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Making New Zealand's  
economic growth more  
inclusive

**David Carey**

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**MAKING NEW ZEALAND'S ECONOMIC GROWTH MORE INCLUSIVE**

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**By David Carey**

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## ABSTRACT/RÉSUMÉ

### **Making New Zealand's Economic Growth More Inclusive**

New Zealand generally performs well in terms of economic and social inclusion. It has high employment rates, and education and health-care systems work well for most. However, some New Zealanders are stuck on low incomes and face material deprivation and multiple barriers to economic and social participation. The ranks of those falling behind increased in the wake of the economic reforms in the late 1980s and early 1990s, which succeeded in halting the decline in GDP per capita relative to the OECD average but contributed to large increases in income inequality and poverty that have only been partially reversed since then. These developments have been aggravated by the rising burden of housing costs on low-income households. Māori, Pasifika and low-income households have also experienced slower rates of improvement in many health and education results. NZ governments have made improving outcomes for disadvantaged groups a top priority in recent years. Reforms are being made to facilitate the transition of welfare beneficiaries into work, increase the supply of affordable and social housing and enhance health and education outcomes for disadvantaged groups. These reforms go in the right direction and, in many cases, would be more effective still if complemented by other reforms.

This Working Paper relates to the 2015 OECD Economic Survey of New Zealand ([www.oecd.org/eco/surveys/economic-survey-new-zealand.htm](http://www.oecd.org/eco/surveys/economic-survey-new-zealand.htm))

*JEL classification codes:* I14; I18; I24; I28; I32; I38

*Keywords:* income inequality, poverty, housing costs, health outcomes, education outcomes

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### **Rendre la croissance économique plus inclusive en Nouvelle-Zélande**

Dans l'ensemble, la Nouvelle-Zélande obtient de bons résultats en matière d'intégration économique et sociale. Le taux d'emploi est élevé et, globalement, les systèmes d'éducation et de santé fonctionnent correctement. Cependant, la situation reste inchangée pour certains Néo-zélandais à faible revenu qui demeurent confrontés à des difficultés matérielles et à de nombreux obstacles à une pleine participation à la vie économique et sociale. Le nombre de foyers ayant perdu du terrain a augmenté à la suite des réformes économiques de la fin des années 80 et du début des années 90, qui ont certes permis d'arrêter le déclin du PIB par habitant par rapport à la moyenne de l'OCDE, mais au prix d'un creusement marqué des inégalités de revenu et d'une hausse de la pauvreté qui n'ont pas été entièrement corrigés depuis. Dans ce contexte, l'augmentation de la charge des coûts du logement pour les ménages à faible revenu a constitué un facteur aggravant. En outre, les ménages néo-zélandais défavorisés – les pauvres, les Maoris et les Insulaires du Pacifique – ont connu des progrès plus maigres à bien des égards en matière de santé et d'éducation. Ces dernières années, l'amélioration de la situation des groupes défavorisés figurait en tête des priorités des gouvernements néo-zélandais. Des réformes ont été menées à bien pour faciliter la transition vers le monde du travail des bénéficiaires de prestations sociales, pour accroître l'offre de logements sociaux abordables, pour améliorer les retombées positives, en matière de santé et d'éducation, pour les populations défavorisées. Ces réformes, qui vont dans la bonne direction, auraient bien souvent une efficacité plus grande si des réformes complémentaires venaient les compléter.

Ce Document de travail se rapporte à l'Étude économique de l'OCDE de la Nouvelle-Zélande 2015 ([www.oecd.org/fr/eco/etudes/etude-economique-nouvelle-zealande.htm](http://www.oecd.org/fr/eco/etudes/etude-economique-nouvelle-zealande.htm)).

*Classification JEL :* I14; I18; I24; I28; I32; I38

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## MAKING NEW ZEALAND'S ECONOMIC GROWTH MORE INCLUSIVE

By David Carey<sup>1</sup>

New Zealand generally performs well in terms of participation in economic and social activities of its people. It has high employment rates, and education and health systems work well for most. The recorded crime rate has been falling since the early 1990s, and the numbers of people entering the criminal justice system is starting to fall. New Zealand's state services are generally well regarded, and it consistently ranks at or near the top of international surveys that measure trust in government.

However, some New Zealanders face persistently low incomes, material deprivation and multiple barriers to economic and social participation. Many of these people are welfare beneficiaries. Their children are at higher risk than others of having poor long-term outcomes across a range of well-being dimensions. Māori and Pasifika, who together make up a quarter of the population, are also overrepresented among those who live in chronic poverty and have a variety of other poor well-being outcomes as well.

The ranks of New Zealanders falling behind the rest of society increased in the wake of the economic reforms in the late 1980s and early 1990s to enhance long-term economic performance. These reforms succeeded in halting the decline in GDP per capita relative to the OECD average, mainly through increasing labour utilisation, but contributed to large increases in income inequality and poverty that have only been partially reversed since then. These developments have been aggravated by the rising burden of housing costs on low-income households. Low-income, Māori and Pasifika households have also experienced slower rates of improvement in health outcomes than the rest of society, and, while gaps in education attainment have narrowed, the influence of socio-economic background on education achievement has increased from a level that was already higher than in most other OECD countries.

NZ governments have made improving outcomes for low socio-economic households, including many Māori and Pasifika people, in key areas that affect well-being (income, housing, health and education) a top priority in recent years. Because the same individuals tend to have poor outcomes across the various dimensions of well-being, a co-ordinated and multi-pronged approach to improving outcomes is needed, as envisaged in the New Zealand Treasury's "Living Standards Framework" (New Zealand Treasury, 2011) and the OECD's "Inclusive Growth" initiative, including through the provision of more

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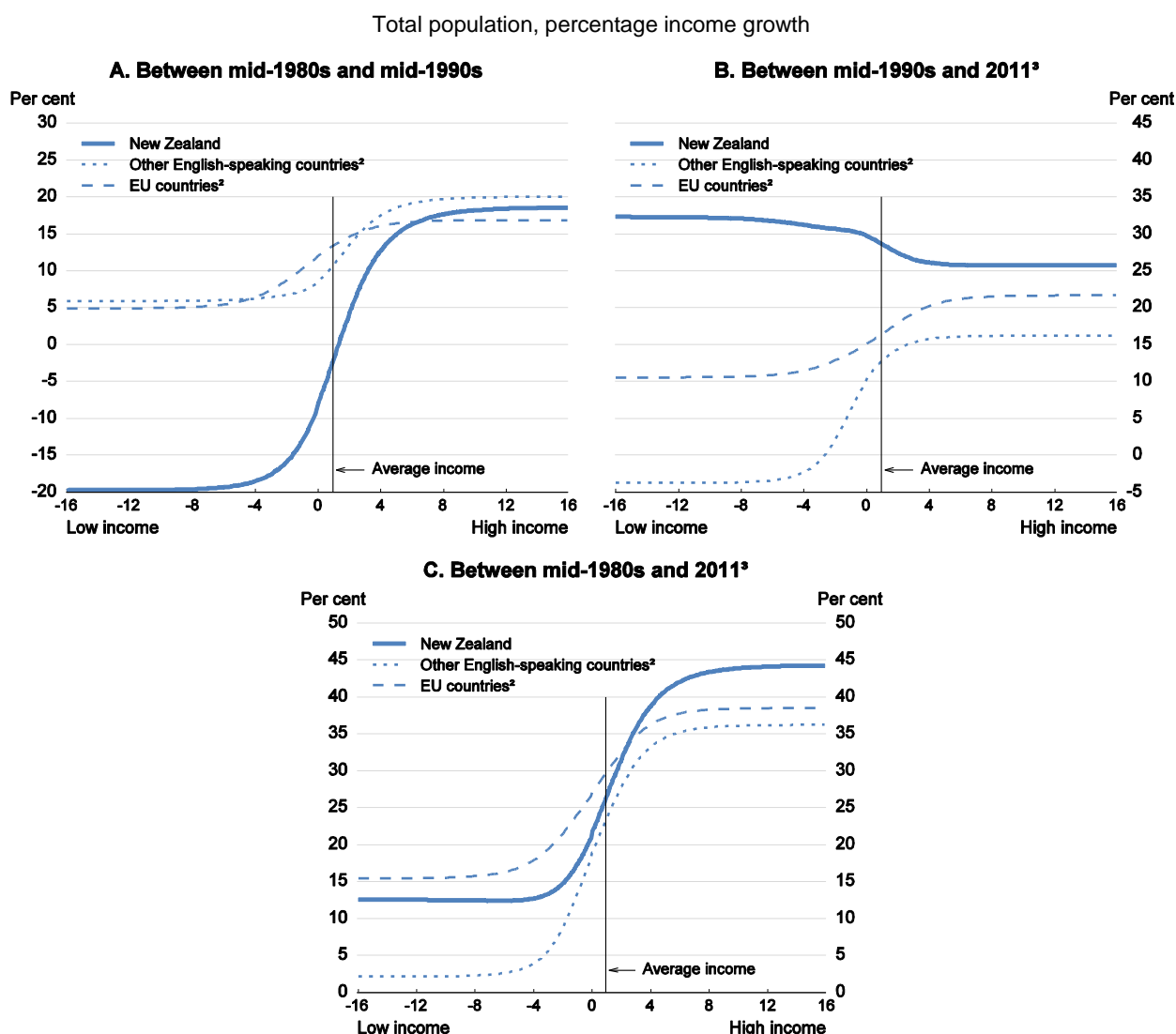
tailored and targeted social services. Such an approach is aimed at delivering improved outcomes both in the short term and especially the longer term.

This paper discusses the distribution of monetary and some of the main non-monetary determinants of well-being in New Zealand together with policies for improving outcomes for people lagging behind. It begins by reviewing developments in income distribution and poverty and discusses welfare and labour-market reforms to increase low incomes. In the following sections, the problems of affordable quality housing and of relatively poor health and educational outcomes for low-income households and Māori and Pasifika populations are discussed together with reforms that are being implemented to alleviate these problems and suggestions for further reform. The topics covered are not exhaustive but do include the most important determinants of well-being in New Zealand.

## **Reducing income inequality and poverty**

### ***Income inequality and poverty rates have increased***

Growth in average real household disposable income<sup>1</sup> has been broadly in line on average with that in comparable OECD countries (other English-speaking countries and the historic EU15 countries) in recent decades (Figure 1). It was very low from the mid-1980s to the mid-1990s, when the upfront costs (including a very large increase in unemployment) of major economic reforms were incurred but has since been higher than in comparable countries. More progress has been made in closing the gap in household incomes than in GDP per capita with comparable OECD countries in recent years because New Zealand's terms of trade have increased and, in contrast to the United States, the labour share of gross domestic income has risen (Figures 2 and 3).

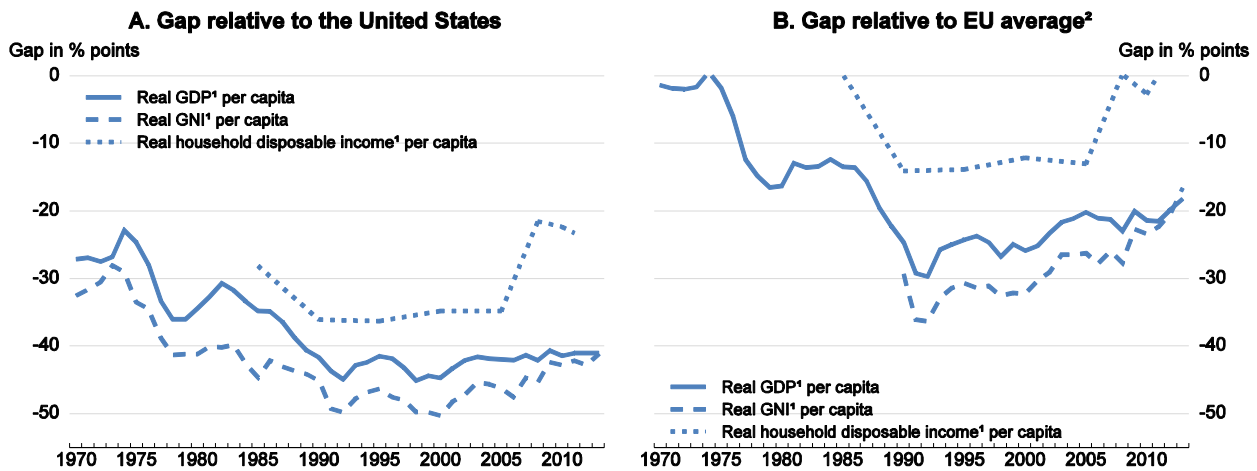
Figure 1. Growth in real household disposable income<sup>1</sup> across the distribution

1. Equivalised household incomes (i.e. adjusted for household size - total household income is divided by the square root of household size) across the distribution are measured by the full range of bottom to top income standards, as determined by the Atkinson inequality aversion parameter  $\alpha$  (a low value corresponding to high inequality aversion). A low value corresponds to low income, zero to median income and a high value to high income. Data are for deciles and expressed in USD 1000, at constant prices and constant 2010 purchasing power parities for households' consumption.
2. EU countries include Denmark, Finland, France, Germany, Italy, Luxembourg, the Netherlands, Sweden and the United Kingdom. Other English-speaking countries include Canada, the United Kingdom and the United States, but exclude Australia owing to data unavailability in the mid-1980s and Ireland due to a break in the series. Country averages are population weighted.
3. 2011 or nearest available year.

Source: Calculations from the OECD Income Distribution database, via [www.oecd.org/social/income-distribution-database.htm](http://www.oecd.org/social/income-distribution-database.htm).

**How to read this figure:** Each curve represents cumulative income growth at different points of the income distribution. For example, low real incomes in New Zealand grew by 13% between the mid-1980s and 2011 (Panel C) while high real incomes increased by 44%, indicating that income inequality widened.

