

THE PREVALENCE AND PERSISTENCE OF LOW INCOME AMONG NEW ZEALAND CHILDREN: INDICATIVE MEASURES FROM BENEFIT DYNAMICS DATA

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Abstract

This paper examines the low-income experiences of a cohort of New Zealand children using information on their inclusion in first-tier income-tested benefits. We follow children born in 1993 and estimate that more than half had some contact with these benefits and, by implication, some experience of low income by age seven. For many the duration was fairly short, but our results suggest that at least a fifth of the birth cohort spent a total of more than five of their first seven years of life with caregivers on low incomes. Analysis of factors that increase the risk of a long benefit duration highlight having contact with the benefit system at birth, and first appearing with a primary beneficiary who is female, Māori, aged under 20, or in receipt of the Domestic Purposes Benefit. These factors are likely to be interrelated. In subsequent work we will seek to estimate their independent effects. Results are linked to the literature on outcomes for children.

INTRODUCTION

A number of recent studies highlight the impact of low income on children. The Child Poverty Action Group has drawn attention to adverse impacts of low family income on children's well-being and rights (St John et al. 2001). Findings from the 2000 Survey of Living Standards confirm that New Zealand families with children on low incomes are more likely than others to report economising on basic items key to children's well-being, such as fresh fruit and vegetables, visits to the doctor, and school books (Krishnan et al. 2002).² Findings from the New Zealand Census-Mortality Study show

¹ **Acknowledgements**

We would like to thank Simon Chapple, Michael Fletcher, Vasantha Krishnan, Marlene Levine, Ron Lovell, Ross Mackay, Graeme Parker, Nick Pole, Ann Reeves, Rachel Smithies, Bob Stephens and two anonymous referees for their helpful comments on earlier drafts of this paper; Sathi Sathiyandra for his assistance with SWIFTT data; Justine Auton, Mike O'Rourke and Sue Meehan for advice on administrative processes around inclusion of children in benefits; and Bill Boddington of Statistics New Zealand for advice on births registrations data. Any errors or omissions are our own. The views expressed are not necessarily those of the Ministry of Social Development or those of the individuals who provided comment on the paper.

² The income threshold used is 60% of the median equivalent disposable income in 1997/98, after adjusting for housing costs.

that children in households with low equivalised income at the 1991 Census had higher-than-average mortality rates over the ensuing three years (Blakely 2002).

Studies carried out in New Zealand and overseas consistently find that income in childhood also matters for outcomes in later life. While not the only factor that shapes attainments and abilities, parental income in childhood has small to modest positive associations with cognitive development and levels of attainment as children move through the school system,³ and with employment propensities and incomes in adulthood, even after controlling for related factors such as maternal education. Importantly, it appears likely that the level of parental income has a stronger effect on a child's outcomes where income is low, and that the effects are even stronger where income is low for long periods.⁴

In many countries such findings have prompted research aimed at establishing the extent to which children are exposed to low income over the course of their childhood, and the timing, duration and causes of that exposure.⁵ We do not have nationally representative longitudinal data that would allow us to comprehensively examine income experiences in this way for the current generation of children in New Zealand.⁶ But we do have two sources of data that allow us to begin to construct partial views.

The first is the Income Supplement, which has been attached to the Household Labour Force Survey (HLFS) since 1997. The rotating panel of the HLFS permits examination of changes in respondents' income status over a one-year interval. These data are currently being analysed to explore, over that limited interval, the proportion of children experiencing low income, the degree of turnover in that population, the events that precipitate transitions into and out of low income, and the relative probabilities of these transitions for different groups of children (Ballantyne et al. forthcoming).

³ See, for example, Wylie et al. (2001) for New Zealand research, and Smith et al. (1997) for research from the United States.

⁴ See Mayer (2002) for a review of this literature commissioned by the Ministry of Social Development, and Duncan and Brooks-Gunn (1997) and Mayer (1997) for earlier reviews. Mayer (2002) includes a review of relevant New Zealand studies.

⁵ See, for example, the collection of studies in Bradbury et al. (2001b).

⁶ New Zealand does have a number of longitudinal studies of children (including the Dunedin Multidisciplinary Health and Development Study, the Christchurch Child Health and Development Study, the Competent Children Project and Te Hoe Nuku Roa – Māori profiles) which could be used to explore income experiences. Either because of the age of the cohorts followed, or their geographic or ethnic specificity, it is doubtful that the income experiences of the children in these surveys could be generalised to the current generation of children as a whole. The Statistics New Zealand Longitudinal Survey of Income, Employment and Family Dynamics, soon to go into the field for its first wave, will provide useful new data. However, features of its design suggest that it too will provide only a partial picture of children's low-income experiences. The survey will follow member families for only eight years. This precludes use of the data to examine low-income experiences over an entire childhood. In addition, it will follow *adult* members of the households sampled in wave one, not *children*, and is therefore unlikely to provide comprehensive measures of the persistence of low income from the child's perspective.

The second data source, and the subject of this paper, is the longitudinal data set assembled from the benefit administration records of the Ministry of Social Development (MSD). This “benefit dynamics data set” holds details of the individual benefit histories of every child who has been included as a dependent child in a basic income-tested working-age benefit since 1993. These benefits form the “first tier” of social assistance for the working-aged and their dependants. They cover contingencies such as unemployment, sole parenthood, widowhood, sickness and long-term incapacity.⁷ They are set to provide a modest level of assistance, and withdrawn fairly rapidly as private income increases.⁸ Those who receive supplementary assistance through the benefit system or family assistance through the tax system, but do not receive one of the basic first-tier benefits, are not captured by the data set.

We use the benefit dynamics data set to calculate measures of whole-of-childhood (to date) contact with the benefit system for the cohort of children born in 1993. These measures provide an indication of the prevalence, timing and duration of periods of low family income over the first seven years of that cohort’s childhood.⁹

It is important to be clear at the outset about what benefit dynamics data cannot tell us. While they constitute one of only a few potential sources of information on income dynamics, they can provide only a rough proxy for income status at any point in time (Bradbury et al. 2001a). Benefit data tell us nothing about the incomes of those off benefit. If there is a large group of children experiencing low incomes without having any contact with the benefit system (such as those in families in low-paid work who may be receiving Family Assistance through the tax system), then benefit contact will understate the prevalence of low income. And if incomes often remain low when a family moves off benefit, then benefit contact will understate the duration of low income. Conversely, we expect income received while on benefit to be low in the New Zealand context, but this may not be the case. If there are large numbers supplementing benefit income with other declared or undeclared income, then benefit contact may overstate the prevalence and duration of low income.

