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Costa Kapsalis and Pierre Tourigny
for
Applied Research Branch
Strategic Policy
Human Resources Development Canada

Canada
SP-577-06-03E

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Final Report

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Abstract

This study attempts to answer the following basic question: why do some lone parents escape low income or never enter spells of low income or social assistance (SA), while others remain in low income or on SA for many years?

The analysis relies on the 1993-98 longitudinal panel of the Survey of Labour and Income Dynamics (SLID). The main focus is lone mothers, since they account for 93% of low income lone parents. Here are the main findings:

Low income

- Lone mothers have the highest incidence of low income of any family type. In 1998, 39% had incomes below the Statistics Canada post-tax income Low Income Cut-Offs (LICO).
- An estimated 55% of low income lone mothers did not work for pay in 1998. In terms of demographics, the most common characteristics of low income lone mothers were:
  - not being in a union when the first child was born (60%);
  - having a pre-school age child (47%);
  - being a student (25%) or being a high school drop-out (28%);
  - living in the Atlantic region; and
  - being a recent immigrant, aboriginal, or disabled.
- A higher level of education is associated with higher earnings and a lower chance of being in low income. However, a higher level of education is no guarantee of averting low income: 36% of non-student low income lone mothers had a post-secondary certificate or degree in 1998.
- Low income is a dynamic phenomenon. For example, 70% of those who were in low income at some point over the period 1993-97 exited from low income (although some may have re-entered later).
- Two events are most commonly associated with significant exits from low income:
  - an increase in own hours of work (82%); and
  - a change in family status, by forming a union and/or someone else becoming the main income recipient (48%);

  (significant exits means here that they were accompanied by an at least 20% increase in family income).

Social Assistance

- 40% of all lone mothers, or 68% of all low income lone mothers, received social assistance (SA) in 1998 - the highest rate of any type of family.
- Government transfers reduce the low income gap of female SARs from about 90% to about 30%.
- The three most common characteristics of lone mothers on SA were the same as those of all low income lone mothers:

  - not in a union when their first child was born (73%);
  - not working for pay (54%); and
  - presence of pre-school age child (44%).

Low Income and SA Spells

- Most new low income and SA spells are very short: about half of all the low income and SA recipients exit low income and SA respectively after about 2 years.
- However, some lone mothers stay on low income and SA for many years. For example, over the period 1993-98:

  (a) of those who experienced low income (60% of all lone mothers), 21% were in low income in all six years; and

  (b) of those who received SA (58% of lone mothers), 41% received SA in all six years.
- As a result, the average time someone has been in low income or on SA at any given time is at least 3.4 and 4.3 years respectively (simply because the same long term low income and long term SA recipients appear in the statistics for many years)
- The characteristics most closely associated with long low income spells were:

  - no change in lone motherhood status;
  - presence of pre-school age children;
  - being a student or a high school dropout;
  - being a recent immigrant, aboriginal or disabled; and
  - living in the Atlantic region or Quebec.
- The three strongest factors associated with longer SA spells were:

  - no change in lone motherhood status;
  - being a recent immigrant, aboriginal or disabled; and
  - presence of pre-school age children.
- Interestingly, the level of education did not appear to have an influence on the length of SA spells.

Conclusion

- The results make somewhat of a case for investing more in education. However, this is not conclusive. Many lone mothers who are in low income or SA recipients have a post-secondary certification. Also, a higher level of education does not seem to have any benefits in terms of shortening SA spells.

- The fact that half of new SA recipients exit within the first two years suggest that policies should be well targeted. However, waiting for several years to ascertain who are long term recipients is not the best targeting strategy. Not only is valuable time wasted, but there is evidence that the longer individuals stay on SA, the more difficult it is to exit.

- A better strategy is to keep probing the characteristics of SA recipients that are associated with long spells and develop programs that are targeted to those characteristics. And since lack of paid work or limited attachment to paid work are common factors among the low income and SA recipients, the main focus should be on providing employment services (such as referrals and employment counseling), coupled with a more generous treatment of earnings under SA and wage subsidies to those able to work a significant number of paid hours.

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1. Introduction

Previous research has identified lone parents with young children (under 18 years of age) as being particularly at risk of extended low income spells and exclusion from the labour market and community life.

This study attempts to answer the following basic question: why do some lone parents escape low income or never enter spells of low income or social assistance (SA), while others remain in low income or on SA for many years?

The ultimate goal of this research is to assist HRDC to identify policies that can help lone parents overcome barriers to employment, thus preventing or alleviating low income and social exclusion.

The analysis relies on the Survey of Labour and Income Dynamics (SLID). The main focus of the analysis is the first SLID panel, which followed the same respondents over the period 1993-98.

In what follows, Section 2 reviews the main findings from the literature and positions the work in this study against this literature. Section 3 describes the SLID data and basic methodological concepts. Section 4 analyzes the 1998 cross-sectional data to measure the extent of low income and to identify the main personal characteristics associated with a high incidence of low income. Section 5 probes in more detail the relative contribution of low hours of work and low hourly earnings to the incidence of low income.

Section 6 presents longitudinal measures of low income based on the 1993-98 longitudinal SLID data. Section 7 uses the same data to assess how dynamic the nature of low income is, while Section 8 estimates the length of low income spells and identifies which characteristics are associated with longer than average spells. Section 9 explores the contribution of social assistance to reducing low income, as well as the factors that contribute to prolonged reliance on social assistance. Section 10 draws together the main conclusions and outlines future research priorities.

2. Literature Review

2.1 The Focus on Lone Mothers

Most of the literature on low income lone parents has focused on lone mothers. The most obvious reason is that over 90% of low income lone parents are lone mothers. Also, in general, lone fathers tend to leave low income and social assistance (SA) more rapidly, further justifying the focus on lone mothers. Finally, because low income lone fathers are a relatively small population, it is often difficult to study their low income experience using survey data because of sample size limitations.

In general, lone mothers have attracted particular attention in the literature on low income because of their high incidence of low income. For example, the annual low income profiles produced by the National Council of Welfare (2000) show that in 1998, 54.2% of lone mothers had incomes below Statistics Canada's pre-income tax Low Income Cut-Offs (LICO) – the highest low income rate of any family type.

Lone mothers, along with individuals with disabilities, recent immigrants, individuals of aboriginal ancestry, and unattached persons aged 45 to 64, have been identified in the literature as high risk groups. They have a much higher probability of being in low income than the rest of the population, a risk that is particularly high when combined with low education (Hatfield 2001a and 2001b).

2.2 The Dynamic Nature of Low Income

Analysis of the dynamics of low income based on income tax data shows that low income is not a static phenomenon; instead, there are significant flows into and out of low income. For example, the work by Finnie (2000) shows that the experience of low income lone mothers is far from homogeneous:

- one-third did not experience low income during the five years covered by the study (1992-96); and
- among those who experienced low income, about one-third were in low-income for a short period (1-2 years) while, at the other end of the spectrum, just over one-third were in low income in all five years.

An objective of our study is to take advantage of the detailed characteristics available in the SLID to understand why some lone mothers experience low income while others do not, and why some lone mothers stay in low income for a long time while others do not.

2.3 Probing Low Income and Social Assistance Spells

A related issue is the possible "scarring" effect of prolonged low income or reliance on SA. This issue has been investigated looking at hazard exit rates – i.e. the probability of exiting low income or SA after a certain stay period. The evidence from the literature is that the longer individuals stay in low income or on SA, the less likely it is that they will exit low income or end reliance on SA.[1]

However, the above finding may be of limited policy value, since there are two competing interpretations with opposite policy implications:

(a) Declining hazard rates may mean that the longer individuals stay in low income the more difficult it is for them to break away, possibly because employment skills deteriorate when not working for pay. The policy implication of this interpretation is that we should try to assist those entering low income as soon as possible to avoid the "scarring" effect of low income.

(b) The competing explanation is that those with good employment prospects exit low income quickly. The policy implication of this interpretation is that we should wait for some time before intervening, otherwise we will be helping individuals who would have exited low income on their own after a short stay.[2]

Unfortunately, the longitudinal SLID sample is small and, as a result, most of the independent variables of the hazard models tested here, including the effect of the duration of spells, turned out to be statistically insignificant. As a result, in addition to the more conventional hazard analysis, we used OLS regression analysis to assess the effect of various factors on in-progress spells. This approach is methodologically less satisfactory than hazard analysis but, in the face of sample size limitations, it provides a simple way of complementing the hazard analysis results.

2.4 Factors Associated with Longer Low Income and Social Assistance Spells

Previous research has identified some of the factors associated with low income and SA durations. For example, Lacroix (2000a) concluded that "single men leave welfare more rapidly than single women. The more educated exit a little sooner than the less educated, and re-entry occurs faster for the less educated."

Gascon (2000) concluded that for non-aged families of two or more persons, the problem of low income "appears to have been particularly linked to the problem of inadequate access to the labour market." However, with respect to lone parents he concludes that "the problem (of low income) may be more linked to a lack of human capital, or at least to a lower income return for it in the labour market."

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1 See for example Finnie (2000); Lacroix (2000b).

2 This, for example, was the rationale for the long-term unemployed program under the old Canadian Job Strategy.

Among other factors that have been investigated in the literature is the correlation between low income or SA dependence and the rate of unemployment. Both longitudinal (Lacroix, 2000a) and time series data (National Council of Welfare, 2000) show that there is a close correlation between the two. This correlation is often interpreted as an indication that low income and reliance on SA are driven primarily by labour market trends and, therefore, the primary policy focus should be on keeping unemployment rates low.

However, while the unemployment rate is an important determining factor, it does not fully explain trends in SA caseloads or work effort among SA recipients. For example, the design of SA programs and the level of SA benefit rates also have an important effect, both on the number of SA beneficiaries and the level of work effort of SA recipients (Kapsalis, 1997).

In this study, we will take advantage of the wealth of variables available in the longitudinal SLID database, to assess the impact of various factors on low income and SA spells. The study will provide basic measures of the extent of low income or reliance on SA, and flows into and of out of low income and SA. In addition, the study will investigate the following key questions: to what extent is low income among lone mothers the result of no work for pay or low hours of work, as opposed to low hourly earnings? What factors are behind low hours or low hourly earnings? Which characteristics are more closely associated with short spells on low income or SA and what are the policy implications?

3. Methodology

3.1 Labour and Income Dynamics

The analysis relies on the Survey of Labour and Income Dynamics (SLID). The survey has been conducted annually since 1993 and the most recent year for which data are available is 2001.

A panel of 15,000 households is introduced every three years. Each panel stays in the sample for six years. All persons in households selected when a panel is introduced remain in the sample, even if there are changes in household composition or residence. Those persons living with an original respondent are also surveyed.

Every person is contacted for a preliminary interview when a panel is introduced. After this, every person is be contacted twice each year: (a) in January for labour data (detailed information on up to six jobs held in the previous year; information on unemployment spells; receipt of EI, social assistance and workers compensation on a monthly basis; family structure; education; disabilities; etc.); and (b) in May for income data (detailed information on sources of income; in about 75% of the cases the income information is obtained from tax records, following consent of the respondent).

For the longitudinal part of the analysis, we use in this study the 15,000 households from the first panel (1993-98). For the cross-sectional part of the analysis, the study uses 1998 data from the first two overlapping panels (a total of 30,000 households). Cross-sectional analysis prior to 1996 is limited to 15,000 households since there was only one panel available during the first three years.

3.2 Sample Selection

The unit of analysis is the main income recipient of the economic family:

- An economic family is defined as a group of individuals sharing a common dwelling unit who are related by blood, marriage or adoption. A person living alone or rooming in a household where he/she is not related to any other household members is called an unattached individual and is treated as an economic family unit by him/herself.
- The main income recipient is the member of the economic family with the highest total income in the year. The possible codes for this variable are:
    - the individual is the main income recipient of the economic family; or
    - the individual is not the main income recipient, but relates to the main income recipient by being one of the following:
        - spouse or common-law partner;
        - child (birth, step, adoptive, foster);

- parent (birth, step, adoptive, foster); or
- sibling, grandparent, grandchild, other relative.

The sample was further restricted to main income recipients who were age 16 to 55. In the case of the cross-sectional analysis the age refers to 1998; in the case of longitudinal analysis the age refers to 1993 or the start of a low income or social assistance spell (depending on the type of analysis). SLID provides complete information on the 16 plus population. The reasons for restricting the sample to those age 55 and under is that virtually no lone parent with young children is older than 55. Thus, restricting the upper end of the age range makes comparisons of lone parents to other types of family more meaningful.

3.3 Definition of Lone Parents

Lone parents are defined based on the following three criteria:

(a) do not have a partner (either marital or common law);

(b) live with at least one child of their own under the age of 18; and

(c) are the main income recipient of the economic family.

The above definition is fairly commonly used in the literature and it is the most functional in the context of SLID. However, it should be pointed out that this definition leaves out a small number of lone mothers (less than 10%) who head a secondary census family (e.g. lone mothers who live with their parents and the main income recipient is one of the parents).

3.4 Definition of Low Income

Individuals are identified as in low income if the income of their economic family is below Statistics Canada's after tax Low Income Cut-Offs (LICO).

The base year for the LICO used in SLID is 1992, with the levels adjusted for later years by the Consumer Price Index (CPI). The after tax LICOs, although not endorsed by Statistics Canada as low income lines, are commonly used to identify the low income population.

The after tax LICOs vary by the size of the economic family and the size of the community. In 1998, for example, in areas with population 100,000 to 499,999 the after tax LICOs were as follows:

- 1 person: $14,510
- 2 persons: $17,705
- 3 persons: $22,392
- 4 persons: $27,890
- 5 persons: $31,172
- 6 persons: $34,454
- 7+ persons: $37,735

4. Cross-Sectional Profile of Low Income

4.1 Introduction

This section presents the income and low income profile of lone parents, based on the 1998 cross-sectional SLID data. We have chosen 1998 as the year of analysis because it is the most recent year of the 1993-98 longitudinal panel.

As mentioned above, the sample is restricted to main income recipients age 16 to 55 in 1998 and all results refer to the main income recipient of the economic family. The main focus of the analysis is lone parents with children under 18 years of age. Lone parents are compared to the main income recipients of other family types in the same age group (16 to 55 in 1998).

4.2 Incidence of Low Income

Lone mothers have the highest incidence of low income of any family type. In 1998, 39% of them had incomes below the Statistics Canada post-tax Low Income Cut-Offs (LICO).

The most basic indicator of low income is the incidence of low income, most often defined as the percentage of families whose income fall below the Statistics Canada after tax Low-Income Cut-Off lines (LICO). *Table 4.1* provides estimates of the incidence of low income by family type. It also provides the actual sample size by family type so that the reader gets a better sense of the precision of the estimates.

Table 4.1 shows that in 1998, 11.3% of all families were in low income. In particular:

- the incidence of low income was highest among lone mothers (39.1%), who accounted for more than one-third of all low income families of two persons or more;
- the incidence of low income among lone fathers is similar to the national average (16.7%); however, compared to male main income recipients in couples with children, their incidence of low income is three times as high.

In fact, in relative terms, the incidence of low income among both male and female lone parents is roughly three times the corresponding rate for male and female main income recipients in couples with children (*Chart 4.1*).