Figure 2. Gaps in incomes with other OECD countries

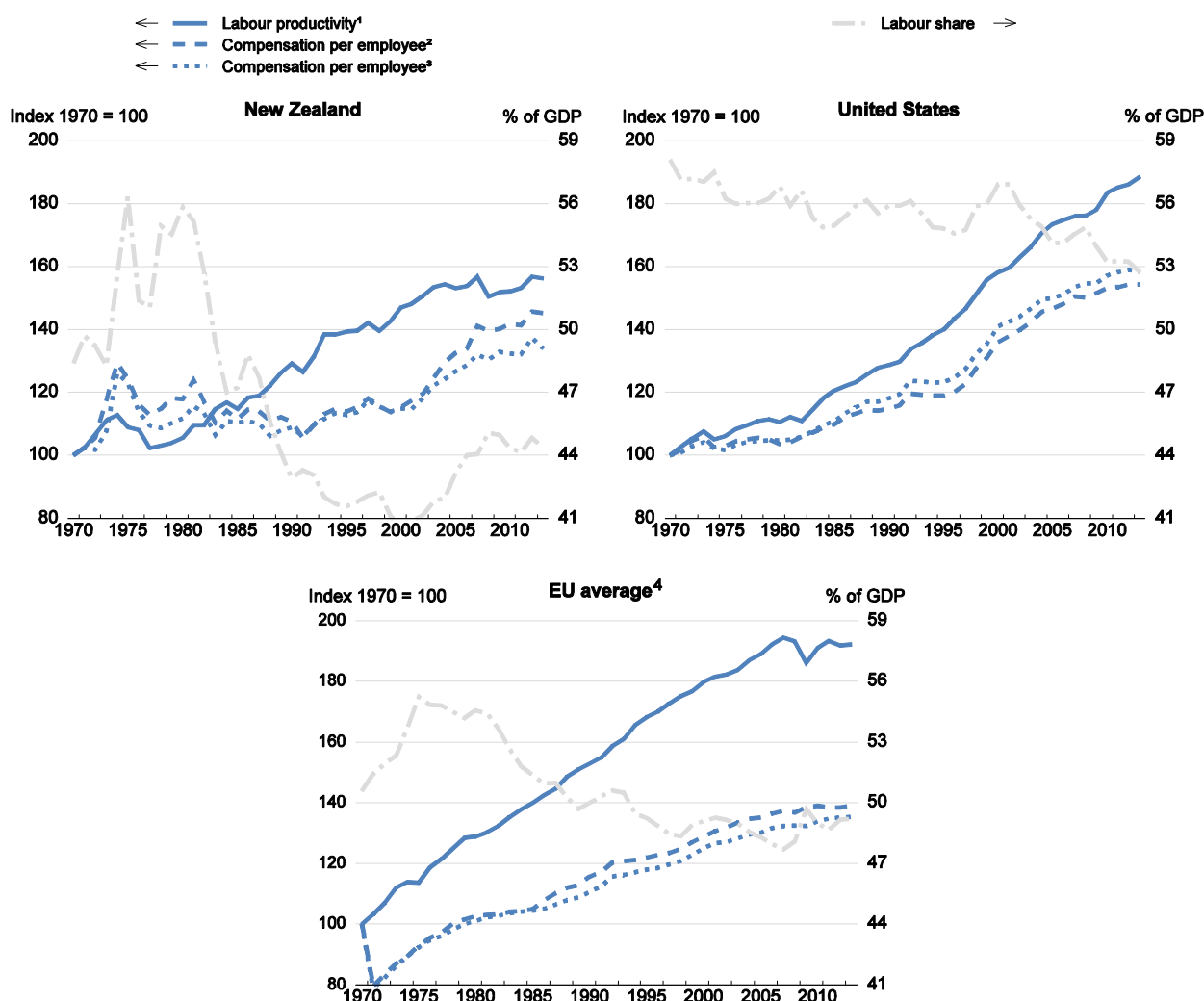


1. Real GDP/GNI is defined as GDP/GNI at 2005 constant prices and constant PPP. Real GNI (but not real GDP) includes a trading gain or loss that arises from changes in the terms of trade; this gain or loss is the difference between real GDP and real GDI. This trading gain or loss is calculated as the current trade balance deflated by the final domestic demand deflator minus real exports plus real imports. Hence, real GNI rises in relation to real GDP when the terms of trade rise and falls in the opposite case. Equivalised real household disposable income is obtained by deflating the I mean of equivalised household disposable income, which is adjusted for household size, by the CPI indexed to 2010 and converted to a common currency using the 2010 PPP for GDP.
2. EU countries include Denmark, Finland, France, Germany, Italy, Luxembourg, the Netherlands, Sweden and the United Kingdom. Country averages are population weighted.

Source: OECD, National Accounts database; calculations from the OECD Income Distribution database, via [www.oecd.org/social/income-distribution-database.htm](http://www.oecd.org/social/income-distribution-database.htm).

However, income inequality has increased more than elsewhere over the whole period from the mid-1980s to 2011, reflecting developments in the late 1980s and early 1990s (Figure 1; Figure 4). That increase reflected both a fall (of 17-20%) in real disposable incomes of the poor and lower middle class and a comparable rise (of 15-18%) in real incomes of the upper middle class and most affluent (Figure 1, Panel A). Lower-income households did relatively poorly because they bore the brunt of restructuring costs (lost employment opportunities and low or negative growth in real wage rates) and because social benefits were cut in 1991 to sharpen work incentives. By contrast, modest growth in market incomes for higher-income households was substantially magnified by income tax cuts, which were financed by the introduction and subsequent increases in value-added tax (GST). The slight decline in income inequality since the mid-1990s reflects higher growth in incomes in the bottom half of the distribution than in the top half (Panel B). Lower-income households have benefited disproportionately from the recovery in the labour market during this period, the introduction of the Working for Families (WFF) package over 2004-07 (which provides means-tested income top-ups to households with children) and increases in New Zealand Superannuation (NZS, the first-pillar pension scheme) benefits in 2008 and 2010; most NZS beneficiaries' incomes are either at the top of the first decile (they have no other disposable income) or at the bottom of the second decile (they have a small amount of other disposable income). Disposable income inequality increased from near and below the EU and OECD averages, respectively, to above them and converged towards the average in other English-speaking countries but remained below it (Figure 4; Figure 5).

Figure 3. Real labour compensation and productivity

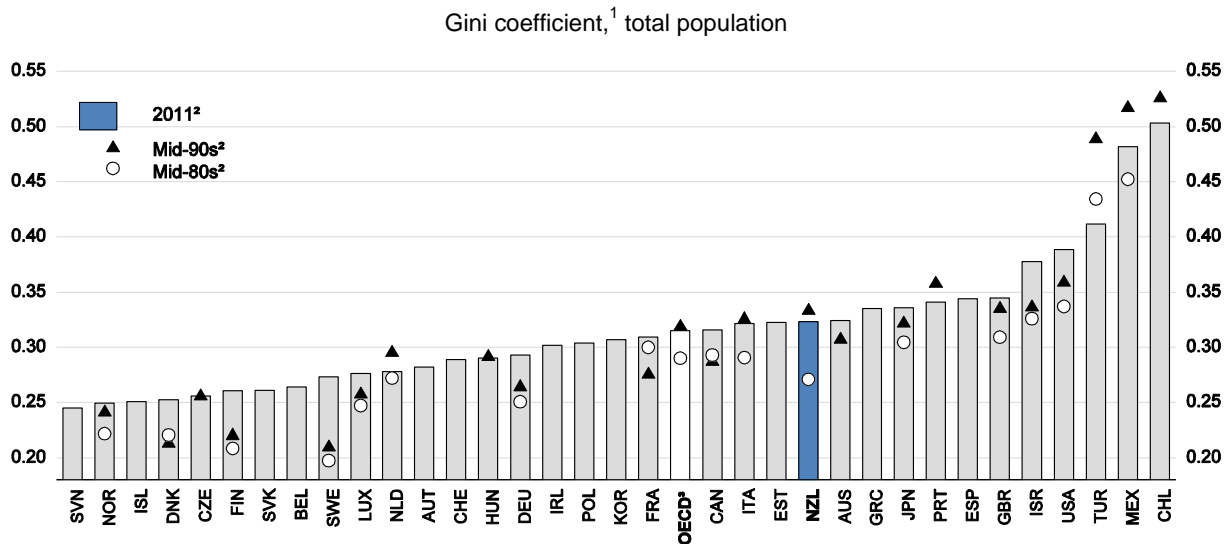


1. Defined as real GDP per person employed.
2. Deflated by the private consumption deflator.
3. Deflated by the GDP deflator.
4. EU countries include Denmark, Finland, France, Germany, Italy, Luxembourg, the Netherlands, Sweden and the United Kingdom. Country averages are population weighted.

Source: OECD, Economic Outlook and Productivity databases.

Redistribution through taxes and transfers has declined, reflecting the aforementioned reforms, which have reduced the progressivity of the tax system and benefit replacement rates, contributing to the increase in disposable income inequality (Figure 6). Overall, the decline in income inequality (measured by the Gini coefficient for the population aged 18-64) due to direct taxes and cash transfers fell from 27% in the mid-1980s, above the OECD average, to 21% in 2011, which was below it.

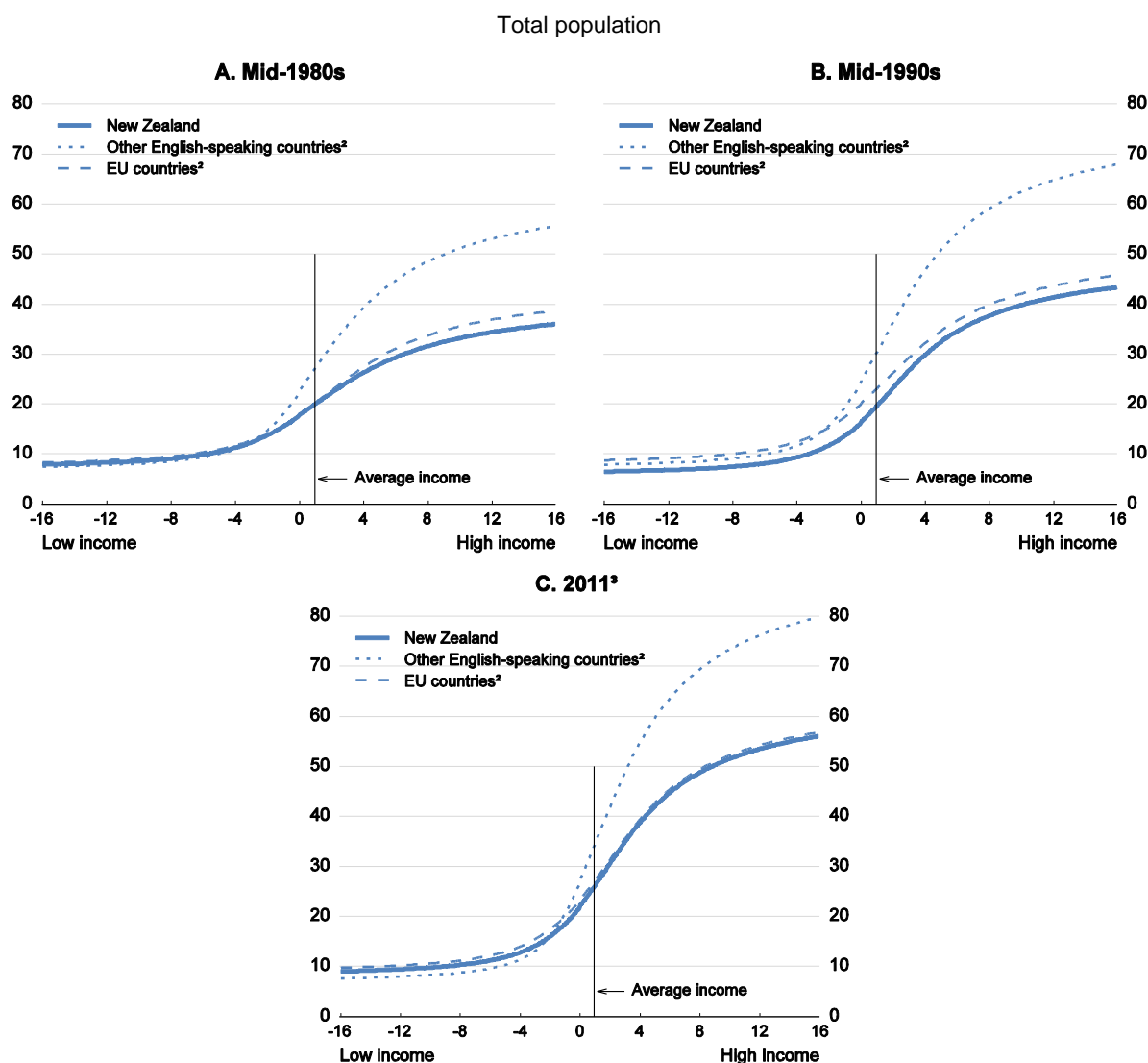
Figure 4. Inequality in household disposable income



1. The Gini coefficient is a measure of income inequality that ranges from 0 (where all households have the same income, i.e. complete equality) to 1 (where one household has all the income).
2. Mid-80s corresponds to the interval 1983-87, mid-90s to 1993-96 and 2011 refers to the latest available year.
3. Unweighted average of countries available for each period.

Source: Calculations from the OECD Income Distribution database, via [www.oecd.org/social/income-distribution-database.htm](http://www.oecd.org/social/income-distribution-database.htm).

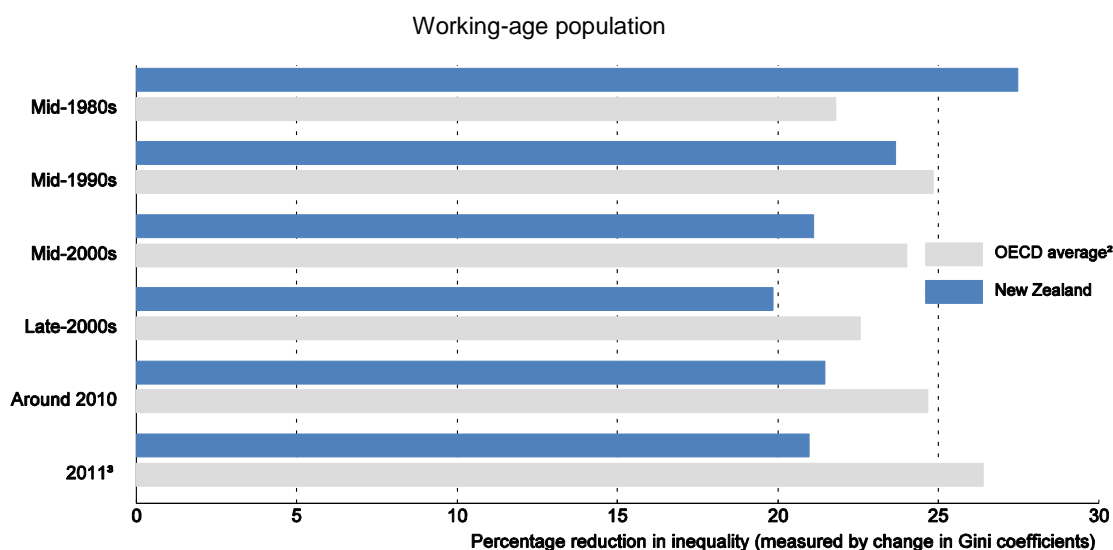
Poverty rates after housing costs (AHC) also increased in the decade to the mid-1990s, especially for children, and have been broadly stable since then in relative terms (i.e. where the poverty line is expressed as a percentage of median income) and declined somewhat in “anchored” terms (i.e. where the poverty line is expressed as a percentage of real median income in a reference year) (Figure 7, Panel A). Based on relative measures, the poverty rate doubled from the mid-1980s to the mid-1990s and has remained more or less stable since then at 18-20% for the 60% of median income AHC measure and 13-14% for the 50% of median income AHC measure. Based on the 60% of anchored 1998 median AHC real income measure, the poverty rate more than doubled from 8% in the decade to the mid-1990s before declining to 13% in 2007. Using 2007 as the reference year, the corresponding anchored poverty rate has continued to decline, from 18% in 2007 (the median real income was higher in 2007 than in 1998) to 16% in 2013. For children, poverty rates soared in the decade to the mid-1990s but have since declined on the anchored measures or remained broadly stable on the relative measures (Figure 7, Panel B). In 2012-13, 22% of children lived in households with real incomes AHC below 60% of 2007 median real household income, much the same proportion as in 2007. Half of poor children live in private rental housing, with a further 19% living in social housing (2013 Census).

Figure 5. Household disposable income<sup>1</sup> across the distribution

1. Equivalised household incomes (i.e. adjusted for household size - total household income is divided by the square root of household size) across the distribution are measured by the full range of bottom to top income standards, as determined by the Atkinson inequality aversion parameter  $\alpha$  (a low value corresponding to high inequality aversion). A low value corresponds to low income, zero to median income and a high value to high income. Data are for deciles and expressed in USD 1000, at constant prices and constant 2010 purchasing power parities for households' consumption.
2. EU countries include Denmark, Finland, France, Germany, Italy, Luxembourg, the Netherlands, Sweden and the United Kingdom. Other English-speaking countries include Canada, the United Kingdom and the United States, but exclude Australia owing to data unavailability in the mid-1980s and Ireland due to a break in the series. Country averages are population weighted.
3. 2011 or nearest available year.

Source: Calculations from the OECD Income Distribution database, via [www.oecd.org/social/income-distribution-database.htm](http://www.oecd.org/social/income-distribution-database.htm).

**How to read this figure:** Each curve represents income levels at different points of the income distribution. For example, income levels in New Zealand are very similar to the EU average in 2011 (Panel C) except for low incomes, which are slightly lower.. Hence, the slightly higher degree of income inequality in New Zealand than in the EU reflects lower low incomes in New Zealand. Compared with other English-speaking countries, low incomes are higher in New Zealand and high incomes are much lower - lower income inequality in New Zealand mainly reflects lower top incomes. The steeper the slope of the curve, the greater the degree of income inequality.

Figure 6. Reduction of market income inequality through taxes and transfers<sup>1</sup>

1. Difference between market- and disposable-income Gini coefficients, as a percentage of the market-income Gini coefficient.
2. Unweighted average of countries available for each period.
3. Or latest year available.

