

# Working Towards Higher Living Standards for New Zealanders

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May 2011



THE TREASURY  
Kaitohutohu Kaupapa Rawa

New Zealand Government



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11/02**

Working Towards Higher Living Standards for New Zealanders

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**TREASURY VIEWS**

This paper reflects the current views, conclusions and recommendations of the New Zealand Treasury. It is intended to contribute the Treasury's views on current public policy debates.

Access to data used in this study was provided by Statistics New Zealand under conditions designed to give effect to the security and confidentiality provisions of the Statistics Act 1975. The results presented in this study are the work of the New Zealand Treasury and not Statistics New Zealand.



# Executive Summary

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## Treasury's vision and role

Treasury's vision is to be “a world class Treasury working for higher living standards for New Zealanders” (Treasury, 2010a, p.i).

In performing its role as the government's advisor on economic, fiscal and regulatory issues, Treasury has focused on how improved economic performance can enhance living standards. This aligns well with the Oxford Dictionary's (2011) definition of living standards as “the degree of wealth and material comfort available to a person or community”.

However, while economic performance certainly contributes to raising *material* living standards and will continue to be a core focus, Treasury's role as a central agency with oversight of issues across the entire state sector requires recognition that there are a broad range of factors that contribute to people's standards of living. Thus, in its broadest interpretation, ‘higher living standards’ encompasses all the objectives of the state sector.

In the past Treasury has acknowledged these other objectives, stating that living standards are “undoubtedly much more than income” (Treasury, 1999, p.1) and include “people's participation in social networks, community life, political choices and civil society” (Treasury, 2001a, p.13). Treasury has also emphasised the importance of responding to governments' equity concerns by providing empirically-based analysis on the distributional impact of policies (Treasury, 2010j).

## A better understanding of living standards

Over the last 18 months, Treasury has undertaken research and analysis to improve its understanding of living standards. This work is part of internal efforts to enhance policy advice and is also a response to external criticisms about the lack of clarity surrounding Treasury's vision (LECG, 2009).

The result of this work is the development of a ‘Living Standards Framework’ (the Framework). The Framework is intended to help Treasury consistently provide Ministers robust, theoretically-grounded and evidenced-based advice that aims to improve the lives of all New Zealanders.

In developing the Framework, Treasury has drawn on substantial and valuable data and analysis from other government departments, international organisations and from the wider academic literature on living standards.

The Framework is underpinned by a range of theoretical approaches, including welfare-based economic theories, capability approaches, sustainable development and subjective wellbeing. It acknowledges that while income and economic production are important in improving living

standards, there are drawbacks to relying solely on proxy measures such as GDP. In doing so, the Framework puts the New Zealand Treasury alongside the latest thinking from the Organisation for Economic Cooperation and Development (OECD, 2010a-d), as well as statements from the United States Treasury (US Department of the Treasury, 2011), the International Monetary Fund (IMF, 2011a) and the Australian Treasury's Wellbeing Framework (2004).

The Framework uses the economic concept of utility, which incorporates a broad range of material and non-material factors. However, it also acknowledges the importance of individual rights, freedoms and capabilities.

While raising overall living standards in New Zealand is a key priority, Treasury recognises that the standard of living of each individual New Zealander is also important. The Framework therefore looks at both the aggregate level of living standards and their distribution across the population. This will help Treasury provide governments with empirically-based advice on achieving their distributional priorities, and will ensure policies are targeted to where they have the greatest impact on people's living standards.

The sustainability of living standards for both present and future generations is a key part of the Framework. This acknowledges Treasury's stewardship role of endowing the next generation with "whatever it takes to achieve a standard of living at least as good as our own and to look after their next generation similarly" (Solow, 1992, p.15).

Finally, the Framework draws on insights from the subjective wellbeing literature, recognising that individuals' assessments of their own living standards are an important consideration.

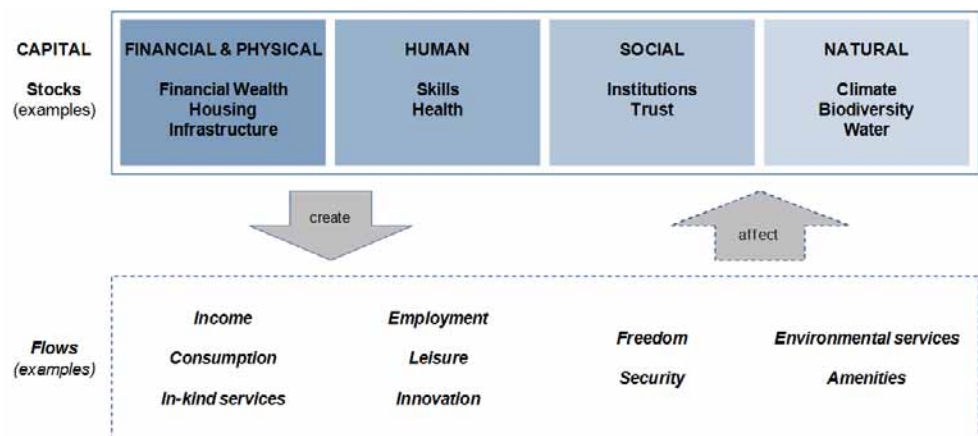
## Treasury's Living Standards Framework

In summary, the Framework recognises the following five elements:

- there is a broad range of **material and non-material determinants** of living standards (beyond income and GDP);
- **freedoms, rights and capabilities** are important for living standards;
- the **distribution of living standards** across different groups in society is an ethical concern for the public, and a political one for governments. It also has efficiency implications, into which empirically-based economic analysis can provide useful insights;
- the **sustainability of living standards** over time is central to ensuring that improvements in living standards are permanent, with dynamic analysis of policy needed to weigh up short and long-term costs and benefits; and
- measuring living standards directly using self-assessed **subjective measures of wellbeing** provides a useful cross-check of what is important to individuals.

To incorporate a broad range of material and non-material factors, distributional concerns, and dynamic considerations, Treasury has used a ‘capital stocks and flows’ approach as the basis for its Framework. This approach borrows the concept of capital from economics – traditionally used to refer to financial and physical assets (such as buildings and machines) that produce future flows of productive services. The notion of an asset that can be built up for future use has subsequently been broadened to include natural capital (OECD, 2001a), human capital (Schultz, 1961; Becker, 1964), and more recently, the importance of social capital (Coleman, 1986; Kulig et al., 2010).

**Figure 1 – Treasury’s Living Standards Framework**



The Framework includes a range of different stocks within financial/physical, human, social and natural capital. It recognises that these stocks create flows of goods and services that contribute to the living standards of New Zealanders, and that when people ‘use’ certain capital stocks and flows, this can affect other forms of capital (and their associated flows). The distribution of these effects may differ across the population and through time. For example, increased investment in skills could increase future flows of employment and income across the population. However, this investment could reduce the financial wealth of government or require a reduction in other government-provided services, all of which would also have effects across the population.

The Framework is intended to be used as a complementary input to the policy process, rather than an analytical, prioritisation or decision-making tool in its own right. When applied to policy advice, the Framework emphasises consideration of:

- *Levels*

Considering aggregate levels of the factors in the Framework is important because it allows Treasury to compare New Zealand’s living standards with those in other countries, and to track how living standards are changing over time.

- *Distribution – now and into the future*

As well as considering aggregate levels of the factors, consideration of their distribution across individuals and groups in society is also important.

- *Interactions*

Finally, identification of the interactions among the factors in the Framework is crucial. Some of these interactions are mutually reinforcing synergies, while others imply the need for trade-offs.

Ultimately, decisions about acceptable levels of factors within the Framework, distributional choices, and trade-offs between competing goods are ethical and political in nature and are therefore not amenable to definitive policy solutions. However, highlighting these choices and trade-offs will help ensure Treasury's advice is robust and that governments' decisions are well-informed.

As a contribution to an evidence base for such advice, Annex 1 of the paper presents data on the stocks and flows illustrated in the Framework. Comparisons are made with other OECD countries and also, where applicable, across the New Zealand population.



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# Working Towards Higher Living Standards for New Zealanders

## 1 Introduction

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Treasury's vision is 'higher living standards for New Zealanders.'

Treasury's vision is to be “a world class Treasury working for higher living standards for New Zealanders” (Treasury, 2010a, p.i). This vision, chosen about a decade ago, reflects Treasury's aim to provide advice that improves the lives of New Zealanders through means that are amenable to public policy.

Treasury recognises that material living standards are underpinned by a well performing economy...

Treasury has not always explained clearly what it means by “living standards”. However, Treasury's role as the government's advisor on economic, fiscal and regulatory issues has meant that its advice has primarily focused on how better economic performance can improve the lives of New Zealanders. In developing its advice, Treasury has drawn from the vast literature on what contributes to economic performance, and how this increases material standards of living. This focus aligns well with the Oxford Dictionary (2011) definition of living standards – “the degree of wealth and material comfort available to a person or community”.

...but also acknowledges that non-material factors contribute to living standards.

However, Treasury's role as a central agency with oversight over all significant policy issues across the state sector has also led it to acknowledge that living standards are broader than income alone, and are determined by a wide range of material and non-material factors. For example, in the past Treasury has noted that living standards:

- are “undoubtedly much more than income” (Treasury, 1999, p.1)
- include “people's participation in social networks, community life, political choices and civil society” (Treasury, 2001a, p.13).

Treasury recognises that the distributional outcomes of policy are important. Its advice on these matters is evidence, not value, based.

In addition, Treasury's roles require consideration of how policy decisions affect the distribution of living standards across the population. Treasury uses an empirically-based approach to advise Ministers how a policy change will affect individuals and groups, and how to best achieve the government's distributional objectives. To maintain an apolitical position, Treasury avoids making value judgments on what represents a ‘fair’ distribution of living standards.

Treasury has done work to better understand living standards...

Over the last 18 months, Treasury has undertaken research and analysis to better understand living standards. This exercise was part of internal efforts to continually enhance the quality and consistency of Treasury's

policy advice. It was also a response to external criticisms of a lack of clarity around Treasury’s vision, including that Treasury pays insufficient attention to “whether higher incomes are the ultimate objective or only useful in so far as they increase some other measures of happiness or wellbeing” (LECG, 2009, p.9).

...which has resulted in the publication of this Framework.

The result of this work is the development of a ‘Living Standards Framework’ (the Framework). The Framework describes a broad range of factors – including income and wealth – that theory and evidence suggest are important to living standards. It also sets out points to consider when developing policy advice: the level and distribution of factors that underpin living standards, and the interactions, trade-offs and synergies among them.

Other departments have provided valuable input...

In developing the Framework, Treasury has drawn extensively on the expertise and publications of many other departments, including Statistics New Zealand’s report *Measuring New Zealand’s Progress Using a Sustainable Development Approach 2008* and the *General Social Survey 2008*; the Ministry for the Environment’s report *Environment New Zealand 2007*; and the Ministry of Social Development’s *Social Report 2010* and *Household Incomes in New Zealand 1982-2009*. Treasury acknowledges and values the useful contribution of this data and analysis.

... and the Framework is consistent with the work of economic agencies internationally.

Treasury’s work on the Framework puts it alongside other economic agencies that are emphasising goals and measures beyond economic growth. For example, the Australian Treasury recognises that “analyses of economic development or progress that only take income into account neglect other important determinants of wellbeing” (2004, p.3) and the then Chief Economist of the United States Treasury, Alan Krueger (2009), noted that “GDP... does not tell us whether resources are being used wisely to maximise the well-being of society”. Similarly, the OECD (2010a) has recently identified measuring wellbeing and progress of societies as a key priority, and in 2008 France’s President Sarkozy commissioned economists Amartya Sen, Joseph Stiglitz and Jean-Paul Fitoussi to investigate alternative measures of economic and social progress. In addition, the IMF (2011a) has emphasised the importance of considering how income and wealth are distributed, noting that sustainable growth requires the benefits of growth to be broadly shared.

Treasury considers that the Framework will improve its advice, and in doing so will improve the lives of New Zealanders.

By identifying a broad range of factors that matter for living standards, the Framework will improve Treasury’s ability to provide Ministers with robust, theoretically-grounded and empirically-based advice on economic, fiscal and regulatory issues, and on significant policy issues from across the wider State sector. In doing so, Treasury considers that the Framework will help to achieve its vision of higher living standards for New Zealanders.

This paper proceeds as follows: section two provides a brief overview of some relevant economic and philosophical theories, concepts and evidence; section three draws on these to develop Treasury’s Living Standards Framework; and section four describes how the Framework can be applied to help develop policy advice.

## 2 A Brief History of Thinking About Living Standards

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*What is the highest of all goods achievable by actions?  
...both the general run of man and people of superior  
refinement say that it is happiness...  
but with regard to what happiness is, they differ.*

[Aristotle, Nicomachean Ethics, Book 1, Chapter 4]

People have been grappling with how to define progress for at least two millennia.

People have been thinking about what makes societies 'better off' and struggling with how to define and measure this for at least two millennia. For example, Aristotle, in his ethical treatises, grappled with how to attain eudaimonia, or happiness. He posited that eudaimonia comprises two key dimensions: moral life, which was necessary to attain happiness, and material life, which was necessary to meet basic needs (OECD, 2010c). Today, ideas about living standards are prominent in a wide range of fields of study including economics, sociology, politics, theology, ecology and philosophy. This section briefly canvasses the ideas Treasury has drawn on in the development of the Living Standards Framework.<sup>1</sup>

### National Accounts and Gross Domestic Product

The most widely used proxy to measure progress is GDP...

The most developed conceptual and measurement framework available to capture a country's living standards is the System of National Accounts (SNA), which includes the commonly used measure gross domestic product (GDP). National income and product accounts were developed by Simon Kuznets in the 1930s in response to information gaps revealed by the Great Depression. They represent a milestone in measurement systems and, as a key tool of macroeconomic analysis, have contributed to economic stability and economic growth (OECD, 2010c).

...although the shortcomings of this measure are well known.

However, the drawbacks of GDP as a proxy for living standards are well-documented (OECD, 2010b; Stiglitz et al, 2009; Jones & Klenow, 2010; Australian Treasury, 2004). As a flow measure of the activity in the market over a certain time period, shortcomings of GDP include:

- that its coverage of non-market activities is incomplete (many services produced in households and in the community do not enter measures of production);
- that it includes activities which may be detrimental to living standards (such as commuting);

---

<sup>1</sup> This paper does not try to provide a comprehensive and rigorous account of authors who have addressed these issues. Rather, it seeks to briefly touch on some of the important themes in the literature which have contributed to the development of Treasury's Living Standards Framework.

- that it is an aggregate measure which does not recognise who accrues the income; and
- that, as a flow measure, it provides limited information about what is happening to society's stock of wealth.

