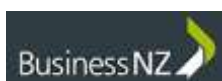




Understanding inequality

Dissecting the dimensions, data and debate

NZIER report to



November 2013

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Key points

- Inequality is poorly defined in public debate and distracts from bigger issues of persistent poverty and deprivation.
- Inequality is a fact of life wherever there is variation. If everyone and everything were the same then there would be no inequality.
- It is unclear how much inequality of income or wealth is good or bad and this matters as more inequality can simply reflect differences in people's lifestyle preferences, whether they pool their incomes with others, where they live and whether they like to save.
- The distribution of income in New Zealand and around the OECD became more unequal after the 1960s as societies became more liberal and households changed.
- But, inequality has not increased in New Zealand in the past decade. It is flat to declining.
- New Zealand's experiences are different to many other countries e.g.
 - median household incomes in NZ have grown 46% from 1994 to 2009, while middle incomes in the US are said not to have grown at all
 - the top 1% of NZ households receives 8% of income as compared to 14% in the UK and 18% in the US.
- Proposals for sweeping measures such as the living wage entirely miss the nuances of New Zealand households and life courses, including e.g. that more than 10% of people on the minimum wage live in a household in the top 10% of incomes.
- Half of measured income inequality in New Zealand can be attributed to differences in earnings over a person's lifetime. Young people earn less than older people. This is not something to be too concerned about.
- Education explains large amounts of earnings variations with lifetime earnings for a tertiary graduate double that of the earnings of person with no qualification.
- Less attention should be paid to differences amongst people in general, and more attention to persistence of poor conditions, too often found amongst
 - people with no qualifications
 - sole parent households
 - Maori.

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1. The New Zealand crisis

New Zealand's income gaps have now widened to such an extent that they have created something of a crisis: not in the sense of a natural disaster that strikes in an instant, but a gradual shift that builds until it reaches a tipping point. That time is now.

Rashbrooke, 2013 p.2

Whether or not inequality is a problem, or even a New Zealand crisis, depends on how you come at the issue.

It is hard to find anyone who thinks 'inequality' is a good thing. Yet it's virtually impossible to find someone who thinks all 'inequalities' are bad.

Inequalities are everywhere and many of them make perfect sense. A 17 year old builder's apprentice earns less than a surgeon. A lotto winner's wealth is likely to be around twice what the average person earns in a lifetime. These inequalities are not likely to upset many people. If inequality at the inter-personal level is acceptable, it must be acceptable for society as a whole.

Yet it is a fact that, on most measures, another surgeon in New Zealand will increase overall inequality. Most wouldn't have a problem with this but a faceless increase in inequality, measured in the aggregate, can cause an outcry. Most of the recent outcry in New Zealand about inequality has been concerned with precisely this kind of faceless increase in measured differences in incomes.

Stranger still, inequality has unambiguously not increased in New Zealand in the past decade.

1.1. A matter of perspective

The different perspectives people bring to the issue of inequality causes them to overlook inconsistencies.¹ This is entirely understandable in the sense that inequality is a matter of perspectives, of which there are many. Nobel laureate Amartya Sen put it best when he said that the central question is not whether equality is good but **'equality of what'**:

...virtually all the approaches to the ethics of social arrangements that have stood the test of time... want equality of something. Not only do income-egalitarians (if I may call them that) demand equal incomes, and welfare-egalitarians ask for equal welfare levels, but also classic utilitarians insist on equal weights on the utilities of all, and pure libertarians demand equality with respect to an entire class of rights and liberties. They are all 'egalitarians' in some essential way².

¹ This is not to say that all perspectives are sound. Logical inconsistencies don't cut it. If income inequality is a problem we can't limit our judgements to the apparently excessive incomes of the people we don't know and the occupations we don't understand. It doesn't make logical sense to limit concern for human misery only to those we know.

² Sen (1992) 'Inequality Reexamined', Oxford University Press, New York.

The focus here is on the current debate around income and to a lesser extent wealth inequality rather than the many different answers that might be given to the question ‘equality of what’. The point is that there are always value judgements and ethics in play in this space and this cannot be avoided.

Focussing on the question of ‘equality of what’ also helps to focus the mind on the precise nature of the problems that income inequalities might represent, the size of the problems and what might be done to resolve them (‘why inequality?’). This is quite some distance from contemporary analysis of income inequality.

1.2. A solution in search of a problem?

The standard analysis of the inequality crisis [sic] in New Zealand follows a logic which says that any reduction in inequality is a good thing, that incomes are self-evidently not as equal as they should be, and although it is not clear how equal they should be and how they should be made more equal, there is a strong case for policy action. For example (Boston, in Rashbrooke, 2013 p.86):

...there is no consensus on what kind of equality should be championed. Even amongst those who concur on what should be equalised, there is often disagreement about what such equalisation means in practice, how much of this particular kind of equality is necessary or sufficient, how such equality can be best achieved, and what specific policy trade-offs are justified...

What are the policy implications of this analysis? In New Zealand, given the substantial increase in inequality since the early 1980s, the marked ethnic disparities that are evident in many areas of policy, and the significant poverty experienced by many low-income households (especially those with children), a strong case can be made for placing more emphasis over the coming years on redistributive policies, particularly those designed to reduce poverty. This will require a mix of both income redistribution and in-kind transfers, both universal and targeted services.

Nothing would be lost in these recommendations if the word inequality was removed. The term inequality is a distraction from the core issues being identified which are: “marked ethnic disparities that are evident in many areas of policy, and the significant poverty experienced by many low-income households (especially those with children)”. To which one might add the failure of policy to date given the array of redistributive policies already in place.

In recent times in New Zealand the problem of income inequality has been taken to be self-evident and the analysis largely uncritical. This is a real problem if uncritical claims lead to poor policy. Introducing income inequality can obscure more specific problems at stake and can distract from these more specific problems.

1.3. False claims and rose coloured spectacles

A range of claims have been made about inequality in New Zealand which are simply not true. For example “New Zealand has the world’s most rapidly increasing wage inequality” (Dominion Post, 15 July 2013).

New Zealand does not have the fastest growing wage inequality within the OECD let alone the world. Even if this claim was true, what should be made of it in light of the fact that unemployment in New Zealand is amongst the lowest in the OECD and our minimum wage the highest when compared to the average wage?

Misinformation is cultivated by poor quality data and the quality of public debate about inequality is often poor. Much goes unquestioned amidst platitudes and rose coloured perspectives. One recent article in The Press (25 September 2013) blithely observed that:

Anyone who grew up in the 1960s or 70s, or earlier, will remember our egalitarian society. Education and healthcare were free; jobs were plentiful; houses were affordable. Public services mattered more than profit alone. How society has changed.

Perhaps some children of the 1960s and 70s remember things this way and their recollections might be spot on, for them. Others will remember things differently:

‘But the belief that the benefits of a booming of economy would trickle down to Maori families – thus eliminating the inequalities that existed between Maori and Pakeha – was shattered as the New Zealand economy entered a prolonged period of economic and political crises by the early 1970s’.

(Poata-Smith in Rashbrooke, 2013 p. 150)

A look back at wages and incomes of the 1960s and 70s gives an illusion of a better time. Average wages were higher in the mid-1970s than they are today in (\$24.40 per hour compared to \$23.60 today, both in 2006 dollars). The only problem was that wages in the 1970s were artificially boosted in attempts to stimulate the economy as its wheels began to fall off. The wages were funded by borrowing. By the early 1980s high wages gave to unemployment and a general economic hangover.

Prior to the economic difficulties of the 1970s, New Zealand did have remarkably low unemployment and reasonably high wages. Much of this reflected an economy whose products were in high demand globally and one in which workers were reasonably scarce.

1.4. Equality has given way to diversity

Most importantly, New Zealand and the rest of the developed world underwent a major social transition in the 1970s which affected variation and variability of social arrangements, the labour force, industrial composition and ultimately incomes.

For example, in the 1960s, women were largely absent from the labour force. In 1961 only one in 3 women of working age was in the labour force versus 90% of men. Most women who were in the labour force were younger, with only 1 in 5 women aged over 25 in the labour force. This compares to around 75% in the labour force today.

Inequality is a fact of life wherever there is variation. If everyone and everything were the same then there would be no inequality.

Note that in 1963 more than half of the income earned by the self-employed was derived from farming and only 11% of taxpayers were self-employed. In the 2000s around 20% of taxpayers had income from self-employment and the share from the primary sector was only 14.5%.

Changes have continued to move through New Zealand society. For example, the most common household and income arrangement for families in 2012 was two parents working full-time (40%). In 1982 the dominant pattern (52%) was one in full-time work and the other 'workless', with only 20% having both in full-time work.

