

**DID THE 1994/96 EMPLOYMENT  
INSURANCE REFORMS IMPROVE  
LABOUR MARKET OUTCOMES  
FOR YOUNG PEOPLE?**

by

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## Abstract

One of the goals of the Employment Insurance (EI) changes during 1994/96 was to reduce the number of habitual, seasonal EI users, and to re-channel such users into higher skilled, lower-unemployment occupations. The changes were expected to re-direct a large proportion of young people into more productive human capital acquisition and occupational-choice activity.

This paper investigates, using a simple one-equation model, the factors associated with a polychotomous (multinomial) variable describing labour-market states for young people. The model uses year / province interaction variables to explain pre- and post-reform EI policy changes, along with labour-market and socioeconomic control variables.

This paper finds that labour market/human capital participation for young people improved steadily, from the 1980s through the late 1990s, for young people living as dependants within a family. But for young people living away from their parents, there was little long-run economic improvement. For this group, there is some evidence that the 1994/96 EI reforms did play a small role in improving labour market / education outcomes.

## **I. Introduction**

From 1994 to 1996 Canada's new Liberal government undertook concrete steps to reform the then-named Unemployment Insurance (UI) program. From reducing the duration of benefits and increasing entrance requirements in the 1994 federal budget to the more substantive changes of the 1996 Employment Insurance (EI) Act, the resulting policy measures reduced the number of EI beneficiaries and unemployment benefits per recipient. Recently the government legislated changes softening the 1996 EI reforms.

There is a disagreement as to whether or not the 1994/96 reforms were all that important as to changes in labour market behaviour. Thomas Courchene, for example, states that "...many of the disincentives (of investing in human capital) within the (EI) system remained in place, albeit scaled down" [Courchene (2001), p. 199]. Other research, particularly that undertaken by Human Resources Development Canada,<sup>1</sup> suggests that the reforms brought noticeable adjustments to labour market participation.

As well, it can be argued that - for those significant labour market adjustments that do occur - the changes would be most noticeable among young people. A high proportion of young people concern themselves with human capital acquisition, an activity crucially important in choosing a desired career. For those young people already in employment and not directly acquiring human capital, occupation switching might be easier than is the case for older people. Young people are less likely to be attached to have family or mobility constraints, again making it easier for this age group to adjust to significant labour market policy changes (such as the 1996 EI reforms).

This paper examines the effect of EI policy changes on the labour market market of young people. We use the Statistics Canada Survey of Consumer Finances micro data set, available from 1984 to 1997, to model participation in overall labour market states (employment,

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<sup>1</sup> See for example Human Resources Development Canada (2001), *Employment Insurance: 2000 Monitoring and Assessment Report*, p. 49, and the discussion in the next section.

unemployment, not in the labour force), human capital acquisition (as to whether or not the individual is in school, part-time or full time, or not in school), and occupational choice (identifying whether the individuals are in a “good”, “bad” or “moderate” occupation). To capture such a wide ranging set of labour market choices, we use a polychotomous (multi-nominal) variable (see below). We then use, in addition to labour-market and socioeconomic control variables, a large set of year and province interaction dummy variables to account for EI policy (and regional) effects.

Section II of this paper very briefly sketches the policy discussion, explaining the changes to Employment Insurance policy and possible influences on young people. Section III outlines our empirical model, listing and describing the data and explaining the model specification. Section IV presents the results. Section V concludes.

## **II. Changes to Employment Insurance Legislation and Possible Effects on Young People’s Behaviour**

Space precludes a lengthy discussion of unemployment insurance policy changes<sup>2</sup>. We divide our discussion into two parts: (A) the 1971 liberalization of the then named UI and other reforms up until the 1994/96 changes, and (B) the period of 1994/96 reforms. Within each part we mention selected literature examining the effects of policy changes on young people.

### ***A. The 1971 UI Reforms and the Period to 1994-96***

The 1971 UI reforms greatly enhanced eligibility and payouts. By reducing the eligibility requirements, raising benefits (including that of sickness and maternity), and introducing regionally-differentiated benefits, the number of individuals on UI substantially increased. Although there has been a debate as to the extent of the effect of UI generosity on Canada’s unemployment rate, a large body of work suggests that such liberalization must have

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<sup>2</sup> For more complete discussions on UI policy formation in Canada, see Rosen et. al. (1999), *The Report*, vol. 3 (1985), *Report. Commission of Inquiry on Unemployment Insurance* (1986), and Audas and Murrell (2000).

increased the rate of joblessness by some amount [see *The Report*, Vol. 2, p. 595; Green (1994, p. 9), Corak (1994, p. 119)]. We note that in the late 1970s modest restrictions were placed on the otherwise generous system<sup>3</sup>. But the federal government under the Progressive Conservatives largely ignored other calls for UI reform, particularly from the MacDonald and Forget Commissions.

Human Resources Development Canada under the new Liberal government commissioned a new set of labour market studies<sup>4</sup>. These studies were specific in nature, using large micro-data sets and analyzing individual UI rules as to effects on labour market behaviour. Some of the research found that the UI regime before 1994/96 lengthened unemployment spells [Lemieux and MacLeod (1995), shortened employment durations [Christofidies and McKenna (1995) and Green and Sargent (1995)], increased labour force participation rates [Green and Riddell (1995)], and increased non-employment spells [Jones (1995)]. Human Resources Development Canada itself stated that “young people who file unemployment insurance claims are particularly likely to become reliant on the system in future years.”<sup>5</sup>

In terms of official federal government pronouncements, there was little discussion concerning the effect of unemployment insurance on young people’s human capital investment. In the important *Jobs and Growth* white paper [HRDC(1994a)], the government carefully separates the discussion of unemployment insurance and education acquisition into two distinct chapters<sup>6</sup>. But especially for young people, interactions between states in the labour force and not-in-the-labour- force – and what young people are doing outside of the labour force – is crucially important. Other commentators mention this link. May (1993) noticed the

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<sup>3</sup> For example, the benefit rate was reduced from 66 2/3 percent to 60 percent in 1977.

<sup>4</sup> These numerous studies comprise the Unemployment Insurance Evaluation Series, and were all published between March and May of 1995.

<sup>5</sup> Human Resources Development Canada (1994b, p. 22).

<sup>6</sup> See Chapter 2B, “From Unemployment to Employment Insurance” and Chapter 3: Learning-- Making Lifelong Learning a Way of Life” [HRDC(1994a, pp. 42-49 and 56-67)].

underachievement of rural young people, where, given generous UI, young people “...quit school, get a job on a local market project, and then qualify for UI”<sup>7</sup>. Both the Forget Commission (1986) and the House Commission (1986) explain how UI lacks incentives to allow recipients to invest in higher education.

### ***B. The Reforms of 1994-96***

More complete descriptions of the 1994/96 reforms to UI exist elsewhere<sup>8</sup>, so we briefly summarize the more important changes. In its 1994 budget, the federal government reduced benefit duration and increased eligibility requirements. In 1996, after two years of strenuous policy debate<sup>9</sup>, the government passed the Employment Insurance Act, which reduced or clawed back benefits, toughened entrance requirements, and broadened family supplements and “active” programs (targeted wage subsidies and supplements, job-creation, etc).

Some evidence suggests that, at least up to 1998<sup>10</sup>, suggests that young people were disproportionately affected by the 1996 EI reforms. HRDC reports that there was a greater-than-average fall in EI claims among people aged 25 years and younger, in contrast to the population as a whole, from the 1995/96 to 1997/98 fiscal years [HRDC (1998), pp. 64-65]. The general consensus is that those less-than-fully attached to the work force have a more difficult time accumulating the minimum number of hours worked to qualify for EI benefits after January 1997, than was the case during UI regime. Before January, 1997, the number of weeks worked, with at least 15 hours worked in any week, was the yardstick used to gauge UI eligibility.

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<sup>7</sup> Quoted in May and Hollett (1995, p. 45).

<sup>8</sup> See Lin (1998), HRDC (1999), Audas and Murrell (2000).

<sup>9</sup> See Audas and Murrell (2000), pp13-18.

<sup>10</sup> From 1997/98 to 1998/99, new EI claims by persons aged less than 25 years grew by a large 3.2 percent, breaking the trend mentioned in the text above. Officials explain this break in pattern as due to the unusually robust economy during this period, which allowed young people to work the minimum number of hours of work to qualify for EI. See HRDC (1999, p. 68).

Research has suggested that, given the change from weeks worked to hours worked, new entrant and re-entrants (a large proportionate of these young people) were affected [Kapsolis (2000)]. Dismissals and voluntary quits for young people declined, allowing for higher employment rates [Jones (2000)] - a positive adjustment on the supply side of young people. On the demand side, given the rules change in January 1997, more jobs with 30 plus hours of week were being offered [Sweetman (2000)].

While a consensus has emerged as that the new EI regime has disproportionately affected young people as to labour market behaviour, little research has been undertaken examining the effect of EI changes on human capital acquisition. We have mentioned above the earlier comments made by the Forget and House commissions. We feel that a much broader yardstick of labour market success – a measure that includes human capital investment – out to be used when discussing young individuals.

### **III. Empirical Investigation**

We divide the discussion in two parts: (1) a description of the data and (2) a description of the basic model.

#### ***A. Description of the Data***

##### ***1. Main Data Source***

We use as the main data source Statistics Canada's Survey of Consumer Finances (1984 to 1997). These surveys provide information on individuals' income, labour market activity and educational attainment and participation. Our interest focuses on the changing patterns of labour market and education participation of young people. Therefore, we have restricted our analysis to only those individuals aged 15-24 (inclusive) at the time they were surveyed. There are 194,094 observations in our data set. Descriptive statistics can be found in Appendix D.



## *2. The Dependant Variable: Labour Market/Human Capital Outcomes*

At the core of our paper is the belief that young people's daily activity requires a more complex summary variable that can be described by pure labour market activity variables alone. A young person must decide on education acquisition prior to career choice. A young individual must decide whether or not to drop out of high school, and, later, whether or not to enrol in community college or university. That is the young person chooses an occupation contingent on prior human capital investment. These choices thus affect unemployment / employment outcomes: a person choosing a "high unemployment" occupation, and particularly an occupation not needing high educational attainment, will on average suffer from longer and more frequent unemployment spells, or longer periods not in the labour force. For a young woman deciding to give birth, such a decision may result in a significant period of labour market inactivity.

