Gender Gap in Layoff Risk

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Abstract

This paper investigates the layoff risk gender gap in Canada for years 1987-2011 using the Labour Force Survey
data. The probability of being laid off is estimated using a Linear Probability Model. The estimated gender
differences in layoff rates are persistent when controlling for age, education group and province of residence. It is
shown that when controlling for industry and occupation, the gender gap shrinks and becomes economically
insignificant. When estimating separate equations for different occupational groups, the gender gap shrinks as well.
This analysis supports recent US literature on this issue and provides detailed report on layoff rates gender gap in
Canada.

Acknowledgments.

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I. Introduction.

In the year 2010, Canada started to recover from an almost 2 year recession. During this recession a large number of people across all provinces and territories were affected through stock markets decline and layoffs. Due to layoffs and other factors, the unemployment rate increased. However, the increase in unemployment was not equal for both genders; men experienced a much steeper increase in unemployment rates. At the same time in the US, Canada's greatest trading partner and very close state in terms of economic structure, men accounted for more than three quarters of job losses according to various media sources (e.g. Hoff Sommers (2009)). In this paper, I examine unemployment due to layoffs in Canada with a focus on differences between males and females.

The gender gaps in unemployment and layoff rates are presented in Figures 1 and 3 in the Appendix (p. 23-24). The gender gap of unemployment could be explained by gender gaps in the other rates. The entrance rates are higher for women, which could be explained by increasing women participation in labour force (Figure 4 p.24). The returning into the labour force rates are again higher for women (Figure 5 p. 25), which could be explained by the fact that women take time off work to raise children, so they leave the labour force for several years, and then some return. However, these rates account for less than 20 per cent of unemployment. Layoffs are the major cause of unemployment and account for more than a half of unemployment. Importantly, the layoff rates are higher for men. This paper addresses the issue of layoff risk in Canada for the period of 1987-2011. Using a Linear Probability Model, the layoff risk equation is estimated: I investigate the gender gap and compare the Canadian results to previous results found in research in the US.

Previous literature provides two major explanations of gender gap in layoff rates. The classical explanation suggests that recessions affect different industries in different ways, and generally speaking, male-dominated industries are more unstable during economic downturns than female-dominated ones. Therefore, the gender layoff gap during recession years could be explained by the fact that the male-dominated industries, such as manufacturing and construction, are more sensitive to business cycles. Another explanation that comes from literature highlights the role of occupations in layoff risks. Each occupation requires a particular set of skills and the level of education, and different occupations are also more sensitive to the business cycles. Therefore, controlling for occupation in addition to industry allows for more accurate analysis of the issue. Most of this research is based on US data and past Canadian research on this issue examines shorter time periods and does not focus on the gender gap in layoff risk.

In this paper, I focus on differences in the layoff risks between males and females, and explore the issue controlling for different sets of variables. The results show that on average women have slightly lower risks of being laid off. Controlling for industry and occupation considerably shrinks the gender gap, which is consistent with previous findings.

In the next section, I discuss research relating to differences in layoff rates in the US and Canada. I then describe the data and methodology used, followed by the results section and conclusion. The full tables and graphs are presented in the Appendix.

II. Literature Review.

American Evidence.

The recession of 2008-2009 was called "men-cession" in the U.S. media, highlighting the fact that men accounted for nearly three quarters of the jobs lost. In response to this news, several papers, most of which were statistical reports, addressed this issue of the effects of the recessions on various groups of people and investigated the gender unemployment rate gap. An example of such report is a Federal Reserve Bank of St. Louis paper by Engemann and Wall (2009). The authors note that different demographic groups are not affected equally by the recession. Although all demographic groups experience job losses during the most recent recession, some groups experienced more severe losses than others. The explanation provided is similar to traditional industry discussions; in addition, the authors note that various demographic groups are more heavily employed in specific industries, so there are two effects – external and internal- working together- a recession affecting an industry as a whole and a recession affecting particular demographic groups within industries. So when talking about the layoff gender gap, it is preferred to look at demographic characteristics as well as industries in order to explain the gap. The authors show that during last 6 recessions, men lost at least 1.1 times as many jobs as women did (Engmann and Wall 2009).

The intuition of the importance of demographic effects was discussed by Wall (2009). Even though the male-dominated sectors of economy were hit the hardest, in other sectors, service for example, men experienced higher layoff rates as well. He also notes that married people had more stable employment compared to non-married. The explanation provided is

based on demographic and educational differences. Single people are more likely to be young and therefore have lower levels of education and less work experience. Married people are more likely to have children and therefore are more likely to take a lower paid job after they have been laid off, thereby returning to employed state sooner. Education is said to be the main explanation for the gender gap, since in the US, men are less likely to have attended college, and jobs that require college education are on average more stable. Most men without a high-school diploma are employed in construction and manufacturing; the industries that experience the most severe effects of an economic downturn. Wall (2009) argues that education is the key to answering why men lost more jobs.

Sahin et al (2010) take a closer look at the gender gap in unemployment rates during the most recent recession in the US and compare patterns with previous recession and non-recession years. In this paper, the gross labour flows data from Bureau of Labour Statistics is analyzed. These data measure the transition of people between employment, unemployment and 'not in labour force'. The authors find that the higher unemployment rates for men in the latest recession can be explained by two main factors: severe downturn impacts on men-dominated industries (e.g. manufacturing), and more men returning to labour force. The latter effect is called the "added worker effect" and was more important for women in previous time periods. Also the authors note that in previous recessions, men who were laid-off sometimes left the labour force until more favourable business conditions returned; during the last recession the opposite happened. They explain this by showing that a high percentage of men aged 55 and older and also college and university students entered the labour force. However, they do not examine aspects other than gender and age in these transitions.

In an influential paper, Goodman et al. (1993) examine women's employment during recession years from 1969 to 1992 in the US. In the beginning of the 1990's, in the US there were some publications in the media suggesting that women lose jobs before men do during economic downturns (e.g. Mann (1992)). Goodman, Antczak and Freeman (1993) show that this is not true, conversely the opposite is true: in each of the 5 recessions[1] during 1969-1992, men lost at least 9 times as many jobs as women did. The explanation is that downturns have different impacts on different industries. Male-dominated industries, for example good-producing industries, experience the greatest losses during recessions. On the other hand, female-dominated industries are more stable and some of them even keep growing during recessions. Therefore, they suggest that the main reason of the existence of the job loss gender gap, is the proportion of jobs held by women in more acyclical industries. The most jobs men lost in 1990-91 recession were jobs in Construction, Manufacturing and Retail Trade. However, in some cases women were more successful at gaining or retaining jobs within industries compared to men. The authors provide three explanations for these cases. First, men are more often employed in occupations which are heavily affected by the business cycle. Second, in some cases, strong growth occurs in female-dominated sectors, for example hospitals were experiencing growth throughout the 1990-91 recession and most hospitals employees are women. A third explanation is the strong trend of employing more women in particular sectors that historically were male-dominated (e.g. finance, insurance, real estate and government sectors).

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[1] December 1969-November 1970, November 1973-March 1975, January 1980-July 1980, July 1981-November 1982, July 1990-March 1991; as defined by the National Bureau of Economic Research.

The division of economy into occupational sectors rather than industry sectors was considered by Rives and Sosin (2002). They looked at recessions in the 1980's and 1990's, and tried to explain the gender gap in unemployment rates in the US controlling for occupation. In the 1980's and 1990's recessions, male unemployment rates were higher than female unemployment rates and during non-recession years the rates were roughly the same. The authors were able to show that the most variation during recessions comes from the different impact recessions have on different occupations, so conditional on occupation, the rates again were roughly the same. Different occupations require different levels of education; therefore this paper also highlights the importance of the level of education in explanation of layoff gender gap.

Canadian Evidence.

The unemployment trends in Canada often follow US trends. Several Canadian papers address the gender gap in unemployment rates. Some papers compare employment rates for different demographic groups. Chaykowski and Powell (1999) find that women's labour force participation rates increased over time and now closely match the participation rates of men, but a gender gap does exist, and mostly could be explained by the presence of young children. The paper examines different labour market trends of women in Canada, including the unemployment rate and how it differed for men and women between 1978 and 1998. The authors do not distinguish between recession and non-recession years, and they do not control for any other demographic characteristics. They explain the initial gender gap by the rise in female labour force participation rates. They also note that changes in the minimum wage level

affect women more than men, since more women are employed in lower paid jobs. In addition to that, the authors find that the number of young children is the main characteristic that affects women's decision on labour force participation. This might explain the layoff gap as well; when a woman gets laid off, she is more likely to leave the labour force, especially if she has young children. So some women would move from employment directly into not in labour force sector, without spending time looking for a job that might replace the lost one. Generally when looking at layoff rates, people who leave the labour force when laid off are not considered, therefore the gender gap can be partially explained by the higher propensity of women to leave the labour force.

Layoff rates were examined by Morissette (2004). He uses the Longitudinal Worker File from 1983 to 1999 to examine whether the permanent layoff rates have increased over time in Canada. A part of this paper examines the risk of permanent job loss by gender and age. This is done by estimating separate logit models for each of the 10 age-gender groups. The covariates he controlled for include: age, province, year effect, industry and firm size. He finds little evidence that the overall permanent layoff rates increased, but did find that the layoff rates increased in some sectors of the economy. Also, no substantial gender differences in risk of being permanently laid off were found.

In this paper, I build on the previous research and focus on the gender gap in layoff rates. I use Canadian data from 1987-2011, a longer period than previous Canadian research has studied. Examining layoff rates is important due to the large scale (more than half of unemployment comes from layoffs), the fact that many large and important governmental

programs focus on it (Employment Insurance, programs assisting with finding a new job), and the large gender differences in layoff rates.