1.5. The bones of an agenda

The purpose of this report is to provide information which helps contextualise the income inequality debate in New Zealand. This means the report is more about descriptions than decisions. Even so, this report provides the bones of an agenda for improving the quality of debate around income inequality.

Causes of inequality

Diversity has grown out of sight in New Zealand and we have become a more open and liberal society. To understand inequality we have to understand where it comes from and the extent to which it is a result of rising diversity and variation that is not problematic or at least acceptable to most (see Section 4).

Understand the measures of inequality

At the same time, it is important to be able to negotiate the high level claims that exist about inequality and understand what the numbers mean and what the trends are, such as the fact that inequality in New Zealand has declined on most measures (next Section 2 and Section 3).

Inequality versus poverty and mobility

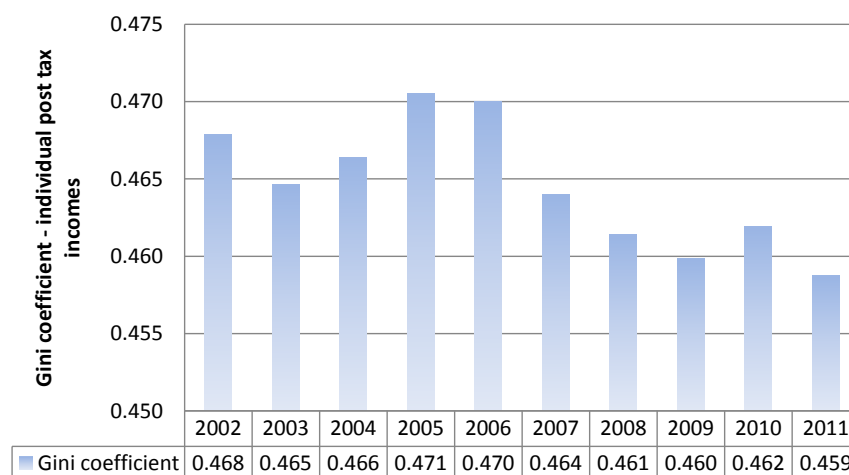
Even if inequality is on the decline, persistent poverty and hardship is not. A sea change in public opinion is needed to shift debate away from 'pre-distribution', welfare for working families, and an 'eat the rich' mind-set and move it towards an agenda which focuses on improving the life course of the most vulnerable (Section 4).

2. Negotiating measures of inequality

2.1. Inequality has trended down

The context-dependence of inequality measures means that changes in measured inequality over time is more meaningful than a particular number at a particular point in time. Even then there is no meaningful or scientific benchmark for interpreting when a change is bad.

Figure 1 Recent changes in NZ Gini coefficients



Source: NZIER, LEED

Over the past decade New Zealand's income distribution has become more equal. Gini coefficients have trended down on all income measures. There have been years when inequality worsened but the overall trend is downwards.

The gradually reducing inequality of the past decade is a reversal of a 30 year trend in increasing inequality which has been observed across all of the OECD.

2.2. A fairly average experience by international comparison

In 2008 the OECD noted that rising dispersion in wage and household incomes was part of a long term secular trend affecting three-quarters of all OECD countries since the 1970s.³ The OECD noted that the changes they observed were modest but not trivial.

³ OECD (2008) 'Growing Unequal: Income Distribution and Poverty in OECD countries', Paris.

Table 1 Top 1% share of pre-tax income

Ordered by size of change between 1990 and 2007 or closest year. NZ figure is 2005.

	1990	2007	Change
United States	13.0	18.3	5.3
United Kingdom	9.8	14.3	4.5
Canada	9.2	13.3	4.1
Finland	4.6	8.6	4.0
Ireland	6.6	10.3	3.7
Norway	4.4	7.1	2.7
Portugal	7.2	9.8	2.6
Australia	6.3	8.9	2.6
Sweden	4.4	6.9	2.5
Denmark	5.1	7.4	2.3
Italy	7.8	9.5	1.7
Belgium	6.3	7.7	1.4
Japan	8.1	9.2	1.1
New Zealand	8.2	9.0	0.8
Switzerland	9.7	10.5	0.8
France	8.2	8.9	0.7
Spain	8.4	8.8	0.4
Germany	10.9	11.1	0.2
Netherlands	5.6	5.7	0.1

Source: OECD

New Zealand has a similar degree of inequality to the OECD average, though it started from a much more equal position than most. From the late 1980s to the mid-1990s income inequality in New Zealand increased significantly and rapidly, taking New Zealand from well under the OECD average to well above it for most of the 1990s. In the 2000s, however, inequality flattened out in New Zealand even as it began to accelerate in countries such as Sweden and Finland which had previously maintained lower levels of inequality.

Between 1990 and the late mid-to-late 2000s the share of incomes accruing to the top 1% of earners grew in many parts of the OECD, particularly in the English speaking countries. In New Zealand the share of pre-tax income accruing to the top 1% changed very little and is at about the same level as Australia, Finland and France.

2.3. Negotiating the measures

Debates about inequality, how much there is and the extent to which it matters, rely on common set of indicators. None of these are perfect. It is important to know how they are constructed, what they show and what they don't show and when they should be ignored. It makes no sense debating what makes a perfect measure or

dismissing commonly used measures as they have become a part of the inequality vernacular.

Measures of inequality can be categorised into two different kinds: absolute measures and relative measures. In practice absolute measures are also relative but the difference between the two is that absolute measures focus more on what is going on at the bottom of the income ladder while inequality measures look across the whole income spectrum.

2.4. Absolute measures

2.4.1. Measuring 'not enough'

Absolute measures attempt to gauge poverty and hardship, rather than inequality per se, but they are frequently raised in the context of inequality. These measures are about:

households and individuals who have a day-to-day standard of living or access to resources that fall below a minimum acceptable community standard. Poverty is different from inequality: it is about "not enough" rather than simply "less than".

(MSD, 2013)⁴

There are no official poverty measures in New Zealand but the de-facto standards are 50% of the median income and 60% of the median income. These figures are often used internationally (e.g. by the OECD and the EU) but they have do not have a scientific basis.

Minimum requires judgement

There have been attempts over the years to define 'minimum' levels of income or expenditure which are not connected to the wages but they have never been successful. Perhaps this is not surprising as these measures are effectively trying to standardise human experience which is difficult in a rapidly changing and increasingly diverse world.

Absolute minimums have never been effectively measured, in a way that has stuck, because people have extremely different tastes and values. This means 'minimums' are either restricted to 'bread and water' measures of what people need, which are rightly rejected as being very patronising and austere, or they are expanded to cover an almost implausible range of things that different people value differently. Besides which, the relative costs of things changes over time, and as they do things which were luxuries become basics.

⁴ Ministry of Social Development (2013) 'Household incomes in New Zealand: Trends in indicators of inequality and hardship 1982 to 2012' <http://www.msd.govt.nz/about-msd-and-our-work/publications-resources/monitoring/household-incomes/>.

Minimums can change over time

The treatment of domestic air travel is one good example. 30 years ago this would have been a luxury item. Today, air travel can be the most affordable alternative for people to be able to visit friends and relatives – something which most would agree is important. This means that domestic air travel usually makes lists of products to include in ‘basic household expenditure’.

Another example is an internet connection or a cell phone. For a majority of people, these are indispensable (78% of people with landlines have a broadband connection). Twenty years ago they were virtually unheard of and for some they remain unnecessary.

Various measures of minimum

The 50% and 60% of the median wage measures get around the problem of defining a fixed set of ‘needs’ in a rapidly changing world. However, they have the problem of not really being absolute measures but rather relative measures. In the event of a recession, if the median wage declines the number of people in hardship can also decline, which is a little counterintuitive. In this respect these measures are not very sophisticated.

In New Zealand it is common for median wage measures of hardship to be fixed at a particular point in time, to try and avoid the problem of these benchmarks moving up and down in a transitory fashion. This is referred to as the ‘fixed line’ approach as compared to the more simple ‘moving line’ approach.

The fixed line approach is better than the entirely variable or relative approach but has additional problems such as trying to choose the ‘right’ year at which to fix the median wage. This requires judgement.

The other common approach to hardship measurement is simply asking people whether they feel they are deprived in various ways and aggregating over the different ways. These measures are often used in New Zealand. However they are likely to understate hardship. Studies have shown that more educated and materially better off people perceive and voice their hardships more vociferously than those in undisputable need.

2.4.2. Absolute poverty on the decline

The Ministry of Social Development (2013) has noted that absolute measures of poverty have been declining in New Zealand, irrespective of the measure used. This is summarised in Table 2 which shows poverty rates measured after housing costs (AHC) and before housing costs (BHC) and for the moving line and fixed line methods. The reference year for the fixed line figures is 2007. The BHC 60% moving line measure is the one used by the EU – the median EU population poverty rate in 2011 was 16% on this measure.

