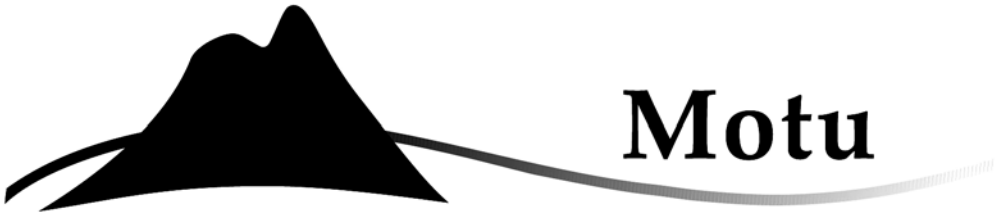

Movements Into and Out of Child Poverty in New Zealand: Results from the Linked Income Supplement

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Abstract

This paper considers the dynamics of child income poverty in New Zealand. Annual movements into and out of poverty by children's households in New Zealand over the 1997/98, 1998/99, and 1999/2000 periods are analysed. The annual Income Supplement to the Household Labour Force Survey allows tracking of dwellings and people in two consecutive June quarterly weeks, and thus allows observation of changes in equivalised household disposable income over a June year. This project is the first to use the Linked Income Survey for analysis of income dynamics and is part of the Ministry of Social Policy's ongoing research on family dynamics.

New Zealand adult and child poverty transitions are compared. Child poverty transitions in New Zealand are compared and contrasted to those of five other countries—Britain, Germany, Hungary, Russia and Spain—where a similar current income measure of poverty is available. The frequency of poverty "trigger events" in New Zealand and their impact on the chances of children exiting and entering poverty are compared to similar data for Britain and West Germany.

JEL classification
I32—Measurement and Analysis of Poverty, J13—Children

Keywords
Child poverty, household income, income mobility.

Contents

1 Introduction

The Ministry of Social Development is currently implementing a research programme on family dynamics, focussing on the influence of family environments on child outcomes through time. Our paper is part of this wider research programme. Our paper considers one dimension of the broad family environment facing children, that of income poverty.

Living in a low-income household is a poor outcome in itself for a child, as poverty reduces consumption possibilities for children (see Greg Duncan, Jeanne Brooks-Gunn and Pamela Klebanov 1994, p. 297; OECD 2001, p. 47; Child Poverty Action Group 2001). This lower consumption is an issue of policy concern, since children have neither the exit opportunities nor the chance to have a voice that adults do.

In addition, there is a fairly strong statistical association between low household income and poor outcomes influencing future life paths for children—including their health, cognitive development, schooling, and delinquency—as well as low income as adults. Some of this association is likely to be causal. But there is considerable debate as to whether income is significant, for what child outcomes, and also regarding the size of the income-child outcome elasticity (Greg Duncan and Jeanne Brooks-Gunn 1997; Susan Mayer 1997). The current body of evidence does suggest that income is more important for those in or close to poverty than for the reasonably well off or rich (Duncan and Brooks-Gunn 1997, p. 597).

Thus our poverty focus, rather than an analysis of income distribution per se, arises out of evidence that relative deprivation of children at the bottom of the distribution is of importance for relative child outcomes later in life, a social investment issue, as well as because of a policy concern about social exclusion of children now.

This paper considers child poverty in a dynamic rather than in the traditionally static context. Our research is among the first to use New Zealand data from the *Linked Income Supplement* (LIS) of the *Household Labour Force Survey* (HLFS), which links two years of data from the *Income Supplement* (IS) to allow a study of annual income dynamics.

A consideration of the dynamics of child poverty is of a great deal of interest for a number of reasons (OECD 2001, p. 38; Bruce Bradbury, Stephen Jenkins and John Micklewright 2001c).

Poverty transitions are important because it is likely that being poor for short periods is less developmentally harmful for children than sustained poverty. And even if the increase in income is not the cause of better child outcomes, the fact that it may be associated with unobservable factors which do lead to better outcomes means a focus on poverty transitions for children is of relevance.

A study of poverty transitions of children provides information on whether poverty is concentrated amongst a small number of children or widely shared across the child population. Does policy need to be designed for a small number of children mired in poverty or for a group with very high turnover? (Bradbury, Jenkins and Micklewright 2001c). Only through examining transitions can this policy question be informed.

A study of poverty transitions gets us one step closer to understanding causes of poverty and of the different factors contributing to inflows and outflows from child poverty, an important part of making good policy to reduce poverty (Stephen Jenkins 1998, pp. 2–3).

At the same time a further aim of the study is utilise the international results to better inform New Zealand policy by adding a New Zealand component to the cross-national comparative work of child poverty dynamics reported in Bruce Bradbury, Stephen Jenkins and John Micklewright (2001a) and Stephen Jenkins and Christian Schluter (2001).

Our paper develops as follows.

In Section 2, we undertake a brief and selective literature review of relevant work on child poverty dynamics. The review provides a context to our analysis by detailing the methods and broad conclusions of the literature and the directions in which it is developing, and indicating where the current paper draws from and adds to this work.

Our next two sections consider the data. Because the data set has not been used before in New Zealand, we consider it in detail. Section 3 describes the data and Section 4 discusses its limitations.

Section 5 discusses construction of the child poverty measure.

One major potential limitation of the data is attrition of people from the sample from one year to the next. A fuller discussion of attrition in Section 6 follows on from a consideration of data limitations and construction of child poverty measures.

The substantive results begin with Section 7 comparing child and adult poverty results at a point in time and through time.

The next section, Section 8, compares child poverty dynamics in New Zealand with those in a number of overseas countries described in Bradbury, Jenkins and Micklewright (2001a). This comparison provides an important benchmark for establishing the relative degree of child poverty dynamics in New Zealand.

Section 9 also involves an international comparison with the UK and West Germany. The section examines events that may trigger exits from child poverty and the chances of exiting poverty conditional on experiencing a trigger event. It thus moves us towards developing a causal story of why households with children may exit poverty. It also considers poverty entry in an analogous fashion

Section 10 concludes with the major findings of the research, discusses future directions of work, and touches on some broad implications for analysis and policy.

This version of the paper is the comprehensive version. A streamlined version will be produced for publication.

2 Selective literature review

This literature review section places our analysis in the context of the existing body of research by detailing methods and broad conclusions, and the directions in which the literature is developing.

We first touch upon New Zealand work on static income poverty and on income dynamics and then the international literature on comparing child poverty dynamics across countries.

There is a small but growing body of New Zealand research on income poverty. As befits the relatively small scale of the research, much of it has a cross-sectional measurement and descriptive focus (e.g. F. Brashares 1993; Vasantha Krishnan 1995; Brian Easton 1995a & 1995b; Bob Stephens, Charles Waldegrave and Paul Frater 1995; Charles Waldegrave, Shane Stuart and Bob Stephens 1996). To a large extent, the focus on cross-sections has been dictated by limits of the available data set, the now three-yearly *Household Economic Survey*. This work has thus far not had a particular focus on child poverty.

There is another small amount of New Zealand literature on income and earnings mobility using Inland Revenue Department tax data (H. Smith and Robert Templeton 1990; John Creedy 1996; Dean Hyslop 2000). This literature considers individual income mobility of those people filing a tax return and cannot directly address issues of child poverty dynamics, for no information is collected on children.

There is, however, some New Zealand research on child poverty dynamics. One study has been undertaken on factors associated with transitions into and out of poverty using the Christchurch Child Health Development data (Tim Maloney and George Barker 2000; for an updated version see Tim Maloney 2001).[1] While extremely valuable, the study is limited to a single-year cohort of around 1000 children and their families, rather than transitions for a cross section of New Zealand children.[2] The sample is neither geographically nor ethnically representative of New Zealand as a whole, although it is socio-economically representative. In addition, the income data collected is somewhat crude. The study stops in 1991 because income data are no longer comparable through time. However, a major strength of the study is that it can be used to examine income transitions as children in the study age from one to fourteen years old.

[1] The Dunedin Multi-disciplinary Child Health Development Study, New Zealand's other longitudinal child development study, has collected much more limited income information. Ranged mother and father figure income data was collected when subjects were aged 13 and 15 years old.

[2] The unit of analysis for looking at poverty transitions in Maloney and Barker's study is the family. Since there is typically only one child observation per family, this amounts to a child focus.

Considering the fourteen years of the children's life trajectory between 1978 and 1991, Maloney and Barker demonstrate considerable income mobility and immobility for the children's family income. The mobility cup is half full or half empty, depending on one's priors, a common finding too in the international literature on income dynamics (OECD 2001, p. 38). In addition, much of the income churning is from just under the poverty line to just over the poverty line (and vice versa).

Using the international benchmark of an earlier version of Bradbury, Jenkins and Micklewright's (2001c) book, Maloney's comparative finding is that "New Zealand, relative to those other countries [in Bradbury et. al.] appears to have a moderate to low level of low-income persistence amongst children" (Maloney 2001, p. 32).

In a further interesting analysis, Maloney and Barker use regression analysis to show that two-parent families, families experiencing large increases in weekly hours worked, and families close to the poverty line (defined as between the bottom and second to bottom quintile), are more likely to climb out of poverty. Falling into poverty is associated negatively with weekly hours of work of the mother and father, a transition to a single parent family, and proximity to the poverty threshold.

An analysis of the impact of persistent poverty and the timing of poverty on later outcomes of the Christchurch study as the subjects move through adulthood would be a valuable extension of this work for the Ministry's family dynamics project.

There is also a body of overseas research considering income poverty dynamics issues for children and families that is of relevance to this project. Most of these studies use data sets specifically designed for longitudinal purposes where in many cases multiple transitions are observed.

Our focus is on the work involving inter-country comparisons. However, we also consider research that involves consideration of poverty over a longer period of the child's childhood and which looks at causes of flows into and out of poverty by children. We are interested in what the unit of analysis is for

income attribution (the individual person or the household), how children are defined (age of child), and the definition of income used (e.g. pre- or post-tax).

The first significant study of inter-country comparisons of child poverty dynamics is Greg Duncan et. al. (1993). They provide an inter-country comparison focussing on low-income families with children (defined as minors) as the unit of analysis. The countries included are Canada, France, Germany, Ireland, Luxembourg, the Netherlands, Sweden and the United States. The income measure is pre-tax. The major aim of the paper is to consider whether mobility out of poverty, where poverty is defined as 50 per cent of median family income, is as great in other countries as in the USA. To eliminate small transitions from under to just above the poverty line, they require the transition out of poverty to be a "significant" jump over the poverty threshold.

Of the countries considered, the USA had the highest cross-sectional poverty rate for families with children and the highest proportion of this population that was in poverty for each year of a three-year window (US equals 14 per cent and Canada equals 12 per cent, compared to half of one per cent for the Netherlands). The spread of cross-country differences in escape rates from poverty varied substantially according to the poverty definition, but transitions out of poverty for families close to the poverty line were strikingly similar across countries. Thus the cause of the more persistent US and Canadian poverty was the much lower starting position of those families in poverty on average relative to the poverty line compared to European families.