III. Data and Methodology

Dataset Description

In this paper, I use the Labour Force Survey data from 1987-2011[2]. This survey samples working-age population in Canada (age 15 and above) and divides it into three mutually exclusive categories: employed, unemployed, and not in labour force. The focus of the paper is on the Employment to Unemployment flow, so the sample used contains only people in labour force who were initially employed. The approximate number of observations is 29,500,000.

Variables Used.

The main variables of interest are the labour force status and flow into unemployment; a modified version of them is the dependent variable. The labour force status has the following values: 1- employed, at work; 2- employed, absent from work; 3- unemployed, temporary layoff; 4-unemployed, job searcher; 5-unemployed, future start; 6 and 7 not in labour force. The flow into unemployment has the following values: 1-temporary layoff; 2-permanent layoff; 3 and 4 -job leaver; 5-8 – outside of labour force. The dependent variable is the probability of being laid off. It is equal to 1 if a person is unemployed due to layoff; if a person is employed, the variable has a value of zero.

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[2] January 1987- March 2011 (the most recent data available)

I include the following variables as controls: age, province, survey year, marital status, education level, full-time/part-time employment, industry and occupation. Education level[3] is divided into the following dummies: completed 0-8 years of schooling (reference category), 9-10 years of schooling completed, 11-13 years of schooling (without specifying if graduated or not, as the post 1990 variable does), some post-secondary completed, post-secondary certificate or diploma, university degree (Bachelor's or above).

Given that different demographic groups are employed full-time compared to part-time and these groups are likely to be affected differently by economic downturns, particularly in terms of layoffs, it is therefore important to distinguish between full-time and part-time employment.

As discussed in Wall (2009), controlling for marital status is important. Controlling for province is also essential in Canada, since provinces have their own legislation systems governing labour. As well, some industries are concentrated in different regions of Canada. For example, most good-producing industries are located in Ontario and Quebec, therefore, it is important to control for provincial differences.

In the Labour Force Survey, over 800 different industries are identified. I have grouped the industries into 20 sectors according to NAIC-2002 system and control for each industry with a dummy variable. I also group the 500 plus occupations into 10 groups[4]. The default category has the following characteristics: province – Newfoundland and Labrador, education level – 8

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[3] For consistency, I code the education dummies based on the pre-1990 definition since prior to 1990, the education variable contained less categories.
[4] The list of categories can be found in Appendix on page 33.

years of education or less, industry – agriculture, occupation – occupations in Art, Culture,

Recreation and Sport.

Model.

The purpose of this paper is to examine the layoff risk, and in particular, differences in

the probability of layoffs between males and females. The basic model estimated is: Y=Xβ +ε,

where Y= probability of being laid off, X is the set of independent variables, which includes a

gender dummy. Gender differences in the layoff rates are examined by estimating 4 equations

using various specifications. Due to computational constraints owing to the large sample size

present in the Labour Force Survey, each equation is estimated by a Linear Probability Model,

rather than a Probit or Logit model.

First I estimate layoff risk controlling only for gender and age (equation 1). Then I add

controls for province, education level and marital status in order to see if the gender gap can be

explained by demographic differences (equation 2). After that I add industry and occupation

variables (equation 3).

(1) $\Pr(\text{LAYOFF} = 1)_i = \beta_0 + \beta_1 \text{age}_i + \beta_2 \text{age}_i^2 + \beta_3 \text{female}_i + \varepsilon_i$

(2) $\Pr(\text{LAYOFF} = 1)_i = \beta_0 + \beta_1 \text{age}_i + \beta_2 \text{age}_i^2 + \beta_3 \text{female}_i + \beta_4 \text{educ}_i + \beta_3 \text{female}_i +$

$\beta_5 \text{province}_i + \varepsilon_i$

(3) $\Pr(\text{LAYOFF} = 1)_i = \beta_0 + \beta_1 \text{age}_i + \beta_2 \text{age}_i^2 + \beta_3 \text{female}_i + \beta_4 \text{educ}_i + \beta_5 \text{province}_i +$

$\beta_6 \text{industry}_i + \beta_7 \text{occupation}_i + \varepsilon_i$

where female is gender binary variable, equals to 1 if female; educ is a vector of binary variables for education level[5]. Both age and age squared are controlled for, since it is plausible to have a non-linear relationship between the risk of being laid-off and age. For example, as people become older the probability of being laid-off may decrease quickly at younger ages and then flatten off. Industry and occupation are controlled for with 19 industries and 9 occupational dummies. Conditioning on occupation and industry allows for determining how much of the gender gap in layoffs is due to differences in the type of jobs males and females work in.

Next I add controls to the set of equations for recession periods, and then add interaction terms for the recessions and female dummy[6]. This helps in analysing the behaviour of layoff risk and the gender gap during recession and non-recession periods.

After this analysis, for each occupation groups (10 groups) the following equation is estimated:

(4) $\Pr (\text{LAYOFF} = 1)_i = \beta_0 + \beta_1 \text{age}_i + \beta_2 \text{age}_i^2 + \beta_3 \text{educ}_i + \beta_4 \text{province}_i + \beta_5 \text{industry}_i + \beta_6 \text{recession}_i + \varepsilon_i$

Equation 4 allows me to examine whether the impact of the covariates on the layoff rates are different between occupations. As well, Rivers and Sosin (2002) suggest that differences in the occupational distribution of males and females are key to explaining the gender gap; however, in their paper separate analysis for the occupation groups was not

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[5] For each education level discussed above a binary variable is generated, so the education level in the model is described by 6 dummy variables.
[6] One binary variable to describe recession of 1990-1993 and another for recession of 2008-2009.

conducted. Nevertheless, narrowing the population down to people employed in specific

occupational groups allows for examining the gender gap within occupations as well as

investigating different effects of other explanatory variables within occupations. For example,

in some occupations education might play bigger role in determining the layoff risk than in

others.

Data Analysis

The graphs presented in the Appendix show the gender gap in layoff rates. Female layoff

rates lag male layoff rates and are on average lower. In Canada, the gender layoff gap is

shrinking as can be seen from Figure 3 on page 23. The behaviour of the gender gap was

different across the provinces (as can be seen from Figures a-u on pages 22-27). In

Newfoundland and Labrador, Nova Scotia, New Brunswick and Saskatchewan this gap was the

largest. In Prince Edward Island, Ontario, Quebec and Manitoba, the rates were closer and

sometimes female layoff rates were higher.

The graphs presented in Appendix (Figures 1-5 on pages 22-24) show a persistent

gender gap in all of the following: unemployment rates, layoff rates, new entry rates and rate of

labour force re-entrance.   The unemployment rates were higher for women up until the 1980's

recession, after which the female rates followed the male rates closely until the recession of

the early 1990's, when the male unemployment rate was higher and the gender gap increased.

Later the gap shrunk and then increased again in the mid 2000's. Contributing to the

unemployment gap are the gaps in layoffs, new entrance and re-entrance rates. Historically the

latter two were higher for women and account for less than 20 percent of total number of unemployed, while the layoff rates were always higher for men.

IV. Results

Table 1. Linear Probability estimates of Layoff risks.

	Equation 1. Controlling for age and gender.	Equation 2. Adding province, education and marital status.	Equation 3. Adding industry and occupation.
Variables			
Female	-.0149***	-.0137***	-.0006***
	(0.000)	(0.000)	(0.000)
Age	-.0003***	.0001***	.0008***
	(0.000)	(0.000)	(0.000)
Age Squared/100	-.0004***	-.0016***	-.0014***
	(0.000)	(0.000)	(0.000)
Constant	.045***	.136***	.106***
	(0.000)	(0.001)	(0.001)
R^2	0.002	0.011	0.021
Number of observations	29,500,000	29,500,000	29,500,000

Notes: Age=Actual age − 30. Regressions also include controls for education, province of residence, marital status, industry and occupation. The sample is restricted to people aged 15+. See Table A2 in the appendix for the full set of coefficient estimates.

In column 1 of Table 1, I begin by examining the layoff gap controlling only for age and gender. Controlling only for age, females have much lower layoff rates than males. The monthly layoff rates for females are around 1.5 percentage points lower than for males. This is

very large relative to the intercept of 4.5, which can be interpreted as the mean layoff rate for males aged 30.[7]

Once additional covariates are controlled for in column 2 of Table 1, the difference in layoff rates shrinks by only a small amount, with the coefficient dropping from around -1.5 percentage point difference to a -1.4 point difference. Therefore, differences in region of residence and education levels explain very little of the male-female layoff gap.

However, once occupations and industries are controlled for, the gap shrinks considerably (see column 3 of Table 1). While the difference is statistically significant (which is not surprising, given the large sample size), it is no longer economically significant, and the coefficient decreases from around a 1.5 percentage point difference to less than .1 difference. Therefore, industry and occupational differences are indeed the key to explaining the gender layoff gap.

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[7] Age is defined as age – 30.

