung would blacken the palm almost as black as to put it wet in a pan of soot”.⁴⁴

You can still see similar conditions today – not in London or Chicago or Pittsburg but in Beijing and China’s industrial cities. Historian Stephen Mihm draws strong parallels between the current industrial cities in China and the Western cities of the early- to mid-twentieth century.⁴⁵

This first-worse-then-better U-shaped relationship between economic growth and environmental quality is called the Environmental Kuznets Curve.

The curve was first described in 1991 by economists Gene Grossman and Alan Krueger, who wanted to test whether free trade between Mexico and the United States was likely to worsen or improve environmental quality in Mexico.⁴⁶ Trade opponents argued that American industrialists would set up factories in Mexico to take advantage of less restrictive environmental regulations, exporting pollution. Grossman and Krueger argued instead that free trade would increase incomes in Mexico and consequently reduce pollution.

Grossman and Krueger found that when per capita GDP reached US\$4,000–\$5,000 in 1985 dollars, or about US\$10,000 today, sulphur dioxide and smoke levels started improving with economic growth rather than worsening. Mexican per capita GDP rose in real terms from about US\$4,000 in 1992 to about US\$10,000 in 2013. In 2010, a *Washington Post* headline announced: ‘Mexico City Drastically Reduced Air Pollutants Since 1990s’.⁴⁷ If anything, Grossman and Krueger were too pessimistic about how long it would take for outcomes to improve.

For pollutants with strong local effects, like nitrogen oxide, sulphur dioxide, and particulate matter like fine soot, the relationship holds well. For pollutants whose effects are less noticeable in the area generating the pollution, the effect is weaker.⁴⁸

Environmental economist Susmita Dasgupta and co-authors reviewed the overall performance of the Environmental Kuznets Curve literature and, with some reservations, ultimately sided with the optimists.⁴⁹ Dasgupta, et al. argued that the most plausible long-run forecast is for improved environmental quality in both high- and low-income economies. Economic liberalisation, improved information, better technology, and more stringent and cost-effective approaches to regulating pollution in developing countries have begun to ‘flatten’ the Environmental Kuznets Curve.

In short, economic growth now brings improved environmental quality earlier in a country's development than it did when pollution control technologies were first being developed.

It is easy to see how the Environmental Kuznets Curve effect works, and when it does not. When a city's air is unbreathable, and when the city's residents are rich enough to switch from coal heating, government regulation becomes an easy and effective way to solve the problem. Any one household switching away from coal heating to, say, gas heating, would experience all the costs of the switch, but because the problem is so vastly bigger than that one household, it would not notice any improvement in outdoor air quality. Things like the deadly London fog can spark change through policy – when city residents can afford alternatives. Economic growth both makes alternatives cheaper, through improved technology and widespread use, and encourages households rich enough to afford to do better.

By contrast, a town with high greenhouse gas emissions is not necessarily a worse place to live than one with lower emissions: you cannot smell or taste the difference. Solutions then require national or international agreements rather than local action: any town, city or small nation imposing strong local restrictions would be in the same position as a London household choosing not to burn coal in the early 1950s, bearing all the local costs but not reaping any of the benefits.

London's smog led to a ban on coal-based heating. If Chinese carbon dioxide emissions drop with the Chinese government's promise to reduce emissions from 2030 onwards,⁵⁰ it will more likely be due to pressure on the government to deal with the effects of urban coal-burning than from any general commitment to climate change.

On the whole, then, the evidence on the Environmental Kuznets Curve is mixed. While economic growth reduces 'local' pollution, it does not mitigate pollution felt farther afield.

And, as economist Bruce Yandle explains, strong property rights help make the link from economic growth to improved environmental quality.⁵¹ Strong property rights both increase income and provide ways for those affected by pollution to sue polluters for the damages caused. Yandle cites research showing that economic growth turns more quickly into improved environmental outcomes in countries with strong property rights. Would

you rather be downstream from a factory making a mess of the river in New Zealand, or from a state-owned enterprise in China doing the same?