Source: Calculations from the OECD Income Distribution database, via [www.oecd.org/social/income-distribution-database.htm](http://www.oecd.org/social/income-distribution-database.htm).

The two main factors that underlay the rise in AHC poverty rates in the early 1990s for the population aged less than 65 years and children were the 1991 cuts in welfare benefits by up to 20% with future increases indexed to the CPI instead of earnings, and the ending of income-related rents for social housing<sup>2</sup>, which contributed to a large increase in housing costs for low-income households (Figure 8). Income-related rents were reinstated for social housing in 2000, contributing to the large reduction in housing costs for low-income households and in child poverty rates in the early 2000s. Poverty rates for beneficiary households (whose main source of income is an income-tested benefit) below age 65 without children and with children are currently around 72% and 80%, respectively. The corresponding rates for households with market income as the main source are 10% and 12%, respectively. These rates have increased less markedly, not least because such low incomes have been topped up in recent years to a greater extent through the WFF programme.

The rising burden of housing costs on low-income households has contributed significantly to the increase in AHC poverty rates since the late 1980s (Figure 8). The proportion of low-income households (with incomes in the first- (Q1) and second-quintiles (Q2)) with high accommodation outgoings-to-income (OTI) ratios (more than 30%) has increased from 13%-16% in the late 1980s to 36%-42% in 2013; and these figures understate the plight of working-age, low-income families, as many older households, who tend to be mortgage-free owner occupiers, are included. The increase in housing costs cancelled out gains in before-housing cost (BHC) incomes for low-income households, leaving AHC incomes for bottom decile households lower in real terms in 2013 than in the 1980s, and much the same for those in the second decile (Perry, 2014). Concomitantly, BHC poverty rates increased by less than AHC rates. For example, the BHC poverty rate (based on 50% of median income poverty line) increased from 6% in the mid-1980s to 10% in 2011 (OECD Income Distribution Database). This increase was greater than the average for the OECD, taking New Zealand's rate up almost to the OECD average.

Figure 7. Poverty rates

Percentage below selected thresholds after housing costs<sup>1</sup>

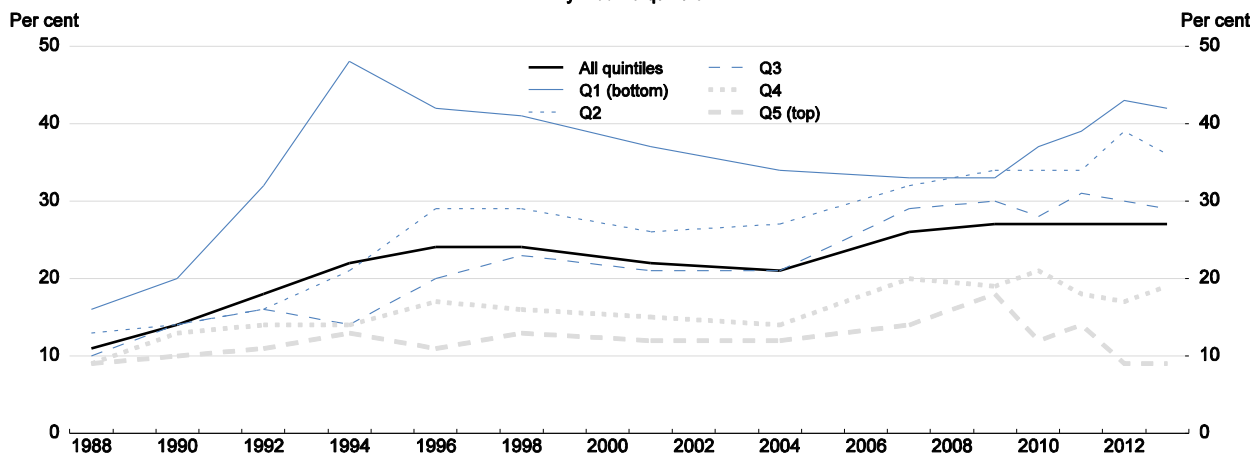
1. After housing costs (AHC) thresholds are calculated by deducting 25% from the corresponding before housing costs (BHC) threshold as an allowance for housing costs. Each household's AHC is then assessed against the chosen threshold.
2. Constant value (CV) or 'anchored' thresholds are based on the BHC median in a reference year, currently 2007.
3. The moving line or relative<sup>3</sup> approach sets the poverty line as a proportion of the median income from each survey, so that the threshold changes in step with the incomes of those in the middle of the income distribution.

Source: B. Perry (2014), *Household Incomes in New Zealand: Trends in Indicators of Inequality and Hardship 1982 to 2013*, Ministry of Social Development, Wellington, July, Tables F.4 and F.7.

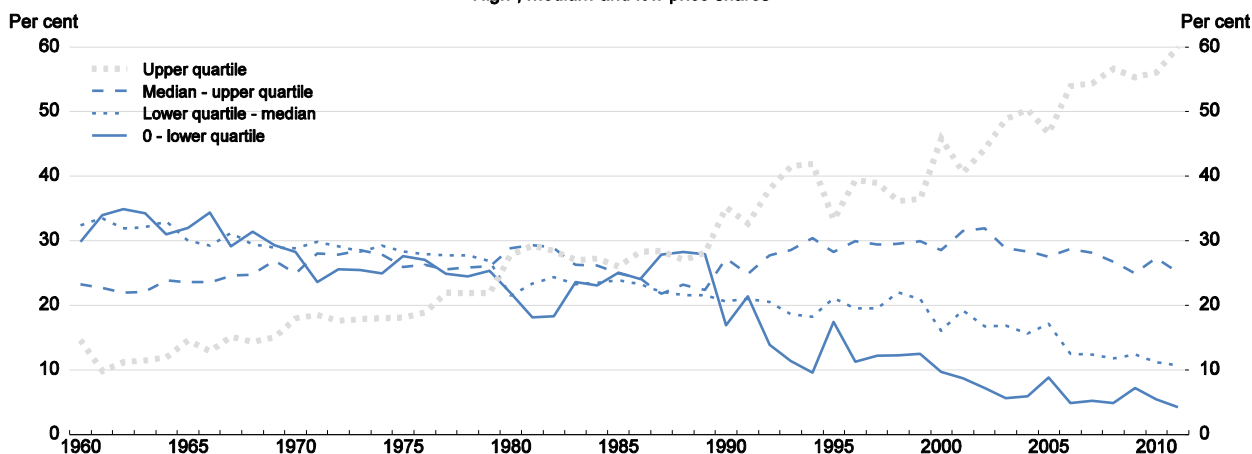


Figure 8. Housing costs and price distribution of new housing investment

**A. Proportion of households with housing-cost-to-income ratios greater than 30%**  
By income quintile



**B. New housing investment**  
High-, medium- and low-price shares<sup>1</sup>



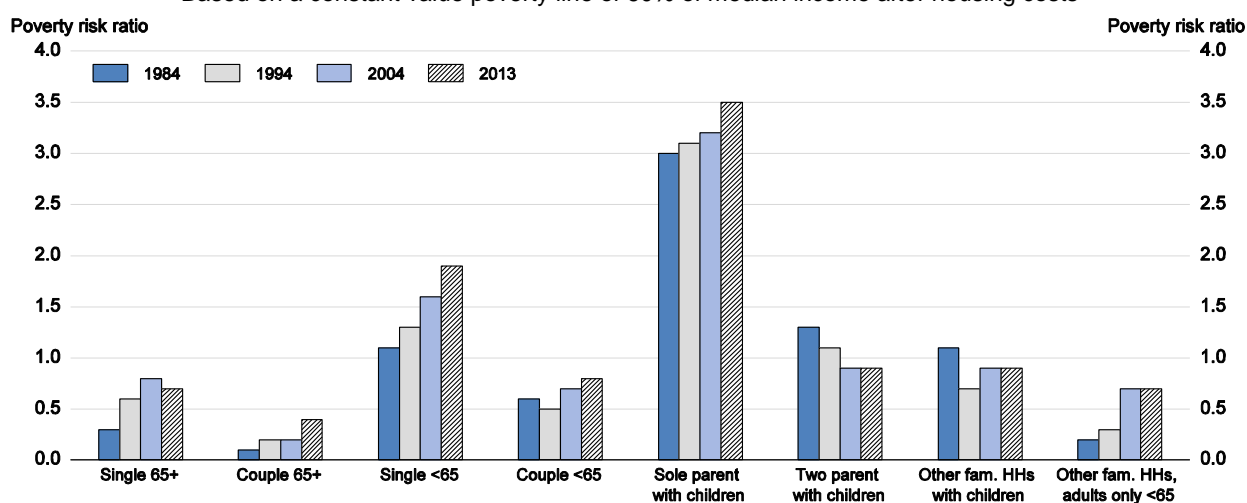
1. The construction data only include life-style, stand-alone and attached residential dwellings - apartments, which do not have individual entrances from the exterior and are typically in high-rise buildings, are excluded. For each year, the data show the share of new houses that are valued within each quartile of the value distribution for the existing housing stock.

Source: B. Perry (2014), *Household Incomes in New Zealand: Trends in Indicators of Inequality and Hardship 1982 to 2013*, Ministry of Social Development, Wellington, July, Table C.3 for Panel A; Productivity Commission calculation using Corelogic data for Panel B.

Sole-parent households have a high relative risk of poverty (Figure 9). The poverty risk ratio (PRR) for sole parents, which is the ratio of their poverty rate to that for the whole population, increased from 2.8 in 1984 to 3.7 in 2013. The other household type with a high and rising PRR is working-age adults living alone, for whom the rate increased from 1.2 in 1984 to 1.7 in 2013 (this group's poverty rate in 2013 was 29%). PRRs are also high (around 1.5) for Māori (poverty rate 24%), Pasifika (poverty rate 23%) and other non-European ethnicities (poverty rate 24%). Child poverty rates for these ethnicities are also around double the rates for the European ethnic group. At the other end of the spectrum, the PRR for the elderly is very low. This is attributable to the relatively generous level of NZS compared with social benefits and the high rate of mortgage-free home ownership for this group.

Figure 9. Poverty risk ratios by household type<sup>1</sup>

Based on a constant value poverty line of 60% of median income after housing costs



1. The poverty risk ratio is the ratio of the poverty rate for a particular group divided by the poverty rate of the whole population.

Source: B. Perry (2014), *Household Incomes in New Zealand: Trends in Indicators of Inequality and Hardship 1982 to 2013*, Ministry of Social Development, Wellington, July, Table G.8.

Chronic poverty rates, based on longitudinal studies of people's average incomes over a number of years in relation to the average poverty line over these years, may give a better guide to hardship than currently low income, as some people with currently low incomes may still be able to buy the necessities of life by drawing on savings. The chronic poverty rate is around 70% of the current poverty rate for the population as a whole and a little higher (around 80%) for children and Māori (Perry, 2014). On this basis, the latest chronic AHC poverty rates are around 11% for the whole population, 18% for children and 19% for Māori.

Non-income measures of hardship (NIM) show that there is a reasonable similarity between actual proportions of populations identified as 'income poor' or 'in hardship' (Table 1). Based on the Ministry of Social Development's Economic Living Standards Index (ELSI) (Box 1), 13% of the population was in hardship in 2012, the same as the proportion in income poverty based on the AHC relative 50% of median income measure. The same populations are identified as experiencing relatively high hardship rates as for income poverty measures, notably welfare beneficiaries, sole-adult households, households with three or more children, sole-parent families and Māori/Pasifika families. In many cases, a household falls into more than one of these categories. Using the official 2008 NIM-based EU deprivation index, New Zealand's hardship scores rank in the middle of EU countries and are relatively high for children and low for the elderly (Table 2).

#### Box 1. The Ministry of Social Development's principal non-income measure of hardship

The Ministry of Social Development's Economic Living Standards Index (ELSI) ranks the population from an *enforced lack perspective*, in which respondents do not have essentials because of cost or have to cut back severely on essentials because the money is needed for other essentials, and a *freedoms enjoyed perspective*, based on the degree of restriction/freedom for having or purchasing desirable non-essentials (while having the essentials). Households are considered to be in hardship if they report six or more deprivations out of 16.

Those in hardship using the ELSI measure have on average eight deprivations out of 16, compared with one out of 16 for those in the middle of the income distribution. The level at which the hardship threshold is set is therefore consistent with the relative disadvantage notion in which the poor and those in hardship have "resources that are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities" (Townsend, 1979). The ELSI measure of hardship identifies living standards below a minimum acceptable standard for New Zealand today, in line with the definition used in the European Union.

Table 1. **Comparison of hardship rates based on income and non-income measures**  
By selected individual and household/family characteristics (2012 HES),<sup>1</sup> per cent

	Income poverty		Material hardship	
	AHC REL 50 <sup>2</sup>	ELSI <sup>3</sup>	FRILS <sup>4</sup>	MWI <sup>5</sup>
<b>Total population</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>12</b>
<b>Age group</b>				
0-17	20	21	19	19
18-24	17	14	14	15
25-44	14	12	12	13
45-64	9	10	9	9
65+	7	6	8	3
<b>Ethnicity (average over HES 2010, 2011 and 2012)<sup>6</sup></b>				
European	11	10	11	-
Māori/Pacific	23	28	31	-
<b>Family type</b>				
SP	44	39	34	36
2P	12	14	14	13
<b>Number of children (average over HES 2010, 2011 and 2012)<sup>5</sup></b>				
One	19	16	15	-
Two	17	15	15	-
Three+	27	28	25	-
<b>Main sources of income for families/households &lt;65</b>				
Market	9	10	11	10
Government	64	43	42	42

1. Household Economic Survey.
2. After housing costs relative poverty rate based on disposable income less than 50% of the median.
3. Economic Living Standards Index. See Box 1.
4. Fixed Reference Index of Living Standards. This is an experimental alternative to ELSI that uses most of the ELSI items but takes much less account of what respondents want to have or do. FRILS does not use the general self-rating items that play a large part in ELSI.
5. Material Wellbeing Index. This is a revised and updated version of ELSI.
6. Figures for ethnicity and number of children are averages over these surveys to improve the reliability of the estimates, as some of the sub-divisions have relatively small samples.

Source: B. Perry (2014), *Household incomes in New Zealand: Trends in indicators of inequality and hardship 1982-2013*.

Table 2. **Material hardship rates in New Zealand (2008) and the EU (2007)**  
Countries are ranked by total population deprivation rates, per cent

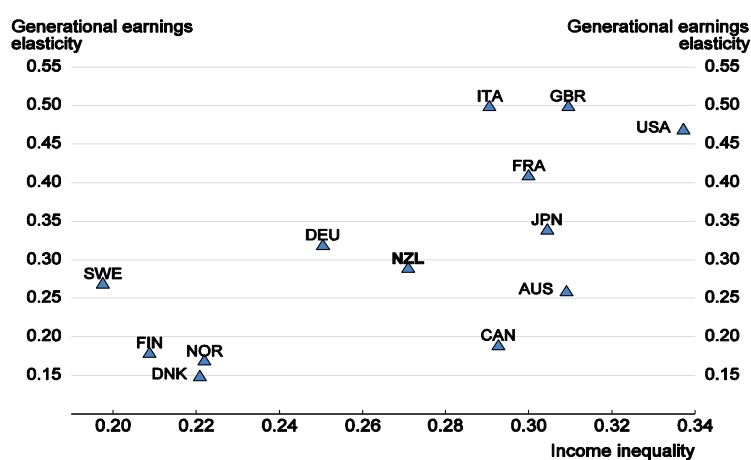
	All	0-17 years	65+ years
Poland	44	39	41
Hungary	38	42	35
Slovakia	36	32	42
Greece	23	20	29
Portugal	20	24	26
Italy	14	18	14
Germany	13	13	7
<b>New Zealand</b>	<b>13</b>	<b>16</b>	<b>3</b>
France	11	15	8
United Kingdom	10	15	5
Finland	10	10	8
Denmark	8	8	4
Netherlands	6	6	3
Norway	5	6	1

Source: B. Perry (2014), *Household incomes in New Zealand: Trends in indicators of inequality and hardship 1982-2013*.