More fundamentally, the determinants of living standards are wider than economic wellbeing and include a variety of intangible factors, such as health, the environment, human relationships and freedom.

Alternative measures to GDP exist. They are widely recognised as conceptually superior to GDP, although they face methodological issues.

Two other measures in the national accounts address some of the above shortcomings and are therefore a better proxy for living standards. Gross national income (GNI), defined as GDP plus net receipts of wages, salaries and property income from abroad, measures the income that accrues to the residents of a country, rather than the total income produced within a country. Net National Income (NNI), takes into account depreciation of fixed capital assets over time and provides a better measure of sustainable production. However, measuring both GNI and NNI raises significant practical and methodological difficulties, such as those of measuring international flows of wages, salaries, property income and depreciation. Therefore, GDP per capita continues to be widely used despite being theoretically inferior (OECD, 2010e).

It is increasingly accepted that governments need to develop a more comprehensive view of societal progress...

As noted in the introduction, it has become increasingly accepted that countries and governments need to develop a more comprehensive understanding of living standards and a way of measuring them that goes beyond GDP (Treasury, 2001a, 2002a, 2002b; MSD, 2009; Australian Treasury, 2004; OECD, 2010c). One response has been to develop composite indicators that combine several different factors into a single measure, many of which have been developed in order to adjust GDP or other macro-economic indicators in some way.<sup>2</sup> For example,

...and a number of composite indicators have been developed for this purpose, though none receive universal support.

- The Human Development Index, developed in 1990 by the United Nations Development Programme, combines GDP per capita with three dimensions of human wellbeing: life expectancy; adult literacy rate and educational enrolment.
- The Genuine Progress Indicator (GPI) adapts the common metric of GDP in a number of ways, including taking account of the negative aspects of output such as crime and pollution.
- The Index of Sustainable Economic Welfare (ISEW), takes household consumption as its starting point and adjusts it for items such as the distribution of income, the value of non-market activities, damage caused by economic activities, and the depletion of natural capital and pollution.

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<sup>2</sup> A more detailed summary of composite indicators of wellbeing can be found in Kulig et al 2010, p.121-122.

These indicators are useful as they recognise a range of factors as being important for living standards. However, they are necessarily exclusionary, and there are difficulties around monetising, weighting and aggregating the factors they include (Kulig et al, 2010).

## Welfare-based approaches

In modern economics progress is typically defined as an increase in social welfare...

Welfare-based approaches to measuring living standards consider that all actions and policies should be evaluated on the basis of their consequences for human welfare.<sup>3</sup> The philosopher Joseph Raz summed this up in his humanistic principle: “the explanation and justification of the goodness or badness of anything derives ultimately from its contribution, actual or possible, to human life and its quality” (Raz, 1986, p.194).

...with welfare broadly defined as utility or happiness.

The most well-known and influential welfare-based approach is utilitarianism. English philosopher Jeremy Bentham provided the first systematic account of the theory of utilitarianism in the 18th century. He was influenced both by Hobbes' account of human nature and Hume's account of social utility. Bentham famously held that humans were ruled by two sovereign masters: pleasure and pain. We seek pleasure and the avoidance of pain, they “...govern us in all we do, in all we say, in all we think...” (1789, Ch 1). Bentham espoused the principle of utility as the standard of right action on the part of governments and individuals, and held that public policy should seek to provide “the greatest happiness of the greatest number” (1789, Ch 1).

Utilitarian theory was revised and expanded by Bentham's student John Stuart Mill, though he disagreed with some of Bentham's claims. For example, Mill considered intellectual and moral pleasures to be superior to physical pleasure: “it is... better to be Socrates dissatisfied than a fool satisfied” (1863, Ch 2). Both Bentham and Mill used utilitarianism to push for changes to laws and social policies. Mill, for example, argued for women's suffrage and free speech on the grounds that they would increase happiness.

There are some conceptual limitations to the utilitarian approach. Among the most significant are the following:

Utilitarianism has been criticised for ignoring the distribution of living standards...

- Utilitarianism concerns itself with maximising the sum of total happiness, and distributional outcomes are only important in terms of their impact on the sum. However, utilitarianism does acknowledge that in some cases there will be diminishing marginal utility, and hence a given distributional outcome may be more efficient than another.

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<sup>3</sup> Welfare-based theories are a subset of consequentialist theories, which hold that the morality of one's conduct should be judged by the consequences of that conduct. This is in contrast to deontological theories which hold that the morality of conduct is determined by the nature of the behaviour itself, rather than its outcomes (Spielthener, 2005).

...and for excluding notions of rights and liberties.

- Utilitarianism seeks to maximise utility, and, while other factors may have instrumental value, they hold no intrinsic importance. This assumption is questioned by many theorists. For example, human rights philosophers argue that there are some basic rights to which all humans are entitled, while libertarians argue that liberty is important in and of itself, and not just as a means to gain happiness.<sup>4</sup>
- People's minds are malleable and adapt to different levels of utility, which can limit the meaningfulness of interpersonal utility comparisons. For example, people suffering severe poverty may have come to terms with their hardship out of necessity. This does not usually mean that we are no longer concerned about their circumstances (Sen, 1999).

Utilitarianism has been adapted to take into account some of these other values, and forms the basis of modern welfare economics.

A variation on utilitarianism – known as ideal utilitarianism – addresses the second criticism above, by arguing that good outcomes should not simply be reduced to pleasure. G.E. Moore (1903), a key proponent of this theory, considered that some things have intrinsic value, such as beauty, knowledge and virtue, and thus should be maximised for their own sake. Modern welfare economics has responded to some of these concerns by adapting social welfare functions to take into account broader values than utility, and allowing weightings to be attached to certain groups within society if particular distributional outcomes are desired.

## Capability approach

An important theory that has emerged more recently is the capability approach...

In recent decades, the capability approach has emerged as a new theoretical framework for thinking about concepts such as wellbeing, development and justice. The approach was pioneered by economist-philosopher Amartya Sen, though aspects of it can be traced back to, among others, Aristotle, Adam Smith, and Karl Marx (see Nussbaum 1988, 1992; Sen 1993, 1999). The capability approach argues that the freedom to achieve wellbeing is:

- of primary moral importance; and
- to be understood in terms of people's capabilities, that is, their real opportunities to do and be what they have reason to value.

...which promotes effective freedom as the key objective of public policy.

The capability approach aims to provide an alternative to theories, such as utilitarianism, which rely solely on “the judgements of states of affairs to the utilities in the respective states (paying no direct attention to such things as the fulfilment or violation of rights, duties, and so on)” (Sen, 1999, p.59). It is generally conceived as a flexible and multi-purpose framework, rather than a precise theory of wellbeing.

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<sup>4</sup> Nozick, in his most prominent work *Anarchy, State and Utopia* (1974), employs a thought experiment (“the experience machine”) to argue that people would prefer to live a real life rather than a machine-induced experience of a wonderful life, and therefore ethical hedonism must be false. Sen also rejects the idea that utility is the only value. In his words, “we do not necessarily want to be happy slaves or delirious vassals” (1974, p.62).

<p>Sen measures progress by the extent to which individuals' capabilities afford them effective opportunities.</p>	<p>Sen proposes that a society's development should be judged by the extent to which individuals possess various kinds of 'functional capabilities', which afford them effective opportunities. Sen (1999) identifies five instrumental freedoms that contribute to the general capability of a person to live more freely: i) political freedoms, ii) economic facilities, iii) social opportunities, iv) transparency guarantees, and v) protective security. He argues that freedom, in all its dimensions, is both "the primary end and the principal means of development" (1999, p.36). In his view, neither opulence (income, consumption) nor utility (happiness, satisfaction of desires) constitute or adequately represent human wellbeing and deprivation.</p>
<p>Sen also emphasises that these freedoms allow for both economic and social progress.</p>	<p>While Sen considers freedom itself to be the ultimate goal, he also emphasises the interactions among the above instrumental freedoms, which makes them critically important as a means to achieve social development. For example, he notes that "political freedoms (in the form of free speech and elections) help to promote economic security. Social opportunities (in the form of education and health facilities) facilitate economic participation. Economic facilities (in the form of opportunities for participation in trade and production) can help to generate personal abundance as well as public resources for social facilities" (1999, p.11).</p>
<p>The capability approach is however criticised for not specifying particular capabilities that are important...</p>	<p>Sen also considers distribution to be important, and recognises that individual heterogeneity means that different people will need different levels of resources to have the same level of capabilities. His capabilities framework explicitly takes into account "not only the primary goods persons respectively hold, but also the relevant personal characteristics that govern the conversion of primary goods into the person's ability to promote her ends" (Sen, 1999, p.74).<sup>5</sup></p>
<p>...or allowing for comparisons between individuals.</p>	<p>Sen's theory has led to a new and highly interdisciplinary literature in the social sciences resulting in new statistics and social indicators (including the Human Development Index discussed above), and to a new policy paradigm that is mainly used in development studies, the 'human development approach'. Sen's approach is not without criticism, however. For example, several commentators have criticised Sen for failing to supplement his framework with a coherent list of important capabilities (Nussbaum, 1988; Qizilbash, 1998). Others have cast doubt on the usefulness of the capability approach for making inter-personal comparisons of wellbeing, or have pointed to the high informational requirements to provide an adequate analysis of capability.</p>

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<sup>5</sup> Primary goods are those goods that allow a person to meet their objectives and include rights, liberties and opportunities, income and wealth, and the social bases of self-respect (Sen (1999), p.74).



The capability approach is useful for public policy, as by promoting opportunities for specific groups within society, it allows for equity concerns.

The capability approach has been developed and extended by a number of scholars. The most well-known extension is that of feminist philosopher Martha Nussbaum. Nussbaum developed a list of what she considers to be the central human capabilities, which include bodily health, practical reason and play (Nussbaum, 2005).

The capability approach emphasises the importance of ensuring that people have the opportunities necessary to participate in society and live a fulfilling life. Applied to public policy, this leads to consideration of how to support the expansion of human capabilities, and to ensure that all persons have a basic level of capabilities. For example, policy might focus on ensuring people have adequate income to achieve a minimal level of functioning (Sen, 1993), or that children are given adequate support to develop their capabilities. This may require analysis of the transmission of capabilities across generations.

## Sustainable development

While distributional outcomes within the current generation are important, theories of sustainable development are useful for ensuring intergenerational equity.

Since the 1970s the question of sustainability, that is, the ability to maintain living standards in the future, has added an extra dimension to the discussion of progress. Influential reports such as the early reports of the Club of Rome (Meadows et al., 1972; Mihajlo & Pester, 1974) and the Brundtland report (WCED, 1987) have emphasised the idea that one should not only be mindful of current living standards but also those of future generations. Sustainable development has been defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987), or the capacity to provide non-declining future welfare (Neumayer, 1999; see also Daly and Farley, 2003).

Sustainability is often considered in terms of three pillars – the economy, environment and society – and operationalised by defining different forms of capital. Two types of environmental sustainability are often distinguished, weak and strong:

The two main sustainability theories are weak and strong sustainability.

- Weak sustainability holds that stocks of natural capital are substitutable, meaning that their depreciation can be offset by increases in other types of capital.
- Strong sustainability, in contrast, argues that some aspects of natural capital, such as the atmosphere, are ‘critical’ in that they are non-substitutable. From a strong sustainability perspective, sustainability can only be achieved when stocks of critical natural capital do not depreciate, or at least do not drop below a specific level (Kulig et al., 2010). Strong sustainability emphasises the biophysical limits to growth, the “‘critical threshold’ in the availability of ecosystem services ... beyond which non-linear patterns, irreversible changes and catastrophes may occur, with major environmental and economic consequences” (Farber, in Niccolucci et al., 2007, p. 668).

While there is some debate over non-substitutability and identifying critical thresholds, these ideas reinforce that the stocks of natural capital are the foundation for many other aspects of living standards now, and into the future, and that they need to be managed with care, both at the domestic and international level.

Considering future generations requires a dynamic assessment of the stocks of wealth.

Consideration of sustainability has led to new approaches to measuring living standards. As discussed above, composite indicators have been developed to take sustainability into account, such as by adjusting GDP for the depletion of natural capital. More recently the capital approach has been proposed as a conceptual basis for living standards (World Bank, 2006; Statistics New Zealand, 2009a). This approach has some key advantages as a conceptual framework. Firstly, it broadens definitions of living standards by incorporating a range of values and factors beyond economic production. Secondly, it provides a way to think about stocks, flows and sustainability in a way which is readily understood, because it is based on well established economic frameworks.

The capital approach has gained significant support from academics, statisticians and institutions (Atkinson & Pearce, 1993; World Bank, 2006; UNECE, 2009), and has been described as “the most promising way forward” in measuring social welfare (Kulig et al., 2010, p.119). Statistics New Zealand has recently engaged in designing a framework for measuring indicators of sustainable development (Statistics New Zealand, 2009a) following the recommendation of the capital approach by the joint OECD/United Nations Economic Commission for Europe and Eurostat Working Group on Statistics for Sustainable Development (WGSSD, 2008).

## Subjective wellbeing

While objective measures of living standards are useful, how individuals feel about their lives is also important...

In the last decade there has also been considerable interest in measuring the happiness, or subjective wellbeing, of individuals. Typical subjective wellbeing questions ask people to consider how satisfied they are as a whole with their life, or to rank their level of happiness on a numerical scale.<sup>6</sup> An alternative method asks people to report their feelings in real time, which yields a measure of ‘experienced effect’ or happiness (Kahneman et al., 2006).

Researchers are increasingly using these self-assessed measures to provide insights into living standards within and across societies (Veenhoven, 2007; Layard, 2005; OECD, 2006). Such measures can be useful at two levels: (i) to measure the overall wellbeing within or between societies; and (ii) to inform and test more specific policy hypotheses.

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<sup>6</sup> Subjective measures are generally considered meaningful and reasonably comparable among groups of individuals, though biases can occur (Veenhoven, 2007). The responses are highly correlated with physiological and medical measures of happiness, such as how often a person smiles (Layard, 2005).

...and a diverse range of factors affect subjective wellbeing.

A large proportion of individual differences in life satisfaction can be attributed to genetic and personality factors – some people are hard-wired to be happy.<sup>7</sup> That notwithstanding, income and a range of situational variables also affect life satisfaction. Layard (2005) proposes the following ‘big five’ factors that impact on happiness in order of importance: family relationships, financial situation, work, community and friends, and health.

Subjective studies also emphasise the importance of freedom, rule of law and security...