The link between economic growth and environmental quality depends on strong property rights and a political system that lets individuals ‘buy’ better environmental quality as they get richer and can afford it. It is entirely right to worry about the effects of environmental regulation on economic growth, as it is possible to spend too much on anything – and doubly so when the government is doing the buying on our behalf. But the right amount of environmental quality does go up as people get richer and can afford it, both in their private decisions and policy preferences.

The ongoing risk is in striking the right balance. Consider climate change and economic growth. While richer countries get a lot more economic output for every tonne of carbon dioxide released into the atmosphere, greenhouse gas emissions in total show little sign of reducing with economic growth. Or, at least, the world has not yet seen income levels at which the curve bends downward. Reducing greenhouse gas emissions may pass cost-benefit analyses, especially where it is viewed as buying insurance against the kinds of outcomes that, while unlikely, would be very harmful.⁵² Such reductions will come at a cost for economic growth.

Substantial greenhouse gas abatement may be worth that cost, but it is critically important that we weigh the case fully. Wealth provides us a general-purpose ability to deal with harmful outcomes. Curbing economic growth to reduce global warming necessarily leaves the world more vulnerable to other risks not associated with greenhouse gas emissions.

We can think about it this way. Imagine you could either buy a house insurance policy that gives less-than-full protection against a range of threats such as fire, earthquake, typhoon, tornado, flood or landslide, or you could buy an insurance policy that makes sure you never suffer any damage from flooding but does not help you in case of anything else. Do you feel lucky?

3.2 GROWTH AND A FINITE PLANET

While current economic growth seems to do more good than harm for overall environmental quality, worries about the effects of growth on the environment make a lot of sense. The early stages of economic growth brought much environmental damage, and countries like China and India are now going

through what the developed world experienced 50–100 years ago. Pollution is real and can sometimes require government regulation as a solution.

By contrast, worries that the world will run out of critical resources make far less sense, while arguments that economics cannot handle scarcity make no sense at all.

In 1972, the Club of Rome predicted that the world would run out of oil by 2003 if oil consumption did not slow down, and by 1992 if consumption continued to grow. Opponents of suburban expansion tell us that farmland will become too scarce if urban growth is not limited. In the early 2010s, there were worries that China was monopolising access to a few ‘rare earth’ elements necessary for high-tech manufacturing, with the potential to strangle Western access. And David Attenborough says only madmen and economists believe infinite growth is possible in a finite world.⁵³ All these stories ultimately rest on mistakes about how markets work.

Economist Harold Hotelling explained the economics of non-renewable resources in 1931.⁵⁴ Imagine you owned a large deposit of a non-renewable resource – say, iron. Imagine further that the only thing in the world that you cared about was profits. How fast should you pull all your iron out of the ground and sell it?

The naïve answer – as fast as you can! – is not right. In fact, it is an answer that throws away money. Pulling everything out of the ground in a hurry is generally more expensive than a slower approach. Suppose you could either mine all the ore this year, all the ore next year, or some this year and some next year. Hotelling showed that miners would pull ore out of the ground until the profits from mining this year, plus interest on those earnings, were the same as the profits expected from mining ore next year and selling it then.

Miners then will not simply extract ore as quickly as possible. Instead, they will weigh up current interest rates, current production costs, expected future production costs, and expected future prices. Even when the only thing they care about is profit, tomorrow’s profits count, too. And \$1.05 in profits tomorrow is worth more than a \$1 profit today, if the interest rate is less than 5%.

In the simple Hotelling model, the world never runs out of any resource. The prices of all resources slowly increase over time, in line with interest rates,

unless technological innovation changes the costs of mining or makes it easier to use less of the resource.

What does this mean in the real world? It means we need not worry much about running out of things. As relative scarcity increases, so too does relative price. Companies have no incentive to try and pull everything out of the ground now if they expect prices to rise, and increasing relative scarcity drives prices upwards. As prices rise, technology adapts both to increase the effective supply of the commodity – by making previously unfeasible reserves viable – and to figure out how to use alternative, relatively less scarce materials instead.