To summarize such a complexity of labour market / human capital interactions, we categorize young people's current states as falling into one of four descriptive categories: good, moderately good, moderately bad, and bad. To arrive at a complete taxonomy, we have made a number of assumptions as follows:

1. Individuals are categorized as having a "good" outcome (indexed as '1') if:
  - they do not have a high school diploma and are currently in secondary school;
  - they are studying full-time at university;
  - they have graduated from high-school and are employed full-time in a good job.<sup>11</sup>
2. Individuals are considered to have a "moderately good" outcome (indexed as a '2') if:
  - they are studying in a community college;
  - they have graduated from high school and are employed full-time in an "moderate" occupation working for more that 30 hours per week;
  - if they have graduated from high school and are employed part-time and are studying part-time.

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<sup>11</sup> We categorize occupations into three categories: "good", "moderate" and "bad".

3. Individuals are categorized as being in a “moderately bad” outcome if:

- they are unemployed or are not in the labour force (NILF) and are in part-time education;
- they are employed full-time in a “bad” occupation;
- they are in full-time secondary education and already have a high-school diploma;
- they are working fewer than 30 hours per week and are not participating in education.

4. They are categorized as in a bad outcome if:

- They are unemployed or NILF and not participating in education.
- If they have not graduated from high school and are not participating in education.

We undertook the following approach to measure quality of occupations. We took a 47-occupation breakdown (1980 S.O.C.), using Canada-wide 1998 data, and calculated Z-scores for (1) actual hours per week at main job, (2) usual hourly wages, and (3) unemployment rates, for each of the occupations. Averaging the three Z-scores for each occupation, we denoted a “good” occupation as having a total Z-score over 1.0, a “moderate” occupation as being between -1.0 and +1.0, and a “bad” occupation as being below -1.0. Note that, of the 47 listed occupations, we found that for young people there were eight “good” occupations and twelve “bad” occupations, with the remainder “moderate”. We list the “bad”, “moderate” and “good” occupations in Appendix E.

### *3. The Labour-Market Control Variables.*

The provincial unemployment rates, come from the Labour force Survey, and are transformed into annual data. The usual number of hours worked and average weekly wages, by province, come from the Survey of Employers (Stat. Can. No. 72-002), and also are averaged into annual numbers. Figure 1 plots the national distribution of these variable components over time.

#### *4. Provincial Differences in Outcomes*

We also wish to explain the extent to which how labour market/human capital decisions vary across provinces. Do young people in certain provinces consistently do better than young people in other provinces? Are there a regional convergences or divergences in good and bad outcomes? We graph the trends in Figure 2 and Figure 3. Figure 2 plots the good outcomes (defined as above) over time for each province. Figure 3 plots the bad outcomes over time for each province.

Figure 2 shows two clear patterns. First, there is a general long-run increase in the proportion of young people in good outcomes, with every province having a higher proportion of young people in good outcomes in 1997 vis a vis 1984. Second, from 1990 on, there appears to be a divergence across provinces. Certain provinces do quite well (in particular NS, NFLD, NB, ONT and PEI) and other provinces doing quite poorly (in particular QUE). In 1984 the percentage point difference between the province with the highest proportion of good outcomes and that with the lowest proportion of good outcomes was less than 8 percent. By 1997 this percentage point differential had grown to more than 18 percentage points.

Figure 3 shows trends for “bad” outcomes. There is a downward trend in bad outcomes with each province having a lower proportion of young people in bad outcomes in 1997 vis a vis 1984. The provinces with the highest proportion of young people in bad outcomes are NFLD<sup>12</sup> and PEI; the province with the lowest proportion of young individuals in bad outcomes is ONT. In addition, there appears to be a convergence across provinces in bad outcomes. The percentage point differential between the highest and lowest province in 1984 was 20 percent. By 1997 that differential had narrowed to about 9 percentage points.

In the context of evaluating the reform of EI/UI, there does not appear to be a strong decline corresponding to the 1994/96 reforms. The pattern of the decline appears to be

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<sup>12</sup> Note that while NFLD had the highest proportion of young people in a bad outcome, they also had the most striking decline in this outcome over the study period.

more pronounced through the nineties, although there does appear to be a slight decrease in 1997. We will return to this point, when discussing the empirical results below.

### *5. Family Attachment Differences in Outcomes*

One of the key distinctions we observe in the data is between young people who remain attached to their families and those who have become independent from their families. The secular trend suggests that there is an increasing trend to remain affiliated with the family<sup>13</sup>. This is shown in Figure 4.

Note that there is a substantial difference in labour market outcomes for those who remain attached to the family vis a vis those who remain independent from the family. This is displayed in Table 1. Those who are not attached to the family are approximately three times less likely to be in a good outcome (as defined above) and more than twice as likely to be in a bad outcome. This stark difference in outcomes and the nature of the data collection (household rather than individual based) suggests that the best empirical strategy would be to run separate equations for the two groups.

### ***B. The Model***

Given a wide range of choices as to labour market and human capital investment, a generalized descriptive model is required to test the effect of EI rule changes for all possible labour-market states. As described above, the nature of the data, particularly the fundamental differences in outcomes between those young people still attached to their families and those no longer attached to their families, requires dividing the database along these lines. A key advantage of this tactic is that it allows for a consistent interpretation of household variables,

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<sup>13</sup> In the Survey of Consumer Finances, individuals are asked their relationship to the head of the household. Individuals can be: head of household, spouse of head, child of head (including step-children) or other. For our purposes, individuals are attached to their families if they are child of the head.

many of which are about the head of the household. As such, the derivation of variables is somewhat different between the two models, since not making such an adjustment would present an endogeneity problem.

To test the effect of EI/UI legislation on such a wide set of labour-market behaviour, we propose the following equation:

$$(1) \quad \text{LMSUCCESS} = F(\text{CONTROLVAR}; \text{DUMMY})$$

where LMSUCCESS is a four-level multinomial variable measuring labour-market/human capital “success” of young persons, as described above. Our modelling strategy is to utilise the ordered (though discrete) nature of our variable of interest - the labour market or education decision of the young person - by estimating an ordered logit equation. Recall we have assigned numerical values to our dependent variable, such that ‘1’ corresponds to a “good” outcome; ‘2’ corresponds to a “moderately good” outcome; ‘3’ corresponds to a “moderately bad” outcome and ‘4’ corresponds to a “bad” outcome. The value for the independent variable gets larger as the outcome quality deteriorates. Therefore we can interpret negative coefficients as meaning that the presence of (in the case of indicator variables) or more of (in the case of continuous measures) a particular variable is associated with a better labour market / education outcome. Conversely, a positive coefficient indicates the presence of, or more of, a particular variable is associated with worse labour market / education outcomes.

As for the explanatory variables, CONTROLVAR is a list of control variables, which can in themselves be divided into two groups: aggregate provincial labour market variables and socio-economic variables measuring each individual’s family status and other characteristics. We test the two provincial labour-market variables: annual unemployment rates for young-people aged 15 to 24 and the average industrial wage rate.

DUMMY are the interaction dummy variables for each of the available years (less one) and each of the ten Canadian provinces showing the interaction of the years and provinces

to the left-hand-side variable. These interaction dummy variables represent the heart of our investigation. As described above, the most noteworthy changes took place from 1994 to 1996 inclusive. A negative coefficient on the interaction dummy variables indicate positive labour market adjustment by young people, for either EI reform (for dummies after 1993), or for some other reason (for any dummy). We would expect some provincial variation. Provinces with a disproportionately high number of youth dependent on EI can be expected to adjust faster to EI policy change, given a province's unique relationship to EI policy, labour markets, and individual and family socio-economic characteristics.

We discuss the results for the two estimations, as to family attachment, separately.

#### **IV. Empirical Results**

##### ***A. Outcomes for those Attached to the Family***

Our results suggest a number of important socio-economic and demographic effects in predicting labour market / education outcomes for young people remaining attached to their family. Table 2 summarizes the results. The more important results are as follows:

- Females are significantly more likely to be in a good labour market / education state than males.
- Age has a negative and highly significant effect on labour market / education state with older individuals being increasingly likely to complete school and move into (low quality) employment or unemployed.
- Immigrants tend to have better outcomes than non-immigrants.
- Individuals who do not speak either official language as their first language tend to be more likely to be in a worse labour market / education state. Given that the model accounts for immigration status, this is likely capturing bad labour market / education outcomes for Native Canadians.
- An interaction between immigration status and official languages suggests that those immigrants who do not speak either official language as their first language are more likely to be in a good labour market state.
- The education variables are all negative and significant as compared to the base case

(having a high school diploma). Individuals with less than a high school diploma are more likely to still be in school and those with education beyond high school are more likely to continue to be in education or a good occupation. This set of results suggest that young people entering the labour market with no qualifications beyond high school tend to fare quite badly.

- Family home ownership is highly associated with positive outcomes as compared to those individuals living in rental accommodation. Individuals living in other forms of housing are not significantly different from renters. This finding is consistent with other studies on youth transition (see Dolton et al, 1999).
- Individuals in families below the low-income cut-off tend to be more likely to have worse outcomes.
- Individuals in households with more individuals experiencing unemployment tend to have worse outcomes.
- Family income source is also an important predictor of labour market / education outcome. Those individuals in households with no income, or with main source of income being self-employment or especially government transfers being more likely to have a bad outcome, compared to individuals from households with wages and salaries as the main income source. Conversely, those individuals coming from military families tend to do somewhat better than those coming from families with wages and salaries as main source of income.
- Receipt of EI/UI in the household has mitigating effect on the cumulative effect of income and labour market states in the household. Those households receiving EI/UI (which also tend to have more individuals unemployed, tend to have government transfers as their main source of income and tend to be low income) tend to have positive labour market / education experiences. This, perhaps, reflects the lack of a need for young people to enter the labour market to supplement family income. It also suggests a recent attachment to the labour market, so the full economic effect of employment disruption may not yet have manifested itself.
- The province and year specific unemployment rates are both positive and significant, suggesting that labour market effects are working in opposite directions. Higher provincial unemployment (and the concomitant fewer opportunities) is not associated with individuals adding to their human capital, as has been suggested by a number of authors. In effect, it appears to make young people more likely to be unemployed or in poor employment. Higher provincial wage rates are also associated with poorer labour market / education outcomes. This suggests that higher wages may pull young people into the job market - probably into moderate or poor occupations.
- Finally, we multiply provincial dummies by year dummies to create a large number of 'province-year' interaction terms. The general pattern is for each province to have a significant positive coefficient up to 1989 and a significant negative coefficient from

1991 onwards<sup>14</sup>. A notable exception is Quebec, which remains positive - and generally significant - throughout the entire sample period. This suggests that young people in Quebec are tending to fare relatively worse than their counterparts in all other parts of the country. Table 3 highlights the results of the province-year interactions.