Persistent declines in poverty is a strong result given that the ‘moving line’ measures are constantly pegged to the median wage and as a result a substantial portion of the population will always be below the poverty line.

The rising rate from 2001 to 2004 on the BHC measure reflects the fact that median household income increased much more rapidly than low incomes did in the period – a composition effect. Another important consideration is that *Working for Families*

was introduced in 2005 and the poverty rate on the BHC measure would have continued to rise from 2004 to 2009 if not for *Working for Families*.

Table 2 Absolute income poverty rates, % of population

Household income survey year	AHC 'fixed line' 60%	AHC 'moving line' 60%	AHC 'moving line' 50%	BHC 'moving line' 60%
2001	25	20	13	18
2004	22	20	14	21
2007	18	18	13	18
2009	15	18	13	18
2010	15	18	11	18
2011	16	19	13	17
2012	14	17	12	16

Source: MSD 2013

2.4.3. Living wage is a blunt measure of 'enough'

Recent attempts to calculate a living wage are related to absolute or hardship measures in the sense that they try to get at a 'minimum acceptable' income.

The Living Wage Aotearoa Campaign suggests a wage of \$18.40 per hour based on the expenditure needs of two parent families with one full time and one part time income and two children. The idea is that:

A living wage is the income necessary to provide workers and their families with the basic necessities of life. A living wage will enable workers to live with dignity and to participate as active citizens in society.

There have been calls for all workers to be paid the \$18.40 living wage, irrespective of their family situation. This would be rather a large leap of logic, given that not every worker lives in the kind of household used to calculate the living wage. The Treasury has calculated that, of the people who currently earn less than the proposed Living Wage, 79% are in families with no children at all and 1 in 5 live in families with total incomes over \$80,000 per annum.

2.5. Relative measures

2.5.1. The many ways to measure 'less than'

The two most common ways that relative inequality is measured are via

- Gini coefficient
- income percentiles

Gini coefficient

The Gini coefficient compares the entire income distribution against a standard of perfect equality.

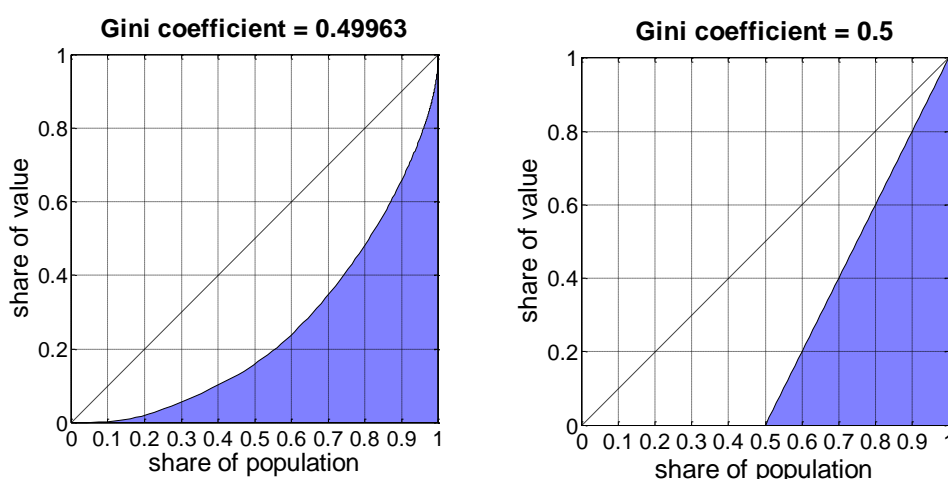
An example of the Gini coefficient is shown on the left side of

Figure 2. The diagonal line is the income distribution if incomes were the same across the entire population. The blue shaded area (known as the Lorenz curve) shows the distribution of gross taxable incomes of individuals in New Zealand in 2006. The Gini coefficient value of 0.49963 is the area between the actual distribution and the perfectly equal distribution. If incomes were perfectly equally distributed the Gini coefficient would be 1 and if one person had all the income the value would be zero.

One of the limitations in the Gini coefficient is that it gives the same weight to every point on the income distribution. If half the population earned all the income the Gini coefficient would be 0.5. This is shown on the right side of Figure 2. This is approximately the same as the value of the coefficient on the left of Figure 2, yet most would agree that the distribution on the left is preferable to one on the right.

Figure 2 Gini coefficients and Lorenz curves

Individual pre-tax incomes in 2006 (left) vs. all income earned by half the population (right)



Source: NZIER

Income percentiles

Comparisons of income percentiles are one way of assigning value to specific ways that income is distributed. Standard OECD metrics, for example, compare the top end

of incomes against median incomes, the bottom end of incomes against median incomes and the top end of incomes against the bottom end of incomes (see Table 3). These measures are useful because, for example, they can show where gaps in incomes are widest and they can be used to give more scrutiny to differences between the very rich and the very poor.

Comparisons of income percentiles carry implicit value judgements about whether particular percentiles are important indicators of inequality compared to others. These judgements can have large effects on how the numbers might be interpreted. This can be seen in Table 3 where New Zealand has one of the smallest gaps between the median and bottom decile of wages but is about average in terms of the ratio between the top income decile and the bottom income decile.

Broad conclusions about inequality do not change a great deal if percentiles or the Gini coefficient are used to compare income distributions. This can be seen in Figure 3 where Gini coefficients are compared against the ratio of the top quintile (80th percentile) of incomes against the bottom quintile (20th percentile). The ratio of top quintile to bottom quintile of income is the measure of inequality used by the influential 2010 book *The Spirit Level*.⁵ The relative position of countries remains the same regardless of which measure of income distribution is used.

Table 3 OECD earnings dispersion measures

Relative earnings across deciles measured at 90th, 50th and 10th percentiles.

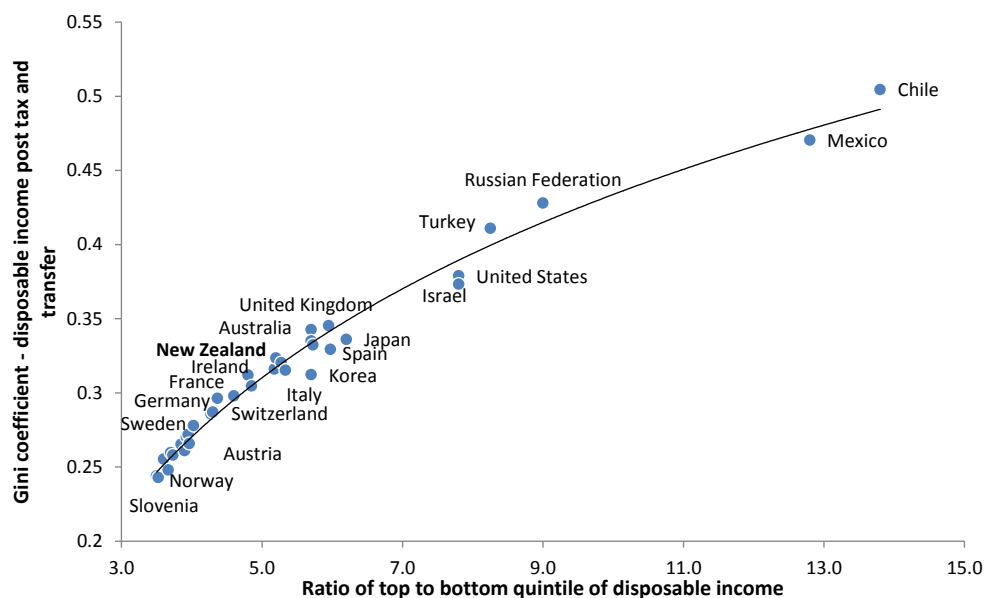
	Top decile vs bottom decile	Top decile vs median	Median vs bottom decile
New Zealand	2.9	1.9	1.6
OECD	3.4	2.0	1.7
Australia	3.3	1.9	1.7
Denmark	2.8	1.7	1.7
France	2.9	2.0	1.5
Germany	3.3	1.8	1.9
Japan	3.0	1.8	1.6
Norway	2.3	1.5	1.6
United Kingdom	3.6	2.0	1.8
United States	5.0	2.4	2.1

Source: OECD

⁵ The *Spirit Level*, does not make use of OECD data but cites the UN as its source. Notably, the OECD lists Japan as being one of the more unequal OECD countries while *The Spirit Level* lists Japan as being the most equal country.

Figure 3 Gini coefficient compared to ratio of income quintiles

Average 2008-2011



Source: OECD

None of these measures say anything about whether relative income inequality is being caused by the existence of very high incomes or very low incomes. This requires some sense of the levels of incomes.