⁷ These benefits are Unemployment Benefit, Independent Youth Benefit, Job Search Allowance, Emergency Unemployment Benefit – Students, Young Job Seekers Allowance, 55+ Benefit, Emergency Unemployment Benefit, Training Benefit, Domestic Purposes Benefit, Emergency Maintenance Allowance, Sickness Benefit, Emergency Sickness Benefit, Invalids Benefit, Widows Benefit, Transitional Retirement Benefit, and their Community Wage equivalents. Those receiving New Zealand Superannuation or supplementary assistance only are not included in the data set. Nor are those who receive Family Assistance but do not receive a first-tier income-tested benefit. For a description of the data set, see Wilson (1999).

⁸ New Zealand has no social insurance, aside from the Accident Compensation scheme.

⁹ While patterns of benefit contact in themselves are of some wider interest, here we are concerned only with benefit contact as an indicator of exposure to low income. The available evidence from the literature on outcomes for children suggests that once income levels and parental characteristics are controlled for, receipt of benefit income is rarely significantly associated with poor child outcomes (Smithies and Stephens forthcoming, Mayer 2002, Boggess et al. 1999).

But if benefit contact is an imperfect proxy for low income, then it is also important to recognise that neither measure is a perfect proxy for low living standards, the underlying state that is perhaps of most concern. Families experiencing only short-lived falls in income might borrow or draw on savings to protect their living standards, making income dynamics an imperfect measure of shifts in living standards (Bradbury et al. 2001a). Could benefit contact be a better, if still imperfect, measure? Aber and Ellwood (2001) argue that it could, where the benefit system entails some form of means test, and where the policy regime is sufficiently stable over time. Certainly among New Zealand children in families on low incomes,¹⁰ Krishnan et al. (2002) found that those with benefits as their main source of income over a year were much more likely than those with market income as their main income source to be affected by economising on basic activities or purchases because of cost.

Work currently being undertaken within MSD suggests that of the range of possible measures of a family's income, those that are adjusted for housing cost have a stronger correlation with achieved living standards. When we set a constant real-dollar low-income threshold at 60% of median annual equivalent disposable income, adjusted for housing costs, this locates most, but not all, children in families receiving some income from social welfare benefits over a year below the threshold.¹¹ And it locates most, but not all, children in families with income below the threshold in families receiving some benefits. It is notable that the degree of overlap is not as great when we use income measures that are not adjusted for housing costs.

So if we are interested in a measure of income that approximates living standards, it appears that while benefit dynamics data are likely to tell us about most of children's experience of low income, they do not tell us about all of it, and in some cases we may be inferring low income from these data where none is occurring. The relative scale of these two sources of omission will depend partly on the threshold below which we consider income to be low.

The paper opens with a brief discussion of the strengths and limitations of the benefit dynamics data (in the following section), before turning (in the subsequent two sections) to measures of the prevalence, timing and duration of benefit contact experienced by children born in 1993. Bi-variate analysis of the factors associated with an increased risk of a long duration of benefit contact, once contact has occurred, is

¹⁰ The threshold used is 60% of the median equivalent disposable income in 1997/98, after adjusting for housing costs.

¹¹ Derived from the 1993/94-1997/98 Household Economic Surveys by MSD analysts using a constant dollar value threshold set at 60% of the median equivalent disposable income in 1997/98, after adjusting for housing costs. The 60% threshold is commonly used in New Zealand studies of income distribution and poverty. See, for example, Stephens and Waldegrave (2001).

presented next. We then briefly examine the extent to which the experiences of the 1993 birth cohort have also been shared by children born later in the 1990s. The final section reviews our findings and summarises their implications for our conception of the proportion of New Zealand children who experience low income in their early years, and the proportion who experience long periods of low income.

DATA: STRENGTHS AND LIMITATIONS

A number of features of the benefit dynamics data set lend it particular strengths as a basis for constructing measures of the prevalence and persistence of low income in childhood.

- It covers a fairly long window of time. At the time of writing, we were able to follow children born in 1993 through to the end of 2000.
- It holds information on the entire population of children included in benefits over the period of study. This enables us to enumerate the total number of children having contact with the benefit system and also to examine the experiences of narrowly defined sub-groups of children, without encountering the problems associated with sampling error. We are also able to analyse the experiences of those children who might have a low chance of being included in a longitudinal survey, such as those moving between cities or between caregivers (Bradbury et al. 2001a).
- The frequency of information on changes in status is much greater than that generally available through longitudinal surveys, which are often constrained to recording status on an annual basis, or taking snapshots at infrequent intervals. In addition, the data do not generally rely on respondents' recollection of events and so tend not to be subject to errors of recall. These features, together with our ability to comprehensively keep track of children, enable us to accurately calculate their total duration of contact over what can be quite complex benefit and caregiver histories.

The data set is by no means ideal, however, and has a number of limitations.

- The quality of the data is highly dependent on the administrative processes that generate it. Although we take steps to check for and correct inconsistencies, it is unlikely that we identify all problem cases.¹²

¹² For example, the accuracy of the present analysis relies heavily on the same child having repeated contact with the benefit system being identified as such. It appears that the administrative procedures that ensure that this occurs may not always be followed. We revise the data in those instances where it is clear that the same child has appeared with different identifiers. However, even after these revisions, some children with multiple identifiers may remain. Consequently, children's chances of contact may be slightly overstated, and the average duration of contact may be slightly understated.

- The administrative origin of the data set also has implications for its scope. There is limited information available on the individual characteristics and circumstances of the children included in benefits. For instance, no data is collected on the ethnicity of children included in benefits. While it is possible to ascribe a proxy based on the ethnicity of the caregiver or caregivers in whose benefits the child has been included, this will be an imperfect and potentially misleading measure for a number of reasons. Firstly, we often only observe the ethnicity of a sole caregiver. Secondly, in some cases the caregiver/s will not be the biological parent/s of the child. And, thirdly, even if we could observe the ethnicity of both biological parents, this will not necessarily give us an accurate picture of the child's ethnic affiliation. Given these problems, our approach has been to analyse only on the ethnicity of the primary beneficiary.
- The benefit dynamics data set has no in-built count of the entire population of children who could potentially have had some contact with the benefit system over the period of study, or the length of time for which they were resident and at risk of contact. We attempt to estimate the former number, but we do not attempt to estimate the latter.