### ***B. Outcomes for those Not Attached to the Family***

Now we turn our attention to those individuals not attached to the family. Due to the nature of the data collection, it is inappropriate to use the same set of regressors as this causes some significant endogeneity problems. The highlights of the results are:

- Females are more likely than males to be in poor labour market / education state. This is capturing many females who leave the home to have children and as such tend to have poor labour market and employment outcomes.
- Age is positive and highly significant suggesting older individuals who are unattached are considerably more likely to have a poor outcome. Again, this captures the transition from education to moderate or poor employment or unemployment as individuals get older.
- Immigrants and those with a first language other than French or English tend to have better labour market / education outcomes. The interaction between these variables is not significant.
- The education variables show a strong pattern of those without a high school diploma doing relatively worse than those that have achieved this qualification. In turn, those with qualifications beyond high school tend to do better, with a particularly pronounced finding for those with a university degree.
- Home ownership and other housing arrangements are both significantly associated with superior labour market / education outcomes as compared to those individuals living in rented accommodations.
- Those individuals with low-income status tend to be much more likely to have a poor labour market outcome.

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<sup>14</sup>For each set of province year interactions 1990 is excluded as the base case,



- In addition, the effects of another individual in the household (although not the individual under examination<sup>15</sup>) receiving EI/UI is associated with worse outcomes.
- The provincial labour market variables are both positive and significant, suggesting that higher unemployment does not encourage young people to continue to add to their human capital base. Rather it tends to make them more likely to be unemployed or in poor employment. Higher wage rates tend to pull young people out of education and into the labour market, although the types of occupations being taken up appear to be moderate or poor.
- Finally the estimation for those attached to the household, the vast majority of the province-year interactions were not statistically significant. However, if we lower our significance cut-off to 10% (a decision we make with some trepidation), we do tend to observe something of pattern emerge suggesting better outcomes for these individuals in 1996-97. Highlights of the 'province-year' interactions can be found below in Table 4. While it should be noted that this is not an overwhelming trend, only one of the 20 'province-year' interactions is positively signed (New Brunswick, 1997) and in this case the t-value is 0.073. Of the 19 remaining province-years 11 are at least significant at the 10% level and the remaining 8 are negative but the null cannot be rejected at the 10% level. In addition the significant negative coefficients for Ontario appear to be more a part of long-run improvement in educational and occupational outcomes for young people in this province.

### *C. Discussion*

A number of interesting differences emerge between the two estimations. First, there is a clear gender difference across specifications. Females who remain attached to their families tend to do better than males. By contrast, those who are not attached to their families tend to do considerably worse than males, which is probably attributable to females who leave home having children and thus constraining their labour market and education activity in the short run. By contrast, the fact that females who remain at home tend to do better than males could be capturing higher levels of participation in education and in particular attending university.

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<sup>15</sup>If the individual identifies him/herself as head of the household than this variable takes on the value '1' if someone other than the head of household receives EI/UI. If the individual does not refer to him/herself as the head of the household then this variable takes on the value '1' if the head of the household receives EI/UI.

Interestingly, even when correcting for a variety of other socio-economic factors, home ownership remains a strong predictor of good labour market outcomes and this is irrespective of whether the young person owns their own home or whether they are still attached to a family that owns their own home. This suggests that beyond positive economic consequences normally associated with home ownership, it also provides some stability that encourages individuals to make good labour market / education choices.

Receipt of EI/UI has the opposite effect in these specifications. For those individuals remaining attached to their families the head of the household receiving benefit appears to have a mitigating effect on the outcomes. Note that these families are also likely to experience higher numbers of unemployed individuals, are more likely to be below the low income cut-off and are more likely to draw their main source of income from government transfers - all of which are associated with poor labour market / education outcomes. Receipt of EI/UI appears to go some way to reduce these adverse circumstances. This is consistent with Audas (1994) who found that receipt of UI reduced the instances of individuals quitting secondary school before graduating. In contrast, for individuals who are not attached to their family the presence of another individual receiving benefit is associated with worse labour market outcomes. This suggests EI/UI may have some effect on depressing incentives to find work or continue in education.

There is a considerable difference in the effects of the province-year interactions between the two estimations. For those remaining in attached to their families there is a long-run secular trend towards improved outcomes for every province except Quebec. With one of the key aims of this paper being the examination of the effects of the 1994/96 UI/EI reform, we are unable to show that these reforms have had any substantive change in the labour market / education outcomes for those individuals who remain attached to their families. For individuals who are not attached to their families, the results are somewhat less clear. There appears to be no strong secular trend towards improving outcomes, although there does appear to be a consistently negative effect (suggesting better outcomes) in 1996 and 1997. We believe the

tightening of access to (the renamed) EI is part of this process as our estimations account for labour market conditions through the unemployment and wage rate variables.

## **V. Conclusion**

This study finds that the effects of EI reforms, on young individuals' labour market/human capital behaviour, are rather weak. The policy literature cited does state that EI reforms disproportionately affect the young as to eligibility and benefits: disproportionately fewer of the young receive EI. For those that do, they receive less after the policy change went into effect. But we find that, for the young living with their parents, there is no discernable EI policy effect as to labour market / education behaviour. For the young living away from their parents, there is cautionary evidence that EI revisions have helped their labour market-human capital status, however modestly.

As one policy review had stated (looking at all age groups), "...it becomes more difficult to isolate the independent impact of EI reforms on the economy" [HRDC (1999), p. 65]. This paper, though our empirical estimations, attempts to model exactly that. But we find that, perhaps, long-run trends swamp the immediate impacts of the EI policy shift. For one thing, we observe a long-run increase in university participation rates, particularly among women [see, for example, Riddell and Sweetman (2000)] We have found that women are more likely to be in "good states", if they remain for longer periods with their parents. Perhaps for all young people, regardless of gender, living at home serves to insulate them from exogenous economic shocks, including EI policy changes. Conversely, young people not living with their parents are not protected from such policy shocks, and do adjust, however modestly.

Finally, the most noticeable inter-provincial difference lies with Quebec. Young people in that province have not seen that great an improvement in labour market / education states – for young individuals living with parents or living away from home. We can only speculate as to why Quebec deviates from the general pattern. Perhaps it is due to that province's unique inter-provincial migration adjustment: given language considerations that province has

structurally lower migration rates. Or perhaps the pattern results from a more rapid decline in the two-parent nuclear family, which some say has led to lower relative human capital achievement, particularly with young men [see Campbell and Allaire (1994) for evidence of a growing gender gap in education].

We emphasize this paper's empirical results stem from a descriptive model. We look at EI policy effects from a wide lens, viewing many alternative labour market/education states, provincial differences, family status differences, and UI/EI policy changes, over a 14-year period. By taking such a wide view, we may be missing key effects. Much of the research that we cite, for example, narrows in on a specific UI or EI policy change only. As well the bulk of the literature focuses on selected labour market flow behaviour, such as flows in or out of employment. By creating an overall "quality" labour market/education variable, as a stock indicator, we may miss exact EI policy effects on individual components of this wide-ranging variable. That is to say, our aggregation may hide important effects. Finally, our data set ends in 1997. Clearly, having additional years may yield different results. It may be the case that labour market/human capital adjustment takes more than one or two years to take hold, after a policy changes is initiated. For this last reason, we think, our empirical results should be considered as tentative.

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*Appendix A: Tables*

Table 1: Labour Market Outcomes by Family Attachment

<b>Outcome</b>	<b>Not Attached to Family</b>	<b>Attached to Family</b>
Good	0.187332	0.554494
Moderately Good	0.284436	0.185238
Moderately Bad	0.149696	0.093677
Bad	0.378535	0.16659

Table 2: Summary Table of Empirical Results

<b>Variable class</b>	<b>Living With Nuclear Family</b>	<b>Outside-of-Nuclear Family</b>
sex and age	women are doing better; older age cohorts do worse	SAME*, but women are doing worse
other demographic variables	lower income, other language individuals do worse; immigrants do better	SAME, except that other languages do better
Education	all education categories do better than high school graduates	outcomes improve with higher educational attainment
sources of income by other family members	others in family receiving EI or other transfers induces reference individuals to do worse	not applicable
year/province interaction dummy variables	individuals in 1990s do better, after 1991 or 1992 for all provinces except for Quebec	individuals in 1990s do not better than those in 1980s, until 1996 or 1997, except for New Brunswick
labour-market variables	individuals do worse as provincial unemployment rates, real incomes rise	SAME
* Same as the description in the column immediately to the left, except where note.		



Table 3 Results of 'Province-Year' Interactions, those Attached to Families

Province	Last Significant Positive Coefficient	First Significant Negative Coefficient
Newfoundland	1989 (1988 not sign.)	1991
Prince Edward Island	1989	1992 (1995-97 not sign.)
Nova Scotia	1989	1991 (1995 not sign.)
New Brunswick	1988	1991
Quebec	1996	None
Ontario	1988	1991
Manitoba	1989	1993
Saskatchewan	1989	1993 (1995 & 1997 not sign.)
Alberta	1989	1992 (1994-95, 1997 not sign.)
British Columbia	1989 (1984-88 not sign.)	1993 (1997 not sign.)

Table 4 Results of 'Province-Year' Interactions, those Not Attached to Families

Province	1996-97	Other Significant Interactions
Newfoundland	1996(-)*, 1997(-)*	none
Prince Edward Island	1996(-), 1997(-)	1986(+)**, 1992(-)*
Nova Scotia	1996(-), 1997(-)**	1984(+)*, 1985-87(+)**, 1988(+)*, 1989(+)**, 1992(-)*
New Brunswick	1996(-), 1997(+)	none
Quebec	1996(-)*, 1997(-)**	1986-1989(+)**, 1993(-)*
Ontario	1996(-)**, 1997(-)**	1985(+)*, 1987-88(+)**, 1991-95(-)**
Manitoba	1996(-), 1997(-)	1986-87(+)**, 1994(-)**
Saskatchewan	1996(-)**, 1997(-)**	1984-85(+)**, 1986-87(+)*, 1991-92(-)**
Alberta	1996(-), 1997(-)*	1993(-)**
British Columbia	1996(-), 1997(-)**	1984(+)*, 1989(+)*

\*\* denotes statistical significance at the 5% level.

\* denotes statistical significance at the 10% level.