In New Zealand's case, for example, the relatively small gap between the bottom decile and the median is likely to be influenced by the fact New Zealand's minimum wage being the highest in the OECD. In other words, median incomes are not necessarily low, rather low incomes are high.

The Gini coefficient for New Zealand shown in Figure 3 is 0.324. This is above the OECD average of 0.313. However, it is lower than the one cited earlier (0.499) because the OECD statistics are for the distribution of household disposable incomes after tax and transfers. In other words, the distribution of taxable incomes significantly overstates inequality.

2.6. 'Less than' what?

Whose income matters for inequality, and what that income actually is, are major questions that need to be resolved when thinking about inequality. Measures of personal versus household income, and gross versus total disposable income, can lead to very different outcomes.

The numbers that are easiest to get a hold of are the ones most commonly used. Usually this means average wages and gross take home or taxable earnings of individuals. However, household after-tax (or disposable) income is the most reasonable measure of income differences.

The pre-tax incomes of individuals are particularly misleading. For people in the upper portions of the income distribution, these numbers are often before sizable tax deductions. For people further down the distribution, these numbers often exclude

transfers and this can have a marked effect on measured inequality with 40% of tax payers in New Zealand receiving some income via transfers from the State.

New Zealand researchers' estimates suggest that the reduction in inequality from redistribution is around 30%.⁶

The tax-funded provision of Government services also reduces inequality in New Zealand, with estimates that it reduces inequality by another 10%. Throughout the OECD, the provision of government services has a smaller impact on inequality, compared to transfers or benefit payments, because these are not usually tightly targeted to lower income groups.

Overall, redistribution and public service provision shifts a large amount of resources from the top to the bottom of the income distribution. Between 1998 and 2010 the value of benefits and public services received exceeding taxes paid for the bottom 60% of households.

The amounts of these benefits and services have varied across income deciles and over time. In recent years the largest recipients of services were in the 3rd decile of incomes, which has the largest number of people over 65 in it. In 2010, the bottom 40% of households by income were net recipients of support averaging between \$20,000 and \$30,000. The top decile of households contributed a net positive average of \$50,000 to \$60,000 per annum (adjusted for inflation) between 1998 and 2010.

2.7. Beware average wages

Changes in average or median wages are often referred to in the context of inequality. These are not good measures of inequality. Averages obscure what is really going on and can be very misleading. In particular, averages can obscure important underlying shifts in the composition of workers, new entrants to the labour force, new business start-ups and growth in the number of jobs.

If people enter the workforce on lower than average wages then the overall average goes down. This happened from 1999 to 2007. The New Zealand economy underwent a prolonged period of growth. Labour was difficult to find, wages began to rise and large numbers of lower skilled and unemployed people were drawn into the workforce. This had the effect of keeping average wages down by a large margin. Between 1999 and 2007 average earnings increased by 9% (after inflation). Mare and Hyslop (2008) show that they would have risen by 15%, if the composition of the workforce haven't changed.⁷

New firms have a similar composition effect on average wages. New firms do not have the established networks and experience of existing firms and can't pay as much as others. If increasing numbers of new firms are being born, this will also affect average wages. Mare and Hyslop have shown that real wages would have grown by an additional 1% between 1999 and 2007, if not for this compositional effect.⁸

⁶ Aziz, O., M. Gibbons, C. Ball, and E. Gorman (2012) 'The Effect on Household Income of Government Taxation and Expenditure in 1988, 1998, 2007 and 2010', *Policy Quarterly*, vol.8, no.1 pp.29-38.

⁷ Maré, David C. and Dean Hyslop.(2008). "Cyclical Earnings Variation and the Composition of Employment," LEED Research Report, Statistics New Zealand.

⁸ This is after controlling for the upward pressure that is exerted on average wages from the fact that firms who 'exit' the economy also tend to pay less than other firms.

Between 1999 and 2007 average earnings grew by 1.3% per annum after inflation. If new jobs had not been created and inexperienced people had not entered the labour force, it would have grown by 2.1%. It is hard to see how 1.3% is worse than 2.1% in this context.

The important question to be asked is how people who entered the workforce between 1999 and 2007 have fared over time. Have they been able to maintain their foothold in the workforce and have they gone on to receive higher wages?

2.8. Who has less than whom?

Households are the best unit of measure for income inequality, as opposed to the individual, because people within households pool costs and share resources. Ignoring sharing can have significant effects on how inequality measures are interpreted.

In the 2011 Minimum Wage Review, the Department of Labour noted that on average (1997-2011) more than 10% of minimum wage earners lived in households in the top decile of household incomes. If these earners are considered independently, inequality will look more pronounced than it actually is.

Adjustments for household composition ('equivalised' income) are based on the idea that a larger household needs more income than a smaller household for the two households to have similar standards of living (all else being equal), and there are offsetting cost sharing options for larger households. Adjustments are made by translating income into how far it would go compared to a person living alone.

The adjustments made in New Zealand treat a two adult household as needing 1.54 times the income of an adult living alone, rather than double the income, to achieve the same living standard. Children generally receive a lower weight in the calculation than adults. For example a family with a sole parent and one child is treated as needing 1.40 times the income of a person living alone (MSD, 2013).

2.9. Current income versus income mobility

Evaluating income inequality at any point in time overlooks the fact that this year's high earners are not necessarily the same as last year's high earners.

Mobility up and down the income ladder is a fact of life for many, especially entrepreneurs who face the possibility of losing everything if their business fails, as they often do.

Mobility or income dynamics have important implications for the interpretation of the extent to which higher incomes mean largesse. For example, all people face the risk of unemployment. Incomes from years of employment need to cover years of unemployment, if people want to limit hardship.

There will also be people who have been working their way towards a higher income for many years who have finally reached the top of the distribution. That is, a proportion of those with high incomes will be experiencing the highest incomes of their lives and trying to make retirement hay while the sun shines.

Table 4 Personal income mobility 2005-10

Percentage of people moving between annual income deciles. Dollars are 1000s.

	From									
To	\$2.20	\$6.40	\$12.30	\$19.70	\$26.80	\$33.50	\$40.20	\$49.30	\$64.00	\$64+
\$2.80	26.1%	13.5%	10.1%	7.7%	5.5%	4.1%	3.1%	2.6%	2.2%	2.1%
\$8.10	15.0%	16.5%	11.9%	8.4%	6.2%	4.4%	3.3%	2.5%	2.0%	1.5%
\$15.30	14.1%	15.1%	16.5%	12.5%	8.4%	6.0%	4.6%	3.4%	2.7%	2.0%
\$24.20	12.0%	13.3%	15.6%	18.9%	13.2%	8.6%	6.4%	4.6%	3.6%	2.4%
\$32.30	10.1%	11.9%	12.6%	16.4%	20.1%	13.1%	8.0%	5.3%	3.9%	2.5%
\$39.90	8.0%	10.2%	10.8%	12.6%	18.3%	22.5%	14.0%	7.4%	4.6%	2.5%
\$48.00	6.2%	8.3%	9.0%	9.8%	13.0%	19.6%	24.3%	14.6%	6.8%	3.4%
\$59.30	4.3%	6.2%	7.2%	7.1%	8.6%	12.7%	21.0%	28.5%	14.6%	5.0%
\$77.50	2.6%	3.4%	4.5%	4.4%	4.7%	6.5%	11.7%	23.6%	37.6%	13.9%
\$77.5+	1.5%	1.5%	1.9%	2.1%	2.1%	2.4%	3.7%	7.5%	21.9%	64.8%

Source: Statistics NZ LEED

A summary of income mobility from tax data is shown in Table 4. On average, 1 in 10 people moved from one income decile to another between 2005 and 2010. More people moved out of the bottom half of incomes and into the top half of incomes than fell from the top half.

Movements from the very bottom of the distribution to the very top are reasonably rare; 1.5% of people (~2000 people) moved from the lowest decile to the highest and 2.1% (~4000) moved from the top to the bottom.

2.10. Income versus wealth and consumption decisions

Differences in incomes, via age and skills naturally have a persistent and large impact on inequalities of wealth. These effects are larger than for incomes because people with higher incomes are generally able to save more. Wealth begets wealth, by inheritance and by compound returns.

Stage of life important

Demographic and lifecycle effects are important sources of variation in wealth. Young people simply have not had time to accumulate wealth and their wealth, when measured in terms of financial assets, can even be negative. However, the present value of their human wealth – their capital will be very high instead, as shown in Figure 11. The accumulation of wealth over time is the reverse of the profile of lifetime labour incomes shown in Figure 11. People move their 'wealth' from their ability to earn labour income to their ability to build businesses or otherwise invest in wealth.