Table 1 shows our approach. In order to construct estimates of the proportion of children born in 1993 having contact with the benefit system between 1993 and 2000, we need an estimate of the total number of *different* children born in 1993 who were *ever present* in that period. We know that there were close to 59,000 live births during 1993 (A). An estimated 6,700 children born in 1993 entered the cohort population as permanent and long-term arrivals over the period of the study, 1993-2000. If we add this figure to the total number of live births, we obtain an estimate of the total number of different children ever present in the cohort by age seven (B), a figure 11% higher than the number of live births. This is likely to be an overestimate of the population ever at risk of contact, however.¹³ We therefore present estimates calculated using both the number of live births and our estimated ever-present population to give an indication of the range within which the true proportions having contact might fall.

¹³ There are several potential problems. Some of the permanent and long-term arrivals will have been New Zealand born children returning to this country while some children may have been permanent and long-term arrivals more than once. In addition, some children whose families intended to stay only for a short period on arrival may have settled permanently. We expect that on balance we over-estimate the number of children ever present.

Table 1 Estimated Number of Children Born in 1993 Ever Present in the New Zealand Resident Population by Age Seven

A	Number of live births registered in New Zealand in 1993	58,866
	Estimated total number of children born in 1993 entering New Zealand by age 7*	6,686
B	Estimated total number of children born in 1993 ever present in New Zealand by age 7	65,552
	Percentage difference between 1993 live births and estimated total number of children born in 1993 ever present by age 7	11.4

Source: Statistics New Zealand: Number of live births, years ended 1993-1999; Permanent and long-term arrivals by single year of age, year ended June 1994-2001.

* We use June year estimates of permanent and long-term migration because they provide the greatest degree of overlap with the cohort population. These estimates do not map perfectly onto our birth cohorts, however. The total should therefore be viewed as an estimate.

PREVALENCE OF CONTACT AND TIMING OF FIRST CONTACT

Cross-sectional data show that at any point in time since the early 1990s just over three in every ten New Zealand children aged under seven were included in a benefit, with the age-specific rates beginning to fall from age five.¹⁴ What these data do not tell us, however, is whether the same group of children were included in a benefit year after year, or whether inclusion in benefit – and, by proxy, low income – was more widely distributed across the child population. By following a cohort of children over their early years we are able to obtain an estimate of the proportion of children who ever come into contact with the benefit system – an indicative measure of the prevalence of low income.

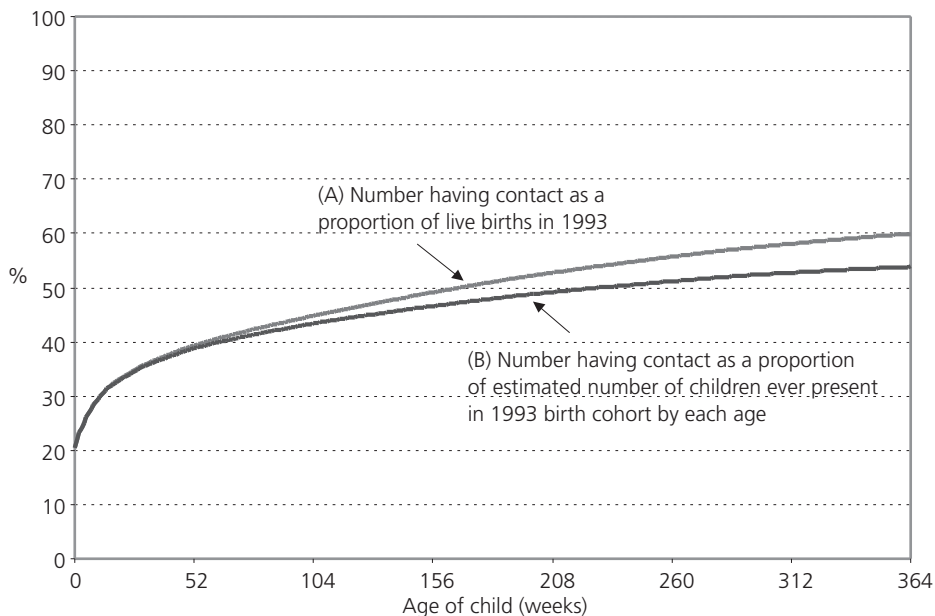
Figure 1 shows the estimated proportions of children who were included in a first-tier benefit by different ages up to age seven. The broad findings persist regardless of whether we use the number of live births during 1993 (A) as the estimate of the population at risk, or our migration-adjusted estimate of the total number of children ever present in the 1993 birth cohort by each age (B).¹⁵ Figure 1 shows that:

- More than half of children born in 1993 had some contact by age seven (364 weeks from birth).
- Almost four in ten had experienced contact by the time of their first birthday (52 weeks from birth).
- Around one fifth were included in a benefit at birth.

¹⁴ Source: SWIFTT: Numbers of children included in benefit by single year of age as at 31 December 1993-2000; Statistics New Zealand: Estimated resident population by single year of age as at 31 December 1993-2000.

¹⁵ Derived for single years of age using the approach outlined in Table 1, and then smoothed using linear interpolation.

Figure 1 Estimated Proportion of 1993 Birth Cohort Having Contact with the Benefit System by Each Age*



Source: MSD benefit dynamics data set, December 2000 update; Statistics New Zealand: Number of live births, years ended 1993-1999; Permanent and long-term arrivals by single year of age, year ended June 1994-2001.

* The denominator for (B) is based on our estimate of the number ever present in the cohorts by given ages. Numbers of births are used as the estimate for age 0 weeks. The numbers of permanent and long-term arrivals in single-year-of-age groups each year are added to gain estimates of the number ever present by each birthday. Estimates for intervening weeks are obtained using linear interpolation.

The proportion of children having contact rises steeply over the first few weeks from birth. When we examine the caregiver's benefit status prior to the child's inclusion, it appears that in most cases this reflects a delay in applying for the child to be included in a benefit that was already ongoing. We assume that where a child was included in a benefit after birth but within their first eight weeks of life, and where benefit receipt was ongoing at their inclusion, that child was in contact with the benefit system from birth. Table 2 shows the number and estimated proportions of children in the cohort having contact at birth before and after this revision.