(+) denotes the a positive coefficient (tending towards worse labour market outcomes)

(-) denotes a negative coefficient (tending towards better labour market outcomes)

Figure 1: Labour Market/Education Outcomes

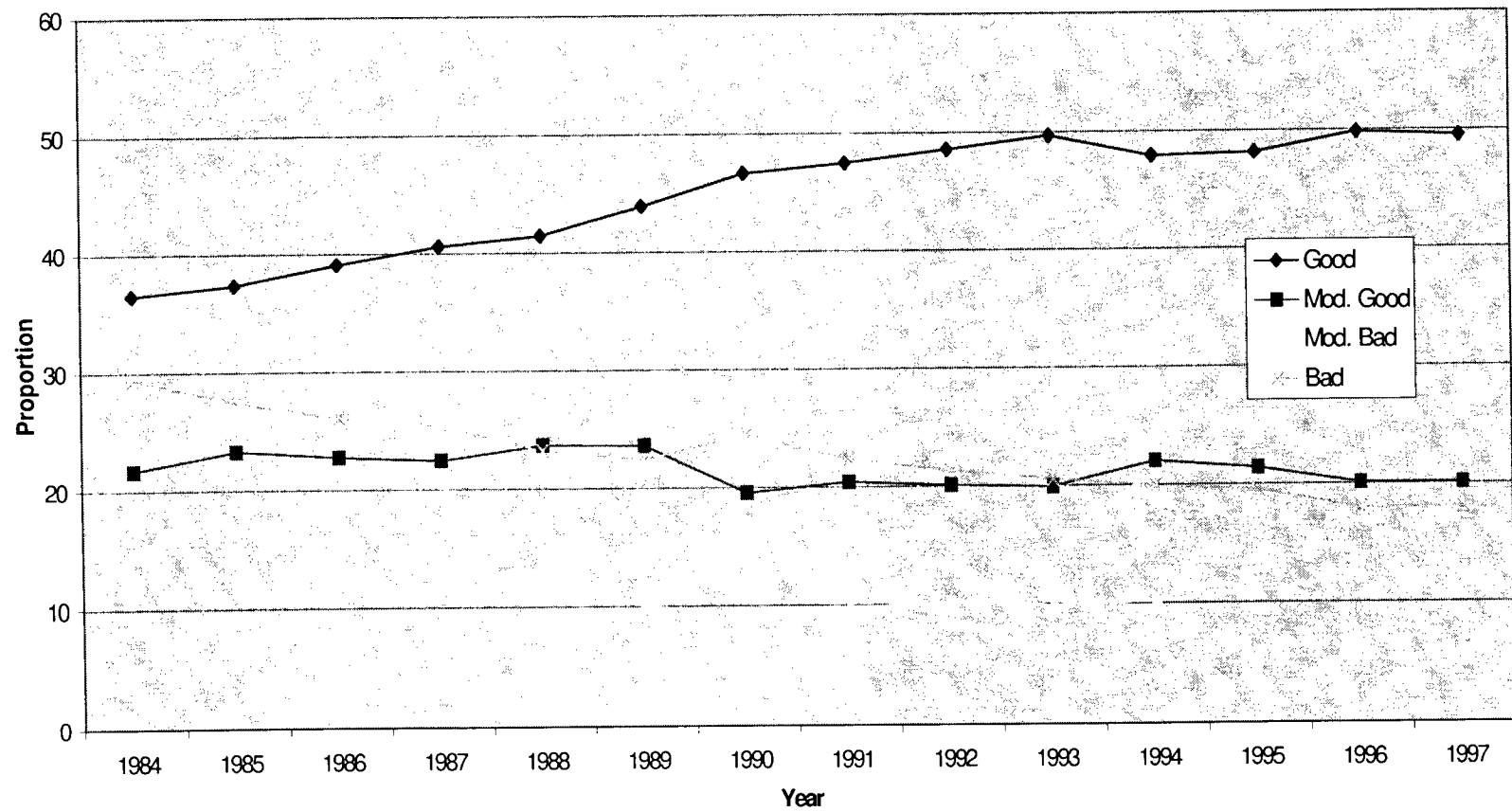


Figure 2: Good Outcomes, By Province

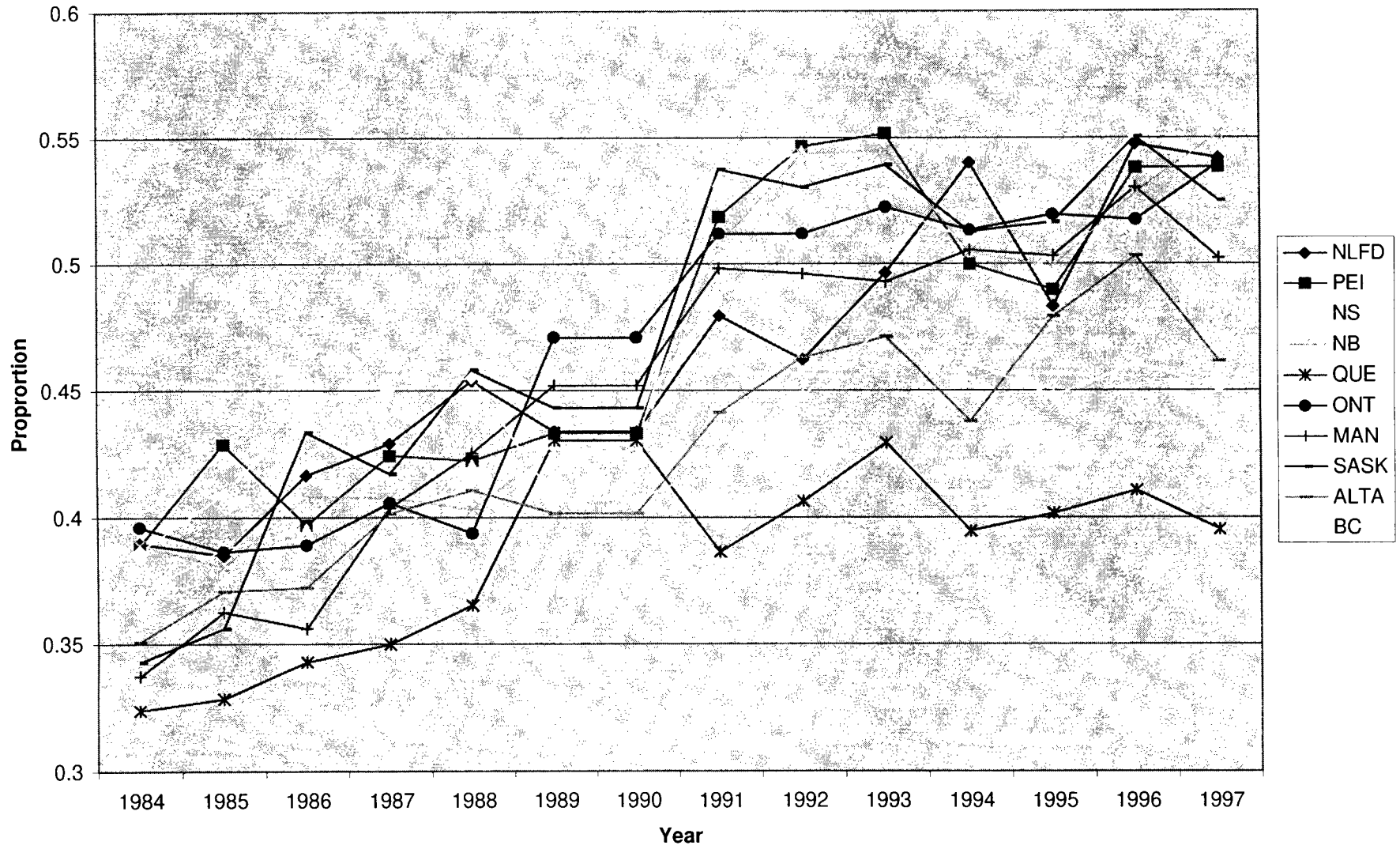
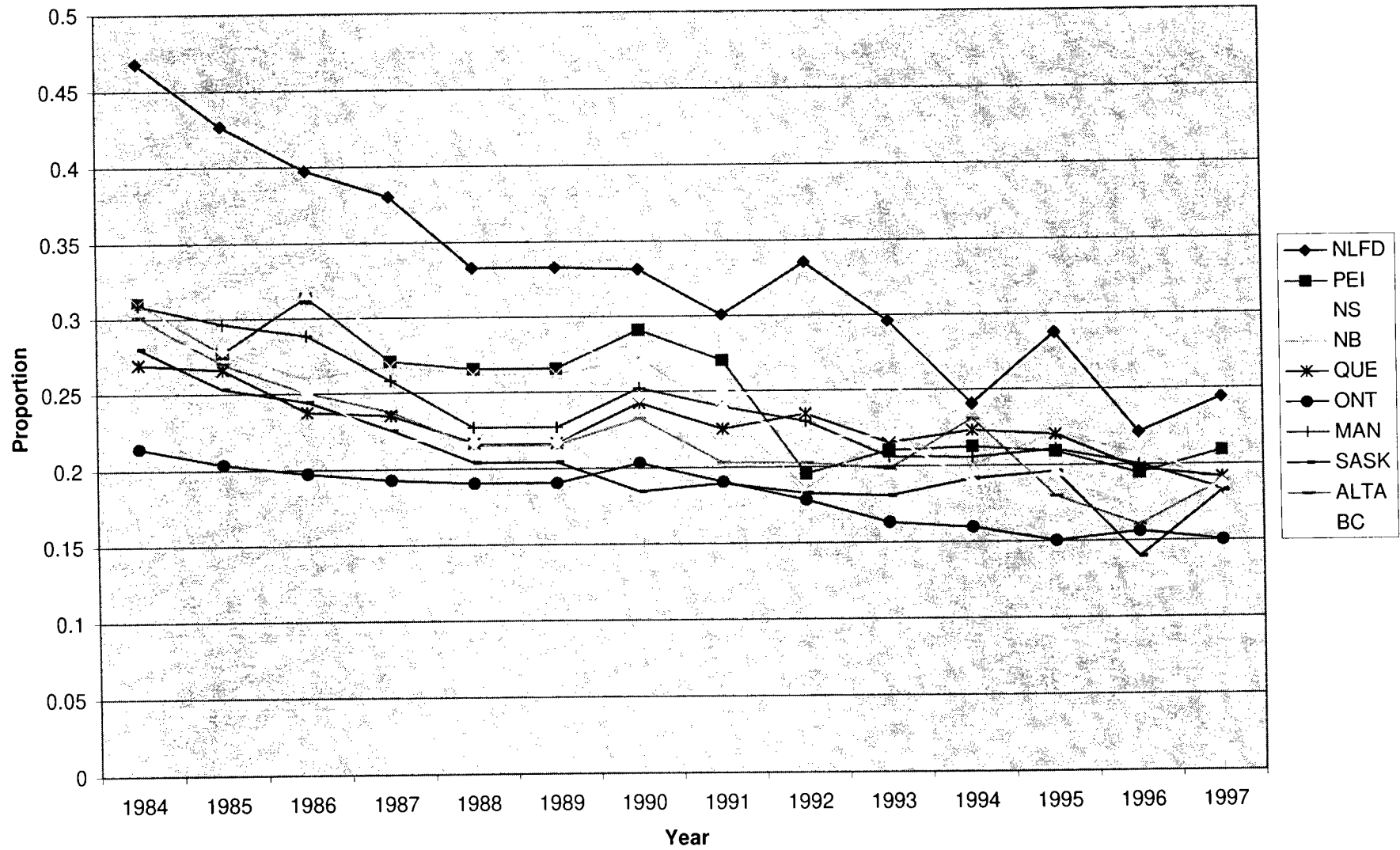