Chart 4.1
Incidence of low income among all major income recipients, by family type and gender, 1998

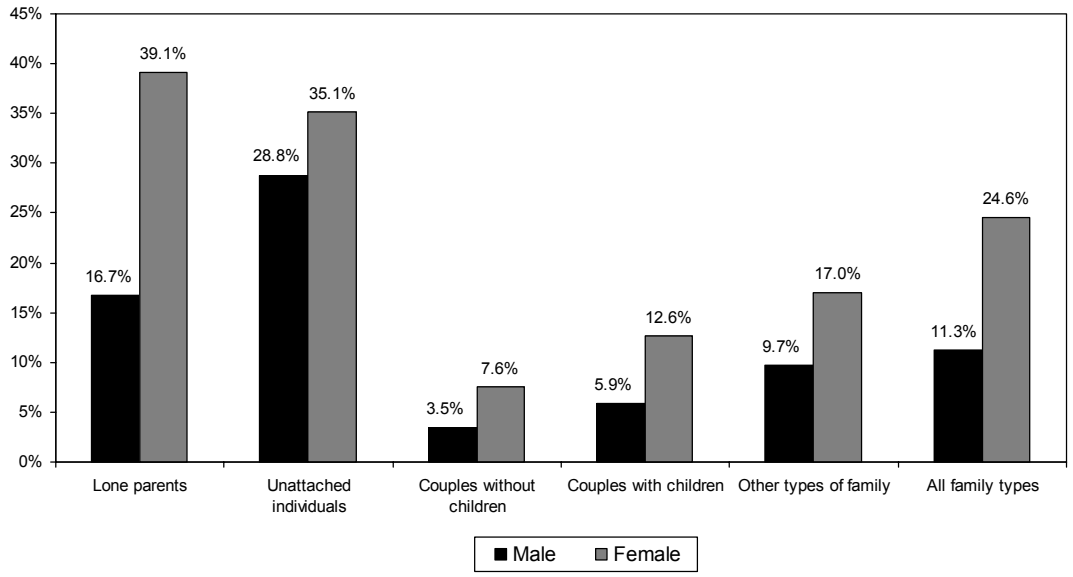


Table 4.1
Annual incidence of low income among all major income recipients, 1998[1]

	Lone parent, kids<18	Unattached individual	Couple without kids<18	Couple with kids<18	Other economic families	All economic families
Male major income recipients						
All major income recipients	110,545	1,392,465	1,309,674	2,551,716	361,897	5,726,297
Low income major income recipients	18,506	400,738	45,288	149,940	35,069	649,541
Incidence of low income	16.7%	28.8%	3.5%	5.9%	9.7%	11.3%
Low income gap before transfers	77.7%	68.4%	66.5%	64.4%	61.8%	67.2%
Low income gap after transfers	36.9%	41.7%	36.2%	24.6%	35.5%	36.9%
Female major income recipients						
All major income recipients	630,731	995,847	548,226	682,179	268,630	3,125,613
Low income major income recipients	246,407	349,879	41,682	85,805	45,745	769,518
Incidence of low income	39.1%	35.1%	7.6%	12.6%	17.0%	24.6%
Low income gap before transfers	82.5%	67.5%	61.8%	65.5%	75.6%	72.2%
Low income gap after transfers	29.7%	43.4%	37.6%	28.7%	33.7%	36.5%

Table 4.1 Annual incidence of low income among all major income recipients, 1998[1]						
All major income recipients						
All major income recipients	741,276	2,388,312	1,857,900	3,233,895	630,528	8,851,911
Low income major income recipients	264,913	750,617	86,970	235,745	80,813	1,419,059
Incidence of low income	35.7%	31.4%	4.7%	7.3%	12.8%	16.0%
Low income gap before transfers	82.2%	67.9%	64.3%	64.8%	69.6%	69.9%
Low income gap after transfers	30.2%	42.5%	36.9%	26.1%	34.5%	36.7%
Sample size						
Male major income recipients						
All major income recipients	296	3,335	3,621	6,337	847	14,436
Low income major income recipients	47	997	103	286	66	1,499
Female major income recipients						
All major income recipients	1,425	2,379	1,337	1,789	587	7,517
Low income major income recipients	531	946	75	226	80	1,858
(1) Sample of major income recipients, age 16-55, in 1998.						

4.3 Low Income Gap

Lone mothers have the largest pre-transfer low income gap of any type of low income family (83%); however, after government transfers their low income gap is one of the lowest (30%).

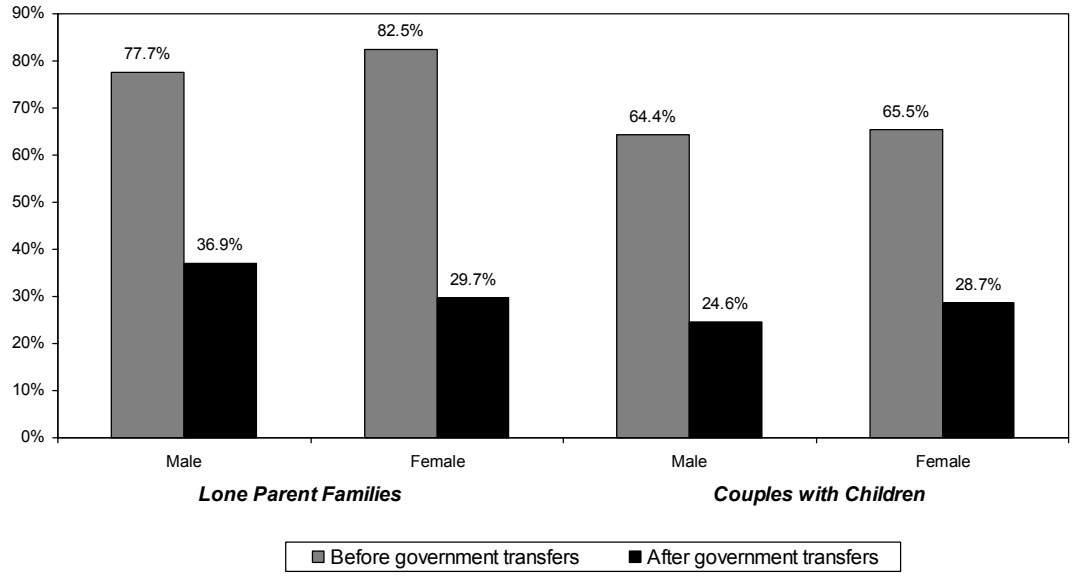
An indicator of the severity of low income among the low income is the low income gap. It is calculated as the difference between the total income of low income families and the low income line, expressed as a percent of the low income line.

Differences in the low income gap between different types of families are much smaller than differences in the incidence of low income. *Chart 4.2* compares the low income gap before and after government transfers among low income families with children:

- the low income gap before government transfers is large, particularly for lone mothers (83%);
- government transfers reduce the low income gap significantly; in the case of lone mothers the gap is reduced to 30%.

These results suggest that government transfers have a fairly significant impact on reducing the severity of low income.

Chart 4.2
Low income gap among low income major income recipients with children, by family type and gender, 1998



4.4 Characteristics of Low Income Lone Mothers

An estimated 55% of low income lone mothers did not work for pay in 1998. In terms of demographics, the most common characteristics of low income lone mothers were: not being in a union when the first child was born (60%); having a pre-school age child (47%); and being a student (25%) or being a high school drop-out (28%).

This sub-section examines the characteristics of low income lone mothers. The reason we focus on low income lone mothers is because they account for 93% of all the low income lone parent families. However, tables for all lone parents are shown in *Appendix A*.[3]

(a) Work Effort

With respect to work effort (measured here in terms of annual hours of paid work) *Table 4.2* shows that:

- More than half of all low income lone mothers (55%) had no earnings at all during the year. This result suggests that a main policy concern is overcoming barriers to employment – through, for example, reinforcing work incentives under social assistance, improving employment placement services, providing better access to daycare, and investing more in skills upgrading. Later on we probe in more detail the factors that may explain the weak attachment of low income lone mothers to the labour force.

[3] The characteristics of lone fathers cannot be studied separately because their sample is too small.

- At the other end of the work spectrum, about 12% of low income lone mothers worked 1,500 hours or more.[4] The most obvious difficulty facing this group is low hourly earnings. The reasons behind low earnings are also probed below. The most obvious short term solution is earnings supplementation. However, a long-term solution would require further skills upgrading.

- For most of the remaining approximately one-third of lone mothers, low income is the result of a combination of low hours of work and low hourly earnings. These low-income mothers likely experienced both employment barriers and low wages and are, therefore, possible candidates for both types of assistance listed above.

Table 4.2
Distribution and incidence of low income by selected characteristics, 1998.
Lone mothers versus female major recipients of couples with children under 18

	Lone mothers			Female major recipients in couples with children under 18		
	Distribution of all lone mothers	Distribution of low income lone mothers	Incidence of low income	Distribution of all major recipients	Distribut. of low income major recipients	Incidence of low income
Age						
16-29	19.2%	30.1%	61.5%	10.4%	22.4%	27.0%
30-55	80.8%	69.9%	33.8%	89.6%	77.6%	10.9%
Age when first child was born						
Under 20	18.4%	25.2%	52.9%	8.2%	23.8%	34.9%
20 or more	81.6%	74.8%	35.4%	91.8%	76.2%	10.0%
Marital status when first child was born						
Not in a union	46.4%	60.4%	50.7%	9.0%	16.7%	20.0%
Married	49.6%	34.8%	27.3%	85.0%	83.3%	10.5%
Common law	4.0%	4.8%	46.7%	***	***	***
Age of youngest child						
0-5	32.6%	46.8%	56.0%	41.0%	49.4%	15.2%
6-11	36.0%	36.4%	39.6%	35.0%	34.3%	12.3%
12-17	31.4%	16.8%	20.9%	24.0%	16.2%	8.5%
Student during the year						
Yes	17.5%	25.3%	56.3%	***	***	***
No	82.5%	74.7%	35.4%	91.5%	100.0%	12.5%
Level of education of non-students						
Less than high school	19.0%	28.3%	51.8%	11.6%	36.5%	34.3%
High school diploma	17.8%	15.4%	30.1%	***	***	***
Some post-secondary	15.1%	20.0%	46.0%	12.3%	27.9%	24.6%
Post-secondary degree	48.1%	36.3%	26.2%	59.0%	35.6%	6.6%
Hours of work during the year						
No work	26.5%	54.8%	80.9%	9.2%	38.3%	51.7%
1-749 hours	12.5%	19.9%	62.2%	5.9%	17.3%	36.3%
750 -1499 hours	14.2%	13.2%	36.5%	12.8%	17.9%	17.3%
1500 + hours	46.9%	12.1%	10.1%	72.1%	26.6%	4.6%

[4] The 1,500 annual hours of work roughly corresponds to the full-time threshold, which is 50 weeks, times 30 hours per week (which is treated in the Labour Force Survey as the minimum weekly hours for full-time employment).

Table 4.2 Distribution and incidence of low income by selected characteristics, 1998. Lone mothers versus female major recipients of couples with children under 18						
Immigrant, aboriginal, or disabled[1]						
Yes	22.8%	30.1%	51.6%	16.0%	23.9%	18.7%
No	77.2%	69.9%	35.4%	84.0%	76.1%	11.4%
EI region employment rate						
At, below average	41.0%	44.6%	42.5%	36.5%	44.3%	15.3%
Above average	59.0%	55.4%	36.7%	63.5%	55.7%	11.0%
Broad region						
Atlantic	8.8%	11.8%	52.7%	8.1%	9.0%	13.9%
Quebec	25.7%	24.1%	36.5%	24.2%	29.7%	15.4%
Ontario	37.7%	38.2%	39.6%	39.5%	31.5%	10.0%
Prairie	15.5%	13.6%	34.4%	16.4%	22.2%	17.0%
B.C.	12.4%	12.3%	38.8%	***	***	***
All lone parents	100.0%	100.0%	39.1%	100.0%	100.0%	12.6%
(1) Immigrated in last 10 years; or aboriginal origin; or work limiting disability. **** Less than 30 observations*						

(b) Demographic Characteristics

With respect to demographic characteristics of low income lone mothers, *Table 4.2* shows that:

- *Age*: 30% of low income lone mothers were under 30 years of age. Younger lone mothers had twice as high an incidence of low income as older lone mothers (62% vs. 34%). However, regression analysis shows that to a large extent this difference reflects the correlation between age and the presence of pre-school age children, low education and student status.

- *Age when first child was born*: About 25% of low income lone mothers were teenagers when they had their first child. This group also had a relatively higher incidence of low income in 1998 than the rest of lone mothers (53% vs. 35%).

- *Marital status when first child was born*: The most common characteristic of low income lone mothers was that they were not in a union when their first child was born (60%). Their incidence of low income in 1998 was considerably higher than for the rest of lone mothers (51% vs. 29%).[5]

- *Age of youngest child*: Almost half of low income lone mothers (47%) had a child under 6 years of age in 1998. The presence of pre-school age children has a strong association with the probability of being in low income. For example, the incidence of low income among lone mothers with children under 6 years of age was 2.5 times higher than that of lone mothers with the youngest child age 12 to 17 (56% vs. 21%).

- *Student status*: One-quarter of all low income lone mothers were students in 1998. Their incidence of low income was higher than the rest of lone mothers. However, this group is perhaps of lesser concern, since one can assume that their long-term employment and income prospects will be better.

[5] Interestingly enough, the incidence of low income among those who were in a common law relationship when their first child was born, is about the same as for those who were not married. However, the sample is too small for definitive conclusions.

- *Level of Education*: 28% of low income lone mothers who were not students were high school drop-outs. Their incidence of low income was 52%. However, although a higher level of education was associated with higher earnings and a lower chance of being in low income, higher education is no guarantee of averting low income. In fact, 36% of non-student low income lone mothers had a post-secondary degree.

- *Recent immigrant, aboriginal, or disabled*: About 30% of low income lone mothers also belonged to at least one more group that has been identified as having a high risk of low income and social exclusion: recent immigrants; persons of aboriginal origin; or persons with a work-limiting disability. This group may present special policy challenges because of the confluence of additional negative factors.

- *Region*: The incidence of low income was highest in the Atlantic region, a reflection of the relatively worse labour market conditions in that region. This conclusion is further reinforced by a comparison of low income rates between EI regions with a high employment rate and EI regions with a low employment rate.[6]

4.5 Multivariate Analysis of the Incidence of Low Income in 1998

Logit multivariate regression analysis shows that, in descending order of importance, the characteristics that are most likely to lead to low income are:

- having a pre-school age child;
- being a student;
- being a high school drop-out;
- living in the Atlantic region;
- not being in a union when the first child was born;
- being a recent immigrant, having a work-limiting disability, or being of aboriginal origin

(a) Logit Regression Methodology

The incidence of low income among lone mothers in 1998 was further probed using multivariate logit regression analysis. Logit regression, rather than the more common Ordinary Least Squares (OLS) regression, was used because the dependent variable takes only the values of 1 or zero. The results of the logit analysis are presented in *Table 4.3*.

The logit regression results are more difficult to interpret than the results of OLS regression. For the purpose of providing a more intuitive interpretation of the logit regression results, we also present a linear approximation of the logit coefficients. The linearized logit regressions have a similar interpretation to that of OLS regression coefficients and, in fact, in most cases the two are fairly close to each other. *Box A* provides a simple guide to interpreting the logit results, as well as an explanation of how the linearized logit coefficients were calculated.

[6] The employment rate was calculated by dividing the weeks of work of each woman (0 to 52) by 52. The ratio was averaged within each of the 54 regions that are designated by the EI program.

The reader must be reminded that cross-tabulation estimates of the effect of various characteristics on the incidence of low income will generally differ from regression estimates. For example, according to *Table 4.3* the incidence of low income among younger lone mothers is 27.7% higher than that of older lone mothers (61.5% - 33.8%). On the other hand, according to the logit regression results, the effect of younger age is to increase the incidence of low income by only 3.6%. What these results suggest is that the reason that younger lone mothers have a significantly higher incidence of low income is not age *per sé*, but other negative characteristics that are associated with younger age, such as a higher probability of being a student or presence of pre-school age children.

Box A: Interpreting Logit Regression Results

In this Box we provide a simplified guide to interpreting the logit results. We use the first line of the results in Table 4.4 as an example.

The b-coefficient is 0.155. The positive coefficient means that younger lone mothers are more likely to be in low income than older lone mothers (which in this case is the omitted or comparison group). It is difficult, however, to interpret the size of the coefficient, since the dependent variable is not the incidence of low income but the logit transformation of the incidence of low income. As a result, the b-coefficients do not have the same direct interpretation as OLS regression coefficients do.

The standard error is 0.187 and the t-statistic is 0.829 (where the latter is simply the ratio of the b-coefficient to the standard error). The t-statistic is used in the same fashion as with OLS − meaning that if the t-statistic is greater than 1.96, then there is an at least 95% chance that the coefficient is not zero. In this instance, the coefficient is not significant. This means that the reason young lone mothers have a higher incidence of low income (as shown in *Table 4.4*) is due to the presence of other characteristics of young lone mothers − such as, possibly, the presence of pre-school age children.

The odds ratio is 1.168. This means that the odds of being in low income are somewhat higher when a lone mother is under 30 years of age. If the ratio was 1, that would have meant that age has no effect. The odds are calculated by dividing the probability that something will happen, by the probability that it will not happen. The odds ratio is the ratio of the odds of a variable to that of the omitted variable, and it provides a more intuitive interpretation of the logit b-coefficients.

The linearized logit coefficient is 3.6%. The linearized logit coefficients are a linear approximation of the logit coefficients and have a similar meaning to that of OLS regression. In fact, typically the linearized logit coefficients are close to the OLS linear coefficients. In this particular example, the 3.6% linearized logit coefficient can be explained as follows: if we take lone mothers age 30 to 55 (i.e. the omitted category) and we only change their age group to 16 to 29, the probability of being in low income will increase by 3.6 percentage points.[7]

The Nagelkerke R^2 is 21.1%. This indicator measures the goodness of the fit of the logit regression. It is comparable to the more familiar OLS adjusted R^2.

[7] A common way of estimating a linear approximation of the logit coefficients is to: (a) estimate the expected probability for each characteristic (assuming the rest of the characteristics equal the average values of the total sample); and (b) subtract from each estimated probability the estimated probability of the reference category.

In our methodology we used a slight variation. Rather than keeping the remaining characteristics equal to the average for the total sample, we kept them equal to the average characteristics of the reference category. So, for example, when assessing the effect of age, we kept all the characteristics (e.g. education, etc.) equal to that of the reference category (age 30 to 55). The actual calculation technique was as follows: we started with the observed probability for the omitted category, and then calculated the probability of the younger age group based on the odds ratio from the logit regression.

From the practical point of view, there is not much difference between the two approaches, since typically the estimates are very similar. However, our approach is intuitively more appealing. Effectively our approach answers the following question: if you take all the lone mothers age 30-55, keep all their characteristics (except their age) unchanged, what would be the impact of lowering their age to 16-29.

