

# Longitudinal Estimates of Child Poverty in the Maritimes versus the Rest of Canada\*

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We know that children living in the Maritime provinces of Canada have historically experienced higher rates of poverty than children living elsewhere in Canada. However, most evidence to date is based upon cross-sectional data, which provides only a snapshot at a point in time. Thus, we do not know whether cross-sectional child poverty rates are higher in the Maritimes because children remain poor for longer periods of time, or because more Maritime children have short spells of poverty. And, the implications of having more long-term versus more short-term poverty for children's health, happiness and educational success in the Maritimes versus the rest of Canada are not the same. While it is clear that higher rates of poverty in general are associated with worse outcomes for children, longer-term poverty has particularly adverse consequences, especially for cognitive outcomes (see Phipps (2003) for a recent survey). Further, deciding how to design policy to tackle the problem of child poverty will be informed by a knowledge of whether a small group of children are chronically poor or a larger group experience shorter spells of poverty. If patterns of child poverty differ across regions, policy responses may need to differ correspondingly.

This paper uses data from the National Longitudinal Survey of Children and Youth to compare experiences of child poverty in the Maritimes versus the rest of Canada. What follows is divided into five sections. First, a review of relevant literature is presented; then the data are described; this is followed by a descriptive analysis of longer-term child poverty in the Maritimes compared to the rest of Canada; then, multivariate techniques are used to examine the role played by

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observable differences across the regions, with a particular focus on labour markets, in explaining the much higher rates of child poverty in the Maritimes. Finally, some conclusions are presented.

### Selected Review of the Literature

Although cross-sectional studies indicate higher rates of child poverty in the Maritimes (e.g., National Council of Welfare 2002; Ross et al 2000; Sharif and Phipps 1994), there is little comparative analysis of longer-term child poverty across Canadian regions. Two Canadian longitudinal studies do present findings relevant to the question of whether poverty is primarily chronic or transitory (though not whether patterns differ by region). Finnie and Sweetman ((2003), based on Finnie (2000a and 2000b)) use a sample of individuals aged 20 and over from the Longitudinal Administrative Database (LAD) and find that individuals poor in 1992 were most likely to remain poor throughout the survey period (1992-1996); the second most likely path was to leave poverty in the next period and not to be observed poor again. Picot et al (1999) use longitudinal micro data from the Survey of Labour and Income Dynamics (SLID) for 1993 and 1994. They focus on children and again suggest considerable persistence of poverty. Thus, existing Canadian evidence suggests 'two worlds' of poverty – those who are only temporarily poor and those who are chronically poor; this is also consistent with evidence for the US and Europe (e.g., Bane and Ellwood 1986; Bradbury and Jantti 2001).

*Who* is likely to be chronically poor? Finnie and Sweetman (2003) demonstrate that lone mothers are over-represented among the long-term poor and that change in marital status is a key reason for change in poverty status. Picot et al (1999) also find that divorce/separation or re-marriage of parents, have the largest association with the probability of a child entering or leaving poverty. But, changes in family composition are relatively rare, while gaining or losing a job is quite common. Thus, while labour market changes have smaller associations than changes in marital status, over-all, the two factors are about equally responsible for children moving into and out of poverty in Canada. However, since regional differences in family formation/dissolution are smaller than differences in labour market conditions, our focus in this paper is on the role of labour markets.

While there are relatively few regional comparisons of child poverty within Canada, there are many cross-national studies. Most of these focus on differences in state-provided cash transfer programs and have consistently concluded that countries which offer larger cash transfers to families with children have lower rates of child poverty (Bradbury and Jantti 2001; Rainwater and Smeeding 2003). Within Canada, many cash transfers for families with children are provided federally (e.g., the Canada Child Tax Benefit, and Employment Insurance, including maternity/parental benefits), so regional differences in transfers are largely due to differences in social assistance (i.e., 'welfare'). While regional differences in welfare are certainly apparent (see National Council of Welfare 2003), welfare payments are so low in all regions that they would almost never lift any families

out of poverty and hence would not explain differences in *rates* of child poverty (though they could play a role in explaining differences in the depth of child poverty).