When comparing happiness across nations, broad societal factors become important. These include freedom (economic, political and personal), the rule of law, tolerance, security and equality (Veenhoven, 2000, 2006). Importantly, subjective measures of wellbeing are, in some circumstances, found to be a better predictor of life outcomes than objective measures. For example, Singh-Manoux et al. (2005) found that subjective socio-economic status is a better predictor of health status in middle-aged adults than objective measures of socio-economic status.

...and indicate that there are diminishing returns to income.

Income displays an interesting, paradoxical, relationship to happiness. At a given point in time, individuals and nations with higher incomes report higher happiness. Yet for most countries happiness has increased little if at all over the last few decades while real incomes have risen dramatically (the Easterlin paradox). As is well documented in the literature, there are diminishing returns to life satisfaction with higher incomes. For example, while there has been a two to five fold increase in incomes for the United States and Japan, the average self-reported happiness has stayed constant (Easterlin, 1995). Common explanations for this divergence are the powerful effects of adaptation and social comparisons, a tendency for happiness to vary around a set point, and the omission of factors which have offset the beneficial effect of economic growth (Layard, 2005).

They therefore emphasise goals such as work-life balance and mental health.

The latest data does, however, give some indication of increasing happiness over time, but large increases in national income over time are correlated with only very small changes in subjective wellbeing.<sup>8</sup> Within wealthy nations, the differences in happiness between people are explained more by social relationships than by income. The happiness literature thus calls for a reprioritisation of goals away from GDP towards work-life balance, income redistribution, treatment of mental health and encouraging a sense of community (Layard, 2005).

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<sup>7</sup> The classic evidence for the influence of genes come from studies of twins that were raised together and apart where the correlation of subjective wellbeing was almost 50 percent for identical twins versus less than 10 percent for non-identical twins (Tellegen et. al., 1988).

<sup>8</sup> The results of the latest World Values Survey indicates that happiness rose in 45 of the 52 countries for which substantial time-series data were available (Inglehart et al., 2008). Stevenson and Wolfers (2008) also find some income-happiness relationship over time, although to increase happiness beyond a certain point required an increasingly large amount of income (i.e., the relationship was not linear).

### 3 Treasury's Living Standards Framework

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Treasury's Living Standards Framework is grounded in theory and evidence...

In developing the Living Standards Framework, Treasury has drawn on the ideas discussed in the previous section.

...and includes the importance of utility, rights, freedoms and capabilities.

The Framework acknowledges that income and economic production are important determinants of living standards, but recognises the drawbacks of relying on measures such as GDP as a proxy.

It draws on the economic concept of utility, which incorporates a broad range of material and non-material factors that underpin living standards. However, it recognises that utility is not the only value relevant to living standards, which is consistent with views of Sen, Nozick and others. Other important factors are included, the most salient of which are individual rights, freedoms and capabilities.<sup>9</sup> These factors are often positively related to utility and thus have an instrumental value, but they are also important for living standards in themselves. Similarly, while the Framework is primarily focused on end-states or outcomes it also attaches value to fair processes, such as the rule of law.

The Framework also considers distributional outcomes, to ensure spending is well targeted and addresses governments' equity concerns.

While the overall level of living standards in New Zealand is a key priority, Treasury recognises that the living standards of each individual New Zealander are also important. Therefore, Treasury looks not only at aggregate living standards but also at their distribution across the population. Doing so allows Treasury to provide empirically-based advice to governments to help them achieve their distributional priorities, and ensures policies are targeted to where they have the greatest impact on people's living standards.

Intergenerational concerns are important...

The sustainability of living standards for both present and future generations is a key part of the Framework. This acknowledges Treasury's stewardship role of ensuring the next generation is endowed with "whatever it takes to achieve a standard of living at least as good as our own and to look after their next generation similarly" (Solow, 1992, p.15).

...as are subjective measures.

Finally, the Framework recognises that people's subjective assessment of their own standard of living is important, and it therefore draws on insights from the subjective wellbeing literature.

In summary, the Framework recognises the following five key elements:

- there is a broad range of **material and non-material determinants** of living standards (beyond income and GDP);
- **freedoms, rights and capabilities** are important for living standards;

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<sup>9</sup> This approach, which recognises a wide range of values which are important to individuals, is similar to the one described and used by the Australian Treasury (2004) in their Wellbeing Framework.

- the **distribution of living standards** across different groups in society is an ethical concern for the public, and a political one for governments. It also has efficiency implications, into which empirically-based economic analysis can provide useful insights;
- the **sustainability of living standards** over time is central to ensuring that improvements in living standards are permanent, with dynamic analysis of policy needed to weigh up short and long-term costs and benefits; and
- measuring living standards directly using self-assessed **subjective measures of wellbeing** provides a useful cross-check of what is important for living standards.

The Framework describes a broad understanding of living standards, which is appropriate given Treasury's role at the centre of policy making in New Zealand. While broad, the Framework is not intended to be comprehensive or prescriptive, and there may be important values that are not included. Some have been excluded because they are not directly amenable to public policy (such as the weather), and others because they are not common concerns in policy issues that the Treasury deals with (for example, the intrinsic value of the environment as distinct from its instrumental and amenity benefits).

## A capital stocks and flows approach

The cornerstone of the Framework is the capital stocks and flows approach...

To allow the Treasury to incorporate a broad range of material and non-material factors, distributional concerns, and dynamic considerations, a 'capital stocks and flows' approach is used as the basis for the Framework. This approach borrows the concept of capital from economics – traditionally used to refer to assets that enable future flows of real income, such as building and machinery. The notion of an asset that can be built up for future use has subsequently been broadened to include natural (OECD, 2001) and human capital (Schultz, 1961; Becker, 1964). Recently, the importance of social capital has been recognised (Coleman, 1986; Kulig et al., 2010), and cultural aspects are sometimes included (Bourdieu, 1986; Dalziel et al., 2009).

The Framework comprises four types of capital that are integral to current and future living standards:

...which includes financial and physical, human, social and natural capitals.

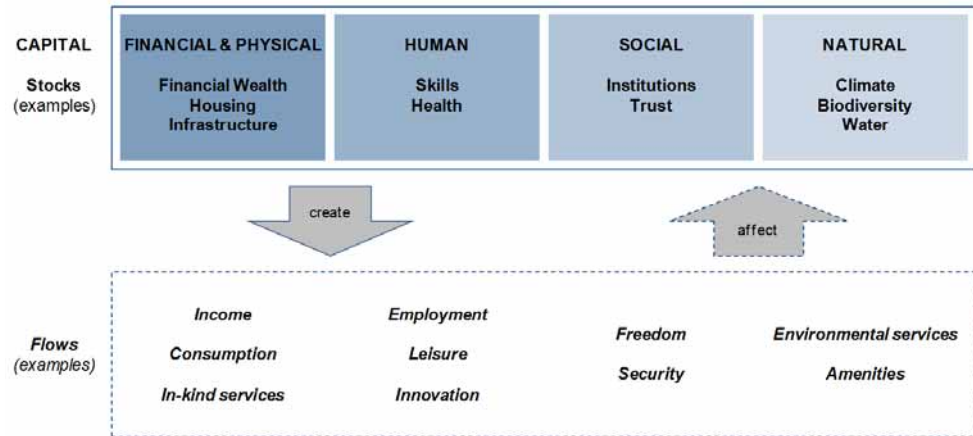
- i financial and physical capital;
- ii human capital;
- iii social capital; and
- iv natural capital.

These capital stocks represent the wealth of the country and interact to generate beneficial flows.

These four capital stocks (cultural aspects are included in human, social and natural capital) make up the national wealth of New Zealand. As illustrated below, the Framework recognises that there are a range of different stocks within each of the four types of capital. These stocks create flows of goods and services that contribute to the living standards of New Zealanders. In using certain capital stocks and flows other forms of capital (and flows) may also be affected. These effects may be positive

(increasing one form of capital may lead to flows of services that benefit other forms of capital) or negative (increasing one stock of capital may undermine others). The effects may also be distributed unevenly across current and future generations.

**Figure 2 – Treasury’s Living Standards Framework**



The Framework can be used to illustrate the potential trade-offs and synergies that exist within policy choices, as well as to inform Ministers of distributional outcomes.

The Framework is a complementary input to the policy process, rather than an analytical, prioritisation or decision-making tool in its own right. It can be used to illustrate the potential trade-offs and synergies that exist within public policy issues, as well as informing Ministers of distributional outcomes. For example, the government may wish to invest more in education to increase skills in the general population. This will come at a cost of either a reduction in financial wealth for the government (and possibly an associated increased level of debt) or a reduction in other in-kind services, which may disproportionately affect certain groups. The benefits of increasing skills are greater levels of employment and income that add to the financial wealth of both government (through taxes) and households. Greater income may also increase consumption, which may have an impact on other stocks of capital such as the health of the population and water quality.

### Financial/physical capital

Physical and financial capital is a major determinant of both current and future living standards.

Physical capital includes fixed assets in production processes, which can be tangible (e.g., machinery, buildings, houses, roads) or intangible (e.g., computer software, intellectual property) (Statistics New Zealand, 2009). Financial capital includes equities, assets and liabilities that have a degree of liquidity, such as bank deposits, debt, and government bonds (Statistics New Zealand, 2009).

The level of financial and physical capital (economic wealth) and associated income flow that an individual or household has are important determinants of their material standard of living, now and over time (Stiglitz et al., 2009). Supplemented by government-provided benefits (in cash and in kind), wealth and income determine an individual or household’s ability to consume market-produced goods and services.

When considering financial wealth, it is important to acknowledge the risks associated with high debt.

The stock of **financial wealth** – be it in the form of bank deposits, financial investments, or superannuation accounts – provides people with opportunities to consume and to invest, and the financial security to take risks. Wealth can be consumed by running down assets or increasing debt, or it can be invested to generate future income flows. Increased savings (obtained either by reducing consumption relative to income or by holding an asset that has increased in value) will also add to wealth, and will therefore allow higher future consumption. In contrast, increased debt levels represent higher consumption today and must be paid for by reduced consumption in the future. Further, high public and private (national) indebtedness may increase vulnerabilities to future credit shocks, which can undermine incomes and require costly government responses. Measures of wealth that include savings and debt levels are therefore “an important indicator of the sustainability of consumption” (Stiglitz et al., 2009, p.29).

Infrastructure and housing are central building blocks of living standards.

The stock of physical assets such as **infrastructure and housing** is also an important component of an individual, household, or country’s wealth. Well-functioning infrastructure, including roads, airports and telecommunications systems, helps enable economic growth and social cohesion (New Zealand Government, 2010). Adequate housing in particular is recognised as being an important contributor to other factors that underpin living standards, such as health (Howden-Chapman et al., 2007). Housing is also directly amenable to policy interventions, for example through “ownership and maintenance of public housing stock, the availability of housing benefits, and laws against local pollution” (OECD, 2009b, p.37). The importance of housing is reflected in the fact that it is included as a key indicator (in the form of adequacy of facilities and number of rooms per person) in a forthcoming OECD Compendium of Key Wellbeing Indicators (OECD, 2011d).

Income is essential for consumption of valued goods and engagement in society....

**Income** is a flow, generated from economic production, wages and investment. As income is generally expressed in monetary terms, it is discussed primarily in this section, although it is underpinned by human, social and natural capital. Income is critical for material living standards because of its direct link to consumption, as “a large portion of what matters to individuals and families has to be paid for” (Treasury, 1999, p.11).

... and should be considered on a household basis.

Not having adequate income is a key characteristic of poverty and social exclusion (Sen, 1999). Economic participation also contributes to living standards in non-material ways, through the sense of identity and self-confidence it provides. In addition, the ability to participate in voluntary economic exchanges is widely seen as an important individual right (Treasury, 2001a).<sup>10</sup> While income has traditionally been measured on a per person basis, recent literature emphasises the importance of measuring it at the household level (e.g., Stiglitz et al., 2009). This is because the income (and wealth) that an individual has available to them is typically a

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<sup>10</sup> Sen (1999, p.6), for example, speaks about the right of people to free exchange: “To be *generically against* markets would be almost as odd as being generically against conversations between people”.

function of the household they live in. In practice, however, defining households in a meaningful way makes measurement at this level difficult.

The services that governments provide to households should be included when measuring living standards...

The government provides a variety of income transfers (such as the unemployment benefit and New Zealand superannuation) and ***in-kind services*** (such as subsidised health care, educational services and the provision of infrastructure). These services (which add to an individual's income to produce what is referred to as final income) are often a substitute for, or a supplement to, household income, and will directly influence the level of consumption that the household can sustain (Stiglitz et al., 2009; OECD, 2010a-d; Treasury, 2010h).

...as should the net wealth position of the government.

The sustainability of income transfers and in-kind services is related to the fiscal position of the government. The same principle of sustainable consumption that applies at the household level also applies to the government and the economy as a whole (Stiglitz et al., 2009). The stock of physical assets the government owns and its balance of savings and debt determine the sustainability of the level of services the government provides (Treasury, 2001a, 2010c). As the government is ultimately owned by households, the wealth of households can be effectively augmented or reduced by the fiscal position of government.

In considering consumption possibilities, a dynamic approach is necessary to take into account life-time earnings and assets.

Income measures should be considered alongside measures of ***consumption*** and wealth to provide a fuller picture of consumption possibilities. Income can differ over time without compromising a person's consumption possibilities as long as their longer-term income expectations (or permanent income) do not change (Friedman, 1957). While permanently low income levels are likely to have a significant negative effect on living standards, transitory short-term decreases in income are not. This is especially true if the person owns assets that can either be sold, or provide consumption benefits, such as housing. Consequently, for policy making purposes it is important to consider whether people's circumstances are transitory or permanent, and what the dynamic impacts of policy are likely to be on different groups.

Employment is a major determinant of current and future income and wealth...

Income is most commonly generated through employment. ***Employment*** affects living standards in two key ways. Firstly, it increases income, which leads directly to an increase in living standards for the individual, and also helps people improve their human capital and future earnings potential. Secondly, the additional living standards benefits from employment, over and above the impact of increased income, are significant. As noted in section two, the subjective wellbeing literature consistently finds that being in employment is one of the most important factors for an individual's happiness or life satisfaction, independent of the income that such employment provides (Jenkins, 2001; Layard, 2005; Veenhoven, 2007). Job quality varies and can affect the extent of benefits accordingly. But even low-wage, low-skill jobs are usually better for those in a position to work than no job at all.

...and employment also contributes to individuals' social engagement and health.



Long term unemployment is particularly detrimental.

Conversely, job loss and the resulting drop in income and experience of unemployment – particularly long-term unemployment – have a detrimental effect on personal wellbeing beyond the loss of income (Treasury, 2001a; Layard, 2005; Treasury, 2010d). Where job losses are widespread in particular areas, whole communities can be disrupted both socially and economically. This occurred in the 1980s in New Zealand and is currently occurring in some communities in the aftermath of the recent recession.

