

**The Impacts of Canadian Social Program Reforms on Job
Tenure of Newer Jobs from 1976 to 2010**

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Major Paper present to the Department of Economics of the University of
Ottawa in partial fulfillment of the requirements of the M.A. Degree

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April 2011

Abstract

In this paper I use the 1976-2010 Canadian Labour Force Survey to examine the impact of specific program reforms on the aggregate employment rate and the one-year retention rate for workers with less than one year of job tenure. In particular, I focus on the Employment Insurance program and the social assistance programs that are under federal and provincial jurisdiction, respectively. I find that for the most part, these program reforms do affect both employment rate and retention rate. These results hold even when controlling for province and year fixed effects. For example, I find that the 1996 EI reform led to an increase of 2.82 percentage points in the employment rate and an increase of 6.73 percentage points in the retention rate with province fixed effects. These are significantly economic changes considering that the average employment rate is 74.1% and the average retention rate is 56.9%.

1 Introduction

It is highlighted by the New Economy literature that technological changes and increased international trade would bring a transformation to traditional job arrangements; establishing a new employer-employee relationship in forms of non-standard work, such as temporary work, part-time work and self-employment (e.g. Autor (2003); Hacker (2006); Vosko, Zukewich, and Cranford (2003)). One important implication of the New Economy is a long-term decrease in job stability since workers have become as disposable as other resources. As such, workers may more readily quit or be fired. However, arguments against this implication arise from some research that estimated the recent change of Canadian job stability (Brochu (2006; 2008; 2010); Heisz (2005)). Evidence indicates a dramatic increase in job stability in the early 1990s and a constant high level thereafter; it is also demonstrated that the change is secular, rather than cyclical in nature. Particularly, job stability of workers with less than one-year of initial job tenure (which is defined as newer job in this paper) has increased, while it remains somewhat unchanged for those with more than one-year of initial job.

The aging of the workforce, the increased educational attainment, and the increased labour force attachment of woman can explain a large part of the recent changes in aggregate job stability; however, for the job stability of newer jobs, only the growing educational attainment can be linked to it (e.g. Brochu (2010)). What else may matter besides educational attainment? Social program reforms (this paper focuses on welfare programs specifically) can be a good presumption because many researchers have shown that workers do tailor their employment behaviour in response to changes of social programs (e.g. Christofides and McKenna (1996); Green and Sargent (1998); Friesen (2002); Hunter (2002); Fortin, Lacroix, and Drolet (2004); Lemieux and Milligan (2008); Gray (2006)). Using the 1976-2010 Canadian Labour Force Survey (LFS), this work attempts to find out whether Canadian social program reforms play a

significant part in explaining the recent change of job stability for newer jobs, and if so, how they work. My work is the first one to examine the linkage between social programs and the job stability for newer jobs.

I focus on three specifications in my regression and analysis—without province and year fixed effects, with province fixed effects, and with both province and year fixed effects. For the EI reforms I prefer the second specification and for the social assistance reforms I prefer the third specification.¹ My results indicate that social programs do affect the job stability of newer jobs and the employment rate. The dramatic growth of job stability in the 1990s and its constant high level thereafter can be explained by the social program reforms that ranged the whole country around the mid-1990s. It holds for most reforms that the less generous legislation increases the job stability. However, a few results are counterintuitive. Some possible explanations are discussed, such as program design as another effective factor. In addition, the social program reforms affect the employment rate and the retention rate more for young and low-educated people.

The rest of the paper is divided as follows. Section 2 provides an overview of the federal Employment Insurance (EI) and the provincial social assistance programs and their most important reforms over the 1976-2010 period.² Section 3 reviews relevant literatures. Section 4 and 5 describes the methodologies, including the measure of job stability and the regression models, and the data respectively. Results are presented and discussed in Section 6. Section 7 carries out robustness check. Finally, Section 8 concludes.

¹ Including province and year fixed effects will most likely address the endogeneity problems. This issue is discussed in detail in the Methodology section. The EI reforms cannot be estimated with year fixed effects because they affect all provinces.

² Before 1996, the EI was called the Unemployment Insurance (UI).

2 Social Program Reforms

The Canadian social programs provide assistance to people who have issues with employment, income, health, family and other aspects. This section provides an overview of the EI program and the social assistance programs, as well as their major reforms during the 1976-2010 period. The EI program is designed and implemented by the federal government and covers people across the country, while the social assistance programs are under provincial jurisdiction and only for people residing in specific provinces. Catering to specific economic situation and different political consideration, social programs have evolved overtime with introduction of new legislation, changes in benefit level, adjustment of eligibilities and so on. I have selected thirty major reforms of EI and social assistance between 1976 and 2010 to work in this study.

EI

EI is a financial support program offered by the Canadian federal government to assist temporarily unemployed workers. EI pays beneficiaries at a replacement rate which is a fraction of their previous wage. The eligibility for receiving EI depends on a worker's previous work experience and the regional unemployment rate. Given differences among regional unemployment rates, the eligibility and benefits vary across regions. In high-unemployment regions, for example, the Atlantic region, it is difficult and time-consuming for unemployed individuals to find jobs. Thus the benefit durations for those regions are longer and the qualifying requirements are less strict than regions with lower unemployment rates. In addition, self-employed workers are not covered by the EI program.

EI has experienced many changes during the 1976-2010 period.³ This study identifies five of them, in 1977, 1989, 1993, 1996, and 2009's, as the major ones to be studied.

³ See Appendix.

In 1977, the entrance requirements were tightened and the benefit duration was reduced. The differences of employment situation among regions were recognized. So the Variable Entrance Requirements (VERs) was introduced to set specific required worked weeks, ranging from 10-14 weeks before a claim could be introduced, for each region according to the local unemployment rate.

In 1989, the Bill C-21 made some changes to the EI legislation. The VERs was raised from 10-14 weeks to 10-20 weeks. The penalty for voluntary leave without just cause, dismissal due to misconduct, or refusal to accept suitable employment was extended and the replacement rate for those people was lowered. In spite of some stringent legislation, Bill C-21 eliminated the additional six weeks to the VERs for repeat users, making the EI more generous to those people.⁴

In 1993, those who left voluntarily, were fired, or refused suitable employment were no longer eligible for EI. Furthermore, the replacement rate dropped from 60 percent to 57 percent.

As a significant transition of the EI program, the 1996 reform introduced many significant changes to the legislation with a greater emphasis on re-employment and labour force attachment. The eligibility and benefit entitlement were calculated based on worked hours instead of worked weeks. The weekly maximum insurable earnings (MIEs) were reduced. The new legislation for repeat users which was known as the intensity rule was more stringent than previous legislation with a lowered replacement rate depending on their past benefit duration. Repeat users also faced up to 100% repayment of benefits based on their earnings and benefit duration in the past 5 years.

In response to the recession that started in 2008, the EI legislation was adjusted to be more generous in 2009. Five additional weeks of receiving regular benefits were

⁴ Repeat users are described as 'a number of individuals, year after year, work for a portion of the year and then collect EI benefits for the rest of the year' by Stratyчук (2001).

provided and the maximum benefit duration was increased from 45 to 50 weeks for regions suffering from high unemployment. Extended or earlier benefits were provided to long-tenured workers participating in training through the *Career Transition Assistance Initiative* (CTAI).