### *Intergenerational income mobility is middle ranking but likely to decline*

An important measure of equality of opportunity is intergenerational income mobility: the elasticity of children's adult earnings with respect to their parents' earnings – the higher the elasticity, the less the intergenerational mobility. The intergenerational earnings elasticity between fathers and their adult sons in New Zealand is around the middle of the range for a group of OECD countries with comparable data (Figure 10). In order to draw an inference about equality of opportunity from the degree of intergenerational earnings mobility, it is necessary to distinguish between differences in circumstances and in personal choices (Corak, 2013). This has been done empirically by constructing indices of equality of opportunity that remove the influence of factors over which individuals have no control, such as race, parental education, region of birth and parental occupation. Such indices are highly correlated with indicators of intergenerational earnings or educational mobility (Brunori et al., 2013).

Figure 10. **Inequality and intergenerational income mobility<sup>1</sup>**



1. Income inequality is measured by the Gini coefficient for household disposable income in the mid-80s (mid-90s for Australia). Intergenerational economic mobility is measured by the elasticity between paternal earnings and a son's adult earnings, using data on a cohort of children born, roughly speaking, during the early- to mid-1960s and measuring their adult outcomes in the mid- to late-1990s. See Corak (2006) for more details.

Source: OECD, *Income Distribution database*; M. Corak (2013), "Inequality from Generation to Generation: the United States in Comparison", Chap. 6 in *The Economics of Inequality, Poverty and Discrimination in the 21st Century*, edited by R. Rycroft, Santa Barbara, CA; M. Corak (2006), "Do Poor Children Become Poor Adults? Lessons for Public Policy from a Cross-Country Comparison of Generational Earnings Mobility", *Research on Economic Inequality*, Vol. 13, pp. 143-188.

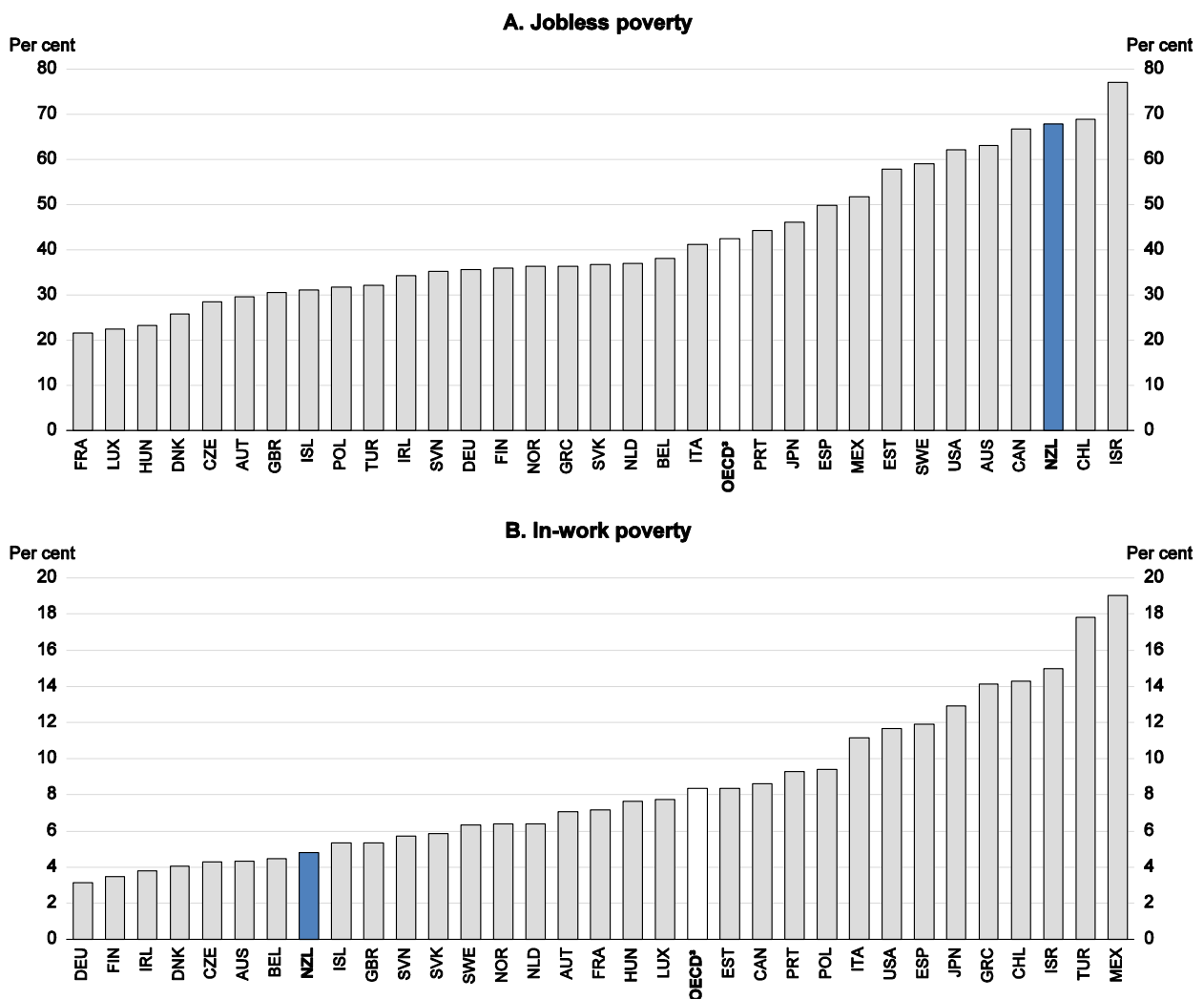
The intergenerational earnings elasticity is positively correlated with disposable income inequality a generation earlier, when children were growing up (Figure 10). This probably reflects the fact that opportunities for economic advancement, in particular those of investing in higher education, are more unequally distributed among children when income inequality is higher (Brunori et al., 2013; Cingano, 2014). Given that disposable income inequality has increased in New Zealand since the mid-1980s, countervailing measures such as those discussed below will be needed if intergenerational earnings mobility, which is assessed here when the next generation is 30-40 years old, is not to decline.

### *Welfare reform to facilitate the transition to work and thereby reduce poverty*

In view of the much higher poverty and hardship rates for entirely jobless households than for those with someone in work (Figure 11; Table 1), the government has reformed the welfare system to facilitate the transition from benefit dependence to work, thereby reducing poverty. The main pillars of the reform, launched in 2013 to "better recognise and support people's work potential", are:

- the creation of three new benefit categories – Jobseeker Support, Sole Parent Support and Supported Living Payment – to replace most of the previous benefit types, increasing work obligations for many beneficiaries and their partners;
- the imposition of new obligations for continued benefit receipt, which are aimed at improving beneficiaries’ ability to get a job and enhance the well-being of their families (notably by making sure that children get health checks and education); and
- the establishment of an “investment approach” to setting priorities for service delivery and activation expenditures by Work and Income (W&I), the public agency responsible for assistance with job search and benefit administration.

Figure 11. Jobless and in-work poverty rates,<sup>1 2</sup>



1. Poverty rates correspond to the percentage of individuals living in households whose disposable income falls under half the median value of disposable income in their country. Poverty rates are calculated for all persons living in a household with a working-age head and at least one worker (in-work poverty rate), and for all persons living in a household with a working-age head and no workers (poverty rate among jobless households) or nearest year available.
2. OECD unweighted average.

Source: Calculations from the OECD Income Distribution database, via [www.oecd.org/social/income-distribution-database.htm](http://www.oecd.org/social/income-distribution-database.htm).

The centrepiece of the reform is the investment approach, which sees supporting beneficiaries into work as important for lifting their long-term outcomes and for reducing long-term fiscal pressures.<sup>3</sup> It supports the enhanced work requirements by increasing the efficiency with which scarce activation resources are used. To this end, it uses an actuarial valuation (based on historical patterns of benefit receipt) as an accountability tool for W&I. The valuation highlights cohorts of beneficiary clients at risk of long-term benefit dependency and is used to help set priorities for W&I case management and other employment interventions and to measure performance over time. W&I is required to prioritise its employment interventions to where they are most likely to reduce long-term benefit dependency and welfare costs, with agency performance measured annually by the valuation. The focus has been on young people (aged 16-17 years and not supported by anyone) and sole parents, both of whom have high risks of long-term benefit dependency, as compared to Jobseeker Support clients who are work ready and have only recently entered the benefit system (Table 3).

Table 3. **Welfare beneficiary numbers and forward liabilities**

Segment	Number			Aggregate liability			Liability per client		
	June 2012	June 2013	Per cent Change	NZD million		Per cent Change	NZD		Per cent Change
				June 2012	June 2013		June 2012	June 2013	
People receiving a main benefit									
Jobseekers	164 169	155 836	-5.1	20 525	18 104	-11.8	125 024	116 173	-7.1
Sole Parents	89 538	84 897	-5.2	20 950	18 004	-14.1	233 979	212 069	-9.4
Supported Living	101 379	101 444	0.1	17 927	17 155	-4.3	176 831	169 108	-4.4
Youth	2 949	2 857	-3.1	705	554	-21.4	239 064	193 910	-18.9
<b>Total on a main benefit</b>	<b>358 035</b>	<b>345 034</b>	<b>-3.6</b>	<b>60 107</b>	<b>53 817</b>	<b>-10.5</b>	<b>167 880</b>	<b>155 976</b>	<b>-7.1</b>
People not receiving a main benefit									
Supplementary benefits only <sup>1</sup>	105 638	102 742	-2.7	6 672	5 891	-11.7	63 159	57 338	-9.2
Recent exits <sup>2</sup>	163 809	154 704	-5.6	10 115	8 762	-13.4	61 749	56 637	-8.3
Future expenses				7 955	7 698	-3.2			
Net loan cost				420	372	-11.4			
<b>Total not receiving a benefit</b>	<b>269 447</b>	<b>257 446</b>	<b>-4.5</b>	<b>25 162</b>	<b>22 723</b>	<b>-9.7</b>			
<b>Total</b>	<b>627 482</b>	<b>602 480</b>	<b>-4.0</b>	<b>85 269</b>	<b>76 540</b>	<b>-10.2</b>			

1. People only receiving supplementary payments such as Accommodation Support.

2. People who received a main benefit payment within the past 12 months. Excludes those incorrectly included in current clients for the 2012 valuation.

Source: Ministry of Social Development (2014), *Work and Income, 2013 Benefit System Performance Report for the year ended 30 June 2013*.

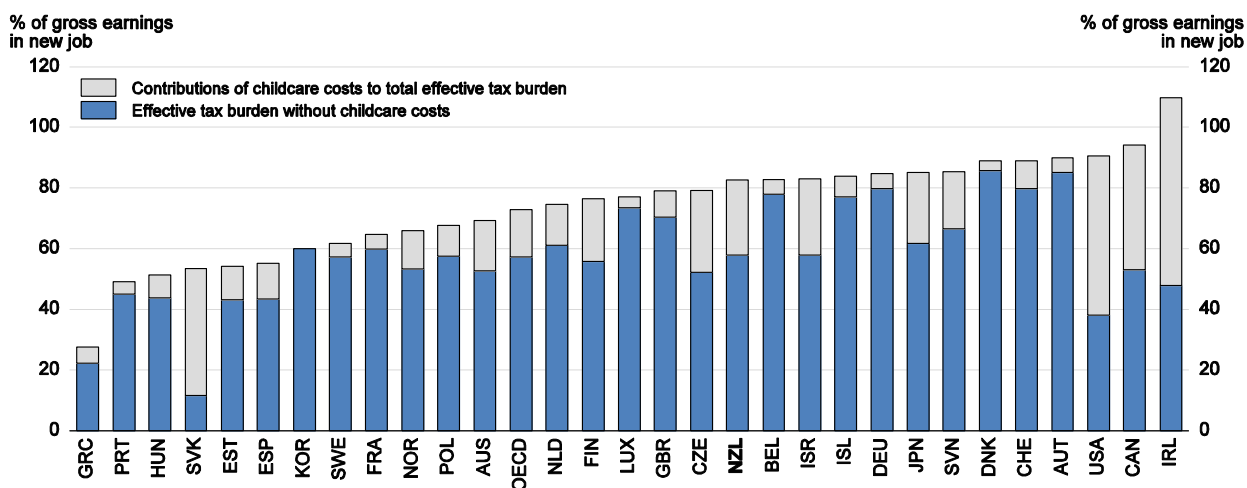
This approach yielded considerable expected future budget savings in its first full year of operation (ending June 2013), with more than half of the 10% fall in the net present value of future liabilities in areas that W&I can influence. The largest contribution to this reduction came from Sole Parents, for whom the probability of exiting benefit receipt rose and the upward trend in average benefit levels ended owing to higher rates of part-time work. There was also a large contribution from Jobseekers, which has been one of the other main categories targeted by welfare reforms and where case management efforts have had the most impact; in this case, the high rate of return on investment comes from lower costs of successful activation, rather than from a particularly high present value of forward liabilities. For both beneficiary categories, there has been a lower rate of returning for recent exits, implying slightly better sustainability in off-benefit outcomes MSD (2014). Nevertheless, MSD (2014) notes that a large proportion of new beneficiaries each year are people who have recently been on benefit, with 44% having been off benefit for less than 12 months and a further 19% for between 12 and 24 months. For these people, “pre-work and in-work training along with post-placement support is likely to be needed to achieve sustainable work

outcomes” MSD( 2014). More generally, welfare reform would be more effective in reducing poverty if the investment approach were complemented by a greater focus on improving outcomes for people going off benefit. W&I is working on using longitudinal data to inform decisions about priorities to this end.

The investment approach may have contributed to an increase in sole-parent employment rates. The proportion of sole parents with dependent children employed increased by 10.3 percentage points during the three years ending in 2014, considerably more than the 2.4 percentage point increase in the previous three-year period (to the September quarter of 2007) with a similar economy-wide employment growth rate. However, whereas there was a large increase (12 percentage points) in the proportion of such households in full-time employment in the earlier period, this share actually fell in the most recent period, with the result that there was a smaller rise in hours worked. This reflects the impact of policy settings which create strong incentives for sole parents, and others on low incomes, to work 20 hours a week but little or none to work more. The introduction of WFF has mitigated the impact of benefit abatement for working 20 hours per week since it became fully operational in 2007. However, people on low incomes face very high marginal effective tax rates from working more than 20 hours. This is reinforced by higher subsidies for the first 20 hours per week of early childhood care for three and four-year old children. As a result, a sole parent taking up full-time, low-wage employment faces an average effective tax rate of over 80%, a third of which reflects childcare costs (Figure 12). This impact is despite the availability of income-tested subsidies, in addition to the 20 hours subsidies, for low-income families (which cover almost 70% of the cost of childcare for those on the lowest incomes). These costs are higher than the OECD average, accounting for New Zealand’s higher overall effective tax rate. There is a need to review policy settings to strengthen the incentives for those on low incomes to work more than 20 hours a week, which would include a review of benefit and WFF abatement rates, as well as reducing childcare costs.

Figure 12. Effective tax rate for a sole parent moving to low-paid full-time work

Moving into full-time employment with earnings of 67% of average earnings, including childcare costs,<sup>1</sup> 2012



1. Effect of childcare costs for a sole parent with two children, aged two and three.

Source: OECD, Tax-Benefit Models database, [www.oecd.org/els/social/workincentives](http://www.oecd.org/els/social/workincentives).