Wealth is accumulated over time

Wealth is accumulated over time. This means that wealth is naturally distributed much more unequally than income (especially disposable income after tax and transfers). In 2003-2004 the top wealth decile accounted for around 50% of the total

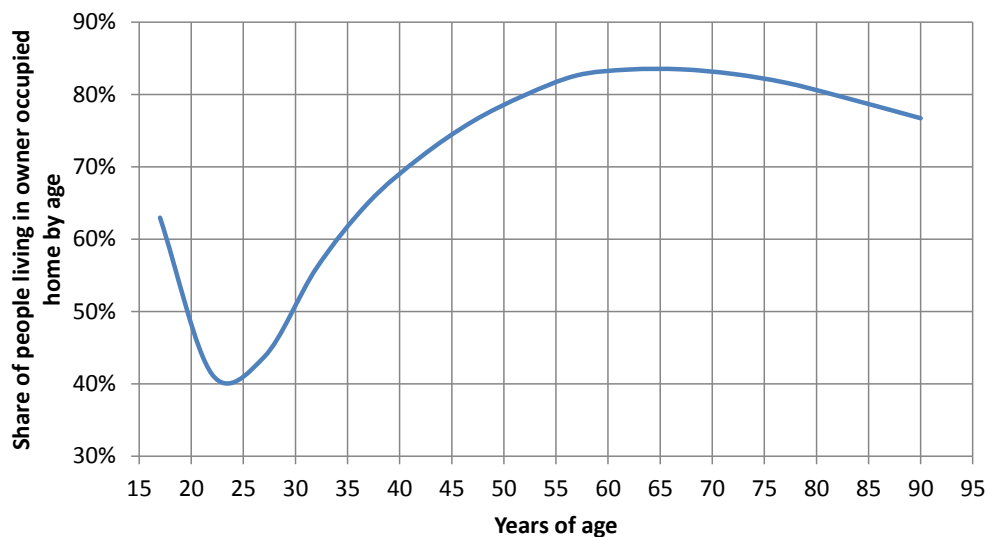
wealth, while the top income decile accounted for 25% of the total income. This is similar to other OECD countries.

In 2003-04, the median net worth of people aged 50-64 was 70 times higher than for people aged 15-24 (\$2,400 versus \$170,000).

Age variations in the ability of people to accumulate wealth can have a significant impact on observed differences in wealth. Housing is a good example (data on other forms of asset is limited). Early in life, people typically rent. As they get older and incomes improve and they choose to settle down they are more likely than not to buy a house. In 2006 half of 35 years and over 80% of people aged 60 olds lived in owner-occupied homes.

Debt funded assets including businesses and homes won't show up in people's net wealth until the debt has been worked out and this naturally takes time. Data from surveys in New Zealand (Statistics New Zealand SoFIE) show that the level of indebtedness climbs rapidly at young ages, peaks at around age 25 at a level of nearly \$50 for every \$100 in assets. The debt ratio then declines rapidly between 25 and 35 as assets are built up. By retirement age, the average level of indebtedness is reduced to near zero.

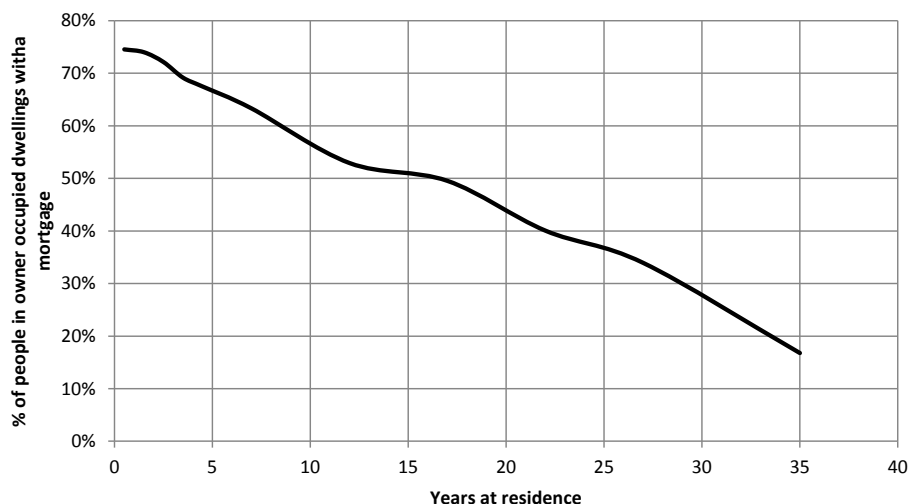
Figure 4 Ownership of homes by age



Source: NZIER, Statistics New Zealand

Figure 5 Share of people with a mortgage

By years at residence



Source: NZIER

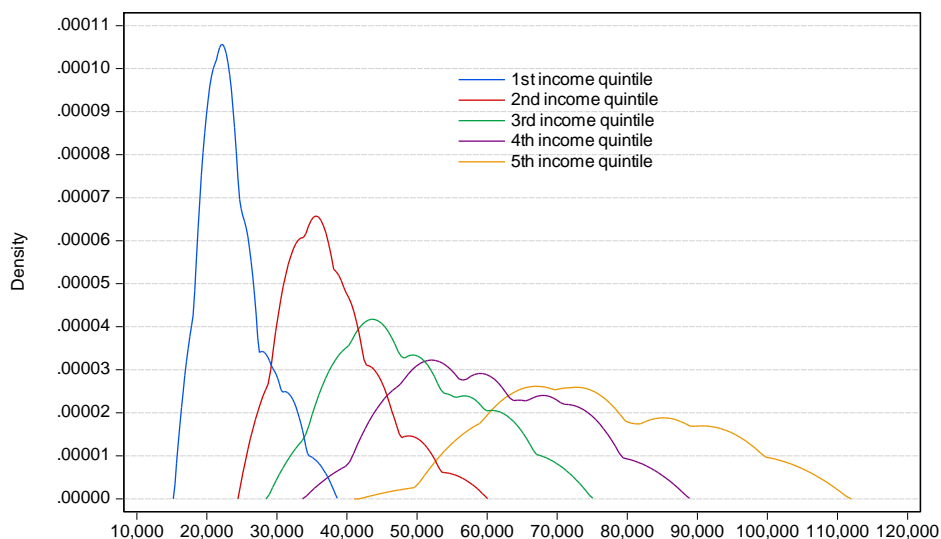
Savings choices matter

The role of saving decisions and the decision to save also have a significant cumulative effect on wealth. There is little reason why all people should save and accumulate wealth at the same rates. Indeed there is significant variation in how much people consume at different income levels, across different household types and at different stages in the life cycle. Consequently there is also large variation in savings and large variation in wealth which results from savings.

For example, around 5% of couple households (18,000 households) which earn in the over \$110,000 of income (top 25%) spend less than the median expenditure of households in the lowest income quintile. Clearly, some people are savers and some are not.

Figure 6 Household spending by income

Distribution across households in each quintile, 2006



Source: Statistics New Zealand

3. Where is the inequality coming from?

Why did inequality increase in New Zealand and most OECD countries from 1970 to 2000? This is a question that is rarely addressed directly in New Zealand debate, presumably because the answer is assumed to be self-evident.

OECD reviews of inequality trends (2008, 2011)⁹ have found that from the mid-1980s to the mid-2000s:

- Social and demographic changes, such as smaller households and increases in the number of sole-parent households, have played an important role increasing inequality (11% of inequality changes explained by changes to household structures).¹⁰
- Variations in wage rates explain 40% of household earnings inequality in OECD countries.
- The tendency for high earners to partner with high earners explains 11% of inequality changes in household inequality – this magnifies changes in earnings differences.
- Increased employment of women has reduced household inequality by 19% compared to what otherwise would have been.
- Globalisation has not had a significant impact on wage inequality or employment in OECD countries.
- Regulatory and policy reforms promoting labour market flexibility have increased wage disparities but increased employment.
- Reduced employment of men contributed 17% of the changes in inequality observed around the OECD.

The OECD findings paint a picture of rising inequality that is more complicated than simple claims suggest. New Zealand is not the OECD and we don't know the full extent to which the OECD's observations apply to New Zealand. We do know, however, that there are significant sources of variation in incomes which are explicable and acceptable to most people when spelled out.

3.1. Experience, qualifications and geography

Experience (age) can explain almost half of current pre-tax income inequality

Shifting demographics change how trends in inequality should be interpreted. First, there is some basic level of inequality which one should expect if we accept that skills and pay rise with experience.

⁹ OECD (2011) 'Divided we stand: Why inequality keeps rising', Paris.

¹⁰ Smaller households are less able to benefit from the savings associated with pooling resources and sharing expenditures. A trend toward smaller households is therefore likely to increase earnings and income inequality.