Despite the emphasis on cross-national differences in welfare states as the key explanation for differences in child poverty, some attention has also recently been paid to differences in labour market outcomes for families with children. Bradbury and Jantti (2001), for example, compare market incomes for the poorest 20 % of children in each of 25 affluent countries and find that low-income children in countries such as Canada, the UK and the US, which have the highest child poverty rates of any studied, have particularly low *market* incomes (the same point is made by Smeeding and Rainwater 2003). Since the labour market is the most important source of income for most families with children, differences in labour market outcomes are vital to understanding child poverty. This includes differences in the availability of paid work, differences in rates of compensation and differences in social support for the paid employment of parents (e.g., maternity leaves, childcare, time off to care for children who are ill or disabled – see Gornick and Meyers 2003).

### Data

This study uses the first three cycles of the National Longitudinal Survey of Children and Youth (NLSCY). Survey questions are answered by the 'person most knowledgeable about the child' (pmk), generally the biological mother. The NLSCY follows children who were aged 0 to 11 years in 1994, 2 to 13 years in 1996 and 4 to 15 years in 1998 (14,040 children are present in all 3 years). The main component of the survey consists of children living in households who had recently been part of the Labour Force Survey (thus households living in the North, on Indian Reserves or in institutions are excluded). Throughout our analysis, we use longitudinal weights to address issues of differential probabilities of attrition (e.g., poor children are more likely to disappear from the sample).

'Maritime' children are defined as those who lived in the Maritimes in all three survey years; 'rest of Canada' children are analogously defined. We thus exclude the 121 children who moved in or out of the Maritimes at any point in our survey period. Throughout, we adjust standard errors to account for the non-independence of sibling observations since multiple children from one household can be included. Finally, we keep only those observations with valid responses to all variables used in the study, leaving an estimating sample of 2146 Maritime observations and 11,153 observations from the rest of Canada.

## Descriptive Analysis of Child Poverty in the Maritimes and Rest of Canada

### Cross-Sectional Results as a Benchmark

We define poverty in relative terms – a child is poor if he or she lives in a household with equivalent income before tax less than 50 % of median equivalent gross income for the full Canadian population. 'Equivalent income' is total household income, adjusted to take account of family size using the 'Luxembourg Income Study' equivalence scale. (After-tax income is unavailable in the NLSCY.) In order to compare our multi-period results to what has traditionally been reported in the literature and often continues to be used in policy debates in Canada, we begin with some single-year estimates of child poverty for the Maritimes compared to the rest of Canada. That is, we present estimates of the incidence and relative depth<sup>1</sup> of child poverty for each year separately, asking only if the child was poor in 1994, for example, based on 1994 income or if he or she was poor in 1996, based on 1996 income, and so forth. Recall that our longitudinal sample includes only children who were present in all 3 survey years and were thus aged 0 to 11 years in 1994, 2 to 13 years in 1996 and 4 to 15 in 1998. Table 1 illustrates that cross-sectional estimates of the incidence of poverty are higher in the Maritimes than the rest of Canada (e.g., 27.8 % compared to 22.4 % in 1994; 28.7 compared to 22.4 % in 1996; 25.2 % compared to 18.4 % in 1998). In 1994, the average income shortfall for poor children living in the Maritimes was 36.0 % of the poverty line compared to 33.3 % for children living elsewhere in the country. Thus, although children are more likely to be poor in the Maritimes, depth of poverty for those who are poor is fairly similar across regions.

### Longer-Term Estimates of Child Poverty

The second panel of Table 1 exploits the multi-period information available in the NLSCY to report percentages of children in our longitudinal cohort who did not experience any poverty during our study period, who experienced poverty in only one year (regardless of which year), in any two years or in all three years, respectively. As was the case with the cross-sectional estimates, more child poverty is evident in the Maritimes. Notice, however, that the cross-sectional estimates are misleading for *both* regions insofar as they *understate* how many children are touched by poverty in Canada. When we follow children over a longer time horizon (i.e., the 5-year span with 1994 and 1998 as beginning and end points), we find that considerably more children have experienced at least some poverty than is suggested by the estimates from a single point in time. To the extent that any time spent poor is harmful for children's health and well-being, then cross-sectional

1. 'Relative depth' is the ratio of the amount of money by which household income falls short of the poverty line to the poverty line itself, and calculated only for children living in poor households.