Table 2. **Impact of recessions on male/female layoff risk.**

Variables	Equation 1. Controlling for age, gender and recession.	Equation 2. Adding province, education and marital status.	Equation 3. Adding interaction of recession and gender.	Equation 4. Adding industry and occupation.
Female	-.015***	-.014***	-.013***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Age	-.0003***	.0001***	.0001***	-.0001***
	(0.000)	(0.000)	(0.000)	(0.000)
Age Squared/100	-.0004***	-.0016***	-.0016***	-.0014***
	(0.000)	(0.000)	(0.000)	(0.000)
Recession 90's	.014***	.011***	.014***	.015***
	(0.000)	(0.000)	(0.000)	(0.000)
Recession 2008-9	-.005***	-.002***	-.001*	-.002***
	(0.000)	(0.000)	(0.000)	(0.000)
Female*Recession 90's			-.007***	-.006***
			(0.000)	(0.000)
Female*Recession 2008-9			-.003***	-.003***
			(0.000)	(0.000)
Constant	.044***	.136***	.135***	.104***
	(0.000)	(0.001)	(0.001)	(0.001)
R^2	0.003	0.011	0.011	0.021
Number of observations	29,500,000	29,500,000	29,500,000	29,500,000

Notes: Age=Actual age − 30. Regressions also include controls for education, province of residence, marital status, industry and occupation. The sample is restricted to people aged 15+. See Table A2 in the appendix for the full set of coefficient estimates.

In column 1 of Table 2 controlling for age, gender and recession periods shows a large

difference in yearly layoff rates- 1.5 percentage points (lower for women). During the recession

of the early 1990's, the estimated increase in the layoff risk was 1.4 percentage points, during

the most recent recession the estimates show that the layoff risk actually decreased by 0.5

percentage points[8].

Adding province, education levels and marital status in column 2 of Table 2 slightly

decreases the gender gap from 1.5 percentage points to 1.4. The coefficients on recessions

dummies both decrease in absolute values; however, for recession of 2008-2009 the coefficient

is still negative, this time it shrinks to - 0.2 percentage points – not economically significant.

When I interact the two recessions dummies with the female dummy in column 3 of

Table 2, the interaction terms have negative coefficients, which is consistent with general

finding that women experience lower layoff risks during recession years compared to men. The

coefficient on the 1990's recession increased to 1.4 percentage points, showing an increase in

the layoff risk for males on average. For females, there is only a 0.7 percentage point increase

during the first recession. So the results suggest that layoff risks increase during the 1990's

recession for both genders, but with a higher risk for males on average. This is consistent with

previous research findings. The coefficient on the 2008-9 recession was still negative, but

decreased in absolute value again becoming around -0.1 percentage points for males, which is

not economically important. For females this number was around -0.4 percentage points, again

showing lower layoff risk for females.

Controlling for industry and occupation in addition to the previous set of variables in

column 4 of Table 2 makes the coefficient on the female dummy statistically insignificant. The

intercept shrinks to 10.4 percentage points; the coefficients on the 1990's recession dummy

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[8] Potentially the increase in unemployment associated with recessions is due to lower hiring of new entrants to the labour market.

and its interaction with female do not change in significant ways. The coefficient on the 2008-9 recession dummy becomes -0.2 (an increase in absolute value compared to column 3), which again shows an economically insignificant decrease in the layoff risk during this recession for males. For females the layoff risk decreased by around 0.5 percentage points during the 2008-9 recession. So the model again predicts a lower layoff risk for females compared to males during recession periods. During non-recession periods the difference is estimated to be insignificant. Therefore, again controlling for industry and occupation dramatically shrinks the gender gap.

Overall, these results show that controlling for industry and occupation does indeed shrink the gender gap in terms of the layoff risk. Also, married people on average have a slight advantage. On average the most unstable industry is Construction, the most stable one is Utilities; the most stable occupation group is managerial, the most unstable ones are occupations unique to primary industry, all of this is consistent with previous research (see Tables 1A and 2A in the Appendix).

Table 3a: **Separate regressions for 10 occupation groupings.**

Occupation group:	Managerial	Business, Finance and Administrative	Natural and Applied Sciences	Health	Social Sciences, Education, Government Service and Religion
Variables:					
Female	.001***	0.000	.002***	-.001**	-.001**
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Recession 90's	.003***	.006***	.004***	0.001	-.003***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Recession 2008-9	-.002***	-0.001	-.002**	-.002**	-.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Interaction with female					
Recession 1990's	.003***	0.000	0.000	0.000	.004***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Recession 2008-9	-.004***	-.006***	-.003*	-0.001	-0.001
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Constant	.054***	.087***	.206***	.099***	.061***
	(0.002)	(0.002)	(0.004)	(0.007)	(0.006)
R²	0.004	0.007	0.012	0.006	0.008
Number of observations	2,502,733	4,846,058	1,414,510	1,628,445	2,172,476

Occupation group:	Art, Culture, Recreation and Sport	Sales and Service	Trades, Transport and Equipment	Unique to Primary industry	Unique to Manufacturing, Processing and Utilities
Variables					
Female	-.004***	-.006***	0.000	.011***	.011***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Recession 90's	.014***	.007***	.021***	.004***	.026***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Recession 2008-9	-.004**	-.009***	-.012***	-.004***	.024***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Interaction with female					
Recession 1990's	-.011***	0.000	-0.001	-.005**	0.000
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)
Recession 2008-9	-.005*	-0.001	0.004	-0.004	-.014***
	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)
Constant	.080***	.117***	.307***	.172***	.370***
	(0.008)	(0.003)	(0.002)	(0.002)	(0.008)
R^2	0.009	0.012	0.031	0.043	0.017
Number of observations	630,614	6,965,504	4,996,284	2,099,831	1,925,925

Notes: Age=Actual age − 30. Regressions also include controls for education, province of residence, marital status, industry and occupation. The sample is restricted to people aged 15+. See Table A4a and A4b in the appendix for the full set of coefficient estimates.

In Tables 3a and 3b, I examine the gender gap for the different occupational groups to examine the within occupational gender gap, and to compare this gap across the different occupations. The gender gap shrinks when separate equations are estimated for each occupational group (full Tables 3A(a) and 3A(b) on pages 35-40). The only occupations that showed economically significant coefficients on the female dummy are occupations unique to primary industry, manufacturing, processing and utilities. The recession dummies showed that during economic downturns the layoff probability becomes economically insignificantly for most occupations, except for occupations unique to manufacturing, processing and utilities

(during both recessions considered the model predicted the average layoff rates to increase by about 2 percentage points). For occupations in Trades, Transport and Equipment, the coefficient on the 1990's recession dummy was positive and shows a 2.1 percentage point increase in layoff rates, while the 2008-9 recession dummy has negative coefficient and shows a 1.2 decrease in layoff rates. The difference for females in recession coefficients was mostly economically insignificant with two exceptions. The 1990's recession effect was smaller for females in occupations in Art, Culture, Recreation and Sports: they experienced an increase in layoff risk due to the recession of only 0.3 percent compared to males with a 1.1 percent increase. The recession of 2008-9 had less impact on females employed in occupations unique to Manufacturing, Processing and Utilities; the total effect for females was approximately a 1 percent increase in layoff risk compared to 2.4 percent increase for males.

The estimated behaviour of the layoff risk gender gap is consistent with the previous research done on this topic; therefore I conclude that the behaviour of layoff risk gender gap in Canada is close to that in US.

V. Conclusion

The analysis provided in this paper shows that the gender gap in layoff risk is persistent when controlling for age, the highest level of education and province of residence. Women on average have lower risk of being laid-off. Higher layoff rates for men could be explained by the classical example that male-dominated industries (e.g. Construction) are more unstable than female-dominated industries (e.g. Education). I was able to show that adding occupation and

industry controls considerably shrinks the gender gap. Controlling for occupational group allows partially controlling for earnings, ability, highest level of education, various demographic aspects and working environment, therefore providing a more homogeneous setting. This supports idea discussed in Wall (2009) that recessions, business cycles and various external shocks affect industries both externally and internally, affecting each person separately (this effect is approximated with control for occupation) and industry as a whole. Also the analysis in this paper shows that behaviour of layoff rates gender gap in Canada closely matches those in the US.

Possible ways of improving the analysis provided in this paper is by adding variables like earnings, tenure and various immigration parameters. Tenure affects layoff risk, since people who stay at a company longer are more valuable if the given job requires firm or occupational specific human capital. Variables like immigration status, country of birth and country of education might help in controlling for the language ability, the quality of education received and laws and regulations protecting employment (e.g. employment of people with Work Visas is regulated differently compared to employing Permanent Residents and Canadian Citizens). However, immigration variables are available in LFS starting from 2006; therefore this is left for future research.