The most up-to-date work involving inter-country comparisons of child poverty dynamics builds on the earlier work of Duncan et. al. and has been published recently as a book, with a chapter comparing country outcomes and a variety of country-specific chapters (Bradbury, Jenkins and Micklewright 2001a).

For our purposes the key chapter is that of Bradbury, Jenkins and Micklewright (2001c) which considers child poverty dynamics in the US, the UK, Germany, Ireland, Spain, Hungary and Russia. In accordance with the United Nations Convention on the Rights of Children, children are defined as those under eighteen years of age. Transitions are considered only for children (thus for one-year transition windows the child sample is those between zero and seventeen

years in wave one, for two-year transition windows between zero and sixteen and so forth). Unlike Duncan et. al. (1993), the unit of analysis is the child, not the family with children. Sensitivity is examined to pre- and post-tax family income.

Similar but not identical patterns of dynamics are found across the seven countries, with the exception of Russia, where economic change has led to very high churning. As expected, child poverty mobility increases as the observation window is extended through time. However, in the US and Germany roughly one in twenty children spend ten consecutive years of their lives in poverty.

We now consider some international material addressing possible causal factors. A variety of proximate causes of child poverty dynamics can be identified (Bruce Bradbury, Stephen Jenkins and John Micklewright 2001b, pp. 52–57). Children may enter poverty by being born into it. Equally they may leave poverty by becoming an adult. Putting aside these demographic causes, there are three other broad possibilities causing child poverty transitions: changes in household income associated with the labour market, other changes in income (associated primarily with the welfare system), and changes in the size and composition of the household. Changes in labour market income can be further decomposed into quantity effects (changes in hours worked, including becoming employed) and price effects (changes in earnings per unit time). Changes in household composition include divorce or separation and remarriage and re-partnering as well as arrival of a newborn or departure of an older child (the latter due perhaps to relocation for work or study).

There is some cross-country consideration of events associated with falling into poverty and escaping poverty for families with children in Duncan et. al. (1993). This work involves examining the frequency of "favourable events" (divided into marriage, job gain, more work, social insurance beginning) and "unfavourable events" (symmetrically divided into divorce, job loss, less work, social insurance ending) amongst families with children who exit or enter poverty for the eight countries in their study. The overall cross-country conclusion is that more people carry positive or negative labour market events over the poverty boundary than carry marriage market events. The finding of the relative importance of labour market events is replicated by the OECD (2001) for poverty

transitions more generally. Duncan et. al.'s finding may reflect the fact that marriage market events are less frequent than labour market events, or that marriage market events are less likely to tip children into and out of poverty than labour market events.

Using Canadian data and a more sophisticated approach than that of Duncan et. al. (1993), G. Picot, M. Zyblock and W. Pyper (1999) consider whether annual child poverty transitions are primarily due to changes in parental labour market status or changes in parental marital status. They find that changes in marital status are more strongly associated with child poverty transitions, but occur much less frequently than parental labour market transitions.

Jenkins and Schluter (2001) consider why UK child poverty rates are higher than those in Germany. They provide a very useful decomposition in terms of "trigger events" and conditional probabilities of making a poverty transition given experience of the trigger event.

In comparing Germany and the UK, Jenkins and Schluter find that it is cross-national differences in conditional probabilities of shifting having experienced a trigger event rather than differences in prevalence of the trigger events themselves that explain higher UK poverty entrance and lower exit than in Germany.

Our select literature review reveals a certain amount of New Zealand and international material for comparison and validation later in our analysis. Additionally, the work reviewed provides useful methodologies that can be applied to the New Zealand data. And it is to the data that provides the major source material for this study to which we turn.

3 The linked income supplement

This section provides a detailed discussion of the longitudinal data used in this study. Our discussion of the data is longer than normal as this is the first piece of research to utilise this data. It is desirable that what we have learned is adequately documented.

New Zealand's quarterly *Household Labour Force Survey* (HLFS) currently contains about 15,000 dwellings and 30,000 people. The sample is a

rotating panel, designed so as to facilitate the inter-temporal reliability of cross-sectional estimates of labour force status.[3] The basic unit of sample selection is the geographic address.

Each geographic address is in the panel for eight consecutive quarters. Each quarter, one-eighth of the panel drops out of the sample. Thus the entire panel turns over in a two-year period.[4]

While designed for cross-sectional purposes, the rotating panel of the HLFS provides potentially useful longitudinal information.[5] This information has been used to examine quarterly transitions in labour market status (e.g. Julie Woolf 1989; David Grimmond 1993; Brian Silverstone and Susi Gorbey 1994; Stuart Irvine 1994). However, it has not been used to examine longer-range transitions (more than one quarter), with the exception of some preliminary analysis by Diane Ramsay, Janette Briggs and Max Wigbout (2001). And it has not been used to consider issues of interest to child policy.

In the dwelling's first quarter the HLFS is a face-to-face survey.[6] The surveyor administers the household questionnaire to a householder of working age (15 years plus). The household questionnaire asks a range of questions for the reference week of the HLFS about age, gender, ethnicity, date of birth, relationship to the reference person and years in New Zealand of all people in the dwelling in the reference week. The interviewer then administers the personal questionnaire to the reference person and others of working age in the household

[3] The approximately 37,000 Census mesh blocks are collapsed into 19,100 primary sampling units (PSUs), forming the basis of sample selection in the HLFS. PSUs typically contain between 50 and 100 dwellings. The average is 65. PSUs are then divided into 120 groups dependent on region, age, family type, ethnicity, education, employment status and amenities (derived from the previous census). One thousand seven hundred and sixty PSUs are sampled, with nine households surveyed per PSU. Dwellings are allocated to groups, called panels, of about nine. Each panel is surveyed for eight quarters, after which it is rotated out.

[4] The Spanish data used by Bradbury, Jenkins and Micklewright 2001b and Olga Canto and Magda Mercader-Pratts 2001 to look at child poverty dynamics across eight European countries is a very similar "residence-based" quarterly rotating panel rotating an eighth of the sample out per quarter (Bradbury, Jenkins and Micklewright, 2001a). However, it has income information in every quarter, as opposed to every fourth quarter.

[5] In addition to the Spanish data set already mentioned in footnote four, similar data sets are used overseas for longitudinal purposes. Paul Gregg and Jonathan Wadsworth (2000) exploit the similar short-range panel of the British Household Labour Force Survey for longitudinal purposes and Franco Peracchi and FinisWelch (1995) discuss the US Current Population Survey (CPS).

[6] Thanks to Jacinda Dalziell of Statistics New Zealand for her great help in dealing with detail about collection of the surveys.

who are present, after checking that the reference person's answers on the relevant household questions for each householder of working age are correct. The personal questionnaire collects the labour market information for each person of working age living in the household during the reference week. In the physical absence of householders of working age, arrangements are made to visit and interview at a later date. Proxy responses on labour market outcomes are permissible only on behalf of relatives of the responder to the household questionnaire. If the responder is happy to provide proxy responses, these are acceptable. The process of future interviews is arranged at this first session.

In the absence of any dwelling response in the first quarter, the surveyor visits the address two or three times and attempts to verify non-contact by asking neighbours if anyone is currently living in the dwelling.

In six of the subsequent seven quarters the HLFS is administered by telephone to those within the scope of the survey, unless the dwelling has no telephone number in the first visit or if respondents express a preference for a face-to-face visit. The household details are checked and if necessary amended. The personal labour force questionnaire is administered over the phone with each person of working age. The surveyor may phone back 10 to 15 times at different times of different days to try and track the household and obtain responses to the personal questionnaire. There is no personal visit unless the phone number is disconnected. Again, there may be proxy phone responses to the personal questionnaire of the HLFS by the household respondent, but only on behalf of relatives.

The *Income Survey* (IS) of the HLFS occurs annually every June quarter. The IS has been running since 1997. It is designed to collect information on current hourly and weekly earnings and income from self-employment and from government benefits over the reference week of the HLFS. In addition it collects retrospective information on annual personal income from all sources by 13 ranges over the previous year (Statistics New Zealand 2000a & 2000b).

Unlike the HLFS, the IS must be personally administered face-to-face. No proxy responses to the IS are admitted. On the IS visit the HLFS is again personally and face-to face administered prior to collection of the IS. The main

Statistics New Zealand priority is to collect the HLFS, not the IS. Up to three personal visits are made if a response cannot be elicited on the first visit. Reasons for non-contact are coded.

The factors mentioned above mean that there is much greater individual non-response to the IS than the HLFS, over and on top of the normal greater reluctance of people to report on their incomes than on their labour market status. Attrition is compounded as one individual non-response in a household knocks that household out of consideration for household income transitions.

Because of the rotating nature of the panel, in theory half the dwellings in one IS will also be in the IS the following year. However, this is only currently the case in actuality for the 1997/98 data. Due to accelerated sample rotation the maximum dwelling linkages in the 1998/99 and 1999/2000 LIS are one quarter rather than one half. In the LIS for 2000/2001, there is a return to half the dwellings being eligible for linking in the sample.

What are the possible reasons for the non-response to the IS? There is coding of non-dwelling HLFS response that may give scope for some further analysis.[7] People may die. People may be on holiday. People may be out of the dwelling when the data collection and the various follow-ups occur. People may move out of a household. People may refuse to respond, having responded in the previous year.

[7] The household participation codes for the HLFS are 13: 1 = full response, 2 = full refusal, 3 = part refusal, 4 = verified full non-contact, 5 = non-verified full non-contact, 6 = part non-contact, 7 = death and illness, 8 = all persons out of scope, 9 = vacant dwelling, 10 = dwelling under construction, 11 = dwelling converted to a non-dwelling, 12 = derelict dwelling, 13 = dwelling demolished or removed. Full response includes households where in wave 1 a couple were observed who split up in the interim and in wave two only one adult remains in the household and responds fully. Verified non-contact means at least 10 phone calls and visits by interviewers and confirmation with the neighbours the people are not in the dwelling in the reference week but do still live there. Death or illness means that people have not been interviewed because of sensitivities arising out of recent family death or current illness, rather than because they necessarily are dead or ill.

4 Limitations of the linked income supplement as longitudinal data

This section continues the discussion of the data set begun above, but focuses on limitations of the LIS data as longitudinal information.

A primary weakness of the LIS is that only one annual income transition is observed. The important issue of re-entry into poverty following exit cannot be considered. In other words, while the data set can be used for an analysis of annual poverty dynamics, it cannot deal with important issues of *persistent and cumulative poverty* (Mary Bane and David Ellwood 1986; OECD 2001, p. 40). That said, observing one transition is substantially better than observing no transitions at all, as in a cross-sectional data set.

The point during the year where people enter or leave the household is not observed, and thus at what point they contribute to and call on the household's resources. Typically true longitudinal data designs have a monthly event calendar to more accurately date trace such events in time.[8]

There are other issues. Because the LIS is address-based, more mobile sectors of the population are under-represented in the survey. The problem can be offset by use of longitudinal weights that re-weight for observed attrition biases. Nevertheless, if there are unobservable factors causing mobility between dwellings that the weights do not account for, attrition biases may remain. Attrition issues are discussed in more depth in Section 6.