TABLE 1 Cross-Sectional versus Longitudinal Estimates of Child Poverty in the Maritimes Compared to the Rest of Canada

	Maritimes		Rest of Canada	
	Incidence	Relative Depth (depth as a percentage of poverty line)	Incidence	Relative Depth (depth as a percentage of poverty line)
Full Sample Cross-Sectional Estimates <sup>1</sup>				
1994	27.8%	36.0%	22.4%	33.3%
1996	28.7%	34.3%	22.4%	32.9%
1998	25.2%	30.4%	18.4%	30.3%
Full Sample Longitudinal Estimates				
Ever Poor (1994, 1996, or 1998)	40.2%	—	32.7%	—
Poor in any 1 year	13.9%	25.8%	12.7%	25.9%
Poor in any 2 years	10.8%	28.0%	9.5%	28.8%
'Always' Poor (1994, 1996 and 1998)	15.4%	38.7%	10.5%	37.0%
Paid Worker Sample Longitudinal Estimates <sup>2</sup>				
Ever Poor (1994, 1996, or 1998)	34.2%	—	26.7%	—
Poor in any 1 year	14.6%	24.1%	12.2%	24.5%
Poor in any 2 years	9.9%	26.4%	8.7%	26.6%
'Always' Poor (1994, 1996 and 1998)	10.0%	32.6%	5.7%	32.3%

Note: 1. Note, however, that we use the same longitudinal sample of 13,298 children who were present in all 3 cycles. Of these, 2145 were from the Maritimes and 11,153 were from the rest of Canada.

2. At least one parent had paid work in 1994.

3. Relative depth = [(poverty line - income)/poverty line] for those in poverty.

estimates of incidence may under-state the extent of the poverty problem in Canada, especially since one year of poverty is a large proportion of a young child's

life and much research emphasizes the critical developmental importance of the very early years of life (Hertzman 2000).

In the Maritimes, if a child is poor at all during the 1994 to 1998 study period, it is most likely that he or she is poor in all 3 years (roughly one third of all poor children are 'chronically' poor).<sup>2</sup> Outside the Maritimes, on the other hand, if a child has any experiences with poverty during the 1994 to 1998 time period, it is

2. Since we only observe children in 1994, 1996 and 1998, we of course do not know if they were poor in 1995 and 1997 as well. However, for ease of exposition, we will tend to say they were 'poor throughout the period.' Relative depth of poverty for children observed poor in more than one year is calculated by converting actual income shortfall for each year to 1998 dollars, taking the average value of the shortfall, and then expressing this as a percentage of the 1998 poverty line.

most likely that he or she is poor for just one year (roughly 40 % of children with *any* poverty were poor just once). The proportion of children in the population who had just one encounter with poverty is quite similar across the regions as are percentages of children with two observed periods of poverty. Thus, the largest observed difference is in the percentage of the population of children who are observed poor throughout the study period -- 15.4 % in the Maritimes compared with 10.5 % elsewhere.

Table 1 also reports the relative depth of poverty for children observed poor in only one, in two or in all three years (1994, 1996 and 1998). Here, the key message is that children who are poor for the longest period of time are also the children who are *most* poor. In terms of regional comparisons, while children are considerably more likely to experience poverty, particularly chronic poverty, if they live in the Maritimes, once poor, the depth of their poverty is quite similar across the regions.

The third panel of Table 1 focuses on the subset of children with at least one parent with paid work in 1994 (79.4 % of children in the Maritimes and 83.1 % of children in the rest of Canada).<sup>3</sup> In either region, a child is less likely to experience poverty if at least one of his or her parents has paid work. Chronic poverty is also less likely for this sample -- estimated incidence falls by about 5 percentage points in both regions. But, notice that in the Maritimes, it is nonetheless true that 10.0 % of all children whose parents have at least some paid work were observed poor in 1994, 1996 and 1998; 5.7 % of children in paid-worker families were poor throughout the study period in the rest of Canada.

Table 2 presents longer-term estimates of poverty separately for children living with lone mothers and children living with two parents since children living with lone mothers are particularly vulnerable (e.g., Ross et al 2000).<sup>4</sup> For children living with two parents (in either the Maritimes or the rest of Canada), next to having no encounters with poverty, it is most common to have experienced just one year; having two years of poverty is second most common; being poor in all three survey years is the least likely situation for children in two-parent families in either region.

For children living with lone mothers, the patterns of poverty experience are almost the reverse. The *most likely* situation is that children are observed to be poor in all three survey years, and this is especially pronounced in the Maritimes. Notice that in either region it is more likely that the children living with lone mothers will have been poor in *all* 3 survey years than that they will never have experienced poverty.