After revision, we estimate that 40.8% of those children who had contact with the benefit system before age seven were included at birth. These figures suggest that for as many as a quarter (24.5%) of live births in New Zealand in 1993, low family income preceded or coincided with the birth (Column A).

Altogether, two-thirds of children who had contact with the benefit system before age seven, and close to 40% of children overall,¹⁶ experienced their first contact either at birth or during their first year of life.

Table 2 Number and Estimated Proportion of 1993 Birth Cohort Having Contact by Given Ages, Before and After Revision

	Number	% with contact	% 1993 births (A)	% estimated number ever present in cohort by age* (B)
At birth				
before revision	12,017	34.0	20.4	20.4
after revision	14,401	40.8	24.5	24.5
By age 1	23,112	65.5	39.3	38.7
By age 7	35,301	100.0	60.0	53.9

Source: MSD benefit dynamics data set, December 2000 update; Statistics New Zealand: Number of live births, years ended 1993-1999; Permanent and long-term arrivals by single year of age, year ended June 1994-2001.

*Derived using the approach outlined in the note to Figure 1.

This concentration is likely to reflect a number of factors:

Biology and economic structures conspire to lead to most children being born when parents' wages are typically at their lowest. Moreover the nurturing and care needs of the children themselves may limit the labour market options of the parents (or parent, if only one is present). (Aber and Ellwood 2001:284)

The stability of parents' employment might also be at its lowest ebb: some of the concentration of contact in the first year of life might partly reflect the continuation of the parents' existing patterns of intermittent contact with the benefit system due, for example, to seasonal or temporary employment.

The transition to parenthood has also been associated with an increase in marital conflict for some couples, which may increase the likelihood of separation (Belsky and Rovine 1990). In addition, increasing numbers of children live with one parent from birth.¹⁷ This, coupled with the more constrained care and labour market circumstances

¹⁶ 1996 Census data also suggest levels of contact in this range. Special tables prepared by Statistics New Zealand show that on Census night 45% of babies aged under 1 year were in families that had received some state income support in the last 12 months. The slightly higher level of contact suggested is explained by the broader definition of state income support used (including ACC payments, Student Allowances, and benefit payments other than first-tier income-tested benefits).

¹⁷ The proportion of babies under 1 year who were living with a sole mother rose sharply from 7% in 1981 to 19% in 1991, then more slowly to reach 21% in 1996 (Davey 1998b Table A3).

of sole parents, particularly (but not only) in the first year of the child's life, will explain some of the concentration of benefit contact at this early age.

DURATION

The length of time a child lives in a family where income is low has been identified as an important factor in determining outcomes for children, with adverse outcomes generally more pronounced among children who experience long-term low income (Duncan and Brooks-Gunn 1997, Mayer 2002).

In this section we examine two measures of the duration of contact with the benefit system that are indicative of the length of time children spend in low-income circumstances:

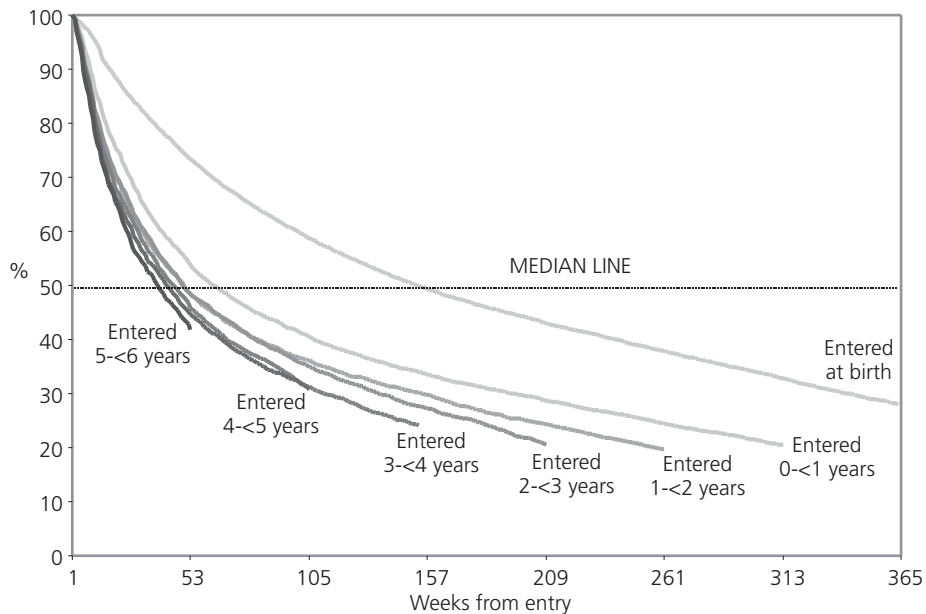
- duration of continuous contact with the benefit system from the date of first contact; and
- total duration, aggregating over all periods of contact up to age seven.

In calculating both measures we use the revised start date for first inclusion in benefit outlined above. We also treat two spells separated by a break of less than 15 days as a single spell of unbroken contact. In doing so, we assume that many such breaks are administratively generated and do not correspond to an underlying improvement in the child's income circumstances.

Continuous Duration from First Entry

The duration of the first period of contact with the benefit system can tell us about the extent to which children experienced low income on a continuous basis. We might expect that children who experience lengthy unbroken periods of low income may be more susceptible to poor outcomes than children for whom low income is interspersed with periods of higher income (Ashworth et al. 1994). It is important to emphasise the limitations of our measure of continuous duration, however. As benefit dynamics data tell us nothing about those children who experienced low income after exiting benefit, it is likely to understate the length of continuous low income.

Figure 2 Proportion of 1993 Birth Cohort Remaining Continuously on Benefit at Given Weeks From First Contact by Age of Child at First Contact



Source: MSD benefit dynamics data set, December 2000 update.

Overall, 60% of children who entered before age six (including those who entered at birth) remained in continuous contact with the benefit system one year from their first entry. Children who entered at birth showed a quite distinct pattern. Almost three-quarters remained continuously on benefit after a year, half remained at age three, and 28% spent all of their first seven years of life continuously on benefit. This group appears to be one with a particularly high risk of spending lengthy continuous periods in a family where income is low.