As oil prices rose from the mid-1970s and consumers demanded more fuel-efficient cars, substitutes for oil were found and previously uneconomical reserves became worth exploiting. Rising oil prices first encouraged innovation in the Alberta oil sands, then brought us massive amounts of cheap natural gas through hydraulic fracturing. And the rare earths crisis fizzled to nothing as the threat of increased prices both encouraged manufacturers to consider other alternatives and provided incentives for new rare earths mining outside China.⁵⁵ If urbanisation ever turned any substantial amount of farmland into subdivisions, the consequent rise in the value of farmland and price of food would both encourage innovation in improving crop yields and in developing denser urban living environments.

None of these innovative responses to price changes would have surprised Julian Simon. In *The Ultimate Resource*, Simon argued that while physical resources are finite, human ingenuity in using those resources is infinite.⁵⁶ Doom-laden predictions of scarcity end-times might sell papers, but they consistently fail because they ignore our capacity to innovate.

Now, how can this all go wrong? Everything so far depends on firms being able to look forward and make optimising decisions over time. But consider an oil company deciding how much oil to pump out from a fairly unstable African country. The company is worried that at any moment, the government might be overthrown and a new government expropriate private oil investments. Future profits then become risky and the barrel-in-hand becomes more valuable. Firms will then extract ‘too much’ in those areas relative to what they would have extracted if they were not worried about expropriation. Insecure property rights can break some of the Hotelling results.

So long as production from such countries is a small proportion of overall figures, we would expect only displacement: More current production will come from those places, and more future production from places where companies are not worried about expropriation. But if most production happens in places where property rights are not secure, real problems can emerge.

The limiting case is easy to imagine: whaling. Let us pretend that whales are a non-renewable rather than a renewable resource: the Hotelling result only applies to non-renewable resources where this year's production means less availability next year. In the nineteenth century, property rights over whales lay with whoever landed the great beastly.

Whale oil was a valuable commodity. If somebody owned the whales and could enforce property rights over them, whales could have been harvested sustainably, with the price of whale oil increasing predictably over time. Instead, nobody owned the whales, and a whale left to be harvested next year would instead be harvested by somebody else this year. And so whales were, predictably, over-hunted – just as deep sea fisheries continue to be overexploited outside countries with quota management systems.

In cases such as whales, secure property rights are an important part of ensuring that resources are available in the future. Otherwise, the common pool resource problem – the tragedy of the commons – induces too much extraction today, at tomorrow's expense. There would be little point in developing innovative whale-breeding techniques if anybody with a boat and harpoon could reap the benefits of your work.

So, how can infinite growth be possible on a finite planet? All that is required is continued increases in productivity: our recipes for turning labour, materials and machines into valuable output. Economic output is measured not in kilojoules, kilograms or kilowatts, but rather in dollars. As economist John Hartwick explains, investment in productivity and good management of resources can sustain infinite growth in a finite universe.⁵⁷ If you have ever wondered why economists worry so much about falling productivity growth, Hartwick's work can help in explaining it.

3.3 THE LORAX, REVISITED

It is worth revisiting the parable that opened this chapter on the environment and economic growth. While Dr Seuss wanted to impress children with the importance of caring, he had a few other important lessons as well.

The fundamental problem in *The Lorax* is not really the Once-ler's greed, or that he would not listen to the Lorax. Rather, it is that nobody seemed to own the Truffula trees, and nobody could sue the Once-ler for ruining the streams and the air.

It is hard to make sense of the Once-ler simultaneously announcing that he planned on expanding production forever while cutting down the last tree. Perhaps the Once-ler thought he had to cut down the Truffula trees quickly before anyone else could beat him to them – like the whales.

More likely, though, Dr Seuss simply imagined entrepreneurs to be foolish enough to spend millions on a factory that could only pay for itself with an ongoing supply of Truffula trees, while cutting down the last one: it is his statement about the possibilities of infinite growth in a finite world. In the real world, trees are a renewable resource. And even if real world Bar-baloos would be happy to put up with some mess in the short run in exchange for better jobs, economic growth would, in the longer term, bring them both better incomes and decent environmental standards.