3. Of those children whose parents had at least some paid work in 1994, 95.4 % had paid work in all 3 years in the Maritimes; 96.3 % had paid work in all 3 years in the rest of Canada.

4. Family structure here simply refers to 1994. In the multivariate work, we control for number of periods of lone-motherhood.

TABLE 2 Longitudinal Estimates of Child Poverty for Children Living with Two versus One Parent

	Maritimes		Rest of Canada	
	Incidence	Relative Depth	Incidence	Relative Depth
Children Living with Two Parents in 1994				
Ever Poor	32.8%	--	25.5%	--
Poor in any 1 year	14.4%	24.5%	12.2%	24.5%
Poor in any 2 years	9.4%	25.4%	7.6%	26.4%
'Always' Poor (1994, 1996 and 1998)	9.0%	34.6%	5.7%	33.1%
Children Living with Lone Mother in 1994				
Ever Poor	81.2%	--	77.3%	--
Poor in any 1 year	10.9%	35.2%	16.1%	32.3%
Poor in any 2 years	18.9%	35.4%	21.5%	33.8%
'Always' Poor (1994, 1996 and 1998)	51.3%	42.7%	39.7%	40.4%

Note: 1. Relative depth=[(poverty line - income)/poverty line] for those in poverty.

### Multivariate Analysis of the Correlates of Child Poverty

In order to better understand why more children experience poverty in the Maritimes than in the rest of Canada, we estimate probit models: 1) of the probability of experiencing *any* poverty over the study period and 2) of the probability of remaining in poverty *throughout* the study period. (Since regional differences in the depth of poverty are less striking than differences in incidence, the multivariate work focuses on the incidence measures.) Our central hypothesis is that differences in labour markets across the regions will play a key role in explaining observed differences in child poverty.

#### Baseline Model

To begin, we estimate probit models with a single dummy variable indicating residence in the Maritimes. Results are reported in columns 1 and 4 of Table 3 and confirm the conclusions reached earlier about the significantly higher probability of both ever being poor and always being poor in the Maritimes.

#### Adding Demographic Risk Factors

We next add important demographic controls. Note that child poverty could be higher in the Maritimes either because families are more likely to have characteristics associated with higher rates of poverty (e.g., low education) or because having

TABLE 3 Probit Models of the Probability of Poverty. Full Sample

	Poor Any Cycle			Poor All Three Cycles		
	Baseline	Demogra. + Risk Factors	Demographics + Risk Factors + Neigh. Unemploy. Rate 1994	Baseline	Demogra. + Risk Factors	Demogra. + Risk Factors + Neigh. Unemploy. Rate 1994
Dummy=1 if resides in the Maritimes 1994	0.199* (0.051)	0.175* (0.057)	0.073 (0.058)	0.237* (0.062)	0.229* (0.068)	0.138** (0.069)
Neighbourhood Unemployment Rate 1994	–	–	0.030* (0.003)	–	–	0.030* (0.009)
Dummy=1 if PMK age <25	–	0.962* (0.099)	0.943* (0.099)	–	0.488* (0.108)	0.455* (0.110)
Dummy=1 if PMK age 26-30	–	0.451* (0.074)	0.415* (0.075)	–	0.282* (0.098)	0.228** (0.100)
Dummy=1 if PMK age 31-35	–	0.136** (0.066)	0.130** (0.066)	–	0.096 (0.086)	0.085 (0.087)
Dummy=1 if PMK age >45	–	-0.013 (0.154)	0.010 (0.153)	–	0.125 (0.166)	0.152 (0.170)
Dummy=1 if PMK has < HS 1994	–	0.668* (0.072)	0.637* (0.072)	–	0.641* (0.072)	0.609* (0.073)
Dummy=1 if PMK has a dip./certif. 1994	–	-0.228* (0.064)	-0.212* (0.064)	–	-0.246* (0.093)	-0.222** (0.097)
Dummy=1 if PMK has a univ. degree 94	–	-0.557* (0.113)	-0.521* (0.115)	–	-0.393** (0.168)	-0.359** (0.168)
Dummy=1 if non-white	–	0.425* (0.063)	0.424* (0.063)	–	0.171** (0.078)	0.164** (0.078)
Dummy=1 if resid. is rural area in 1994	–	0.411* (0.054)	0.385* (0.055)	–	0.239* (0.067)	0.190* (0.071)
Number of children in the household 1994	–	0.271* (0.029)	0.294* (0.029)	–	0.257* (0.030)	0.280* (0.031)
Child's age 1994	–	-0.018* (0.007)	-0.019* (0.007)	–	-0.028* (0.009)	-0.031* (0.009)
Dummy=1 if lone mom household one cycle	–	1.218* (0.089)	1.221* (0.089)	–	0.568* (0.122)	0.565* (0.119)
Dummy=1 if lone mom household two cycles	–	1.490* (0.103)	1.491* (0.103)	–	1.064* (0.120)	1.072* (0.124)
Dummy=1 if lone mom household three cycles	–	1.687* (0.088)	1.674* (0.089)	–	1.908* (0.086)	1.914* (0.086)
Dummy=1 if PMK agrees/strongly agrees "if something went wrong no one would help"	–	0.187*** (0.100)	0.173*** (0.101)	–	0.202 (0.140)	0.170 (0.143)
Dummy=1 if PMK/spouse self reported health is poor/fair	–	0.459* (0.093)	0.442* (0.093)	–	0.474* (0.115)	0.466* (0.113)
Intercept	-0.448* (0.024)	-1.755* (0.099)	-2.084* (0.103)	-1.255* (0.030)	-2.561* (0.124)	-2.903* (0.135)
Pseudo R-squared	0.0011	0.2872	0.3004	0.0019	0.3234	0.342