Total Duration by Age Seven

Half of the children who had contact with the benefit system by age seven had just a single benefit spell by that age.¹⁸ A further 26% had two spells, while the remaining 23% had three or more spells. Our second measure of duration takes into account these repeat spells and provides an indicative measure of the total length of exposure to low income. Again, it is important to emphasise that we cannot be sure that periods spent

¹⁸ A spell is defined as a period of continuous contact. We treat two spells separated by a gap of less than 15 days as an unbroken period of receipt, and include the length of the gap in calculated duration. Children may move between benefits and between caregivers within a spell.

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off benefit were associated with higher income levels. Our measure will understate the total duration of low income where this was not the case.

Table 3 shows numbers of children born in 1993 with given total durations on benefit by age seven. Column (A) shows the distribution of durations for all children with contact, while column (B) expresses these results as a proportion of the estimated number of children ever present in the 1993 birth cohort by age seven.

Table 3 Total Duration on Benefit by Age Seven, 1993 Birth Cohort

	Number children	% of children of with contact (A)	% of estimated number of children ever present in 1993 birth cohort by age 7 (B)
No contact	30,251		46.1
< 1 year	7,619	21.6	11.6
1-<3 years	7,771	22.0	11.9
3-<5 years	6,271	17.8	9.6
5-<7 years	9,651	27.3	14.7
All 7 years	3,989	11.3	6.1
Number of children who came into contact with the benefit system by age 7	35,301	100.0	53.9
Estimated number of children ever present in 1993 birth cohort by age 7*	65,552		100.0**

Source: MSD benefit dynamics data set, December 2000 update; Statistics New Zealand: Number of live births, years ended 1993-1999; Permanent and long-term arrivals by single year of age, year ended June 1994-2001.

*See Table 1 for derivation

**Percentages may not sum due to rounding.

We see that slightly under half of children in the birth cohort had no contact by age seven, while 11.6% had a total duration of less than one year. A fifth experienced moderate contact, spending between one and four years in total included in a benefit; 14.7% spent a total of at least five years but not all of their first seven years in contact with the benefit system; 6.1% of children ever present in the 1993 birth cohort entered at birth and spent all of their first seven years in contact with the benefit system.

From these results we can infer that *at least* one-fifth of children in the cohort spent at least five of their first seven years of life in families with low income. More than one in twenty appear to have spent all of their first seven years on low income. These are likely to be conservative estimates as they exclude periods of low income that occurred without contact with the benefit system. They are also based on a likely overestimate of the population ever present in the 1993 cohort, and one that makes no adjustment for the shortened risk periods of children who moved into or out of the country over the period.¹⁹

FACTORS ASSOCIATED WITH LONG DURATION

This section provides a preliminary examination of some of the possible factors associated with long benefit durations. A more detailed analysis is the subject of further work.

Ideally, we would like to examine the factors associated with variations in the duration of low income across the cohort as a whole. However, the benefit dynamics data set does not provide us with any data on those children who experienced low income but did not have contact with the benefit system. Thus we are limited to an examination of factors that are associated with the length of contact with the benefit system for those children who had contact.

In order to standardise the length of the follow-up, we restrict the analysis to those children who came into contact with the benefit system before their second birthday and follow them over five years from their first contact. Column A in the tables below shows the proportion of children, entering before age two who went on to have a total duration of at least four years contact, and presents a range of characteristics as they were observed at the child's first contact. Column B presents the proportion of children with contact before age two who had these characteristics. The characteristics selected are those that are readily available from the data set. As we have very limited information on the characteristics of the child, much of the analysis is based on the characteristics of the primary beneficiary.²⁰

¹⁹ An estimated 11% arrived as permanent or long-term arrivals after their birth; an estimated 9% left as permanent and long-term departures at some point in their first seven years. The figures therefore understate the proportions spending most or all of their time present in New Zealand in contact with the benefit system. We make no attempt to calculate the scale of the underestimate.

²⁰ Note that where we have revised the start date of the child's first contact for some children who entered in the few weeks after birth (see the section on strengths and limitations of the data) we use data that relate to their unrevised first date of inclusion.

Age of Child

Table 4 shows that the sole characteristic of the child that we obtain from benefit data – the age of the child at first entry into the benefit system, is an important factor associated with having long-term contact with the benefit system. More than six in ten children who had contact at birth spent a total of at least four out of the five years from first entry included in a benefit. This compares with 35.8% of children aged one at first contact. In part this result suggests that children born into families in difficult economic circumstances are more at risk of experiencing long periods of low income than families for whom the events that precipitate contact with the benefit system occur after the child’s birth. At the same time, those caring for newborn children may be less likely to participate in paid employment than those with older children, and such lengthy absences from the workforce may restrict the ability of the caregiver to secure employment as the child ages.

Table 4 Proportion of Children With Contact by Age 2 Having a Long Benefit Duration, by Age of Child at First Contact

	% of children with contact by age 2 spending at least 4 out of the 5 years from first entry on benefit	% of children with contact by age 2 in category
Age of child at first contact*		
At birth	62.6	(54.7)
0 – <1 years	45.0	(33.1)
1 – <2 years	35.8	(12.3)
All	53.5	(100.0)

Source: MSD benefit dynamics data set, December 2000 update.

*After revision. See the section “Prevalence of contact and timing of that contact” (above).

Family Formation and Demographic Characteristics of Primary Beneficiary

Living with a female primary beneficiary at entry increased the likelihood of a child having a long duration on benefit (Table 5). This partly reflects the higher incidence of sole parenting among this group, given that the majority of the children in sole-parent families were living with a female parent. It may also partly reflect the tendency for the primary beneficiary in two-parent families to be the male. Around 60% of the children who entered by age two were living with a single caregiver at first contact. These children were significantly more likely than those with partnered caregivers to experience a lengthy total duration.

There are several reasons why children of sole caregivers may be more likely to experience a lengthy duration on benefit, including the loss or absence of a potential earner and the reduced opportunity to increase the level of household income through employment. Barriers to securing employment such as those arising from a lack of affordable quality childcare and the lower average qualifications among sole parents are likely to play a role (Goodger and Larose 1999). Given that most sole parents are female, the lower wages of women generally may play a role. Parenting choices and trade-offs may also be important. While very few participants in a recent study of sole-parent benefit recipients saw benefit income as providing an adequate standard of living for their children, most viewed their ability to focus on the care of their children while on benefit as crucial to their children’s well-being (Saville-Smith and James 2001).