The data set contains information on children (defined as those under 15 years of age) in each dwelling in terms of their age, sex, country of birth and ethnic group.[9] There is also information on their relationship to the adults in the dwelling. However, there is no other information included on children. In particular, there is no direct information on child outcomes allowing an examination of income and poverty on child outcomes.

[8] There is a possibility that the interim quarters of HLFS could be used to more accurately date people entering and leaving a dwelling and entering and leaving paid employment. This may be worth following up in the future.

[9] The United Nations Convention on the Rights of the Child (UNCROC), ratified by New Zealand, defines children as those under 18 years of age.

Because of significant non-response to the IS, income is often imputed. The imputation algorithm used searches for a record with the same demographic characteristics as the person with missing income and assigns them the income of the first complete and matching record found. This imputation approach occurs anew randomly for each new cross-section, independent of the record that was used for imputation in the previous wave. Thus income transitions will in all likelihood be overestimated as independent cross-sectional imputation of income records in either wave one or wave two is likely to lead to an observed change in income where none actually takes place. Sensitivity of results to inclusion and exclusion of imputed records can be used to examine the extent of this issue.

Exclusion of imputed income records, our preferred option, reduces the number of the matched sample records by eliminating any children's *household* where there is at least one imputed income record for any *individual* in the dwelling for either wave one or wave two.

It may be possible in the future to increase the amount of information in the sample without adding spurious transitions through longitudinal imputation of individual income. For reasons of cost, this option was not pursued.

Another issue is that the income data are address-based rather than family-based. However, the data set does include important information on the social (typically family) relationships between the children and the adults in the dwelling.

Non-place-based family relationships cannot be explored. Equally, if one parent of a separated family with children has the children two nights a week, the contribution of the second household to the child's food, clothing, housing, education and so on is not registered. Flows of resources from extended family members who are not present at the same address are also not captured. Such flows may be more important for Māori and Pacific children who are overrepresented amongst the poor.

There is no information on wealth, or on actual or imputed income from other sources. For example, if child support is paid directly, it is not observed in the IS.

Finally, the LIS contains neither consumption nor expenditure information that would have provided an alternative measure of household material wellbeing.

5 Measuring child poverty using the linked income supplement

Our study makes the unit of analysis the child. The unit of income accounting is the household. We use data on weekly total income of those who live in a household with at least one child, observed in both Income Supplements. Current PAYE tax rates are applied to the gross income to obtain after-tax personal weekly income. We make a series of adjustments for child support payments, assuming that weekly income questions are not picking up annual IRD family tax credits.[10] Net income is then summed across the household and equivalised using the square root of the number of people in the household. This net weekly household equivalised income is attached to each individual child in the household.

The approach replicates as far as possible the methods followed in Bradbury, Jenkins and Micklewright (2001a) with the aim of making an international comparison which is as accurate as possible.

We exclude from our analysis all households where there is any cross-sectionally imputed income for any adult in the household in either the first or second period. Our belief, confirmed by the data, is the income imputation algorithm adds false transitions to the data.

This study also uses the data on annual income as the accounting period. Annual income information, recalled over the previous year, is provided in the IS in ranges. We make point estimates of annual personal income using 1995 *Household Economic Survey* mid-point estimates of ranges. PAYE tax rates are applied to the annual income estimate, and incomes are then again summed across the household, equivalised and attached the individual householders, adult and child.

[10] For more detail on adjustments for child benefits, see Appendix A.

In theory more current weekly income variation is likely to be due to fluctuations in transitory income than for annual income variation. On the other hand the annual measure will miss short periods of poverty within the year, which may be harmful if there are constraints in the extent to which households can go into short-term debt to finance a within-year income shortfall.

Evidence from the British Household Panel Survey suggests that in practice current income and annual income measures provide similar pictures of the static income distribution, composition of the low income population, income distribution amongst sub-groups, income mobility, and low income transition rates (René Boheim and Stephen Jenkins 2000). This British result suggests that the use of a current income measure, as is employed here, may give empirical results little different from annual income.

There is another reason why current income is favoured over annual income in this study. The IS aims to accurately measure weekly income rather than annual income. The annual income measure is recorded with much less precision than the weekly income measure because of the ranged nature of the data. Greater error is also likely because incomes are recalled over the past year rather than in the reference week. Because our judgement is that measurement error in annual income arising out of ranged data and recall problems is likely to impart greater spurious variation than transitory income fluctuations in better measured current weekly income, weekly current income is our preferred measure for examining child poverty transitions.

Poverty is typically measured in our paper as having an equivalised disposable household income of below 50 per cent of the median. The rationale for the 50 per cent line is the practical one of international comparisons. Some comparisons require use of a 60 per cent median poverty line and in other cases 60 per cent is used to assess sensitivity of the conclusions to a different arbitrary line.[11]

The following weights were available for use in the study. First, there are adult weights. In this case adults were defined in this instance as those over

[11] Because the HLFS contains no housing information, sensitivity cannot be examined to inclusion and exclusion of housing costs.

the age of 15 in both waves one and two who, as a minimum, complete the HLFS, including those with both imputed and non-imputed income. Thus only children between 15 and 18 could receive an individual weight. Second, there are synthetic household weights constructed out of mean adult weights by household and then applied to all residents in the household, including children.

There are two versions of these synthetic household weights, respectively including and excluding imputed income. The version incorporating imputed income was used to produce a weighted population median income for calculating poverty thresholds. The non-imputed version was used to weight up the child and population poverty rates.

Median income was calculated for each wave using all adults and children, including those with imputed household income, who appear in both wave one and wave two and weighted using a ”synthetic” household weight. The poverty line was taken as 50 per cent and 60 per cent of the population median and calculated for each wave.

Weighting was found to have a fairly minor impact on transitions into and out of poverty. However, weights are used as a preferred option on a priori grounds.

Standard errors for the LIS are presented in Appendix B.

6 Child’s household attrition in the linked income supplement

An issue inevitably raised when using data from any longitudinal survey is attrition bias. Attrition can result in non-representative samples. Non-representative and hence biased estimates of income transitions may result. The LIS has a potentially larger problem with attrition compared to explicit longitudinal designs, since people who are not located at the physical address at the first wave are not chased up in the second wave, as they would be in a true longitudinal design. In addition, the priority of the survey is to collect labour market rather than income information. This further increases attrition from the IS.

A summary table of the pooled data in Table 1 shows that of 8464 potential child poverty transitions in the pooled LIS data set, only 4105 actual poverty transitions (48.5 per cent) can be used. The majority of missing observations—2666 (31.5 per cent) in total—are lost through income imputation in the child's household in either wave one or wave two or both. These observations are not included because the cross-sectional income imputation method adds spurious income transitions.

Other reasons (almost all due to non-HLFS response in wave two) account for 1134 of the loss (13.4 per cent), while the remainder—559 (6.6 per cent)—is accounted for by the child leaving the geographic address over the period.

Table 1: Imputation and attrition for the pooled LIS data—numbers, row percentages, and column percentages

	Wave two				
	No imputed income in child's household in wave two	*Imputed income in child's household in wave two*	*Child moved address in wave two*	*Other (mostly non-HLFS response in wave two)*	*Total*
Wave one					
No imputed income in child's household in wave one	4105 66.1 77.4	923 14.9 63.0	399 6.4 71.4	787 12.7 69.4	6214 100.0
Imputed income in child's household in wave one	1200 53.3 22.6	543 24.1 24.1	160 7.1 28.6	347 15.4 30.6	2250 100.0
Total	5305 62.7 100.0	1466 24.1 100.0	559 6.6 100.0	1134 13.4 100.0	8464 100.0

Having defined overall poverty as 50 per cent of equivalised median household income, we break down the 6214 potential child poverty transitions in wave one into a simple two-by-three attrition table (in poverty/not in poverty by in poverty/not in poverty/attrition) pooled across the three LIS's (see Table 2). Longitudinal attrition is high. The situation of about a third (33.9 per cent) of children whose poverty status is observed via non-imputed household income in

wave one could not be assessed in wave two. In addition, children in poverty in wave one are somewhat more likely to suffer attrition (38.5 per cent) than those not in poverty in wave one (33.1 per cent). Higher attrition rates for the poor generally are also found in overseas longitudinal studies (OECD 2001, p. 43).

Table 2: Raw pooled LIS, numbers and row percentages of child poverty transitions

		In poverty wave two	*Not in poverty wave two*	*Attrition wave two*
In poverty wave one	Number	270	327	373
	Row percentage	27.8	33.7	38.5
Not in poverty wave one	Number	306	3202	1736
	Row percentage	5.8	61.1	33.1
Total wave one	Number	576	3529	2109
	Row percentage	9.3	56.8	33.9

What are the reasons for observed attrition by poverty status? Table 3 breaks down child's household attrition by different reasons and compares these differences for children in and not in poverty. Those in poverty in wave one are slightly more likely to move address and to be in a household where at least one person did not respond to the HLFS.

Table 3: Pooled LIS, row percentages of attrition

Reasons for attrition in wave two	*In poverty wave one*	*Not in poverty wave one*	*Difference in attrition between those in poverty and those not in poverty in wave one*	*Total*
Total attrition wave two	**38.5**	**33.1**	**5.4**	**33.9**
Of which:				
Imputed income in child's household in wave two	14.7	14.9	–0.2	14.9
Child moved address in wave two	8.7	6.0	2.7	6.4
Other (mostly non-HLFS response in wave two)	15.1	12.2	2.9	12.6

Attrition has the potential to bias the transition results. There are upper and lower bounds for flows that can be estimated under the polar assumptions that either all those children not observed in wave two change poverty state or all those children not observed in wave two do not change poverty state. The maximum bounds for transition rates into and out of poverty are unsurprisingly high. We do not know if the point estimates where children are observed in both wave one and wave two are biased upwards or downward within these bounds and, if so, by how much.

To investigate this further we turn to a modelling approach. We estimate probit regressions on the likelihood of being missing in the second wave for both the poor and non-poor children and on the likelihood of exiting and entering poverty. A variety of wave one household variables are used as explanatory variables. We can observe how the probability of exiting (entering) poverty changes as the probability of leaving the sample due to attrition increases. The poverty exit (entry) probability can then be inferred from this information for those children who actually suffer attrition.[12] Information on "predicted" poverty entry rates (the ratio of the number of children entering poverty between waves one and two to the number of children not in poverty in wave one) and exit rates (the ratio of number of children who exit poverty between waves one and two to the numbers of children in poverty in wave one) for attritors can be combined with the actual entry and exit rates of non-attritors to give a "best guess" of overall transition rates.