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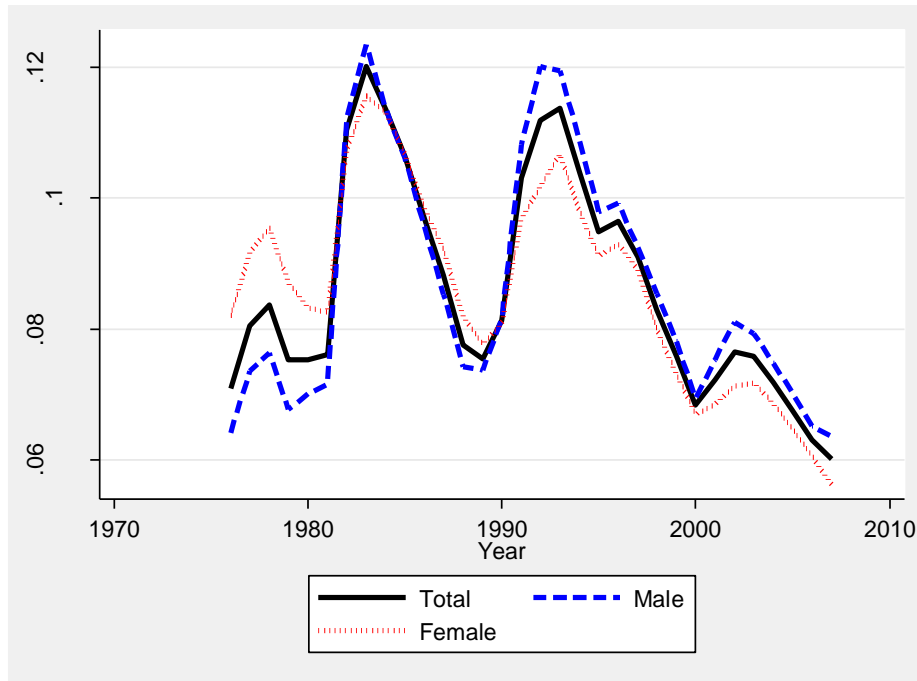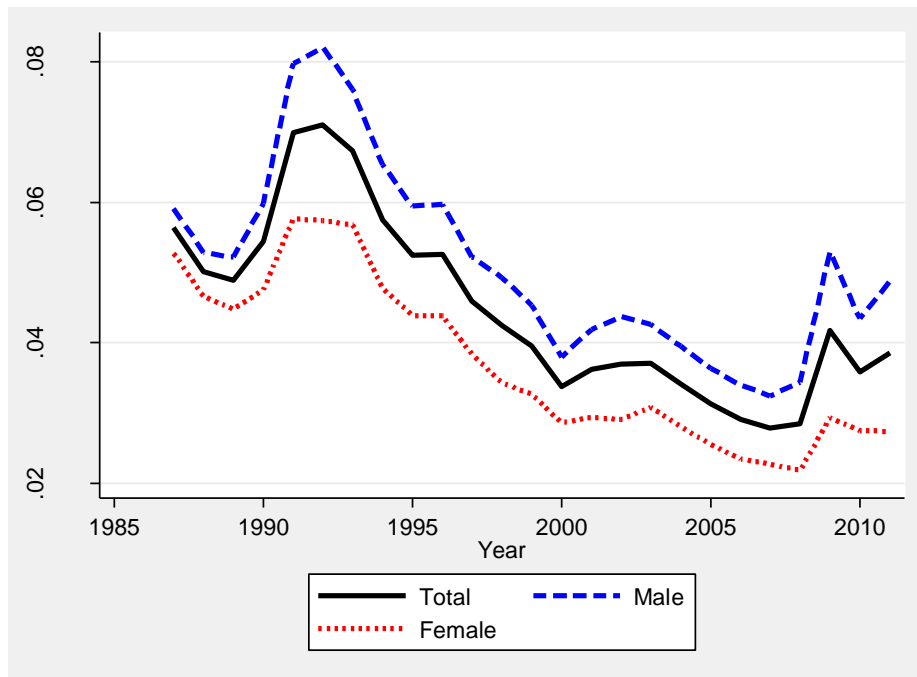Figure 1: Unemployment Rates in Canada, 1976-2008

Figure 2: Quits and Layoff Rates[9] in Canada, 1987-2011

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[9] Percentage rate of people who were laid off or quit their jobs regarding to total number of employed, job-quitters and job-losers.

Figure 3: Layoff Rates as percentage of unemployment, 1987-2011.
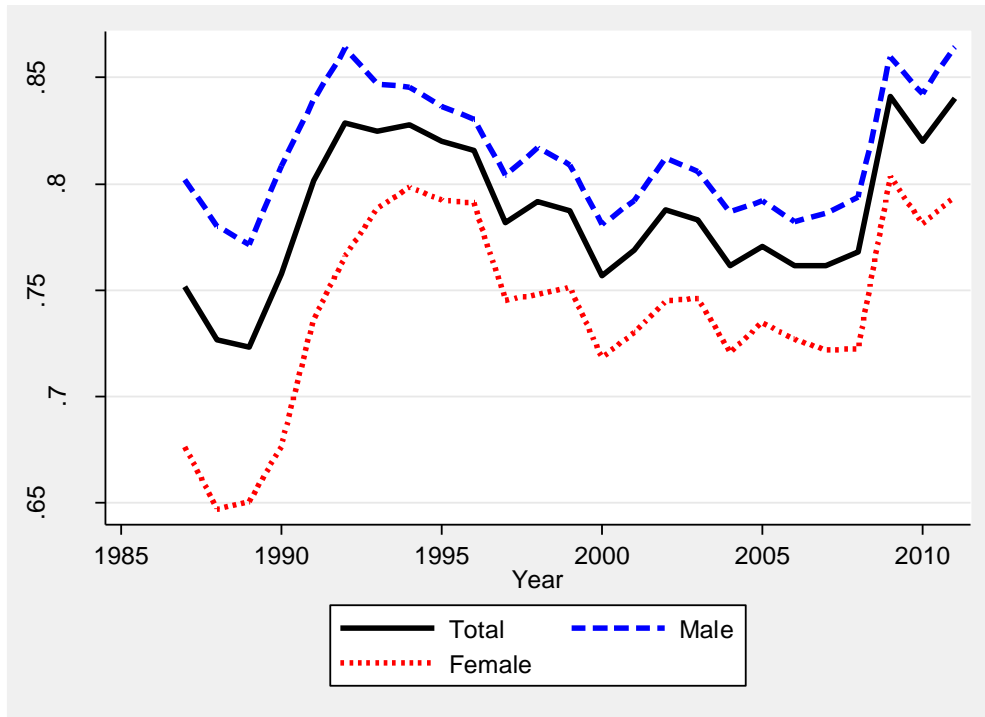
Figure 4: New Entry Rates as percentage of unemployment, 1976-2008
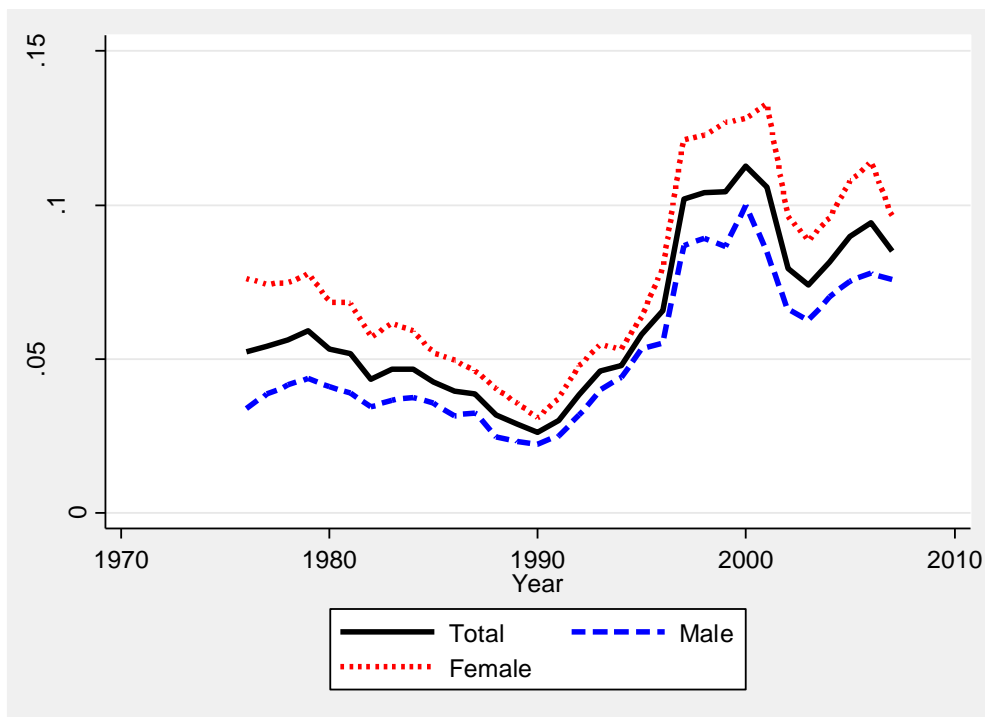
Figure 5: Returning into Labour Force Rates as percentage of unemployment, 1976-2008
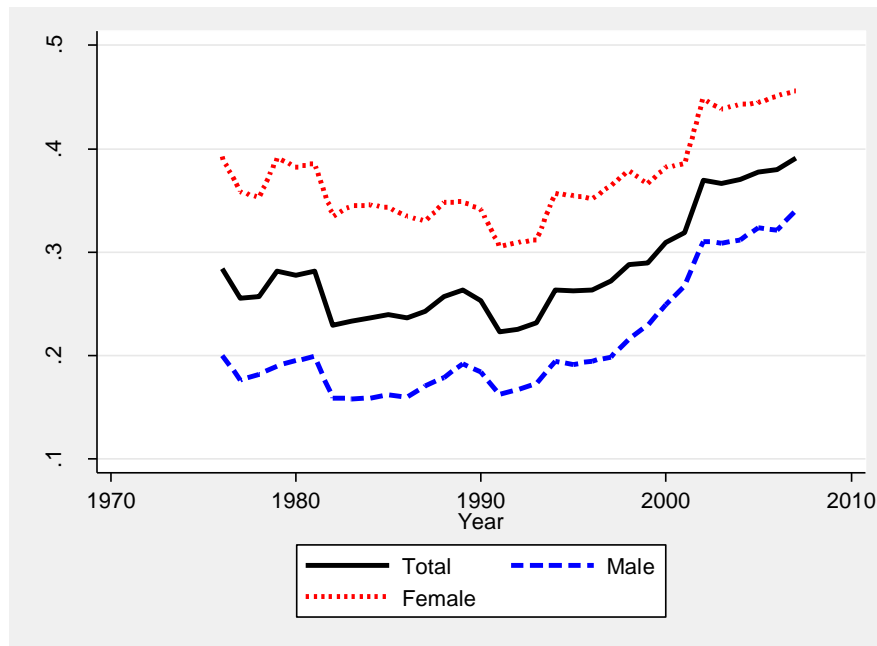
Quits and Layoff Rates as percentage of job-losers, job-quitters and employed; Layoff Rates as percentage of job-losers and job-quitters by Province