Employment also has benefits for the government's fiscal position.

Paid employment also has a number of benefits from a national perspective, such as raising economic output and income per capita, and improving the government's fiscal position by providing tax revenue and reducing the demand for income and in-kind transfers. As the population ages, it will become increasingly important to raise participation rates among people of working age and those past the current retirement age in order to maintain economic growth and the government's fiscal position (Treasury, 2001a).

The value of unpaid work should be recognised...

Unpaid employment also produces many of the above benefits, to varying degrees. Much unpaid work involves the provision of services that would otherwise need to be paid for, such as household chores, cooking, cleaning and caring for children. These tasks are of substantial economic value, regardless of whether money changes hands or not. Unpaid work can also have significant wellbeing benefits. For example, volunteering in the community improves the wellbeing of the volunteer as well as those they are assisting, particularly when it involves engaging with other people.

...as should the benefits of leisure, including improved personal health, relationships and social cohesion.

While employment generates a raft of material and non-material benefits, it is not a case of more is always better. As jobs become more demanding and stressful the psychological benefits diminish and they may become harmful (Treasury, 2001a). There is also a trade-off between work – whether paid or unpaid – and the amount of *leisure* time people have. The subjective wellbeing literature indicates that the amount of leisure time people have and how they spend it is important for living standards (Layard, 2005; OECD, 2009a). Leisure time spent doing recreational activities, building social relationships and engaging in community activities is particularly beneficial for personal health and social cohesion (OECD, 2009a). The income-leisure trade-off is one area where the importance of productivity is apparent. Higher labour productivity allows for higher incomes with the same amount of work effort, or, conversely, more leisure for the same amount of income (Treasury, 2010c).

## Human capital

Human capital is a driver of economic growth and higher life satisfaction.

Human capital is the stock of “knowledge, skills, competencies and attributes embodied in individuals” (OECD, 2001, p.18). It is a combination of a person's inherited characteristics and their education and experience. Human capital was originally used to refer to personal attributes that produce economic value. Behrman and Taubman (1982, p.474), for example, narrowly define human capital as “the stock of economically productive human capabilities”. However, human capital can also be defined as the broader personal attributes and capabilities that contribute to

a person's happiness and life satisfaction. For example, David & Lopez (2001) distinguish between human capital's tangible (e.g., health, physique, longevity) and intangible (e.g., cognitive and non-cognitive skills) aspects.

Skills within a country are essential to improving earnings and economic production.

The economic importance of human capital – particularly in the sense of cognitive **skills**<sup>11</sup> – is widely recognised within labour economics and growth theory as one of the key factors underpinning economic production and the employability of individuals (Treasury, 2010e; Hanushek & Woessmann, 2008). Empirical studies confirm that measures of skill account for a significant part of the variance in labour market outcomes between individuals. For example, across developed countries, an extra year of education is associated with increased individual earnings of between 5% and 15% (Krueger & Lindahl, 2000). Moreover, recent OECD evidence (2010g) suggests that reducing the proportion of people without basic skills could add 0.4 percentage points to New Zealand's long run annual GDP growth rate.

In addition to cognitive skills, non-cognitive skills are important...

Recent economic studies suggest that non-cognitive skills, such as personality and behavioural traits, which are not captured by the traditional cognitive measures of skill, also explain a significant proportion of the variance in individual outcomes (Bowles et al., 2001; Treasury, 2008). The economic literature refers to two main types of non-cognitive skills: i) self-regulatory skills, such as self-discipline and motivation; and ii) interpersonal skills such as communication, ability to work with others and empathy. Non-cognitive skills influence labour market outcomes, both directly and indirectly (through their impact on educational achievement).

...and both are important for non-economic reasons, such as for political participation, exercising freedom, improving trust...

Skills, cognitive and non-cognitive, are important for wider wellbeing and for avoiding dysfunction, independent of their effects on earnings and productivity. For example, higher levels of education are associated with higher social and political participation, less exclusion, higher trust and higher social cohesion (Putnam, 2000). Higher skill levels also support the positive exercise of freedom and choice by improving people's ability to make decisions that will benefit them in all areas of life. George Ainslie (2000), for example, discusses the implications of hyperbolic discounting, in which people not only prefer the present to the future, they do so with an extreme preference for more immediate payoffs relative to later payoffs. Ainslie's central idea is that humans have an innate tendency to prefer immediate to delayed rewards, and must use a range of strategies to manage this internal struggle in order to achieve goals with a future focus (such as reading, education, health, saving and positive social interaction). Strategies to manage the internal battle between present and future concerns are learned (although like other skills, different people have different aptitudes), and require effort. Recently published New Zealand research supports these ideas, showing that childhood self-control predicts

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<sup>11</sup> Human capital has traditionally been assessed using internationally comparable surveys such as the Adult Literacy and Life Skills Survey (ALL) and the Programme for International Student Assessment (PISA), or proxy indicators such as qualification or occupation (Hanushek & Woessmann 2008).

adult physical health, substance dependence, personal finances and criminal offending, independent of other variables such as intelligence/cognitive skills and social class, and that self-control can be learned (Moffitt et al., 2011).

... and reducing crime.

The flow of personal wellbeing and social benefits from human capital accrue both to the individual receiving the education and to the community in which they live (Treasury, 2001b; WGSSD, 2008). For example, higher levels of education are associated with lower levels of crime (Wolfe & Haveman, 2001). Investment in education also generates economic benefits for people other than the individual making the investment (positive externalities), which provides an economic justification for public investment in education (Sianesi & Van Reenen, 2003).

Skill levels are particularly important from a distributional perspective because of the high transmission of human capital from one generation to the next (Currie & Morretti, 2003). This transmission is sometimes described as a kind of embodied cultural capital that can be passively inherited from the family through the socialisation of culture and traditions (Bourdieu, 1986).

High levels of human capital support innovation, another key determinant of economic growth...

A society's knowledge and capability to use knowledge are critical for the flow of **innovation** and knowledge, which are important determinants of economic growth (Treasury, 2010i). The OECD (2005, p.7) argues that "in advanced industrial economies, innovation and exploitation of scientific discoveries and new technology have been the principal source of long-run economic growth....In the future, the innovation performance of a country is likely to be even more crucial". Jakob Madsen (2010) found that growth in OECD countries from 1870-2006 has been largely caused by total factor productivity (TFP) growth. TFP growth has in turn been predominantly driven by research and development (R&D), knowledge spillovers, skills, and the interaction between skills and the distance to the technology frontier. For example, Madsen finds permanent positive economic growth effects from increases in R&D and human capital.

... while good health enables people to realise their potential – both in contributing to the economy and society.

In addition to skills, a person's **health** is integral to their experience of life and ability to contribute to improving overall living standards. Health is an important element in most definitions of wellbeing at both the individual and societal level. Individuals' health underpins productivity, both now and in the future, and it is also a key contributor to their subjective wellbeing (Layard, 2005; OECD, 2010a-d; Holt, 2010; Enright and Scobie, 2010). For example, there is strong evidence that obtaining a job after a period of unemployment is likely to have positive effects on mental health (Jenkins, 2001). Health outcomes are in part determined by the self-regulatory skills described above which assist in balancing the short and long-term costs and benefits of diet and other lifestyle decisions (Heckman, 2008).

Measurements of health should take into account both morbidity – impairment of functioning, which is a measure of quality – and mortality, which is a measure of quantity (Stiglitz et al., 2009). Some measures, such as 'healthy life year expectations' or 'quality adjusted life years' try to

combine these two elements (Ministry of Health and Statistics New Zealand, 2009).

## Social capital

Social networks, good governance and preservation of individual freedoms are important for living standards...

The World Bank (2006, p.xviii) defines social capital as “the degree of trust in a society and the ability of people to work together for common purposes”. Other definitions include community characteristics, networks, norms, and institutions such as the rule of law and transparency of political processes (Statistics New Zealand, 2009). Like other types of capital, social capital can be accumulated over time and then drawn on for use in the future.

Treasury (2001a, p.6) has previously emphasised the importance of social capital for living standards: “when there are high levels of participation, interconnection and cohesion, there are correspondingly high levels of social capability; that is, a high level of the ability of various interests in society to co-operate towards common goals”. Social capital is built on cooperation and trust at an institutional and interpersonal level, effective institutions and a strong sense of culture and social cohesion.

...as is the performance of institutions, law and political processes.

**Effective public institutions** underpin social capital, as they provide the framework within which the society and the economy function (Treasury, 2001a). Institutions have major affects the living standards of New Zealanders, both directly through opportunities for democratic participation and the protection of important individual freedoms and the rule of law, and indirectly through their impact on the functioning of society and the economy. The governance and effectiveness of institutions affects how well people can use their other resources, such as their physical, financial and human capital.<sup>12</sup>

The degree of trust that exists within society increases social bonds...

**Trust** is an important element of social capital, which is strengthened when communities have shared values, low levels of social dysfunction and confidence in public institutions. High levels of trust can be developed through bonding – strong ties that emphasise a shared identity within a group such as a whānau – or bridging – weaker ties that help foster broader community links and information channels between separate groups (Putnam, 2000). However, bonding social capital may detract from bridging social capital. This can happen when strong in-group ties are exclusive and discourage the participation of people outside the group (Treasury, 2001a).<sup>13</sup>

...and economic prosperity.

There are important interactions between the above elements that help create an economically prosperous and socially cohesive society. For example, a transparent system of government gains the trust of the

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<sup>12</sup> For a more detailed summary of the various linkages between good governance and living standards see Treasury (2001a) pp.79-81.

<sup>13</sup> For a more detailed summary of the linkages between shared values and living standards see Treasury (2001a) pp.81-82.

population, which reinforces the responsibility of institutions to the public. Aspects of social capital also have benefits for the economy, particularly in terms of decreasing transaction costs and encouraging cooperative behaviour (Australian Bureau of Statistics, 2002). For example, transaction costs may be lowered if people know others will honour contracts and can trust people they do not know well (Putnam, 2000; Fukuyama, 1996).

One of the most important functions of public institutions is to protect the rights and freedoms of individuals...

**Rights and freedoms** are an integral part of social capital and are inherently connected to an individual's relationship to the state and society. Freedom (economic, political and personal) is one of the main factors explaining differences in life satisfaction across nations (Veenhoven, 2006). Effective public institutions and the rule of law serve to protect individual freedom, but protecting freedom may also require limitations on the state's interference in people's lives.

...and it is important that regulations do not overly impede individual liberties.

Some of the rights and freedoms that institutions should protect can be considered absolute and should not be traded off for another person's wellbeing. For example, the United Nation's Universal Declaration of Human Rights (United Nations, 1948), to which New Zealand is a signatory, sets out rights that are intended to be inalienable and indivisible. Other rights are relative, and need to be balanced against other factors that affect living standards. For example, institutions that enforce property rights facilitate well-informed and secure contracting, which is a crucial driver of economic growth (Treasury, 2001a). However, the right to one's property is not an absolute right. For example, the government taxes property to provide other benefits, although decisions to do so should consider the reduction in freedom that taxes and regulation create.

Another important function of institutions is to provide safe environments.

An important role of public institutions is to provide **security** from harm. Feeling safe and secure is necessary for people to realise their capabilities. There are a variety of external factors that put people's security at risk: crime, accidents, terrorism, bio-security hazards and natural disasters (Stiglitz et al., 2009). These events have a disproportionate effect on people's lives and therefore require special attention. Public institutions such as the defence forces, police, courts, the prison system and civil defence, should strive to enhance community safety while respecting the rights of those they seek to protect. It is essential that these institutions have public support and confidence in order to work effectively.

Social capital exists within, and is shaped by, the cultural context. Cultural values and a sense of cultural identity, which are inherited from the previous generation and adapted by current members of the community, assist in building and transferring social capital. Cultural norms differ across groups within a society. For example, an analysis of social capital in a Māori society is likely to identify an important role for culture in establishing a sense of identity and belonging, along with other features such as the primary importance of extended family relationships (Statistics New Zealand, 2002). The extent to which cultural norms vary across society can influence the extent to which social capital is bonding or bridging. Strong bridging social capital is often more important in multicultural societies, as it helps build social cohesion across disparate groups.

## Natural capital

Natural resources can be renewable and non-renewable.

Natural capital refers to the earth's natural resources and systems that support life. As such, it encompasses both non-renewable natural resources (such as land, coal, oil, gas and minerals) and conditionally-renewable resources (such as forests, fish and water) (Statistics New Zealand, 2009).

They provide essential services to the population and underpin the New Zealand economy.

Natural capital provides a flow of **environmental services**.<sup>14</sup> For example, the natural environment absorbs waste products, up to its absorptive capacity, which would otherwise cause pollution damage and endanger people's health (WGSSD, 2008). In addition, natural capital provides services that contribute to economic activity. This is especially true in New Zealand, where the primary sector (which includes agriculture, mining, forestry and fisheries) accounts directly for about 7% of New Zealand's GDP, while tourism, which trades off New Zealand's '100% Pure' image, accounts for another 10%. Furthermore, consumers in New Zealand and overseas are placing a higher value on environmentally-friendly production technologies and in some markets, environmental sustainability is becoming the price of entry for New Zealand's exports (Treasury, 2010g).

Natural capital also has amenity and cultural values for New Zealanders.

Natural capital also provides **amenity value** and contributes to New Zealand's cultural identity, with both the rural and urban environments being fundamental to people's lifestyles. In addition, natural capital has a high importance for Māori as tāngata whenua (people of the land), with local geographical features playing an important role in narratives of community origins. Treasury has a responsibility to recognise this cultural relationship in accordance with the principles of the Treaty of Waitangi.

In New Zealand, stocks of natural capital, in particular, the atmosphere, freshwater, soil, fish stocks and biodiversity, are of particular importance to living standards:

There are a range of capital stocks that are important to New Zealand, in particular climate stability, biodiversity and water.

- The earth's atmosphere makes life on earth possible. It also helps determine the **climate**, which in turn supports primary industries. Increasing concentrations of carbon dioxide and other greenhouse gases in the atmosphere are affecting the climate and leading to rising sea levels, changes in wind and rainfall patterns, and increases in temperatures, floods and droughts. These effects will significantly affect New Zealand's primary production sector (MFE, 2008).
- As well as being crucial to sustaining life, stocks of **freshwater** are a key input to many of New Zealand's industries. For example, 77% of the national water allocation is used on irrigation. New Zealanders are used to having an abundance of freshwater, and on average, use an estimated two to three times more water per person than the inhabitants of most other OECD countries (MFE, 2008).

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<sup>14</sup> The intrinsic value of the environment is also an important aspect of natural capital, but is not a central part of our Framework as is not a common concern in policy issues that the Treasury advises on.