Social Assistance

Social assistance is a broad definition and can be generally explained as a financial assistance or in-kind goods and services provided to individuals or families when their financial resources are insufficient to support their basic life. Not only restricted to employment, social assistance covers a wider range of social issues, such as income, health, child-care, and pensions. Generally speaking, the eligibility and benefits level usually depend on various factors of the claimants, such as amount of income and assets, employment situation, family size, health situation, etc. Unlike EI, social assistance is designed, delivered and administrated by provincial governments. Hence, the legislation and the transition of social assistance program vary across provinces.

a) Ontario

Four major changes of Ontario social assistance have been analyzed in my study. Ontario began loosening the eligibility requirement in 1987. Some generous legislation was introduced. For example, the 'souse-in-the-house' rule allowed individuals in a common-law relationship to remain eligible as single persons for up to three years. The period of generous social assistance ended in 1995 by Harris government. The 'Common Sense Revolution' restricted the eligibility and cut the benefit level of social assistance. The benefit rate was frozen as well. In 1998, the *Ontario Works* program was launched to help people get employed as quickly as possible. Those employable recipients who could not find a job had to take part in the training which is helpful for employment; otherwise they would lose their benefits. In 2005, the benefit rates freeze was lifted and an annual growth in benefit was allowed. But due to the high inflation rate at that time, the increased benefit rate was counteracted and the family receiving

the benefits were even worse off than they were in 2003.

b) Quebec

I focus on three reforms are focused on for Quebec. In 1989, a welfare reform was introduced in Quebec with a main purpose of abolishing age discrimination. The benefit level for single individual and childless couple under 30 years old was equalized to the level for people aged more than 30, with a jump of monthly benefits from \$173 to \$425. In 1998, another reform was introduced and changed the social assistance system thoroughly. This reform placed an emphasis on employment and added more obligations to recipients. One of those obligations was that the employment assistance recipients must not quit a suitable employment without serious cause or lose suitable employment due to a fault of their own; otherwise their family eligibility could be rendered. In 2005, a new program—*Work Premium* replaced the previous earning supplementation for parents. The *Work Premium* was a refundable tax credit providing benefits to low-income workers. This program can be seen as an incentive for employment since eligible people can receive benefits once they are employed.

c) Alberta

In November 1990, the Social Allowance Program was replaced by the *Supports for Independence* (SFI) which reflected the tone of encouraging employment in the following reforms. In 1993, the Minister of Family and Social Services, Mike Cardinal, introduced comprehensive reforms to social assistance. The benefits were reduced substantially and the eligibility was tightened. In 2004, a new employment-oriented program *Alberta Works* was introduced to replace the SFI program. To encourage employment, trainings were offered and an earnings exemption was set to allow recipients keeping their wages at the same time when they receive income support.

d) British Columbia

I identified two reforms for British Columbia. As a replacement of the *Guaranteed*

Available Income for Need (GAIN), the *BC Benefits* was introduced in 1996. In order to reduce the caseload and encourage employment, the benefit rate was lowered for some groups of individual, such as single youth, couples up to 24 without dependents, single employable adults, and employable couples aged 24 to 25 without dependents. In 2002, a reform was launched by Premier Gordon Campbell that rendered the social assistance program less generous. One feature of this reform was that British Columbia was the first province to set a time limit of benefit duration for employable recipients. This reform affected the caseload hugely by decreasing it by a quarter thereafter (Kozhaya, 2007).

e) Manitoba

Two main changes are identified for Manitoba. In 1993, The Manitoba government started the social assistance cut by reducing the dental and health benefits and the monthly payment to many recipients. In the following years, a campaign to encourage recipients to return the “welfare cheats” was introduced and benefit rate was cut for groups of people. The second main change happened in 2004. The social assistance became more generous as the monthly basic benefit was increased.

f) Saskatchewan

There are two identified important changes for Saskatchewan. The province started its social assistance reform a little late in the 1990s. In 1998, Saskatchewan introduced the program of *Building Independence – Investing in Families* as a part of the reform to provide benefits to low-income working individuals and families. Other than that, stringent ‘accountability’ measures were adopted for investigating fraud cases. In 2003, the *Transitional Employment Allowance Regulations* (TEA) was introduced to provide temporary financial support to encourage people entering labour market. Benefits would be provided to people only if they participated in the employment readiness program and demonstrated reasonable expectation of being independent in a short time.

g) New Brunswick

Two reforms are identified for New Brunswick. In 1982 the province began to differentiate benefits according to employability and age. The most employable recipients were matched with the lowest benefit rates. A system of the classification of recipients was established based on employability. Recipients were classified into three groups: 'long-term (having limited employability)', 'upgrading, training and placement programs', and 'interim assistance'. In 1995, another reform was launched by emphasizing independence, especially for young and employable recipients. The benefit rate for the most employable single claimant was half of the benefit rate for the least employable single claimant. Those who refused, without just cause, participating education, training or work offer might face reduced benefits; those who quitted jobs might face a delayed or denied social assistance.

h) Nova Scotia

This study selects three reforms in Nova Scotia to be studied. In 1977, a new program The *Family Benefits Act* was introduced for all single mothers and persons with disabilities over 18 years of age. It provided a higher benefit rates and an eased eligibility requirement. In 1998, the benefit rates for recipients such as able-bodied single, married men and single women were lowered, turning the social assistance less generous. Following the trend of 1998, in 2001, the *Employment Support and Income Assistance Act* (ESIA) was introduced in Nova Scotia providing a lower benefit rates than the previous *Family Benefits Act*.

i) Newfoundland and Labrador

Attention is paid to two reforms in Newfoundland and Labrador. In order to help recipients move from relying on social assistance to self-sufficiency, the *Supports to Employment Program* (STEP) was put in place in 1998. The government did not set criteria and develop tools to identify employability. Every recipient could be defined as employable and eligible for the program. Recipients were encouraged to participate but it was not mandatory—there was no penalty for those who refused to participate.

As announced in the 2005 budget, the Income Support rate was increased by 2%. The earnings exemption was improved for working recipients, making the social assistance more generous.

j) Prince Edward Island

Two reforms are identified for Prince Edward Island. In response to a high unemployment rate and an increasing number of young single persons seeking financial assistance, the *Job Creation Program* (JCP) was introduced in 1983. Funding was provided to employers to hire employable recipients. Besides the goal of helping recipients re-building independency, another simple consideration of JCP was that those recipients could have earnings from the funded employment and also accumulated worked weeks that were required for entering the UI program. In 1993, the province announced a freeze on the benefit rates and a significant cut in social assistance for the next two years, due to the early 1990s recession and a growing number of social assistance applicants.

Discussion of Expected Impacts

Social program reforms can be looked at in terms of benefit changes, eligibility adjustments, or an introduction of employment-oriented programs. Benefit levels can be cut, raised or frozen; Eligibility can be loosen or tightened; new employment-oriented programs are instituted to encourage employment by assisting recipients of social programs to re-enter the labour force.

I identify a reform to be less generous if it cuts benefits or tightens eligibility, such as the 1996 EI reform, the 1995 Ontario Social Assistance Reform and the 2002 British Columbia Social Assistance Reform.⁵ I would expect the employment and retention

⁵ The 1998 Quebec Reform, the 2004 Manitoba Reform and the 2009 EI reform are the examples of more generous reforms.

rates to increase under the less generous reforms because people may want to quit jobs and/or stay on the social programs if they could receive higher compensation easily.

A special category of social program reforms is the introduction of new programs that encourages employment. This includes the 1995 New Brunswick Reform, the 1998 Ontario Reform, and the 2005 Quebec Reform. Generally speaking, I would expect this sort of reforms to increase the employment rate. However, it is hard to predict for the impact on the retention rate as it is conditional on working. We cannot foresee if people may stay with the same employer after they become employed.

3 Literature Review

This section first reviews works on Canadian job stability patterns. Papers that explore the impact of EI reforms on different labour market outcomes, such as work hours, employment probability, seasonal job duration, and so on, are then examined. Finally, the literature concludes with an examination of papers that look at the effects of social assistance reforms.

Heisz (2005) examined the changes in job stability from 1976 to 2001 by using data from the LFS data and focusing on retention rate approach. He identified two main changes in job stability pattern during the 1976-2001 period: a decline across the 1980s and a recovery in the mid-1990s. He speculated that the 1980s decline was cyclical in nature, which contradicted the 'New Economy' view that the job stability had declined. He pointed out that the recovery in the mid-1990s showed a dramatic increase of job stability with the aggregate retention rate growing from less than 0.74 in the early 1990s to almost 0.8 in the late 1990s. Particularly, the retention rate for newer jobs demonstrated the most striking increase—rising steadily from 0.4 in 1993 to 0.54 in 2001. Heisz attributed the recovery of job stability across the 1990s to the business cycle.