The results of the modelling exercise are shown in Table 4. There are two modelling estimates for 1999/2000, where cross-sectional weights were

[12] An alternative source of information is available to check for attrition biases. Our problem is that we don't know what happens to children observed in the LIS in wave one but who move in wave two. However, currently there are children observed in wave two but not observed in wave one and thus not currently considered in our study since we observe no transition. However, we could assume that children who move out in wave two, conditional on being observed in wave one, have similar wave two outcomes to children who move in wave two, conditional on not being observed in wave one. We can see if the wave two cross-sectional poverty pattern of those who move in differs greatly from the wave one poverty pattern of those who move out. If it were greatly different we would be more worried about attrition bias. The advantage of using movers in the form of arrivers to tell us something about leavers is that the fact of their movement means that we have taken into consideration unobserved variables associated with moving. For resource reasons, this method was not explored. It is not, in addition, unproblematic. Children who move in may be very different from those who move out.

available. No cross-sectional weights were available for other years. The results suggest that the "best guesses" of poverty entry and exit rates are little different and not systematically different from the point estimates of transition rates on the complete data. We conclude that the evidence suggests that attrition bias is not likely to significantly impact on our results.

That said, we believe that further work on attrition in the LIS could be of considerable value in establishing a sound basis for future work on the data set.

Table 4: Modelling child poverty entry and exit rates to allow for attrition biases

	Actual poverty exit rate	*Modelled exit rate of children in households suffering attrition in wavetwo*	*"Best guess" poverty exit rate*
1997/1998	53.6	53.6	53.6
1998/1999	64.5	60.0	62.1
1999/2000			
unweighted	46.6	50.2	48.8
weighted	51.6	47.9	49.2
	Actual poverty entry rate	*Modelled entry rate of children in households suffering attrition in wave two*	*"Best guess" poverty entry rate*
1997/1998	7.9	9.1	8.4
1998/1999	9.4	10.3	9.8
1999/2000			
unweighted	9.5	10.1	9.8
weighted	8.8	9.5	9.1

7 Child and adult poverty and poverty dynamics in the linked income supplement

This section compares child poverty rates and child poverty dynamics with those of the adult population. The main sensitivity explored is to differences in the poverty line. We considered making benchmark comparisons with other New Zealand research on child poverty dynamics but the differences in data along many dimensions were sufficiently great to persuade us the task was unrewarding.

Table 5 shows that slightly less than one in eight children are in poverty, measured as less than 50 per cent of median disposable income. Child poverty rises markedly to almost one in four children when the chosen poverty line is 60 per cent of median income. The chances of an adult being observed in poverty are always lower than for children, regardless of the chosen poverty line.

Children are more likely to be in poverty than are adults in New Zealand. This pattern, familiar from the overseas literature, is replicated elsewhere regardless of the definition of poverty.

It is likely that the higher rate of child poverty is driven off some combination of four factors. First, almost by definition, children typically provide no income for the numerator of household equivalised income but contribute to the hungry mouths in the denominator. Second, parents have children earlier in the earnings life cycle, and parental incomes have yet to peak. Third, having children has implications for (typically) female labour supply and thus this lowers labour market earnings of the household as someone stays at home to provide non-market income in terms of childcare. Fourthly, poor people may have more children.

Table 5: Cross-sectional rates of child poverty compared with adult poverty

	Wave one 50 per cent of median	*Wave two 50 per cent of median*	*Wave one 60 per cent of median*	*Wave two 60 per cent of median*
Children	13.1	12.6	23.2	22.8
Adults	9.4	8.8	17.2	16.4

Poverty experiences over a year are explored for adults and children in Table 62. The *never poor* are those who are not below the poverty line in either wave one or wave two. Those that *enter poverty* are not poor in wave one but are poor in wave two. Those that *exit poverty* are poor in wave one but not poor in wave two. As a percentage of the population the four groups sum to one hundred.

Where poverty is measured as below 50 per cent of median income, over one in five children have at least one poverty experience compared to one in six adults. For poverty defined as less than 60 per cent of the median, children remain more likely to experience poverty at least once, with the figure of about one in three compared to one in four adults.

With either poverty measure, the chances of children being always in poverty are nearly double that of adults. Thus child poverty is not only higher than adult poverty regardless of where the poverty line is drawn, it is also more persistent.

Table 6: Poverty experiences across the two waves for children compared to adults

Children	*Never*	*Enter*	*Exit*	*Always*
50% of median	78.0	7.5	8.0	6.6
60% of median	65.1	8.7	9.7	16.5
Adults	*Never*	*Enter*	*Exit*	*Always*
50% of median	84.5	5.5	6.2	3.8
60% of median	72.4	7.9	9.9	9.8

Table 7 considers flows back and forwards across various poverty lines. Chances of exiting poverty are higher for adults than children, but lower in both cases for the more encompassing 60 per cent of median income poverty line. Chances of entering poverty are higher for children than for adults and higher for the more encompassing 60 per cent of median income poverty line. Mobility is a two-edged sword. High immobility ensures that those who are poor are stuck and have a relatively intense experience of poverty. On the other hand increasing mobility, while ensuring poverty is more evenly shared across the population, increases total exposure to poverty.

Table 7: Poverty entry and exit rates across the two waves for children compared to adults

Children	*Poverty exit rate*	*Poverty entry rate*
50% of median	58.5	8.2
60% of median	38.5	11.1
Adults	*Poverty exit rate*	*Poverty entry rate*
50% of median	61.2	5.7
60% of median	48.2	9.1

8 International comparisons of child poverty transitions

This section presents a cross-national perspective on child poverty dynamics. It utilises the information on child poverty dynamics in five countries provided by Bradbury, Jenkins and Micklewright (2001c). New Zealand mobility, extracted and pooled from the LIS for New Zealand for three waves, 1997/98, 1998/99, and 1999/00, is compared to mobility in the five countries (Britain, Germany/West Germany, Hungary, Russia, and Spain) where a current net after-tax income measure is available.

Basic data for the different surveys are summarised in Table 8. In all cases the child is the unit of analysis and children are attributed disposable household income equivalised by the square root of household size. Noteworthy is the relatively large size of the New Zealand data set in terms of numbers of households with children in two waves, similar to that of Germany and significantly smaller only than Spain. Also noteworthy is the comparatively high proportion of children in the New Zealand sample, partly reflecting our younger average age and perhaps also the address-based nature of the data set.

Only in the case of New Zealand and Britain is income measured weekly. In the other cases current income is measured monthly. Additionally, as already noted, the Spanish data source is a very similar residence-based eight-quarter rotating panel to the LIS, but collects income information quarterly using a monthly income accounting period, as well as expenditure information.

Are there large differences in mobility for a given country when different time periods are used for income measurement? Are these patterns systematic across countries? Using gross annual income as opposed to a monthly or weekly net measure of current income to examine transitions between child distribution deciles gives a slightly lower mobility measure for Britain (2.9 percentage points lower, with the mobility measure being the off-diagonal component on a decile-based income transition matrix). The results for Germany are similar (0.5 percentage points lower). However, higher mobility is found for Hungary (by 4.0 percentage points).

Thus overseas evidence does suggest that differences in income accounting periods are not particularly important for broad mobility patterns. Given differences in ways of measuring income between New Zealand and other countries, this result is of some comfort in terms of broad accuracy of the comparisons and contrasts which will be drawn below. We may not be comparing lemons and lemons, but we are comparing lemons and limes.

Table 8: The surveys

Country	*Survey*	*Income variables*	*Most recent income period*	*Number of households with children in two waves*	*Number of children as a percentage of all people in two waves*
Britain	British Household Panel Survey	Annual gross income	Year to August 1996	1529	21.8
		Current gross income per month	Autumn 1996	1529	21.8
		Current net income per week	Autumn 1996	1264	22.1
Germany	German Socio-economic Panel Survey	Annual net income	1995 calendar year	2072	19.9
		Current net income per month	1996 Spring –Summer	1871	20.7
Hungary	Hungarian Household Panel	Annual net income	1995–1996 March year	488	21.9
		Monthly net income	1996 March	488	
Russia	Russian Longitudinal Monitoring Survey	*Monthly net income*	1995 December	1316	24.6
		Monthly expenditures	1995 December		
Spain	Encuesta Continua de Presupuestos	*Estimate of current net income*	1985–1992	5812	25.8
		Current expenditures	1985–1992	5812	25.8
New Zealand	Linked Income Supplement of the Household Labour Force Survey	Current net income per week	June week 1998, 1999, 2000	2035	29.0

Table 9 presents the basic cross-country facts on child poverty. Compared to the continental European countries, New Zealand has a relatively high child poverty rate and New Zealand children have a low median income in comparison to the population. New Zealand's outcomes look broadly most similar to those of Britain.

Table 9: Inequality and poverty

Country	*Child median ÷ population median*	*Child poverty rate (half median poverty line)*	*Increase in child poverty waves t-1 to t (percentage points)*
Britain	0.89	16.8	0.5
Germany	0.95	7.7	–0.6
West Germany	0.94	6.8	–0.8
Hungary	0.97	9.7	3.5
Russia	0.94	24.1	5.2
Spain	0.92	11.9	–1.9
New Zealand	**0.90**	**12.6**	**1.7**

Notes: The income measure used is current net income. All incomes are adjusted by the 'square root of household size' equivalence scale. Child median and poverty rates are for children in two waves. The population median is calculated for all persons.
Source: Britain, Germany, West Germany, Hungary, Russia and Spain: Bradbury, Jenkins and Micklewright (June 2001c) "Child Poverty Dynamics in Seven Nations".

Now consider the degree of churning in the income distribution. One popular measure of churning throughout the distribution is the extent to which children shift between income deciles. In effect, the mobility measure is the off-diagonal component in an income transition matrix. Table 10 shows that income mobility of children is at the higher end in New Zealand relative to overseas benchmarks, with the exception of Russia, which is found to be a strong outlier in the group in terms of income mobility across most measures. Over two-thirds of New Zealand children change their income decile over a year. There is a reasonable amount of household income churning for children in New Zealand.

Table 10: The income mobility of children

Country	*Percentage of children in a different decile group of the income distribution of children in waves t-1 and t*
Russia	83.3
Spain	65.9
Hungary	65.2
Britain	62.8
Germany	60.8
West Germany	59.4
New Zealand	**66.6**

Note: The income measure used is current net income.

Having established that general income mobility of New Zealand children is at the higher end, mobility out of and into relatively low income—defined here as the bottom fifth of the child income distribution—is now considered (see Table 11).

Do the same mobility conclusions hold if the focus is on the bottom end of the income distribution? The answer is yes. Again, with the exception of Russia, New Zealand appears to have a relatively high degree of mobility across a low income threshold. On average about 12 per cent of New Zealand children are in the bottom fifth of the child household income distribution for two consecutive years, whereas the European countries have somewhat higher figures. Russia is the low outlier, with about nine per cent of children in poverty for two out of two waves.

The flip side of relatively high levels of mobility is that a somewhat greater proportion of New Zealand children have at least one experience of poverty over a two-wave period. Again Russia is the exception for Europe, with exposure rates very similar to New Zealand.