Note: 1. \* = statistically significant with 99% confidence; \*\* = statistically significant with 95% confidence; \*\*\* = statistically significant with 90% confidence.  
2. Standard errors in parenthesis

the same risk factor is more likely to result in poverty in the Maritimes (e.g., because labour market opportunities for those with a low education are more limited).

First, child's age in 1994 is likely to be associated with poverty. Care requirements will vary as the child ages – labour force participation is easier once the child is of school age, for example. However, since the average age of children is the same (5.7 years in the Maritimes and 5.5 years in the rest of Canada), this cannot explain inter-regional differences in child poverty. Children from larger families are more likely to be poor both because it is harder for parents to do paid work and because additional siblings increase financial needs. However, there is no difference in average number of children (2.3 in both regions).

We control for pmk's age in 1994, since older parents have typically moved up their life-time earnings profiles, are better-established in the labour market, and hence are less likely to have low incomes. Maritime pmks are somewhat younger than pmks living in the rest of Canada (e.g., 30.4 versus 38.5 % are aged 36 to 45), which is potentially disadvantageous financially for Maritime children.

Pmk's education level is also an important determinant of family income, and since Maritime pmks have lower levels of education, this could be important. Maritime children are both more likely to have a pmk who has not finished high school (16.2 % versus 15.9 %), and less likely to have a pmk who has finished a university degree (14.5 % versus 16.2 %). Family structure is another key determinant of child poverty, but the percentage of children who have ever lived with a lone mother is much the same across the regions (22.4 in the Maritimes versus 20.9 % elsewhere – not statistically different).

Pmks are much less likely to be non-white in the Maritimes (8.8 % versus 25.4 %). To the extent that racial discrimination exists in Canadian society, then, children from non-white families may experience more poverty (see Li 2001). Of course, this regional difference predicts more poverty outside the Maritimes.

Finally, Maritime families are much more likely to live in a rural<sup>5</sup> area (42.3 % rural compared to 17.5 % in the rest of Canada). If, for example, labour market opportunities are more limited in rural areas, then poverty rates may be higher for children living in rural areas (see Alasia and Rothwell 2003).

Anecdotes suggest that despite high rates of poverty, some people may not wish to leave the Maritimes because they have strong social support in the region. How could this influence an income-based measure of child poverty? Cash transfers from family or friends should already be captured in the 'total income' used to assess poverty, but social support could also mean someone available to look after children when they are sick so that the parent does not lose her job or someone available to take children after school so that labour-market participation is possible. Thus, pmks lacking social support may be more likely to be poor, other things equal. As a proxy for 'lack of social support,' we use a dummy variable which equals 1 if the individual agrees or strongly agrees that "if something went wrong, no-one would help." However, 4.7 % of pmks in the Maritimes report a lack of social support compared with 5.7 % of pmk's living elsewhere in Canada, a statistically insignificant difference.