In a later paper we will explore the way in which the characteristics and circumstances examined in this section unfold over children’s period of contact with the benefit system, and the impact that this unfolding has on their likelihood of having a long duration. Preliminary analysis of the caregiver changes of those children who had contact before age two and spent four or more of the five years from first entry on benefit shows that considering changes in circumstances over time will be important. While 42% had the same sole caregiver throughout all their periods of contact up to age seven, and 7% had the same two partnered caregivers throughout, the remaining half experienced some degree of caregiver change.

Table 5 Proportion of Children with Contact by Age Two Having a Long Benefit Duration, by Selected Characteristics of the Primary Beneficiary at First Contact

	% of children with contact by age 2 spending at least 4 out of the 5 years from first entry on benefit	% of children with contact by age 2 in category
Sex of primary beneficiary:		
Female	61.5	(63.2)
Male	39.8	(36.8)
		(100.0)
Partnership status by sex of primary beneficiary:		
single female	64.3	(57.1)
single male	62.0	(5.1)
all single	64.2	(62.2)
partnered, primary female	35.6	(6.2)
partnered, primary male	36.2	(31.7)
all partnered	36.1	(37.8)
		(100.0)

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Table 5 cont...

	% of children with contact by age 2 spending at least 4 out of the 5 years from first entry on benefit	% of children with contact by age 2 in category
Age of primary beneficiary at date of first entry of the child:		
< 20	70.7	(12.2)
20-24	58.4	(28.9)
25-29	49.3	(25.8)
30-34	45.0	(19.2)
35-39	45.8	(9.1)
40+	51.7	(4.8)
		(100.0)
Ethnicity of primary beneficiary:		
not coded	39.4	(15.3)
NZ Māori	68.6	(31.9)
NZ European	49.2	(36.7)
other European	34.6	(1.9)
all Pacific peoples groups	51.9	(10.7)
Samoa	48.9	(5.7)
Cook Islands Māori	62.5	(2.0)
Niuean	66.4	(0.5)
Tokelauan	58.7	(0.2)
Tongan	46.0	(2.3)
Chinese	19.9	(0.6)
Indian	32.1	(0.7)
Other	46.2	(2.1)
All	53.5	(100.0)

Source: MSD benefit dynamics data set, December 2000 update.

Comprising around one in eight of those with contact by age two, children with a primary beneficiary who was aged under 20 at the time of their first contact were disproportionately at risk of having a long duration. These findings are closely related to the results for partnership status, given that most women who give birth as teenagers are unpartnered. Results may also reflect the lower average qualifications and work experience among younger caregivers, which may affect their chances of long-term benefit receipt.

A further characteristic associated with duration on benefit is the ethnicity of the primary beneficiary at first contact. Children included in benefits where the primary beneficiary identified as Māori were substantially more likely to spend at least four out

of the five years from first contact on benefit than children with a primary beneficiary in the New Zealand European ethnic group. In part this is a reflection of ethnic differences in family formation. Although the median age at childbearing among Māori has increased in recent years, Māori still continue to have children around five years earlier than non-Māori. Other possible explanations include the higher incidence of sole parenting among Māori and the lower average qualifications among the Māori population, which affect employment and earnings prospects.

In contrast, the likelihood of having a long duration of contact among children with a primary beneficiary in the Pacific peoples group more closely resembles that of the New Zealand European group. This pattern may reflect, in part, the higher full-time employment rates among Pacific sole parents with a youngest child aged 0-4 years.²¹ This in turn is likely to be related to an increased tendency for Pacific sole parents to reside in a multi-family household, perhaps providing them with greater access to informal childcare (Davey 1998a).

Another possible explanation relates to the high levels of mobility across some Pacific populations. Many children may have spent periods outside New Zealand during their early years, thus reducing their overall duration of contact. This may be particularly important for the 1993-1994 period, when there were net outward flows of Pacific residents.²²

One of the strengths of the benefit data is that it allows us to look at sub-groups within the Pacific population. Results presented here highlight the diversity of the Pacific ethnic group as a whole. They show that children with a primary beneficiary who identified as Tongan or Samoan were much less likely to have a long duration of contact than children whose primary beneficiary identified as Niuean, Cook Islands Māori or Tokelauan.

A small proportion of children were living with a primary beneficiary who identified as Chinese or Indian or "other European". Compared to the other groups, these children were less likely to have a long duration of contact.

Income Support Characteristics

Information on benefit characteristics and prior benefit history among caregivers can provide insights into particular pathways associated with long-term contact among children. Benefit type at entry, for instance, can provide some indication of the type of

²¹ Rochford (1993), Statistics New Zealand 1996 Census, unpublished tables.

²² Statistics New Zealand (2000) Table 5.07. p 126.

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circumstances that culminated in the child's inclusion in a benefit. From our results we see that close to half the children were included in a Domestic Purposes Benefit at first contact. These children had a high likelihood of having a long duration of contact. A smaller group were included in an Unemployment or Training Benefit and had a significantly lower likelihood of having a long total duration (Table 6).

Table 6 Proportion of Children with Contact by Age Two Having a Long Benefit Duration, by Aspects of Benefit Status at First Contact

	% of children with contact by age 2 spending at least 4 out of the 5 years from first entry on benefit	% of children with contact by age 2 in category
Benefit type at first contact:		
Invalids benefit	78.6	(1.1)
Widows benefit	72.5	(0.3)
Sickness benefit	52.9	(13.5)
Unemployment/training benefit	37.9	(36.5)
Domestic Purposes Benefit – sole parent	64.7	(48.6)
Other	50.0	(0.0)
		(100.0)
Benefit status at first contact		
new spell commenced	34.9	(34.2)
spell on same benefit ongoing	61.8	(51.2)
transferred from benefit as primary	68.6	(13.6)
transferred from benefit as partner	65.9	(1.1)
		(100.0)
Declared income at first contact		
Nil	55.6	(91.3)
\$1-80	38.4	(4.7)
\$81-180	29.9	(1.9)
\$181+	20.4	(2.1)
All	53.5	(100.0)

Source: MSD benefit dynamics data set, December 2000 update.

A very small proportion of children (1%) were included in an Invalids Benefit at entry. They had a very high likelihood of having a long duration of contact.