Table 11: Low income persistence of children

	Percentage of children always in the bottom fifth		*Percentage of children ever in the bottom fifth*	
	In one wave[a]	*Two out of two waves*[a]	*In one wave*[a]	*In at least one wave*
Britain	19.7	14.1	19.7	27.2
Germany	20.1	13.4	20.1	26.5
West Germany	20.0	14.1	20.0	25.0
Hungary	19.8	13.1	19.8	26.5
Russia	20.0	8.5	20.0	31.3
Spain	20.0	13.3	20.0	26.8
New Zealand	**19.9**	**11.6**	**19.9**	**28.2**

Note: The income measure used is current net income.
[a]Percentages differ from 20 per cent because of the application of longitudinal weights to a cross-section from a longitudinal sample. In one wave refers to the most recent wave.

Another way of considering churning is to examine the extent to which middle income or middle class families fall into the bottom fifth. Defining middle income as the middle fifth of the distribution, Table 12 shows that nearly one in ten New Zealand middle income children will fall into the bottom fifth of the distribution the following year. This is nearly twice the chance of a middle income child in Britain, for example, falling into the bottom fifth. As has become familiar, Russia is the outlier, with high numbers of middle income children downward bound.

Table 12: Middle class entry to low income: falling down the ladder

Country	*Percentage of children in the middle fifth falling into the poorest fifth Between years t-1 and t*
Britain	4.7
Germany	4.7
West Germany	8.2
Hungary	4.9
Russia	12.8
Spain	6.3
New Zealand	**9.1**

Note: The income measure used is current net income.

Moving away from quintiles as a means of subdividing the distribution, consider mobility into and out of child poverty, with poverty defined as below 50 per cent of median income. Table 13 shows New Zealand has a poverty entry rate around that of Britain, after the Russian aberration, and the highest poverty exit rate. Almost one in ten non-poor New Zealand children falls into poverty, while the chances of exiting poverty year on year exceed a half. Thus at the bottom end of the distribution New Zealand exhibits a high degree of churning relative to other countries.

Table 13: Child poverty entry rates and exit rates

Country	*Entry rate (%)*	*Exit rate (%)*
Russia	17.9	49.5
Britain	8.0	38.0
Spain	5.0	44.8
Hungary	5.3	25.1
Germany	3.9	51.8
West Germany	2.7	43.2
New Zealand	**8.2**	**58.5**

Note: The income measure used is current net income. The entry and exit rates refer to movements into and out of poverty between year t-1 and year t. Countries are sorted within each income definition in descending order of the child poverty rate.

Now consider poverty persistence, shown in Table 14. The first column is a repeat of the second column in Table 9: the wave one cross-sectional distribution of child poverty. With 5.4 per cent of New Zealand children remaining in poverty in two of two waves, New Zealand fits in the middle of the persistence rankings, below both Britain and Russia but above the continental European countries. About one in five New Zealand children experience poverty in one of the two waves, slightly below Britain and above the continental countries. Russia is the high exception. Thus New Zealand has relatively high

child poverty rates, a medium degree of persistence, and relatively high poverty exposure.

Table 14: Poverty persistence among children

Country	*Percentage of children with household income always below half median income*		*Percentage of children with household income ever below half median income*	
	In one wave	*Two out of two waves*	*In one wave*	*In at least one wave*
Britain	16.8	10.1	16.8	22.9
Germany	7.7	4.1	7.7	11.9
West Germany	6.8	4.3	6.8	10.0
Hungary	9.7	4.6	9.7	11.2
Russia	24.1	9.6	24.1	33.5
Spain	11.9	7.6	11.9	18.1
New Zealand	**12.6**	**5.4**	**12.6**	**20.2**

Note: The income measure used is current net income.

Where do those entering and exiting poverty come from and go to? Table 15 addresses these issues. In terms of small movers across the boundary in either direction, New Zealand has relatively few small "boundary hoppers" into poverty—in other words, much of New Zealand's downward child mobility appears to be genuine mobility compared to other countries. Russia as ever is the exception. New Zealand's share of poverty exits moving from just below to just above the poverty line is small. Again, New Zealand seems to have a relatively high proportion of big movers into and out of poverty.

Table 15: Entry from and exit to "near poverty"

Country	*Children entering poverty*		*Children exiting poverty*	
	Shares of entries coming from "near poverty" (%)	*Share of entries coming from "near poverty" and going to "just below the line" (%)*	*Share of exits going to "near poverty" (%)*	*Share of exits going to "near poverty" and coming from "just below the line" (%)*
Russia	10.4	3.5	19.9	6.7
Britain	57.2	40.3	43.9	20.7
Spain	38.1	22.4	36.9	17.1
Hungary	56.6	48.4	33.8	23.0
Germany	53.7	36.2	37.3	30.7
West Germany	39.1	26.1	29.5	27.2
New Zealand	**42.0**	**24.0**	**38.9**	**14.8**

Note: *The income measure used is current net income. "Near poverty" is defined as income in the range 50–60 per cent of the median; "just below the line" is defined as income in the range 40–50 per cent of the median.*

Overall New Zealand mobility patterns are broadly consistent with the comparative overseas work on mobility of children into and out of poverty on a year-on-year basis. This makes us more confident about assuming other broad overseas patterns of multi-year persistence of child poverty are likely to hold in the New Zealand environment.

The New Zealand picture of child poverty and child poverty dynamics most closely approximates Britain. This may be because of the income measure—Britain is the only other country where weekly data is available—or because the two countries truly are most similar.

Generally it seems that mobility of children into and out of poverty in New Zealand is reasonably high, as also is our cross-sectional child poverty rate. At the same time as comparisons suggest New Zealand has quite high child poverty mobility, there is also an economically and socially significant amount of poverty persistence. The stock of poor children is far from turning over annually.

An issue arises regarding whether it is the data set—in particular the weekly measure of current income used here—that is generating these results. We do not believe that it is the data generating the results. British mobility, like New Zealand mobility, is examined using a weekly current income measure. Equally, the Spanish data set is collected using a very similar method to New Zealand. Finally, given the result mentioned earlier that different income measures for the same country generate similar patterns of results within that country, we are confident that our results are broadly reliable.

9 Trigger events and child poverty transitions

This section uses information on exit and entry rates from child poverty and concurrent events that might be thought to "trigger" the entry or exit.

The framework used here is outlined in Jenkins and Schluter (2001). It involves consideration of entry and exit rates for two different sorts of households observed in the first wave—lone parents and couples. Trigger events are considered which may push children's households into and out of poverty. Probabilities of entry and exit are considered conditional on the chances of

experiencing certain trigger events and these are compared to the overall likelihood of entry and exit.

The trigger events are changes in the number of workers in a child's household, changes in a child's household earnings (holding the number of workers fixed), movements into and out of a single adult household, and changes in the number of household members (holding household type fixed).

The advantage of this approach is that the New Zealand results on frequency of trigger events and on conditional probabilities of experiencing transitions can be compared with the West German and British information provided by Jenkins and Schluter (2001). The cross-country information is of great interest, since it provides some information on whether it is differences in the "impulse" shocks or in the "propagation mechanisms" through which shocks influence outcomes (to use Ragnar Frisch's fruitful business cycle terminology) or both across countries that drives observed cross-country differences.

The data sources for both Britain and West Germany are true longitudinal surveys, whereas the New Zealand data set is not. This difference should be borne in mind in what follows below, especially in terms of differences in trigger event frequencies.

Jenkins and Schluter (2001) use their results to argue that the differences between Britain and Germany are due to differences in propagation mechanisms that reflect broad cross-country differences in social policies. They argue that cross-country differences in labour or marriage market institutions will be primarily revealed through differences in frequencies of trigger events. On the other hand, they suggest that differences in the nature of welfare states will be reflected in differences in conditional transition probabilities. This paper takes a somewhat more agnostic line to using such information to draw inferences about differences in nature of welfare states.

Basic cross-country comparisons are shown in Table 16. The poverty line is now 60 per cent of median disposable income, since this is what is used in Jenkins and Schluter. New Zealand has a total cross-sectional child poverty rate between that of West Germany and Britain. However, New Zealand's lone parent poverty rate is indistinguishable from that in West Germany, which in turn is

lower than that experienced in Britain. New Zealand's couple household child poverty rate is similar to Britain and West Germany.

New Zealand has the highest exit rate of child poverty. This high exit ranking is due primarily to high exit rates for couple households, since New Zealand's exit rate for lone parent households is between Britain's and West Germany's. New Zealand also has British-like entry rates for both types of household.

New Zealand generates a lower relative probability of exit from poverty for lone parent households relative to couple households compared to Britain and West Germany. The chance of exit for a child in a lone parent household in New Zealand is about half the exit chances of a child in a couple household, whereas for Britain it is much rosier—more like two thirds. In turn Germany does even better—the chances of a child in a lone parent household exiting poverty are over 90 per cent of the chances of a poor child in a couple household.

What stands out is the relatively disadvantaged exit position of children in lone parent households compared to couple households in New Zealand. A similar but not as pronounced pattern of relative disadvantage for New Zealand lone parents is found for child poverty entry rates.

Table 16: Annual poverty rates and poverty exit and entry rates for children for New Zealand compared to Britain and West Germany

	Poverty rate in wave one			*Exit rate*			*Entry rate*		
	New Zealand	*Britain*	*West Germany*	*New Zealand*	*Britain*	*West Germany*	*New Zealand*	*Britain*	*West Germany*
All children	23.2	30.1	19.4	38.6	25.0	36.1	11.1	11.3	7.1
Lone parent household	47.0	68.1	49.1	25.2	20.4	33.4	23.5	24.9	17.1
Couple household	17.7	22.4	16.3	46.3	27.3	36.2	8.2	9.9	6.4

Source for the United Kingdom and West Germany: Jenkins and Schluter (2001).
The British and West German data used is eight waves of survey data over the 1991–1998 period.
New Zealand data is pooled data for the three LIS's: 1997/98, 1998/99, 1999/2000.
The poverty line used is 60% of median income because that is the measure used in Jenkins and Schluter (2001) to calculate poverty in the UK and West German y.
Jenkins and Schluter (2001) equivalise using a weighted average of children and adults present in the household. They show their results are not sensitive to different equivalisation weights.

Trigger events and conditional poverty exits are examined separately for lone parents and couples in turn. The separate consideration of lone parents and couples has a number of justifications. The first is that as a consequence of the type of household, lone parents potentially experience different events from a couple household—for example, re-partnering from a sole parent situation. The second major reason for separation is that labour supply behaviour of lone parents is likely to be different from couple households because of less potential for shared childcare or a household division of labour in childcare.

Trigger events considered for lone parents include the demographic events of a fall in household size (for example, either an older sibling leaving or possibly exit of the custodial parent), and exiting a lone parent household (re-partnering). In addition there are the labour market events of gaining full-time work and experiencing an increase in labour market earnings with the number of workers unchanged. Finally a combined event—leaving a lone parent household and gaining a full-time worker—is considered.