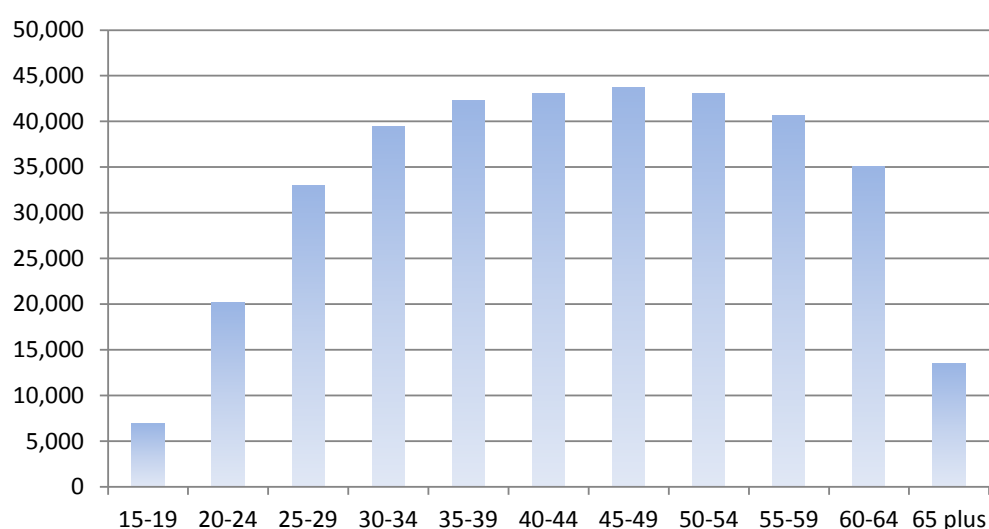
If every New Zealander started on the minimum wage and received a 1% pay rise, after inflation, for every year of their working life, New Zealand's Gini coefficient on pre-tax income would be 0.2412. This is half the actual pre-tax Gini coefficient for individual incomes in New Zealand.

Most people would rightly aspire to a larger than 1% 'real' pay rise on average for every year of their working life. Over a forty year working life this would lift a person from the minimum wage of \$13.75 per hour to \$20.50; substantially lower than the current average (nominal) wage of \$28.

Historically, incomes have risen rapidly, on average, until around 50 years of age and then tend to flatten before declining as people retire (see Figure 7). This age-specific pattern of earnings, when combined with the actual age-profile of the population gives a Gini coefficient of 0.20. In other words nearly half of the inequality in New Zealander's taxable income could be explained by increased earnings over the life cycle and the age composition of the population.

Figure 7 Average income by age

Median gross individual income within each age group



Source: Statistics New Zealand, LEED

Demographics will create future shifts in inequality measures

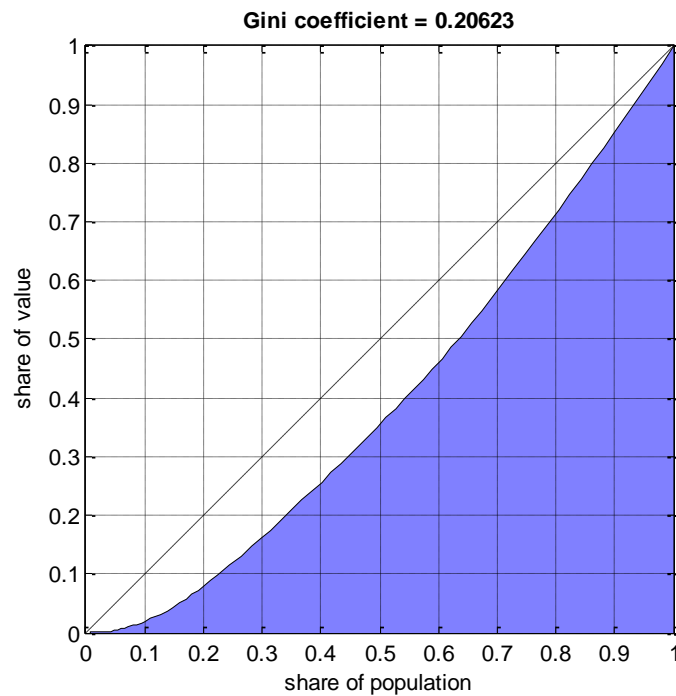
Shifts in the age-composition of the population over time have also caused inequality to rise and fall. Figure 9 shows the path of inequality over time if the only variation in incomes is age related (as in Figure 7).

This shows that a rise in income inequality in the 1990s and the subsequent decline were to be expected based solely on demographic changes. It also cautions that the increasing number of older people in the next 20 years will likely increase inequality.

These changes are benign in the sense that they would occur with reasonably modest differences in incomes over the lifecycle as shown in Figure 7.

This shows that changes in income inequality over time may reflect benign life-cycle effects and are therefore not something to get especially concerned about.

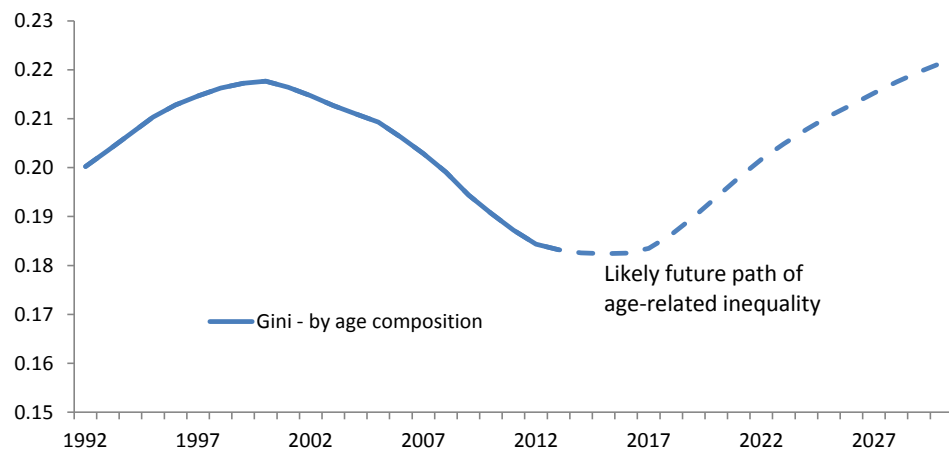
Figure 8 Pre-tax income inequality in 2006 due to age



Source: NZIER

Figure 9 Changes in inequality due to change age-composition

Gini coefficient based on age composition and age-specific average wages

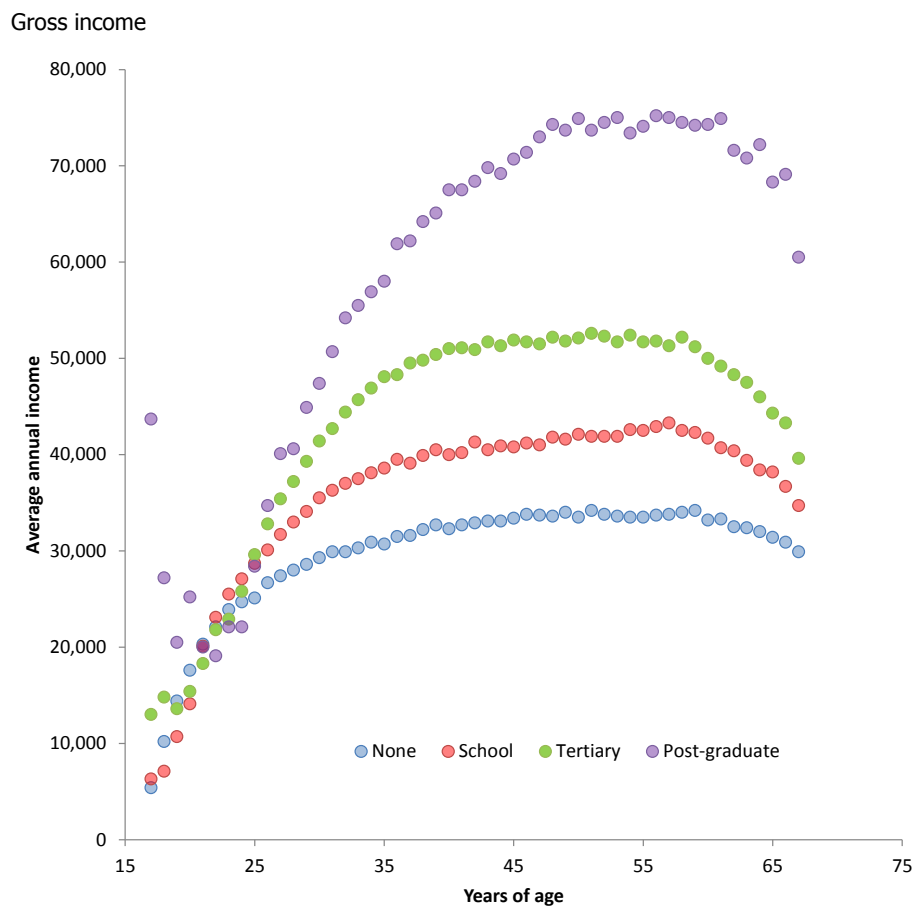


Source: NZIER

Education has significant implications on lifetime incomes

Another important driver of measured income inequality is education. The earnings profile of people over their working lives varies considerably by education.