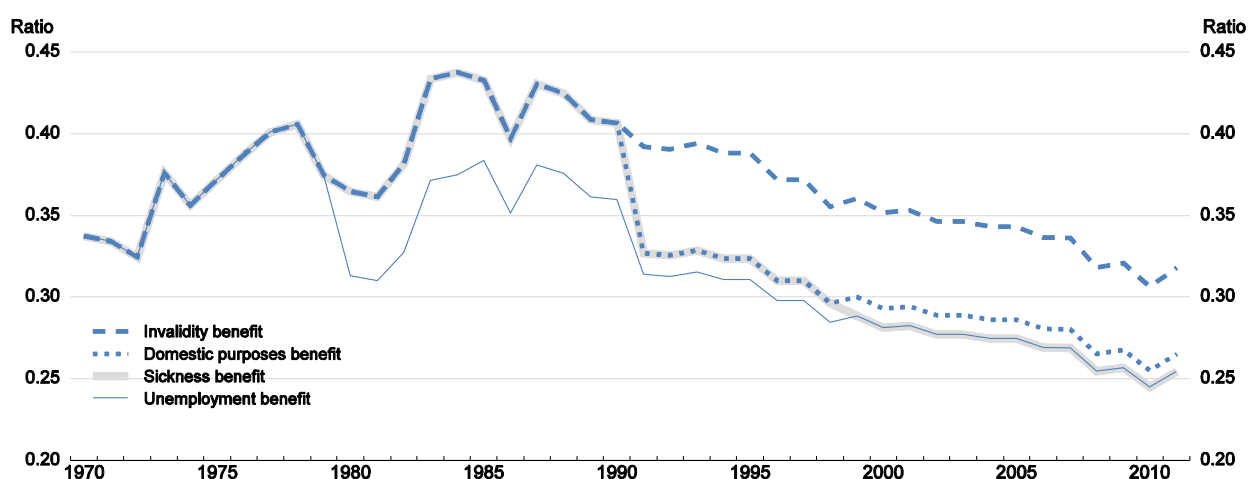
Based on experience across OECD countries, lower childcare costs in relation to full-time earnings are associated with lower poverty rates for sole-parent households; higher lone-parent benefits in relation to average wages, as in New Zealand, also reduce poverty rates for such households, but there is no significant relationship between employment rates and poverty rates.<sup>4</sup> W&I has also identified non-flexible childcare hours as a barrier to work and is experimenting with flexible hours for sole parents.



### *Increasing welfare benefits and investments in job-search support and activation programmes*

Poverty rates could also be reduced by increasing social benefits, whose low average level partly explains the high poverty rate for jobless households relative to in-work households (Figure 11). To strengthen work incentives and make budget savings, the main benefits were cut in 1991 and indexed to the CPI, resulting in steady declines relative to average wages (Figure 13). Most beneficiaries also receive a number of supplementary benefits targeted at vulnerable families, such as special needs grants, temporary assistance support or government-provided in-kind services for education and health, which have increased since 1991. However, increases in supplementary benefits have been largely targeted on low-income working families primarily through WFF. In view of the high child-poverty rate in beneficiary households (80%, based on a 60%-of-median-income AHC poverty line), priority should be given to increasing income by raising benefits and/or supplementary benefits for dependent children. This would help to reduce the high relative poverty risk for sole-parent households, more than half of whom rely on social benefits for their primary source of income, and complement measures in other fields aimed at strengthening equality of opportunity (Figure 9). Increasing main benefits and indexing them to median wages would reduce poverty across all beneficiary classes, including single-person households (below age 65), who have the second-highest relative risk of poverty.

Figure 13. Ratio of main benefit payments to net average wage<sup>1</sup>



1. As most beneficiaries also receive supplementary benefits, such as the Accommodation Supplement and family tax credits, their total income is likely to be higher than shown in this figure. However, increases in family tax credits have been targeted mainly to low income working households rather than beneficiaries.

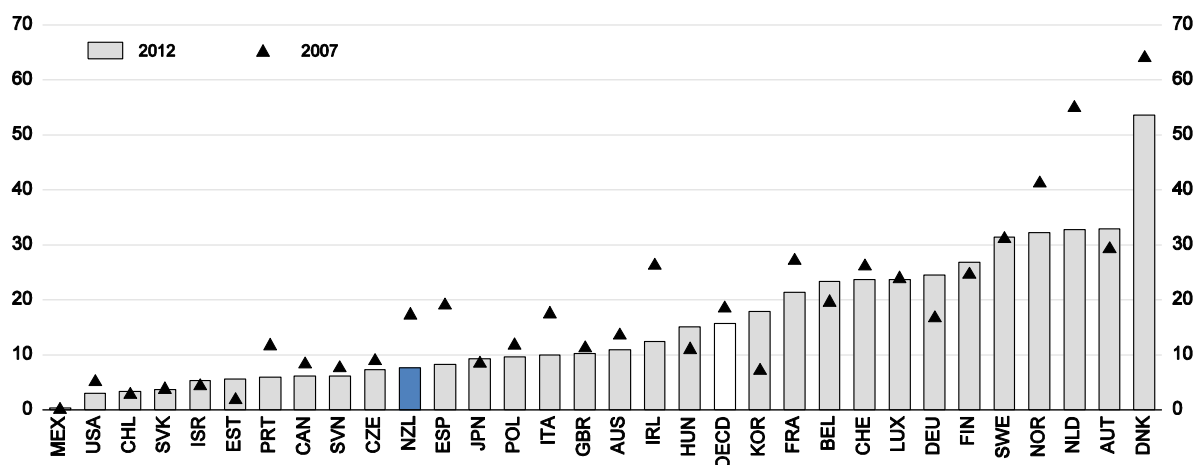
Source: New Zealand Treasury (2013), *Working-Age (Non-NZS) Welfare – Draft Paper for the Long-Term Fiscal External Panel*, January, Figure 4.

The downside of higher benefits is that they weaken work incentives and hence offset efforts that have been made to break intergenerational welfare dependence. To counter this effect, the government should step up job-search support and activation programmes for beneficiaries for whom work is a feasible option, spending on which is low by international comparison and falling (Figure 14). Increasing resources for job-search and activation programmes is one of the few structural reforms identified in a recent OECD study (Causa et al., 2014) that both boosts economic growth and reduces income inequality and where New Zealand has significant room for improvement.



Figure 14. **Public expenditure on active labour market policies per unemployed<sup>1</sup>**

As a percentage of GDP per capita



1. The latest available year is 2011 for Australia, Ireland, Israel, Luxembourg, Poland and Spain; and 2009 for the United Kingdom. The OECD average excludes Greece, Iceland and Turkey. For 2007, data refer to 2008 for Chile.

Source: OECD, Public Expenditure and Participant Stocks on Labour Market Participants and Economic Outlook databases.

### ***Lowering the burden of high housing costs on low-income households***

Reforms that reduce housing costs for low-income households have considerable potential to improve their well-being. Poor housing affordability for low-income households has been aggravated by the shift in new housing supply from affordable to high-end housing (Figure 8, Panel B). This may be linked to rising land prices, which is one of the barriers that make building affordable housing uneconomic (New Zealand Productivity Commission, 2012). In this case, increasing the supply of building sites in Auckland, where housing costs are highest and one third of the population lives, would allow a greater supply response, making it more likely that developers build more affordable housing. An increase in the supply of such housing would reduce its price, benefiting low-income households.

The government and Auckland Council are also working to increase the supply of housing through Special Housing Areas (SHAs), which also include some social-housing estates to be redeveloped. In SHAs, the Auckland Council's proposed land-use regulations are already applicable, and there is an expedited consenting process, enabling more housing to be developed quickly. There is also a requirement that a proportion of each development meets defined affordability criteria.

Social housing plays a vital role in alleviating poverty. It is more effective than Accommodation Supplement, the other main subsidy to reduce low-income households' housing costs, reflecting the much higher subsidy rates for social housing. In New Zealand, social housing rents are set at 25% of household income up to rents deemed to be at the market rate. The downside of income-related rents, however, is that they reduce incentives to take up employment; this effect is stronger than for Accommodation Supplement, which has a lower abatement rate and half of beneficiaries already at the benefit ceiling. Jobseeker Support recipients who are social housing tenants are less likely to take up employment (only 9% did so over a recent six-month period) than non-social housing tenants (22%). Further analysis of this difference is required to determine the extent to which it is attributable to income-related rents as opposed to other factors, such as social-housing tenants typically having greater barriers to employment and/or less valuable skills than private-sector tenants. Insofar as income-related rents are discouraging transitions into employment, case management of social-housing tenants should be reinforced.

The government is committed to strengthening the contribution of social housing to improving well-being and reducing poverty. Housing New Zealand, the central-government agency that operates most

social housing, is adjusting its housing stock to bring it more into line with demographic and geographic demand. Existing tenancies are being reviewed for social-housing tenants paying market-related rents for more than one year and with weekly incomes greater than NZD 500, building on the 2011 reform that made only three-year reviewable tenancies for new social-housing tenants. The review of tenancies is aimed at moving people paying market-related rents out of social housing to make room for people with greater needs.

The government also has launched a Social Housing Reform Programme. It will transfer part of the Crown's social housing stock on a competitive basis to be operated by community providers in order to provide better service to tenants and improve the effectiveness of related public expenditure. The government believes that such providers will be more client-focussed and innovative than HNZ. To improve these reforms, it will be important to closely monitor their implementation and to assess their results in terms of: housing and social outcomes for tenants who move out of social housing; efficiency in improving outcomes for social housing tenants; and adequacy of protections to prevent private operators from taking excessive financial risks, as occurred in the Netherlands (Box 2), which could result in additional fiscal costs.

#### Box 2. Commercialisation of the social housing sector in the Netherlands\*

The Dutch social-housing system provides rent subsidies to those living in regulated-rent dwellings, i.e. dwellings with rents up to EUR 699 per month in 2014, which comprise around one third of the total housing stock (Rijksoverheid, 2014). Subsidised housing is targeted at about 43% of the population. Independent Housing Associations (IHAs) provide 90% of new such rentals.

A series of reforms were initiated in the early 1990s that entailed a shift in the policy focus towards stimulating private homeownership and replacing subsidies to social housing providers with demand-side subsidies (housing allowances for social-housing tenants) (Boelhouwers and van der Heyden, 1995). At the same time the housing associations that operate social housing became independent organisations that – conditional on prior approval by public authorities – could take on private commercial activities, thereby enabling them to raise private capital to complement public funding.

Commercialisation of IHAs expanded their remit and ambition, increasing their risk exposure, and is to a large extent responsible for the recent decline in their fortunes. Since the early 2000s IHAs' operating costs have increased annually by 6-7% (de Jong, 2013), and IHAs' consolidated losses over the 2007-12 period amounted to EUR 1.2 billion (Algemene Rekenkamer, 2014). These losses were partly attributable to investments in complex financial instruments and other commercial activities in which they had little expertise: almost 20% of IHAs speculated in financial derivatives and one incurred a loss that was so big (EUR 2 billion) that it had to be bailed out by public funds and other IHAs.

In response to these developments, a parliamentary inquiry was held (Tweede Kamer der Staten-Generaal, 2014). The key conclusions of the parliamentary committee highlight the simultaneous occurrence of: failing IHA managers and supervisors, operational and/or financial mismanagement and a surprisingly large number of cases of self-enrichment, at the very least pointing to a lack of moral judgement in remuneration, with excessive wage payments to senior managers; failing public supervision - the public supervisor of financial affairs (CFV) did not have a good view of the financial risks being taken by the sector, and the Ministry's operational supervision was also inadequate (Algemene Rekenkamer, 2014); and failing politicians and policymakers – there was a lack of political guidance and supervision, sometimes driven by a dogmatic belief in the self-regulatory capacity of the sector. There was also an inconsistent and changing policy environment.

A key recommendation of the parliamentary committee was for the IHAs to return to basics, including by phasing out involvement in commercial activities. The committee recommends that the central government provide the housing-sector framework and that the position of local governments and tenants be enhanced (including by limiting the size of IHAs to weaken their bargaining position). The supervisory role of the government should be strengthened with respect to the loans guaranteed by the Waarborgfonds Sociale Woningbouw and by the creation of an independent supervisory housing authority; the Ministry had already announced changes in its supervisory structure and tighter rules for engagement by IHAs in new commercial activities.

\* This is an abridged version of Box 7 in OECD (2014a).

The government has also committed to increasing the number of social-housing units funded by the income-related rent subsidy from around 62 000 currently – around 5% of the total dwelling stock, which is low compared with double-digit shares of social housing in most European countries – to 65 000 in 2017/18. This expansion is expected to be achieved through new supply, more efficient providers, better asset utilisation and configuration, and tenancy reviews. The government should increase public support so that a more significant increase in the supply and eligibility for social housing can be achieved.

Accommodation Supplement (AS) has not been very effective in relieving the burden of high housing costs on low-income households, partly because part of the subsidy is shifted forward to landlords owing to the relatively weak elasticity of housing supply discussed above, and partly because the parameters have been frozen since 2005, reducing the value of AS most in areas that have experienced the largest increases in housing costs. Almost all tenants (94%) receiving AS in 2013 spent more than 30% of their income on housing costs, three in four spent more than 40% and one in two spent more than 50% (Perry, 2014). On the other hand, there is unlikely to be a big enough increase in the availability of social housing in the foreseeable future to accommodate all low-income households currently receiving AS. In these circumstances it would make sense to increase AS and reprioritise it for the benefit of the poorest households living in high-cost areas provided that most of the benefits accrue to tenants rather than landlords. An empirical evaluation of AS is urgently required to estimate its incidence on rents.

Another problem for low-income households is that housing quality is often substandard – cold, damp and, for Māori and Pasifika, overcrowded. Low-income households often have poorly insulated houses that they cannot afford to heat. Frequently, they heat only one room into which the whole family crowds. One third of Pasifika households and one-fifth of Māori households are overcrowded, compared with just 4% of European-ethnicity households (2013 Census). These conditions contribute to high rates of infectious diseases, such as rheumatic fever, among disadvantaged groups. Hospital admission rates for infectious diseases over 2004-08 were 2.8 times higher for households in the most deprived districts (NZDep 9-10) than in the least deprived districts (NZDep 1-2), 2.4 times higher for Pasifika households than for households of European and Other ethnicity and 2.2 times higher for Māori households than for households of European and Other ethnicity (Baker et al., 2012). Moreover, these inequalities have increased since the late 1980s. To reduce the incidence of rheumatic fever, people most at risk of being infected have been given top priority for social housing since 2014.

To improve housing quality, the government is subsidising housing insulation (Warm Up New Zealand). One hundred thousand homes were insulated in the first two years of the programme (2009-11). On the basis of a detailed anonymised matching of the first 47 000 houses insulated, it was found that while there was only a small drop in metered energy use, significant gains ensued in health indicators: pharmaceutical usage, average length of hospitalisation and avoidable mortality for over-65s all fell significantly (Grimes et al., 2012). The benefit-to-cost ratio is estimated to have been 3.9:1, rising to 6:1 for children. The current programme, which will run from 2013-2016, is expected to result in around 46,000 more homes being insulated. In light of the health benefits of this scheme, the government should prolong funding so that more low-income households can benefit (the programme is now means tested), and work should be undertaken to improve take-up by landlords with low-income tenants.

Five city councils (Auckland, Tauranga, Wellington, Christchurch and Dunedin) are collaborating in a pilot project to improve information on the quality of private rental housing, which is on average the lowest-quality housing in New Zealand (the best is owner-occupied housing, with social housing lying in between) (Buckett (ed.) et al., 2011)). To this end, a University of Otago public health research team has developed a rating tool that links health and building science known as the Healthy Housing Index. It measures effects on respiratory conditions, injury hazards and energy efficiency. Rental properties are pre-tested on demand and given a pass or fail rating. In the latter case, advice is given on what needs to be

done to bring the property up to standard. If successful, such a programme should be progressively rolled out nation-wide.

Another problem with private rental housing in New Zealand is weak security of tenure. Under the typical tenancy agreement, a landlord can terminate the agreement with 42 days' written notice at any time for specific reasons or with 90 days' notice without reasons; tenants can terminate with 21 days' written notice. Average tenure for such housing is only 19 months. This is highly disruptive for children's education, as they are obliged to change schools often; 42% of low-decile (socio-economic background) primary schools had student turnover rates of 20% or more according to a 1999 New Zealand Council for Educational Research national survey, compared with only 7% for high-decile primary schools (Gilbert, 2005). As most tenancies use the government's standard Residential Tenancy Agreement, the government is in a strong position to increase the standard required notice periods. At the same time, it would be important to continue to permit the rapid expulsion of tenants who do not pay their rent or who degrade their dwellings to prevent losses from such tenants being passed on to good tenants in the form of higher rents and the exclusion of households from the rental market who cannot provide adequate payment guarantees.