Trigger events are not mutually exclusive, although they are examined as if they were. It is possible that a child experiences a fall in household size while exiting a lone parent household, gaining a full-time worker and getting a 20 per cent or more increase in labour earnings.

The rise in labour earnings considered here is not a pure price effect, since it does not control for hours worked for a given level of household employment. Thus for many children's households experiencing such a shock, parental hours of work may increase to raise labour earnings.

Consider first poverty exits for lone parents for the three countries. The first line in Table 17 presents the baseline rates of exit for all children of lone parent households in poverty. Chances of exit in New Zealand are about one quarter, between a high of one third in West Germany and one fifth in Britain.

There are cross-national differences in the chances of trigger events occurring. In New Zealand 12 per cent of lone parent households fell in size. The numbers for the two other countries were negligible.

It is likely that this finding is a data artefact. Many of these observed falls in household size in New Zealand may have been because of the temporary

absence of people from the household during the reference week because of holidays and so on. In addition, since the New Zealand sample includes a larger share of children than the other two samples, there will be more older children leaving home for study or for employment elsewhere.

Compared to Britain (17 per cent) and Germany (13 per cent), New Zealand lone parents have a lower chance of re-partnering (11 per cent). On the other hand, in terms of the labour market generating lone parent jobs, New Zealand (11 per cent) sits between Britain, where lone parents have a 9 per cent chance of getting full-time work, and West Germany, where odds of finding full-time work, at about 15 per cent, are higher. But the joint probabilities of re-partnering and gaining a full-time worker (either through changes in the initial lone parent's labour supply or because the new partner has or gets a job) are very similar across the three countries in the comparison.

There are very large differences between New Zealand and the other two countries in terms of the chances of having a 20 per cent or more increase in labour earnings with the number of employed people in the household held constant. In New Zealand the chances of this happening are a modest 8 per cent, while in Britain it is experienced by two-thirds and in West Germany by half of lone parents. Regarding the Britain/West Germany comparison, Jenkins and Schluter (2001, p. 17) conclude that "it appears, in both countries, increases in annual work hours (for already working households) are more common amongst poor lone parent households than are moves into full-time work".

There is a puzzle here. It may be that in West Germany and Britain many lone parent households experience increases in hours worked from a low base that do not take them over a full-time threshold. It may also be the case that the differences are generated by different data sets.

Table 17: Poverty exits by poor children in lone parent households for New Zealand compared to Britain and West Germany (pooled data 1997/98, 1998/99, 1999/2000)

Event	*Percent*		
	New Zealand	*Britain*	*West Germany*
All children at t-1 at risk of poverty exit			
Pr(not poor at t)	25.2	20.4	33.4
Household size fell			
Pr(event)	12.4	1.3	0.0
Pr(not poor at t/event)	19.5	3.1	_
Left lone parent household			
Pr(event)	10.3	17.0	12.6
Pr(not poor at t/event)	28.6	46.0	48.8
Gained one or more full-time workers			
Pr(event)	10.5	8.9	14.6
Pr(not poor at t/event)	61.6	74.1	82.2
Both of above			
Pr(event)	5.7	6.0	5.3
Pr(not poor at t/event)	51.8	83.5	91.7
Labour earnings increased by 20% or more (number of workers unchanged)			
Pr(event)	6.3	65.2	50.0
Pr(not poor at t/event)	26.3	11.1	32.3

Now consider the comparative probabilities of exit conditional on experiencing a trigger event.

Leaving a lone parent household raises the probability of a New Zealand child exiting poverty marginally above the baseline. However, the effects are much stronger in Britain and West Germany, where exit chances on household re-partnering are nearer to one-half. Given the baseline is a fifth for Britain and one-third for West Germany, the differential impact of re-partnering relative to baseline exit rates is strongest in Britain.

Gaining a full-time worker is very good for raising child poverty exit chances in all three countries, but the chances, at 62 per cent, are lowest in New Zealand, with British chances a solid three-quarters and West German chances in excess of eighty percent.

Experiencing the combined event of exit from lone parenting and gaining one or more workers reveals a similar ranking. While the event nearly

guarantees exit in the cases of West Germany and Britain, the chances of leaving poverty for New Zealand children of lone parents are only a half.

Gaining a 20 per cent or more increase in labour earnings doesn't raise exit chances in New Zealand. The German result is similar. In Britain the chances of exit on this event are actually lower than the baseline exit rate.

Now consider cross-country comparisons of poverty exits for couple households. The information is contained in Table 18.

Overall children in couple households are most likely to exit poverty in New Zealand with chances of nearly one-half compared to a little over one-quarter and a third for Britain and West Germany respectively. The poverty exit chances for couple households are higher in all three countries than poverty exit rates for children from lone parent households.

Consider first the different probabilities of trigger events across the three countries. Again, probably because the data is a non-longitudinal design, falls in household size are more common in New Zealand compared to the other two countries. The chances of gaining a worker are a little under a third in New Zealand, much higher than the one in five chance in Britain and the 15 per cent chance in West Germany. Equally the chances of gaining a fulltime worker follow the same ordering, with a one in five chance of the event in New Zealand compared to 15 per cent and 10 per cent for Britain and West Germany respectively.

Again, an increase in labour earnings is least likely in New Zealand. The event happens to less than one in five children in poor couple households. The chances of such an event are more than twice as high in Britain and about almost twice as high in West Germany. While the country differences in event frequency are quite disproportionate for New Zealand, they are nowhere near as disproportionate as the same event frequency for children in poor lone parent households.

Decreases in household size, experienced by a small 7 per cent of poor children in New Zealand couple households, have a two-thirds chance of poverty exit, whereas the events are very rare for Britain and West Germany.

Gaining a worker raises chances of a child poverty exit in New Zealand to 65 per cent while gaining a full-time worker is even better—an over 80 per cent chance of exit. Relative to both the lone parent situation in New Zealand and to conditions in Britain and West Germany, gaining a worker in New Zealand has a much stronger impact on child poverty exit in a couple household. Chances for exit conditional on the same event in Britain and West Germany are bunched at around one half.

Gaining an economically significant rise in labour earnings gives a chance of poverty exit of 71 per cent in New Zealand, comparable to West Germany at around 63 per cent, but over double that of Britain, where the chances of exit are no more than the baseline exit rate.

Overall New Zealand is much more successful in generating jobs for poor couple households with children than West Germany and Britain. New Zealand is less successful than both Britain and West Germany in translating positive events for lone parent families, like re-partnering and gaining a full-time worker, into a child poverty exit, despite roughly similar cross-country rates of experience of these main trigger events.

On the other hand, New Zealand appears to be more efficient compared to Britain and West Germany in translating labour market events like gaining a full-time worker and experiencing an economically significant rise in labour earnings into poverty exits for poor children in couple households. This is despite the fact that such an event is less frequent in New Zealand.

New Zealand's relative success in generating poverty exits for children in couple households compared to children in lone parent households follows from these facts.

There are also some commonalities between poor children in lone parent and couple households in New Zealand. In the one case of an ability to translate an economically significant rise in labour earnings into a poverty exit, New Zealand appears more efficient than either Britain or West Germany for both child household types.

Table 18: Poverty exits by poor children in couple households children for New Zealand compared to Britain and West Germany (pooled data 1997/98, 1998/99, 1999/2000)

Event	*Percent* *New Zealand*	*Britain*	*West Germany*
All children at t-1 at risk of poverty exit			
Pr(not poor at t)	47.0	27.3	36.2
Household size fell			
Pr(event)	8.1	1.7	2.2
Pr(not poor at t/event)	81.8	34.2	37.9
Gained one or more workers			
Pr(event)	29.0	20.1	15.1
Pr(not poor at t/event)	65.3	41.0	50.0
Gained one or more full-time workers			
Pr(event)	20.7	15.4	10.9
Pr(not poor at t/event)	80.7	50.0	56.5
Labour earnings increased by 20% or more (number of workers unchanged)			
Pr(event)	17.4	40.8	32.0
Pr(not poor at t/event)	70.8	28.3	62.9

Now consider movements into child poverty. Couple households only are considered since the sample numbers for non-poor households of other types are too small to sustain further analysis.

Now consider rates for couple households entering poverty. Baseline entry rates are fairly similar across countries but lowest in Germany.

Again trigger events are considered first. Household size rises for about one in ten children in New Zealand couple households not in poverty. Odds of this happening are about half as large in Britain and West Germany. Again, these differences between New Zealand and the other two countries are likely to be influenced by the geographic frame within which New Zealand data is collected.

Risks of becoming a sole parent are small and very similar in New Zealand and West Germany. Given the geographic basis of the New Zealand data and the likelihood that in many cases becoming a sole parent will be associated with a movement in geographic location, couple separations are likely to be relatively underestimated in the New Zealand data.

Experiencing the loss of a worker is most likely in Britain and least likely in West Germany. New Zealand lies in the middle between the two

comparison countries. Similar relative patterns are found for the event of losing a full-time worker.

The probability of experiencing the twin events of becoming a lone parent household and a worker is low, for all countries lying between one and two percent.

In terms of entry into poverty, country rankings of the chances of experiencing a significant fall in labour earnings for a couple household are quite different from country rankings for experiencing a significant rise in labour earnings for lone parent and couple households in poverty. Children in New Zealand couple households who are not in poverty have a one in five chance of experiencing this event, much higher than chances in either Britain or Germany (in both cases a less than one in ten chance).

Finally, the chances of children in non-poor families experiencing the shock of a newborn child are nearly twice as high in New Zealand as in Britain, where the chances are in turn nearly four times higher than in West Germany. The reason for the large West German–British difference is due to the different nature of the two surveys (Jenkins and Schluter 2001, p. 21, fn 15). The geographical basis of the New Zealand data set and the fact that families about to have children are less likely to be geographically mobile is likely to be driving at least some of this New Zealand–British difference.

Now consider conditional probabilities of children from couple households entering poverty.

Household size increases have small impacts in pushing the chances of children in couple households falling into poverty above baseline, except for Britain, where chances rise to double baseline chances.

While joining a lone parent household is a comparatively rare event, it leads to a big increase in all three countries in probabilities of falling into poverty compared to the baseline chances. However, the chances of a split making a child downward bound into poverty are the lowest in New Zealand.

Again, the experience of losing one or more workers—or one or more full-time workers—generates very similar cross-country chances of children in

couple households falling into poverty in all three countries, with the chances lurking between one in four and one in five.

While significant falls in labour earnings are most likely in New Zealand, the chances of this throwing children in couple households into poverty is at baseline. On the other had it is much more likely to throw into poverty both British children—with a chance of over one in four—and West German children, with a chance of about one in five.

Finally, having a newborn in Britain and West Germany substantially increases the chances of children in couple households falling into poverty—in both cases the odds are over one quarter. The event is less traumatic in New Zealand, with the odds only a little above baseline.