Figure a:Newfoundland and Labrador Quits and Layoffs   Figure b: Newfoundland and Labrador Layoffs
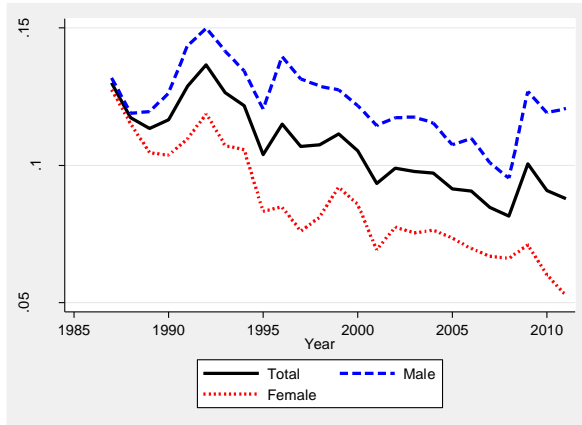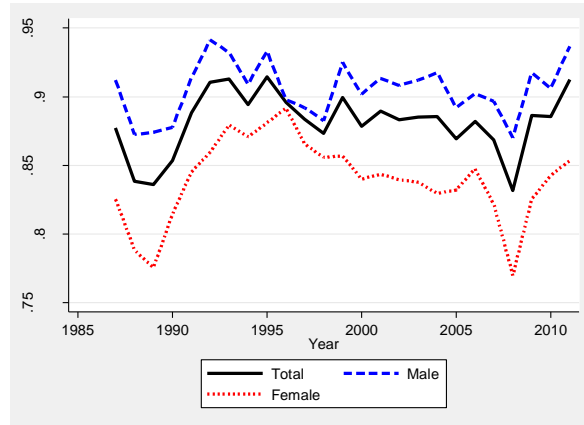
Figure c: Prince Edward Island Quits and Layoffs
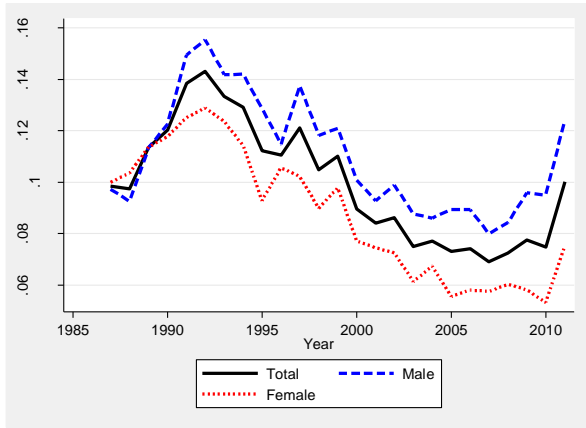
Figure d: Prince Edward Island Layoffs
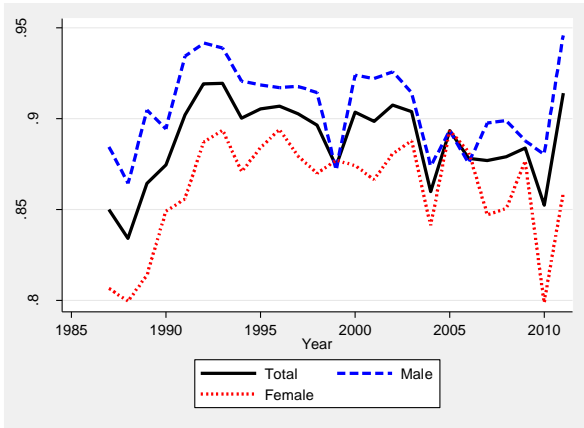
Figure e: Nova Scotia Quits and Layoffs
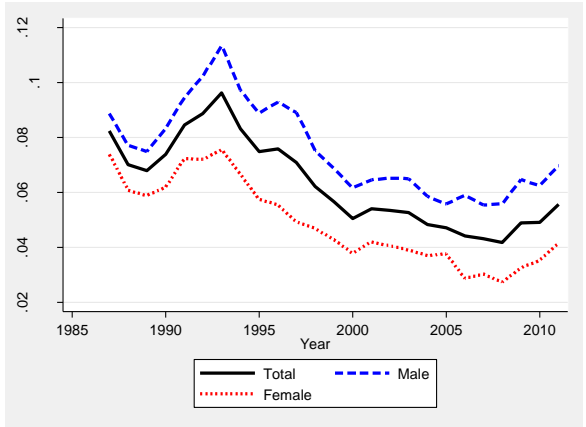
Figure f: Nova Scotia Layoffs
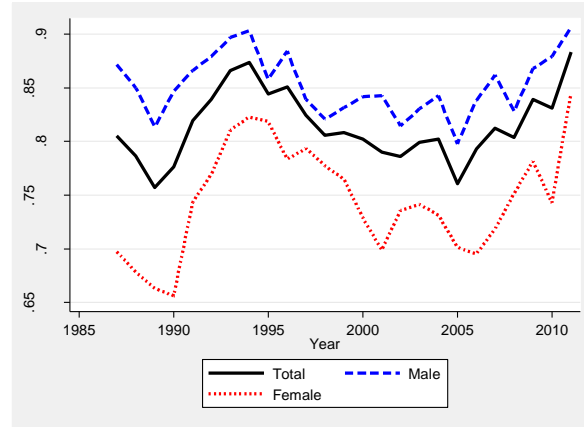
Figure g: New Brunswick Quits and Layoffs
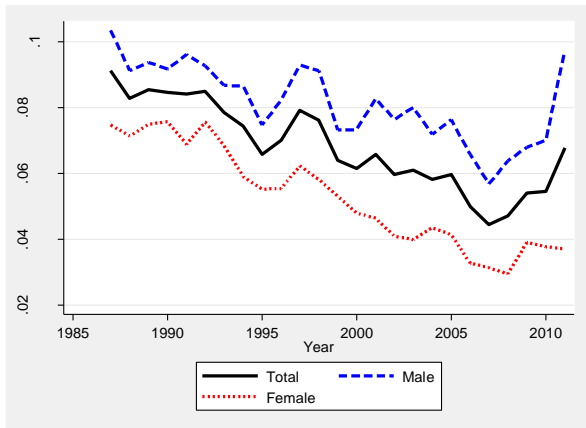
Figure h: New Brunswick Layoffs
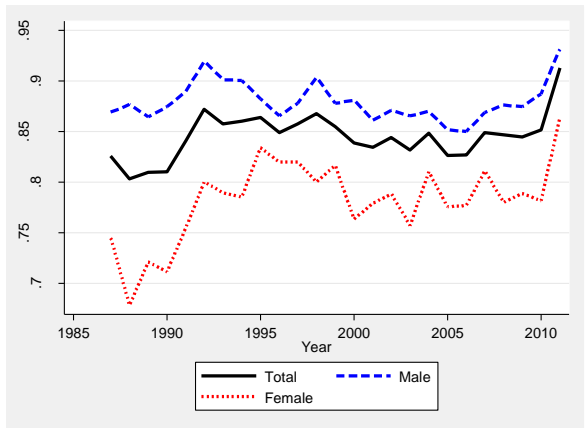
Figure j: Quebec Quits and Layoffs
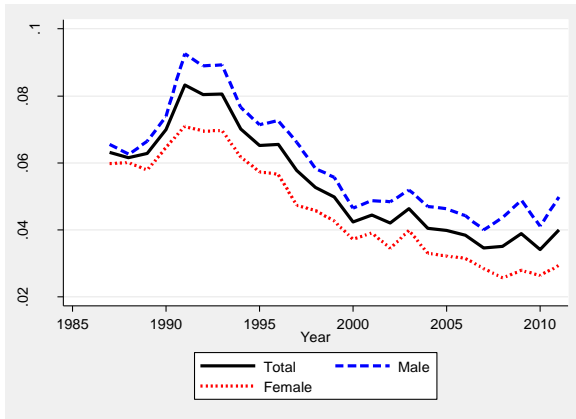
Figure k: Quebec Layoffs