### **Reducing inequalities in health outcomes**

Inequality is also manifest in health outcomes, which are generally worse for Māori, Pasifika peoples and socio-economically poorer groups (Ministry of Health, 2014). In some dimensions, such as access to immunisation, inequality is diminishing, while in others, such as mortality, rates of improvement for Māori, Pasifika and low-income individuals have not been as rapid as for others. The causes of these differential outcomes are complex but include differences in access, use and experience of health services as well as differences in exposure to lifestyle-related risk factors. Reducing inequalities is a focus for the health system and government.

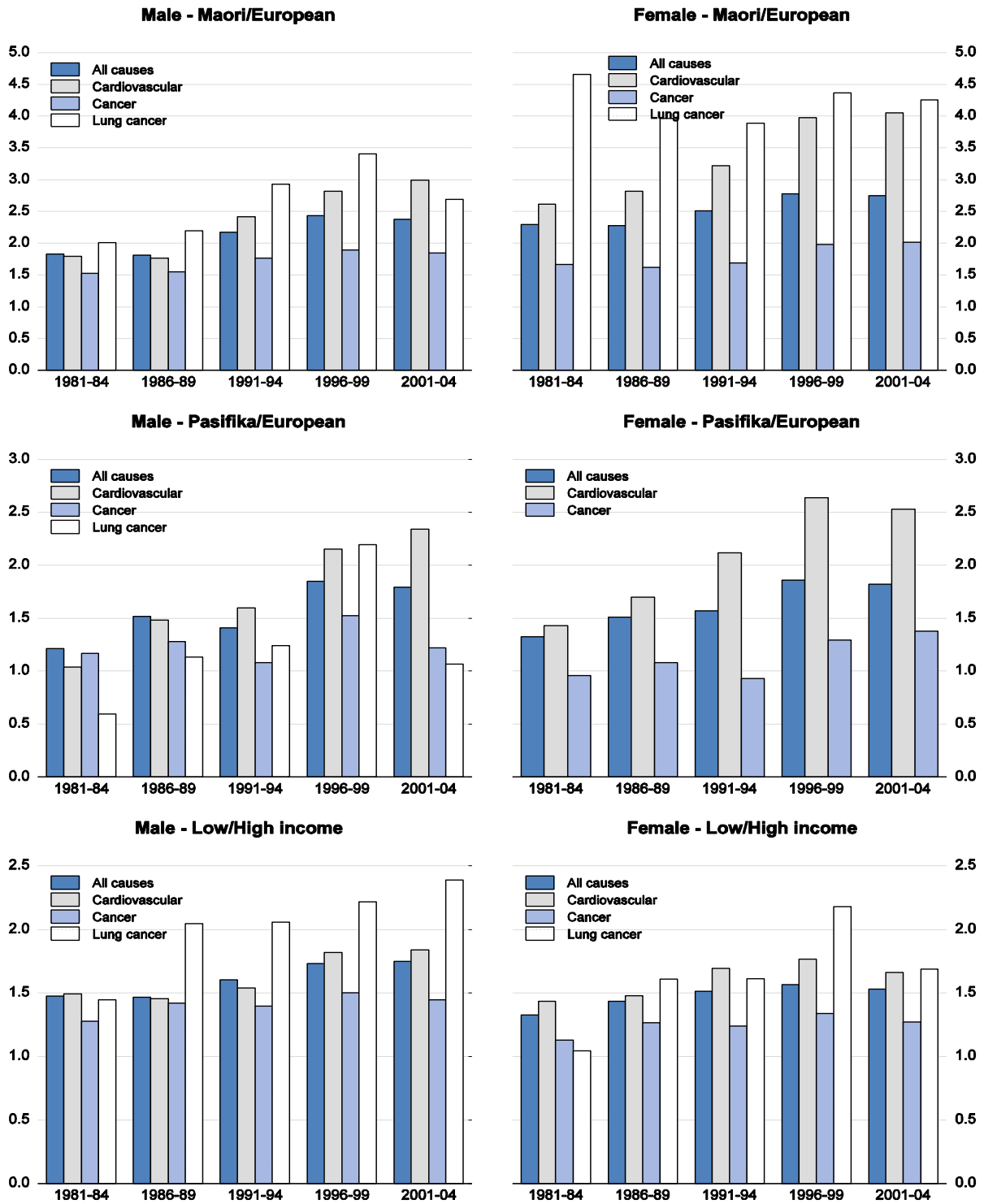
As inequalities in health outcomes result from many factors beyond inequalities in access to health care, it is unlikely that relying on health-care measures alone to eliminate gaps in outcomes would be efficient. In particular, inequalities in health outcomes partly depend on inequalities in their social determinants, such as income, housing conditions, employment and education (Blakely and Simmers, 2011). Consequently, reducing these inequalities would help to lessen inequalities in health outcomes, including by improving diets and reducing obesity. Similarly, improving housing quality for low-income and Māori and Pasifika households, as discussed above, would reduce their incidence of infectious diseases, especially rheumatic fever. But health-care reform also has an important direct role to play in reducing health inequalities, preferably combined with reforms in other areas that also influence health outcomes.

#### ***Rates of decline in mortality rates have been lower for disadvantaged groups than for others***

An important summary measure of health outcomes is mortality rates. For the population aged 1-74 years old, mortality rates (standardised for age) have declined substantially for people at all income levels (also standardised for ethnicity) and for all ethnicities (New Zealand Census Mortality Study WebTable Results). However, rates of improvement have been slower for people of Māori or Pasifika ethnicity and/or on low incomes, with the result that mortality rate ratios between Māori or Pasifika people and European-ethnicity people on the one hand, and low- and high-income people on the other, have increased (Figure 15). Crude mortality rates are 50-80% higher for Pasifika and low-income people than for European ethnicity and high-income groups, respectively, and 140-170% higher for Māori than for people of European ethnicity. Differences in socio-economic status explain only about half of the difference between mortality rates for Māori and people of European ethnicity (Tobias et al., 2009).

Figure 15. Mortality ratios for disadvantaged vs advantaged groups

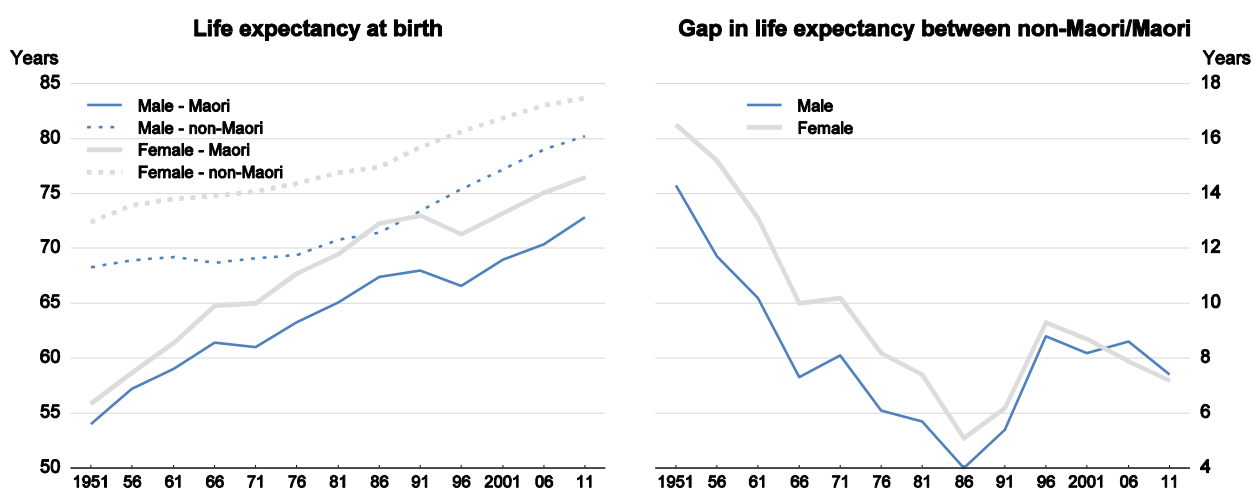
By cause of death, 1-74 years old



Source: OECD calculations based on data extracted from the New Zealand Census Mortality Study WebTable Results, <http://www.otago.ac.nz/NZCMSWebTable/>.

Life expectancy for people in the top third of the income distribution is five to six years longer than for people in the bottom third (Blakely and Simmers, 2011). This gap is about average for OECD countries. There are also large gaps in life expectancy by ethnicity (Figure 16). Life expectancy at birth for Māori is about seven to eight years less than for the rest of the population, a significant improvement on the mid-1990s.

Figure 16. Ethnic inequalities in life expectancy



Source: M. Tobias et al.(2009), "Changing Trends in Indigenous Inequalities in Mortality: Lessons from New Zealand", *International Journal of Epidemiology*, Vol. 38, pp. 1711-22, Oxford University Press.

### ***Further prevention measures would improve Māori, Pasifika and low-income people's health outcomes***

The main causes of excess mortality among Māori and Pasifika peoples and low-income groups are cardiovascular disease (CVD) and cancer. They contribute around two thirds of Māori and Pasifika excess mortality and about one half of excess mortality for all low-income people (Table 4). While the contribution of CVD has declined for most disadvantaged groups, it has increased sharply for Pasifika men. On the other hand, the contribution of cancer has increased for all disadvantaged groups except Pasifika men. Mortality-rate ratios between Māori and Pasifika and the European ethnicity group are much higher for CVD than for all causes of death but are lower for cancer except for lung cancer among Māori. Māori females' ratio has soared to very high levels (Figure 15). For low-income people, specific-cause mortality-rate ratios are generally in line with the all-causes ratios except for lung cancer, where there have been sharp increases to higher levels than for all causes.

Two important lifestyle factors – obesity and cigarette smoking – contribute to excess mortality. In 2012/13, the age- and sex-adjusted ratios of obesity prevalence for Māori and Pasifika people versus the rest of the population were 1.8 and 2.4, respectively (Ministry of Health, 2013).<sup>5</sup> Like the rest of the population, the prevalence of obesity has continued to increase for Māori and Pasifika, reaching 48% and 68% of the population aged 15 years and over, respectively, in 2012/13. After adjusting for age, sex and ethnicity, adults living in the most deprived neighbourhoods were 1.5 times more likely to be obese than adults living in the least deprived neighbourhoods; deprivation is determined using the NZDep2006 index of deprivation, which combines nine variables from the 2006 census that reflect eight dimensions of deprivation to provide a score for small geographical units known as mesh-blocks. Obesity rates for Māori, Pasifika and low-income people are very high by international comparison. For current tobacco smoking, the age- and sex-adjusted ratios for Māori and Pasifika versus the rest of the population were 2.5 and 1.3,

respectively. As for the rest of the population, the prevalence of current smoking has declined in recent years, although the rate of decline has been smaller among Māori and Pasifika than among the European/Other ethnicity group. In 2012/13, adults living in the most deprived neighbourhoods were almost three times as likely to be current smokers as adults living in the least deprived neighbourhoods after adjusting for age, sex and ethnicity. A particularly promising sign for the future is that daily smoking rates among 14-15 year-olds have halved for Māori students since 1999 and fallen by around two-thirds for Pasifika students (Ministry of Social Development, 2010).

Table 4. **Contributions to mortality rate gaps**

Population aged 1-74, per cent

Cause of death by disadvantaged group	Males					Females				
	1981-84	1986-89	1991-94	1996-99	2001-04	1981-84	1986-89	1991-94	1996-99	2001-04
<b>Māori vs European</b>										
Cardiovascular disease	44	40	46	42	41	47	47	42	38	36
All cancer	17	19	20	21	23	19	19	21	27	29
Lung cancer	10	11	12	12	9	11	12	12	14	15
Other causes	39	41	33	37	36	34	34	38	34	35
<b>Pasifika vs European</b>										
Cardiovascular disease	8	39	55	45	48	50	45	56	44	38
All cancer	21	15	6	21	10	-5	6	-6	17	23
Lung cancer	-15	2	4	10	1					
Other causes	71	46	38	34	42	55	48	50	39	44
<b>Low income vs high-income households</b>										
Cardiovascular disease	47	41	36	38	32	49	38	39	32	28
All cancer	16	24	21	24	23	15	23	21	30	25
Lung cancer	8	13	11	11	11	1	7	8	14	11
Other causes	37	35	43	39	44	37	38	40	38	47

Source: OECD calculations based on data extracted from the *New Zealand Census Mortality Study WebTable Results* website, <http://www.otago.ac.nz/NZCMSWebTable/>.

To reduce obesity on a broad scale, a comprehensive programme of multiple interventions is likely to be required (McKinsey Global Institute, 2014). Education and encouraging personal responsibility need to be complemented by changing the environment to encourage physical activity and better nutrition, thereby making healthy behaviour easier and more normal. In this regard, there is scope for primary care to make a greater contribution through improved obesity management. Currently, less than half of obese adults had their weight checked at their usual medical centre in the past year, and only a quarter received advice about their weight, diet or physical activity (Ministry of Health, 2014). Complementary measures to make the environment less obesogenic, as identified through evaluations of community-based approaches that are being trialled internationally, will also be needed. Healthy Families NZ, which was recently implemented in ten communities, is one such initiative (it also aims to reduce other lifestyle risk factors). To discourage cigarette smoking, tobacco taxes have been progressively increased by 70% since 2010, reaching the OECD average in 2011 and the highest rate in the OECD in 2015, with a further 10% rise scheduled for 2016 (TobaccoAtlas.org); each 10% increase in taxes is estimated to reduce the number of smokers by 5-7% (Isaac, 2012; Chaloupka et al., 2012). The government is also considering regulation to permit only plain, undifferentiated packets, as in Australia.

### ***Reducing amenable mortality for disadvantaged populations***

While rates of amenable mortality (that which could have been avoided through appropriate medical care) have declined across all groups, they remain substantially higher for Māori, Pasifika and low-income individuals than for the rest of the population. Adjusting for age, the standardised rate ratios (SRRs) of amenable mortality for Māori and Pasifika are three times and twice as high as for the rest of the population, respectively. For people living in the most deprived quintile of neighbourhoods, the SRRs are 1.7 and 1.5 as high as for people living in the least deprived quintile of neighbourhoods for males and females, respectively (Ministry of Health, 2010).

These differences appear to be attributable to lower health literacy and less access to primary care related to social disparities. Poor access to primary care is likely to result in late detection of health problems, reducing the likelihood that they can be treated successfully (as well as increasing the cost of treatment). This issue arises most for Māori, who (after adjusting for age and sex) are 50% more likely to report an unmet need for primary health care in the past 12 months than the rest of the population, and people living in the most deprived neighbourhoods, who (after adjusting for age, sex and ethnicity) are 40% more likely to report an unmet need than people living in the least deprived neighbourhoods. The share of the whole population reporting an unmet need (27%) is high by international comparison (Ministry of Health, 2013).

One barrier to access may be cost, which disadvantaged groups are especially likely to cite as a reason for having an unmet need for primary health care. Māori are 70% more likely not to have visited a primary care physician because of cost than the rest of the population, while people from the most deprived neighbourhoods are more than twice as likely to fall into this category as people from the least deprived neighbourhoods (ibid); the cost factor would be even more important if complementary costs, such as for transport and childcare, were taken into account. The cost barrier could be lowered by further targeting of the co-payment reduction for Very-Low-Cost-Access practices, which get subsidies to offer low co-payments in high-need communities.

A lack of suitable cultural context may also be an access barrier for Māori and Pasifika. Surveys show that these groups are more likely to use health providers from their own ethnic groups if that option is available (Ministry of Health, 2008). Similarly, pilot studies show that Māori respond well to services from Māori outreach workers (Ellison-Loschmann and Pearce, 2006). To improve cultural context, it would help to raise the proportions of health workers from these groups, which are well below their population shares.