(b) Logit Regression Results

The regression results show that the most important contributing factors to low income are the following:

(a) *age of youngest child*: appears to have the most important influence; for example, those with a pre-school age child have a 26% higher incidence than those with children age 12 to 17;[8]

(b) *student status*: students have a 17% higher incidence of low income than non-students with high school education;

(c) *level of education*: among non-students, high school dropouts have a 14% higher incidence of low income than those with high school education; interestingly enough, a post-secondary degree does not have a statistically significant effect; it would appear that, as far as avoiding low income is concerned, a high school level of education is sufficient;

(d) *region*: also has a significant effect; for example, lone mothers in the Atlantic region have a 14% higher chance of being in low income, relative to Ontario (whose incidence of low income is average); the difference is even greater relative to the Prairie regions (which has the lowest incidence of low income);

(e) *marital status when first child was born*: not being in a union when the first child is born raises the probability of being in low income by 12%; and

(f) *belonging to another high risk group*: lone mothers who were also recent immigrants, had a work-limiting disability or were of aboriginal origin, had a 12% higher probability of being in low income.

The current age of the lone mother or her age when the first child was born did not have a statistically significant effect on the probability of being in low income.

[8] Estimated by subtracting from the coefficient of lone mothers with pre-school children the coefficient for lone mothers with the youngest child age 12 to 17 (i.e. 9.7% - (-16.3%)) = 26.0%.

Table 4.4
Logit regression estimate of determinants of incidence of low income among lone mothers with children under 18, 1998

Variable	Explanation	b-coef	Std err	t-stat.	Odds ratio	Linearized coefficient
Dependent						
LICOFA27	1998 income < LICO					
Age						
GAGE(1)	- 16-29	0.155	0.187	0.829	1.168	3.6%
GAGE(2)	- 30-55			(omitted)		
Age when first child was born						
CAGE(1)	- 16-19	0.194	0.177	1.096	1.214	4.5%
CAGE(2)	- 20-55			(omitted)		
Marital status when first child was born						
CSPOUSE(1)	- not in a union	0.568	0.134	4.239	1.765	12.2%
CSPOUSE(2)	- in a union			(omitted)		
Age of youngest child						
YKID(1)	- 0-5	0.396	0.156	2.538	1.486	9.7%
YKID(2)	- 6-11			(omitted)		
YKID(3)	- 12-17	-0.770	0.164	-4.695	0.463	-16.3%
Level of education						
STEDUC(1)	- student	0.726	0.229	3.170	2.067	17.0%
STEDUC(2)	- non-student: less than high school	0.607	0.231	2.628	1.835	14.0%
STEDUC(3)	- non-student: high school diploma			(omitted)		
STEDUC(4)	- non-student: some post-second.	0.450	0.241	1.867	1.569	10.2%
STEDUC(5)	- non-student: post-sec. degree	-0.180	0.202	-0.891	0.835	-3.7%
Immigrant, aboriginal, or disabled						
HIGHRISK(1)	- yes	0.508	0.148	3.432	1.662	12.3%
HIGHRISK(2)	- no			(omitted)		
Broad Region						
REGION(1)	- Atlantic	0.582	0.228	2.553	1.790	14.4%
REGION(2)	- Quebec	0.052	0.163	0.319	1.053	1.2%
REGION(3)	- Ontario			(omitted)		
REGION(4)	- Prairie	-0.328	0.200	-1.640	0.721	-7.5%
REGION(5)	- B.C.	0.239	0.215	1.112	1.270	5.8%
Constant		-1.107	0.216	-5.125	0.330	
Nagelkerke R^2 (similar concept to OLS adjusted R^2)				21.1%		
Number of cases				1,262		

5. *Labour Market Activity and Low Income*

5.1 Introduction

The relatively high incidence of low income among lone mothers is not very surprising, given that typically there are no other income earners in the family and the fact that the presence of young children is both a cost and a potential barrier to full-time/full-year employment.

This section focuses on the following question: why are some lone mothers in low income while others are not? Is it mostly because they do not work enough hours, or is it mostly because their hourly earnings are low? And what are the main factors that may explain low hours (e.g. presence of pre-school age children) or low hourly earnings (e.g. low education)?

To answer the above questions, we first compared the hours of work and hourly earnings of low income and non-low income lone mothers. Then, we used multivariate analysis to understand the reasons for the low hours of work or low earnings.

The analysis focuses on lone mothers only. The reason is that lone mothers have more than twice the incidence of low income of lone fathers. As a result, the significant gender difference between low income and non-low income lone parents will tend to distort the influence of other factors (such as hourly earnings) that tend to be closely correlated with gender.

5.2 Labour Market Comparisons between Low Income and Non-Low income Lone Mothers

Low income among lone mothers is mostly the result of low hours of work. For example, if all lone mothers worked at least 1,750 hours annually (the average for non-low income working mothers), their low income rate would have dropped from 39% to 8%.

This sub-section compares key labour market factors between low income and non-low income lone mothers. *Table 5.1* shows that the most significant difference between low income and non-low income lone mothers is their employment rate. Thus while 89% of non-low income lone mothers worked for pay in 1998, the corresponding rate among low income lone mothers was 37%.

Table 5.1 Work and earnings of lone mothers, 1998		
	Low income	Non-low income
1. All lone mothers	246,407	384,324
2. Had some work in 1998	90,944	340,148
Employment rate (2/1)	36.9%	88.5%
3. Average weeks employed (per employed)	33.8	49.5
4. Had some unemployment in 1998	36,080	44,316
Unemployment rate (4/2)	39.7%	13.0%
Average weeks unemployed (per unemployed)	19.8	16.0
5. Average weekly hours of work (per employed)	29.7	35.3
6. Average hourly earnings (per employed)	$8.13	$16.59
7. Average annual earnings (per employed)	$5,874	$27,360
8. Average annual earnings (all lone mothers)	$3,012	$25,656

Low income lone mothers worked, on average, fewer weeks and fewer weekly hours, than non-low income lone mothers. They also were more likely to experience unemployment. At the same time, their hourly earnings, when they worked, were less than half the hourly rates for non-low income lone mothers.

As a result of all these differences, the average earnings for all low income lone mothers (working and non-working) in 1998 were $3,012, compared to $25,656 for all non-low income lone mothers − a gap of $22,644.

(a) Impact of Hours and Wages on the Earnings Gap

Table 5.2 shows the impact on the earnings gap between low income and non-low income lone mothers if low income lone mothers had similar hours of work and similar hourly earnings to those of non-low income lone mothers. It shows that:

- *impact of increasing work effort*: if low income lone mothers had the same employment rate and the same annual hours of work as non-low income lone mothers, the earnings gap between the two groups of lone mothers would have dropped by 43.2%;
- *impact of increasing hourly earnings*: on the other hand, if only the hourly earnings of low income working lone mothers were raised to match the average hourly earnings of non-low income working lone mothers, the earnings gap between the two groups would have dropped by 14.9%.

The point of the above simple exercise is to demonstrate that low hours of work is the main factor behind the earnings gap between low income and non-low income lone mothers. However, it must be recognized that there is an interaction between hours of work and hourly earnings. In other words, although the direct cause of low income is typically low hours of work or no work at all, a not uncommon underlying cause is low potential hourly earnings.

Table 5.2 Impact of hours of work and wage rates on earnings gap between low income and non-low income lone mothers, 1998		
	Earnings Gap	**Percent drop**
Earnings gap between low income and non-low income lone mothers before any adjustments.	$22,644	
Earnings gap if low income and non-low income lone mothers had the same employment rate.	$18,201	19.6%
Earnings gap if low income and non-low income lone mothers had the same employment rate and average hours of work.	$12,851	43.2%
Earnings gap if low income and non-low income lone mothers had the same hourly earnings, with no change in the hours of work.	$19,277	14.9%

(b) Impact of Hours and Wages on the Incidence of Low Income

Table 5.3 presents estimates of the impact on the incidence of low income among lone mothers of raising their work effort or hourly earnings. The results show that:

- *impact of increasing the employment rate*: if all non-working low income lone mothers were working for pay (at the same average hours and same wage rates as the average working low income lone mother), the incidence of low income in 1998 would have dropped from 39.1% to 23.0% (a 16 percentage point reduction);
- *impact of increasing the hours of work*: in addition, if no working low income lone mother worked less hours than the average non-low income working lone mother, the incidence of low income in 1998 would have dropped to 8.1% (an additional 15 percentage point reduction);
- *impact of increasing hourly earnings*: on the other hand, if there was no change in work effort among low income lone mothers but only their hourly earnings were raised so that no one earned less than the average rate of non-low income lone mothers, the incidence of low income would have dropped from 39.1% to 29.5% (one-third of the potential drop of increasing work effort).

Table 5.3 Impact of hours of work and wage rates on the incidence of low income among lone mothers, 1998			
	Estimated number	**Incidence**	**Drop in incidence**
All lone mothers with children under 18.	630,731		
Number of low income before any adjustments.	246,407	39.1%	
Number of low income if all non-working low income lone mothers worked as many hours as the average working low income lone mother.	144,945	23.0%	16.1%
Number of low income if all poor lone mothers worked at least as much as the average working non- low income lone mother.	50,842	8.1%	31.0%
Number of low income if the only change was to raise the hourly earnings of working low income lone mothers to be at least as high as the average hourly earnings of non-low income lone mothers.	186,378	29.5%	9.5%

The above calculations imply that:

(a) if all low income lone mothers had worked at least 1,000 hours in 1998 (at current wage rates for low income lone mothers), 40% of the low income problem would have disappeared; and

(b) if they had worked 1,750 hours (i.e. the average hours of non-low income working mothers) most low income (80%) would have disappeared.

The above results should not be interpreted as implying that skills upgrading and earnings supplementation are not also important. After all, both of them can have a positive effect on work effort (by, respectively, improving marketable skills and providing work incentives). Rather, the main message from these results is that the main focus of policy should be to encourage a stronger labour force attachment among lone mothers. This could be achieved by, for example, providing more employment services (e.g. job referrals) and making paid work more attractive (e.g. though earnings supplementation or a more generous treatment of earnings under provincial social assistance programs).

5.3 Determinants of Probability of Working for Pay

Among all lone mothers (low income and non-low income), the three strongest factors associated with a low probability of working for pay, in descending order of significance, were: the presence of at least one high risk characteristic (recent immigrant; disabled; aboriginal); being a high school drop-out; and living in the Atlantic region.

This sub-section takes a closer look at the factors that affect the labour market behaviour of lone mothers (both low income and non-low income). Given that over one-half of low income lone mothers are not working for pay, the main focus of the discussion here is on the factors that affect the work participation of lone mothers.

Table 5.4 compares the incidence of work, annual hours of work and hourly earnings of lone mothers by various characteristics, while *Table 5.5* presents the results of a further probing using logit regression analysis of the probability of working among lone mothers. The logit regression results in *Table 5.5* show that, in descending order of importance, the three main influences on the probability of work are:

- *recent immigrant, aboriginal or disabled*: membership in at least one of these three high risk groups had the most negative influence on the probability of working (26%); this result suggests that lone mothers with any of these additional characteristics should be a high priority for public policy;

- *education*: high school drop-outs have a 12% lower probability of working than those with a high school diploma; the difference is even greater relative to those with a post-secondary certificate or degree (21%); and

- *region*: living in the Atlantic region reduces the probability of working relative to Ontario by 12% and relative to the Prairies by 24%; this result likely reflects inter-provincial differences in labour market conditions; however, it may also reflect differences in the design of social assistance programs among provinces (issues related to social assistance are probed in a later section).

As seen in Table 5.5, one surprising result was that the presence of pre-school age children did not have a negative effect on the probability of working. However, further probing showed that among high school drop-outs the probability of working is low regardless of the age of the youngest child; on the other hand, among higher education levels, there was a negative relation between the presence of young kids and the probability of working. Unfortunately, the sample is too small for more definitive conclusions.

Another surprising result was that the presence of earnings from other members of the family, investment income, or alimony income did not have a negative effect on the probability of working. One would have expected a negative relation, because the presence of other income sources tends to lessen the need for work. In fact, such a negative relationship has been confirmed in the literature with respect to married women. The most likely explanation why this negative correlation was not confirmed here is that, in most cases, other sources of market income among lone mothers were not significant enough to influence their work behaviour.

Table 5.4
Cross-sectional work profile of all lone mothers, 1998[1]

	Percent who worked	Average hours of work	Average hourly earnings
Age in 1998			
16-29	47.8%	1,242	$10.86
30-55	73.2%	1,657	$15.42
Age when first child was born			
Under 20	50.0%	1,473	$13.84
20 or more	72.6%	1,613	$15.09
Marital status when first child was born			
Not in a union	59.0%	1,443	$13.66
Married	76.6%	1,707	$15.96
Common law	67.9%	1,660	$13.33
Age of youngest child			
0-5	59.6%	1,411	$13.55
6-11	69.7%	1,580	$13.75
12-17	75.9%	1,780	$16.94
Student during the year			
Yes	56.2%	1,242	$13.96
No	71.0%	1,661	$14.96
Level of education of non-students			
Less than high school	50.5%	1,565	$10.64
High school diploma	73.1%	1,735	$12.98
Some post-secondary	66.6%	1,389	$16.55
Post-secondary degree	79.7%	1,731	$16.29
Immigrant, aboriginal, or disability[2]			
Yes	48.6%	1,284	$12.77
No	74.2%	1,663	$15.20
EI region employment rate			
At, below average	61.6%	1,538	$13.64
Above average	73.0%	1,639	$15.49
Broad region			
Atlantic	56.5%	1,434	$12.62
Quebec	67.2%	1,606	$14.56
Ontario	67.9%	1,636	$16.71
Prairie	76.9%	1,661	$12.38
B.C.	69.7%	1,505	$14.25
Other earnings or market income in 1998			
Yes	78.7%	1,696	$15.90
No	61.3%	1,519	$13.85
All	68.3%	1,602	$14.80

(1) Sample of lone mothers, age 16-55, with at least one child under 18 in 1998.

(2) Immigrated in last 10 years; or aboriginal origin; or work limiting disability.

Table 5.5
Logit regression estimates of determinants of incidence of work among all lone mothers with children under 18, 1998

Variable	Explanation	b-coef	Std err	t-stat.	Odds ratio	Linearized coefficient
Dependent						
HADWORK	Worked in 1998					
Age						
GAGE(1)	- 16-29	-0.454	0.195	-2.328	0.635	-9.8%
GAGE(2)	- 30-55			(omitted)		
Age when first child was born						
CAGE(1)	- 16-19	-0.483	0.179	-2.698	0.617	-10.6%
CAGE(2)	- 20-55			(omitted)		
Marital status when first child was born						
CSPOUSE(1)	- not in a union	-0.266	0.145	-1.834	0.767	-5.2%
CSPOUSE(2)	- in a union			(omitted)		
Age of youngest child						
YKID(1)	- 0-5	0.002	0.169	0.012	1.002	0.0%
YKID(2)	- 6-11			(omitted)		
YKID(3)	- 12-17	0.057	0.173	0.329	1.058	1.2%
Level of education						
STEDUC(1)	- student	-0.298	0.237	-1.257	0.742	-6.3%
STEDUC(2)	- non-student: less than high school	-0.560	0.236	-2.373	0.571	-12.3%
STEDUC(3)	- non-student: high school diploma			(omitted)		
STEDUC(4)	- non-student: some post-second.	0.042	0.255	0.165	1.043	0.8%
STEDUC(5)	- non-student: post-sec. degree	0.504	0.212	2.377	1.655	8.7%
Immigrant, aboriginal, or disability						
HIGHRISK(1)	- yes	-1.124	0.153	-7.346	0.325	-25.9%
HIGHRISK(2)	- no			(omitted)		
Broad Region						
REGION(1)	- Atlantic	-0.521	0.236	-2.208	0.594	-12.2%
REGION(2)	- Quebec	-0.315	0.171	-1.842	0.730	-7.2%
REGION(3)	- Ontario			(omitted)		
REGION(4)	- Prairie	0.642	0.226	2.841	1.900	12.2%
REGION(5)	- B.C.	-0.459	0.225	-2.040	0.632	-10.7%
Other earnings or market income in 1998						
OTHEARN(1)	- yes	0.727	0.149	4.879	2.070	15.3%
OTHEARN(2)	- no			(omitted)		
Constant		1.181	0.237	4.983	3.257	
Nagelkerke R^2 (similar concept to OLS adjusted R^2)				23.5%		
Number of cases				1,262		

6. Longitudinal Profile of Low Income

6.1 Introduction

Until now we have focussed on the incidence of low income in a single year and we have tried to answer the question: why do some lone mothers experience low income, while others do not? We found that the main cause of low income is insufficient hours of work, rather than low wage rates. We also identified some of the demographic characteristics most closely associated with low income such as: having a pre-school age child; being a student; or not being in a union when the first child was born.

We now turn our attention to the factors that affect the duration of low income. The question we address in this section is: why do some lone low income mothers stay in low income for many years, while others stay in low income only for a short period? The results of this section are based on an analysis of the longitudinal 1993-98 SLID data.