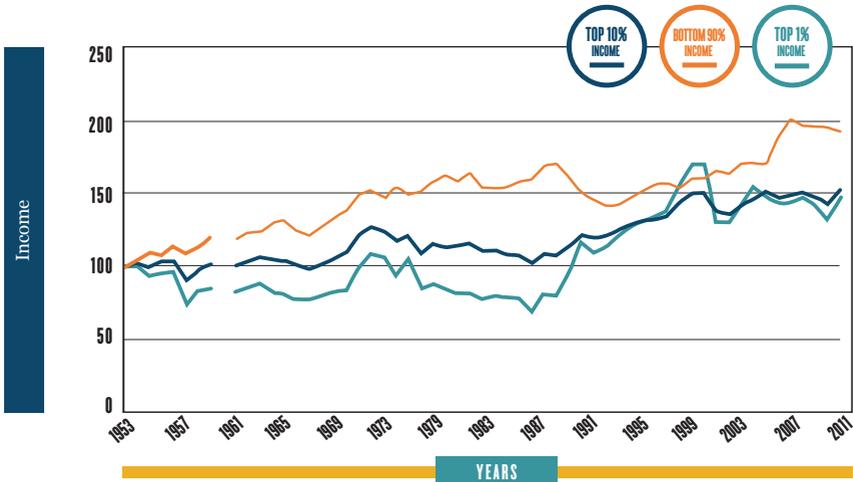
3.4 POVERTY AND INEQUALITY

But apart from improvements in longevity, happiness, health, education, safety and environmental quality, what has economic growth done for the poor?

Chapter Two showed that absolute poverty is declining around the world. The fraction of the world's population living on less than \$1 or \$2 per day dropped rapidly over the twentieth century.

The benefits of growth in New Zealand also have been widely shared. Figure 5, below, charts average income per adult in New Zealand as well as average incomes excluding the top 10% of earners. Average real incomes rose from about \$23,000 in 1953 to over \$41,000 in 2011. Average earnings for the bottom 90% rose from \$16,500 to \$31,800, almost doubling, in real terms, from 1953 to 2011.

Figure 5: Growth for the bottom 90% and top 10% since 1953



Source: Author’s calculations from The World Top Incomes Database.⁵⁸

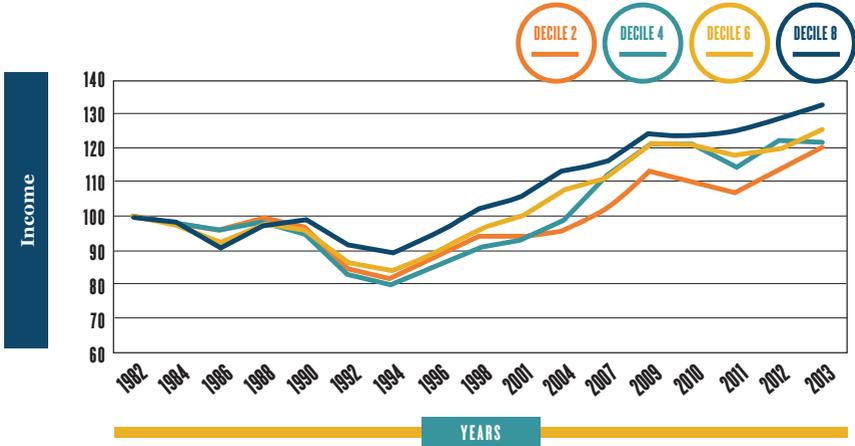
Economic growth from 1953 to 2011 reduced inequality between the bottom 90% and the top 10%. Growth in incomes has been strongest, relatively speaking, for those outside of the top 10%. Figure 5 shows income growth relative to a 1953 baseline. The data series starts in 1953 because, before that, a different measure of household earnings was used making the earlier data not comparable to the later figures. The table sets 1953’s income equal to 100 for all three groups, then traces the growth since then.

While the earnings of the top 1% grew rapidly from 1988 to 1999, over the longer period, the top 1% have not fared nearly as well. Incomes for the bottom 90% almost doubled from 1988 to 1999. The top 1% and 10% are up by half as much: incomes of both groups are 50% higher than in 1953.