Table 19: Poverty entry by non-poor children in couple households children for New Zealand compared to Britain and West Germany (pooled data 1997/98, 1998/99, 1999/2000)

Event	*Percent* *New Zealand*	*Britain*	*West Germany*
All children at t-1 at risk of poverty entry			
Pr(poor at t)	8.2	9.9	6.4
Household size rose			
Pr(event)	9.5	6.0	4.8
Pr(poor at t/event)	8.2	18.0	9.0
Joined lone parent household			
Pr(event)	1.8	3.2	1.6
Pr(poor at t/event)	43.7	61.8	58.9
Lost one or more workers			
Pr(event)	13.9	18.0	8.7
Pr(poor at t/event)	21.4	23.0	20.0
Both of the above			
Pr(event)	1.6	1.9	1.4
Pr(poor at t/event)	49.4	64.7	65.1
Lost one or more full-time workers			
Pr(event)	10.4	17.0	8.3
Pr(poor at t/event)	20.5	22.0	21.5
Labour earnings fell by 20% or more (number of workers unchanged)			
Pr(event)	18.7	8.4	8.0
Pr(poor at t/event)	8.8	27.7	19.3
New born child at t			
Pr(event)	7.5	4.3	1.0
Pr(poor at t/event)	9.5	27.2	25.9

The overall impression of the inter-country comparisons of New Zealand, West Germany and Britain is that there is more variation in event probabilities—"trigger events"—than in transition probabilities conditional on experiencing the trigger event. This conclusion was arrived at semi-formally. There were 16 cases across the three tables where coefficients of variation (standard deviation divided by mean) could be calculated across the three countries for the trigger events as well as the transition probabilities and the two coefficients of variation compared for trigger events versus transition probabilities. In 12 out of the 16 cases (75 percent) country variation in experience of trigger events exceeded country variation in transition probabilities.

This three-country conclusion appears somewhat at odds with the two country conclusion of Jenkins and Schluter (2001). Jenkins and Schluter (2001, p. 23) sum up:

> We have used a form of decomposition analysis, comparing cross-nationally the prevalence of events that trigger poverty…and the chances of making a poverty transition conditional on experiencing a trigger event. It turns out that it is the latter type of difference that is the most important for [differences between West German and British] poverty exits and poverty entries…these findings reflect differences between the German and British welfare states, in particular the German one providing a greater cushion against adverse events and better reinforcement of positive events. Differences in the prevalence of trigger events do, of course, play a role; a notable example being the greater risk of job loss in Britain compared to Western Germany.

There are a number of possible reasons for the difference in the findings. First and most obviously, this study adds another country observation to the mix. Second, Jenkins and Schluter examine shocks and transitions over a multi-year window, not simply the annual window examined here (which of course is a consequence of the fact that the New Zealand data only allows examination of a one-year window). A third possible reason is that the differences in the ways data is collected in the three countries has a greater influence on the observed prevalence of trigger events than on the transitional probabilities of exits. For example, it is clear that the address-based nature of data collection and the fact that data collection is based on the narrow window of the reference week in New Zealand will mean more changes in the number of people observed in the

household. It is less obvious that this data collection method will lead to as much variation in transition probabilities.

Another way of considering the data which generates some insights is to look at the percentage of those exiting poverty who had a particular trigger event associated with that exit. This provides an indication of the relative importance of trigger events in association with exits or entries. The events will not sum to a hundred percent, since there will be exits not associated with trigger events and, in addition, the events are not mutually exclusive. This method provides some information on comparing one country with a low event prevalence but a high exit probability with another with a high event prevalence but a low exit probability. The information is provided in Tables 20–22.

These tables show that, for New Zealand, child poverty exiters are more likely to "take" a positive labour market event with them than a positive demographic event.

Over a quarter of children exiting poverty from a lone parent family take the gain of a fulltime worker, compared to somewhat less than a third in Britain and Germany. Only 14 per cent of children in lone parent New Zealand families leave with their parent having re-partnered, whereas 38 per cent of British exits are re-partners. The biggest single event in Britain associated with poverty exit for children of lone parents is a marriage market event not a labour market event (see Table 20). West Germany is more like New Zealand, with the marriage market event being less important and the labour market events being more common.

Nearly one-half of child poverty exits from coupled households are associated with the gain of a worker in New Zealand, much higher than the one-third in Britain and the one-fifth in Germany. On the other hand, over half of children in poor couple households in Germany who leave poverty are in households experiencing a significant rise in labour earnings, compared to only one-quarter in New Zealand (Table 21).

Table 20: Share of poverty exits (%) of poor children in lone parent households children who experienced the trigger event for New Zealand compared to Britain and West Germany

Event	*Percent*		
	New Zealand	*Britain*	*West Germany*
Household size fell	9.1	0.2	0.0
Left lone parent household	11.8	38.3	18.4
Gained one or more full-time workers	25.7	32.3	35.9
Both of the above	11.8	24.6	14.6
Labour earnings increased by 20% or more (number of workers unchanged)	6.6	35.5	48.4

Table 21: Share of poverty exits (%) of poor children in couple households children who experienced the trigger event for New Zealand compared to Britain and West Germany

Event	*Percent*		
	New Zealand	*Britain*	*West Germany*
Household size fell	14.4	2.1	2.3
Gained one or more workers	41.0	30.2	20.9
Gained one or more full-time workers	36.1	28.2	17.0
Labour earnings increased by 20% or more (number of workers unchanged)	26.6	42.3	55.6

Finally consider the relative importance of trigger events in association with exits or entries (shown in Table 21). Fully one in five British children in couple households who fall into poverty have parental separation associated with them, compared to one in seven in Germany and less than 10 per cent in New Zealand. Again, more children "take" adverse labour market events with them when they fall into poverty than take adverse marriage market events—with New Zealand being particularly pronounced in this regard—or demographic events (arrival of a newborn).

Table 22: Share of poverty entries (%) of non-poor children in couple households children who experienced the trigger event for New Zealand compared to Britain and West Germany

Event	*Percent*		
	New Zealand	*Britain*	*West Germany*
Household size rose	9.6	10.9	6.8
Joined a lone parent household	9.6	20.0	14.7
Lost one or more workers	36.3	41.8	27.2
Both of the above	9.5	12.4	14.2
Lost one or more full-time workers	26.1	37.8	27.9
Labour earnings increased by 20% or more (number of workers unchanged)	20.2	23.5	24.1
Newborn child	8.7	11.8	4.0

In summary, the trigger events analysis presented above emphasises the importance of labour market shocks and responses for generating child exits from poverty compared to demographic events like changes in household size, new births, and re-partnering. Demographic events occur less frequently than labour market events in all three countries. In addition in New Zealand, West Germany and Britain, unlike Canada (see Picot, Zyblock and Pyper. 1999), labour market events are more likely to generate the positive events of exit and the negative events of entry into child poverty. The results also suggest the greater importance of labour market events compared to marriage market events in New Zealand relative to Britain and West Germany.

10 Conclusion

This study is the first to use the New Zealand LIS for household longitudinal analysis. No insurmountable obstacles exist to using the LIS for these purposes. The LIS provides a useful adjunct to current and likely future longitudinal data in New Zealand. As the data set accumulates, it will enable consideration of time series changes in probabilities of child and adult income transitions. In addition, "stacking" the data over a number of years may provide interesting income transition information allowing comparisons for smaller population groups. When 2000/01 data becomes available, this gives more child transitions, since the theoretical match for dwellings will again be back up to one half from the one quarter of 1998/99 and 1999/2000 surveys.

The short-range household income transition data, both for adults and for children, may well be valuable for future Ministry social monitoring, given that it is annually available data on a pertinent social policy issue that has not thus far been used for social monitoring purposes. As Jenkins (1998, p. 2) puts it "[t]he extent of mobility and poverty persistence are important social indicators to be placed alongside information about the income distribution at a point in time".

However, while use of the data is feasible, researchers must continually be aware of data limitations. The primary limitations are that the LIS is not a longitudinal design, with the Imputation and attrition for the pooled LIS data—numbers, row percentages, and column percentages sample being geographically based. Only one annual income transition is observed. The issues of the limitations of the LIS as a longitudinal data set have been considered in detail and, where possible, sensitivity analysis has been used to examine whether the limitations matter. It is of some comfort that other countries, for example Spain, have used similar data sets to the LIS for similar purposes.

It is hoped that one of the spin-offs of this project is that researchers and policy makers are persuaded that this data has something to offer. It is also to be hoped that our creation and testing of the data lowers the costs for others considering working in the area.

What does the study show? First, not all children in poverty at any point in time will stay there. A large proportion shift out. A large proportion of children not in poverty will shift into poverty. There is evidence of considerable circulation into and out of poverty but also children who remain in poverty on a year by year basis. Facing up to transitions forces policymakers to consider poverty policy in a different way. In affect it forces a focus on the "streams" flowing in and out of the "pond" rather than the "pond" alone. A focus on flows rather than stocks gets researchers and policy makers closer to behavioural and causal mechanisms than the standard static cross-sectional "ponds" approach. In so doing, it suggests that different policies may be specified to reduce inflows and increase outflows.

Overseas data provides evidence of considerable flows in and out of poverty as well as considerable multi-year persistence in poverty for a considerable number of people. While the New Zealand LIS data cannot

corroborate the latter stylised fact locally, the fact that annual inflows and outflows from child poverty are broadly similar to those overseas lends more confidence to a belief that there is likely to be significant poverty persistence in New Zealand. This relatively high churning conclusion supports that earlier arrived at by Maloney and Barker (2000) using the Christchurch data.

At the same time, cross-country comparisons between New Zealand and others reveal relatively high transitions in New Zealand into and out of child poverty, combined with quite a high relative rate of child poverty compared to other countries. These two facts imply that in New Zealand children have a quite high relative chance of exposure to poverty over a two-year period.

New Zealand data also shows that the "middle class" in New Zealand are relatively vulnerable to "falling down the ladder" into poverty compared to other countries and the mobility observed appears to be genuine, not simply small and perhaps inconsequential hops over an arbitrary poverty boundary.

The study has also presented a consideration of trigger events and conditional probabilities of transition in a context that moves at least some way towards providing a behavioural structure on the descriptive statistics. New Zealand generates a much lower probability of exit from poverty for children in lone parent households relative to children in couple households in Britain and West Germany.

Data examined reveals that New Zealand is much less successful than both Britain and West Germany in translating positive events for poor children like parental re-partnering and the household gaining a full-time worker—key proximate causal events—into a child poverty exit for lone parent families. On the other hand, New Zealand appears to be far more efficient in translating labour market events like gaining a full-time worker and experiencing an economically significant rise in labour earnings into poverty exits for poor children in couple households than either Britain or West Germany. At the same time New Zealand appears to be good at generating positive job gains for poor children in couple households compared to Britain and West Germany.

In terms of commonality between poor children in lone parent and couple households in New Zealand, in the case of an economically significant rise

in labour earnings into a poverty exit, New Zealand again appears more efficient than either Britain or West Germany.

Overall, the trigger events analysis re-emphasises the importance of labour market shocks and responses for generating child exits from poverty compared to demographic events. Demographic events and marriage market events are less frequent and in New Zealand are more likely to generate the positive events of exit and the negative events of entry into child poverty.