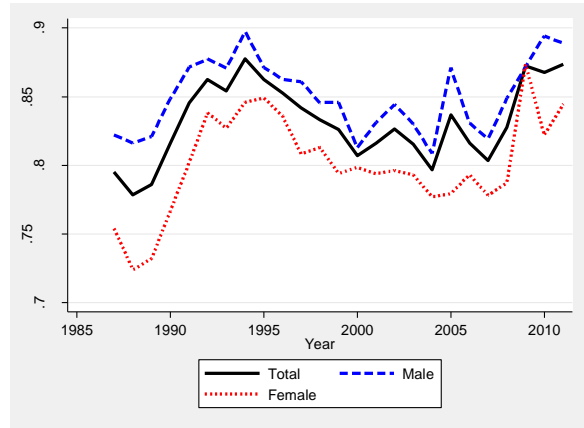
Figure l: Ontario Quits and Layoffs
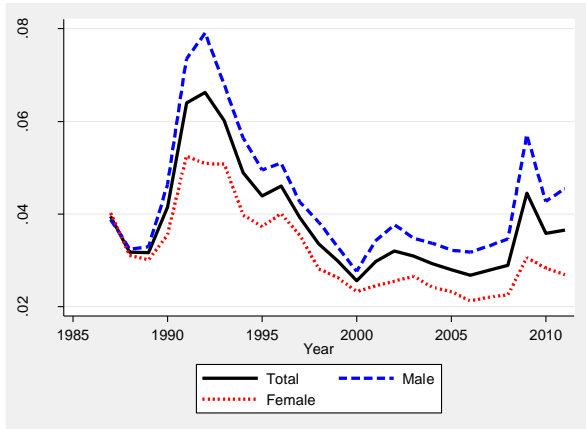
Figure m: Ontario Layoffs
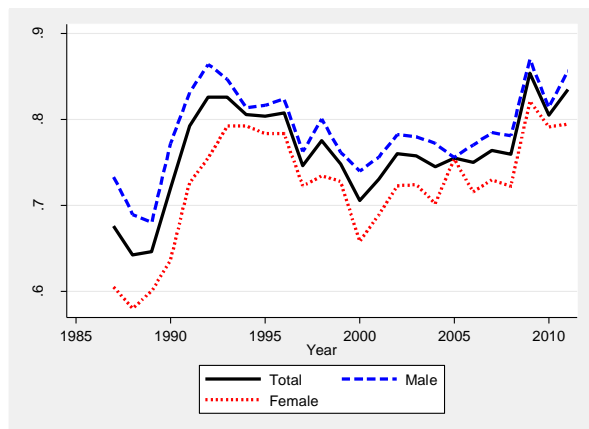
Figure n: Manitoba Quits and Layoffs
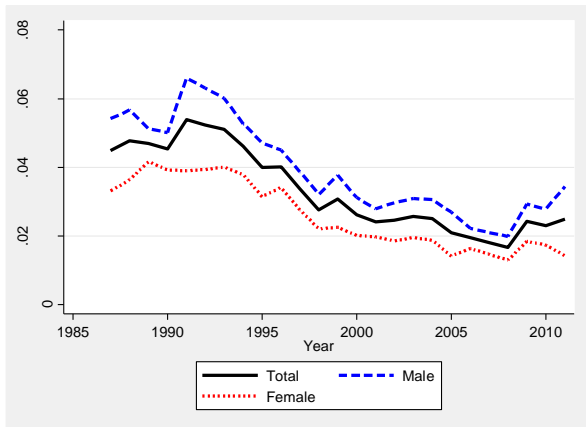
Figure o: Manitoba Layoffs
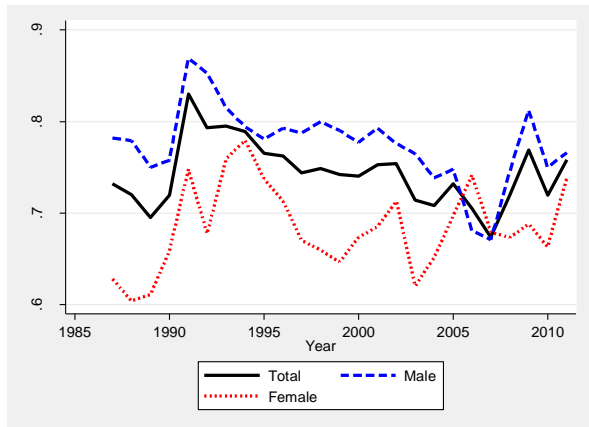
Figure p: Saskatchewan Quits and Layoffs
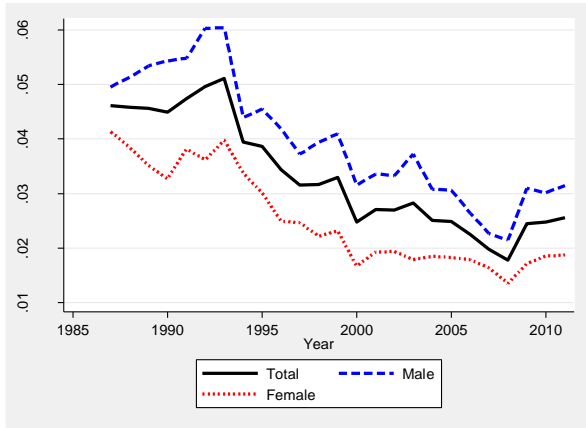
Figure q: Saskatchewan Layoffs
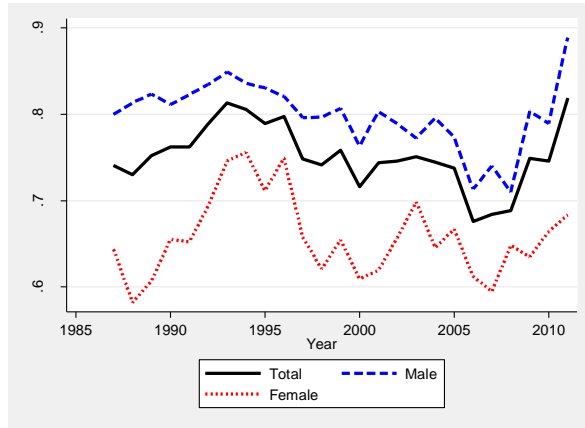
Figure r: Alberta Quits and Layoffs
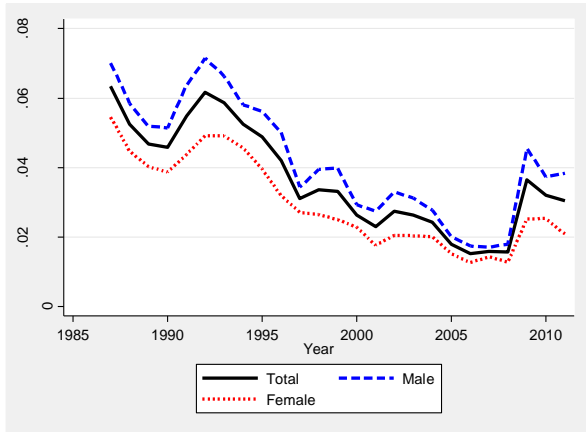
Figure s: Alberta Layoffs
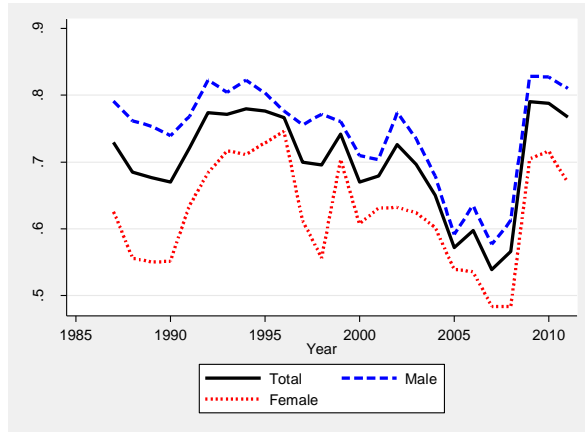
Figure t: British Columbia Quits and Layoffs
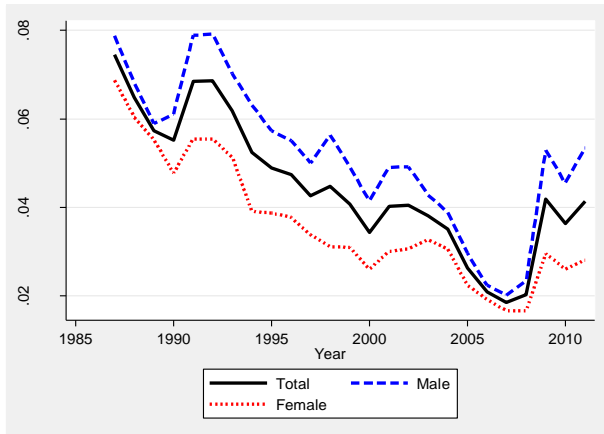
Figure u: British Columbia Layoffs