Brochu (2010) extended the LFS data into the late 2000s and explored the causes of recent changes in Canadian job stability patterns. He found that aggregate job stability stayed at high level in the 2000s after its recovery in the 1990s, and also for workers with low levels of tenure. He showed that it represented a secular change, as opposite to a cyclical change as believed by Heisz. Brochu also found that the changes in aggregate job stability could be explained in most part by the aging of work force, the increased educational attainment and the increased work force attachment of woman. However, the large increase in job stability for workers with less than one year of initial tenure could only be partly explained by increased educational attainment.

Many works from various perspectives have been done on how EI impacts the labour market. Using data from the Canadian 2-year longitudinal Labour Market Activity Survey of 1986-87, Christofides and McKenna (1996) sought to explore the effect of eligibility of receiving Unemployment Insurance (UI) benefits on job duration. After controlling for many personal and job characteristics, their result indicated a moral hazard effect, a prevalent UI-seeking behaviour—job termination occurred when the qualified worked duration for UI claim had been reached. It was suggested that lengthened the VERs could mitigate the UI-seeking behaviour.

Green and Sargent (1998) examined the impact of UI program on job duration by categorizing jobs into seasonal and non-seasonal jobs. The data was drawn from the 1989 Labour Market Activity Survey (LMAS) and a proportional hazards model was utilized in the estimation. They found that the UI-seeking behaviour mainly happened for seasonal jobs. The job spell hazard rate for seasonal workers declined in the weeks before the qualification for UI but increased substantially after qualification. They also found that changes in requirements for eligibility and generosity of regional benefits and of formula converting weeks of work into weeks of UI entitlements did have effects on seasonal job duration although the effects on average duration of seasonal job were small. Since the termination of seasonal jobs mostly occurred in the first year of work, Green and Sargent's work is an important reference to my research.

Friesen (2002) examined how individual alter weekly work hours in response to the new hour-based entrance requirement and benefit entitlement introduced in the 1996 EI reform. She found that there was a clear tendency of moving away from very short-hour jobs. Except in seasonal sectors, workers and firms preferred switching towards jobs requiring less than 35 hours per week. While in seasonal sectors, workers tended to accept job with more than 40 hours per week. In all, the pattern of changes was different in stable and unstable sectors.

Gray (2006a) evaluated two aspects of the 1996 EI reform, the small weeks initiative and the “allowable-earnings” regulation. His focus was on how workers with non-standard employment pattern, particularly the frequent EI users, tailored their behaviour to both aspects of the reform. He found that these policy changes did encourage the working activities of targeted individuals (i.e. frequent EI users) for short-term jobs. However, they created unintended disincentives for long-term employment attainment. In other words, a stronger motivation to search for and accept jobs was produced, while job stability in terms of job tenure was not improved.

Provincial social assistance reforms have also been examined. Hunter (2002) conducted a time-series analysis to see if the introduction of Saskatchewan *Building Independence* program in 1998 played a significant role to reduce the provincial welfare caseload. He identified a long-term trend towards a lower level of caseload over the 1995-1999 period using data from the Quarterly Statistical Report, Saskatchewan Social Services. Using piecewise regression, he found that the program could not explain the reduction of caseload and another strong explanation could be the lower unemployment rate due to the economic recovery after 1990 recession.

Fortin, Lacroix and Drolet (2004) used an important episode, the significant increase in maximum benefits for single individual under 30 years of age, in the Quebec 1989 social assistance reform to analyze the impact of benefits on duration of welfare spells. Their results implied that the more than doubling of benefits in this reform increased

the average duration of benefit spells for men in the 22 to 29 age group by 3.8 months (or by 38%). For women in the same age range, the effect of the reform was stronger and increased their average duration of benefit spells by 5.9 months (or by 41.1%). Similarly, Lemieux and Milligan (2008) looked at the same Quebec 1989 welfare reform and found that for single less-educated men in the 29 to 30 age group without dependent children, the more generous social assistance benefits reduced the employment probability by three to five percentage points.

While many papers have looked at the impact of social programs on various labour market outcomes, yet none has tried to see whether the dramatic rise in job stability for newer jobs that started in the mid-1990s can be explained by changes in social programs. My paper fills the gap in the literature.

4 Methodology

My methodology consists of two steps. It starts with the calculation of two dependent variables—the employment rate and the one-year retention rate. Estimation is conducted then with two regression models that focus on how social program reforms affect the employment rate and the one-year retention rate.

Dependence Variables

a) Employment Rate

The employment rate is defined as the percentage of adult Canadian (aged 15 and above) working for pay. It is common to look at employment rate when exploring the impact of government programs, just as is done in the relevant literatures.

b) Retention Rate

One-year retention rate is defined as the conditional probability that an individual will work for the same employer in the next year. The one-year retention rate for workers

with s years of tenure as of time t is simply

$$R_t^s = N_t^s / N_{t-1}^{s-1} \quad (1)$$

where N_t^s is the number of respondents reporting s years of tenure in the survey of year t . Equation (1) can be estimated from repeated cross-sectional data as shown in the Heisz (2005) and Brochu (2011).⁶

The one-year retention rate can be decomposed by subgroups. Hence the equation (1) can be rewritten as

$$R_t^s = \sum_c \gamma^c R_t^{s,c} \quad (2)$$

where $R_t^{s,c}$ indicates the one year retention rate of subgroup c and γ^c denotes the fraction of subgroup in the whole population. For instance, the gender decomposition takes the form

$$R_t^s = \gamma^f R_t^{s,f} + \gamma^m R_t^{s,m} \quad (3)$$

where $R_t^{s,f}$ and $R_t^{s,m}$ are the one-year retention rates for female and male respectively and γ^f and γ^m are the fractions of female and male in the population.

As compared to another measure of job stability, such as the in-progress job tenure approach, the retention rate approach is less sensitive to job inflow.⁷ It is appropriate for studying the Canadian job stability. Canada has experienced significance job inflow as a result of the increased labour force participation of women and the baby

⁶ In the data section, I explain how to calculate equation (1) with particular population count using the LFS.

⁷ Heisz (2005) provided more details on the in-progress job tenure approach.

boom (e.g. Brochu (2010)). Besides, retention rate is a more straightforward way to examine job stability—the lower the retention rate, the lower the probability a worker stays with the same employer, and the lower the job stability. This paper focuses on the one-year retention rate for workers with less than one year of job tenure because this group of worker shows the most dramatic growth of job stability in 1990s among the groups of job tenure, according to the estimation of Heisz(2005) and Brochu (2010).

Empirical Model

The empirical work is based on two econometric models

$$E_{p,t} = \beta_0 + EI_t\sigma + SA_{p,t}\delta + X_{p,t}\varphi + \varepsilon_{p,t} \quad (5)$$

$$R_{p,t} = \beta_0 + EI_t\sigma + SA_{p,t}\delta + X_{p,t}\varphi + \varepsilon_{p,t} \quad (6)$$

where $E_{p,t}$ is the employment rate for province p in year t and $R_{p,t}$ is the one-year retention rate for workers with less than one year of job tenure.

The EI_t represents a vector of binary variables. Each variable identifies an important EI reform. For example, the EI_{1996} binary variable equals 1 for 1996 and onwards and 0 otherwise. Its associated parameter, therefore, measures the effect of 1996 EI reform on the dependent variables. For a reform that took years to implement, I use the year of its inception to mark it. The $SA_{p,t}$ vector is similarly defined but represents social assistance reform. For instance, $SA_{QC,1989}$ equals 1 for Quebec and 1989 and onwards, and 0 otherwise.

The vector $X_{p,t}$ consists of year and province fixed effects to address the endogeneity problem. An endogeneity problem occurs when the error term is correlated with some explanatory variables, leading to an inconsistent and biased estimator.

Province fixed effects are used to control for province specific factors. For example, some provinces have more natural resources than others (e.g. oil in Alberta) which could imply a more dynamic labour market. This could explain why the employment rate in Alberta is high and the one in Newfoundland and Labrador is pretty low since the labour market in Alberta historically performs better than Newfoundland and Labrador. The retention rate varies across provinces as well. A low retention rate may be expected in a province with well-performed labour market because it is easy for workers to leave their job and find a better one. Provincial governments view social assistance in different ways. The Alberta government which has tended to be more right wing generally believes that individuals should not rely on social assistance; however, the more left leaning government as is the case in Saskatchewan weights the importance of social assistance more for helping unemployed or poor people.