Some possibilities for future work include further pooling of the data set with 2000/20001 data, allowing more in-depth multivariate analysis of transitions and trigger events. Considering the exit and entry rates in terms of a explicit behavioural/multivariate approach may also be of some value. Work could also be done to longitudinally impute missing income data, be that data missing for one or both Income Supplements, which would increase sample size and variation and thus lower standard errors.

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Appendix A: Modelling Family Assistance Payments

Family assistance is financial help for families with children who are aged 18 years or under and living at home and financially dependent.

Family income includes all income from parents, including income from work and other sources (for example income tested benefit). Income tested benefits include the domestic purposes, widow's transitional retirement, invalid's, independent youth, emergency, and community wage.

Family assistance is available for children who are not working full-time (not more than 30 hours a week), and are not receiving a benefit, student allowance or other government assistance, and are 17 years or younger, or who are 18 years and still studying.

Family assistance is paid for a child until the end of the calendar year (31 December) when the child turns 18, or the date when the child becomes financially independent, whichever is the earlier.

Payments are to the principal child carer, responsible for the day-to-day care of the children. The principal child carer is not someone who cares for the children part-time or who works as the child minder.

Families can choose to receive fortnightly payments based on their expected annual family income. This means that the family or IRD settle the difference at the end of the year if the expected income did not match the actual as a lump sum after 31 March based on actual income.

The family support tax credit is available to working families who do not receive any income tested benefit from WINZ. If a family receives any income tested benefit, then if a family's total income is less than $20,000 a year, WINZ pays out Family Support. If a family's total income is more than $20,000 a year, then IRD pays out Family Support.

The amounts vary over time and according to the age and number of children. Up until the end of 1997, the payment for the eldest child was $2444 and for other children, payments for those between 16 and 18 were $2080, and those younger than 16 were $1664. From 1998 payments for the eldest child were

$2444 ($3120 if aged 16–18), $3120 for other 16–18 year olds, $2080 for 13–15 year olds and $1664 for children less than 13.

There is also a child tax credit that is unavailable if a family received an income tested benefit of any kind from WINZ. The amount is $750 per year.

The Family Tax Credit is designed to bring the family income up to at least $18,368 a year ($286 after tax each week). To receive Family Tax Credit, at least one parent must be working for salary or wages for at least 20 hours (single parent family) or 30 hours (two parent family). In general, families do not qualify for Family Tax Credit for any weeks when family income is from New Zealand Superannuation or a student allowance, self-employed earnings, shareholder-employee earnings, or a close company in which people have at least a 10% shareholding, or from a partner's employment. When a parent receives any of the above, the only way they may still qualify for Family Tax Credit is if they or their partner also work the required hours for another employer.

People do not qualify at all for Family Tax Credit for any weeks when family income is from an income-tested benefit, a Veteran's Pension, or Parent's Allowance.

To receive family assistance payments fortnightly from IRD a family has to estimate its forthcoming annual income. If a family's estimated income is different to their actual income then the family may be in danger of having to pay back money to IRD (or vice versa). Annual payments are made at the end of the tax year and are automatically calculated by IRD and paid to the family.

The HLFS-IS asks people about income received over the previous fortnight. It is assumed that annual family assistance payments from IRD are not picked up. Therefore family assistance payments were imputed onto eligible families. All families that declare family assistance are assumed to be providing the correct information and, therefore, do not receive any modelled family assistance.

The HLFS-IS contains flags that indicate what benefits an individual receives. However, the payment received from WINZ is not disaggregated to reveal how much is attributed to each benefit. All families receiving an income

tested benefit from WINZ and having a family gross annual income of less than $20,000 are assumed to get the correct family support payments from WINZ.

Families that do not receive any income from WINZ and that receive some of their income from WINZ and have an annual gross family income greater than $20,000 receive family assistance payments from IRD.

Family assistance payments are calculated based upon taxable income, but are added in once tax rates have been applied.

The Parental Tax Credit (PTC) is currently not implemented as the HLFS-IS data set contains age in years. The PTC is paid for the first eight weeks of a child's life and cannot be calculated on a per child basis.

Appendix B: Standard Errors for the LIS

Table 23: Standard error tables based on a random sample (95% confidence) multiplied by two to create errors from a stratified and clustered sample

Sample Size	*Estimated %*										
	5%	*10%*	*15%*	*20%*	*25%*	*30%*	*35%*	*40%*	*45%*	*50%*	*60%*
100	8.5%	11.8%	14.0%	15.7%	17.0%	18.0%	18.7%	19.2%	19.5%	19.6%	19.2%
200	6.0%	8.3%	9.9%	11.1%	12.0%	12.7%	13.2%	13.6%	13.8%	13.9%	13.6%
300	4.9%	6.8%	8.1%	9.1%	9.8%	10.4%	10.8%	11.1%	11.3%	11.3%	11.1%
400	4.3%	5.9%	7.0%	7.8%	8.5%	9.0%	9.3%	9.6%	9.8%	9.8%	9.6%
500	3.8%	5.3%	6.3%	7.0%	7.6%	8.0%	8.4%	8.6%	8.7%	8.8%	8.6%
600	3.5%	4.8%	5.7%	6.4%	6.9%	7.3%	7.6%	7.8%	8.0%	8.0%	7.8%
700	3.2%	4.4%	5.3%	5.9%	6.4%	6.8%	7.1%	7.3%	7.4%	7.4%	7.3%
800	3.0%	4.2%	4.9%	5.5%	6.0%	6.4%	6.6%	6.8%	6.9%	6.9%	6.8%
900	2.8%	3.9%	4.7%	5.2%	5.7%	6.0%	6.2%	6.4%	6.5%	6.5%	6.4%
1000	2.7%	3.7%	4.4%	5.0%	5.4%	5.7%	5.9%	6.1%	6.2%	6.2%	6.1%
1100	2.6%	3.5%	4.2%	4.7%	5.1%	5.4%	5.6%	5.8%	5.9%	5.9%	5.8%
1200	2.5%	3.4%	4.0%	4.5%	4.9%	5.2%	5.4%	5.5%	5.6%	5.7%	5.5%
1300	2.4%	3.3%	3.9%	4.3%	4.7%	5.0%	5.2%	5.3%	5.4%	5.4%	5.3%
1400	2.3%	3.1%	3.7%	4.2%	4.5%	4.8%	5.0%	5.1%	5.2%	5.2%	5.1%
1500	2.2%	3.0%	3.6%	4.0%	4.4%	4.6%	4.8%	5.0%	5.0%	5.1%	5.0%
1600	2.1%	2.9%	3.5%	3.9%	4.2%	4.5%	4.7%	4.8%	4.9%	4.9%	4.8%
1700	2.1%	2.9%	3.4%	3.8%	4.1%	4.4%	4.5%	4.7%	4.7%	4.8%	4.7%
1800	2.0%	2.8%	3.3%	3.7%	4.0%	4.2%	4.4%	4.5%	4.6%	4.6%	4.5%
1900	2.0%	2.7%	3.2%	3.6%	3.9%	4.1%	4.3%	4.4%	4.5%	4.5%	4.4%
2000	1.9%	2.6%	3.1%	3.5%	3.8%	4.0%	4.2%	4.3%	4.4%	4.4%	4.3%
2100	1.9%	2.6%	3.1%	3.4%	3.7%	3.9%	4.1%	4.2%	4.3%	4.3%	4.2%
2200	1.8%	2.5%	3.0%	3.3%	3.6%	3.8%	4.0%	4.1%	4.2%	4.2%	4.1%
2300	1.8%	2.5%	2.9%	3.3%	3.5%	3.7%	3.9%	4.0%	4.1%	4.1%	4.0%
2400	1.7%	2.4%	2.9%	3.2%	3.5%	3.7%	3.8%	3.9%	4.0%	4.0%	3.9%
2500	1.7%	2.4%	2.8%	3.1%	3.4%	3.6%	3.7%	3.8%	3.9%	3.9%	3.8%
2600	1.7%	2.3%	2.7%	3.1%	3.3%	3.5%	3.7%	3.8%	3.8%	3.8%	3.8%
2700	1.6%	2.3%	2.7%	3.0%	3.3%	3.5%	3.6%	3.7%	3.8%	3.8%	3.7%
2800	1.6%	2.2%	2.6%	3.0%	3.2%	3.4%	3.5%	3.6%	3.7%	3.7%	3.6%
2900	1.6%	2.2%	2.6%	2.9%	3.2%	3.3%	3.5%	3.6%	3.6%	3.6%	3.6%
3000	1.6%	2.1%	2.6%	2.9%	3.1%	3.3%	3.4%	3.5%	3.6%	3.6%	3.5%
3100	1.5%	2.1%	2.5%	2.8%	3.0%	3.2%	3.4%	3.4%	3.5%	3.5%	3.4%
3200	1.5%	2.1%	2.5%	2.8%	3.0%	3.2%	3.3%	3.4%	3.4%	3.5%	3.4%
3300	1.5%	2.0%	2.4%	2.7%	3.0%	3.1%	3.3%	3.3%	3.4%	3.4%	3.3%
3400	1.5%	2.0%	2.4%	2.7%	2.9%	3.1%	3.2%	3.3%	3.3%	3.4%	3.3%
3500	1.4%	2.0%	2.4%	2.7%	2.9%	3.0%	3.2%	3.2%	3.3%	3.3%	3.2%
3600	1.4%	2.0%	2.3%	2.6%	2.8%	3.0%	3.1%	3.2%	3.3%	3.3%	3.2%
3700	1.4%	1.9%	2.3%	2.6%	2.8%	3.0%	3.1%	3.2%	3.2%	3.2%	3.2%
3800	1.4%	1.9%	2.3%	2.5%	2.8%	2.9%	3.0%	3.1%	3.2%	3.2%	3.1%
3900	1.4%	1.9%	2.2%	2.5%	2.7%	2.9%	3.0%	3.1%	3.1%	3.1%	3.1%
4000	1.4%	1.9%	2.2%	2.5%	2.7%	2.8%	3.0%	3.0%	3.1%	3.1%	3.0%

Motu Economic and Public Policy Research

Motu Economic and Public Policy is a non-profit Research Institute (Charitable Trust) that has been registered since 1 September, 2000. The Trust aims to promote well-informed and reasoned debate on public policy issues relevant to New Zealand decision making. Motu is independent and does not advocate an expressed ideology or political position.

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Our research funding is primarily in the form of research grants. We see this as a means of maintaining our commitment to the quality and objectivity of our research. We are able to compete internationally for such funding because of the calibre of our principal researchers and because of international fascination with the New Zealand reforms. Some of our funding comes from foreign foundations and governments. This serves not only to expand the available pool of research on New Zealand policy issues, but also to stimulate wider interest in these issues. We also seek unrestricted funding from individuals, foundations and corporations to allow us to build a stronger research infrastructure within Motu and the wider research community. This allows us to actively disseminate ideas, create longer term independent research programs that do not meet short-term funding priorities, and organise networks and conferences involving other researchers and policy analysts.

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