Figure 3: Bad Outcomes, By Province



**Figure 4: Proportion of Sample Attached to Parental Household**

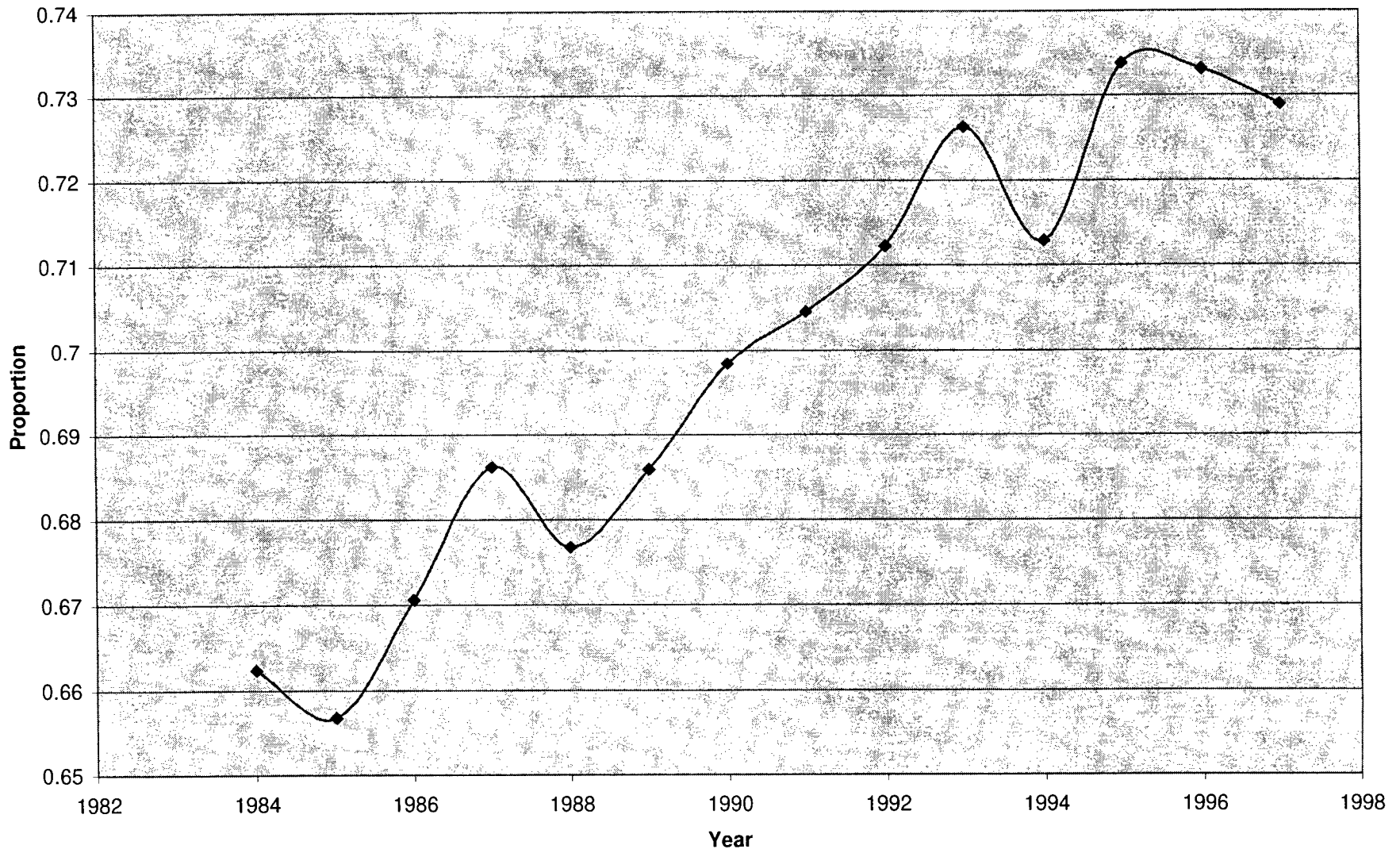
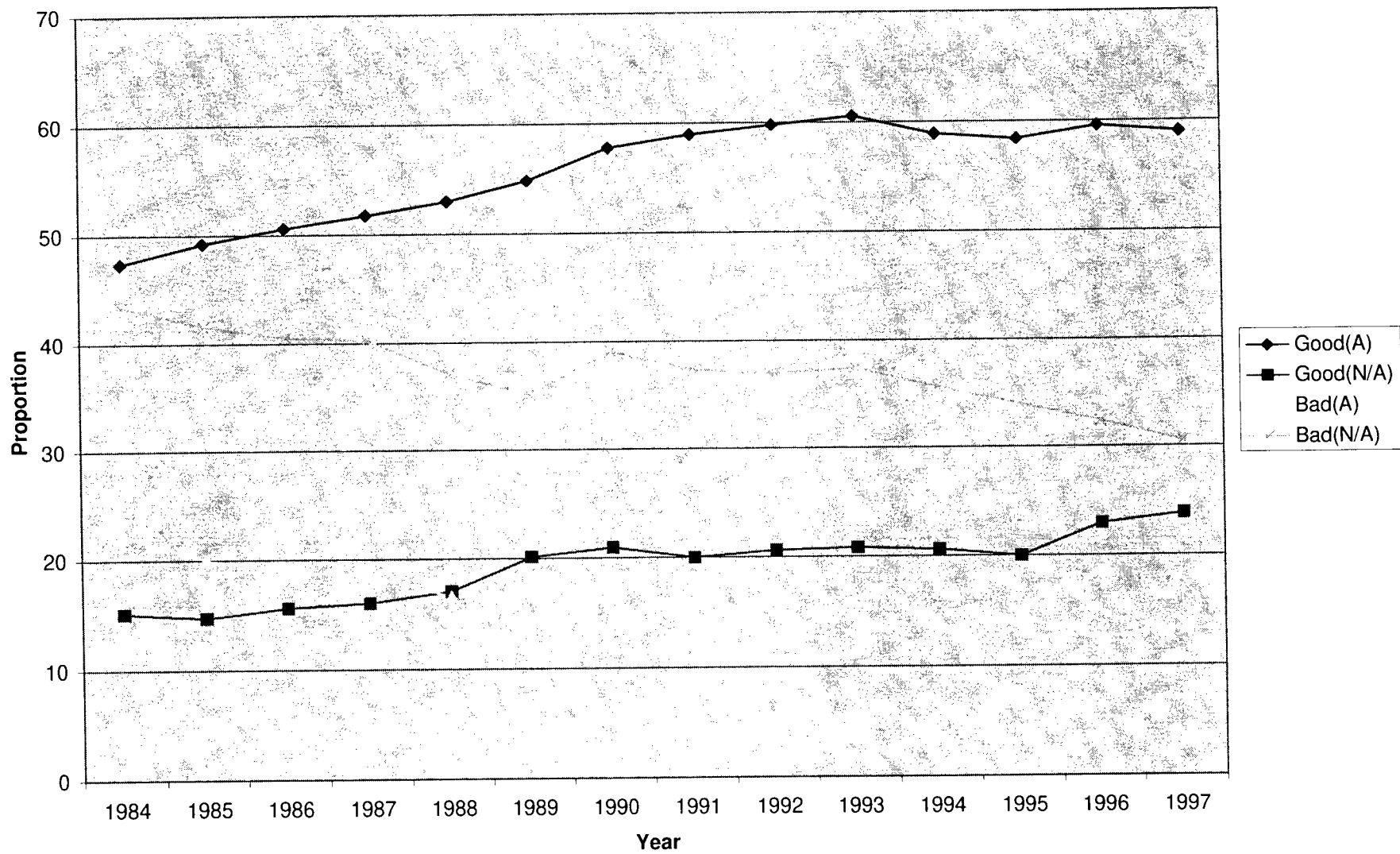


Figure 5: Good and Bad Outcomes for those Attached and Not Attached to their Families



**Appendix C: Ordered Logit Results**  
**Table C-1 Individuals attached to families**  
 Ordered logit estimates

Number of obs = 135188  
 LR chi2(158) = 57286.21  
 Prob > chi2 = 0.0000  
 Pseudo R2 = 0.1827