Figure 10 Income by age and formal qualification



Source: NZIER, Statistics New Zealand Census 2006

The impact of education on lifetime incomes is large. A person with a tertiary qualification could expect income twice that of a person with no formal qualifications. At age 21 a person with a formal school level qualification in 2006 could expect a working-life income of around \$650,000. This is \$250,000 higher than the lifetime income of a person with no formal qualification.

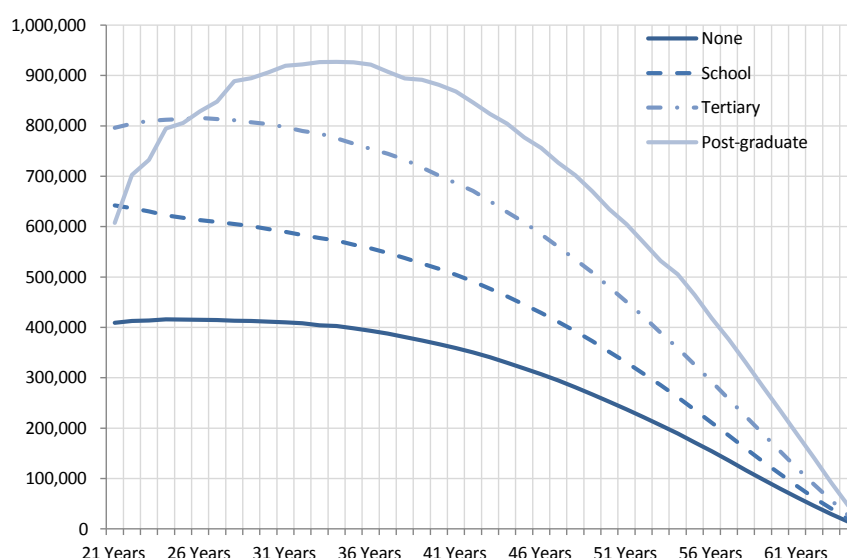
People with post-graduate qualifications have the largest lifetime incomes, although post-graduate education does not appear to pay off, on average, with the income foregone while in post-graduate education not being offset by lifetime increases in earnings.

The lifetime income of a 35 year old with a post-graduate education is much higher than for other people but not when evaluated from the point of view of someone embarking on post-graduate education. In other words, a person with a post-graduate education will look to be earning much more than others when they are 35 to recoup the costs of an investment in education which may not otherwise pay off in monetary terms.

Part of the lower lifetime income of people without formal educational qualifications comes from a higher likelihood of being unemployed. Higher unemployment rates for these people is a long term trend (see Figure 12) with unemployment rates of those without qualifications more than double that of people with school or post-school qualifications.

Figure 11 Average lifetime income by highest qualification

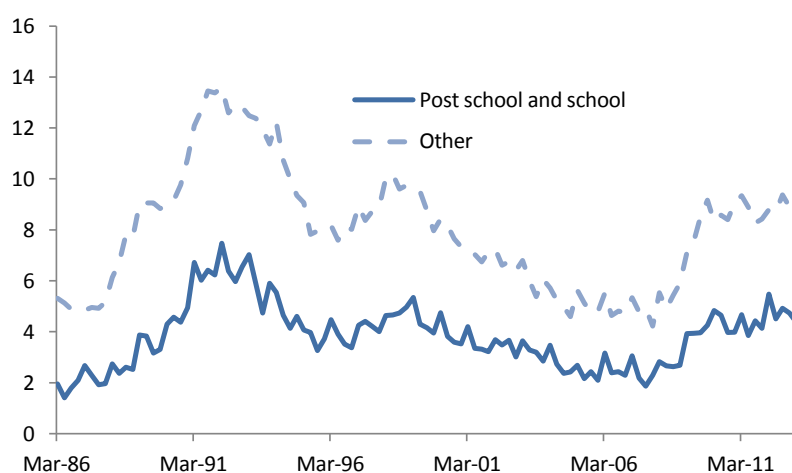
Present value



Source: NZIER, Statistics New Zealand Census 2006

Figure 12 Unemployment rates by qualification

Percent of labour force



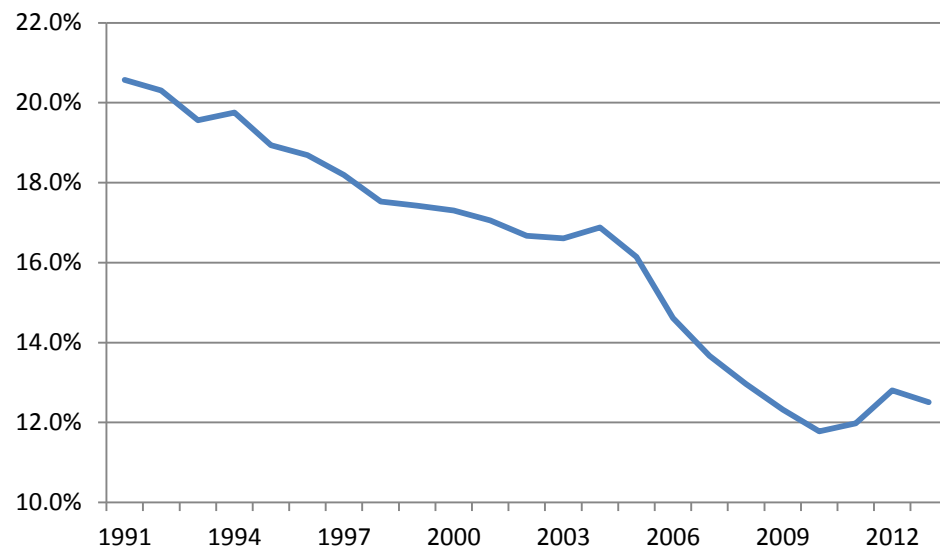
Source: NZIER, Statistics New Zealand

Over time, as the labour force becomes much more educated (assuming that it does) there will be an impact on inequality. Generally speaking, university students work part time, giving up on full time income in the hope of securing benefits later in life.

This means the more students there are, the higher the inequality. The benefits students hope to get include a lower likelihood of unemployment and a good chance of higher incomes. If they are successful, there will be more educated 50 year olds with higher incomes and there will be more inequality. It is hard to see how this is a worse world than one in which young people choose not to go into tertiary education.

Figure 13 Share of 35 year olds with no formal qualification

Percent of population aged 35



Source: NZIER estimates, Statistics New Zealand Census 2006

Geographic variation

Where you live can explain some income inequality. In New Zealand there are significant differences in incomes across regions even within the same industries.

In general, the more densely populated a region the more competition for fixed resources, such as land, and the higher the wage necessary to draw people into the labour market (a cost of living or cost disease effect) or simply to compete for workers with a range of other alternatives (a competition effect).

More densely populated regions generally also offer higher wage industries – which is why they are attractive to people and hence more densely populated – and more demand for services. This higher demand leads to potentially higher capacity utilisation and gains from scale and ultimately higher wages.

There are several other reasons why density increases productivity which ultimately increases incomes and wages. This includes opportunities to specialise and gain specific expertise. Another is the network effects that come from being around other people with ideas and skills and knowledge to learn from.