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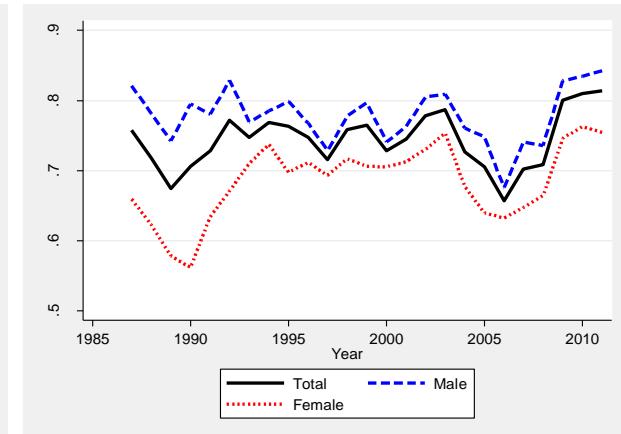
Estimation Results.

Table A1. Linear Probability estimates of Layoff risks.

	Equation 1. Controlling for age and gender.	Equation 2. Adding province, education and marital status.	Equation 3. Adding industry and occupation.
Variables			
Female	-.0149***	-.0137***	-.0006***
	(0.000)	(0.000)	(0.000)
Age	-.0003***	.0001***	.0008***
	(0.000)	(0.000)	(0.000)
Age Squared/100	-.0004***	-.0016***	-.0014***
	(0.000)	(0.000)	(0.000)
Province of residence			
PEI		-.006***	-.009***
		(0.001)	(0.001)
Nova Scotia		-.041***	-.041***
		(0.000)	(0.000)
New Brunswick		-.037***	-.037***
		(0.000)	(0.000)
Quebec		-.049***	-.048***
		(0.000)	(0.000)
Ontario		-.062***	-.063***
		(0.000)	(0.000)
Manitoba		-.068***	-.068***
		(0.000)	(0.000)
Saskatchewan		-.068***	-.069***
		(0.000)	(0.000)
Alberta		-.067***	-.069***
		(0.000)	(0.000)
British Columbia		-.058***	-.059***
		(0.000)	(0.000)
Education Level			
9-10 years		-.011***	-.006***
		(0.000)	(0.000)
11-13 years		-.027***	-.0178***
		(0.000)	(0.000)
Some College		-.036***	-.024***
		(0.000)	(0.000)
Diploma		-.036***	-.023***
		(0.000)	(0.000)

Bachelor's or above	-.049***	-.027***
	(0.000)	(0.000)
Married	-.002***	-.001***
	(0.000)	(0.000)
Full-time		-.002***
		(0.000)
Occupation		
Sales&Service		.003***
		(0.000)
Trades, etc.		.028***
		(0.000)
Primary Industry		.037***
		(0.001)
Manufacturing		.033***
		(0.001)
Managerial		-.008***
		(0.000)
Business		.006***
		(0.000)
Natural&Applied Sciences		.005***
		(0.000)
Health		-.006***
		(0.000)
Education		-0.001
		(0.000)
Industry		
Public Admin.		-0.001
		(0.001)
Other Services		-.002**
		(0.001)
Accommodation		.011***
		(0.001)
Arts		.023***
		(0.001)
Health		-.006***
		(0.001)
Education		.003***
		(0.001)
Administrative&Support		.025***
		(0.001)
Management		.010**

			(0.003)
Professional			.003***
			(0.001)
Real Estate			0.001
			(0.001)
Finance			-.009***
			(0.001)
Information			-0.001
			(0.001)
Transportation			-.007***
			(0.001)
Retail			-0.001
			(0.001)
Manufacturing			.004***
			(0.001)
Wholesale			.003***
			(0.001)
Construction			.044***
			(0.001)
Utilities			-.017***
			(0.001)
Mining			.007***
			(0.001)
Constant	.045***	.136***	.106***
	(0.000)	(0.001)	(0.001)
R²	0.002	0.011	0.021
Number of observations	29,500,000	29,500,000	29,500,000

Note: Standard errors in parentheses,* significant at 5%, ** significant at 1%, *** significant at 0.1%, Age= actual age-30. Base group : 0-8 years of education, province Newfoundland and Labrador, Agriculture, Forestry, Fishing and Hunting industry group (where applicable), occupations in Art, Culture, Recreation and Sport (where applicable).

Table 2A. Impact of recession on male/female layoff risk.

	Equation 1. Controlling for age, gender and recession.	Equation 2. Adding province, education and marital status.	Equation 3. Adding interaction of recession and female.	Equation 4. Adding industry and occupation.
Variables				
Female	-.015***	-.014***	-.013***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Age	-.0003***	-.0001***	-.0001***	-.0001***
	(0.000)	(0.000)	(0.000)	(0.000)
Age Squared/100	-.0004***	-.0016***	-.0016***	-.0014***
	(0.000)	(0.000)	(0.000)	(0.000)
Recession 1990's	.014***	.011***	.014***	.015***
	(0.000)	(0.000)	(0.000)	(0.000)
Recession 2008-9	-.0045***	-.002***	-.0006*	-.0018***
	(0.000)	(0.000)	(0.000)	(0.000)
Interaction with female				
Recession 1990's			-.007***	-.006***
			(0.000)	(0.000)
Recession 2008-9			-.0032***	-.0026***
			(0.000)	(0.000)
Province of residence				
PEI		-.006***	-.006***	-.009***
		(0.001)	(0.001)	(0.001)
Nova Scotia		-.041***	-.041***	-.041***
		(0.000)	(0.000)	(0.000)
New Brunswick		-.037***	-.037***	-.037***
		(0.000)	(0.000)	(0.000)
Quebec		-.049***	-.049***	-.048***
		(0.000)	(0.000)	(0.000)
Ontario		-.062***	-.062***	-.063***
		(0.000)	(0.000)	(0.000)
Manitoba		-.068***	-.068***	-.068***
		(0.000)	(0.000)	(0.000)
Saskatchewan		-.068***	-.068***	-.069***
		(0.000)	(0.000)	(0.000)
Alberta		-.067***	-.067***	-.068***
		(0.000)	(0.000)	(0.000)
British Columbia		-.058***	-.058***	-.059***
		(0.000)	(0.000)	(0.000)

Education Level

9-10 years	-.011***	-.011***	-.006***
	(0.000)	(0.000)	(0.000)
11-13 years	-.026***	-.026***	-.017***
	(0.000)	(0.000)	(0.000)
Some College	-.035***	-.035***	-.023***
	(0.000)	(0.000)	(0.000)
Diploma	-.035***	-.035***	-.022***
	(0.000)	(0.000)	(0.000)
Bachelor's or above	-.048***	-.048***	-.026***
	(0.000)	(0.000)	(0.000)
Married	-.003***	-.003***	-.002***
	(0.000)	(0.000)	(0.000)
Full-time			-.002***
			(0.000)
Occupation			
Sales&Service			.003***
			(0.000)
Trades, etc.			.028***
			(0.000)
Primary Industry			.037***
			(0.001)
Manufacturing			.033***
			(0.001)
Managerial			-.008***
			(0.000)
Business			.006***
			(0.000)
Natural&Applied Sciences			.005***
			(0.000)
Health			-.006***
			(0.000)
Education			-0.001
			(0.000)
Industry			
Public Admin.			-0.001
			(0.001)
Other Services			-.002**
			(0.001)
Accommodation			.011***
			(0.001)

Arts				.024***
				(0.001)
Health				-.006***
				(0.001)
Education				.003***
				(0.001)
Administrative&Support				.026***
				(0.001)
Management				.010**
				(0.003)
Professional				.004***
				(0.001)
Real Estate				0.001
				(0.001)
Finance				-.009***
				(0.001)
Information				-0.001
				(0.001)
Transportation				-.007***
				(0.001)
Retail				0.000
				(0.001)
Manufacturing				.005***
				(0.001)
Wholesale				.003***
				(0.001)
Construction				.044***
				(0.001)
Utilities				-.017***
				(0.001)
Mining				.007***
				(0.001)
Constant	.044***	.136***	.135***	.104***
	(0.000)	(0.001)	(0.001)	(0.001)
R^2	0.003	0.011	0.011	0.021
Number of observations	29,500,000	29,500,000	29,500,000	29,500,000

Note: Standard errors in parentheses,* significant at 5%, ** significant at 1%, *** significant at 0.1%, Age= actual age-30. Base group : 0-8 years of education, province Newfoundland and Labrador, Agriculture, Forestry, Fishing and Hunting industry group (where applicable), occupations in Art, Culture, Recreation and Sport (where applicable).

Table 3A(a): Separate regressions for 10 occupation groupings.

Occupation group:	Managerial	Business, Finance and Administrative	Natural and Applied Sciences	Health	Social Sciences, Education, Government Service and Religion
Variables					
Female	.001***	0.000	.002***	-.001**	-.001**
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Age	-.0004***	.0003***	-.0005***	-.0003***	.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age Squared/100	.0002**	-.0007***	0.000	.0002**	-.0014***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	-.006***	-.004***	-.005***	-.001***	-.0038***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
Full-time	-.002***	-.006***	-.013***	-.008***	-.020***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.000)
Recession 1990's	.003***	.006***	.004***	0.001	-.003***
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
Recession 2008-9	-.002***	-0.001	-.002**	-.002**	-.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Interaction with female					
Recession 1990's	.003***	0.000	0.000	0.000	.004***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Recession 2008-9	-.004***	-.006***	-.003*	-0.001	-0.001
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Province of residence					
PEI	0.000	-.010***	.023***	-.003***	-.007***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Nova Scotia	-.005***	-.025***	-.021***	-.005***	-.018***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
New Brunswick	-.008***	-.024***	-.021***	-.004***	-.018***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Quebec	-.004***	-.022***	-.021***	-.007***	-.019***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ontario	-.012***	-.035***	-.031***	-.009***	-.029***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Manitoba	-.015***	-.037***	-.036***	-.010***	-.028***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Saskatchewan	-.016***	-.040***	-.032***	-.010***	-.028***

	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Alberta	-.013***	-.038***	-.034***	-.009***	-.030***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
British Columbia	-.012***	-.035***	-.032***	-.008***	-.028***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Education Level					
9-10 years	.004***	-.005***	-.014***	0.002	-.006***
	(0.001)	(0.001)	(0.004)	(0.002)	(0.001)
11-13 years	.0026***	-.011***	-.050***	-.003**	0.001
	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Some College	.003***	-.013***	-.059***	-.004**	-0.002
	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Diploma	.002***	-.012***	-.059***	-.008***	0.001
	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Bachelor's or above	-0.001	-.019***	-.065***	-.012***	-.006***
	(0.001)	(0.001)	(0.003)	(0.001)	(0.001)
Industry					
Public Admin.	-.012***	-.007***	-.067***	-.055***	-0.004
	(0.002)	(0.001)	(0.002)	(0.007)	(0.006)
Other Services	0.001	-0.001	-.059***	-.052***	-0.003
	(0.002)	(0.001)	(0.002)	(0.007)	(0.006)
Accommodation	-0.003	.009***	-.042***	-.026**	0.005
	(0.002)	(0.002)	(0.006)	(0.009)	(0.006)
Arts	.023***	.021***	-.032***	-.042***	0.010
	(0.002)	(0.002)	(0.003)	(0.008)	(0.006)
Health	-.008***	-.015***	-.069***	-.058***	-.011*
	(0.002)	(0.001)	(0.002)	(0.007)	(0.006)
Education	-.012***	-.008***	-.071***	-.051***	-0.003
	(0.002)	(0.001)	(0.002)	(0.007)	(0.006)
Administrative&Support	0.000	.026***	-.038***	-.023**	.020**
	(0.002)	(0.001)	(0.003)	(0.008)	(0.006)
Management	-0.005	-0.004	-0.058	-.075***	-.015*
	(0.005)	(0.003)	(0.031)	(0.007)	(0.007)
Professional	0.000	-.006***	-.059***	-.055***	-0.009
	(0.002)	(0.001)	(0.002)	(0.007)	(0.006)
Real Estate	-.010***	-.007***	-.067***	0.001	-0.002
	(0.002)	(0.001)	(0.003)	(0.018)	(0.006)
Finance	-.013***	-.020***	-.074***	-.059***	-.013*
	(0.002)	(0.001)	(0.002)	(0.007)	(0.006)
Information	-.006**	-.013***	-.067***	-0.012	-0.008
	(0.002)	(0.001)	(0.002)	(.020)	(0.006)