Finally, disability or poor health experienced by either parent will limit

5. 'Rural' is defined using the census definition – individuals living in the countryside outside centres of 1000 or more population (Du Plessis et al 2001).

possibilities for participation in paid work and thus be expected to increase the probability that the family experiences poverty.<sup>6</sup> For the Maritimes, we find that 8.6 % of children have a pmk or spouse of pmk (where present) who report health status to be 'fair or poor' compared to 6.7 % in the rest of Canada. Again, while statistically different, the magnitude of this difference does not seem large enough to explain observed regional differences in child poverty. Notice, however, that ill health of a parent is much more likely for chronically poor children (15.0 % in the Maritimes and 13.9 % in the rest of Canada).

To sum up, there are some significant differences between the regions in basic demographic factors acknowledged as important correlates of poverty. However, in some cases, these differences in 'risk factors' would be expected to reduce child poverty in the Maritimes (e.g., fewer pmks with less than high-school education; more social support; fewer non-white families). In other cases, differences would be expected to increase child poverty (fewer pmks with university degrees; more younger mothers; more lone mothers, more rural families, more parents with poor health).

Columns 2 and 5 of Table 3 present the results of probit models of the probability of 'ever' and 'always' being poor, respectively, which include all of the demographic controls described above. The first important point to be made is that a series of likelihood ratio tests indicate that we do not need to estimate separate models of poverty for each region. That is, the presence of any particular 'risk factor' is associated with the *same* increase in the probability of poverty in each region.<sup>7</sup>

The second key result is that controlling for many important correlates of child poverty reduces the estimated coefficient on the 'Maritime' dummy variable very slightly (e.g., from 0.199 to 0.175 in the 'ever poor' equation; from 0.237 to 0.229 in the 'always poor' equation); the Maritime dummy remains highly statistically significant in both regressions.

It is, however, important to note that while these risk factors do not explain away the observed differences in child poverty across the regions, they almost all have, as expected, important associations with child poverty. Thus, for example, children with younger pmks are much more likely to be poor, with the size of the association particularly large for 'ever poor.' Level of pmk education also has an extremely strong association with both 'ever' and 'always' being poor. Larger families, other things equal, are more likely to be poor; older children are less likely to be poor, even after controlling for age of pmk. Non-white and rural children are more likely to be poor as well as children whose parents suffer from ill health. Lack of social support reported by the pmk does not have a significant

6. It is also well-established that poverty can *cause* ill health. To the extent that higher rates of poverty in the Maritimes cause more health problems in the Maritimes, then including 'poor health' in a model which attempts to explain poverty is somewhat circular. In practice, coefficients of other variables are extremely robust to the inclusion/exclusion of the health variable.

7. We experimented with including a full set of interaction terms – each explanatory variable was interacted with the Maritime dummy. We then tested the joint significance of the full set of interaction terms using likelihood ratio tests. We were never able to reject the hypothesis that this set of variables added nothing to our estimated model.

association with the probability of 'always' being poor; there is a marginally significant positive association with 'ever' being poor. Children living in lone-mother families are dramatically more likely to be poor, especially if their parents remain unattached throughout the study period – this is the largest association evident in our data.

### Adding the Labour Market

The central hypothesis of this paper, as noted above, is that differences in labour markets are the principal explanation for differences in rates of child poverty between the Maritimes and the rest of Canada. To investigate this hypothesis, we add a measure of the neighbourhood unemployment rate in the child's 1994 neighbourhood<sup>8</sup> to the models discussed above. Notice that this measure is exogenous to the child's family, but may play a role in determining both wage rates and hours of work available to both parents and/or to any teenagers living in the household. Not surprisingly, average neighbourhood unemployment rates are noticeably higher in the Maritimes (13.5 % compared to 9.8 %); neighbourhood unemployment rates are also higher, within regions, for children who have experienced poverty (e.g., 16.3 % for 'always' poor Maritime children; 13.2 % for 'always' poor children in the rest of Canada).

When the neighbourhood unemployment rate is added to the model, it has a strong positive association with child poverty in both the 'ever' and 'always' poor models (see columns 3 and 6 of Table 3). And, strikingly, the addition of this single variable reduces the magnitude of the 'Maritime' dummy by much more than did the addition of all 16 other demographic risk factors. In the 'ever poor' model, in fact, the Maritime dummy is *no longer statistically significant* once the neighbourhood unemployment rate has been added. In the 'always poor' model, when the neighbourhood unemployment rate is added, the Maritime coefficient falls by nearly one-half, from 0.229 to 0.138, but a statistically significant difference in the probability of chronic poverty remains.<sup>9</sup>