Unfortunately, the World Top Incomes Database used in the charts above does not provide more details about income growth for those outside the top 10%. For that, we need to turn to the Ministry of Social Development’s recent report on trends in inequality and hardship from 1982 to 2013.⁵⁹

Figure 6 plots income growth since 1982 for households in the second, fourth, sixth and eighth deciles. Twenty percent of households earn as much or less than the figure reported for the second decile; 40% earn as much as or less than the fourth decile, and so on.

Figure 6: Household Income Growth Since 1982

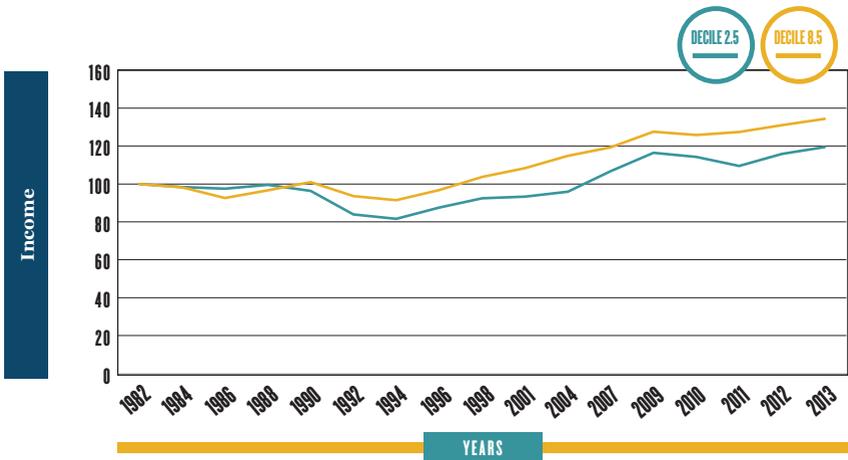


Source: Author’s calculations from appendices to Perry, 2014.⁶⁰

In all cases, incomes declined in real terms from 1982 to 1994, followed by strong growth. Households in the eighth-decile earned 30% more in 2013 than eighth-decile households in 1982. Households in the second decile earned 20% more in 2013 than second-decile households in 1982. And the figures above show that earners in the bottom 90% experienced strong income growth from 1953 to 1971, with stagnation from the early 1970s until the late 1980s or early 1990s, depending on the income group.

An alternative approach is to compare earnings for the bottom and top 40% of households. Figure 7 compares income growth at the midpoint of the second and third deciles – a measure of the median earnings of the bottom 40% – with income growth at the midpoint of the seventh and eighth deciles – a measure of the median earnings of the top 40%.

Figure 7: Household Income Growth Since 1982: bottom 40% and top 40%



Source: Author’s calculations from appendices to Perry, 2014.⁶¹

While incomes grew more strongly for those in the top 40% than for those in the bottom 40% since the early 1980s, both groups have shared in the strong growth since 1994.

Bryan Perry’s report for the Ministry of Social Development concludes:

There is no evidence of any sustained rise or fall in inequality in the last two decades. The level of household disposable income inequality in New Zealand is a little above the OECD median. The share of total income received by the top 1% of individuals is at the low end of the OECD rankings.⁶²

Bad economic policy in the 1970s, combined with worsening trade conditions, made the 1970s a lost decade; recovering from the Muldoon era took the bulk of the 1980s. The economic reforms of the 1980s were necessary, but they were hard – especially for poorer groups. Businesses had to learn how to operate in a new open and competitive environment; too many lower skilled workers had too few options when production lines rationalised.

The period from 1982 to the early 1990s was terrible for workers in the bottom 40%. But by 2009, rapid income growth in the bottom 40% made up much of the difference. It is then not surprising that child poverty rates, as measured as the proportion of children in low-income households, measured after

housing costs, rose from about 15% in the 1980s to peak near 35% in the mid-1990s, before dropping to just over 20% by 2013.⁶³

As poverty rates in this kind of measure are based on a household's income relative to the median, gains in median income will increase measured child poverty unless there is a parallel increase in household incomes for poorer households.