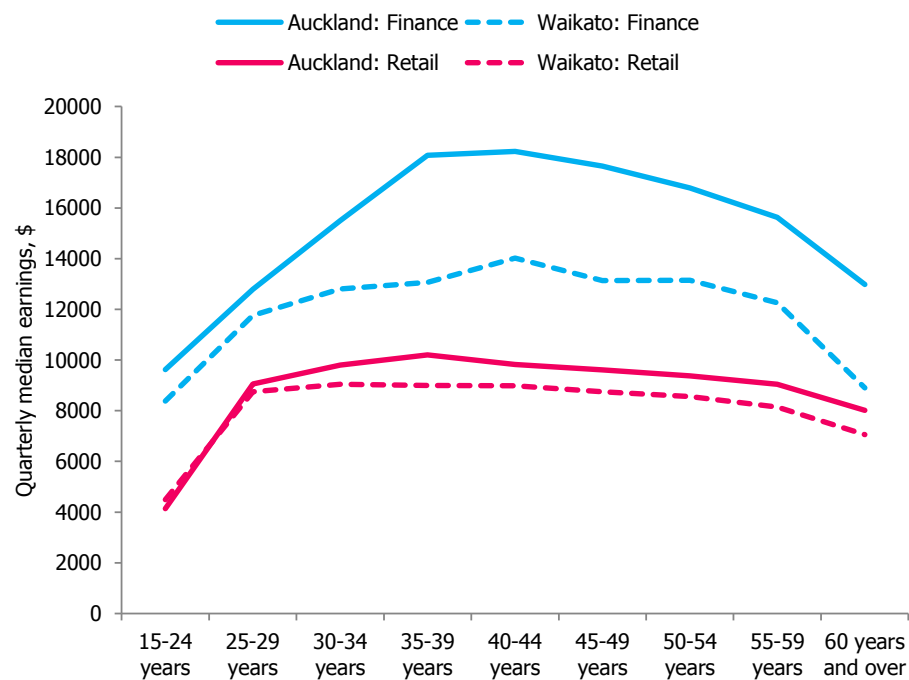
These various effects can be seen the differences that exist between wages in Auckland compared to the Waikato shown in Figure 14. Wages in the retail sector are, on average, 8% higher than in the Waikato.

In the finance industry, Auckland has a strong specialisation relative to the rest of the country. Finance is also a sector where workers are more internationally mobile and this lifts returns to specialisation. In this sector, wages average 28% higher in Auckland than in the Waikato. A key driver of these differences will be that finance jobs in Auckland are not the same as finance jobs in the Waikato.

Some of the age specific income variations across regions can be even more acute.

Figure 14 Income by sector and age in Auckland the Waikato

Quarterly gross earnings



Source: Statistics New Zealand

4. Persistent poverty is the problem

It is clear that there is enough acceptable variation amongst people to make measures of inequality difficult to interpret. That being the case, less attention should be paid to differences amongst people in general, and more attention to persistence of poor conditions. There are two parts to this:

- There needs to be more attention to the persistence of “not enough” rather than simply “less than”.
- There needs to be more attention to the question of “why”.

Poor families stay poor

Families at the bottom end of the income distribution (decile 1) have a high probability of remaining there over time – compared with the rates at which others move between income deciles (see Table 5). This observation at the family level differs significantly from the income mobility picture painted earlier. This is because the statistics shown here are adjusted for size of families including non-earners, which are mostly children.

The study from which the data in Table 5 is taken also notes that¹¹:

Where cross-sectional low income (<60% of median household equivalised income) rates were around 24% (low income estimate) the longitudinal estimate of low income prevalence over seven years is approximately double this (50%) – i.e. half of the sample experienced one or more years of low income.

That is, at the family level incomes at the low end might move up and down a bit but they are persistently lower for longer with less mobility and more deprivation than for other families.

Qualitative measures of deprivation have been used to gauge absolute levels of hardship. The findings show that 6-7% of people are in deprivation in any given year and that of those people who were in deprivation in year 1, 40% remained in deprivation 7 years later. Persistence of low income is related to increasing levels of deprivation (though Treasury has noted that the data show the link is modest¹²).

¹¹ Carter and Gunasekara (2012) ‘Dynamics of Income and Deprivation in New Zealand, 2002-2009’, Public Health Monograph Series, No. 24, University of Otago.

¹² See <http://www.treasury.govt.nz/publications/informationreleases/income-deprivation/t2012-866.pdf>

Table 5 Probability of household moving decile from year to year

Deciles based on equivalised household income

	From									
To	1	2	3	4	5	6	7	8	9	10
1	50.6%	17.4%	8.7%	6.0%	4.3%	3.1%	2.8%	2.5%	2.4%	2.4%
2	18.8%	44.0%	18.8%	6.8%	4.6%	2.4%	1.7%	1.4%	0.8%	0.7%
3	10.3%	19.8%	36.8%	15.5%	7.1%	3.8%	2.5%	1.8%	1.2%	1.4%
4	6.1%	8.7%	17.9%	33.8%	15.3%	7.1%	4.7%	2.7%	1.7%	1.6%
5	4.3%	3.6%	8.3%	19.6%	32.3%	16.2%	7.1%	4.0%	2.9%	1.8%
6	2.8%	2.6%	3.6%	8.8%	19.0%	32.4%	16.3%	7.9%	4.0%	2.4%
7	2.2%	1.6%	2.3%	4.0%	8.9%	20.0%	34.0%	16.5%	6.6%	3.9%
8	1.8%	1.2%	1.8%	2.5%	4.1%	8.5%	20.8%	35.8%	17.1%	6.5%
9	1.5%	0.6%	0.9%	2.0%	2.5%	3.8%	7.1%	20.9%	44.9%	15.8%
10	1.7%	0.6%	1.0%	1.1%	1.8%	2.5%	2.8%	6.6%	18.4%	63.5%

Source: Carter and Gunasekara, University of Otago (2012)

Some persistently low income parts of society

The kinds of people who find themselves in the situation of being in families with persistently low income and deprivation are most likely to be (Carter and Gunasekara, 2012)¹³:

- Under 18 or youths
- Maori
- with low qualifications
- sole parents.

None of these categories is mutually exclusive. However, the Expert Advisory Group on Solutions to Child Poverty has noted that sole parents have particular characteristics which create high rates of poverty:

Like most other countries, New Zealand children living in sole-parent families are much more likely to experience poverty than children with two parents (see Table 1.1 and Figure 1.3). This is particularly concerning because New Zealand has a comparatively high rate of sole-parenthood; in 2011 around a quarter of children were in such circumstances. There are two main reasons why sole-parent families in New Zealand have a high rate of poverty: sole-parents have a comparatively low rate of paid employment by OECD standards, and welfare benefits are low relative to the poverty line.¹⁴

¹³ A limited number of groups and personal characteristics are analysed and discussed in this report; most likely because of sample size issues limiting the robustness of analysis of differences. Groups where sample sizes are most problematic are for low income earners, Maori and Pacific people, and those who were not working. These people were more likely to drop out of the survey over time.

¹⁴ 'Solutions to Child Poverty in New Zealand: Evidence for Action' available at <http://www.occ.org.nz/assets/Uploads/EAG/Final-report/Final-report-Solutions-to-child-poverty-evidence-for-action.pdf>.

Education a gap amongst low income groups

There is also a connection here to the earlier observations around variation in incomes related to education. Around half of households below absolute poverty lines (incomes smaller than 60% of the median wage) have no formal qualifications.¹⁵

The link to education and also to work appears to be a channel that could help to alleviate deprivation and hardship. It would do little in the short term to address aggregate measured inequality – it might even worsen the measured inequality – but it looks like it could do more than a ‘pre-distribution’ measure such as the living wage in terms of reducing child poverty and persistent deprivation.

The prospects for improvements in education outcomes are not especially good on current data. Currently 1 in 3 people aged between 15 and 24 have no formal qualification. A large proportion will go on to gain non-school qualifications but without foundational school education their choices will be limited and options for higher education much more limited.

Youth unemployment and ‘usual’ culprits

Earlier we observed that young people tend to earn less than older people due to a lack of experience or because they are in education. There are, however, those who are not gaining experience or education – the so-called NEETs (not in education, employment or training).

New Zealand’s NEET rate (NEETs as a share of people aged 15-24), crept up above the OECD average in 2011 (12.7% vs 12.3%)¹⁶ and this is of some concern. Also of concern should be the persistent differences across ethnicities in terms of NEET rates:

- 11.5% Pakeha
- 24.9% Maori
- 23.2% Pacific
- 6.7% Asian

This mirrors persistent ethnic differences in other areas including in school level educational attainment, incomes and single parent households.

On educational achievement, while New Zealand has high achievement at the top end, 17% of educational attainment can be explained by socio-economic background. This is high by comparison with other OECD countries and is in spite of the fact that New Zealand is ranked 2nd in the OECD for its expenditure on education.

Causes of poverty versus inequality

Something systematic and persistent is at play in New Zealand which is quite separate from the relative incomes of people in the labour market, whether or not the minimum wage needs to go up or a living wage applied. Rather than help the situation, concern about ‘inequality’, in and of itself, and campaigns for the living wage are just as likely to distract from uncovering and resolving the persistent and truly problematic differences in New Zealand society.

¹⁵ MSD (2013). Calculated based on the number of children in a household. Referred to as ‘child poverty’ though the poverty measure applies to the entire household rather than just the children in the household.

¹⁶ The NEET rate fell back to 12.4% at the start of 2013, however OECD averages are not available for comparison at this time.