I involve year fixed effects to control for some changes over time other than social program reforms, such as business cycle. Business cycle affects my dependent variables since the employment rate is procyclical and at least before the mid-1990s the retention rate is countercyclical. Provincial governments may increase benefit rate during recession, showing a linkage between business cycle and social assistance reforms.

For each model, I estimate three specifications: (a) without any fixed effect, (b) with province fixed effects, and (c) with both province and year effects. It should be noted that one cannot have both the EI vector and year fixed effects at the same time because the EI has a common effect on all provinces; therefore, the EI vector is excluded in specification (c).

5 Data

This work uses data from the 1976 to 2010 LFS, covering more than two business cycles. The LFS is a monthly survey that gathers Canadian labour markets information from around 54,000 households per month. As the LFS has a rotating panel design, every household remains in the sample for only six months; every month one sixth of the sample is replaced. The LFS is suitable for research on job stability because it has kept regular and consistent records of job tenure by asking “When did he/she start working for [name of employer]?” since 1976.

My sample focuses on individuals aged between 24 and 55 over the 1976-2010 period. Self-employed workers are not eligible for EI so they are dropped. Full-time students are also excluded because they attended school regularly with little time to work even though they are in the selected age range. To guarantee a random sample, the data should be extracted from months which are at least six months apart due to the six-month-rotating design of the LFS. Following Heisz (2005), I restricted my data to March of every year.⁸

The LFS follows a stratified sample design. There is, for example, over-sampling in smaller provinces and under-sampling in the larger provinces like Ontario. The response rate is also not the same across all socio-demographic groups. As such, the LFS provides weights to make the data more representative. In the first step, I use these weights to estimate my employment rate. Following Heisz (2005) and Brochu (2010), I take advantage of the fact the weights sum up to the population when estimating my retention rates. I can estimate the population count of a subgroup by simply summing the weights of individuals in that subgroup (see Brochu (2011) for more details)

⁸ Heisz (2005) uses both March and September which are six months apart. He had more observations than me hence the exact value of my output is a little different from his (e.g. the one-year retention rates in this work are below the level estimated by Heisz). However, my statistics show no material difference from his.

Table 1 provides summary statistics (means and standard deviations) for the employment rate, the retention rate, and also for gender, age and educational attainment. My sample consists of 350 observations representing 10 provinces over 35 years. As shown in Table 1, aged 40 to 54 represent the largest age group in my sample which may due to the baby boom effect. For educational attainment, the high school or less group is the biggest group.

Figure 1 illustrates the aggregate employment rate and the one-year retention rate patterns for workers with less than one year job tenure over the 1976-2010 period. The one-year retention rate patterns are similar to those of Heisz (2005) and Brochu (2010), showing a small decline from 1976 to mid 1980s and then remains around 50% for the mid-1980s to the mid-1990s period. As of 1996, the retention rate starts to climb reaching 66% in 2000 and remaining at a high level through to 2010. The aggregate employment rate shows a relatively steady growth since the late 1990s. Before the boom of the retention rate in 1996, the employment rate moved in the opposite direction of the retention rate. For example, during the 1980-1983 period, the employment rate experience a small peak while the retention rate fell to a local bottom. However, just after 1996, there is no obvious correlation between the patterns of these two variables.

6 Results

In this section, I will present and discuss the results of my second step estimation. More precisely, I examine how social program reforms affect both the employment and retention rates. Among the three specifications, the results of the third specification are more convincing because the potential endogeneity problem is addressed by controlling for province and year fixed effects so that the results are probably consistent and unbiased. However, the impacts of EI reforms that are common for all provinces cannot be estimated with year fixed effects. As a result, I

could only focus on the results with province fixed effects (the second specification).

Table 2 focuses on the employment rate results. It has three columns showing the results without province and year fixed effects, with province fixed effects only, and with both province and year fixed effects. As previously discussed, EI reforms are excluded from the regressions with year and province fixed effects.

I would expect that a less generous social program (e.g. reduced benefits) would increase the incentive to work; as programs like social assistance become relatively more appealing. As such, the employment rate should fall. Reforms that encourage people to enter the labour force (e.g. training, income tax credit, and temporary financial assistance as employment incentives), on the other hand, would be expected to increase employment.

Table 2 shows that 26 of 30 social program reforms are statistically significant at 10% level. The majority of the 26 reforms affect the employment rate as expected. For example, the 1996 EI reform that made EI less generous increases the employment rate by 2.82 percentage points in the regression with province fixed effects. As another example, the 2004 social assistance reform in Manitoba that made social assistance more appealing led to a 3.63 percentage point reduction in the employment rate. Finally, the work premium reform introduced in Quebec in 2005 that was designed to encourage employment increased the employment rate by 3.01 percentage points.

As shown in Table 2, a number of reforms generated large employment rate changes. For example, the 2005 Ontario social assistance reform (when including province and year fixed effects) decreases the employment rate by 4.42 percentage points. This change is significant since the aggregate employment rate is 74.1%.

The decision whether to control for province and year fixed effects does matter. In some cases, the results become smaller when both fixed effects are included. For

example, The 1995 New Brunswick reform increases the employment rate by 8.01 percentage points when no province or year fixed effects are included. But the effect decreases to 6.08 percentage points when controlling for province and to 2.94 percentage points when controlling for both province and year. I would argue that in this case at least, the 2.94 percentage point increase is still economically significant. The fact that the results are, to a certain extent, sensitive to the inclusion of province and year fixed effects, may be related to the endogeneity problem (which was previously discussed in the methodology section). By including such controls one is addressing the possibility that the reforms are in fact endogenous.

Table 3 reports how social programs reform affects the retention rate. As was the case in Table 2, I show the results of three specifications: without any province or year fixed effect, with province fixed effect only, and with both types of fixed effects. I would expect that a more generous program would lead to more people quitting their jobs, clearly suggesting a decrease in the retention rate. There is however no clear prediction with respect to the retention rate for programs that put people back into the labour force. The retention rate conditions on the person having a job, and it is not clear if these people that do join the workforce will be more or less stable than existing workers.

Of the 30 reforms, 18 show statistically significant results at the 10% significance level. The impact of most of those reforms matches my expectation. Especially, the majority of the reforms that happened around the mid-1990s significantly affected the one-year retention rate for workers with less than one year of job tenure. For example, the 1996 EI reform increased the retention rate by 6.73 percentage points and the 1998 Quebec reform increased the retention rate by 6.71 percentage points. These effects are substantial considering that average retention for the 1976-2010 period is 56.9%.

A few reforms, however, have different effects than expected. I believe that the 1989 Quebec reform should decrease the one-year retention rate because it increased the

generosity of social assistance, but the findings are not statistically significant. Another case is the 1993 EI reform that disqualified those who voluntarily left their jobs. I would have expected the retention rate to increase but the results when including provinces are of the opposite sign.

For some results that are not statistically significant (and the opposite of my expectations), the reforms are close to each other. As a result, the correlation between them is extremely high, leading to large standard errors and making the results insignificant. One such case is the 1990 and 1993 Alberta reforms, which are only three years apart. The 1993 reform greatly lowered social assistance level, but the results are not statistically significant. The correlation between the two binary variables (that reflect the two reforms) was 0.922. Similarly, the correlation between the 1995 and 1998 Ontario reforms was 0.897. Therefore, it cannot be asserted that those reforms have no effects on the job stability in reality.

Although there are no obvious predictions for reforms that encourage people to go back in the labour force, one can still in some cases draw certain conclusions. For example, the 1998 Ontario reform introduced the *Ontario Works* aimed at helping people to get employed faster. My findings show that it reduced the retention rate by 7.48 percentage points. According to City of Toronto (2002), this could be because most of the recipients are low-educated and low-skilled. They mostly rely on social programs before entering the *Ontario Works*. Although these people become employed fast, they earn very low wages and cannot keep a long-term job. So they return to social assistance again after a short-term employment, leading to a lower retention rate.