Log likelihood = -128134.57

lmout	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
sex	-.2385715	.0118546	-20.125	0.000	-.2618061 -.2153368
age	.4510418	.0032914	137.034	0.000	.4445907 .457493
lowinc	.1207727	.0235042	5.138	0.000	.0747052 .1668401
imigrant	-.1025228	.0379355	-2.703	0.007	-.176875 -.0281706
othlang	.1066745	.0264117	4.039	0.000	.0549084 .1584406
imiol	-.33511	.0561514	-5.968	0.000	-.4451648 -.2250552
educ1	-.2310358	.0269963	-8.558	0.000	-.2839475 -.1781241
educ2	-1.130066	.0203531	-55.523	0.000	-1.169957 -1.090174
educ3	-1.313203	.0212361	-61.838	0.000	-1.354825 -1.271581
educ5	-1.062285	.0171332	-62.002	0.000	-1.095866 -1.028705
educ6	-1.384594	.0224641	-61.636	0.000	-1.428623 -1.340565
educ7	-2.282184	.0406227	-56.180	0.000	-2.361803 -2.202565
ownhouse	-.3170961	.0176291	-17.987	0.000	-.3516486 -.2825436
othhouse	.0767285	.1154978	0.664	0.506	-.1496429 .3031
efunemp1	.3217405	.0157697	20.402	0.000	.2908324 .3526486
efunemp2	.6718841	.0259909	25.851	0.000	.6209429 .7228254
efunemp3	1.26891	.0447298	28.368	0.000	1.181241 1.356578
efunemp4	1.491977	.1044448	14.285	0.000	1.287269 1.696685
hhhdei	-.2169086	.0206629	-10.498	0.000	-.2574071 -.1764101
faminc1	1.258318	.359798	3.497	0.000	.5531268 1.963509
faminc3	.1037362	.0236484	4.387	0.000	.0573863 .1500862
faminc4	.4248894	.0229989	18.474	0.000	.3798124 .4699665
faminc5	-.0033378	.0575039	-0.058	0.954	-.1160434 .1093677
faminc6	.0265136	.0559532	0.474	0.636	-.0831527 .1361799
faminc7	-.0349764	.0752246	-0.465	0.642	-.1824139 .1124612
faminc8	-.2228825	.1063995	-2.095	0.036	-.4314216 -.0143434
nfl dyr84	.7011375	.1051361	6.669	0.000	.4950745 .9072006
nfl dyr85	.4790814	.1031082	4.646	0.000	.276993 .6811698
nfl dyr86	.4410399	.0992607	4.443	0.000	.2464925 .6355873
nfl dyr87	.3027372	.079247	3.820	0.000	.1474159 .4580585
nfl dyr88	.0660108	.0842146	0.784	0.433	-.0990468 .2310684
nfl dyr89	.2398188	.0822501	2.916	0.004	.0786116 .4010259
nfl dyr91	-.5053887	.1087348	-4.648	0.000	-.7185049 -.2922725
nfl dyr92	-.4733555	.1290914	-3.667	0.000	-.72637 -.220341
nfl dyr93	-.725269	.1402793	-5.170	0.000	-1.000211 -.4503266
nfl dyr94	-.795459	.1418836	-5.606	0.000	-1.073546 -.5173723
nfl dyr95	-.4493853	.145798	-3.082	0.002	-.7351441 -.1636266
nfl dyr96	-.7411244	.1518878	-4.879	0.000	-1.038819 -.4434298
nfl dyr97	-.5365433	.138669	-3.869	0.000	-.8083296 -.2647571
peiy r84	.4961004	.1587853	3.124	0.002	.1848869 .807314
peiy r85	.3439457	.153527	2.240	0.025	.0430383 .6448531
peiy r86	.5452723	.15219	3.583	0.000	.2469853 .8435593
peiy r87	.2962944	.1191387	2.487	0.013	.0627867 .529802
peiy r88	.4395935	.135561	3.243	0.001	.1738988 .7052882
peiy r89	.3899625	.1388688	2.808	0.005	.1177846 .6621404
peiy r91	-.1532154	.1334324	-1.148	0.251	-.414738 .1083072
peiy r92	-.7519957	.1509683	-4.981	0.000	-1.047888 -.4561034
peiy r93	-.3592878	.1393567	-2.578	0.010	-.632422 -.0861537
peiy r94	-.4539673	.1374881	-3.302	0.001	-.723439 -.1844956
peiy r95	-.2517101	.1452695	-1.733	0.083	-.5364331 .0330129
peiy r96	-.2839331	.146979	-1.932	0.053	-.5720067 .0041405
peiy r97	-.0728072	.1415746	-0.514	0.607	-.3502883 .2046739
nsyr84	.6026424	.1167353	5.162	0.000	.3738454 .8314394

nsyr85	.5412385	.1070611	5.055	0.000	.3314026	.7510744
nsyr86	.4012885	.1026584	3.909	0.000	.2000818	.6024952
nsyr87	.4363617	.095177	4.585	0.000	.2498182	.6229051
nsyr88	.3664264	.0959614	3.818	0.000	.1783456	.5545072
nsyr89	.2560464	.0930435	2.752	0.006	.0736846	.4384082
nsyr91	-.1835686	.0872743	-2.103	0.035	-.3546231	-.0125142
nsyr92	-.4464107	.0964119	-4.630	0.000	-.6353746	-.2574469
nsyr93	-.5358853	.0964083	-5.558	0.000	-.7248421	-.3469284
nsyr94	-.388483	.1008156	-3.853	0.000	-.5860779	-.1908882
nsyr95	-.1586289	.0991283	-1.600	0.110	-.3529169	.0356591
nsyr96	-.4088097	.1031172	-3.965	0.000	-.6109157	-.2067037
nsyr97	-.3847646	.1103697	-3.486	0.000	-.6010853	-.168444
nbyr84	.366134	.1073467	3.411	0.001	.1557383	.5765297
nbyr85	.1953143	.1009616	1.935	0.053	-.0025668	.3931955
nbyr86	.0136991	.1000835	0.137	0.891	-.182461	.2098591
nbyr87	.2004323	.0917236	2.185	0.029	.0206574	.3802071
nbyr88	.2178807	.0905278	2.407	0.016	.0404496	.3953119
nbyr89	.1564451	.0901827	1.735	0.083	-.0203097	.3331999
nbyr91	-.3473914	.0882742	-3.935	0.000	-.5204057	-.1743771
nbyr92	-.5929077	.1000496	-5.926	0.000	-.7890013	-.3968141
nbyr93	-.5376529	.0982471	-5.472	0.000	-.7302137	-.3450921
nbyr94	-.4431558	.0965167	-4.591	0.000	-.6323252	-.2539865
nbyr95	-.3133018	.1046991	-2.992	0.003	-.5185083	-.1080954
nbyr96	-.4658172	.1048732	-4.442	0.000	-.6713648	-.2602695
nbyr97	-.5679783	.1166238	-4.870	0.000	-.7965568	-.3393998
queyr84	.4567024	.0854242	5.346	0.000	.2892739	.6241308
queyr85	.5064284	.0825257	6.137	0.000	.344681	.6681757
queyr86	.4047873	.0825752	4.902	0.000	.2429428	.5666318
queyr87	.3865433	.0759292	5.091	0.000	.2377248	.5353619
queyr88	.2857491	.0708365	4.034	0.000	.1469122	.4245861
queyr89	.1557914	.0606481	2.569	0.010	.0369234	.2746595
queyr91	.1827444	.0647234	2.823	0.005	.0558889	.3095998
queyr92	.1593732	.0758576	2.101	0.036	.010695	.3080515
queyr93	.02945	.0830196	0.355	0.723	-.1332653	.1921654
queyr94	.1770245	.0793553	2.231	0.026	.021491	.332558
queyr95	.1895058	.0809443	2.341	0.019	.0308579	.3481536
queyr96	.2614279	.0898366	2.910	0.004	.0853514	.4375043
queyr97	.1849183	.1011303	1.829	0.067	-.0132935	.3831301
ontyr84	.3876392	.0966243	4.012	0.000	.198259	.5770194
ontyr85	.3226274	.0752143	4.289	0.000	.1752101	.4700447
ontyr86	.4359502	.0821568	5.306	0.000	.2749259	.5969746
ontyr87	.4108502	.0734015	5.597	0.000	.266986	.5547144
ontyr88	.2612597	.0691418	3.779	0.000	.1257442	.3967753
ontyr89	.0369256	.0550733	0.670	0.503	-.0710161	.1448674
ontyr91	-.4994383	.076079	-6.565	0.000	-.6485504	-.3503262
ontyr92	-.690643	.1004857	-6.873	0.000	-.8875914	-.4936946
ontyr93	-.7435875	.1099932	-6.760	0.000	-.9591703	-.5280047
ontyr94	-.6287169	.1134521	-5.542	0.000	-.8510789	-.4063549
ontyr95	-.5807785	.1162038	-4.998	0.000	-.8085338	-.3530231
ontyr96	-.6088546	.1289548	-4.721	0.000	-.8616013	-.3561079
ontyr97	-.7219815	.141251	-5.111	0.000	-.9988284	-.4451346
many84	.8843737	.1287015	6.872	0.000	.6321233	1.136624
many85	.7146019	.1161418	6.153	0.000	.4869682	.9422356
many86	.7302513	.1226161	5.956	0.000	.4899281	.9705745
many87	.4831863	.1129797	4.277	0.000	.2617501	.7046225
many88	.4453197	.1089694	4.087	0.000	.2317436	.6588958
many89	.3549558	.1004935	3.532	0.000	.1579922	.5519195
many91	-.1006431	.0918581	-1.096	0.273	-.2806816	.0793954
many92	-.1537692	.0977576	-1.573	0.116	-.3453705	.0378321
many93	-.2719769	.1005736	-2.704	0.007	-.4690976	-.0748562
many94	-.1651905	.0869637	-1.900	0.057	-.3356362	.0052552
many95	-.0773765	.0965584	-0.801	0.423	-.2666275	.1118746
many96	-.0993666	.0974638	-1.020	0.308	-.2903921	.0916588



many97	.0571901	.0962424	0.594	0.552	-.1314415	.2458217
saskyr84	.7550942	.1192464	6.332	0.000	.5213755	.9888129
saskyr85	.4424793	.1118004	3.958	0.000	.2233545	.6616042
saskyr86	.3660078	.1154201	3.171	0.002	.1397886	.592227
saskyr87	.4464468	.1128186	3.957	0.000	.2253264	.6675671
saskyr88	.2769469	.1142408	2.424	0.015	.053039	.5008549
saskyr89	.3569222	.110118	3.241	0.001	.1410949	.5727495
saskyr91	-.092651	.0991106	-0.935	0.350	-.2869041	.1016022
saskyr92	-.1976841	.1053393	-1.877	0.061	-.4041454	.0087772
saskyr93	-.351036	.1007222	-3.485	0.000	-.5484479	-.153624
saskyr94	-.2629378	.1094121	-2.403	0.016	-.4773815	-.0484942
saskyr95	-.0290939	.117209	-0.248	0.804	-.2588192	.2006314
saskyr96	-.4051033	.1164458	-3.479	0.001	-.6333329	-.1768738
saskyr97	-.1145486	.1047569	-1.093	0.274	-.3198683	.0907712
altayr84	.4486798	.0857199	5.234	0.000	.2806719	.6166877
altayr85	.3795231	.0822192	4.616	0.000	.2183764	.5406698
altayr86	.423764	.0835033	5.075	0.000	.2601006	.5874274
altayr87	.252004	.0792936	3.178	0.001	.0965913	.4074167
altayr88	.3375645	.0781082	4.322	0.000	.1844752	.4906539
altayr89	.3007537	.085655	3.511	0.000	.1328729	.4686344
altayr91	-.1006388	.0849446	-1.185	0.236	-.267127	.0658495
altayr92	-.2076201	.0951352	-2.182	0.029	-.3940816	-.0211586
altayr93	-.2035543	.0980558	-2.076	0.038	-.3957401	-.0113685
altayr94	.1777741	.0947642	1.876	0.061	-.0079603	.3635085
altayr95	-.0615149	.1052347	-0.585	0.559	-.267771	.1447413
altayr96	-.2993017	.1132051	-2.644	0.008	-.5211796	-.0774237
altayr97	-.0173325	.1220946	-0.142	0.887	-.2566335	.2219685
bcyr84	.1090404	.0822359	1.326	0.185	-.0521391	.2702199
bcyr85	.1014957	.0818658	1.240	0.215	-.0589583	.2619497
bcyr86	.0555336	.0894623	0.621	0.535	-.1198093	.2308764
bcyr87	-.0027531	.0796536	-0.035	0.972	-.1588712	.153365
bcyr88	.0534909	.0837402	0.639	0.523	-.1106368	.2176186
bcyr89	.1804955	.0837315	2.156	0.031	.0163849	.3446062
bcyr91	.0138109	.0894878	0.154	0.877	-.161582	.1892039
bcyr92	-.0881971	.0996222	-0.885	0.376	-.283453	.1070588
bcyr93	-.2636843	.1074209	-2.455	0.014	-.4742254	-.0531432
bcyr94	-.2266732	.1133082	-2.001	0.045	-.4487532	-.0045932
bcyr95	-.2586008	.1285962	-2.011	0.044	-.5106447	-.0065568
bcyr96	-.3723899	.1354773	-2.749	0.006	-.6379205	-.1068593
bcyr97	-.1519805	.1397836	-1.087	0.277	-.4259514	.1219904
unemp_rt	.0285102	.0053997	5.280	0.000	.0179269	.0390935
wage_rt	.0029881	.0009037	3.307	0.001	.0012169	.0047593
-----						
_cut1	9.445753	.48887	(Ancillary parameters)			
_cut2	10.66827	.4890492				
_cut3	11.37437	.489176				
-----						