- A significant amount of New Zealand's GDP depends on the top 15 centimetres of soil, making topsoil another important input to the primary sector. Since the mid-1980s, intensified land use in the agricultural sector has resulted in increasing amounts of nitrogen in the soil, which has negative effects on freshwater stocks (MFE, 2008).
- Amounting to nearly 3% of GDP, the fishing industry is another important part of New Zealand's economy. However, in 2008, approximately 29% of New Zealand's assessed fish stocks were below target levels, up from 15% in 2006 (Statistics New Zealand, 2009).
- **Biodiversity** – stocks of flora and fauna – helps sustain the ecosystems that support life and provides flows of services that contribute to economic production. Protecting biodiversity is a challenge. In spite of efforts to do so, between 2002 and 2005, more native species saw deterioration in their threat status than an improvement (Statistics New Zealand, 2009).

Accounting for the degradation of these stocks is essential.

It is critical that governments efficiently allocate and properly account for the depreciation of stocks of natural capital, to ensure their sustainability *and* the sustainability of the flows of services and amenities they generate.

## Distributional outcomes

Treasury's vision is higher living standards for New Zealanders. This implies a focus on both aggregate levels of living standards and also on their distribution across individuals and groups, both within and between generations.

When thinking about distributional outcomes, Treasury is mindful of distinguishing between normative and positive approaches.

When thinking about distributional outcomes, Treasury is mindful of distinguishing between normative and positive approaches. Normative approaches seek to identify what constitutes an equitable or fair distribution of resources across society. This is essentially a question of political economy and philosophy, the answer to which differs according to one's fundamental values and views of human nature. As such, there are many different theories of distributive equity. For example, utilitarians, while not prioritising distribution, do allow for the redistribution of resources to those who stand to gain the greatest marginal utility from them (unless the efficiency costs of doing so will reduce aggregate utility or welfare), whereas Rawlsians prioritise resources to the least advantaged in society. Libertarians argue that equity exists only where people are entitled to keep whatever they produce or gain from their talents, irrespective of distributional outcomes. Strict egalitarians view inequality of outcomes as a violation of equity, while resource egalitarians focus on equality of opportunity.

Treasury provides impartial, empirically-grounded advice on achieving governments' distributional priorities.

Where normative approaches ask what the distribution of living standards should be, positive approaches ask what the distribution is. They also consider whether there is evidence to suggest that a particular distribution poses social or economic problems and the effect different policy interventions may have on how living standards are distributed.

Treasury takes a positive approach to distribution as opposed to a normative, value-based one. This approach is appropriate to Treasury's policy advisory role, as it allows the organisation to provide advice on the distributional priorities of the government of the day, while maintaining an apolitical position that is grounded in empirical economic analysis.

In particular, Treasury emphasises improving the outcomes of those with the lowest standards of living.

Treasury's advice on distribution has tended to emphasise the inefficiencies that result from having living standards distributed in ways that prevent some people from fully participating in the economy and society. This has led Treasury to advise targeting policy interventions towards those at the lower end of the income distribution, in particular those with long-term and multiple barriers to developing and using their human and social capital, for whom additional assistance will have the greatest marginal impact. Essentially, Treasury focuses on improving the social mobility of the long-term disadvantaged. However, Treasury also emphasises the efficiencies that can be gained from lowering tax rates to those with higher living standards.

More recently, Treasury has been investigating the possible relationship between relative rather than absolute income and wealth, and poor social and economic outcomes (see Wilkinson and Pickett, 2009). While empirical evidence of causation remains inconclusive, both historical and contemporary events demonstrate that societies in which the benefits of growth are captured by a minority can face considerable social, economic and political upheaval. This suggests that relative inequality, where combined with high absolute levels of poverty and a lack of political transparency and democracy, should be a concern.

Treasury believes that analysis of the distribution of living standards is fundamental to good policy advice. Understanding and analysing the distribution of wealth, income and other outcomes across society gives analysts a fuller picture of living standards than is gained from relying on aggregate measures alone. Such analysis ensures policy interventions are targeted to where they will have the greatest impact, and enables Treasury to advise on the most cost-effective way of achieving governments' distributional priorities.

## Subjective wellbeing

Treasury is also interested in how people feel about their lives.

Treasury's Framework is supplemented by insights from the subjective wellbeing literature. Subjective measures of wellbeing bring an additional layer to understanding living standards as they allow Treasury to assess how well someone is living from that individual's own perspective or experience. There is a growing consensus that both subjective and objective indicators are needed to measure living standards (Stiglitz et al., 2009; OECD, 2010b).

These subjective measures of wellbeing provide a useful cross-check on what is important.

Subjective measures of wellbeing have been used in the Framework primarily as a useful cross-check to ensure that the objective measures are the right ones. For example, the subjective wellbeing literature has reinforced the intuitive understanding that factors such as good health and



employment are very important to people's lives. It has also given additional prominence to the importance of social connectedness, such as having strong relationships with family, friends and the community (Layard, 2005). Further, one of the reasons the distribution of living standards is important is that it affects how people feel about their lives. Finally, the subjective wellbeing literature reinforces the concept of diminishing marginal utility of income (Easterlin, 1995; Inglehart et al., 2008; Stevenson & Wolfers, 2008).

## 4 Conclusion

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Treasury's work encompasses a wide range of issues...

... and Treasury recognises that both material and non-material factors are important for people's living standards.

Treasury captures this broad approach to living standards in its Living Standards Framework, which takes a capital stocks and flows approach.

As the government's economic, fiscal and regulatory adviser and also a central agency, Treasury's work encompasses a wide range of policy issues that impact on the living standards of New Zealanders.

Economists recognise that wealth and material comfort (the traditional definition of living standards) are important to living standards. However, there are numerous other factors that matter to New Zealanders' standards of living – for example health, education, a clean environment and freedom – many of which have value independent of their contribution to wealth and material comfort. Treasury's understanding of living standards recognises these other factors and is thus broader than the traditional definition.

This understanding of living standards is captured in Treasury's Living Standards Framework. The Framework draws on a vast theoretical literature to identify a broad range of factors that contribute to living standards. It brings these factors together in a 'capital stocks and flows' approach that includes four types of capital:

- **financial and physical capital**, which includes infrastructure, housing and wealth
- **human capital**, which includes health and skills
- **social capital**, which includes institutions and trust
- **natural capital**, which includes the stability of the climate, quality of water, as well as biodiversity

These capital assets generate a flow of goods and services (broadly conceived) which are consumed by people and enhance their living standards.

### Using the Framework in policy advice

The Framework is not intended to be an analytical tool in itself, but as an input to the policy process.

The Framework is intended to be used as an input to the policy process, rather than an analytical, prioritisation or decision-making tool in itself. Its main value is in the way it encourages a broad understanding of living standards.

When applied to policy advice, the Framework emphasises consideration of:

- *Levels*

It is also useful in tracking how New Zealand is progressing.

Considering aggregate levels of the factors in the Framework is important because it allows Treasury to compare New Zealand's living standards with those in other countries, and to track how they are changing over time. A snapshot of the levels of New Zealand's living standards is provided in Annex 1.

- *Distribution – now and into the future*

Treasury will also use the Framework to address distributional outcomes...

As well as considering aggregate levels of the factors, it is important to be aware of their distribution among individuals and groups in society. This allows Treasury to provide empirically-based advice to help governments' achieve their distributional priorities. Annex 1 provides a snapshot of how living standards are distributed across individuals and groups in New Zealand.

- *Interactions*

... as well as identifying the potential trade-offs and synergies within policy decisions.

Finally, identification of interactions among factors in the Framework is important. Some of these interactions are mutually reinforcing synergies, for example, trust leads to voluntary exchanges and good economic outcomes that in turn reinforce the original trust. However, some interactions will require complex trade-offs. Natural capital, for example, can be consumed to build up physical and financial capital, but this may not be desirable where this results in reductions in non-substitutable stocks. Other trade-offs may occur between short and long term outcomes, between individual and societal outcomes, or between efficiency in increasing aggregate living standards and the equity of their distribution.

The decision on what represents an appropriate level or distribution of each factor will, however, be a political decision.

Decisions about acceptable levels of factors within the Framework, distributional outcomes, and trade-offs are ultimately political in nature and thus beyond the realm of policy advice. However, highlighting them will ensure Treasury's advice is robust and theoretically grounded and that governments decisions are well-informed. As such, the Framework will improve Treasury's ability to fulfil its core role as the government's lead advisor on economic, fiscal and regulatory issues, as well as its role as a central agency that has oversight over all significant policy areas.

# Annex 1 – Indicators for Measuring Living Standards

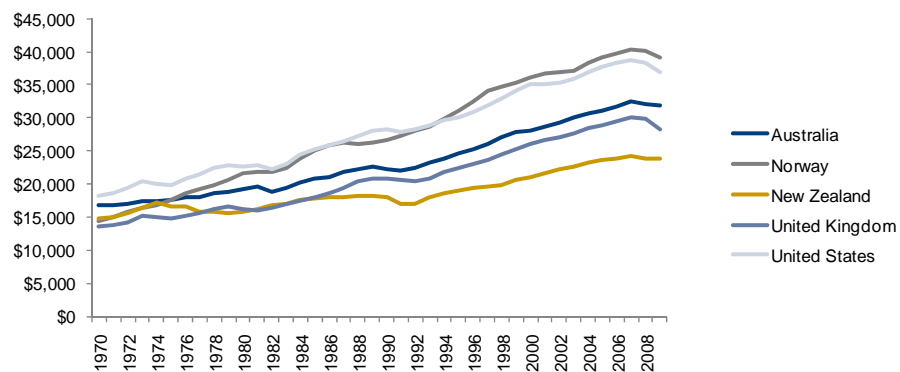
This Annex provides a snapshot of New Zealand’s living standards, as outlined in the proceeding Framework. For each factor, a range of indicators have been selected to measure New Zealand’s overall performance and to analyse how living standards are distributed across the population.

The indicators have been selected through consultation with other departments and through research of comparable international reports. Where possible, indicators have been chosen that allow a comparison with other OECD countries as well as a break-down across ethnicities, ages, household types, gender and income brackets.

## Income

**Figure 3 - GDP/capita US dollars, constant prices, PPPs (reference year 2000)**

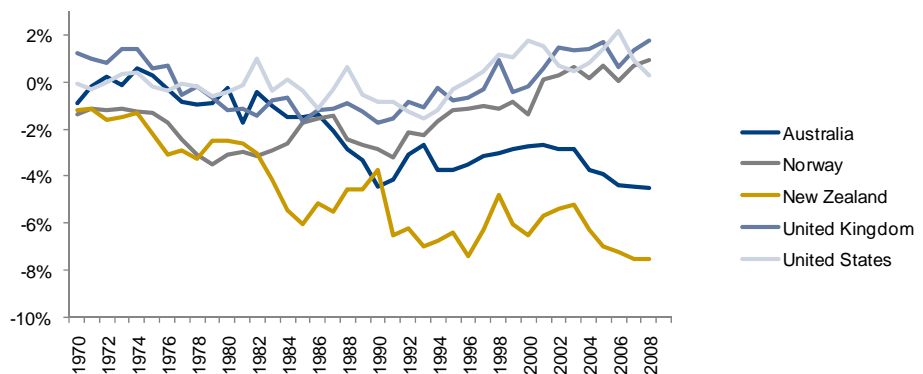
The negative gap between New Zealand's GDP per capita and many other OECD countries widened considerably between the 1970s and early 1990s, but has been broadly stable since, in proportional terms.



Source: OECD (2011a)

**Figure 4 - GNI/capita less GDP/capita - US dollars, current prices, PPPs**

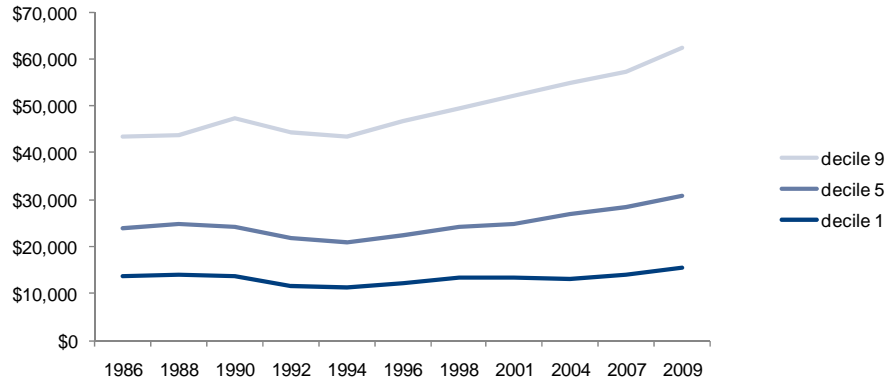
The gap between New Zealand's GDP and GNI (GNI = GDP + net international investment income) has been widening and is larger than that of most other OECD countries.



Source: OECD (2011a)

**Figure 5 - Real household incomes - top of the income range for deciles 1,5,9 (2009 \$NZ)**

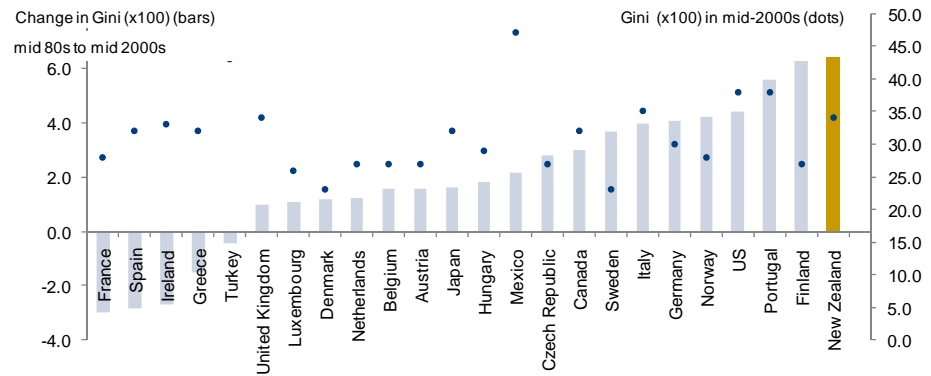
Household incomes have on average grown slowly over the last 15 years. However, incomes for the top decile have grown much faster.