7 Robustness Check

In this section I explore the sensitivity of my results. First I check whether the results

vary across different age groups. Second I examine whether the results are different for low-educated people.

I first check the robustness for the 20 to 29, 30 to 39 and 40 to 54 age groups. I would expect social program reforms to affect young group more than older groups because young people may be more apt to change their behaviour and they are also less experienced, making it hard for them to find or maintain a job. Some social program reforms specifically target certain age groups. For example, the 1989 Quebec reform focuses on recipients under 30 of age and the 1995 New Brunswick reform focuses on young and employable recipients.

I start by narrowing my sample to individuals aged 20 to 29, 30 to 39, and 40 to 54 respectively. Then I calculate the employment rate and the one-year retention rate for each group. Using the second step of methodology, I estimate equation (5) and (6), and focus on only the regression with province fixed effects and year fixed effects. In this case, the impact of EI reforms cannot be identified, but I can still examine the impacts of social assistance reforms.

Table 4 focuses on the employment rate results. Although all three groups are affected by the social program reforms, the younger groups, either age 20 to 29 or 30 to 39, are often affected most. The retention rate results are shown in Table 5. It is just as expected that the young individuals are more easily affected by social program reforms—the 20 to 29 age group is affected by 7 reforms but the 40 to 54 age group is affected only by 2 reforms. I do not see big difference between the 20 to 29 and 30 to 39 age groups. In addition, it is surprising that the 1989 Quebec reform which make social assistance more generous for young people does not show any significant results.

I focus next on those with low levels of education. Since the low-educated people remain the largest fraction in the population and their employment situation is unstable

due to lack of skill and low income, I would expect them to rely on social programs and thus be affected more by the reforms.

Table 6 indicates how social program reforms impact the employment rate for low-educated individuals. Compared with the results of Table 2, the effects on low-educated people are larger as expected. For example, with province and year fixed effects, the 1993 Manitoba reform increases the employment rate for all individuals by only 0.98 percentage points while this reform increases the employment rate for low-educated individuals by 2.82 percentage points. Table 7 shows the one-year retention rate results. In comparing with the results of Table 3, just as expected I find larger effects on low-educated people, especially for some reforms that focus more on this group of people, such as the 1998 Ontario reform.

8 Conclusions

This paper presents three main findings. The first one is that social program reforms play an important role in explaining changes in the aggregate employment rate and job stability patterns for workers with less than one year of job tenure. Most of the reforms which happened around the mid-1990s, reduced the generosity of social programs and show significantly positive effects on job stability. In addition, it is shown that the less generous programs would increase the employment rate and job stability.

The second finding is that the application of province and year fixed effects used to address the potential endogeneity problem weakens the impacts of social assistance reforms. However, for most of the reforms especially the ones happened in 1990s, controlling for province and year fixed effects does not alter the nature of how social assistance reforms affect job stability and the employment rate. The effects are still both statistically and/or economically significant. It should be noted that that year fixed effects are not applicable for examining EI reforms since the reforms affect all provinces so I therefore rely on the results with province fixed effects (the second

specification). It is interesting to find that including province fixed effects does not weaken the impacts of some EI reforms but strengthen them or increase their statistical significance, such as the impacts of the 1989 and 1996 EI reforms.

The third finding indicates that for social program reforms which encourage employment, some elements such as program design, could affect the job stability to some extent. Being aware of appropriate information about those elements can help predict the way social program reforms impact job stability. Robustness checks suggest greater impacts of social program reforms on young and low-educated individuals.

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Appendix

Table: Historical Main Changes of EI Legislation and Regulation (1976-2010)

Year	Main Changes
1977	<ul style="list-style-type: none"> ✓ VERs ranging from 10 to 14 weeks, were introduced to better reflect local unemployment rates; ✓ Entrance requirements were tightened and the duration of benefits was reduced; ✓ Three-phase benefit structure replaced former five phase benefit structure.
1979	<ul style="list-style-type: none"> ✓ More work effort was required from new entrants and re-entrants to qualify for benefits; ✓ Benefit repayment provisions were introduced and the benefit rate was lowered to 60% from 66%.
1989	<ul style="list-style-type: none"> ✓ VER raised from 10-14 weeks to 10-20 weeks; ✓ Disqualifications for voluntary leaving and misconduct were expanded; ✓ Repeat users no longer required 6 additional weeks; ✓ Extra parental benefits were provided with existing maternity benefits, payable to either men or women, and special benefits (e.i. maternity, parental, sickness) were expanded; ✓ A one-phase benefit structure, based on the number of insured weeks and the unemployment rate in the economic region, was introduced.
1993	<ul style="list-style-type: none"> ✓ Those who quit without just cause, were fired because of misconduct, or refused to accept suitable employment became ineligible for benefits; ✓ Replacement rate dropped to 57% from 60%.
1994	<ul style="list-style-type: none"> ✓ VERs raised to 12-20 weeks; ✓ Entitlement duration changed to work component and regional component; ✓ Replacement rate raised to 60% for low-earnings claimants with dependants, dropped to 55% for others.
1996	<ul style="list-style-type: none"> ✓ System renamed EI from UI; ✓ Hours/earnings coverage requirement abolished, every hour of work insurable; ✓ Entrance requirement and benefit entitlement based on hours of work instead of weeks; ✓ Average earnings over the last 20 weeks used to calculate amount of benefits.

Appendix—Continued

	<ul style="list-style-type: none">✓ Replacement rate for repeat users dropped by 1 percentage point for each 20 weeks of benefits in the past 5 years, up to a maximum of 5 percentage points;✓ Repeat claimants faced a benefit clawback of up to 100%, depending on earnings and the weeks of benefits in the past 5 years;✓ Weekly MIEs reduced from \$845 to \$750.
2000	<ul style="list-style-type: none">✓ Parental benefits were expanded from 10 to 35 weeks with up to one year of combined maternity and parental benefits;✓ The number of hours of insurable employment required to qualify for maternity, parental or sickness benefits were reduced from 700 to 600 hours;✓ A second parent sharing parental leave was no longer required to serve a second two-week waiting period and parents were able to earn the greater of \$50 or 25% of their weekly parental benefit without a reduction in their EI benefits.
2001	<ul style="list-style-type: none">✓ The intensity rule, which had been implemented to discourage repeat use of EI by reducing the benefit rate of frequent EI claimants, was eliminated;✓ The benefit clawback, initially introduced to reduce EI use by higher income repeat claimants, was adjusted to improve targeting and reflect changing economic realities by setting exemption for first-time and special benefits claimants and setting a threshold on net income;✓ Parents re-entering the work force who received EI maternity and/or parental benefits in the four years prior to the normal two-year “look back” period can now access regular benefits with the same number of hours as other regular claimants in their region;✓ The Small Weeks pilot project became a national and permanent feature of the program.
2009	<ul style="list-style-type: none">✓ The federal government froze the EI premium rate for 2010 at \$1.73 per \$100 of insurable earnings;✓ Five additional weeks of EI Regular benefits were provided and the maximum number of weeks of entitlements was increased from 45 to 50 weeks in regions with high unemployment;✓ Extended or earlier EI benefits were provided to long-tenured workers participating in longer term training through the CTAI.

Source: Lin (1998) and hrsdc.gc.ca

Table 1: Summary Statistics (1976-2010)

	Mean	Standard Deviation
Employment Rate	0.741	(0.083)
Retention Rate	0.569	(0.093)
<i>Gender</i>		
Male	0.501	(0.007)
Female	0.499	(0.007)
<i>Age</i>		
Age 20 to29	0.289	(0.065)
Age 30 to 39	0.310	(0.028)
Age 40 to 54	0.401	(0.073)
<i>Educational Attainment</i>		
High school or less	0.598	(0.138)
Post Sec. diploma/certificate	0.258	(0.105)
University degree	0.144	(0.045)
Observations	350	

a) The mean is weighted.