It should be pointed out that the longitudinal SLID analysis is based on a single panel (1993-98), while the cross-sectional analysis is based on the 1998 records of two overlapping panels (1993-98 and 1996-99). As a result, the sample for the longitudinal analysis is roughly half that of the cross-sectional analysis sample and, therefore, the sample size challenges are now more serious than was the case with cross-sectional analysis. (*Table 6.1* provides basic sample size information, similar to what was provided for the cross-sectional sample in *Table 4.1*).

6.2 Longitudinal Incidence of Low Income

Over a six year period, 34% of lone mothers had a cumulative income below the cumulative LICO − a much higher rate than for other family types.

First we examine the longitudinal incidence of low income − i.e. how many lone mothers' cumulative family income over the entire 1993-98 period was less than the cumulative value of their corresponding after tax LICOs? We examine the incidence of low income by type of family and separately for male and female main income recipients.

The longitudinal results present a similar picture to the cross-sectional results. Lone mothers again have the highest incidence of low income among any type of family − 34% or double the rate of any type of family headed by a female (*Table 6.1*).

The cumulative low income gap of lone mothers before government transfers is 84% (the highest of any type of family); after government transfers and income taxes it drops to 26% (the lowest of any type of family). These results are consistent with those based on the 1998 cross-sectional data.

Table 6.1 also shows that longitudinal analysis of the SLID data presents more challenges. Because of sample size limitations, it was not possible to produce estimates for lone fathers and several other types of families. More detailed tables for all lone parents, lone mothers, and female major income recipients in couples with children are shown in *Appendix B*. Also, *Appendix C* presents the results of a logit analysis of the incidence of longitudinal low income (i.e. six-year cumulative income below the six-year cumulative after tax LICOs).

Table 6.1
Longitudinal incidence of low income, 1998, among all major income recipients[1]

	Lone parent, kids<18	Unat-tached individual	Couple without kids<18	Couple with kids<18	Other economic families	All economic families
Male major income recipients						
All major income recipients	93,543	1,012,805	1,216,103	2,262,207	279,183	4,863,840
Low income major income recipients[2]	***	182,051	***	83,307	***	340,001
Incidence of low income	***	18%	***	4%	***	7%
Low income gap before transfers[3]	***	70%	***	61%	***	66%
Low income gap after transfers	***	38%	***	29%	***	35%
Female major income recipients						
All major income recipients	534,988	874,575	426,824	651,926	212,823	2,701,137
Low income major income recipients[2]	182,545	146,557	***	78,696	***	450,176
Incidence of low income	34%	17%	***	12%	***	17%
Low income gap before transfers[3]	84%	67%	***	70%	***	75%
Low income gap after transfers	26%	38%	***	29%	***	31%
All major income recipients						
All major income recipients	628,531	1,887,380	1,642,927	2,914,133	492,006	7,564,977
low income major income recipients[2]	208,163	328,608	46,446	162,003	***	790,178
Incidence of low income	33%	17%	3%	6%	***	10%
Low income gap before transfers[3]	83%	68%	69%	65%	***	71%
Low income gap after transfers	28%	38%	36%	29%	***	32%
Sample size						
Male major income recipients						
All major income recipients	87	939	1,354	2,850	286	5,516
Low income major income recipients	***	157	***	75	***	276
Female major income recipients						
All major income recipients	577	759	459	789	225	2,809
Low income major income recipients	170	116	***	61	***	380

(1) Sample of major income recipients, age 16-55 in 1993.

(2) A major income recipient is classified as low income if the cumulative 1993-98 family income was less than the cumulative LICOs (all expressed in 1993 dollars).

(3) The low income gap refers to the average low income gap during the years that the family unit was low income.

**** Less than 30 observations.*

6.3 Duration of Low Income

60% of lone mothers experienced low income at least once over the six-year period 1993-98; of those who experienced low income, one-fifth were in low income in all six years.

Over the six-year period 1993-98, 60% of lone mothers experienced at least one year of low income (*Table 6.2*). This means that low income touches many more lone mothers than indicated by the single-year incidence of low income (39% in 1998) or the cumulative low income rate referred to in Table 6.1 (34%).

We now turn our attention to one of the main focuses of the study: the duration of low income. *Table 6.2* presents three basic measures:

- *always in low income*: one indicator of the duration of low income is what percent of those who were in low income in 1993-98 were in low income in all six years; *Table 6.2* shows that 21% of low income lone mothers were in low income in all six years;

- *average years in low income*: another indicator is the average number of years that were spent in low income over the period 1993-9; among those who were in low income at least once over that period, the average years in low income for lone mothers was 3.6, the highest for any type of family;

- *in-progress low income spell*: finally, another indicator of the duration of low income is "in-progress" spells; they are estimated by examining the low income spell of everybody who was in low income in 1993; the in-progress low income spells are an indicator of the length of low income spells, although they are an under-estimate of the length of completed spells (since some of them may have started before 1993 or ended after 1998). *Table 6.2* shows that the average in-progress low income spell of lone mothers is 3.4 years, close to the average across all types of family.

Table 6.2
Indicators of the duration of low income, 1993-98, among all major income recipients[1]

	Lone parent, kids<18	Unat-tached individual	Couple without kids<18	Couple with kids<18	Other economic families	All economic families
Male						
All major income recipients	93,543	1,012,805	1,216,103	2,262,207	279,183	4,863,840
Low income in at least one year	***	42.1%	9.8%	13.7%	20.5%	19.6%
- percent of low income always low income[2]	***	21.6%	***	***	***	14.7%
- average years on low income[3]	***	3.3	2.4	2.5	2.6	2.9
- in-progress low income spell[4]	***	3.3	***	***	***	3.2
Female						
All major income recipients	534,988	874,575	426,824	651,926	212,823	2,701,137
Low income in at least one year	60.0%	42.3%	16.3%	24.9%	28.9%	36.4%
- percent of low income always low income[2]	20.6%	21.3%	***	***	***	20.0%
- average years on low income[3]	3.6	3.3	2.4	3.4	2.5	3.3
- in-progress low income spell[4]	3.4	3.3	***	4.2	***	3.4
Both genders						
All major income recipients	628,531	1,887,380	1,642,927	2,914,133	492,006	7,564,977
Low income in at least one year	57.0%	42.2%	11.5%	16.2%	24.2%	25.6%
- percent of low income always low income[2]	23.2%	21.4%	***	14.1%	***	17.4%
- average years on low income[3]	3.7	3.3	2.4	2.8	2.6	3.1
- in-progress low income spell[4]	3.5	3.3	3.0	3.3	2.9	3.3

(1) Sample of major income recipients, age 16-55 in 1993.

(2) Percent of those who were low income in at least one year, who were also low income in all six years.

(3) Average years in low income of those with at least one year of low income in 1993-98.

(4) Average uninterrupted spell of low income of those who were low income in 1993.

**** Less than 30 observations.*

7. Dynamics of Low Income

7.1 Introduction

In order to assess how dynamic or fluid is the state of low income, we looked at entries into and exits from low income over the period 1993-98. We focused on those who were lone mothers in 1993. First we estimated entry and exit rates. Then we took a closer look at exits and entries to see what events are associated with them.

7.2 Entries into and Exits out of Low Income

Low income is a dynamic phenomenon. For example, 70% of those who were in low income at some point over the period 1993-97 exited from low income (although some may have re-entered later). In three-quarters of the cases the exit was accompanied by increase in income that was at least 20% of the respective after tax LICO.

Table 7.1 provides estimates of how many lone mothers changed their low income status over the period 1993-98. It shows that:

- Of the 535,000 lone mothers in 1993, 162,000 entered low income at least once during the period 1993-98, while 219,000 exited low income at least once, over the same period.
- The above numbers expressed as a percentage of those who could have entered into low income (i.e. were not in low income in all years from 1993 to 1997) or could have exited from low income (i.e. were not non-low income in all years from 1993 to 1997) are respectively: 36% (entry rate) and 70% (exit rate).

Using a more conservative measure of entries and exits, we still find that low income is a very dynamic phenomenon. For example, 56% of those who experienced low income during the period 1993-97 also had a significant exit from low income − i.e. the exit was accompanied by a significant increase in income. *Box B* explains in more detail the calculation of exit and entry rates.

Box B: A Note on Exit and Entry Rates

1. Interpretation of difference between number of exits and entries

Table 7.1 shows that 219,446 lone mothers experienced at least one exit from low income over the period 1993-98, while 161,602 lone mothers experienced at least one entry into low income. The fact that there were more exits than entries over the period 1993-98 indicates that over that period the number of low income lone mothers declined, possibly due to an improvement in economic conditions following the 1991-92 recession, aging of the panel, or other factors.

2. Interpretation of exit and entry rates

When exits and entries are expressed as a percent of all lone mothers, the respective ratios are 41% and 30%. However, the difference in the two rates is even more pronounced in *Table 7.1*. The simple reason is that a different numerator was used in each case. Thus, exit rates were estimated by dividing exits by those who were in low income, while entry rates were estimated by dividing entries by those who were not in low income. The resulting rates are 79% and 37% respectively.

3. How exit and entry rates were calculated in Table 7.1

The exit rate was calculated by dividing the number of lone mothers who had at least one transition out of low income (e.g. in low income in 1995, but not in low income in 1996), by the number of lone mothers who were in low income in at least one year over the period 1993-97. Lone mothers who were in low income only in 1998 were excluded from the denominator. The reason is that we do not know in this case if they exited low income in the following year or not, since the survey period ends in 1998.

Similarly, entry rates were calculated by dividing the number of lone mothers who had at least one transition into low income, by the number of lone mothers who were not in low income in at least one year over the period 1993-97.

It should be pointed out that even if the same number of individuals entered and exited low income over a certain period, the exit rates (as calculated above) will still be greater than the entry rates, as long as the number of low income (denominator of the exit rates) is smaller than the number of non-low income (denominator of the entry rates).

4. Definition of significant transitions

Significant transitions were defined as follows: (a) first we defined a low income band equal to plus/minus 10% of the after tax LICO; and (b) then we assumed that a transition was significant if income moved from one side of the after tax LICO band to the other (in the case of an exit, for example, this will mean that income increased by at least 20%).

Table 7.1
Entries into and exits out of low income, 1993-98, among lone mothers with children under 18 yrs of age in 1993

	All lone mothers	No marital change/ always had kid<18/ always major recipient	Rest of lone mothers
1. Low income entry and exit rates, 1998			
- entered into low income	***	***	***
- exited from low income	48,181	***	***
- continued in low income	137,804	74,754	63,050
- continued out of low income	335,818	115,120	220,698
- all lone mothers	534,988	219,289	315,699
2. At least one low income entry in 1993-98			
All transitions			
Could have entered into low income	454,303	162,640	291,663
Entered into low income	161,602	54,221	107,380
Entry rate	36%	33%	37%
Significant transitions[1]			
Could have entered into low income	420,504	138,463	282,041
Entered into low income	102,271	30,701	71,570
Entry rate	24%	22%	25%
3. At least one low income exit in 1993-98			
All transitions			
Could have exited from low income	315,697	133,268	182,429
Exited from low income	219,446	74,668	144,777
Exit rate	70%	56%	79%
Significant transitions[1]			
Could have exited from low income	294,310	130,531	163,779
Exited from low income	165,738	48,621	117,116
Exit rate	56%	37%	72%

(1) Transitions are defined as significant if family income crossed a low income band, defined as between below 10% and above 10% of the low income line.

**** Less than 30 observations.*

Table 7.1 also confirms that a change in the family situation of a lone mother (e.g. they changed their marital status; their youngest child reached age 18; or another member of the family became the main income recipient) has a positive effect on low income dynamics: those who experienced at least one type of family change had twice as high a significant exit rate from low income as the rest of lone mothers (72% versus 37%).

All the evidence presented so far confirms the view that low income is a dynamic, rather than a static phenomenon. While a majority of lone mothers (60%) experienced low income over the six-year period 1993-98, only a fifth of the low income remained in low income for all six years. Moreover, of those who experienced low income, 70% also had an exit from low income and 56% had a significant exit from low income (meaning that they experienced at least a 20% increase in family income).

7.3 Events Associated with Significant Exits from Low Income

Two events are most commonly associated with significant exits from low income:
(a) an increase in own hours of work (82%); and
(b) a change in family status, by forming a union and/or someone else becoming the main income recipient (48%).

In this section we explore the factors that are associated with exits from low income of lone mothers. Each exit was treated as a separate observation, which means that lone mothers with more than one exit during the period 1993-98 appeared more than once in the analysis. Analysis of entries into low income is not reported because of sample limitations.

Table 7.2 shows that by far the most common events associated with exits from low income are entering the work place (22%) and increasing the hours of work by at least 10% (about 56%). The rates are somewhat higher among significant exits.

Another common event is changes in family status. *Table 7.2* shows that 38% of all exits and almost half of significant exits were associated with the formation of a union or the lone mother not being the main income recipient any longer (the latter often related to forming a union).

Table 7.2
Changes associated with exits from low income lone mothers, 1993-98

	All exits		Significant exits	
	Number	Incidence	Number	Incidence
Total number of exits from low income, experienced by lone mothers over the period 1993-98	343,004	100.0%	244,233	100.0%
Number of exits associated with changes that took place between the year before the exit and the year of the exit:				
◆ **Changes in family status between the two years:**				
- formed a union	63,814	18.6%	59,985	24.6%
- their youngest child reached age 18 or moved out	***	***	***	***
- stopped being the major income recipient	107,478	31.3%	97,925	40.1%
- experienced any of the above changes	131,201	38.3%	117,046	47.9%
◆ **Changes in student status between the two years:**				
- were a student in the year before the exit, but not in the year of the exit	47,437	13.8%	35,823	14.7%
◆ **Changes in labour force status between the two years:**				
- did not work in year before exit; worked in year of exit	76,728	22.4%	52,744	21.6%
- worked in both years; working hours went up by 10%+	190,636	55.6%	146,748	60.1%
- worked in both years; hourly earnings went up by 10%+	71,659	20.9%	61,137	25.0%
◆ **Changes in other sources of income between the two years:**				
- total income from other non-government sources (earnings of other members; plus investment income; plus alimony income) went up by 10%+	86,816	25.3%	69,731	28.6%

****Less than 30 observations*

8. Low Income Spells

8.1 Introduction

One of the main interests of the study is to understand why some lone mothers have longer low income spells than others. The expectation is that such an understanding may help develop better policies for shortening low income spells.

Analysis of spells is complex, both conceptually and in terms of the required estimation techniques. Conceptually, there are two types of spell measures: in progress spells and completed spells. The difference can be best illustrated with a simple arithmetic example (*Box C*).

Box C: In-progress vs. Completed Spells

An Illustrative Example:

Let us consider the following purely hypothetical situation. Suppose over the six year period 1993-98, a lone mother was in low income from 1994 to 1997, while four other lone mothers were in low income only in a single year, each in a different year over the period 1994-97. From this example, we can calculate two different low income spells:

- If we examine a single year, say 1994, then we find two low income lone mothers: one with a spell of four years and another one with a spell of one year. We can conclude from this that the average low income spell was: (4+1)/2=2.5 years.
- But if we take into account all the low income spells that started during the period, then we can conclude that the average low income spell was: (4+1+1+1+1)/5=1.6 years.

Applying the Two Concepts to the SLID Data:

- The first type of measure presented above corresponds to the following question: "How many years did the average low income lone mother in 1993 remain in low income without interruption?" As we will see later in this section, the answer is 3.4 years. In fact, the average low income spell was likely longer, since some spells may have started before 1993, or ended after 1998.
- The second type of measure corresponds to the following question: "When a new low income spells starts, how long is it expected to last on average?" As we will see later in this section, the answer is 2.2 years. The estimates for the two measures correspond only notionally to the figures presented in the hypothetical example above.

The most intuitive way to explain the difference between the two measures is the following one: most low income spells are short, while a smaller number of low income spells last for many years. Since the long-term low income appear in the statistics for many years, in any given year one finds a disproportionate number of this group.

8.2 Methodology

The main analytical challenge of this section is the small size of the sample. In what follows, we provide a simplified explanation of the two methodologies, and their strengths and weaknesses.

(a) OLS analysis of in-progress spells

In-progress spells were measured by selecting first everybody who was in low income in 1993 and measuring the length of their uninterrupted low income spell over the period 1993-98. In-progress spells were analyzed in two ways: (i) using a simple cross-tabulation; and (ii) using an OLS regression, where the dependent variable was the duration of the in-progress spell of low income. The three main limitations of this technique are:

- the independent variables do not change during the duration of the spell and, as a result, the OLS model captures mostly the impact of the characteristics at the start of the in-progress spell;
- in-progress spells are a proxy of the length of completed spells, since some spells may have started before 1993, or ended after 1998; and
- the results are valid only to the extent that the length of spells outside the observed period are, on average, proportional to the duration of spells during the observed period.

(b) "Hazard" analysis of low income spells

A more commonly used technique in the literature is to estimate the duration of low income spells indirectly, by first estimating exit rates (also referred to as "hazard" rates, because of the medical origin of this technique). By knowing the probability of exiting low income after one, two, or more years, we can estimate the expected average (or more commonly the median) duration of a low income spell.