Benefit status of the caregivers before the inclusion of the child may be associated with factors that affect the child's subsequent duration. Where the primary beneficiary was already receiving a first-tier benefit prior to the child's inclusion, that child was more

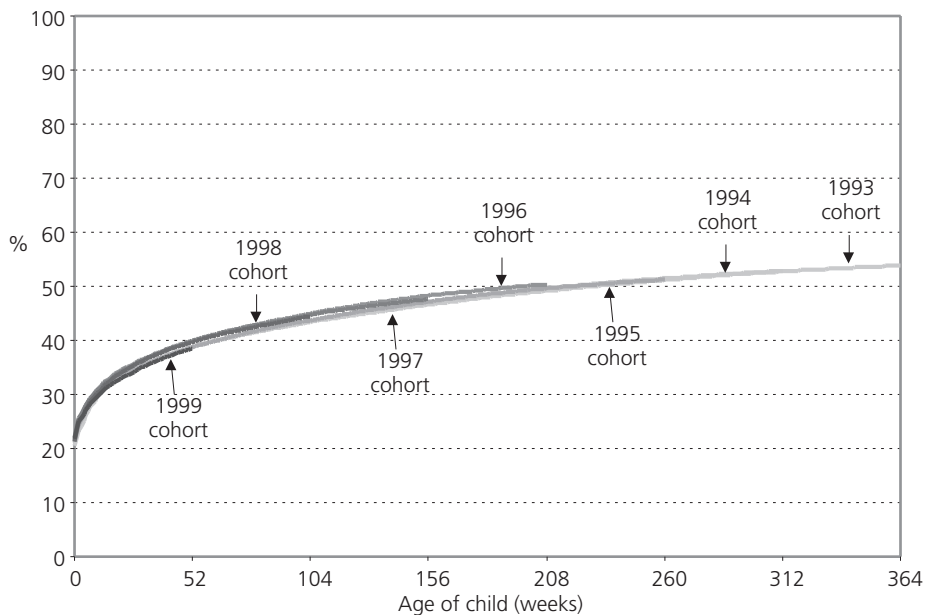
likely to experience a lengthy total duration. Prior receipt of benefit is likely to be indicative of the employment history of the primary beneficiary.

Similarly, where a primary beneficiary was not declaring income at entry and was solely reliant on benefit income, a child was more likely to spend at least four of the next five years included in a benefit. In part this may reflect a greater degree of labour force participation by the caregiver prior to the child's inclusion, which then enables them to obtain or continue in employment. Other factors that may mediate this relationship include the age of the child, the age of any siblings, and the partnership status of the caregiver, all of which could affect the ability of the caregiver to engage in paid employment.

COMPARABILITY OF THE 1993 AND LATER BIRTH COHORTS

This analysis has focused on the 1993 birth cohort because this is the first group that we are able to follow from birth, and the group for whom we can observe the greatest part of childhood to date. How generalisable are our broad findings to later birth cohorts? While we expected that the 1993 cohort might in some respects be unique, arriving as it did at a time of peak unemployment, we found remarkable similarity between this and later cohorts. When chances of contact by given ages are plotted in Figure 3, the successive cohorts can barely be distinguished. Table 7 shows that total duration profiles calculated over different follow-ups and compared across the 1993 and later cohorts changed little.

Figure 3 Estimated Proportion of Children Born 1993-1999 Having Contact with the Benefit System by Each Age*



Source: MSD benefit dynamics data set, December 2000 update; Statistics New Zealand, Demography division: Number of live births, years ended 1993-1999; Permanent and long-term arrivals by single year of age, year ended June 1994-2001.

* The denominator is based on our estimate of the number ever present in the cohorts by given ages. Numbers of births are used as the estimate for age 0 weeks. The numbers of permanent and long-term arrivals in single-year-of-age groups each year are added to gain estimates of the number ever present by each birthday. Estimates for intervening weeks are obtained using linear interpolation.

**Table 7 Estimated Distribution of Total Benefit Durations by Given Ages,*
Children Born 1993-1999**

Total duration from birth	Year of birth						
	1993 %	1994 %	1995 %	1996 %	1997 %	1998 %	1999 %
To age five:							
no time	48.9	48.6	48.7				
some time	42.6	42.4	42.0				
all five years	8.6	9.1	9.3				
all	100.0	100.0	100.0				
To age two:							
no time	56.7	56.5	56.3	55.1	55.3	55.5	
some time	29.3	28.9	28.2	28.6	28.7	29.5	
all two years	14.1	14.6	15.4	16.3	16.0	15.0	
all	100.0	100.0	100.0	100.0	100.0	100.0	
To age one:							
no time	61.3	61.3	61.3	60.2	60.2	60.4	61.6
some time	20.9	20.4	20.0	19.9	20.0	20.6	19.8
all year	17.8	18.4	18.7	19.9	19.8	19.0	18.6
all	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: MSD benefit dynamics data set, December 2000 update; Statistics New Zealand, Demography division: Number of live births, years ended 1993-1999; Permanent and long-term arrivals by single year of age, year ended June 1994-2000.

* The denominator used in these tables is our estimate of the number ever present in the cohorts by the given ages. The numbers of permanent and long-term arrivals in single-year-of-age groups each year are added to the numbers of live births registered for each cohort to gain estimates of the number ever present by each birthday.

If we compare the probability of contact at different ages, however, some differences emerge in the very last year of the study. Figure 4 shows that each of the 1994-1998 cohorts had a lower probability of being on benefit over the last year of observation (which fell at some time in 1999/2000 depending on the birth date of the child) compared with previous cohorts at the same age. The 1999 cohort departs from this trend, its members showing a higher probability of being on benefit in their first year of life than the 1998 cohort. This may reflect problems with the registration of births in 1998 associated with changes in the administration of birth records in that year.²³

Policy changes affecting DPB recipients in 1999 may play a role in accounting for the general pattern of cohort-on-cohort change.²⁴

²³ Many of the births that occurred in 1998 still do not appear to have been registered as a result of these problems. Because a child's birth certificate must be presented in order for them to be included in benefit, this may have contributed to the lower rates of contact observed for the 1998 cohort.

²⁴ The 1999 DPB changes strengthened work expectations for those with children aged 6 or over. Analysis of cohorts of adult DPB recipients through the period of these changes found marked declines in the probability of receipt for the groups affected, with smaller but still marked declines for those with younger children (Wilson and Ball 2001).