Poorer access to life-saving treatments once problems are detected does not appear to be a factor explaining higher amenable mortality rates for disadvantaged groups. Considerable progress has recently been made in improving the prioritisation system for elective surgery, in line with OECD (2013) recommendations, resulting in more services being provided to disadvantaged groups (Controller and Auditor-General, 2013).

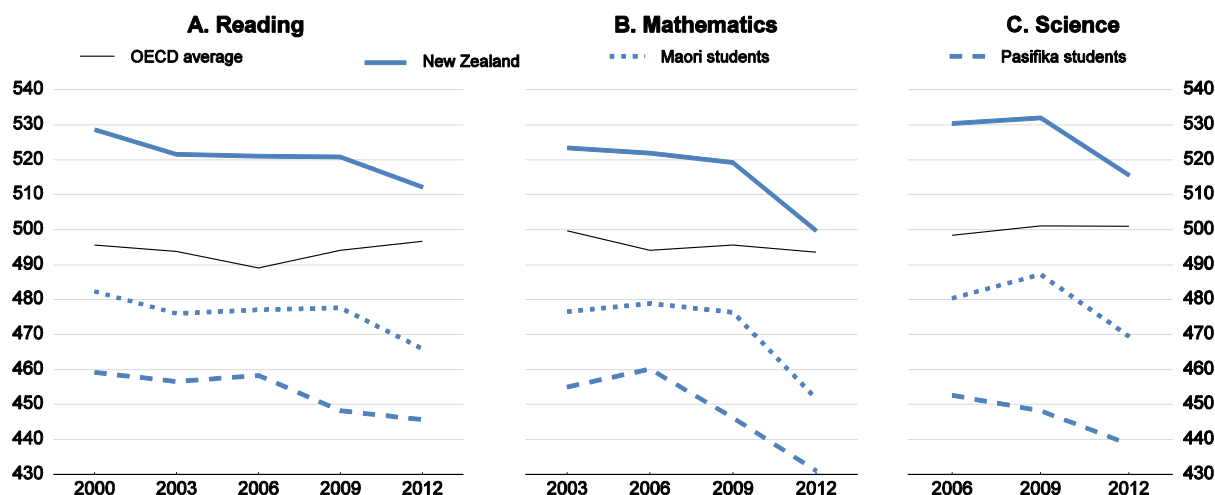
### **Improving education outcomes for individuals in disadvantaged groups**

#### ***Weaker outcomes for Māori and Pasifika students and those from poorer socio-economic backgrounds***

Average PISA scores in New Zealand are above the OECD mean but have been declining (Figure 17). However, scores for Māori and Pasifika students are well below average. These gaps are similar across disciplines. Average PISA scores in reading and science have fallen at a similar pace for Māori, Pasifika and other students since the in-depth tests began but at a faster pace in mathematics.



Figure 17. New Zealand's average PISA scores have fallen



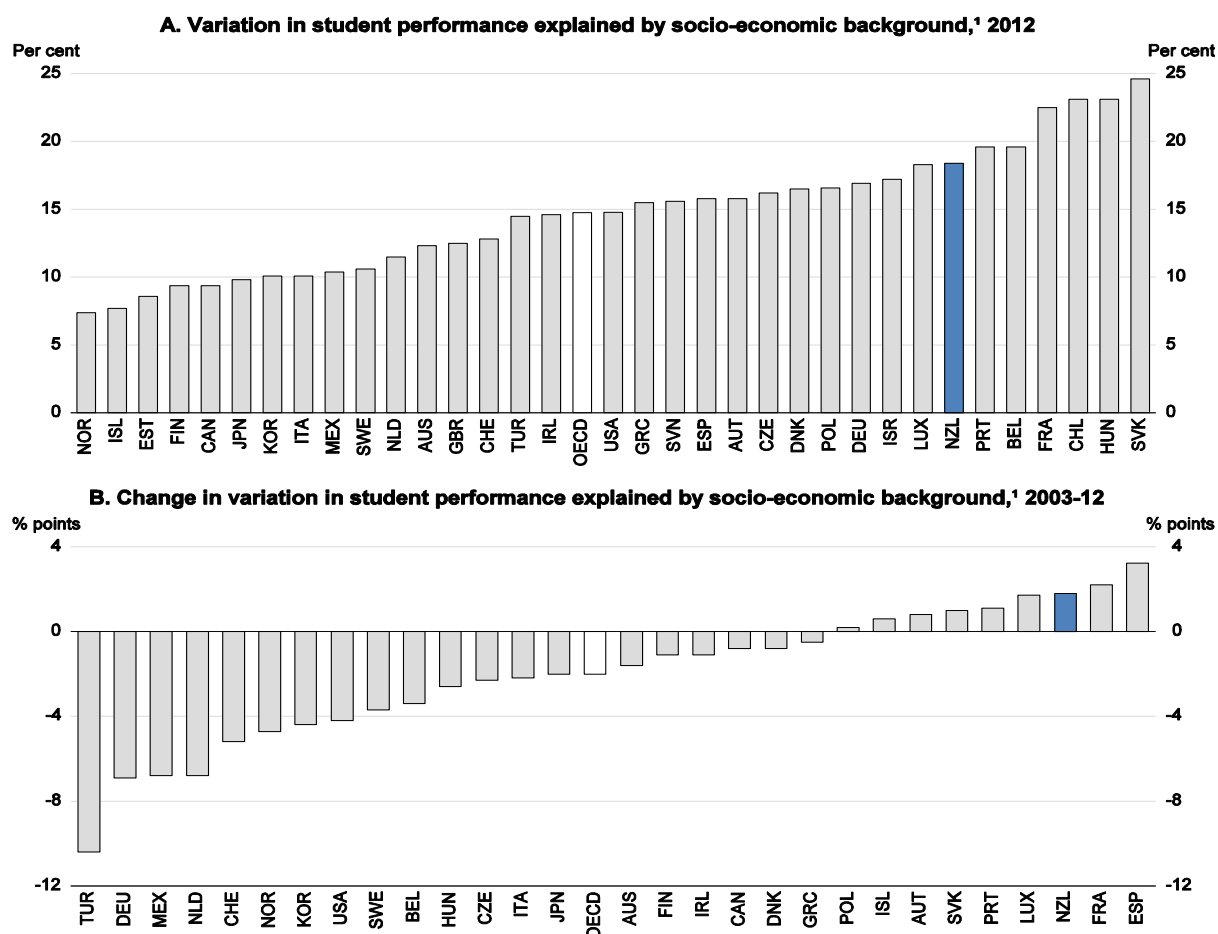
Source: OECD, *PISA Results*, various years.

Moreover, the impact of socio-economic background on PISA scores is greater and has increased by more in New Zealand than the OECD average, which implies an increasing lack of equity (Figure 18). The impact of socio-economic background can be measured by the slope of the socio-economic gradient, which can be expressed as the average difference in performance between two students whose socio-economic status differs by one unit on the PISA index of economic, social and cultural status. In New Zealand, this is 52 points, which is significantly above the OECD average of 39 (OECD, 2014b). The NZ difference is equivalent to nearly one and one third years of schooling. In all, socio-economic background explains 18.4% of the variance in student performance in mathematics in New Zealand, compared with an OECD average of 14.8%.

New Zealand has also lost ground in terms of the chances that disadvantaged students will be high achievers. This can be measured by student “resiliency”. Resilient students are those in the bottom quarter of the country’s distribution of socio-economic status whose performance is in the top quarter of students from all countries, after accounting for socio-economic status (OECD, 2014b). The proportion of resilient students fell to less than 5%, which is lower than in most other OECD countries (Figure 19).

Ethnic gaps in educational attainment have begun to narrow. The proportions of Māori and Pasifika students completing a National Certificate of Educational Achievement (NCEA) Level 2 qualification, or equivalent which is normally gained in upper secondary school by the end of year 12 (and is considered to be the minimum necessary to give people reasonable opportunities in terms of further education and employment), have increased rapidly, narrowing the gap in rates with students of European ethnicity (Figure 20). Nevertheless, the gap remains wide for Māori students. At the tertiary level, Māori students have made more progress in narrowing the NCEA Level 4 attainment gap than Pasifika students. Even so, these gaps remain wide for both Māori and Pasifika students. Success rates for students from schools in low socio-economic districts are also considerably lower than for others. To reach the government’s target of 85% of 18 year-olds having NCEA Level 2 qualifications by 2017 (compared with around 79% in 2013), it will be necessary to raise success rates significantly for Māori and Pasifika students and for students from low socio-economic groups. With only 69% of Māori students still in school by age 17, retention of young Māori in education is the key issue. Programmes such as Youth Guarantee and Trades Academies are having some success with some students but more will be needed to meet the government’s NCEA Level 2 target.

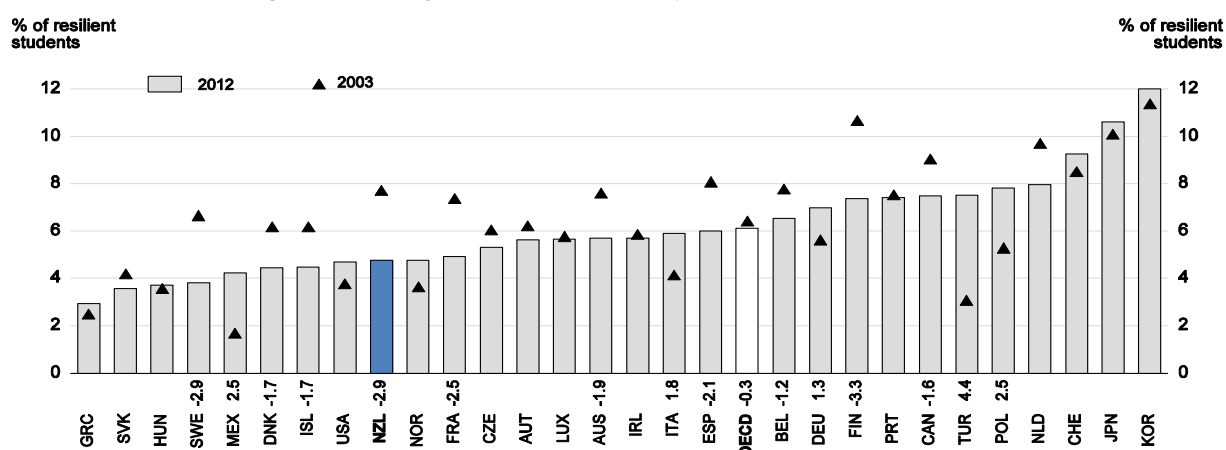
Figure 18. Influence of socio-economic background on PISA scores in mathematics



1. PISA index of economic, social and cultural status.

Source: OECD (2014), *PISA 2012 Results: Excellence through Equity: Giving Every Student the Chance to Succeed*, Vol. II, Figure II.1.2.

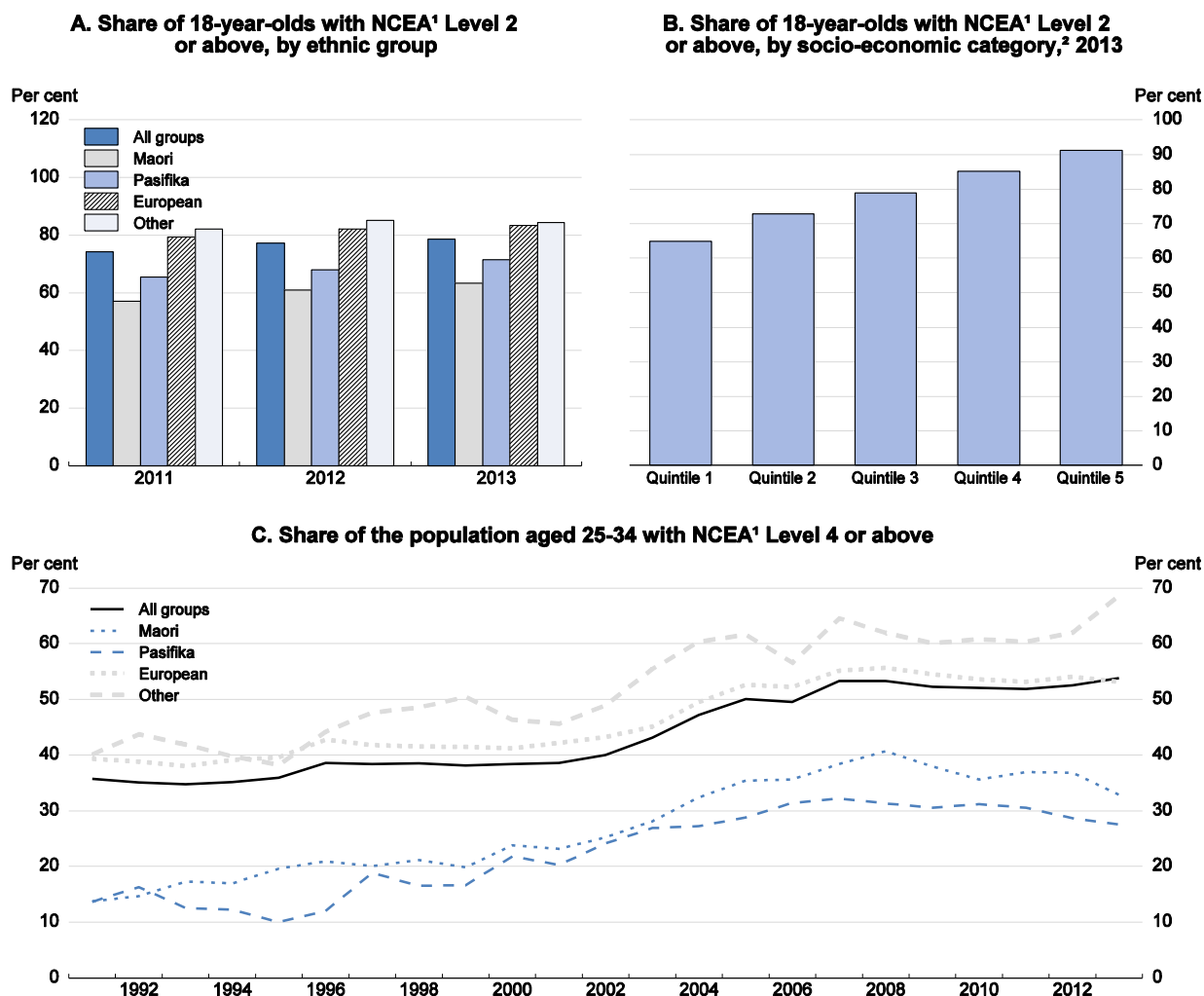
Figure 19. Change in student resiliency to socio-economic status<sup>1</sup>



1. A student is classified as resilient if he or she is in the bottom quarter of the PISA index of economic, social and cultural status (ESCS) in the country/economy of assessment and performs in the top quarter of students from all countries/economies, after accounting for socio-economic status. The percentage-point difference in the share of resilient students in PISA 2003 and PISA 2012 is shown above the country name. Only statistically significant differences are shown.

Source: OECD (2014), *PISA 2012 Results: Excellence through Equity: Giving Every Student the Chance to Succeed*, Vol. II, Figure II.2.14 & Table II.2.7b.

Figure 20. Educational attainment



1. National Certificate of Educational Achievement.
2. Socio-economic school district rankings. Quintile 1 schools have the lowest socio-economic ranking while quintile 5 schools have the highest.

Source: Ministry of Education (2015), Education Counts, <http://www.educationcounts.govt.nz/statistics/schooling/senior-student-attainment/school-leavers2>.