The unit of analysis of this technique is not the individual, but low income transitions. For example, someone who became low income in 1994 and exited low income in 1998 has four transitions (three from low income to low income; and one from low income to non-low income).

"Hazard" analysis is the only way of estimating the expected duration of new spells. A strength of the technique is that all independent variables can be specified to be time-dependent − meaning that they can change every year, as long as the individual stays in low income.

The main limitation of this technique is that we assume that those individuals who had a completed spell during the period are representative of: (a) those with censored spells (i.e. those who were still in low income in 1998); and (b) those who were excluded from the analysis because their low income spell started before 1993. This is an important concern, particularly with the second assumption, since one-quarter of the observations

were excluded because they were in low income throughout the period, while an additional significant part was excluded because they did not start a new low income spell during the period.

In what follows, we present the results of both types of analysis. Despite the various limitations, they provide an insight into the factors likely to be associated with longer low income spells.

8.3 Analysis of In-progress Low Income Spells

According to the OLS methodology, the three characteristics most closely associated with longer low income spells were: no change in lone motherhood status; presence of pre-school age children; and being a student or a high school dropout. Also, low income spells tended to be longer in Quebec and the Prairie region.

The average in-progress low income spell of lone mothers in the period 1993-98 was 3.4 years. This is the average length of uninterrupted low income spells of those who were in low income in 1993, regardless of how long they had already been in low income before 1993. *Table 8.1* shows that the longest durations are observed among:

- those whose family situation did not change (i.e. remained lone mothers and the major income recipient through the entire period); and
- residents of Quebec (and regions with below average employment rates).

The effect of various personal characteristics on low income spells is explored more systematically using an OLS regression (*Table 8.2*). The dependent variable of the regression equation is the in-progress low income spell of those who were in low income in 1993. The independent variables consist of several dummy variables representing various personal characteristics.

The OLS regression results generally confirm the results of the cross-tabulation:

- *Change in family status*: The event that had the strongest impact on low income spells was a change in family status (i.e. forming a union; someone else becoming the main income recipient; or the youngest child reaching age 18). The low income spells of lone mothers who experienced a change in family status were on average 2.1 years shorter. Over the period 1993-98, 55% of low income lone mothers experienced a change in family status.
- *Region*: We also found that there is statistically significant variation in low income spells by region. For example, living in Ontario compared to Quebec adds 1.7 years to the low income spell.
- The OLS regression results also show that pre-school age kids also contribute to longer low income spells, although the coefficient was just over the significance threshold.

The rest of the factors tested through the OLS regression do not appear to have a statistically significant effect on the length of in-progress low income spells.

Table 8.1
Incidence and duration of low income by personal characteristics. Among lone mothers with children under 18 yrs of age in 1993

	All lone mothers	Low income in at least one year in 1993-98		Low income in 1993	
		Number of low income	Incidence of low income	Number of low income	In-progress low income spell
Age in 1993					
16-29	138,344	110,546	80%	89,951	3.1
30-55	396,645	210,492	53%	145,663	3.5
Age of youngest child in 1993					
0-5	225,181	171,410	76%	132,839	3.4
6-11	149,247	74,278	50%	54,090	3.4
12-17	160,560	75,349	47%	48,685	3.3
Student in 1993					
Yes	76,156	64,581	85%	52,738	3.7
No	455,918	255,907	56%	182,327	3.3
Education of non-students in 1993					
Less than high school	109,026	92,971	85%	70,201	3.7
High school diploma	84,839	57,979	68%	48,662	3.3
Some post-secondary	65,361	36,903	56%	***	***
Post-secondary degree	196,692	68,054	35%	42,996	2.9
Immigrant, aboriginal, or disabled					
Yes	108,633	86,801	80%	55,609	3.4
No	426,355	234,237	55%	180,005	3.4
Family status					
There was a change in 1993-98	315,699	183,874	58%	128,980	2.6
There was no change in 1993-98	219,289	137,163	63%	106,634	4.4
Moved to another region after 1993					
Yes	66,114	39,797	60%	32,700	2.9
No	468,874	281,240	60%	202,914	3.4
EI regional employment rate in 1993					
At/below average	207,125	123,079	59%	90,919	3.9
Above average	327,863	197,958	60%	144,694	3.1
Broad region in 1993					
Atlantic	44,042	30,682	70%	24,529	3.4
Quebec	123,228	75,370	61%	59,192	4.4
Ontario	214,024	131,655	62%	90,022	2.9
Prairie	90,359	55,406	61%	46,275	3.3
B.C.	63,334	***	***	***	***
All	***534,988***	***321,038***	***60%***	***235,614***	***3.4***

(1) Immigrated in last 10 years; or aboriginal origin; or work limiting disability.

**** Less than 30 observations.*

Table 8.2
OLS analysis of in-progress low income spells, 1993-98, among low income lone mothers with children under 18 yrs of age in 1993

Variable	Explanation	B-coef	Std err	t-stat.
Dependent				
SPELL93	Uninterrupted low income spell of low income in 1993			
Age in 1993				
GAGE93(1)	- 16-29	-0.190	0.292	-0.651
GAGE93(2)	- 30-55 (omitted)			
Age of youngest child in 1993				
YKID93(1)	- 0-5	0.640	0.317	2.018
YKID93(2)	- 6-11 (omitted)			
YKID93(3)	- 12-17	0.693	0.375	1.849
Level of education in 1993				
STEDUC(1)	- student	0.024	0.347	0.069
STEDUC(2)	- non-student: less than high school	0.396	0.339	1.170
STEDUC(3)	- non-student: high school diploma (omitted)			
STEDUC(4)	- non-student: some post-second.	-0.937	0.464	-2.022
STEDUC(5)	- non-student: post-sec. degree	-0.748	0.392	-1.910
Recent immigrant, aboriginal, or disability in 1993				
HIGHRISK(1)	- yes	-0.097	0.279	-0.347
HIGHRISK(2)	- no (omitted)			
Lone mother/major earner/child under 18 in all years				
FAMILYF(1)	- there was a change	-2.070	0.253	-8.189
FAMILYF(2)	- there was no change (omitted)			
Moved to another region after 1993				
FEIR(1)	- yes	0.142	0.332	0.426
FEIR(2)	- no (omitted)			
Broad Region				
REGION(1)	- Atlantic	0.659	0.381	1.732
REGION(2)	- Quebec	1.703	0.304	5.594
REGION(3)	- Ontario (omitted)			
REGION(4)	- Prairie	1.092	0.331	3.299
REGION(5)	- B.C.	-0.684	0.466	-1.466
Constant		3.508	0.378	9.281
Adjusted R-squared			34.6%	
Number of cases			234	

8.4 "Hazard" Analysis of Low Income Spells

According to the "hazard" methodology, the three characteristics most closely associated with longer low income spells were: no change in lone motherhood status; being in one of the three high risk categories (recent immigrant; aboriginal; disabled); and being a high school dropout or having some post-secondary education.

The results of the "hazard" analysis, summarized in *Table 8.3*, show that:

- Each new low income spell is expected to last, on average, about 2.2 years; this estimate is considerably lower than the average in-progress low income spell (for the reasons given in *Box C*).

- One interesting finding is that low income exit rates ("hazard" rates) decline over time. Thus while about one-third of the low income exit low income after one year, the rate declines to 7% after six years in low income.

The above results indicate that most low income spells are short, but those who do not exit low income soon stay on for many years, which also explains the discrepancy between the two measures of low income spells.

Exit rates may decline over time for at least two reasons: (a) those with better employment options tend to exit soon; and (b) those who stay in low income for longer periods see their employment skills deteriorate, which makes it even more difficult to escape low income.

From the policy point of view, the key is to be able to identify which characteristics are at high risk of prolonged low income and develop programs that reach these groups as early as possible, thus avoiding the "scarring" effect of prolonged low income on the ability of individuals to escape from low income.

The "hazard" results help identify some of the factors associated with a higher risk of prolonged low income. The most significant negative factors are:

- *No change in family status*: For example, the average low income spell of those who remained lone mothers was 6.1 years, compared to one year for those who changed their status (either through the formation of a union, or someone else becoming the main income recipient). This result is also confirmed by the OLS results.

- *High school dropout or incomplete post-secondary education*: High school dropouts have the longest expected low income spells (8.8 years) − a result also supported by the OLS results.[9] Interestingly enough, those with incomplete post-secondary education also tend to stay longer in low income (5.4 years). However, this result is not supported by the OLS results.

- *High risk characteristics*: Recent immigrant, disabled and aboriginal lone mothers are also at risk of staying in low income for an extended period (4 years vs. 1.8 years for those without other high risk characteristics). This result was not confirmed by the OLS analysis. The most likely reason is that one important high risk characteristics (disability) is fairly volatile over time. It would appear that, because the OLS model does not include time-dependent variables, it failed to capture the importance of this variable.

The results with respect to region were not statistically significant. This does not necessarily contradict the OLS results. The most likely explanation is that the coefficients were not significant because of large sample variability, due to the small size of the sample.

Finally, the presence of young kids did not have a significant effect on low income spells. As was pointed out earlier, the OLS results in this case were just above the significance threshold. Therefore there is no major discrepancy between the two methods.

[9] See Box D below for an explanation of how it is possible for the estimated duration of spells to be longer than the period of analysis.

Box D: Estimation of Spell Durations

The length of low income spells is calculated indirectly from estimates of low income exit rates. Exit rates are in turn estimated using the logit regression in *Table 8.3*. The logit transformation of the exit rate is specified to be a linear function of time and several other variables. Based on this relationship, we can estimate the exit rate after one year, two years, and so forth. In fact, we can estimate exit rates past the six year period covered by SLID (by simply inserting the year in the logit regression). Having estimated exit rates for the next several years, we can then calculated how long it would take for half of the people to exit low income (i.e. calculate what is the median spell duration). Thus in *Table 8.3*, 31.9% exit after the first year. Of the remaining 68.1% of low income lone mothers, 24.2% exit after the second year. This means that after two years, 31.9% + 68.1% x 24.2% = 48.3% of low income lone mothers have exited low income. The median, which is 2.2 years, was calculated using linear interpolation (since, only by coincidence, exactly 50% of lone mothers would have exited low income after a certain number of years).

Table 8.3
"Hazard" analysis of low income spells, 1993-98

In all cases, the regression variables reflect the status at the end of each spell (time dependent)	Logit coeff.	Stand. error	t-stat	Exit rates by duration of poverty (yrs)						Median spell
				1	2	3	4	5	6	
Dependent variable: probability of exiting poverty										
Change in lone motherhood status										
◆ there was no change in status	-2.050	0.261	-7.854	21.0%	15.3%	10.9%	7.7%	5.4%	3.7%	6.1
◆ status changed (omitted)				67.3%	58.4%	48.8%	39.4%	30.6%	23.1%	1.0
Was recent immigrant; disabled; aboriginal										
◆ yes	-0.576	0.266	-2.165	23.8%	17.5%	12.6%	9.0%	6.3%	4.4%	4.0
◆ no (omitted)				35.7%	27.4%	20.5%	14.9%	10.6%	7.5%	1.8
Age of lone mother										
◆ 16-29	0.874	0.284	3.077	46.3%	37.0%	28.5%	21.4%	15.6%	11.2%	1.2
◆ 30-55 (omitted)				26.5%	19.7%	14.3%	10.2%	7.2%	5.0%	3.1
Age of youngest child										
◆ 0-5	-0.228	0.273	-0.835	28.9%	21.7%	15.8%	11.3%	8.0%	5.6%	2.6
◆ 6-17 (omitted)				33.8%	25.8%	19.1%	13.8%	9.9%	6.9%	2.0
Level of education										
◆ student	-1.013	0.460	-2.202	35.0%	26.8%	19.9%	14.5%	10.3%	7.3%	1.9
◆ non-student: less than high school	-1.796	0.427	-4.206	19.7%	14.3%	10.2%	7.2%	5.0%	3.5%	8.8
◆ non-student: high school diploma (omitted)				59.7%	50.2%	40.7%	31.8%	24.1%	17.8%	1.0
◆ non-student: some post-second.	-1.681	0.451	-3.727	21.6%	15.8%	11.3%	8.0%	5.6%	3.9%	5.4
◆ non-student: post-sec. degree	-0.385	0.410	-0.939	50.2%	40.7%	31.8%	24.1%	17.8%	12.8%	1.0
Region										
◆ Atlantic	-0.199	0.383	-0.520	28.4%	21.3%	15.5%	11.1%	7.8%	5.5%	2.7
◆ Quebec	-0.142	0.293	-0.485	29.6%	22.3%	16.3%	11.7%	8.3%	5.8%	2.5
◆ Ontario (omitted)				32.7%	24.8%	18.3%	13.3%	9.4%	6.6%	2.1
◆ Prairie	0.038	0.366	0.104	33.5%	25.5%	18.9%	13.7%	9.7%	6.8%	2.0
◆ B.C.	0.311	0.418	0.744	39.8%	31.0%	23.5%	17.3%	12.4%	8.8%	1.5
Spell duration in years (continuous independent)	-0.385	0.140	-2.750							
Constant	2.275	0.512	4.443							
Estimates for average lone mother				31.9%	24.2%	17.9%	12.9%	9.1%	6.4%	2.2
Nagelkerke R^2 (similar concept to the OLS adjusted R^2):		31.0%		*Number of cases:*			510			

9. Reliance on Social Assistance

9.1 Introduction

This section uses similar types of analysis to those used in previous sections of the study to understand why some lone mothers spend long spells on social assistance (SA), while others stay on SA for only short periods or do not rely on SA at all. Because of the close correlation between low income and SA, we expected that many of the findings of the previous sections with respect to low income will also hold for SA. For this reason, the analysis of SA was designed to be more selective than that of low income.

One of the challenges in analyzing SA with survey data is incomplete reporting of SA benefits. However, this problem is less serious with SLID than previous surveys, because of the increased use (with respondent consent) of income tax information. A related issue is that the definition of SA is not always clear, especially with respect to certain provincial income tested programs that tend to have a fairly universal application (e.g. income tested child benefits). To minimize this problem:

We have classified as SA recipients (SARs) those whose family received SA during the year and the amount of SA benefits was at least 10% of their LICO.

We begin the section with an examination of the incidence and duration of SA, as well as its impact on low income gaps. Then we examine the characteristics of SA recipients and attempt to identify the characteristics that are most closely associated with a high incidence of SA. Finally, we examine the duration of SA spells and the characteristics of SA recipients that are most closely associated with longer SA spells.

9.2 Incidence of Social Assistance

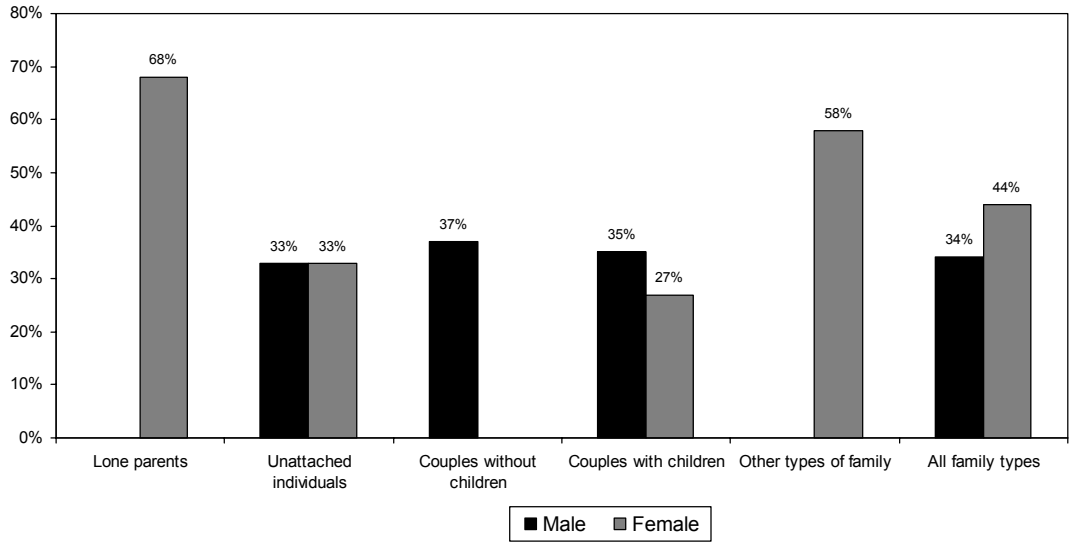
40% of all lone mothers, and 68% of all low income lone mothers, received SA in 1998 − the highest rates for any type of family.

In this sub-section we use the 1998 cross-sectional SLID data to examine the prevalence of the use of SA among all lone mothers and among low income lone mothers. *Chart 9.1* (and in more detail *Table 9.1*) shows that lone mothers not only have the highest incidence of low income, but they also have the highest incidence of SA among all low income families. In particular:

- both among all families and among low income families, lone mothers have the highest incidence of SA (40% and 68% respectively);
- the incidence of SA among lone fathers is less than half of that of lone mothers, but considerably higher than that of other family types with a male main income recipient.