Transportation	-.005*	-.007***	-.063***	-.039***	0.001
	(0.002)	(0.001)	(0.002)	(0.009)	(0.006)
Retail	-.010***	-.005***	-.059***	-.056***	-0.010
	(0.002)	(0.001)	(0.002)	(0.007)	(0.006)
Manufacturing	-.005**	0.001	-.062***	-.043***	0.008
	(0.002)	(0.001)	(0.002)	(0.007)	(0.006)
Wholesale	-.005**	0.001	-.057***	-.056***	-0.007
	(0.002)	(0.001)	(0.002)	(0.008)	(0.006)
Construction	-.011***	.010***	-.036***	.051**	0.012
	(0.002)	(0.001)	(0.002)	(0.016)	(0.008)
Utilities	-.019***	-.020***	-.075***	-.054***	-.017**
	(0.002)	(0.001)	(0.002)	(0.009)	(0.006)
Mining	-0.002	-.003**	-.054***	-.023**	-0.008
	(0.002)	(0.001)	(0.002)	(0.009)	(0.006)
Constant	.054***	.087***	.206***	.099***	.061***
	(0.002)	(0.002)	(0.004)	(0.007)	(0.006)
R^2	0.004	0.007	0.012	0.006	0.008
Number of observations	2,502,733	4,846,058	1,414,510	1,628,445	2,172,476

Note: Standard errors in parentheses,* significant at 5%, ** significant at 1%, *** significant at 0.1%, Age= actual age-30. Base group : 0-8 years of education, province Newfoundland and Labrador, Agriculture, Forestry, Fishing and Hunting industry group (where applicable), occupations in Art, Culture, Recreation and Sport (where applicable).

Table 3A(b): Separate regressions for 10 occupation groupings, continued.

Occupation group:	Art, Culture, Recreation and Sport	Sales and Service	Trades, Transport and Equipment	Unique to Primary industry	Unique to Manufacturing, Processing and Utilities
Variables					
Female	-.004***	-.006***	0.000	.011***	.011***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Age	.001***	.003***	-.001***	-.0004***	-.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Age Squared/100	-.0015***	-.0033***	0.0001	-.001***	.0025***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married	-.002**	.004***	-.006***	-.013***	-.006***
	(0.001)	(0.000)	(0.000)	(0.001)	(0.001)
Full-time	0.000	.002***	-.032***	.025***	-.044***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.002)
Recession 1990's	.014***	.007***	.021***	.004***	.026***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Recession 2008-9	-.004**	-.009***	-.012***	-.004***	.024***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Interaction with female					
Recession 1990's	-.011***	0.000	-0.001	-.005**	0.000
	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)
Recession 2008-9	-.005*	-0.001	0.004	-0.004	-.014***
	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)
Province of residence					
PEI	0.000	-.008***	-.034***	.027***	-.037***
	(0.003)	(0.001)	(0.001)	(0.002)	(0.003)
Nova Scotia	-.017***	-.039***	-.079***	-.013***	-.114***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
New Brunswick	-.005*	-.037***	-.076***	0.002	-.096***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Quebec	-.017***	-.037***	-.104***	-.047***	-.131***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
Ontario	-.034***	-.056***	-.129***	-.094***	-.152***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
Manitoba	-.036***	-.058***	-.127***	-.107***	-.166***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
Saskatchewan	-.035***	-.057***	-.124***	-.104***	-.161***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)

Alberta	-.033***	-.057***	-.132***	-.106***	-.162***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
British Columbia	-.029***	-.052***	-.124***	-.034***	-.146***
	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Education Level					
9-10 years	0.005	-.006***	-.006***	-.006***	-.002**
	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
11-13 years	-.007**	-.014***	-.026***	-.019***	-.011***
	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
Some College	-.006*	-.023***	-.036***	-.036***	-.021***
	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
Diploma	-.009***	-.020***	-.034***	-.031***	-.0154***
	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
Bachelor's or above	-.016***	-.026***	-.041***	-.043***	-.019***
	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)
Industry					
Public Admin.	-.022**	-.077***	-.035***	.064***	-.066***
	(0.007)	(0.003)	(0.002)	(0.002)	(0.008)
Other Services	-0.010	-.070***	-.043***	-.013***	-.033***
	(0.007)	(0.003)	(0.001)	(0.003)	(0.008)
Accommodation	0.003	-.048***	-.039***	.091***	0.001
	(0.007)	(0.003)	(0.002)	(0.006)	(0.020)
Arts	-.027***	-.025***	.024***	.075***	0.001
	(0.007)	(0.003)	(0.003)	(0.003)	(0.015)
Health	-.014*	-.078***	-.060***	.010*	-.091***
	(0.007)	(0.003)	(0.002)	(0.005)	(0.008)
Education	-.032***	-.060***	-.051***	-.020***	-.071***
	(0.007)	(0.003)	(0.002)	(0.003)	(0.010)
Administrative&Support	-0.013	-.046***	0.003	.026***	.040***
	(0.007)	(0.003)	(0.002)	(0.001)	(0.009)
Management	-.048***	-.035***	-.103***	-.079***	-.120***
	(0.007)	(0.010)	(0.008)	(0.002)	(0.030)
Professional	-.031***	-.058***	-0.001	.066***	-.045***
	(0.007)	(0.003)	(0.003)	(0.006)	(0.009)
Real Estate	-0.012	-.071***	-.019***	.051***	-.042**
	(0.008)	(0.003)	(0.002)	(0.007)	(0.015)
Finance	-.024**	-.082***	-0.007	-.057***	-.079***
	(0.007)	(0.003)	(0.007)	(0.007)	(0.011)
Information	-.017**	-.068***	-.060***	.076***	-.084***
	(0.007)	(0.003)	(0.002)	(0.020)	(0.008)

Transportation	-.026**	-.064***	-.049***	.056***	-.045***
	(0.008)	(0.003)	(0.001)	(0.008)	(0.009)
Retail	-.015*	-.062***	-.046***	.009*	-.060***
	(0.007)	(0.003)	(0.001)	(0.004)	(0.008)
Manufacturing	-0.007	-.056***	-.035***	.045***	-.042***
	(0.007)	(0.003)	(0.001)	(0.003)	(0.008)
Wholesale	-0.003	-.075***	-.038***	.013*	-.017*
	(0.008)	(0.003)	(0.002)	(0.005)	(0.009)
Construction	-.018*	0.005	.025***	.106***	0.013
	(0.008)	(0.004)	(0.001)	(0.004)	(0.009)
Utilities	-.038***	-.065***	-.057***	.064***	-.077***
	(0.008)	(0.003)	(0.002)	(0.009)	(0.008)
Mining	-.024**	-.032***	-.028***	.019***	-.051***
	(0.008)	(0.004)	(0.002)	(0.001)	(0.008)
Constant	.080***	.117***	.307***	.172***	.370***
	(0.008)	(0.003)	(0.002)	(0.002)	(0.008)
R²	0.009	0.012	0.031	0.043	0.017
Number of observations	630,614	6,965,504	4,996,284	2,099,831	1,925,925

Note: Standard errors in parentheses,* significant at 5%, ** significant at 1%, *** significant at 0.1%, Age= actual age-30. Base group : 0-8 years of education, province Newfoundland and Labrador, Agriculture, Forestry, Fishing and Hunting industry group (where applicable), occupations in Art, Culture, Recreation and Sport (where applicable).

Industry Groups (according to NAISC 2002):

Agriculture, Forestry, Fishing and Hunting

Mining and Oil and Gas Extraction

Utilities

Construction

Manufacturing

Wholesale Trade

Retail Trade

Transportation and Warehousing

Information and Cultural Industries

Finance and Insurance

Real Estate and Rental and Leasing

Professional, Scientific and Technical Services

Management of Companies and Enterprises

Administrative and Support, Waste Management and Remediation Services

Educational Services

Health Care and Social Assistance

Arts, Entertainment and Recreation

Accommodation and Food Services

Other Services (except Public Administration)

Public Administration

Occupation Groups (according to SOC 1991):

Managerial Occupations

Business, Finance and Administrative Occupations

Natural and Applied Sciences

Health Occupations

Occupations in Social Sciences, Education, Government Service and Religion

Occupations in Art, Culture, Recreation and Sport

Sales and Service Occupations

Trades, Transport and Equipment Operators and Related Occupations

Occupations Unique to Primary Industry

Occupations unique to Processing, Manufacturing and Utilities