Table C-2 Individuals Not Attached to Families

Ordered logit estimates

Number of obs = 58906  
 LR chi2(147) = 22395.53  
 Prob > chi2 = 0.0000  
 Pseudo R2 = 0.1436

Log likelihood = -66757.586

lmout	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
sex	.140412	.0166945	8.411	0.000	.1076914	.1731325
age	.2844277	.0047918	59.357	0.000	.2750359	.2938194
lowinc	.2403552	.0191463	12.554	0.000	.2028291	.2778813
imigrant	-.103176	.0461032	-2.238	0.025	-.1935365	-.0128154
othlang	-.0918289	.043411	-2.115	0.034	-.1769129	-.006745
imiol	-.0210614	.0755958	-0.279	0.781	-.1692265	.1271036
educ1	2.399507	.0536817	44.699	0.000	2.294293	2.504721
educ2	2.293302	.033523	68.410	0.000	2.227599	2.359006
educ3	2.042093	.0369503	55.266	0.000	1.969671	2.114514
educ5	-.8086106	.0231349	-34.952	0.000	-.8539542	-.7632671
educ6	-.891175	.0226342	-39.373	0.000	-.9355371	-.8468129
educ7	-1.9922	.0374962	-53.131	0.000	-2.065691	-1.918708
ownhouse	-.2182239	.0200329	-10.893	0.000	-.2574877	-.1789601
othhouse	-.2727287	.0236242	-11.544	0.000	-.3190313	-.226426
receiui	.2964414	.0250087	11.854	0.000	.2474253	.3454575
nfldyr84	.211613	.2244	0.943	0.346	-.228203	.651429
nfldyr85	-.0321526	.2025615	-0.159	0.874	-.4291659	.3648607
nfldyr86	.1248313	.2087009	0.598	0.550	-.2842151	.5338776
nfldyr87	.0302455	.1581024	0.191	0.848	-.2796295	.3401205
nfldyr88	.2684879	.1828163	1.469	0.142	-.0898254	.6268012
nfldyr89	-.15406	.1659502	-0.928	0.353	-.4793164	.1711964
nfldyr91	-.1535898	.1928777	-0.796	0.426	-.5316231	.2244434
nfldyr92	-.2472581	.2213765	-1.117	0.264	-.681148	.1866318
nfldyr93	-.3240849	.2400076	-1.350	0.177	-.7944912	.1463215
nfldyr94	-.2973229	.2609805	-1.139	0.255	-.8088353	.2141895
nfldyr95	-.2044689	.2662291	-0.768	0.442	-.7262684	.3173306
nfldyr96	-.4749379	.276943	-1.715	0.086	-1.017736	.0678605
nfldyr97	-.5231447	.2807942	-1.863	0.062	-1.073491	.0272018
peiy84	.1899696	.2523005	0.753	0.451	-.3045303	.6844694
peiy85	-.0337874	.2386167	-0.142	0.887	-.5014674	.4338927
peiy86	.5846705	.2311215	2.530	0.011	.1316806	1.03766
peiy87	.2638337	.1804158	1.462	0.144	-.0897747	.6174422
peiy88	.3142627	.2097365	1.498	0.134	-.0968133	.7253386
peiy89	-.1190085	.2134008	-0.558	0.577	-.5372665	.2992494
peiy91	-.3011622	.2326971	-1.294	0.196	-.7572401	.1549157
peiy92	-.4446613	.2436167	-1.825	0.068	-.9221412	.0328186
peiy93	-.3757059	.2442469	-1.538	0.124	-.8544211	.1030093
peiy94	-.015399	.2262052	-0.068	0.946	-.458753	.427955
peiy95	-.292757	.2618905	-1.118	0.264	-.806053	.220539
peiy96	-.0824336	.2365694	-0.348	0.727	-.5461011	.3812339
peiy97	-.2425768	.2342169	-1.036	0.300	-.7016335	.2164798
nsyr84	.3228654	.1652918	1.953	0.051	-.0011007	.6468314
nsyr85	.3542259	.1577429	2.246	0.025	.0450556	.6633963
nsyr86	.3293563	.1546912	2.129	0.033	.0261671	.6325456
nsyr87	.3914858	.1423145	2.751	0.006	.1125545	.6704171
nsyr88	.2452374	.1452485	1.688	0.091	-.0394445	.5299193
nsyr89	.2729734	.1273872	2.143	0.032	.0232991	.5226476
nsyr91	-.0073225	.1419012	-0.052	0.959	-.2854437	.2707987
nsyr92	-.2857245	.1583939	-1.804	0.071	-.5961708	.0247218
nsyr93	-.0490651	.1595803	-0.307	0.758	-.3618367	.2637065
nsyr94	-.2379466	.1484978	-1.602	0.109	-.5289969	.0531038
nsyr95	-.0661845	.1531279	-0.432	0.666	-.3663098	.2339407
nsyr96	-.0196723	.1635859	-0.120	0.904	-.3402948	.3009501
nsyr97	-.4329762	.1733848	-2.497	0.013	-.7728041	-.0931483
nbyr84	.04724	.1526744	0.309	0.757	-.2519964	.3464764

nbyr85	.0515145	.1474279	0.349	0.727	-.2374389	.3404679
nbyr86	.1686707	.1443856	1.168	0.243	-.1143199	.4516613
nbyr87	.0732157	.1381958	0.530	0.596	-.1976431	.3440744
nbyr88	-.0127969	.1279626	-0.100	0.920	-.2635991	.2380053
nbyr89	.0716969	.1341622	0.534	0.593	-.1912562	.3346499
nbyr91	-.0927175	.140226	-0.661	0.508	-.3675554	.1821205
nbyr92	-.1945545	.1537929	-1.265	0.206	-.4959831	.106874
nbyr93	.0168349	.1640749	0.103	0.918	-.304746	.3384158
nbyr94	-.2122775	.1470188	-1.444	0.149	-.5004289	.075874
nbyr95	-.0565676	.1522691	-0.371	0.710	-.3550096	.2418743
nbyr96	-.0598765	.1609673	-0.372	0.710	-.3753666	.2556137
nbyr97	.0137413	.188263	0.073	0.942	-.3552475	.3827301
queyr84	.1566615	.1142615	1.371	0.170	-.0672869	.3806099
queyr85	.1608017	.1084	1.483	0.138	-.0516584	.3732618
queyr86	.2293393	.1063059	2.157	0.031	.0209836	.4376951
queyr87	.1983705	.0946423	2.096	0.036	.012875	.383866
queyr88	.2204151	.0928992	2.373	0.018	.0383361	.4024941
queyr89	.2117357	.0763845	2.772	0.006	.0620248	.3614465
queyr91	-.0806077	.096992	-0.831	0.406	-.2707087	.1094932
queyr92	-.0910395	.1147535	-0.793	0.428	-.3159522	.1338733
queyr93	-.2398015	.1292476	-1.855	0.064	-.493122	.0135191
queyr94	-.0294471	.1165472	-0.253	0.801	-.2578754	.1989812
queyr95	-.0146224	.1195216	-0.122	0.903	-.2488805	.2196357
queyr96	-.2490002	.1367808	-1.820	0.069	-.5170857	.0190853
queyr97	-.3187787	.1475938	-2.160	0.031	-.6080573	-.0295
ontyr84	.1822498	.1232027	1.479	0.139	-.059223	.4237227
ontyr85	.1633604	.0954015	1.712	0.087	-.0236231	.350344
ontyr86	.1245342	.107959	1.154	0.249	-.0870616	.33613
ontyr87	.2849894	.0954034	2.987	0.003	.0980023	.4719766
ontyr88	.284459	.0918489	3.097	0.002	.1044384	.4644795
ontyr89	-.0646418	.0763863	-0.846	0.397	-.2143562	.0850725
ontyr91	-.2117091	.1080543	-1.959	0.050	-.4234916	.0000734
ontyr92	-.4553036	.1403158	-3.245	0.001	-.7303176	-.1802896
ontyr93	-.4381384	.1537656	-2.849	0.004	-.7395134	-.1367633
ontyr94	-.3504683	.1561099	-2.245	0.025	-.6564381	-.0444985
ontyr95	-.3911492	.1621784	-2.412	0.016	-.7090131	-.0732853
ontyr96	-.5032336	.1762375	-2.855	0.004	-.8486527	-.1578145
ontyr97	-.6266476	.1936482	-3.236	0.001	-1.006191	-.2471041
many84	.3103417	.1584496	1.959	0.050	-.0002138	.6208973
many85	.2126061	.1411678	1.506	0.132	-.0640778	.48929
many86	.449525	.1497069	3.003	0.003	.1561049	.7429452
many87	.3817279	.1399824	2.727	0.006	.1073675	.6560883
many88	.1218475	.1345932	0.905	0.365	-.1419503	.3856453
many89	.0271667	.1284052	0.212	0.832	-.2245029	.2788364
many91	.1059605	.1124998	0.942	0.346	-.1145352	.3264561
many92	-.1823788	.1317768	-1.384	0.166	-.4406566	.075899
many93	-.0215811	.115692	-0.187	0.852	-.2483333	.2051711
many94	-.2768335	.1190598	-2.325	0.020	-.5101864	-.0434805
many95	.0466641	.1415499	0.330	0.742	-.2307685	.3240968
many96	-.1764129	.1379743	-1.279	0.201	-.4468376	.0940119
many97	-.0864121	.1330618	-0.649	0.516	-.3472084	.1743842
saskyr84	.3180171	.1410687	2.254	0.024	.0415274	.5945067
saskyr85	.2696404	.1266013	2.130	0.033	.0215063	.5177744
saskyr86	.2335608	.1352315	1.727	0.084	-.0314881	.4986098
saskyr87	.2226322	.1307235	1.703	0.089	-.0335811	.4788455
saskyr88	.0363921	.1288607	0.282	0.778	-.2161703	.2889545
saskyr89	.028911	.1272995	0.227	0.820	-.2205915	.2784134
saskyr91	-.4047863	.1149739	-3.521	0.000	-.630131	-.1794417
saskyr92	-.3057548	.1124348	-2.719	0.007	-.5261229	-.0853868
saskyr93	-.0328553	.1079021	-0.304	0.761	-.2443395	.1786289
saskyr94	-.0172269	.1060049	-0.163	0.871	-.2249927	.190539
saskyr95	.0925125	.1240021	0.746	0.456	-.1505271	.3355521
saskyr96	-.3840849	.1167273	-3.290	0.001	-.6128661	-.1553036