There are several possible explanation why the incidence of SA among low income lone mothers is higher than among other low income families. For example: (a) before government transfers, the average low income lone mother is deeper in low income than other low income families (as revealed by comparisons of low income gaps in *Table 4.1*); (b) lone mothers may be facing fewer legal barriers or more sympathetic bureaucrats when applying for benefits; and (c) lone mothers may be applying more readily for SA, possibly because of non-cash benefits (such as child care or insured health benefits), or because they anticipate a longer stay in low income.

Chart 9.1
Incidence of SA among low income major income recipients, by family type and gender, 1998



Note: Some of the bars are missing because of sample limitations.

Table 9.1 Incidence of social assistance among all major income recipients, 1998[1]						
	Lone parent, kids<18	Unat-tached individual	Couple without kids<18	Couple with kids<18	Other economic families	All economic families
Male						
All major income earners	110,545	1,392,465	1,309,674	2,551,716	361,897	5,726,297
- Received SA	20,501	157,578	67,777	134,373	61,717	441,946
- Incidence of SA	18.5%	11.3%	5.2%	5.3%	17.1%	7.7%
Low income major income earners	18,506	400,738	45,288	149,940	35,069	649,541
- Received SA	***	133,555	16,956	53,071	***	223,595
- Incidence of SA	***	33.3%	37.4%	35.4%	***	34.4%
Female						
All major income earners	630,731	995,847	548,226	682,179	268,630	3,125,613
- Received SA	253,806	131,167	27,808	53,268	60,389	526,439
- Incidence of SA	40.2%	13.2%	5.1%	7.8%	22.5%	16.8%
Low income major income earners	246,407	349,879	41,682	85,805	45,745	769,518
- Received SA	168,011	113,944	***	22,809	26,498	339,141
- Incidence of SA	68.2%	32.6%	***	26.6%	57.9%	44.1%
Both genders						
All major income earners	741,276	2,388,312	1,857,900	3,233,895	630,528	8,851,911
- Received SA	274,308	288,745	95,585	187,641	122,107	968,385
- Incidence of SA	37.0%	12.1%	5.1%	5.8%	19.4%	10.9%
Low income major income earners	264,913	750,617	86,970	235,745	80,813	1,419,059
- Received SA	176,654	247,499	24,834	75,881	37,868	562,736
- Incidence of SA	66.7%	33.0%	28.6%	32.2%	46.9%	39.7%
(1) Sample of major income earners, age 16-55, in 1998. ****Less than 30 observations.*						

9.3 Impact of Social Assistance on Low Income Gaps

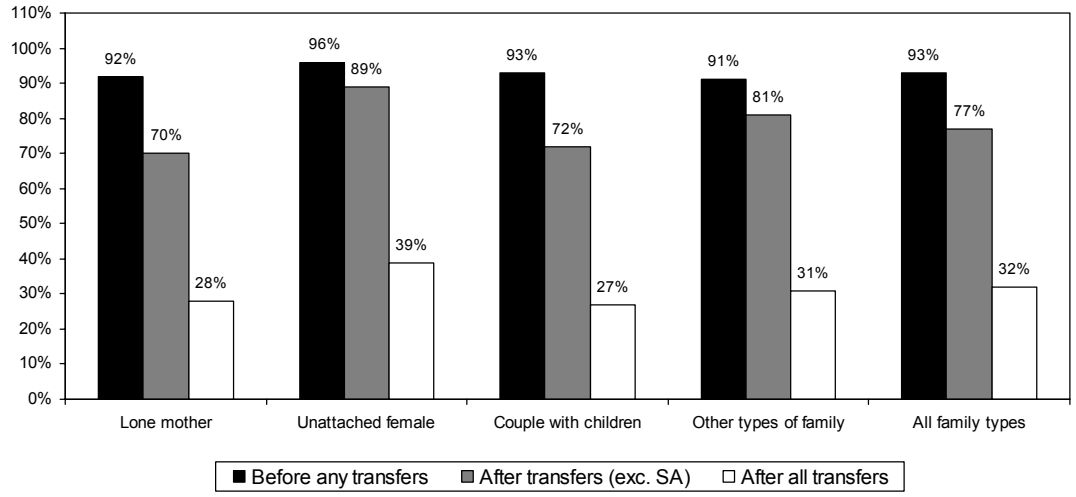
Government transfers reduce the low income gap of female SARs from about 90% to about 30%. Although the impact of SA on the low income gap of lone mothers is somewhat lower than for other family types, this result is more than offset by other government transfers (such as the Child Tax Benefit).

This sub-section examines the impact of SA in terms of reducing the low income gap. In particular, we want to see whether SA takes a bigger "bite" out of low income among lone mothers than is the case for other low income families.

Chart 9.2 shows that among all female main income recipients on SA, the low income gap before any government transfers is around 90%, while after government transfers the gap for most female SARs drops to about 30% − with the exception of unattached female SARs where the gap drops to about 40%.

SA has a somewhat smaller impact on the low income gap of female SARs with children. However, this result is more than offset by other government transfers (such as the Child Tax Benefit).

Chart 9.2
Impact of SA on the low income gap of female major income recipients, by family type, 1998



Note: Couples without children are not shown because the sample is too small.

Table 9.2
Impact of social assistance on low income, 1998, among all poor social assistance recipients (SARs)[1]

	Lone parent, kids<18	Unat-tached individual	Couple without kids<18	Couple with kids<18	Other economic families	All economic families
Male						
All SARs in 1998	***	133,555	16,956	53,071	***	223,595
Low income gap:						
- before any transfers	***	93.0%	83.5%	89.8%	***	90.8%
- after transfers, exc. SA	***	85.8%	70.2%	68.1%	***	78.9%
- after all transfers	***	39.4%	25.2%	27.4%	***	34.7%
Impact of SA on gap	***	46.4%	45.0%	40.7%	***	44.2%
Female						
All SARs in 1998	168,011	113,944	***	22,809	26,498	339,141
Low income gap:						
- before any transfers	91.8%	95.6%	***	93.0%	91.0%	93.0%
- after transfers, exc. SA	70.0%	88.5%	***	71.6%	80.5%	77.3%
- after all transfers	28.0%	39.4%	***	27.4%	31.1%	31.8%
Impact of SA on gap	42.0%	49.2%	***	44.2%	49.5%	45.5%
Both genders						
All SARs in 1998	176,654	247,499	24,834	75,881	37,868	562,736
Low income gap:						
- before any transfers	92.0%	94.2%	85.0%	90.7%	87.1%	92.1%
- after transfers, exc. SA	70.1%	87.1%	72.4%	69.2%	76.3%	78.0%
- after all transfers	28.3%	39.4%	23.7%	27.4%	29.5%	33.0%
Impact of SA on gap	41.8%	47.7%	48.7%	41.8%	46.8%	45.0%

(1) Sample of major income earners, age 16-55, who received SA in 1998.

****Less than 30 observations.*

9.4 Characteristics of Social Assistance Recipients

The three most common characteristics of lone mothers on SA were: not being in a union when their first child was born (73%); not working for pay (54%); and the presence of pre-school age child (44%).

Table 9.3 shows the distribution of lone mothers who received SA in 1998, by various characteristics. It also shows the incidence of SA among all lone mothers. As in the case of the incidence of low income, the incidence of SA was highest among those with no paid work during the year (83%). Non-earning SARs accounted for 54% of all lone mothers on SA.

The two other most common characteristics of lone mothers on SA were: (a) not being in a union when their first child was born; and (b) the presence of pre-school age child (44%).

The impact of various characteristics on the probability of receiving SA was explored using logit regression (*Table 9.4*).[10] The regression results show that the following characteristics have the strongest correlation with the incidence of SA:

(a) *recent immigrants/ aboriginal/ disabled*: 35% of lone mothers on SA had one at least of these three characteristics; their probability of being on SA was 28% higher than that of the rest of lone mothers;

(b) *student status*: 25% of lone mothers on SA were students (full-time or part-time); their probability of being on SA was 27% higher than that of non-students with high school education; this group is of relatively less concern, however, since the expectation is that their earning capacity, at least on average, will be greater once they graduate;

(c) *not in a union when their first child was born*: the most common characteristics among all lone mothers on SA is that they were not in a union when their first child was born (73%); their probability of being on SA was 21% higher than that of the rest of lone mothers;

(d) *under 20 years of age when their first child was born*: 31% of lone mothers on SA were under 20 years of age when their first child was born; their probability of being on SA was 19% higher than for the rest of lone mothers;

(e) *high school dropouts*: high school drop-outs accounted for 30% of lone mothers on SA that were not students; their probability of being on SA was 18% higher than that for lone mothers with high school graduation; however, higher education is not a sure way to avoid dependence on SA; in particular, 34% of non-student SARs had a post-secondary certificate or degree.

[10] The results of an alternative specification of the logit regression (replacing EI regional employment rates and provincial SA benefit rates with dummies for the five major regions) are shown in Appendix D.

Two other characteristics that were found to have a statistically significant impact in increasing the probability of receiving SA were:

(f) *SA benefit rates*: lone mothers living in provinces with above average SA benefit rates had a 16% higher probability of receiving SA, an indication of the connection between generosity of SA benefits and SA caseload; and

(g) *regional employment rates*: lone mothers in regions with below average employment rates had a 11% higher probability of receiving SA, an indication of the impact of labour market conditions on the SA take up rate.[11]

Table 9.3
Characteristics of lone mothers on SA (SARs), 1998[1]

	Distribution of SARs	Incidence of SA
Age		
16-29	32.7%	68.7%
30-55	67.3%	33.5%
Age when first child was born		
Under 20	31.2%	68.8%
20 or more	68.8%	34.2%
Marital status when first child was born		
Not in a union	73.3%	53.8%
Married	22.9%	22.3%
Common law	3.8%	40.9%
Age of youngest child		
0-5	44.4%	54.8%
6-11	36.1%	40.4%
12-17	19.5%	24.9%
Student during the year		
Yes	25.0%	57.3%
No	75.0%	36.6%
Level of education of non-students		
Less than high school	29.9%	57.1%
High school diploma	16.3%	33.2%
Some post-secondary	19.9%	47.8%
Post-secondary degree	33.9%	25.6%
Hours of work during the year		
No work	53.7%	82.9%
1-749 hours	22.1%	72.1%
750-1499 hours	13.0%	37.4%
1500+ hours	11.3%	9.8%
Immigrant, aboriginal, or disabled[2]		
Yes	35.3%	62.5%
No	64.7%	33.7%
EI region employment rate		
At, below average	43.4%	42.6%
Above average	56.6%	38.6%
Provincial SA benefit rates		
At, below average	43.4%	36.2%
Above average	56.6%	44.0%
Broad region		
Atlantic	13.0%	59.5%
Quebec	19.9%	31.2%
Ontario	42.1%	44.9%
Prairie	13.0%	33.8%
B.C.	12.0%	39.2%
All lone parents	100.0%	40.2%

(1) Sample of lone mother major income earners, age 16-55, in 1998.
(2) Immigrated in last 10 years; or aboriginal origin; or work limiting disability.

[11] As explained earlier, the employment rate was calculated by dividing the weeks of work of each woman (0 to 52) by 52. The ratio was averaged within each of the 54 regions that are designated by the EI program.

Table 9.4 Logit regression estimate of determinants of incidence of SA among all lone mothers, 1998						
Variable	**Explanation**	**b-coef**	**Std err**	**t-stat.**	**Odds ratio**	**Linearized coefficient**
Dependent						
SAR98	Received SA in 1998					
Age						
GAGE(1)	- 16-29	0.428	0.199	2.146	1.534	10.1%
GAGE(2)	- 30-55		(omitted)			
Age when first child was born						
CAGE(1)	- 16-19	0.772	0.188	4.113	2.164	18.7%
CAGE(2)	- 20-55		(omitted)			
Marital status when first child was born						
CSPOUSE(1)	- did not have a spouse	0.964	0.146	6.609	2.623	21.2%
CSPOUSE(2)	- had a spouse		(omitted)			
Age of youngest child						
YKID(1)	- 0-5	0.140	0.169	0.828	1.150	3.4%
YKID(2)	- 6-11		(omitted)			
YKID(3)	- 12-17	-0.534	0.173	-3.087	0.586	-12.0%
Level of education						
STEDUC(1)	- student	1.106	0.279	3.964	3.021	26.8%
STEDUC(2)	- non-student: less than high school	0.762	0.237	3.215	2.143	18.4%
STEDUC(3)	- non-student: high school diploma		(omitted)			
STEDUC(4)	- non-student: some post-second.	0.559	0.246	2.272	1.750	13.3%
STEDUC(5)	- non-student: post-sec. degree	-0.175	0.211	-0.829	0.840	-3.8%
Recent immigrant, aboriginal, or disability?						
HIGHRISK(1)	- yes	1.138	0.159	7.136	3.121	27.6%
HIGHRISK(2)	- no (omitted)		(omitted)			
Regional employment rate						
REGER(1)	- at/below average	0.452	0.163	2.763	1.571	11.1%
REGER(2)	- above average (omitted)		(omitted)			
Provincial SA benefit rates						
SABEN(1)	- at/below average	-0.693	0.163	-4.256	0.500	-15.8%
SABEN(2)	- above average (omitted)		(omitted)			
Constant		-1.491	0.231	-6.455	0.225	
Nagelkerke R^2 (similar concept to OLS adjusted R^2)				0.336		
Number of cases				1,234		

9.5 Duration of Social Assistance

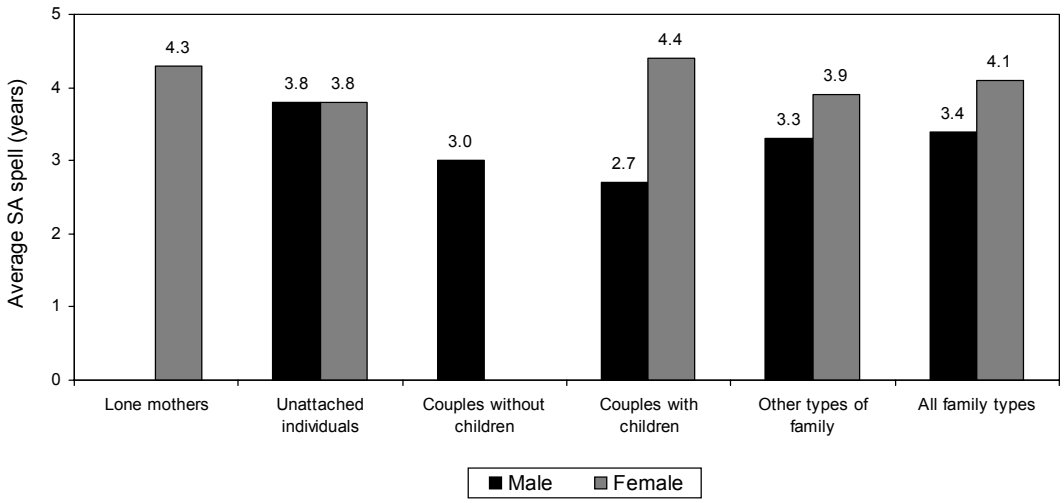
Over the period 1993-98, 58% of lone mothers received SA at least once, while 41% of SA recipients were on SA all six years. The average "in-progress" spell of those who received SA in 1993 was 4.3 years − the longest for any type of family.

In this sub-section we use the 1993-98 longitudinal SLID data to see how many lone mothers are exposed to SA over a longer period and, once they are on SA, how long they tend to stay on SA.

Over the period 1993-98, 58% of lone mothers received SA in at least one year, while 24% of all lone mothers received SA in all six years over the period 1993-98. This means 41% of all SA recipients in 1993-98 received SA in all six years − the highest rate for any type of family (*Table 9.5*).

The average "in-progress" SA spell for lone mothers was 4.3 years (*Chart 9.3*). The average completed SA spell is likely to be longer. The reason is that many of the spells may have started before 1993. Also, since 41% of SARs were on SA all six years, a significant number may have continued on SA past 1998.

Chart 9.3
Average in-progress SA spell, by family type and gender of major income recipient, 1998



Note: Some of the bars are missing because of sample limitations.