Source: MSD (2010a)

**Figure 6 - Gini Coefficient**

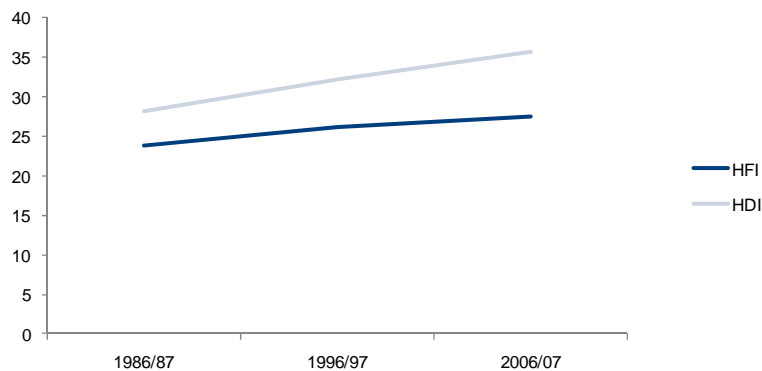
Income inequality in New Zealand increased faster between the mid 80s and mid 2000s than in any other OECD country. Inequality has stabilised recently and is about 7<sup>th</sup> highest in the OECD.



Source: OECD (2008) and Statistics New Zealand (2011a)

**Figure 7 - NZ Gini - measured using household disposable (HDI) or household final income (HFI)**

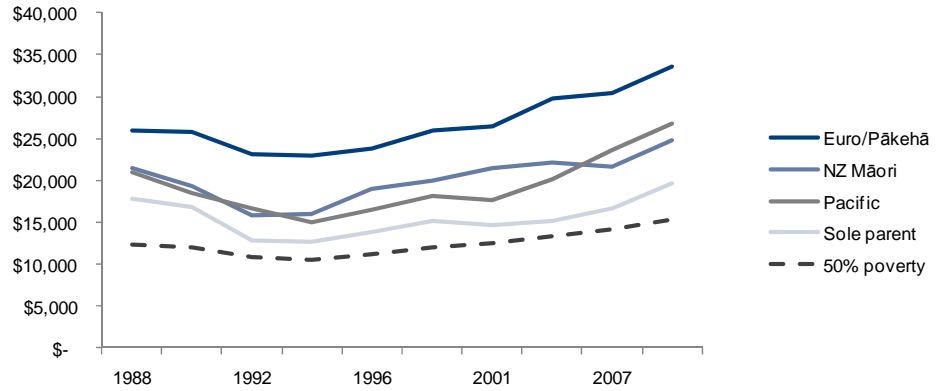
However, when other government assistance (e.g., health and education) is taken into account, both the increase and absolute level of inequality is less - as measured by HFI.



Source: The data is from Statistics New Zealand Household Expenditure Survey and administrative data. Disposable and final income calculations have been made by the Treasury (Aziz, O. & Gibbons, M. (2010)). Note that this study uses different equivalence scales to figure 6.

**Figure 8 - Median incomes in New Zealand - relative to 50% poverty measure**

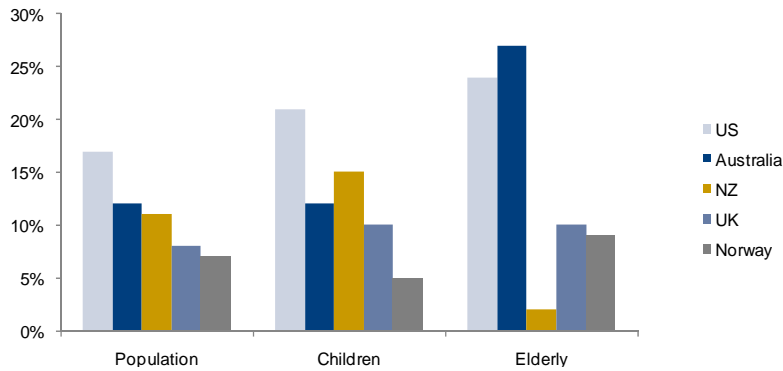
Some groups in New Zealand have relatively low incomes, and live closer to poverty.



Source: MSD (2010a)

**Figure 9 - Proportion living in poverty (below 50% of median income)**

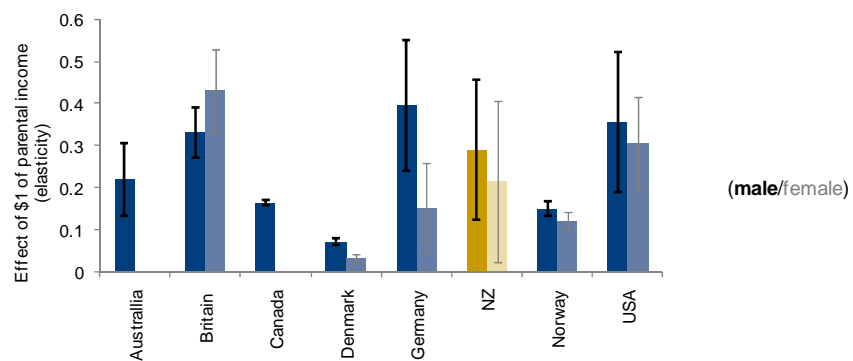
Poverty in the population is around the OECD average, but there are high levels of child poverty and very low levels of elderly poverty.



Source: MSD (2010a)

**Figure 10 - Effect of \$1 of parents' incomes on subsequent incomes of their grown-up children**

There is some evidence that the intergenerational transmission of income in New Zealand is not as large as it is in some OECD countries.

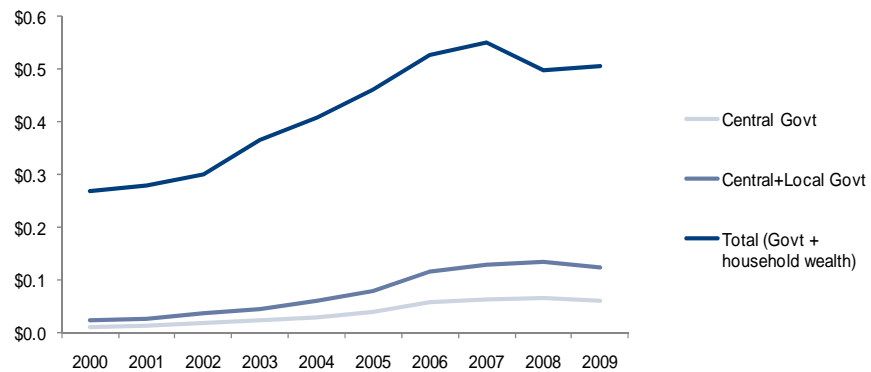


Source: Treasury (2010b)

## Wealth

**Figure 11 - Net household wealth in New Zealand per household (\$m)**

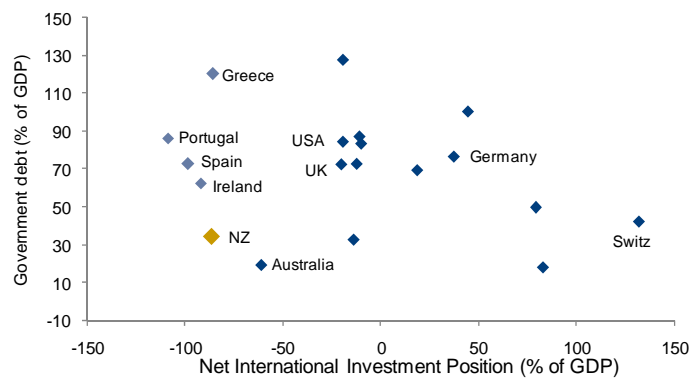
Net household wealth has been increasing and nearly doubled between 2000 and 2009. The majority of this rise has been due to house price increases. In addition, local and central government wealth has also increased.



Source: RBNZ (2011); Statistics New Zealand (2010) & Statistics New Zealand (2011b)

Though public debt levels in New Zealand are relatively low, they are increasing. However, the overall financial position of the country is much weaker, with NIIP (the difference between overseas financial assets held by a country less the debt owed to the rest of the world) at about 90% of GDP.

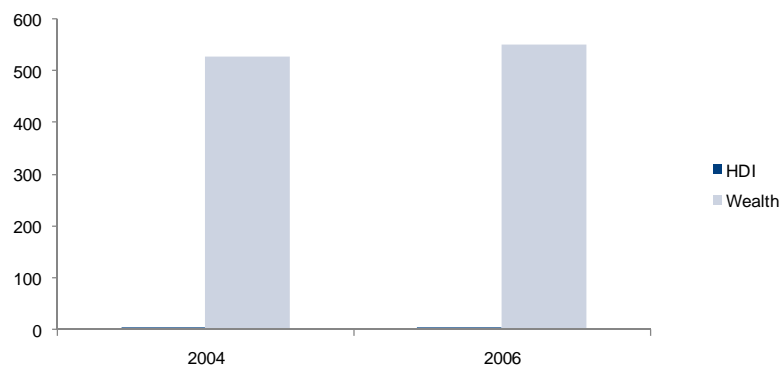
**Figure 12 - National indebtedness (2009)**



Source: OECD (2011e) and IMF (2011b)

**Figure 13 - Ratio of 90:10 percentile - by household disposable income (HDI) and wealth (2006, current prices)**

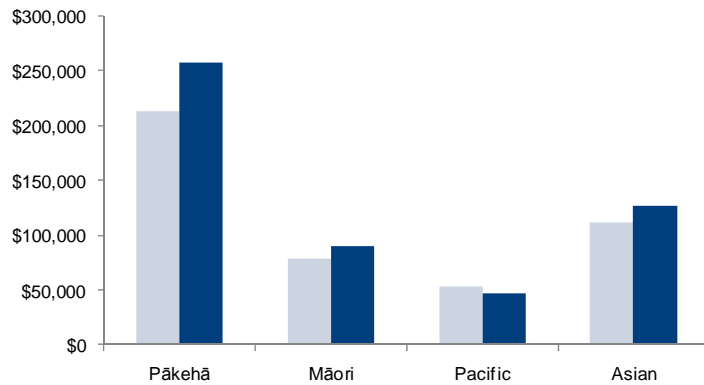
Inequality of wealth is much higher than it is for income, with the top 10% of households owning 500 times more than the bottom 10%.



Source: MSD (2010a) & Gibson et al. (2010)

Inequality of wealth exists between different ethnicities, but controlling for other variables (such as age), reduces the inequalities between groups.

**Figure 14 - Wealth by ethnicity (2004 and 2006)**

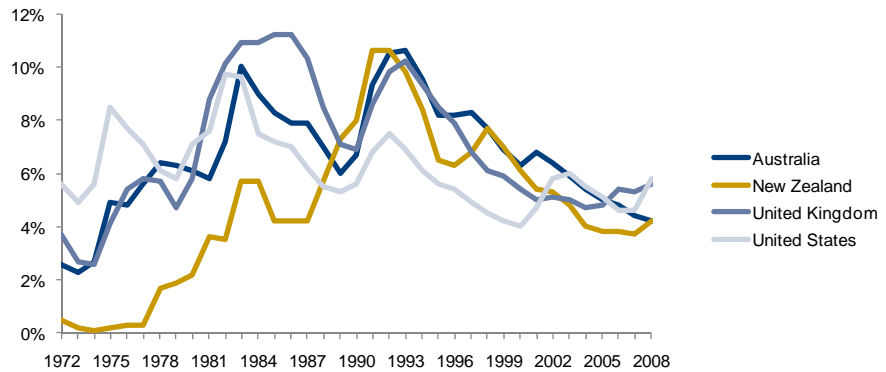


Source: Gibson et al. (2010)

## Employment

Unemployment rates in many countries have fluctuated over the last few decades, but in 2008 New Zealand had a similar unemployment rate to other OECD countries.

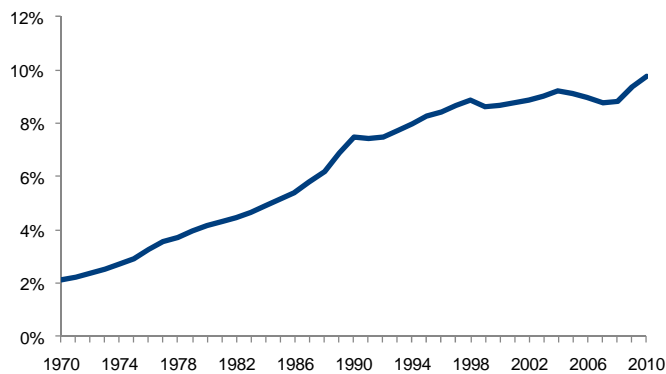
**Figure 15 - Unemployment rate**



Source: OECD (2010f)

**Figure 16 - % of working age population on benefits other than unemployment benefit**

However, New Zealand has a growing number of people on other benefits - whose duration is generally longer than one year.

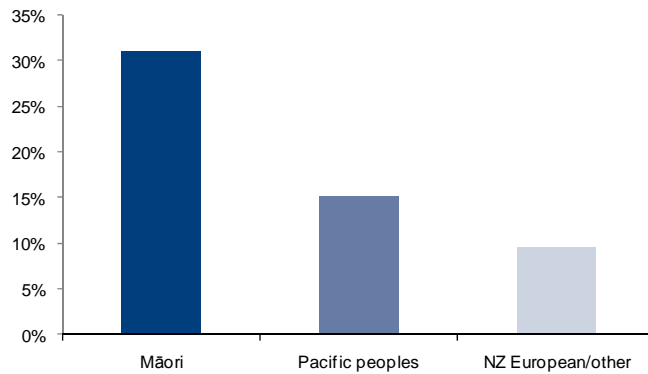


Source: Welfare Working Group (2011)



**Figure 17 - % of working age population on any benefit (June 2010)**

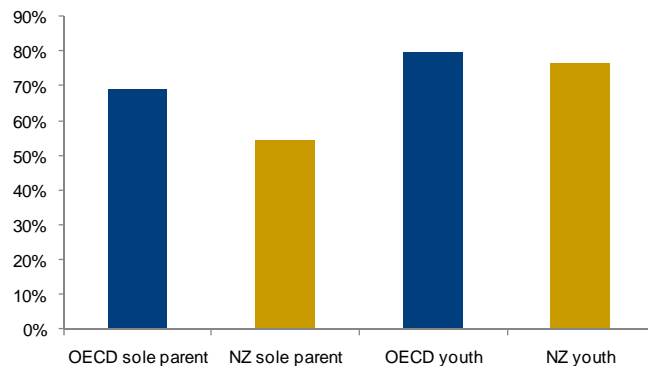
There are very large differences in the proportion of each ethnicity that are on benefits.



Source: Welfare Working Group (2011) & Statistics New Zealand (2011b)

**Figure 18 - Employment rates for youth (2009) and sole parents (2005-08)**

New Zealand has the second lowest rate of sole parent employment in the OECD. Youth employment is slightly lower than other OECD countries.