Table 2: Effects of Social Programs Reforms on Employment Rate (1976-2010)

Variables	(1)	(2)	(3)
	Employment Rate		
<i>EI Reforms</i>			
EI 1977	0.0435** (0.0194)	0.0310*** (0.00773)	- -
EI 1989	0.0219* (0.0129)	0.0262*** (0.00501)	- -
EI 1993	-0.0230 (0.0168)	-0.0102 (0.00640)	- -
EI 1996	0.0220 (0.0157)	0.0282*** (0.00593)	- -
EI 2009	0.00708 (0.0151)	0.00689 (0.00569)	- -
<i>Social Assistance Reforms by Province</i>			
ON 1987	0.0804*** (0.0219)	0.0180* (0.0106)	-0.00588 (0.00605)
ON 1995	-0.0239 (0.0415)	-0.0393** (0.0157)	-0.0266*** (0.00889)
ON 1998	0.0307 (0.0408)	0.0287* (0.0154)	0.00294 (0.00915)
ON 2005	-0.00650 (0.0330)	-0.00643 (0.0125)	-0.0442*** (0.00752)
QC 1989	-0.00170 (0.0215)	0.0166 (0.0103)	0.00514 (0.00574)
QC 1998	0.0433 (0.0331)	0.0322** (0.0125)	0.0175** (0.00748)
QC 2005	0.0301 (0.0329)	0.0301** (0.0124)	-0.0117 (0.00757)
AB 1990	0.0793** (0.0361)	-0.000356 (0.0149)	-0.00522 (0.00823)
AB 1993	0.0331 (0.0420)	0.0158 (0.0159)	0.00672 (0.00887)
AB 2004	0.00757 (0.0289)	0.00592 (0.0109)	-0.0449*** (0.00679)
BC 1996	0.0576* (0.0293)	-0.00140 (0.0120)	-0.00698 (0.00683)
BC 2002	0.0212 (0.0311)	0.0212* (0.0117)	-0.0296*** (0.00716)
MB 1993	0.101*** (0.0228)	0.0229** (0.0103)	0.00981* (0.00584)
MB 2004	0.0162 (0.0289)	0.0146 (0.0109)	-0.0363*** (0.00679)

Table 2—Continued

Variables	(1)	(2)	(3)
		Employment Rate	
SK 1998	0.0987*** (0.0312)	0.0164 (0.0123)	-0.00127 (0.00739)
SK 2003	0.0249 (0.0336)	0.0249* (0.0127)	-0.0179** (0.00771)
NB 1982	-0.0831*** (0.0172)	0.0208* (0.0111)	0.00581 (0.00641)
NB 1995	0.0801*** (0.0268)	0.0608*** (0.0102)	0.0294*** (0.00606)
NS 1977	-0.0443*** (0.0140)	-0.00260 (0.0239)	-0.00677 (0.0132)
NS 1998	0.0438 (0.0390)	0.0257* (0.0148)	0.0143 (0.00877)
NS 2001	0.0366 (0.0387)	0.0366** (0.0146)	-0.00568 (0.00873)
NL 1998	-0.118*** (0.0278)	0.0202* (0.0111)	-0.00649 (0.00673)
NL 2005	0.0546* (0.0330)	0.0547*** (0.0125)	0.0169** (0.00752)
PE 1983	-0.0510*** (0.0194)	0.00953 (0.0111)	-0.00572 (0.00639)
PE 1993	0.0547* (0.0278)	0.0337*** (0.0106)	0.00710 (0.00620)
Constant	0.670*** (0.0185)	0.739*** (0.00969)	0.745*** (0.00534)
Province Fixed Effects	No	Yes	Yes
Year Fixed Effects	No	No	Yes
Observations	350	350	350
R-squared	0.553	0.938	0.983

a) Standard errors are in brackets.

b) Province Abbreviation: Ontario-ON; Quebec-QC; Alberta-AB; British Columbia; MB-Manitoba; SK-Saskatchewan; NB-New Brunswick; NS-Nova Scotia; NL- Newfoundland and Labrador; PE-Prince Edward Island.

c) * significant at 90% level; ** significant at 95% level; *** significant at 99% level.

Table 3: Effects of Social Programs Reforms on One-Year Retention Rate (1976-2010)

Variables	(1)	(2)	(3)
	One-Year Retention Rate		
<i>EI Reforms</i>			
EI 1977	-	-	-
	-	-	-
EI 1989	-0.0381*** (0.0138)	-0.0299** (0.0125)	-
EI 1993	-0.0373** (0.0180)	-0.0277* (0.0159)	-
EI 1996	0.0630*** (0.0168)	0.0673*** (0.0147)	-
EI 2009	0.0162 (0.0161)	0.0161 (0.0141)	-
<i>Social Assistance Reforms by Province</i>			
ON 1987	0.0904*** (0.0234)	0.0113 (0.0268)	0.0399* (0.0223)
ON 1995	0.0329 (0.0444)	0.0198 (0.0390)	0.0299 (0.0321)
ON 1998	0.0285 (0.0436)	0.0270 (0.0382)	-0.0748** (0.0330)
ON 2005	0.00885 (0.0353)	0.00890 (0.0309)	-0.00362 (0.0271)
QC 1989	-0.00220 (0.0230)	-0.0277 (0.0259)	-0.0107 (0.0210)
QC 1998	0.168*** (0.0355)	0.160*** (0.0311)	0.0671** (0.0270)
QC 2005	-0.00792 (0.0352)	-0.00788 (0.0308)	-0.0118 (0.0273)
AB 1990	0.0107 (0.0386)	0.00335 (0.0373)	0.0109 (0.0299)
AB 1993	0.0684 (0.0450)	0.0557 (0.0395)	0.0106 (0.0320)
AB 2004	0.0553* (0.0310)	0.0542** (0.0271)	0.00868 (0.0245)
BC 1996	0.120*** (0.0313)	0.0841*** (0.0300)	0.0526** (0.0247)
BC 2002	0.0128 (0.0332)	0.0129 (0.0291)	-0.0413 (0.0258)
MB 1993	0.137*** (0.0244)	0.0830*** (0.0257)	0.0440** (0.0213)
MB 2004	0.00269 (0.0310)	0.00155 (0.0271)	-0.0440* (0.0245)

Table 3—Continued

Variables	One-Year Retention Rate		
	(1)	(2)	(3)
SK 1998	0.114*** (0.0334)	0.0746** (0.0307)	-0.00612 (0.0267)
SK 2003	0.0264 (0.0360)	0.0265 (0.0315)	0.0191 (0.0278)
NB 1982	-0.0614*** (0.0184)	-0.0671** (0.0292)	-0.0298 (0.0246)
NB 1995	0.0850*** (0.0287)	0.0679*** (0.0253)	-0.00384 (0.0219)
NS 1977	-0.00955 (0.0150)	-0.0870*** (0.0215)	-0.0705*** (0.0174)
NS 1998	0.0501 (0.0417)	0.0338 (0.0366)	-0.0337 (0.0316)
NS 2001	0.0218 (0.0414)	0.0218 (0.0362)	-0.00120 (0.0315)
NL 1998	-0.0272 (0.0298)	0.0554** (0.0277)	-0.0241 (0.0243)
NL 2005	0.0522 (0.0353)	0.0522* (0.0309)	0.0397 (0.0271)
PE 1983	-0.0948*** (0.0208)	-0.0678** (0.0286)	-0.0338 (0.0241)
PE 1993	0.0968*** (0.0298)	0.0780*** (0.0263)	0.00857 (0.0224)
Constant	0.547*** (0.00607)	0.619*** (0.0174)	0.627*** (0.0192)
Province Fixed Effects	No	Yes	Yes
Year Fixed Effects	No	No	Yes
Observations	340	340	340
R-squared	0.582	0.687	0.819

a) Standard errors are in brackets.

b) The one-year retention rate is specific for workers with less than one year of job tenure

c) Province Abbreviation: Ontario-ON; Quebec-QC; Alberta-AB; British Columbia; MB-Manitoba; SK-Saskatchewan; NB-New Brunswick; NS-Nova Scotia; NL- Newfoundland and Labrador; PE-Prince Edward Island.

d) * significant at 90% level; ** significant at 95% level; *** significant at 99% level.