The rise in housing costs over the 1990s and 2000s, largely due to tighter council restrictions on the supply of new housing, has also hurt poorer families. Households on less than half the median income have a much harder time making ends meet, after housing costs, than when councils encouraged more building. The Ministry of Social Development report cited above notes that after-housing-cost incomes for low-income households are no better than they were in the 1980s. The benefits of economic growth ring a bit hollow when all income gains are eaten up in higher rents.

Addressing restrictive land use policies that prevent both building up and building out will consequently be an important part of improving real after-housing-cost incomes for those at the bottom.⁶⁴ The New Zealand Initiative's series of reports on housing and the importance of allowing more development shows how badly council restrictions on land use have been affecting the poorest households.⁶⁵

It is frustrating that the New Zealand housing debate has been framed in terms of developers versus heritage, or development against pastoral landscapes. In reality, rich and privileged homeowners use council processes to block any development that might affect their views, change the character of their neighbourhoods, or make them feel bad about 'sprawl'. The costs are borne by our poorest households, who live in overcrowded, poor-quality, expensive conditions, so that rich homeowners can feel good about opposing sprawl and preserving neighbourhood character. Future New Zealand Initiative reports will focus on the role of local government finance in hindering housing supply. Until local councils also share in the benefits of local development, discord between central government and local bodies over zoning and land use planning is likely to be the norm.

Finally, income mobility also matters. All the graphs and charts above track incomes for each decile group in that year, rather than the income growth of those specific individuals and households in the bottom or top deciles in any

particular year. But the bottom 10%, or the top 10%, in any given year might have a large proportion of people who were in neither group in the previous year.

The New Zealand Treasury finds that over 60% of households shift across decile groups over only a two-year period. After eight years, only 20% of the population is still in the same decile grouping that it was in at the start of the period.⁶⁶

The Treasury also shows relative mobility for the bottom 20%, the next 20%, and so on. Of those in the bottom quintile (the bottom 20%) in any given year, 35% had jumped to a higher quintile by the next year's survey. Of those in the top quintile (the top 20%) in any given year, 30% had dropped to a lower quintile by the next year's measure. And mobility is greater over longer periods.

A quarter of those in the lowest income group remained there after eight years. The rest had moved up. And almost a quarter of those who had been in the lowest income group wound up in the top half of the earnings distribution eight years later.

Differences in incomes across deciles, which are the typical focus of inequality measures, matter less than measures of real and persistent poverty. The government's recent adoption of an investment approach to social assistance focused on understanding and avoiding persistent poverty is welcome.

Economic growth in New Zealand since the 1950s has decreased inequality between the top 10% and the bottom 90%, while strongly increasing real incomes for both groups. Detailed data available since the 1980s shows that while incomes stagnated or fell during the reforms of the 1980s, growth since the 1990s has been widely shared, with no particular changes in income inequality since then.

Moreover, income mobility is strong: relatively few in the top or bottom income cohorts stay there forever. However, housing costs have taken a large bite out of the pay packets of those on lower incomes. Ensuring continued economic growth, and working to increase the supply of housing to reduce the cost of housing, remain the best things that government policy can do for the poor.

The narrative around income inequality in New Zealand is perhaps too strongly shaped by that in the United States, where inequality has grown rather more substantially and where the top 1%'s share of national income is much higher than in New Zealand.

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CHAPTER FOUR

A POLICY FOR GROWTH

So, if we want economic growth, what can we do to get it?

New Zealand has a few inherent advantages, like having English legal origins and a British colonial history. Whatever your views on New Zealand's colonial origins, the economic growth literature makes it quite clear that there were many worse alternatives. Countries colonised by England fared better, in the longer term, than those colonised by France or Belgium. Further, among colonised countries, those where European settlers thrived saw the development of better political institutions than those where disease was more likely to kill settlers.⁶⁷ So New Zealand enjoys two starting advantages: because English settlers could live well in New Zealand, New Zealand was provided with the basic requisites for flourishing.

On the other hand, New Zealand remains small and distant from potential trading partners.

But what of those things that can be affected by policy?