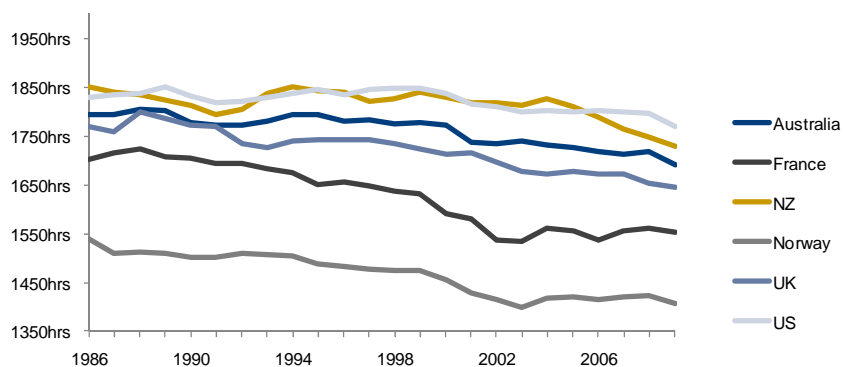


Source: OECD (2011a)

## Leisure

**Figure 19 - Annual hours worked**

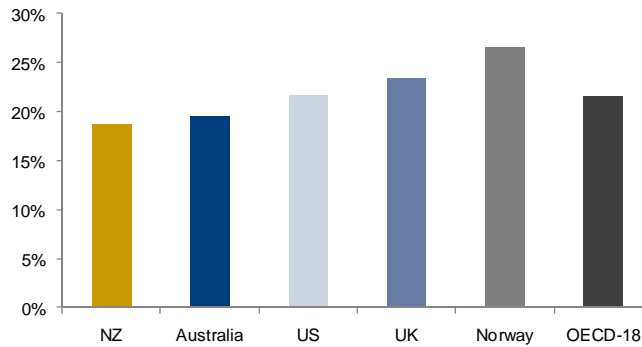
New Zealanders are working longer hours than most OECD countries (although this has dropped recently)...



Source: OECD (2011a)

...and the amount of time New Zealanders have for leisure is therefore less than most OECD countries.

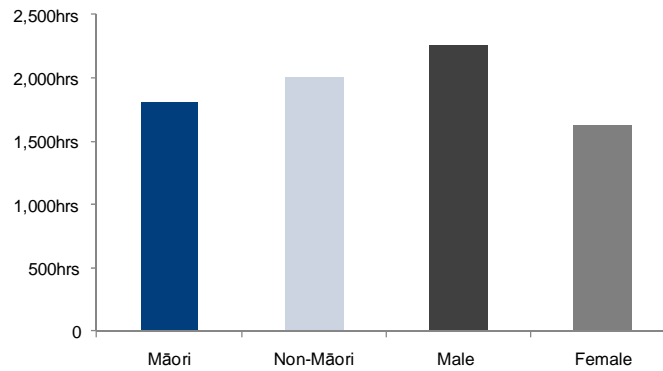
**Figure 20 - % of 24hr period spent in 'leisure' (mostly 2006)**



Source: OECD (2009a)

The actual number of hours that people work varies by ethnicity and gender.

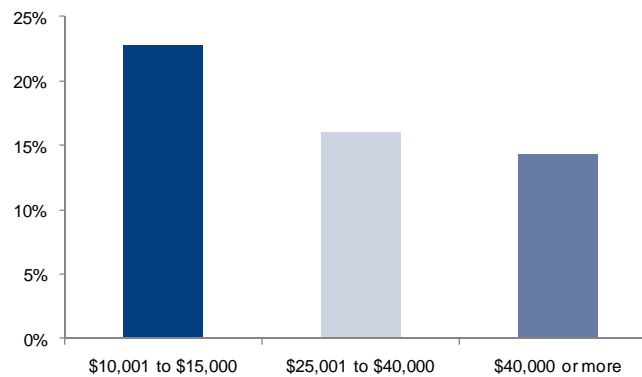
**Figure 21 - Annual hours worked (1999)**



Source: Statistics New Zealand (1999)<sup>15</sup>

And leisure time varies by income bracket.

**Figure 22 - % of day spent on 'leisure' activities (1999)**



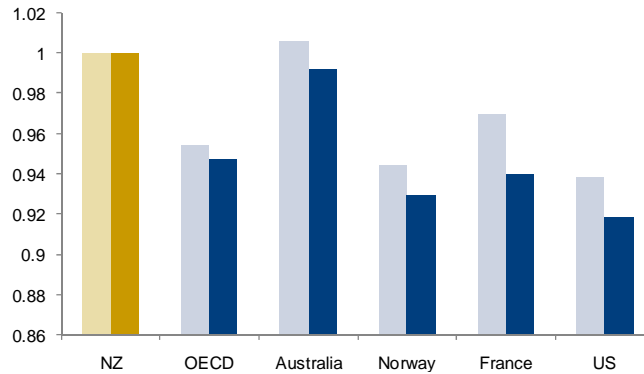
Source: Statistics New Zealand (1999)

<sup>15</sup> Note that the data actually includes total "labour force activities" which includes travel time to work and job seeking, however, the vast majority is actual hours worked.

## Education/Skills

**Figure 23 - Average PISA scores for 2003 and 2006 [NZ=1]**

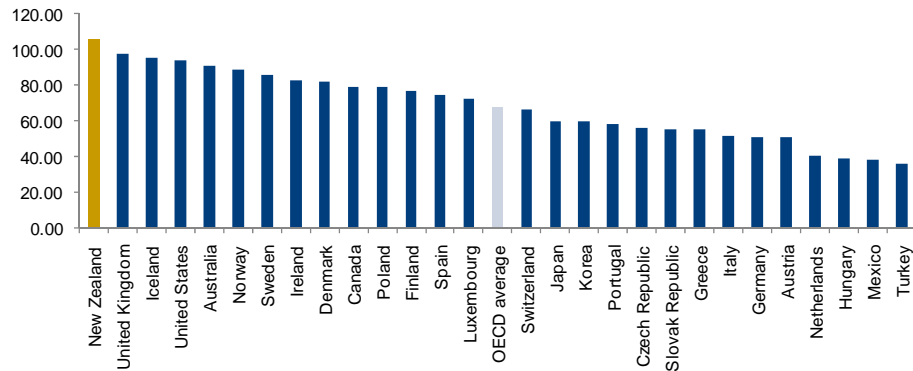
The skill level of New Zealand's 15 year old students (as measured by PISA) has been relatively high compared to OECD countries...



Source: OECD (2011c)

**Figure 24 - Variance in 2006 PISA scores within schools**

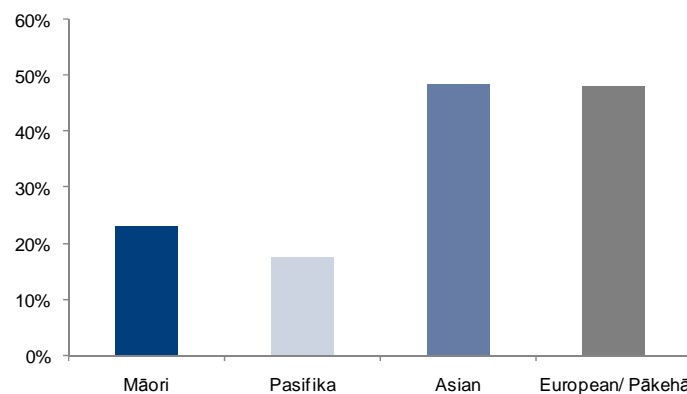
...but compared to the rest of the OECD, New Zealand has the highest level of skills inequality within our schools (as measured by the variance in PISA scores).



Source: OECD (2011c)

**Figure 25 - Percentage of 15 year-old students reaching PISA 3 or above (2006)**

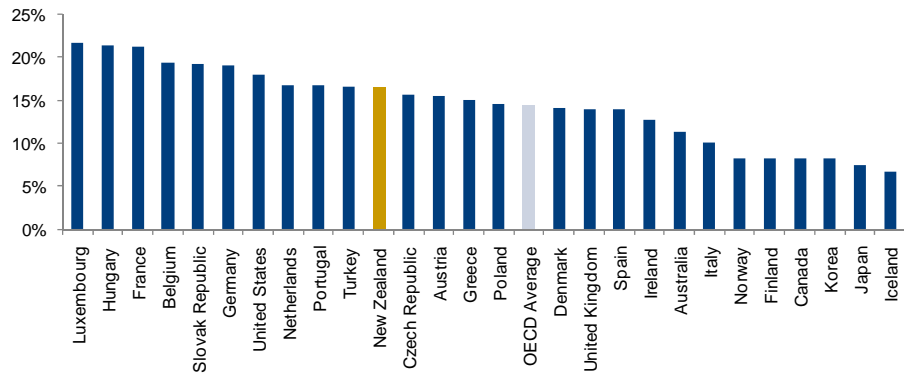
This is in part due to the differences in the skills among ethnic groups.



Source: Education Counts (2006)

**Figure 26 - Impact of socio-economic status (SES) on performance**

The impact of parental SES on a student's performance is high relative to the OECD average. However, SES only explains 17% of the difference in performance, suggesting that other factors are also important.

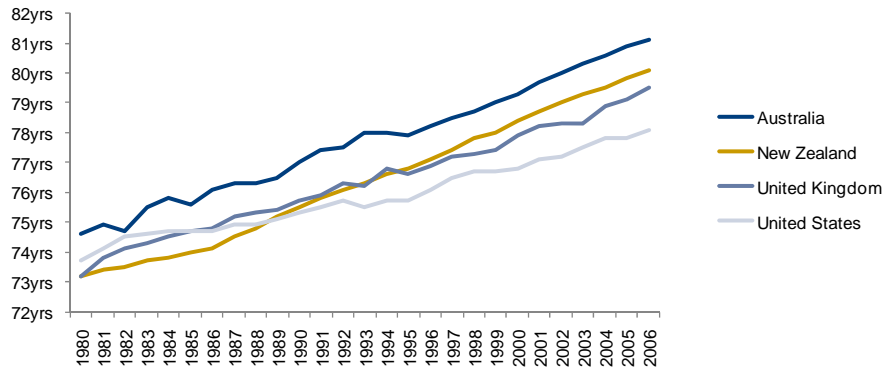


Source: OECD (2011c)

## Health

**Figure 27 - Life expectancy at birth**

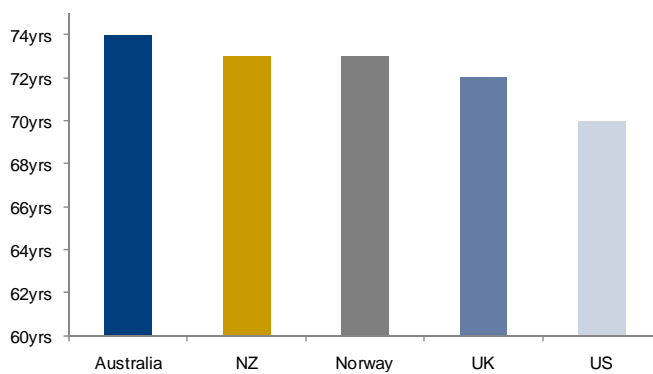
The life expectancy of New Zealanders at birth has increased faster than in many other OECD countries since 1980...



Source: OECD (2011a)

**Figure 28 - Healthy life expectancy**

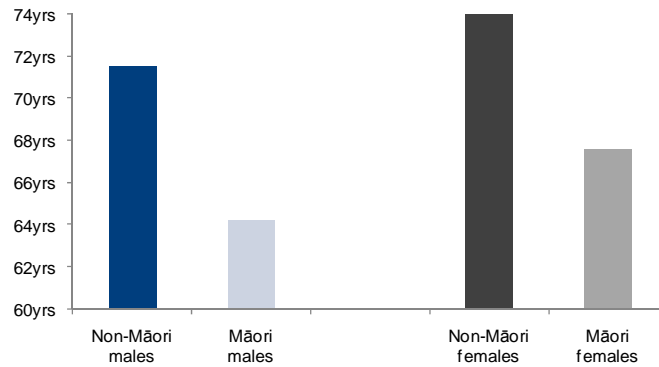
...and the quality of the years lived (measured by 'healthy life expectancy') in New Zealand is slightly above average compared to other OECD countries.



Source: World Health Organisation (2010)

However, differences in healthy life expectancy by ethnicity are high, and there are also gender differences.

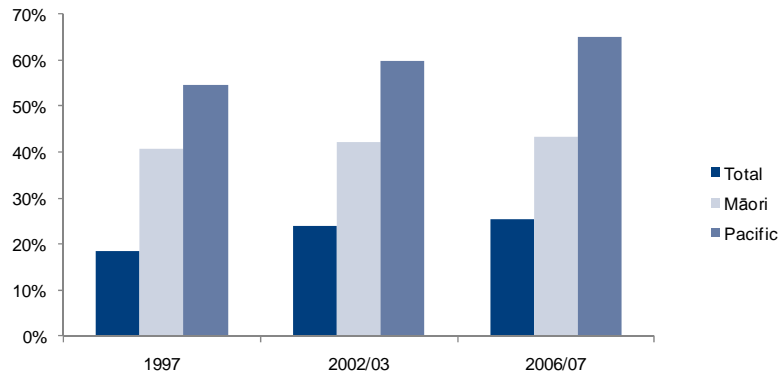
**Figure 29 - Healthy life expectancy in New Zealand (2006)**



Source: Ministry of Health and Statistics New Zealand (2009a)

Obesity, a major determinant of health and life expectancy, has been growing across all of New Zealand society. Levels are significantly higher amongst Māori and Pacific groups.

**Figure 30 - Prevalence of obesity in New Zealand (BMI>30)**

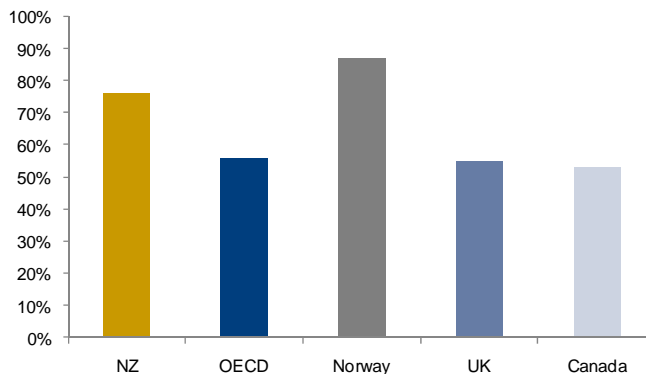


Source: Ministry of Health (2010)

## Trust

**Figure 31 - Proportion reporting that people can usually/always be trusted (~2006)**

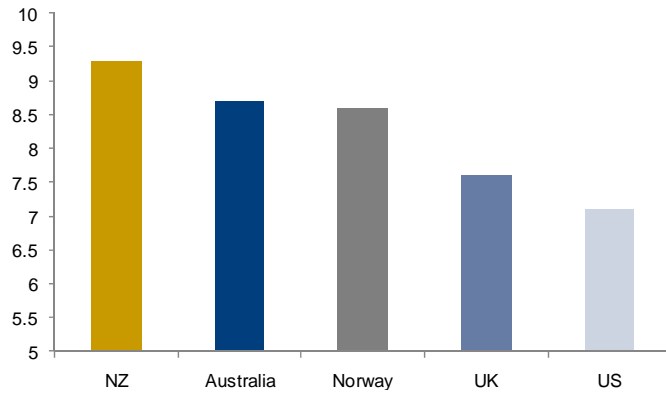
The general level of trust in New Zealand is high relative to other OECD countries...