Table 9.5
Duration of social assistance, 1993-98. Among all social assistance recipients (SARs)[1]

	Lone parent, kids<18	Unat-tached individual	Couple without kids<18	Couple with kids<18	Other economic families	All economic families
Male						
All major income recipients	96,912	1,078,953	1,263,516	2,298,221	313,254	5,050,856
At least one year on SA	***	26.9%	10.0%	9.8%	21.9%	14.6%
All six years on SA	***	6.2%	***	***	***	2.4%
Average years on SA	***	3.4	2.8	2.6	2.8	3.0
Average in-progress spell[2]	***	3.8	3.0	2.7	3.3	3.4
Female						
All major income recipients	555,302	910,502	455,028	676,560	220,596	2,817,988
At least one year on SA	58.1%	21.4%	12.8%	16.6%	33.4%	27.0%
All six years on SA	24.1%	5.5%	***	***	***	9.0%
Average years on SA	4.4	3.4	2.9	3.7	3.7	3.9
Average in-progress spell[2]	4.3	3.8	***	4.4	3.9	4.1
Both genders						
All major income recipients	652,215	1,989,455	1,718,543	2,974,781	533,850	7,868,844
At least one year on SA	54.1%	24.4%	10.7%	11.3%	26.7%	19.1%
All six years on SA	22.2%	5.9%	***	1.9%	6.5%	4.8%
Average years on SA	4.3	3.4	2.8	2.9	3.3	3.4
Average in-progress spell[2]	4.3	3.8	3.0	3.4	3.7	3.8

(1) Sample of major income recipients, age 16-55 in 1993.
(2) SA spell of those who received SA in 1993.
**** Less than 30 observations.*

9.6 Determinants of the Duration of Social Assistance

The three strongest factors associated with longer SA spells in 1993-98 were: (a) no change in family status; (b) being a recent immigrant, disabled, or aboriginal; and (c) having a pre-school age child. Interestingly, the level of education did not appear to have an influence.

In this section we analyze both in-progress SA spells (using a simple tabulation and an OLS regression), as well as the expected duration of new spells (using a "hazard" logit regression). The techniques are the same as those discussed and applied in *Section 8*.

The results show that the average in-progress SA spell is 4.3 years (almost a year longer than the average in-progress low income spell, which is 3.4 years). On the other hand, the average expected duration of new SA spells is 2.1 years, the same as for new low income spells.

The results suggest that in most cases, when lone mothers enter low income or SA, they stay for a short period (2.1 years on average). However, a number of lone mothers stay in low income or on SA for many years.

Both the OLS analysis of in-progress SA spells and the "hazard" analysis of new SA spells led to similar conclusions with respect to the following factors:

(a) *Change in family status*: Both approaches identified this as one of the most important factors; the average in-progress SA spell and the average spell of new starts were about 1.5 years shorter than for the rest of lone mothers; this result is not surprising since, as was pointed out in an earlier section, changes in family status are one of the most significant factors behind low income exits.

(b) *High risk group*: Hazard analysis shows that lone mothers who were also recent immigrants, disabled, or aboriginal, had longer SA spells by 1.5 years; the OLS approach did not confirm this but, as was discussed earlier in the context of low income spells, the most likely reason for this difference is that the OLS model does not properly handle variables that tend to change over time, such as disability status.

(c) *Age of youngest child*: the OLS model shows that both the presence of pre-school age children and high school age children contributed to longer SA spells (by 1 and 1.7 years respectively), but most likely for different reasons:

  (i) younger kids are a barrier to the employment of their mothers;

  (ii) however, this is less likely to be the case with older kids, suggesting that other barriers may be present − such as the "scarring" effect of prolonged reliance on SA.[12]

(d) *Region:* According to the OLS results, in-progress SA spells tend to be longest in Quebec; however, the "hazard" model shows that new spells tend to be longer for Ontario and shorter for Quebec and B.C.; these results suggest that most SA spells in Quebec tend to be short, but there is a core of long spells that show up year after year.

[12] In the "hazard" model we tested only the presence of pre-school children. We found no significant effect. The most obvious reason is that the positive effect of the youngest child being 6 to 11 years of age, was offset by the negative effect of the younger child being 12 to 17 years of age.

The rest of the characteristics − such as student status, level of education, or level of provincial SA benefits − did not have a statistically significant effect on in-progress SA spells.[13]

The most surprising result is that the level of education has no effect on the length of SA spells. It would appear that education has a positive effect in helping lone mothers stay out of SA. However, once on SA, the level of education makes no difference on how long they stay on SA.

Instead, the length of SA spells appear to be dominated by factors over which public policy has little effect − such as change in family status; high risk characteristics; presence of young children; and region of residence. Although these characteristics cannot be influenced directly by public policy, they can be used as indicators for targeting programs for assisting lone mothers to exit SA.

Table 9.6
Length of completed SA spells by personal characteristics among lone mothers on SA, 1993-98

	Distribution of 1993 SARs	Length of average in-progress SA spell (years)
Age in 1993		
16-29	38.5%	4.1
30-55	61.5%	4.5
Age of youngest child in 1993		
0-5	55.4%	4.4
6-11	27.7%	3.8
12-17	16.9%	4.8
Student in 1993		
Yes	22.0%	4.3
No	78.0%	4.3
Level of education of non-students in 1993		
Less than high school	42.4%	4.5
High school diploma	19.8%	4.7
Some post-secondary	15.6%	4.2
Post-secondary degree	22.1%	3.8
Recent immigrant, aboriginal, or disability in 1993[1]		
Yes	31.2%	4.5
No	68.8%	4.3
Lone mother/major earner/child under 18 in all years		
There was a change	50.9%	3.7
There was no change	49.1%	4.9
Moved to another region after 1993		
Yes	13.3%	3.4
No	86.7%	4.5
EI regional employment rate in 1993		
At/below average	38.0%	4.3
Above average	62.0%	4.3
Provincial SA benefit rates in 1993		
At/below average	44.6%	4.1
Above average	55.4%	4.5
Broad region in 1993		
Atlantic	9.4%	4.4
Quebec	16.5%	5.0
Ontario	59.0%	4.5
Prairie	15.1%	3.5
B.C.	***	***
All	100.0%	4.3

(1) Immigrated in last 10 years; or aboriginal origin; or work limiting disability.

**** Less than 30 observations.*

[13] The results with respect to provincial SA benefit rates are based on a similar regression; the results of this regression are not shown here.

Table 9.7
OLS Regression of determinants of completed SA spells, 1993-98 among lone mothers on social assistance in 1993

Variable	Explanation	B-coef	Std err	t-stat.
Dependent				
SASPEL93	Length of completed SA spell (yrs)			
Age in 1993				
GAGE93(1)	- 16-29	-0.349	0.231	-1.508
GAGE93(2)	- 30-55 (omitted)			
Age of youngest child in 1993				
YKID93(1)	- 0-5	1.035	0.246	4.207
YKID93(2)	- 6-11 (omitted)			
YKID93(3)	- 12-17	1.707	0.324	5.269
Level of education in 1993				
STEDUC(1)	- student	-0.146	0.316	-0.463
STEDUC(2)	- non-student: less than high school	-0.046	0.300	-0.154
STEDUC(3)	- non-student: high school diploma (omitted)			
STEDUC(4)	- non-student: some post-second.	0.057	0.372	0.152
STEDUC(5)	- non-student: post-sec. degree	-0.482	0.352	-1.369
Recent immigrant, aboriginal, or disability in 1993				
HIGHRISK(1)	- yes	0.100	0.211	0.471
HIGHRISK(2)	- no (omitted)			
Lone mother/major earner/child under 18 in all years				
FAMILYF(1)	- there was a change	-1.508	0.213	-7.078
FAMILYF(2)	- there was no change (omitted)			
Moved to another region after 1993				
FEIR(1)	- yes	-0.661	0.287	-2.305
FEIR(2)	- no (omitted)			
Broad region				
REGION(1)	- Atlantic	0.045	0.341	0.132
REGION(2)	- Quebec	0.522	0.285	1.832
REGION(3)	- Ontario (omitted)			
REGION(4)	- Prairie	-0.651	0.290	-2.245
REGION(5)	- B.C.	-0.600	0.404	-1.485
Constant		4.591	0.315	14.575
Adjusted R-squared			25.4%	
Number of cases			294	

Table 9.8
"Hazard" analysis of Social Assistance spells, 1993-98

In all cases, the regression variables reflect the status at the end of each spell (time dependent)	Logit coeff.	Stand. error	t-stat	Exit rates by duration of SA (yrs)						Median spell
				1	2	3	4	5	6	
Dependent variable: probability of exiting SA										
Change in lone motherhood status										
◆ there was no change in status	-0.747	0.288	-2.594	24.4%	19.8%	15.8%	12.6%	9.9%	7.7%	3.2
◆ status changed (omitted)				40.5%	34.2%	28.4%	23.3%	18.8%	15.1%	1.5
Was recent immigrant; disabled; aboriginal										
◆ yes	-0.785	0.307	-2.557	19.0%	15.2%	12.0%	9.5%	7.4%	5.8%	5.2
◆ no (omitted)				34.0%	28.2%	23.1%	18.7%	14.9%	11.8%	1.9
Age of lone mother										
◆ 16-29	-0.717	0.354	-2.025	19.1%	15.3%	12.1%	9.5%	7.5%	5.8%	5.1
◆ 30-55 (omitted)				32.6%	27.0%	22.0%	17.8%	14.2%	11.2%	2.0
Age of youngest child										
◆ 0-5	-0.090	0.303	-0.297	27.1%	22.2%	17.9%	14.3%	11.3%	8.8%	2.7
◆ 6-17 (omitted)				29.0%	23.7%	19.2%	15.4%	12.2%	9.6%	2.4
Level of education										
◆ student	0.685	0.498	1.376	38.2%	32.0%	26.5%	21.6%	17.4%	13.9%	1.6
◆ non-student: less than high school	-0.083	0.478	-0.174	22.3%	18.0%	14.3%	11.3%	8.9%	6.9%	3.8
◆ non-student: high school diploma (omitted)				23.7%	19.2%	15.4%	12.2%	9.6%	7.5%	3.3
◆ non-student: some post-second.	-0.179	0.531	-0.337	20.6%	16.6%	13.2%	10.4%	8.1%	6.3%	4.4
◆ non-student: post-sec. degree	0.524	0.454	1.154	34.4%	28.6%	23.5%	19.0%	15.2%	12.0%	1.8
Region										
◆ Atlantic	0.392	0.443	0.885	26.2%	21.4%	17.2%	13.7%	10.8%	8.5%	2.8
◆ Quebec	1.000	0.360	2.778	39.5%	33.3%	27.6%	22.6%	18.2%	14.5%	1.5
◆ Ontario (omitted)				19.4%	15.5%	12.3%	9.7%	7.6%	5.9%	5.0
◆ Prairie	0.603	0.405	1.489	30.5%	25.1%	20.4%	16.4%	13.0%	10.3%	2.2
◆ B.C.	1.453	0.466	3.118	50.7%	44.0%	37.5%	31.4%	25.9%	21.1%	1.0
Spell duration in years (continuous independent)	-0.269	0.151	-1.781							
Constant	-0.290	0.576	-0.503							
Dependent variable: probability of exiting SA				32.2%	24.4%	18.0%	13.0%	9.3%	6.5%	2.1
Nagelkerke R^2 (similar concept to the OLS adjusted R^2):		16.7%		*Number of cases::*		369				

10. Conclusion

Low income and reliance on SA among lone mothers is extensive, a fact that is well known and extensively researched in the literature. However, the facts that many lone mothers do not experience low income and half of those who experience low income exit within two years, give reasons to hope that properly targeted policies can make a difference.

In general, a higher level of education was found to be a positive factor. However, the evidence is less than persuasive. As our results show, more than one-third of low income lone mothers have a post-secondary certificate or degree. Also, a higher level of education does not seem to have any benefits in terms of shortening SA spells.

The fact that half of SA recipients exit within the first two years suggests that policies should be well targeted. However, waiting for several years to ascertain who are long term recipients is not the best targeting strategy. Not only would valuable time be wasted, but there is evidence that the longer individuals stay on SA, the more difficult it is to exit.

A better strategy is to keep probing the characteristics of SA recipients that are associated with long spells and develop programs that are targeted to those characteristics. Our results indicate that a good starting point would be to focus more heavily on lone mothers with: other high risk characteristics (recent immigrants, disabled, and Aboriginal); pre-school age children; or those who are high school dropouts.

And since lack of paid work is a common factor among low income and SA recipients, the main focus should be in providing employment services (such as referrals and employment counseling), coupled with a more generous treatment of earnings for those with at least a minimum attachment to the labour force.

Appendix A: 1998 Cross-Sectional Profiles

The following three tables provide a demographic profile of:

(a) all lone parents;

(b) lone mothers; and

(c) female major income recipients in couples with children.

No separate tables are shown for lone fathers, because of sample limitations. Here is some additional explanation about the three tables:

- In all cases, the tables are based on the sample of main income recipients, age 16-55, with at least one child under 18 in 1998.
- High risk refers to: immigrants who have immigrated in the last 10 years; persons of Aboriginal origin; and persons with a work-limiting disability.
- *** The asterisks indicate that the sample contained less than 30 observations, in which case it was not possible to release any information.

Table A.1
Lone parents

	Number of:		Pct distribution of:		Incidence of low income	Low income gap	
	All lone parents	Low income lone parents	All lone parents	Low income lone parents		Before transfers	After transfers
Gender							
Male	110,545	18,506	14.9%	7.0%	16.7%	77.7%	36.9%
Female	630,731	246,407	85.1%	93.0%	39.1%	82.5%	29.7%
Age							
16-29	123,044	74,672	16.6%	28.2%	60.7%	88.1%	32.3%
30-55	618,232	190,242	83.4%	71.8%	30.8%	79.8%	29.4%
Age when first child was born							
Under 20	107,774	56,069	16.1%	23.6%	52.0%	90.2%	30.4%
20 or more	561,797	181,678	83.9%	76.4%	32.3%	80.4%	29.9%
Marital status when first child was born							
Not in a union	281,117	136,181	42.5%	57.3%	48.4%	84.7%	27.5%
Married	354,439	89,318	53.6%	37.6%	25.2%	79.2%	33.7%
Common law	26,178	11,969	4.0%	5.0%	45.7%	86.0%	30.5%
Age of youngest child							
0-5	216,949	116,507	29.3%	44.0%	53.7%	84.0%	31.1%
6-11	266,578	96,461	36.0%	36.4%	36.2%	81.7%	30.2%
12-17	257,749	51,945	34.8%	19.6%	20.2%	78.8%	28.2%
Student during the year							
Yes	118,403	62,935	16.0%	23.8%	53.2%	82.9%	34.0%
No	622,873	201,978	84.0%	76.2%	32.4%	81.9%	29.0%
Level of education of non-students							
Less than high school	115,116	53,533	19.8%	28.7%	46.5%	90.8%	27.4%
High school diploma	104,435	30,300	17.9%	16.3%	29.0%	77.3%	28.1%
Some post-secondary	81,927	34,753	14.1%	18.7%	42.4%	81.4%	26.4%
Post-secondary degree	281,267	67,650	48.3%	36.3%	24.1%	77.6%	31.3%
Hours of work during the year							
No work	177,854	140,923	24.7%	54.7%	79.2%	95.3%	34.0%
1-749 hours	79,358	48,356	11.0%	18.8%	60.9%	78.9%	25.8%
750-1499 hours	94,265	31,953	13.1%	12.4%	33.9%	67.1%	27.1%
1500+ hours	368,015	36,471	51.1%	14.2%	9.9%	54.8%	25.8%
Immigrant, aboriginal, or disabled							
Yes	164,181	79,842	22.1%	30.1%	48.6%	88.5%	33.7%
No	577,094	185,071	77.9%	69.9%	32.1%	79.4%	28.7%
EI region employment rate							
At, below average	306,375	118,001	41.3%	44.5%	38.5%	85.7%	28.0%
Above average	434,901	146,912	58.7%	55.5%	33.8%	79.3%	31.9%
Broad region							
Atlantic	62,562	30,565	8.4%	11.5%	48.9%	85.9%	23.9%
Quebec	196,124	63,907	26.5%	24.1%	32.6%	86.8%	29.5%
Ontario	278,405	100,605	37.6%	38.0%	36.1%	83.2%	31.3%
Prairie	117,684	39,271	15.9%	14.8%	33.4%	72.1%	34.4%
B.C.	86,501	30,566	11.7%	11.5%	35.3%	78.2%	28.7%
All	741,276	264,913	100.0%	100.0%	35.7%	82.2%	30.2%