Of course, the neighbourhood unemployment rate is only one measure of labour market conditions. To examine the role of wage rates and hours of work in explaining the remaining regional difference in chronic child poverty, we focus on children with at least one parent in paid work in 1994 (in order to observe their wage rates). In both regions, nearly 80 % of chronically poor children have a parents with at least some labour market attachment during the study period. In fact, in the Maritimes, 45.5 % of chronically poor children had parents with labour market attachment *throughout* the survey period, compared to 35.4 % of children

8. 'Neighbourhood' in the NLSCY is the Census Enumeration Area (EA) in which the child lives. Specifically, the EA is the geographic area that is enumerated by one census enumerator and can range from about 125 dwellings to 440. In 1994, there were 49,362 EAs in Canada. This information is not available for 1996 or 1998.

9. We have run the same specifications for the sub-sample of Maritime children, distinguishing those living in New Brunswick and Prince Edward Island from those living in Nova Scotia. We find no significant difference in the probability of chronic poverty; the probability of 'ever' being poor is higher in both NB and PEI, other things equal.

living elsewhere in Canada. Chronic poverty despite continuous participation in paid work suggests low wages, low hours or both.

The hourly wage rate of the parent with the highest wage rate in 1994<sup>10</sup> is about 30 % higher outside the Maritimes (\$21.24 compared to \$16.33). As well, parental wages for children who are chronically poor are about half what is received by parents of children who are never poor. Average annual hours of paid work by the parent with more paid hours are about 5 % higher outside the Maritimes (2196 hours compared to 2099). Again, in both regions, annual hours are much lower for parents who are in the labour market, but remain chronically poor (e.g., 1339 in the Maritimes).

Table 4 reports results for two regressions for the probability of always being poor for the paid worker sub-sample: 1) a regression on just the Maritime dummy; and 2) a model including all demographic controls plus the neighbourhood unemployment rate, annual hours of the parent with higher hours and wage rate of the parent with the higher wage rate.<sup>11</sup> Column 1 confirms that there is significantly more chronic poverty among children whose parents are paid workers in the Maritimes than in the rest of Canada. The addition of the labour market variables again reduces the estimated Maritime coefficient dramatically – from 0.28 to 0.11 and the Maritime dummy is now insignificant. In terms of the labour market variables themselves, chronic 'working poverty' is higher when neighbourhood unemployment rates are higher and lower when paid hours are higher. The hourly wage does not have a statistically significant association with chronic poverty, suggesting that lack of work may be the more serious problem. This is consistent with Mead (1996) who argues that it is the number of hours and not wages which has been central to poverty rates in the United States through the 1980's and early 1990's.<sup>12</sup>

## Discussion

Consistent with earlier cross-sectional work on regional differences in child poverty in Canada (e.g., National Council of Welfare 2002; Ross et al 2000), we find higher rates of child poverty in the Maritimes than in the rest of Canada. However, because we use longitudinal data which track children across time for our regional comparisons (the National Longitudinal Survey of Children and

10. We have chosen to focus on the wages and hours of the individual with the highest wages/hours to avoid confounding marital status and labour market experiences. We did experiments with a series of dummy variables for various configurations of marital status and labour market status (e.g., married couple, both working full-time; lone-mother in labour market full-time, etc). Results were qualitatively as reported here. We also experimented with average hours over the three cycles; average wage over the three cycles; minimum hours and wages. Again, these variables were all extremely significant and dramatically reduced the estimated magnitude of the 'Maritime' dummy variable.

11. A likelihood ratio test again indicates that there is no need to estimate separate models for the two regions.

12. Higher wages are associated with lower poverty depth (an OLS regression using the same specification as Table 4 confirms that both hours and wages have a statistically significant association with poverty depth) but wages may only 'bump people across the line,' if incomes are very close to poverty level to begin with.