Table 4: Effects of Social Assistance Reforms on Employment Rate by Age (1976-2010)

Variables	Employment Rate		
	Age 20-29	Age 30-39	Age 40-54
ON 1987	0.00431 (0.01000)	-0.0134 (0.00879)	-0.00792 (0.00675)
ON 1995	-0.0336** (0.0147)	-0.0236* (0.0129)	-0.0230** (0.00991)
ON 1998	0.00999 (0.0151)	-0.00374 (0.0133)	0.00434 (0.0102)
ON 2005	-0.0560*** (0.0124)	-0.0475*** (0.0109)	-0.0368*** (0.00839)
QC 1989	0.00208 (0.00949)	0.0160* (0.00834)	0.00433 (0.00641)
QC 1998	0.0213* (0.0124)	0.00383 (0.0109)	0.0317*** (0.00834)
QC 2005	-0.0234* (0.0125)	-0.0199* (0.0110)	-0.00207 (0.00845)
AB 1990	-0.00314 (0.0136)	0.00139 (0.0120)	-0.0121 (0.00917)
AB 1993	0.0180 (0.0147)	-0.00925 (0.0129)	0.0111 (0.00989)
AB 2004	-0.0388*** (0.0112)	-0.0579*** (0.00987)	-0.0413*** (0.00757)
BC 1996	-0.000535 (0.0113)	-0.00905 (0.00992)	-0.0104 (0.00761)
BC 2002	-0.0128 (0.0118)	-0.0419*** (0.0104)	-0.0301*** (0.00799)
MB 1993	0.00741 (0.00966)	0.00700 (0.00849)	0.0126* (0.00652)
MB 2004	-0.0447*** (0.0112)	-0.0504*** (0.00987)	-0.0240*** (0.00757)
SK 1998	-0.00848 (0.0122)	-0.0157 (0.0107)	0.00872 (0.00824)
SK 2003	0.000739 (0.0127)	-0.0260** (0.0112)	-0.0227*** (0.00860)
NB 1982	0.00351 (0.0106)	0.00674 (0.00931)	0.0110 (0.00715)
NB 1995	0.0543*** (0.0100)	0.0223** (0.00880)	0.0201*** (0.00676)
NS 1977	0.0130 (0.0218)	-0.00713 (0.0191)	-0.0259* (0.0147)
NS 1998	0.0283* (0.0145)	0.00302 (0.0127)	0.0218** (0.00978)

Table 4—Continued

Variables	Employment Rate		
	Age 20-29	Age 30-39	Age 40-54
NS 2001	-0.0166 (0.0144)	-0.00682 (0.0127)	0.00160 (0.00974)
NL 1998	-0.00240 (0.0111)	-0.00667 (0.00978)	-0.0106 (0.00750)
NL 2005	0.0224* (0.0124)	0.0173 (0.0109)	0.0151* (0.00839)
PE 1983	-0.0135 (0.0106)	-0.0165* (0.00928)	0.00815 (0.00713)
PE 1993	0.0208** (0.0102)	-0.00601 (0.00900)	0.00714 (0.00691)
Constant	0.773*** (0.00883)	0.744*** (0.00777)	0.719*** (0.00596)
Province Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	350	350	350
R-squared	0.956	0.961	0.982

a) Standard errors are in brackets.

b) Province Abbreviation: Ontario-ON; Quebec-QC; Alberta-AB; British Columbia; MB-Manitoba; SK-Saskatchewan; NB-New Brunswick; NS-Nova Scotia; NL- Newfoundland and Labrador; PE- Prince Edward Island.

c) * significant at 90% level; ** significant at 95% level; *** significant at 99% level.

Table 5: Effects of Social Assistance Reforms on One-Year Retention Rate by Age (1976-2010)

Variables	One-Year Retention Rate		
	Age 20-29	Age 30-39	Age 40-54
ON 1987	0.00584 (0.0317)	0.0810** (0.0374)	0.0720 (0.0439)
ON 1995	0.0651 (0.0457)	-0.0126 (0.0539)	-0.00391 (0.0632)
ON 1998	-0.0856* (0.0471)	-0.0973* (0.0555)	-0.0346 (0.0651)
ON 2005	0.00193 (0.0387)	-0.0541 (0.0456)	0.0237 (0.0535)
QC 1989	-0.0217 (0.0300)	0.0318 (0.0354)	-0.0246 (0.0415)
QC 1998	0.106*** (0.0385)	-0.00338 (0.0453)	0.0897* (0.0532)
QC 2005	-0.0827** (0.0390)	0.00109 (0.0459)	0.0628 (0.0539)
AB 1990	-0.00226 (0.0426)	0.00504 (0.0502)	0.0275 (0.0589)
AB 1993	0.0247 (0.0456)	-0.0419 (0.0538)	0.0365 (0.0631)
AB 2004	0.0329 (0.0349)	-0.0337 (0.0412)	0.000351 (0.0483)
BC 1996	0.0619* (0.0353)	0.0275 (0.0415)	0.0647 (0.0487)
BC 2002	-0.0577 (0.0369)	-0.0766* (0.0434)	0.00909 (0.0510)
MB 1993	0.0633** (0.0303)	0.0597* (0.0357)	-0.00550 (0.0419)
MB 2004	-0.0320 (0.0349)	-0.105** (0.0412)	-0.0153 (0.0483)
SK 1998	0.0122 (0.0381)	-0.0367 (0.0449)	-0.000160 (0.0527)
SK 2003	0.0304 (0.0397)	0.0137 (0.0467)	0.0207 (0.0549)
NB 1982	-0.0264 (0.0351)	-0.0135 (0.0414)	-0.0507 (0.0485)
NB 1995	-0.00851 (0.0312)	-0.0205 (0.0367)	0.0352 (0.0431)
NS 1977	-0.0764*** (0.0248)	-0.0727** (0.0292)	-0.0524 (0.0343)
NS 1998	0.0220 (0.0451)	-0.0657 (0.0532)	-0.0890 (0.0624)

Table 5—Continued

Variables	One-Year Retention Rate		
	Age 20-29	Age 30-39	Age 40-54
NS 2001	-0.0324 (0.0449)	-0.0525 (0.0529)	0.0851 (0.0621)
NL 1998	-0.0165 (0.0347)	-0.0382 (0.0409)	-0.0144 (0.0480)
NL 2005	0.0389 (0.0387)	0.0229 (0.0456)	0.0427 (0.0535)
PE 1983	-0.00783 (0.0344)	0.0334 (0.0405)	-0.191*** (0.0476)
PE 1993	0.0710** (0.0319)	-0.0292 (0.0376)	-0.0514 (0.0441)
Constant	0.561*** (0.0274)	0.627*** (0.0323)	0.658*** (0.0379)
Province Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Observations	340	340	340
R-squared	0.615	0.691	0.661

d) Standard errors are in brackets.

e) The one-year retention rate is specific for workers with less than one year of job tenure

f) Province Abbreviation: Ontario-ON; Quebec-QC; Alberta-AB; British Columbia; MB-Manitoba; SK-Saskatchewan; NB-New Brunswick; NS-Nova Scotia; NL- Newfoundland and Labrador; PE-Prince Edward Island.

g) * significant at 90% level; ** significant at 95% level; *** significant at 99% level.