There is good evidence that strong market-based policies are associated with economic growth. In an important survey of the literature, Jakob De Haan, Susanna Lundström and Jan-Egbert Sturm find that increases in economic freedom, as measured by the Fraser Institute's Economic Freedom of the World Index, stimulate economic growth.⁶⁸

The Fraser Institute's index ranks countries' economic freedom based on the size of their governments relative to the size of their overall economies; the strength of their legal systems and property rights; the soundness of their currency; their residents' freedom to trade internationally; and the obstructiveness of government regulation.

Where New Zealand ranked 36th out of 72 countries in 1975 and 31st of 110 in 1985, policy improvements since then have seen New Zealand rise to generally occupy third place in the rankings since 1995, with Hong Kong and Singapore typically taking the top two positions.

While New Zealand's rank has been fairly stable since 1995, its level of economic freedom declined from 8.6 out of 10 in 1995 to 8.25 in 2012 – the latest year for which ranking is available.⁶⁹ Improving New Zealand's ranking would be difficult, but improving the country's openness to foreign investment and simplifying business regulations, particularly around the *Resource Management Act*, would improve the country's level of economic freedom.

New Zealand's foreign direct investment regime, as detailed in a series of *New Zealand Initiative* reports,⁷⁰ remains a hindrance to economic growth. The New Zealand Treasury also demonstrated that workers in foreign-owned firms earn a reasonable wage premium over workers in domestically owned firms. The Overseas Investment Act then provides one of New Zealand's more egregious self-inflicted wounds.

Other aspects of economic liberalism matter as well.

In the absence of very strong market-oriented policies elsewhere, countries with larger governments have poorer economic growth. All else being equal, a government that makes up 35% of a country's economic activity rather than 25% is associated with a 0.5 to 1-percentage point reduction in annual economic growth rates.⁷¹

The recent strong economic performance of Scandinavian countries, despite their relatively large governments, is largely due to those countries' strong market liberalisation since the mid-1990s in areas other than the overall size of government. While Sweden ranks 150th in terms of size of government, it ranks among the top 10 for a strong legal system and sound money. And Sweden is relatively open to free trade, which matters as the international literature suggests that a 1-percentage point increase in export growth is associated with a 0.2-percentage point increase in economic growth.⁷²

Further, how governments collect taxes and where they spend the money matters as well. Income taxes are worse for economic growth than indirect taxes like GST. And while redistributive spending on transfer payments can be harmful for growth, investments in education can improve growth.⁷³

Studies of the effects of education on growth yield mixed conclusions, partly because education is typically measured as 'number of years in school'. If schools vary in quality across countries, then an extra year's schooling can have very different effects in different countries.

More careful work has looked at the effects of international test scores on economic growth – and found more conclusive results. Improvements of about 25 points on a PISA scale, one of the main international tests of student performance, are associated with a 0.5% increase in economic growth rates. Improving the quality of primary and secondary schools can yield substantial benefits. And so *The New Zealand Initiative* has examined how the country's education system might be improved,⁷⁴ with more research currently underway and planned.

Finally, there is increasing evidence of returns to size in economic growth, especially in urban centres. Large cities have increasingly become engines of productivity and growth as information technology works, surprisingly, to increase the advantages of larger cities over smaller ones.⁷⁵

As consequence, New Zealand will be less able to afford self-inflicted policy wounds as the tyranny of distance effectively worsens; increasing the country's capacity to take in more immigrants also becomes more important where metropolitan size matters more for economic growth.

In their report on New Zealand's fiscal future, Bryce Wilkinson and Khyaati Acharya argued for the establishment of a fiscal council that might undertake rolling reviews of existing spending programmes to ensure the country continues to receive value-for-money in its government programmes.⁷⁶ Where zero-based budgeting proves too politically difficult, rolling policy reviews can work toward that end.

New Zealand's regulatory structure also needs to ensure cost-effective delivery of things like environmental quality. For too long, public policy debate has pitted economic growth against environmental quality. The country can afford better environmental quality as it gets richer; the stringency of environmental regulation should be increasing over time. But that does not give carte blanche for regulatory structures that deliver very little environmental benefit at very high cost. As Jason Krupp demonstrates, New Zealand's regulations around mining could deliver even better overall environmental quality at much lower cost.⁷⁷

Improving the quality of regulations around housing and land use as well would then do double duty in both reducing unnecessary costs and in making it easier for New Zealand to accommodate more migrants.