TABLE 4 Probit Models of the Probability of Poverty. Paid Worker Sample

	Poor All Cycles	
	Baseline	Labour Market Variables
Dummy=1 if resides in the Maritimes in 1994	0.281* (0.072)	0.114 (0.085)
Neighbourhood Unemployment Rate	–	0.0190* (0.004)
Household hourly wage - highest of PMK/spouse (where positive)	–	-0.015 (0.011)
Household paid hours - highest of the PMK/spouse (where positive)	--	-0.0005* (0.00006)
Dummy = 1 if PMK age <25	–	0.381* (0.145)
Dummy = 1 if PMK age 26-30	–	0.106 (0.126)
Dummy = 1 if PMK age 31-35	--	-0.045 (0.109)
Dummy = 1 if PMK age >45	–	0.191 (0.199)
Dummy = 1 if PMK has less than high school in 1994	–	0.463* (0.096)
Dummy = 1 if PMK has a diploma/certificate in 1994	--	-0.138 (0.115)
Dummy = 1 if PMK has a university degree in 1994	–	-0.209 (0.181)
Dummy = 1 if nonwhite	–	0.067 (0.094)
Dummy = 1 if residence is in a rural area in 1994	–	0.329* (0.084)
Number of children in the household in 1994	–	0.308* (0.039)
Child's age in 1994	–	-0.020*** (0.011)
Dummy=1 if lone mom in one cycle	–	0.491* (0.158)
Dummy=1 if lone mom in two cycles	–	0.753* (0.135)
Dummy=1 if lone mom in three cycles	–	1.124* (0.129)
Dummy = 1 if agree/strongly agree there would be no one to help if I needed it	–	-0.017 (0.182)
Dummy = 1 if PMK or spouse health is fair or poor	–	0.222 (0.146)
Intercept	-1.577* (0.036)	-1.651* (0.295)
Pseudo R-squared	0.0029	0.3095

Note: 1. \* = statistically significant with 99% confidence; \*\* = statistically significant with 95% confidence; \*\*\* = statistically significant with 90% confidence.  
2. Standard errors in parenthesis.

Youth for 1994, 1996 and 1998), we are able to add to this literature a comparison of the extent of chronic versus transitory poverty in the two regions. Consistent with other longitudinal studies of poverty for Canada over-all (Finnie and Sweetman 2003; Picot et al 1999) and with evidence available for other countries (Bane and Ellwood 1986; Bradbury et al 2001), we find that looking only at cross-sectional data under-estimates the total number of children touched by poverty over a longer period of time. This is true for both the Maritimes and the rest of Canada, though having *any* encounter with poverty is more likely in the Maritimes (40.2 % compared to 32.7 % were poor at least once over the 5 years spanned by our data). But, what is particularly important is that the largest part of the regional differences is attributable to higher *chronic* child poverty in the Maritimes. That is, 15.4 % of all Maritime children were poor *throughout* the study period, compared to 10.5 % of children living elsewhere. Moreover, children who are chronically poor are also the most severely deprived, with an average income shortfall of about 38 % of the poverty line. Higher rates of chronic child poverty in the Maritimes is a particularly serious Canadian policy problem both in and of itself as an issue of equity and because the literature linking socioeconomic status and child health emphasizes long-term poverty as having the largest negative associations (see Phipps 2003). Higher rates of chronic poverty in the Maritimes may thus be an important contributing factor to the lower observed health status (Lethbridge and Phipps 2003; Willms et al 2003) and educational attainment (Cartwright and Allan 2002; Lauzon 2003) of children living in the Maritimes. Notice, moreover, that lower child health status and educational attainment now can lead to lower labour market productivity and hence earnings in the future, potentially helping to sustain regional differences in poverty.

Many other studies attempting to explain geographic differences in rates of child poverty have concluded that differences in tax and transfer policies across countries are the most important explanation (e.g., Jenkins and Schluter 2003). However, both Bradbury and Jantti (2001) and Rainwater and Smeeding (2003) have also recently emphasized the importance of parental labour market outcomes in explaining differences in child poverty. Given fairly limited variation in tax/transfer programmes across Canadian regions compared with fairly large differences in unemployment and wage rates, we emphasize the role of labour markets in our comparison.

Multivariate analysis which includes a wide range of demographic correlates of child poverty (e.g., age, education, health and marital status of parents, size of family, ethnicity, rural/urban status) leaves the regional gaps in the probability of 'ever' and 'always' being poor unexplained. Simply adding a control for neighbourhood unemployment rate eliminates the difference in 'ever experiencing poverty' and halves the estimated regional difference in chronic poverty. Adding controls for parental wages and working hours for a sub-sample of children with parents in paid work eliminates the regional difference in chronic 'working poverty'.

Thus, our results clearly emphasize the important role played by regional differences in parental labour market outcomes in explaining regional differences in child poverty. Given the potentially important connections between poverty,

especially chronic poverty, and child health and well-being, policies directed toward expanding employment opportunities for parents, particularly through reduced unemployment rates and increased available hours are clearly warranted.

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