Table A.2
Lone mothers

	Number of:		Pct distribution of:			Low income gap	
	All lone mothers	Low income lone mothers	All lone mothers	Low income lone mothers	Incidence of low income	Before transfers	After transfers
Age							
16-29	120,822	74,246	19.2%	30.1%	61.5%	88.0%	32.3%
30-55	509,909	172,161	80.8%	69.9%	33.8%	80.1%	28.6%
Age when first child was born							
Under 20	105,590	55,847	18.4%	25.2%	52.9%	90.1%	30.4%
20 or more	468,523	165,700	81.6%	74.8%	35.4%	80.9%	29.6%
Marital status when first child was born							
Not in a union	263,410	133,620	46.4%	60.4%	50.7%	84.7%	27.5%
Married	281,528	76,918	49.6%	34.8%	27.3%	80.4%	33.8%
Common law	22,999	10,730	4.0%	4.8%	46.7%	84.5%	30.8%
Age of youngest child							
0-5	205,781	115,233	32.6%	46.8%	56.0%	83.9%	31.1%
6-11	226,847	89,789	36.0%	36.4%	39.6%	83.0%	30.5%
12-17	198,104	41,384	31.4%	16.8%	20.9%	77.8%	24.0%
Student during the year							
Yes	110,691	62,338	17.5%	25.3%	56.3%	82.8%	33.7%
No	520,040	184,068	82.5%	74.7%	35.4%	82.4%	28.3%
Level of education of non-students							
Less than high school	92,846	48,063	19.0%	28.3%	51.8%	91.5%	26.6%
High school diploma	86,880	26,170	17.8%	15.4%	30.1%	80.0%	29.5%
Some post-secondary	73,976	34,023	15.1%	20.0%	46.0%	81.5%	26.2%
Post-secondary degree	235,407	61,731	48.1%	36.3%	26.2%	77.8%	30.6%
Hours of work during the year							
No work	162,141	131,247	26.5%	54.8%	80.9%	95.0%	33.2%
1-749 hours	76,625	47,658	12.5%	19.9%	62.2%	78.8%	25.5%
750-1499 hours	86,982	31,742	14.2%	13.2%	36.5%	67.2%	27.3%
1500+ hours	287,227	28,979	46.9%	12.1%	10.1%	55.4%	25.2%
Immigrant, aboriginal, or disabled							
Yes	143,564	74,151	22.8%	30.1%	51.6%	88.1%	33.4%
No	487,167	172,256	77.2%	69.9%	35.4%	80.1%	28.1%
EI region employment rate							
At, below average	258,380	109,864	41.0%	44.6%	42.5%	86.5%	28.1%
Above average	372,350	136,543	59.0%	55.4%	36.7%	79.3%	31.0%
Broad region							
Atlantic	55,301	29,155	8.8%	11.8%	52.7%	86.2%	24.0%
Quebec	162,275	59,265	25.7%	24.1%	36.5%	87.9%	30.5%
Ontario	237,500	94,105	37.7%	38.2%	39.6%	83.3%	30.1%
Prairie	97,608	33,626	15.5%	13.6%	34.4%	71.1%	32.5%
B.C.	78,048	30,256	12.4%	12.3%	38.8%	78.6%	29.0%
All	630,731	246,407	100.0%	100.0%	39.1%	82.5%	29.7%

Table A.3
Female major income recipients of couples with children under 18

	Number of:		Pct distribution of:			Low income gap	
	All female major income recipients	Low income female major income recipients	All female major income recipients	Low income female major income recipients	Incidence of low income	Before transfers	After transfers
Age in 1998							
16-29	71,193	19,220	10.4%	22.4%	27.0%	74.4%	32.1%
30-55	610,987	66,584	89.6%	77.6%	10.9%	62.9%	27.8%
Age when first child was born							
Under 20	50,970	17,773	8.2%	23.8%	34.9%	75.4%	35.1%
20 or more	570,933	57,039	91.8%	76.2%	10.0%	60.2%	26.1%
Marital status when first child was born							
Not in a union	55,457	11,119	9.0%	16.7%	20.0%	78.8%	28.7%
Married	526,717	55,369	85.0%	83.3%	10.5%	59.8%	28.5%
Common law	37,146	***	***	***	***	***	***
Age of youngest child							
0-5	279,826	42,426	41.0%	49.4%	15.2%	70.2%	30.5%
6-11	238,896	29,437	35.0%	34.3%	12.3%	58.6%	23.6%
12-17	163,457	13,942	24.0%	16.2%	8.5%	65.7%	34.1%
Student during the year							
Yes	58,106	***	***	***	***	***	***
No	624,073	78,174	91.5%	100.0%	12.5%	65.0%	29.0%
Level of education of non-students							
Less than high school	68,809	23,627	11.6%	36.5%	34.3%	84.5%	37.4%
High school diploma	101,675	***	***	***	***	***	***
Some post-secondary	73,457	18,059	12.3%	27.9%	24.6%	57.3%	25.6%
Post-secondary degree	350,996	23,040	59.0%	35.6%	6.6%	54.8%	24.3%
Hours of work during the year							
No work	59,870	30,950	9.2%	38.3%	51.7%	82.3%	31.5%
1-749 hours	38,500	13,968	5.9%	17.3%	36.3%	67.2%	32.8%
750-1499 hours	83,776	14,487	12.8%	17.9%	17.3%	46.2%	17.5%
1500+ hours	470,984	21,476	72.1%	26.6%	4.6%	56.8%	30.3%
Immigrant, aboriginal, or disabled							
Yes	109,479	20,469	16.0%	23.9%	18.7%	66.2%	24.3%
No	572,700	65,336	84.0%	76.1%	11.4%	65.2%	30.1%
EI region employment rate							
At, below average	249,109	38,014	36.5%	44.3%	15.3%	70.5%	26.7%
Above average	433,070	47,791	63.5%	55.7%	11.0%	61.5%	30.4%
Broad region							
Atlantic	55,570	7,710	8.1%	9.0%	13.9%	77.0%	28.5%
Quebec	165,122	25,467	24.2%	29.7%	15.4%	64.4%	25.2%
Ontario	269,506	27,001	39.5%	31.5%	10.0%	63.7%	30.2%
Prairie	111,556	19,016	16.4%	22.2%	17.0%	63.2%	32.4%
B.C.	80,425	6,611	***	***	***	***	***
All	682,179	85,805	100.0%	100.0%	12.6%	65.5%	28.7%

****Less than 30 observations*

Appendix B: 1993-1998 Detailed Longitudinal Tabulations

Table B.1
Detailed longitudinal incidence of low income, 1993-98.
Female major income recipients in families with children under 18 yrs of age[1]

	Lone parents			Lone mothers			Female major recipient in couples with kids<18		
	All lone parents	No family change	Rest of lone parents	All lone mothers	No family change	Rest of lone mothers	All major recipients	No family change	Rest of major recipients
All major income recipients	628,531	245,404	383,127	534,988	219,289	315,699	651,926	178,760	473,167
Incidence of ever low income in 1993-98									
Low income major income recipients	358,318	143,976	214,341	321,038	137,163	183,874	162,404	27,947	134,457
Incidence of low income	57%	59%	56%	60%	63%	58%	25%	16%	28%
Low income gap before transfers	83%	87%	79%	84%	89%	79%	70%	61%	72%
Low income gap after transfers	28%	24%	31%	26%	24%	29%	29%	24%	30%
Incidence of always low income in 1993-98									
Low income major income recipients	82,975	50,129	***	65,980	44,719	***	***	***	***
Incidence of low income	13%	20%	***	12%	20%	***	***	***	***
Low income gap before transfers	88%	89%	***	91%	92%	***	***	***	***
Low income gap after transfers	32%	29%	***	32%	30%	***	***	***	***
Incidence of cumulative income<LICO									
Low income major income recipients	208,163	114,512	93,651	182,545	107,977	74,568	78,696	***	66,600
Incidence of low income	33%	47%	24%	34%	49%	24%	12%	***	14%
Low income gap before transfers	86%	89%	82%	88%	90%	83%	77%	***	80%
Low income gap after transfers	29%	25%	35%	28%	25%	32%	31%	***	32%

1. Sample of female major income recipients, age 16-55, and at least one child under 18 in 1993.

****Less than 30 observations.*

Table B.2
Longitudinal profile of low income, 1993-98

	Lone Parents				Lone Mothers				Female major recipient in couples with kids<18			
	Never low income	Low income 1-3 years	Low income 4-6 years	All[1]	Never low income	Low income 1-3 years	Low income 4-6 years	All[1]	Never low income	Low income 1-3 years	Low income 4-6 years	All[1]
Change in family status												
Yes change	168,786	116,079	98,263	383,127	131,825	108,506	75,368	315,699	338,710	74,183	60,274	473,167
No change	101,428	35,983	107,993	245,404	82,126	34,580	102,583	219,289	150,813	***	***	178,760
Age in 1993												
16-29	34,007	59,315	51,509	144,830	27,798	59,037	51,509	138,344	86,281	***	***	117,714
30-55	236,207	92,747	154,747	483,701	186,153	84,049	126,443	396,645	403,242	77,674	53,296	534,212
Age of youngest child in 1993												
0-5	69,556	76,852	101,372	247,779	53,771	75,448	95,962	225,181	248,941	47,223	34,412	330,576
6-11	94,723	43,155	38,517	176,395	74,969	39,738	34,541	149,247	132,952	25,947	***	187,485
12-17	105,934	32,056	66,367	204,357	85,211	27,900	47,449	160,560	107,630	***	***	133,865
Student during the year												
Yes	***	24,417	42,091	79,177	***	***	41,679	76,156	***	***	***	***
No	253,386	127,366	163,894	544,646	200,011	119,905	136,002	455,918	476,402	84,413	65,571	626,386
Level of education of non-students												
Less than high school	27,993	32,516	74,374	134,883	***	28,762	64,209	109,026	52,088	***	***	97,295
High school diploma	35,495	***	***	102,898	26,860	***	***	84,839	90,252	***	***	115,564
Some post-secondary	32,805	***	***	75,541	28,458	***	***	65,361	45,988	***	***	68,932
Post-secondary degree	157,093	42,792	***	231,325	128,638	40,211	***	196,692	288,075	44,637	***	344,596
Members of a high-risk group												
Yes	***	32,575	61,614	122,616	***	27,587	59,214	108,633	27,927	***	***	64,560
No	241,787	119,487	144,641	505,915	192,118	115,499	118,738	426,355	461,596	82,137	43,634	587,366
All	***270,213***	***152,062***	***206,255***	***628,531***	***213,951***	***143,086***	***177,952***	***534,988***	***489,523***	***88,984***	***73,419***	***651,926***

1. All refers to the previous three groups

2. Full-time or part-time student

**** Less than 30 observations.*

Table B.3
Longitudinal persistence of low income, 1993-98, lone parent major incomes recipients[1]

	Lone parents			Lone mothers		
	All lone parents	No marital change/ always had kid<18/ always major recipient	Rest of lone parents	All lone mothers	No marital change/ always had kid<18/ always major recipient	Rest of lone mothers
Years spent in low income in 1993-98						
- 1 years	63,391	***	53,819	59,456	***	50,162
- 2 years	54,613	***	44,962	49,572	***	41,047
- 3 years	34,058	***	***	34,058	***	***
- 4 years	62,214	***	33,076	53,306	***	***
- 5 years	61,066	***	***	58,666	***	***
- 6 years	82,975	50,129	***	65,980	44,719	***
All with 1+ years in low income	358,318	143,976	214,341	321,038	137,163	183,874
Average years in low income in 1993-98						
Among those with 1+ years in low income	3.7	4.4	3.2	3.6	4.4	3.0
Hazard exit rates						
- after 1 years	39%	***	47%	41%	***	51%
- after 2 years	***	***	***	***	***	***
- after 3 years	***	***	***	***	***	***
- after 4 years	***	***	***	***	***	***
- after 5+ years	***	***	***	***	***	***
Average completed low income spell in 1998						
Among those with a low income spell	2.6	3.6	1.7	2.6	3.6	1.7

1. Sample of major income recipients, age 16-55, with at least one child under 18 in 1993.

**** Less than 30 observations.*

Table B.4
Entries into and exits out of low income, 1993-98 -- Lone parent major income recipients[1]

	Lone parents			Lone mothers		
	All lone parents	**No marital change/ always had kid<18/ always major recipient**	**Rest of lone parents**	**All lone mothers**	**No marital change/ always had kid<18/ always major recipient**	**Rest of lone mothers**
1. Low income entry and exit rates, 1993-98						
- entered into low income	***	***	***	***	***	***
- exited from low income	49,595	***	***	48,181	***	***
- continued in low income	162,729	80,164	82,566	137,804	74,754	63,050
- continued out of low income	397,073	135,825	261,248	335,818	115,120	220,698
- all lone parents	628,531	245,404	383,127	534,988	219,289	315,699
2. At least one low income entry in 1993-98						
All transitions						
Could have entered into low income	530,850	183,345	347,505	454,303	162,640	291,663
Entered into low income	179,525	54,221	125,304	161,602	54,221	107,380
Entry rate	34%	30%	36%	36%	33%	37%
Significant transitions						
Could have entered into low income	497,052	159,168	337,883	420,504	138,463	282,041
Entered into low income	117,229	30,701	86,528	102,271	30,701	71,570
Entry rate	24%	19%	26%	24%	22%	25%
3. At least one low income exit in 1993-98						
All transitions						
Could have exited low income	351,736	140,081	211,655	315,697	133,268	182,429
Exited low income	232,961	76,072	156,889	219,446	74,668	144,777
Exit rate	66%	54%	74%	70%	56%	79%
Significant transitions						
Could have exited low income	326,523	137,344	189,179	294,310	130,531	163,779
Exited low income	172,460	50,025	122,435	165,738	48,621	117,116
Exit rate	53%	36%	65%	56%	37%	72%

1. Sample of major income recipients, age 16-55, with at least one child under 18 in 1993.

**** Less than 30 observations.*

Appendix C: Logit Regression of Longitudinal Incidence of Low Income

Table C.1
Determinants of incidence of cumulative low income, 1993-98, among all lone mothers with children under 18 yrs of age in 1993

Variable	Explanation	B-coef	Std error	t-stat.	Odds ratio
Dependent					
CLICOFA	Cumulative income < cumulative LICO				
Age when first child was born					
CAGE(1)	- 16-19	0.126	0.287	0.439	1.134
CAGE(2)	- 20-55 (omitted)				
Marital status when first child was born					
CSPOUSE(1)	- not in a union	0.766	0.240	3.192	2.152
CSPOUSE(2)	- in a union (omitted)				
Age in 1993					
GAGE93(1)	- 16-29	-0.860	0.309	-2.783	0.423
GAGE93(2)	- 30-55 (omitted)				
Age of youngest child in 1993					
YKID(1)	- 0-5	1.471	0.311	4.730	4.353
YKID(2)	- 6-11 (omitted)				
YKID(3)	- 12-17	0.785	0.363	2.163	2.192
Level of education					
STEDUC(1)	- student	0.470	0.372	1.263	1.600
STEDUC(2)	- non-student: less than high school	0.888	0.366	2.426	2.431
STEDUC(3)	- non-student: high school diploma (omitted)				
STEDUC(4)	- non-student: some post-second.	-0.390	0.403	-0.968	0.677
STEDUC(5)	- non-student: post-sec. Degree	-1.534	0.359	-4.273	0.216
Immigrant, aboriginal, or disabled					
HIGHRISK(1)	- yes	1.305	0.275	4.745	3.689
HIGHRISK(2)	- no (omitted)				
Lone mother/major earner/child under 18 in all years					
FAMILYF(1)	- there was a change	-1.667	0.265	-6.291	0.189
FAMILYF(2)	- there was no change (omitted)				
Moved to another region after 1993					
FEIR(1)	- yes	-0.150	0.328	-0.457	0.861
FEIR(2)	- no (omitted)				
Regional employment rate					
REGER(1)	- at/below average	0.636	0.238	2.672	1.888
REGER(2)	- above average				
Constant		-1.143	0.371	-3.081	0.319
Nagelkerke R-squared (similar concept to OLS adjusted R-squared)			42.3%		
Number of cases			558		

Appendix D: Alternative Logit Regression of Incidence of SA

Table D.1
Logit regression estimate of determinants of incidence of SA among all lone mothers, 1998

Variable	Explanation	b-coef	Std err	t-stat.	Odds ratio	Linearized coefficient
Dependent						
SAR98	Received SA in 1998					
Age						
GAGE(1)	- 16-29	0.405	0.201	2.012	1.500	9.5%
GAGE(2)	- 30-55			(omitted)		
Age when first child was born						
CAGE(1)	- 16-19	0.796	0.191	4.159	2.218	19.3%
CAGE(2)	- 20-55			(omitted)		
Marital status when first child was born						
CSPOUSE(1)	- did not have a spouse	0.953	0.148	6.458	2.593	21.0%
CSPOUSE(2)	- had a spouse			(omitted)		
Age of youngest child						
YKID(1)	- 0-5	0.146	0.171	0.854	1.157	3.6%
YKID(2)	- 6-11			(omitted)		
YKID(3)	- 12-17	0.501	0.175	2.855	0.606	-11.3%
Level of education						
STEDUC(1)	- student	1.175	0.282	4.167	3.237	28.5%
STEDUC(2)	- non-student: less than high school	0.739	0.242	3.054	2.093	17.8%
STEDUC(3)	- non-student: high school diploma			(omitted)		
STEDUC(4)	- non-student: some post-second.	0.541	0.248	2.181	1.717	12.8%
STEDUC(5)	- non-student: post-sec. degree	-0.212	0.212	-1.000	0.809	-4.5%
Recent immigrant, aboriginal, or disability?						
HIGHRISK(1)	- yes	1.179	0.163	7.251	3.252	28.6%
HIGHRISK(2)	- no (omitted)			(omitted)		
Broad region						
REGION(1)	- Atlantic	0.643	0.248	2.593	1.902	15.9%
REGION(2)	- Quebec	-0.578	0.177	-3.266	0.561	-13.5%
REGION(3)	- Ontario			(omitted)		
REGION(4)	- Prairie	-0.951	0.225	-4.227	0.386	-21.0%
REGION(5)	- B.C.	-0.187	0.234	-0.799	0.830	-4.6%
Constant		-1.391	0.237	-5.869	0.249	
Nagelkerke R^2 (similar concept to OLS adjusted R^2)				0.355		
Number of cases				1,234		

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