### Strengthening early childhood education

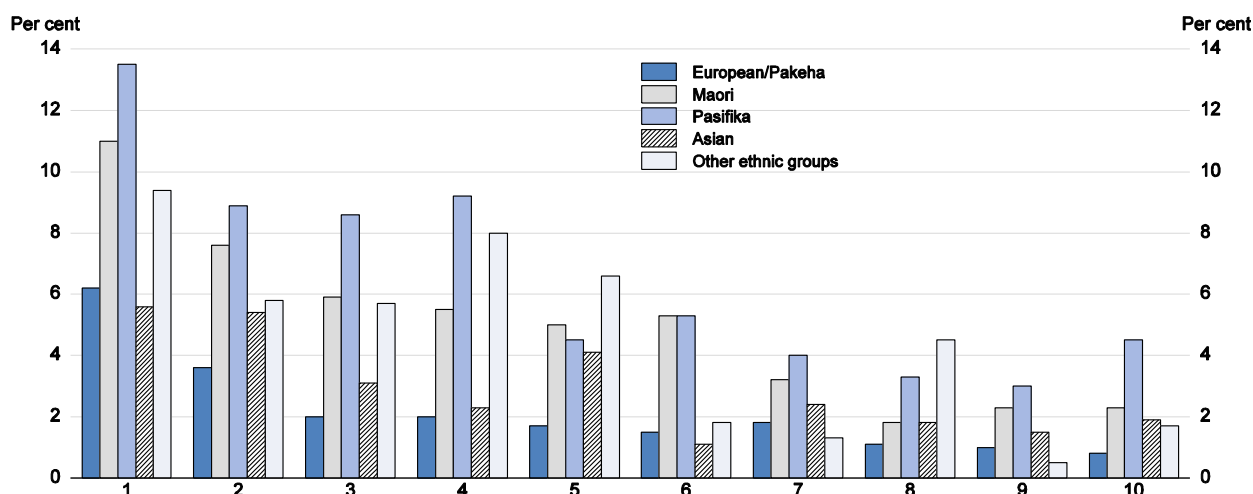
Educational inequality is already apparent by the time five year-olds start school. The results of School Entry Assessments in 1999-2000, the only period for which data have been published, show that children starting in decile 1 schools had average early reading scores that were only a little over a half of those of their peers starting in decile 7-10 schools (Davies, 2001). Maths scores were on average a third below those of their peers. Māori and Pasifika children’s reading and maths scores were around two-thirds and three-quarters, respectively of scores for children with European ethnicity. The lower educational starting point for children from these groups puts them at a lasting educational disadvantage.

A cornerstone of a strategy to reduce the effects of low socio-economic and/or Māori or Pasifika background on education outcomes is to ensure that all pre-school children have access to high-quality early childhood education (ECE). This lays a strong foundation for future learning, especially for children from lower socio-economic backgrounds and ethnic minorities (CCEAGSCP, 2012). Successive

governments have given priority to increasing participation rates for disadvantaged groups, which lag behind those for the rest of the population (Figure 21). Following initiatives in the early 2000s, more recent measures include the introduction of the 20 Hours ECE free of charge programme in 2007 and the Ministry of Education's Participation Programme since 2010.

Figure 21. **Early childhood education non-participation rates for children starting school**

By school decile<sup>1</sup> and ethnic group, December 2014



1. All schools are given a decile rating depending on the socio-economic status of the community their students come from. Decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities while decile 10 schools have the lowest.

Source: Ministry of Education (2015), Education Counts website - Early Childhood Education Participation Statistics.

Progress has been particularly marked for Pasifika and Māori children, for whom non-participation rates have fallen from 24% and 17%, respectively, in 2000 to 10% and 7% in 2014. Nevertheless, these non-participation rates and those for children from lower socio-economic backgrounds remain significantly higher than for the rest of the population. These gaps will need to be closed if the government is to reach its Better Public Services (BPS) participation target of 98% by 2017. A database has been developed to make the participation target more meaningful by distinguishing between occasional and regular participation. It will be equally important to ensure that the education delivered is of high quality. To this end, the government will need to monitor outcomes for disadvantaged individuals and, if necessary, move to ensure that increased participation is delivering improved educational outcomes for them.

A wider view of what is needed to bring deprived and ethnic-minority children up to speed when they start school is being taken. Foreign intervention studies targeting children from lower socio-economic families that combine good quality ECE with parenting support and education have been found to have positive impacts on children's cognitive growth, school performance and long-term outcomes (Károly et al., 2005). Benefit-to-cost ratios are high for such programmes (CCEAGSCP, 2012). One such NZ programme is Engaging Priority Families (EPF), which provides support to three and four year-olds and their families (and is one of the main components of the Participation Programme). EPF co-ordinators engage with and support the hardest-to-reach families, helping them attend ECE regularly, supporting learning at home and assisting with the transition to school (CCEAGSCP, 2012). As of March 2013, there were 30 EPF initiatives around the country. Such programmes should be expanded, subject to programme evaluation that demonstrates success.

### ***Encouraging students to stay in education longer***

In recent years the government has taken a variety of initiatives to encourage students to stay in education longer. Increasing educational attainment is very important for equality of opportunity because parental attainment, especially of mothers, has a strong influence on how well their children do in education. These initiatives, together known as the Youth Guarantee, focus on improving pathways to further learning and work. This is seen as vital for countering disengagement among secondary-school students, especially Māori. The Youth Guarantee provides new routes to NCEA Level 2 qualifications including through: work-related learning; new forms of collaboration between schools and post-school tertiary education organisations (TEOs); and opportunities to enrol in TEOs without having to pay fees. Six sector-specific Vocational Pathways have been introduced. Secondary-Tertiary Programmes have been developed, typically entailing either secondary school students receiving teaching in technical subjects from staff at neighbouring TEOs or from Trades Academies; Trades Academies deliver trades and technology programmes to secondary students based on partnerships between schools, tertiary institutions, industry training organisations and employers to meet local and national needs. Fees-free places and Secondary-Tertiary Programmes are estimated to have increased retention in education to age 17 and attainment of NCEA Level 2 qualifications by age 18, compared with a control group (Ministry of Education, 2014), but these initiatives need to be evaluated for their long-term effectiveness. Demand for places in Trades Academies has been such that the Ministry of Education could fund only 4 500 out of the 5 500 places requested in 2014. Subject to favourable evaluation results, funding for Trades Academies should be increased to meet demand. This funding could be sourced from defunding the Youth Training initiative, which has “actually resulted in fewer young people attaining NCEA Level 2 or equivalent by age 18 than would be expected if they had not gone on the programme” (Earle, 2013, p. 4).

Such strengthening of vocational pathways at the upper secondary level is a vital component of setting more young people on their way to achieve NCEA Level 4 qualifications, which typically open the doors to well-paying jobs (Dalziel, 2013). Level 4 occupations comprise technicians and trades workers (200 000 in 2006) and people in community and personal services, clerical and administrative work and in sales (a total of 67 000 workers in 2006). Many of these occupations are on immigration priority lists because of shortages. Providing opportunities for more New Zealanders to enter these occupations will not only increase their earnings and productivity, and hence activity overall, but will also reduce the proportion of people with very low incomes, reducing inequality. More broadly, New Zealand is one of a minority of OECD countries that have not yet undertaken an OECD review of vocational education and training. The government should consider commissioning such a review, which would be helpful in benchmarking New Zealand’s vocational system against a wide range of international comparators.

### ***Raising teaching quality***

Teacher quality is considered to have the greatest effect on student learning of all the potentially measurable influences (Alton-Lee, 2003; Hattie, 2009). International findings show that teachers at the top of the quality distribution can achieve up to one year’s worth of additional student learning by the end of schooling than those at the bottom (Hanushek and Rivkin, 2006). Unfortunately, low-decile schools are at a disadvantage when it comes to recruiting high-quality teachers. These schools tend to be in unattractive residential locations, are not prestigious and experience more classroom disruption, which contributes to higher rates of teacher burnout than in high-decile schools (Denny et al., 2009). Not only is teaching in these schools often more difficult, financial rewards are also lower – while there is a small supplementary allowance, which has been frozen for many years, high-decile schools have considerably more resources coming from donations, foundations and foreign-student fees that enable them to offer in-kind benefits, such as extra professional development. In 2012, 20% of decile 1-2 secondary school principals had difficulty finding suitable teachers compared with only 3% of their decile 9-10 school peers (Wylie, 2013).

A range of initiatives are underway to improve the quality of teaching, consistent with OECD work suggesting a high quality teaching workforce is a result of deliberate policy choices carefully implemented over time. As one part of its strategy, the government is reforming the teacher professional body. It is also implementing a reform that creates more career ladders for teachers and principals and increases collaboration between schools. These new career paths could help to attract top teachers to struggling schools. Provided that teachers are performing well, the government should complement this reform by providing increased financial support to schools with high concentrations of children at risk of under-achievement to recruit and retain effective teachers. While the creation of communities of schools to increase collaboration within and between schools should improve teaching quality, the effect on inequality in outcomes is likely to be limited, as schools in high- and low socio-economic areas tend not to be in the same community. The “principal recruitment allowance” created as part of this initiative complements the community of schools collaborative programme by providing specific schools which face significant achievement challenges with better expert leadership to address these problems. Improved allowances are available to schools that establish these roles to support leadership that improves school performance and achievement.

These reforms are consistent with OECD recommendations on policies to improve teacher quality (Schleicher, 2011), notably: support for continuous learning, career structures that give new roles to teachers, and engagement of teachers as active agents in school reform. One of the OECD recommendations where more reform will be required is to make teacher evaluation systems fairer and more effective (Nusche et al., 2012). Key issues still to be addressed in this regard are large differences in the quality of teacher appraisal and poor linkages between appraisals, and professional and school development. Nusche et al. (2012) also recommend that more be done to ensure that teachers and schools have the skills to collect, analyse and interpret data in order to support improved student outcomes. The Education Counts and Public Achievement Information datasets and the Information for Learning initiative provide a new knowledge base to inform schools and teachers so they may better manage achievement challenges. In addition, while there is a growing evidence base about what effective professional learning and development looks like, Wylie (2013) reports that just 56% of secondary teachers think they get the out-of-school support they need to do their job effectively. Reforming this system to be more consistent with best practice could make an important contribution to improving the quality of teaching.

There is scope to improve educational outcomes for children from low-income backgrounds, many of whom are also Māori or Pasifika, by adopting good practices. The Education Review Office (ERO, 2014) found (only) nine out of 140 decile 5 or lower secondary schools with 200 or more students that demonstrated good practices in student engagement and achievement. In these nine schools stand-downs, suspensions and exclusions, which have very negative consequences for future learning, were lower than average. And student attainment levels ranged from above those for their decile to close to the BPS target of 85% of 18 year-olds to attain at least a NCEA Level 2 qualification. The ERO found that these schools identified with their community and had a clear vision of what they wanted for their students. At the heart of each vision was building strong relationships with their students and enabling them to learn. Among the key areas of good practice identified were:

- a belief that all students can succeed: low expectations for Māori and Pasifika students are a problem in many schools;
- adopting remedial rather than punitive practices (such as expulsions and exclusions) when problems arise;
- students taking responsibility for their learning: McKinley et al. (2009) find students in a low-decile secondary school can make significant NCEA gains when detailed data on their academic progress is used to help them meet goals that they themselves have set to meet career aspirations;

- school leaders and teachers using extensive, high-quality data to identify students' needs and responding appropriately;
- having principals who are knowledgeable and skilful change managers; and
- senior leaders working efficiently as a team with high levels of relational trust.

In light of this study, the ERO made a number of recommendations to schools to reduce educational inequalities:

- School boards should focus on how well students are engaged with their learning by scrutinising engagement and achievement data and using the information to identify what approaches and resources are needed to ensure every student succeeds; and
- School leaders should manage changes to establish a strong culture where: expectations for every student are high; relationships are carefully nurtured, respectful and supportive; evidence and research are used to empower teachers to use and reflect on a range of approaches to effectively engage all students in learning; and teachers' professional development is integrated with the school's vision and direction.

Another good practice to reduce educational inequalities is to take children who are falling behind aside for short periods of increasingly intensive instruction to bring them back up to the level needed to learn with the rest of the class, as occurs in Finland. This is a better solution than placing them in classes for slow learners, which stigmatises them, assigns them low expectations and results in low levels of achievement. More generally, the widespread use of early streaming in New Zealand, which typically begins in lower secondary school, increases inequality in outcomes (OECD, 2014b). Expectations are low for children in low streams. They study academically "light" programmes, which is one of the reasons why New Zealand has a relatively large proportion of poor performers in PISA studies. Such programmes also limit future educational opportunities.

Māori medium schools, which provide teaching and learning in Te Reo Māori (the Māori language) within Māori cultural settings, are helping to increase Māori learner achievement rates. This success seems to be based on a number of factors, including strong family and Māori community and learner engagement, high community and teacher expectations of learners, as well as affirmation of the learner's culture and identity. Adjusted for socio-economic background, 74-84% of school leavers attain NCEA Level 2 qualifications or higher in such schools compared with only 56% in other schools. Unfortunately, for a variety of reasons, only a small minority of Māori students attend these schools, especially at upper secondary school levels. These reasons include accessibility (not all regions have Māori medium schools) and shortages of Māori language teaching resources and qualified teachers who are fluent in Māori (with an associated relatively narrow range of subject choices). While teacher shortages may be expected to ease over time as some of the graduates from these schools themselves become teachers, further steps may be needed to facilitate a faster increase of quality and supply. New Zealand's Māori medium education programme is supporting improvement in quality of provision and the breadth of education pathways available to students in Māori medium education.

### Recommendations to make growth more inclusive

#### Reducing income inequality and poverty

- Complement the recent welfare reform by following up people going off benefit, as planned, to ensure satisfactory outcomes. Strengthen the focus of social spending on lifting the long-term outcomes of the disadvantaged, including by improving coordination across the public sector.
- Review policy settings to strengthen the incentives for those on low incomes to work more than 20 hours a week, including benefit abatement rates and childcare costs.
- Increase welfare benefits for beneficiary households with children, and step-up job-search and activation investments, especially for jobseeker beneficiaries who are social housing tenants.
- Raise the supply of social housing for low-income households. Increase targeted housing subsidies for low-income households that are not in social housing.

#### Reducing inequalities in health outcomes

- Adopt a comprehensive approach to reducing obesity, covering personal actions, factors that influence physical activity and nutritional practices, and improved obesity management through primary care.
- Reduce further the costs (including transport and childcare) of access to primary health care for the poor.

#### Improving education outcomes for individuals in disadvantaged groups

- Meet the 98% participation target for early childhood education. Ensure that the education provided is of high quality, includes programmes to enhance the involvement of parents and focuses more on the outcomes of children with disadvantaged backgrounds.
- Provide more financial support to assist with the recruitment and retention of effective teachers and school leaders for schools with high concentrations of children at risk of under-achievement.
- Continue to strengthen existing measures to help school boards, principals and teachers use student achievement data to ensure that all students are performing well.

## Notes

1. All references to household income in this paper are to equivalised household income. Equivalised household income is adjusted for household size. The adjustment used is to divide total household income by the square root of household size.
2. Social rentals were raised to market levels and, for those who could not afford the rent, an accommodation supplement was paid amounting to 65% of the difference between the new rent and 25% of household income.
3. The “investment approach” differs from “social investment” in Europe in that it focuses on budget savings as opposed to outcomes for individuals. In Europe, social investment means policies designed to strengthen people’s skills and capacities and support them to participate fully in employment and social life. Key policy areas include education, quality childcare, health care, training, job-search assistance and rehabilitation (Social investment - Employment, Social Affairs & Inclusion - European Commission).
4. Regressing lone-parent poverty rates (LPPR) on lone-parent benefit rates as a percentage of average earnings (LPBR), childcare fees as a percentage of 67% of average earnings (CCF) and lone-parent employment rates (ER) for 30 OECD or EU countries yields the following results (t-statistics in brackets):

$$\begin{array}{ccccccc} \text{Log(LPPR)} = & 5.274 & - & 0.733 \log(\text{LPBR}) & + & 0.294 \log(\text{CCF}) & - & 0.067 \log(\text{ER}) \\ & (2.619) & & (-2.610) & & (2.918) & & (-0.155) \end{array}$$

Adjusted R-squared 0.234; F-statistic 3.946; DW 1.997.



5. All statistics quoted in this paragraph come from Ministry of Health (2013). A rate ratio less (more) than 1 means the outcome is less (more) likely in the group of interest than in the reference group. Rate ratios adjust for factors such as age, sex and ethnic group. The total response measure of ethnicity is used (i.e. individuals identifying more than one ethnicity are included in all the groups identified).

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