saskyr97		-.2450469	.1170063	-2.094	0.036	-.4743751	-.0157187
altayr84		.1393632	.0938731	1.485	0.138	-.0446247	.3233511
altayr85		.1193026	.0880512	1.355	0.175	-.0532745	.2918797
altayr86		-.0122239	.0913684	-0.134	0.894	-.1913026	.1668548
altayr87		.0875868	.085709	1.022	0.307	-.0803998	.2555734
altayr88		.0860739	.0824639	1.044	0.297	-.0755524	.2477003
altayr89		.1311962	.0927836	1.414	0.157	-.0506562	.3130487
altayr91		-.1358503	.088894	-1.528	0.126	-.3100793	.0383788
altayr92		-.1670105	.1085472	-1.539	0.124	-.3797591	.0457382
altayr93		-.238918	.112591	-2.122	0.034	-.4595923	-.0182438
altayr94		-.0513383	.1196705	-0.429	0.668	-.2858882	.1832116
altayr95		-.1714353	.1268941	-1.351	0.177	-.4201431	.0772725
altayr96		-.1678816	.1401562	-1.198	0.231	-.4425828	.1068195
altayr97		-.2774139	.1483206	-1.870	0.061	-.568117	.0132892
bcyr84		.1958816	.1139381	1.719	0.086	-.027433	.4191963
bcyr85		.1144462	.1068176	1.071	0.284	-.0949125	.3238048
bcyr86		-.0808289	.1106315	-0.731	0.465	-.2976626	.1360047
bcyr87		.0814619	.1012072	0.805	0.421	-.1169006	.2798244
bcyr88		-.0154198	.0996722	-0.155	0.877	-.2107737	.179934
bcyr89		.1821236	.0949347	1.918	0.055	-.0039449	.3681921
bcyr91		.1575447	.1143272	1.378	0.168	-.0665324	.3816218
bcyr92		-.0711483	.1282303	-0.555	0.579	-.3224751	.1801784
bcyr93		-.1347227	.1397409	-0.964	0.335	-.4086098	.1391645
bcyr94		-.1644239	.1483291	-1.109	0.268	-.4551437	.1262958
bcyr95		-.0740692	.1713091	-0.432	0.665	-.4098289	.2616906
bcyr96		-.0851899	.1794338	-0.475	0.635	-.4368737	.2664938
bcyr97		-.3827857	.1823844	-2.099	0.036	-.7402526	-.0253188
unemp_rt		.0372659	.008256	4.514	0.000	.0210845	.0534474
wage_rt		.0024655	.0011691	2.109	0.035	.0001741	.0047568

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_cut1		6.268106	.631247
_cut2		7.876168	.6314524
_cut3		8.760616	.6316061

(Ancillary parameters)

### Table C-3 Guide to Variable Names

lmout = labour market / education outcome variable. 1 = good; 2 = moderately good; 3 = moderately bad; 4 = bad.

sex = gender (female = 1; male = 0).

lowinc = variable indicating if the economic family is below the low income cut-off.

imigrant = immigration status (1 if the individual was born outside of Canada; 0 otherwise).

othlang = language spoken in the home (1 if not English or French; 0 otherwise).

imiol = interaction between imigrant and othlang.

educ1 = education indicator (grade 8 or below).

educ2 = education indicator (grade 9 or 10).

educ3 = education indicator (grade 11-13, did not graduate).

educ5 = education indicator (some post secondary, no diploma).

educ6 = education indicator (community college diploma).

educ7 = education indicator (university degree)

ownhouse = housing tenure indicator (owns house)

othhouse = housing tenure indicator (lives in other housing)

efunemp1-efunemp4 = indicators of number of individuals in household receiving EI/UI

hhhdei = indicates if household head received EI/UI.

receiui = indicates if another individual in the household received EI/UI.

faminc1 = main source of family income indicator (no income).

faminc2 = main source of family income indicator (wages and salaries).

faminc3 = main source of family income indicator (net income from self employment).

faminc5 = main source of family income indicator (net income from investment).

faminc6 = main source of family income indicator (retirement pensions and superannuation).

faminc7 = main source of family income indicator (other money income).

faminc8 = main source of family income indicator (military pay and allowances).

Province-year interaction terms are created by multiplying provinces by multiplying a dummy variable for each year (1984 through 1997). The province names are as follows:

nfld = Newfoundland and Labrador

pei = Prince Edward Island

ns = Nova Scotia

nb = New Brunswick

que = Quebec

ont = Ontario

man = Manitoba

sask = Saskatchewan

alta = Alberta

bc = British Columbia

unemp\_rt = province specific annual unemployment rate.

wage\_rt = province specific annual industrial wage rate.

*Appendix D: Summary Statistics*

Table D-1: Observations by Year

Year	Number of Observations
1984	16456
1985	15635
1986	13299
1987	17314
1988	14113
1989	14545
1990	15933
1991	14426
1992	12933
1993	12890
1994	13044
1995	10942
1996	11352
1997	11212
total	194094

Table D-2 Descriptive Statistics, By Family Attachment (standard deviations in parentheses)

	Attached to Family	Not Attached to Family	Total
<b><i>Demographic</i></b>			
Female	.4547	.5973	.4980
Age	18.42 (2.63)	21.69 (2.07)	19.41 (2.90)
Live in Owner-Occupied Home	.8503	.2618	.6717
Live in Rental Accommodation	.0027	.1474	.2817
Live in Other Accommodation	.1469	.5908	.0466
Immigrant	.0543	.0680	.0584
Other Language	.0821	.0770	.0805
<b><i>Province</i></b>			
Newfoundland	.0875	.0480	.0755
Prince Edward Island	.0363	.0253	.0329
Nova Scotia	.0740	.0617	.0703
New Brunswick	.0756	.0614	.0713
Quebec	.1714	.1643	.1693
Ontario	.2530	.2155	.2416
Manitoba	.0668	.0770	.0699
Saskatchewan	.0673	.1026	.0780
Alberta	.0899	.1483	.1076
British Columbia	.0781	.0960	.0835
<b><i>Income and Sources</i></b>			
Low Income Status	.1082	.3503	.1817
Number of Earners	2.788 (1.15)	1.446 (0.78)	2.381 (1.22)
<b>Income Source</b>			
No Income	.0002	.0112	.0036
Wages and Salaries	.7915	.7674	.7842
Self-Employment	.0707	.0294	.0582
Government Transfers	.1076	.1637	.1246
Investments	.0098	.0056	.0085
Pensions and Superannuation	.0100	.0039	.0082
Other Money Income	.0066	.0105	.0078
Military Pay	.0036	.0082	.0050

Received EI/UI	.1602	.2353	.1830
<b><i>Educational Attainment</i></b>			
Grade 8 or below	.0823	.0525	.0733
Grade 9 or 10	.3006	.1471	.2540
Grade 11-13, did not graduate	.1802	.1022	.1565
Grade 11-13, graduated	.1809	.2925	.2148
Some post-secondary (no dip.)	.1621	.1638	.1626
Community College Diploma	.0758	.1884	.1100
University Degree	.0181	.0535	.0288
<b><i>Number</i></b>	135188	58906	194094



*Appendix E: Good, Moderate and Bad Occupations Classified*

Occupation	Score	Category
Officials and Administrators in Gov't	-0.836	Moderate
Other Managers and Administrators	2.402	Good
Management and Admin, Related	1.839	Good
Physical, Life Science	0.893	Moderate
Architects and Engineers	3.036	Good
Architecture and Engineering Related	2.042	Good
Social Sciences	0.490	Moderate
Health Diagnosing and Treating	2.901	Good
Nursing, Therapy and Related	2.516	Good
Medicine and Health Related (10)	2.598	Good
Artistic and Recreation	-0.945	Moderate
University and Related	0.81	Moderate
Elementary, Secondary and Related	1.521	Good
Other Teaching and Related	-0.585	Moderate
Stenographic and Typing	-0.011	Moderate
Bookkeeping, Account Recording and Related	0.638	Moderate
Office Machine and EDP Operators	0.308	Moderate
Material Recording, Scheduling and Distribution	-1.104	Bad
Reception, Information, Mail and Message Distribution	0.084	Moderate
Library, Files, Correspondence, Other Material and Related (20)	0.090	Moderate
Sales, Commodities	-0.132	Moderate
Sales, Service and Other Sales	0.100	Moderate
Protective Services	-0.588	Moderate
Food, Beverage Preparation, Lodging and Accommodation	-0.995	Moderate
Personal Apparel and Furnishing Service	-1.971	Bad
Other Service Occupations	-4.206	Bad
Farmers and Farm Management	2.816	Good
Other Farming and Horticulture	-2.941	Bad
Fishing, Hunting, Trapping and Related	-6.124	Bad
Forestry and Lodging (30)	-8.005	Bad
Mining and Quarrying	-3.147	Bad
Food, Beverage and Related	-2.000	Bad
Other Processing Occupations	-1.325	Bad
Metal Shaping and Forming	-1.244	Bad
Other Machining Occupations	0.505	Moderate

Other Metal Products	-0.625	Moderate
Electrical, Electronics and Related Equipment	1.608	Good
Textiles, Furs and Leather Goods	-2.241	Bad
Wood Products, Rubber, Plastics and Other Related	-2.238	Bad
Mechanics and Repair (excl. Electronics) (40)	-0.091	Moderate
Excavating, Grading and Paving	-3.308	Bad
Electrical, Power, Lighting and Wire Communication	-0.686	Moderate
Other Construction Trades	-3.711	Bad
Motor Transport Operators	-0.772	Moderate
Other Transportation Operators	0.809	Moderate
Material Handling	-1.764	Bad
Other Crafts and Equipment	-0.984	Moderate