Table 6: Effects of Social Program Reforms on Employment Rate for Low-Educated Individuals (1976-2010)

Variables	(1)	(2)	(3)
	Employment Rate		
<i>EI Reforms</i>			
EI 1977	0.0397*	0.0263***	-
	(0.0236)	(0.00824)	-
EI 1989	-0.0105	-0.00542	-
	(0.0158)	(0.00535)	-
EI 1993	-0.0308	-0.0152**	-
	(0.0205)	(0.00683)	-
EI 1996	0.0164	0.0245***	-
	(0.0191)	(0.00633)	-
EI 2009	0.0000153	-0.000229	-
	(0.0184)	(0.00607)	-
<i>Social Assistance Reforms by Province</i>			
ON 1987	0.0926***	0.0204*	0.00295
	(0.0267)	(0.0113)	(0.00812)
ON 1995	-0.0265	-0.0455***	-0.0363***
	(0.0506)	(0.0167)	(0.0119)
ON 1998	0.0432	0.0405**	0.0177
	(0.0497)	(0.0164)	(0.0123)
ON 2005	-0.0223	-0.0222*	-0.0617***
	(0.0402)	(0.0133)	(0.0101)
QC 1989	-0.0122	0.0126	0.00428
	(0.0262)	(0.0110)	(0.00771)
QC 1998	0.0423	0.0285**	0.0149
	(0.0404)	(0.0134)	(0.0100)
QC 2005	0.0291	0.0292**	-0.0143
	(0.0401)	(0.0132)	(0.0102)
AB 1990	0.0997**	0.0103	0.00727
	(0.0440)	(0.0159)	(0.0110)
AB 1993	0.0505	0.0290*	0.0206*
	(0.0513)	(0.0170)	(0.0119)
AB 2004	0.0139	0.0118	-0.0396***
	(0.0353)	(0.0117)	(0.00912)
BC 1996	0.0807**	0.00347	-0.000398
	(0.0357)	(0.0128)	(0.00916)
BC 2002	0.0331	0.0331***	-0.0176*
	(0.0379)	(0.0125)	(0.00962)
MB 1993	0.134***	0.0392***	0.0282***
	(0.0278)	(0.0110)	(0.00785)
MB 2004	0.0189	0.0167	-0.0347***
	(0.0353)	(0.0117)	(0.00912)

Table 6—Continued

Variables	(1)	(2)	(3)
	Employment Rate		
SK 1998	0.125*** (0.0380)	0.0185 (0.0132)	0.00423 (0.00992)
SK 2003	0.0303 (0.0410)	0.0304** (0.0135)	-0.0145 (0.0104)
NB 1982	-0.103*** (0.0210)	0.0106 (0.0118)	0.00441 (0.00861)
NB 1995	0.0823** (0.0327)	0.0584*** (0.0109)	0.0260*** (0.00814)
NS 1977	-0.0550*** (0.0170)	-0.00820 (0.0255)	-0.0104 (0.0177)
NS 1998	0.0466 (0.0475)	0.0242 (0.0157)	0.0143 (0.0118)
NS 2001	0.0313 (0.0472)	0.0313** (0.0156)	-0.0102 (0.0117)
NL 1998	-0.183*** (0.0340)	-0.00651 (0.0119)	-0.0302*** (0.00903)
NL 2005	0.0498 (0.0402)	0.0499*** (0.0133)	0.0104 (0.0101)
PE 1983	-0.0607** (0.0237)	-0.000386 (0.0118)	-0.00610 (0.00858)
PE 1993	0.0349 (0.0339)	0.00901 (0.0113)	-0.0195** (0.00832)
Constant	0.633*** (0.0226)	0.711*** (0.0103)	0.717*** (0.00718)
Province Fixed Effects	No	Yes	Yes
Year Fixed Effects	No	No	Yes
Observations	350	350	350
R-squared	0.533	0.950	0.978

a) Standard errors are in brackets.

b) The low educated individual is defined as people whose education attainment is below post secondary diploma/certificate.

c) Province Abbreviation: Ontario-ON; Quebec-QC; Alberta-AB; British Columbia; MB-Manitoba; SK-Saskatchewan; NB-New Brunswick; NS-Nova Scotia; NL- Newfoundland and Labrador; PE-Prince Edward Island.

d) * significant at 90% level; ** significant at 95% level; *** significant at 99% level.

Table 7: Effects of Social Program Reforms on One-Year Retention Rate for Low-Educated Individuals (1976-2010)

Variables	(1)	(2)	(3)
	One-Year Retention Rate		
<i>EI Reforms</i>			
EI 1977	-	-	-
	-	-	-
EI 1989	-0.0698***	-0.0611***	-
	(0.0166)	(0.0149)	-
EI 1993	-0.0261	-0.0152	-
	(0.0216)	(0.0190)	-
EI 1996	0.0776***	0.0828***	-
	(0.0201)	(0.0176)	-
EI 2009	-0.0164	-0.0165	-
	(0.0194)	(0.0169)	-
<i>Social Assistance Reforms by Province</i>			
ON 1987	0.0736***	-0.0116	0.0195
	(0.0281)	(0.0321)	(0.0287)
ON 1995	0.0354	0.0205	0.0327
	(0.0533)	(0.0466)	(0.0414)
ON 1998	0.0263	0.0246	-0.0807*
	(0.0524)	(0.0457)	(0.0426)
ON 2005	0.0151	0.0151	0.00658
	(0.0424)	(0.0370)	(0.0350)
QC 1989	-0.0256	-0.0595*	-0.0392
	(0.0276)	(0.0310)	(0.0272)
QC 1998	0.188***	0.179***	0.0873**
	(0.0426)	(0.0372)	(0.0348)
QC 2005	-0.0138	-0.0138	-0.0216
	(0.0422)	(0.0369)	(0.0353)
AB 1990	0.00136	-0.00183	0.00738
	(0.0464)	(0.0446)	(0.0386)
AB 1993	0.0765	0.0619	0.0180
	(0.0540)	(0.0472)	(0.0413)
AB 2004	0.0373	0.0360	-0.0124
	(0.0372)	(0.0325)	(0.0316)
BC 1996	0.124***	0.0786**	0.0493
	(0.0376)	(0.0359)	(0.0319)
BC 2002	0.0343	0.0344	-0.0213
	(0.0399)	(0.0348)	(0.0334)
MB 1993	0.137***	0.0766**	0.0402
	(0.0293)	(0.0308)	(0.0275)
MB 2004	0.00758	0.00620	-0.0422
	(0.0372)	(0.0325)	(0.0316)

Table 7—Continued

Variables	(1)	(2)	(3)
	One-year Retention Rate		
SK 1998	0.101** (0.0400)	0.0485 (0.0367)	-0.0305 (0.0345)
SK 2003	0.0271 (0.0432)	0.0271 (0.0377)	0.0190 (0.0359)
NB 1982	-0.0674*** (0.0221)	-0.0757** (0.0349)	-0.0268 (0.0318)
NB 1995	0.0611* (0.0344)	0.0417 (0.0303)	-0.0312 (0.0282)
NS 1977	-0.0264 (0.0180)	-0.110*** (0.0257)	-0.0919*** (0.0224)
NS 1998	0.126** (0.0501)	0.107** (0.0438)	0.0304 (0.0409)
NS 2001	-0.0306 (0.0497)	-0.0306 (0.0434)	-0.0400 (0.0407)
NL 1998	-0.0282 (0.0358)	0.0749** (0.0332)	-0.00516 (0.0314)
NL 2005	-0.0134 (0.0424)	-0.0133 (0.0370)	-0.0218 (0.0350)
PE 1983	-0.127*** (0.0250)	-0.0934*** (0.0342)	-0.0471 (0.0311)
PE 1993	0.0933*** (0.0357)	0.0720** (0.0315)	-0.000550 (0.0289)
Constant	0.518*** (0.00729)	0.595*** (0.0208)	0.570*** (0.0248)
Province Fixed Effects	No	Yes	Yes
Year Fixed Effects	No	No	Yes
Observations	340	340	340
R-squared	0.536	0.655	0.768

a) Standard errors are in brackets.

b) The one-year retention rate is specific for workers with less than one year of job tenure

c) The low educated individual is defined as people whose education attainment is below post secondary diploma/certificate.

d) Province Abbreviation: Ontario-ON; Quebec-QC; Alberta-AB; British Columbia; MB-Manitoba; SK-Saskatchewan; NB-New Brunswick; NS-Nova Scotia; NL- Newfoundland and Labrador; PE-Prince Edward Island.

e) * significant at 90% level; ** significant at 95% level; *** significant at 99% level.

Figure 1: Aggregate Employment Rate and One-Year Retention Rate for Workers with Less than One-year of Initial Job Tenure (1976-2010)



Source: Author's calculation