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Questions for exploration at a future date, and with a longer follow-up period, are:

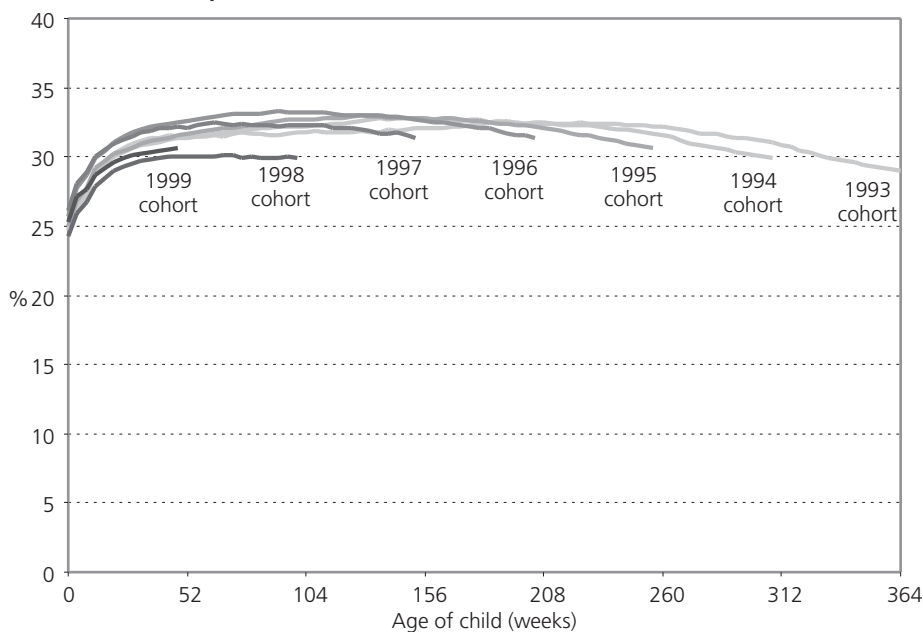
- Was the drop sustained?
- Who did it affect? and
- How did it change total childhood benefit durations?

Perhaps the more important questions are:

- Was the drop in the probability of being on benefit associated with a reduction in the prevalence and duration of low income in childhood? and
- Was it associated with improved living standards?

These questions cannot be addressed using benefit data – an essential limitation highlighted by Aber and Ellwood (2001). In the absence of a national longitudinal survey of children, it is difficult to see how they could be addressed using any other data source currently available.

Figure 4 Probability of a Child Being Included in a Benefit at Weekly Intervals from Birth, Children Born 1993-1999*



Source: MSD benefit dynamics data set, December 2000 update; Statistics New Zealand: Estimated mean resident population for the year ended December, 1993-2000.

* The denominator is based on the estimated mean resident population in single-year-of-age groups for the years ended December 1993-2000. These are used as the estimated size of the birth cohorts at cohort members' birthdays. Estimates for intervening weeks are obtained using linear interpolation.

SUMMARY AND CONCLUSIONS

Increasing attention is being focused on children in poor families and the effects of low income and poor living standards on children's well-being and development. This has generated a growing need for information on the extent to which children in New Zealand are exposed to low income, and the timing and duration of that exposure. This study uses information on children's contact with first-tier income-tested benefits in an attempt to address this need. Although not a perfect proxy, contact with the benefit system provides an indication of children's experiences of low income and low living standards.

Rather than involving a small minority of children, findings presented here suggest that more than half of children born in the mid- to late 1990s may have been exposed to low income for at least part of their early years. They also suggest that most of the children who had a period of low family income in their first seven years of life experienced low income before their first birthday. For a large proportion of children, perhaps as many as a quarter, low family income preceded or coincided with their birth. The high levels and early timing of contact with the benefit system highlight the vulnerability of very young children to low income.

Our findings suggest that not all of those who experienced low income did so over extended periods, but we estimate that at least one-fifth of New Zealand children born in 1993 spent at least five of their first seven years of life with caregivers on low incomes. More than one in twenty appear to have spent all of their first seven years on low income. These findings challenge our understanding of the extent of persistent low income among New Zealand children. They suggest that for a sizeable group of children, low income is a sustained feature of their early years.

The analysis identified a number of factors that increase the risk of experiencing a long total benefit duration once a child has come into contact with the benefit system. Disentangling the independent effects of these and other factors on children's benefit experiences is the subject of further work. Many of the factors highlighted are likely to be closely interrelated, and some may reflect the influence of factors not captured by benefit data, such as the educational attainment and employment history of the caregiver. They include being in contact with the benefit system at birth, living with a sole caregiver at first contact, and first appearing with a primary beneficiary who is female, Māori, aged under 20, or in receipt of the Domestic Purposes Benefit.

That these factors point to sole parenthood as a key risk factor is perhaps not surprising given the young ages at which we observe these children. The ability of sole parents to earn their way out of low income is substantially constrained in the New Zealand context, particularly where pre-school children are present. The costs of alternative care

often reduce or eliminate the income to be gained from employment. And concerns about the quality of the affordable alternative care can present parents with difficult trade-offs concerning the relative impacts of either their absence or continued low income on their children's current and future well-being.

Drawing policy implications from this analysis is not straightforward. The literature on outcomes for children tells us that low parental income is associated with poorer outcomes. Part of this association can be explained by family background characteristics that result in both low parental income and worse life chances for children. But even when these background characteristics are controlled for, income still matters: all other things being equal, an increase in income will improve outcomes.

What the literature does not tell us, however, is the size of improvement in outcomes that could be expected if we raised the incomes of low-income families by a given amount, or whether raising incomes would be more cost effective than other interventions. Nor does it offer us a ready made absolute threshold at which we can definitively say that a given level and duration of low income will adversely affect a child's development.²⁵ Most of the available studies estimate the linear effect of family income on children's outcomes. If the effect of an extra dollar income is greater for those on low incomes than for those on high incomes, these studies will understate the effects on outcomes of raising incomes at the bottom of the income distribution (Mayer 2002). If the effect of income is sufficiently strong at low incomes, then this would suggest that policies that raise the incomes of poor families may deliver considerable benefits for children's outcomes. However, as yet we lack evidence on this matter.

What conclusions are drawn from our findings must, then, turn on a judgement about the adequacy of government supports, both financial and non-financial, in protecting the quality of life for children experiencing low income, and in supporting families to make improvements in their income position. If these supports are adequate, our results suggest that government is playing a key role in protecting a group of children that, without assistance, may have poorer cognitive development and lower chances of success in the labour market in adulthood. If we consider these supports lacking, our results suggest that the ability of a large minority of the current generation of children to reach their potential may be compromised.

²⁵ There is also insufficient research to draw conclusions about the applicability to New Zealand of effects found in the mainly American research.

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