The case for increased immigration is very similar to the case for free trade and a freer foreign direct investment regime. Adam Smith pointed out that the benefits of the division of labour are limited by the extent of the market – a bigger market can enjoy greater gains from specialisation. Increasing the size of the New Zealand market, by bringing more people into New Zealand, increasing the range of countries to which New Zealand firms can easily export, and increasing the pool of international investors who can help Kiwi innovators to grow to serve those markets, makes for stronger New Zealand firms and better economic growth.

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CONCLUSION

HOW DO WE GET THERE FROM HERE?

Ultimately, policy follows what voters want. If there is strong popular support for policy moves towards greater economic freedom and a bigger, better New Zealand, policy will move in that direction. Politicians can only go as far as voters allow, though clever ones will ensure that they build support for policies that will improve economic growth before launching those policies.⁷⁸

Nothing encourages success like success. Economist Bryan Caplan demonstrates that while voters on the whole have serious misperceptions about economic growth and economic policies, when economic times are good and incomes are improving, voters are more likely to agree with economists about the merits of markets and growth.⁷⁹ This fuels voter support for better economic policies, encouraging a virtuous cycle from good policy to strong growth to reasonable voter preferences and back to good policy.

On the other hand, poor economic performance encourages a return to the kind of economic thinking that economist Paul Rubin characterises as emerging from our paleolithic ancestors: zero-sum thinking about economic growth, a focus on inequalities rather than absolute improvements in the conditions of the poor, and a strong distrust of foreigners and out-groups.⁸⁰ This reinforces the vicious cycle from poor economic performance to worsening ideas about policy, worse policies, and still poorer growth. Caplan argues that this ‘idea trap’ is responsible for ongoing bad policy in too many developing countries.⁸¹

While governments have to balance the punishment they will incur from voters for poor economic performance against the punishment for instituting unpopular policies that set the stage for long-run sustainable growth, think-tanks have an important role to play as well in making the case for economic growth and for sound policy.

Stronger popular support for economic growth requires a better public appreciation for what economic growth has brought us. It is not just bigger

pay packets and material wealth. Economic growth brings better health outcomes and better education. Environmental quality improves with growth. We now have access to a wealth of opportunities that could barely be imagined a hundred years ago. Any yet, when politicians offer nostrums like that “Growth isn’t everything” or “Higher GDP does not make you happier”, they earn praise for their presumed enlightenment rather than deserved opprobrium. While it is trivially true that growth is not everything, economic growth helps bring the other things we care about.

Unless we can demonstrate that economic growth is our best way of reducing long term poverty, enhancing environmental quality, and providing the best possible future for our grandchildren, we cannot expect politicians to implement policies that work to those ends.

This short paper is part of that work. But so too is each and every other policy study undertaken at *The New Zealand Initiative*. Our work on housing, education, resources, fiscal discipline and foreign direct investment is directed at discovering the best ways of achieving long-term prosperity for New Zealanders, and at communicating that research so that those who support our goal of a free and prosperous New Zealand can lay the groundwork for successful and sustainable policy change.

THE
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Apart from longer life expectancy, better health, improved education, a cleaner environment, better opportunities for our children and a happier country, what has economic growth ever done for New Zealanders?

Eric Crampton and Jenesa Jeram tour through the evidence and find that economic growth has meant a lot more than a car in the garage and a nicer computer on the desk. Real standards of living have improved dramatically over the past 60 years. Economic growth may not be everything, but it does help to bring us most of the other things we think are important.

And where critics claim that the benefits of growth have mostly gone to the rich, the opposite proves true: while incomes for New Zealand's top one percent are now fifty percent higher, in real terms, than they were in 1953, those in the bottom ninety percent saw their real incomes double.

Too often economic growth is placed in false dichotomy with other goals, like environmental quality; economic growth is seen as a destructive force at worst, or as an irrelevant abstraction at best. But economic growth is really the means by which we are able to afford a cleaner environment, and is the only way to bring real and lasting improvement to everyone's quality of life over the longer term.

Growth is good.

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