Source: MSD (2010b)

**Figure 32 - Lack of perceived corruption in government (2010)**

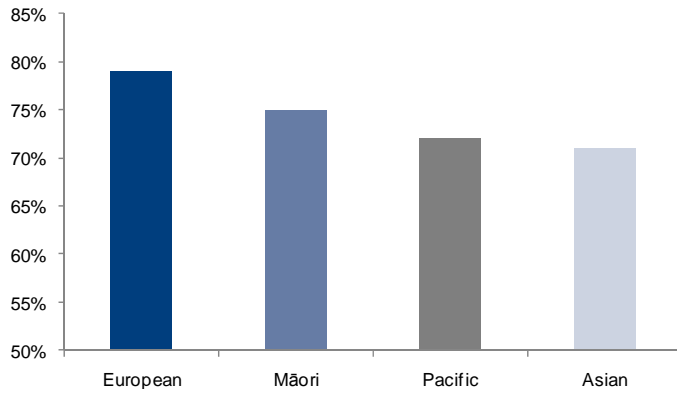
...and New Zealand government institutions are very well trusted (highest trust in the world on a zero to ten scale).



Source: Transparency International (2010)

**Figure 33 - Reported as usually or always trusting people - by ethnicity (2008)**

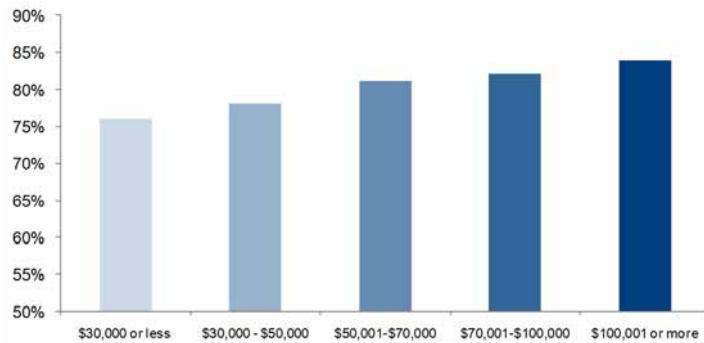
Trust is relatively similar across different ethnicities...



Source: MSD (2010b)

**Figure 34 - Reported as usually or always trusting people - by income bracket (2008)**

...and across different income brackets.

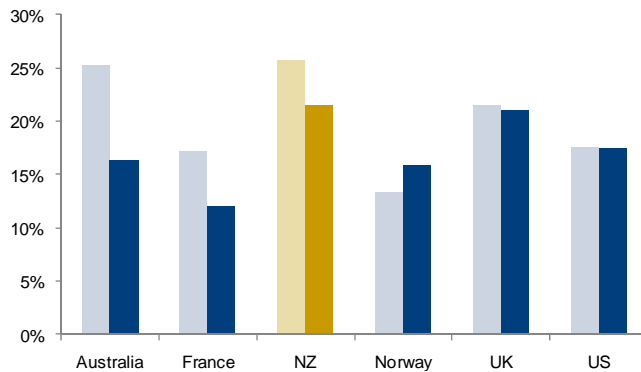


Source: MSD (2010b)

## Security

**Figure 35** - % population reporting crime over the previous 12 months (2000 vs 2004/05)

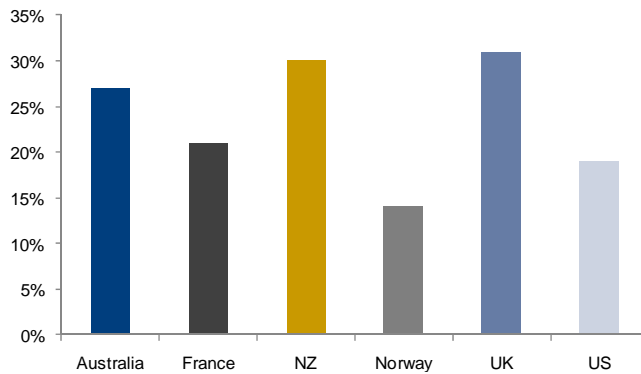
Crime rates are falling, but New Zealand has high rates of victimisation relative to other OECD countries (2<sup>nd</sup> highest of all).



Source: OECD (2009a)

**Figure 36** - % population that feels unsafe or very unsafe on the street after dark (04/05)

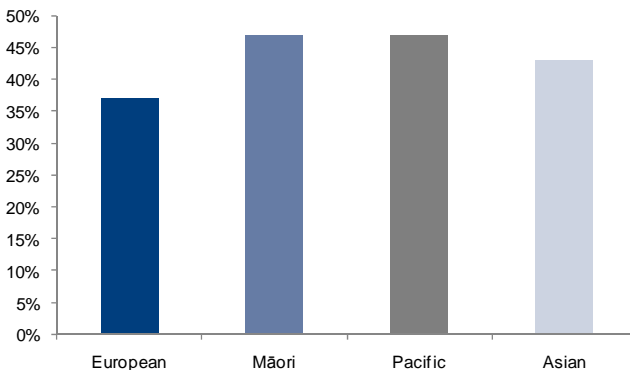
There is a strong relationship between the reported level of crime (above) and the level of perceived safety on the streets. The high levels in Figure 36 have increased to 32% in 2008.



Source: OECD (2009a)

**Figure 37** - % of population that reported victimisation in previous year

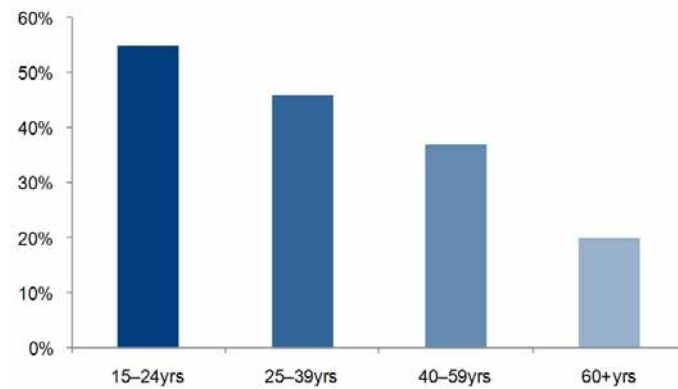
Victimisation levels are slightly higher for some ethnic groups...



Source: MSD (2010b)

**Figure 38 - % of population that reported victimisation in previous year**

...and there are large differences between age groups.

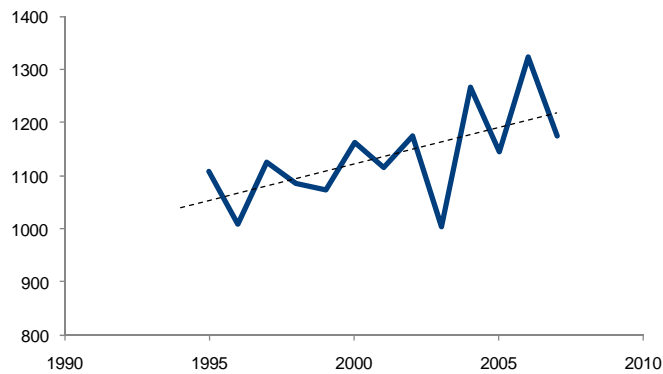


Source: MSD (2010b)

## Environment

**Figure 39 - Highest levels of nitrogen in rivers - micrograms per litre (at 95% percentile)**

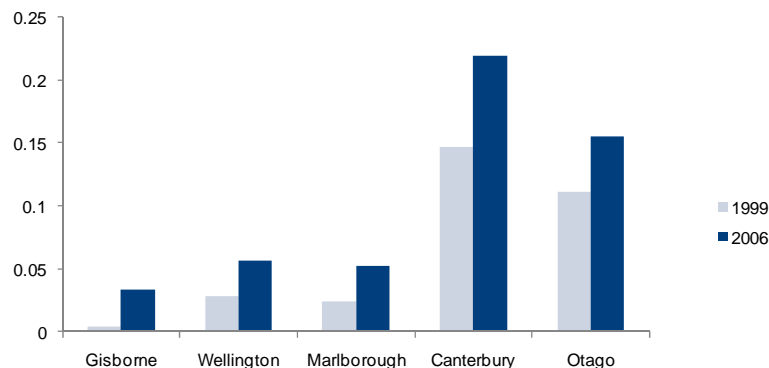
The peak levels of pollution in New Zealand's rivers are increasing...



Source: Statistics New Zealand (2009a)

**Figure 40 - Water stress ratio (total allocated/total resource)**

...and water may become a binding constraint in the future (both for production and recreational use). In some of New Zealand's key agricultural regions, water demand is already beginning to outstrip supply.

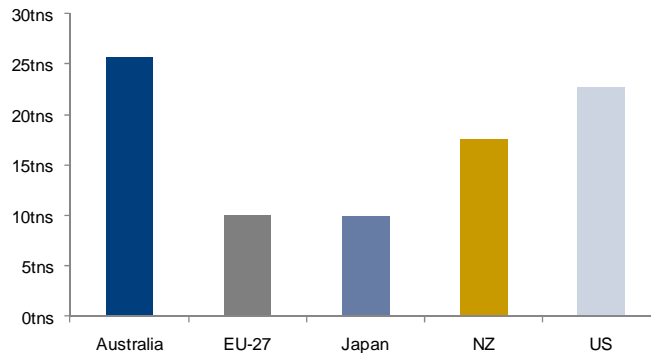


Source: Statistics New Zealand (2009a)



**Figure 41 - GHG emissions per capita 2008 (excluding forestry)**

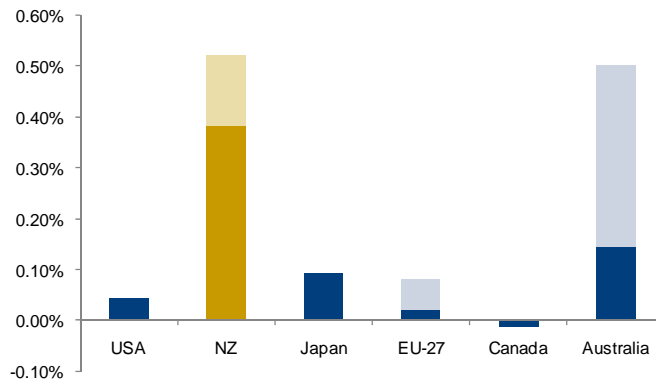
GHG emissions per capita are relatively high in New Zealand, which could undermine future competitiveness if prices of carbon increase or consumers focus on the relative carbon intensity of products...



Source: World Resources Institute (2010)

**Figure 42 - Direct costs (as % GDP) of each country's low or high ambition 2020 targets pledged**

...however, in working towards a new climate change agreement, it will be important that any future target for New Zealand represents a fair share, including consideration of the relative economic effort that countries undertake to meet their targets.



Source: IIASA (2010)

## Subjective Wellbeing

**Figure 43 - Average life satisfaction vs GDP/capita (2008)**

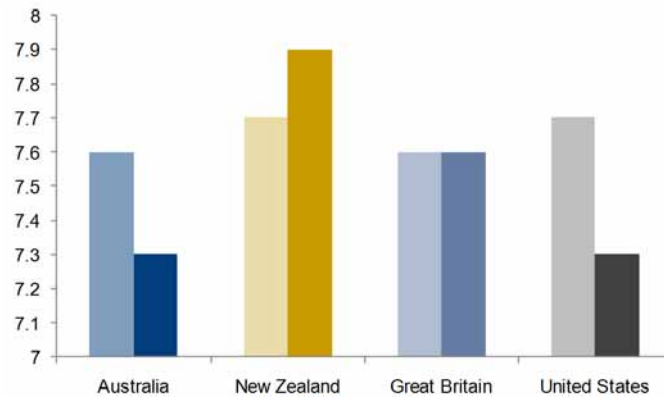
New Zealanders' rating of their satisfaction with life is high relative to other countries with much higher GDP/capita.



Source: Gallup (2010)

**Figure 44 - Average life satisfaction 1995-8 vs 2004-06**

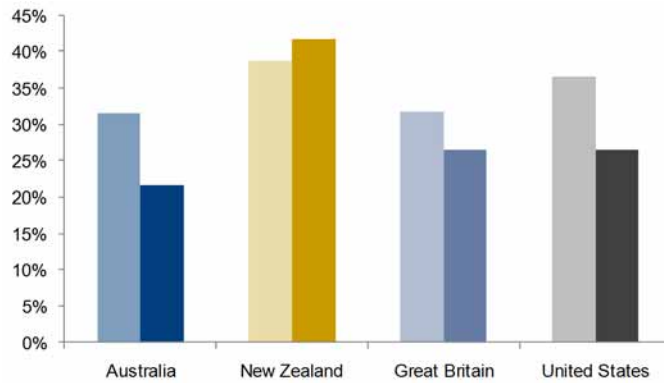
Life satisfaction in New Zealand has increased over the last 10-15 years, unlike in some other OECD countries...



Source: World Values Survey (2011)

**Figure 45 - % of population rating 9 or 10 out of 10 satisfied**

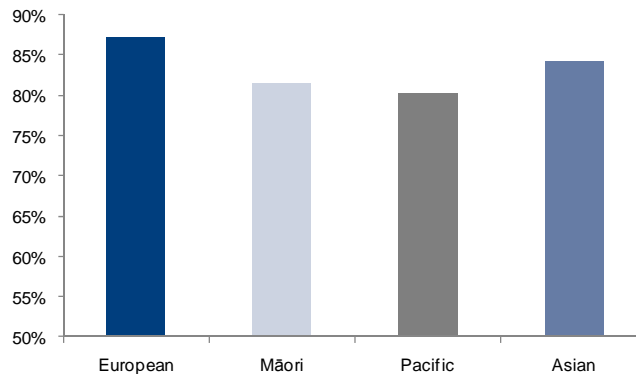
...in particular for those rating their life satisfaction as 9 or 10 out of 10.



Source: World Values Survey (2011)

**Figure 46 - % of population 'satisfied or 'very satisfied' with their lives**

Life satisfaction is similar for most ethnicities in New Zealand.



Source: Statistics New Zealand (2009b)

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