

# Turbulence or Steady Course? Permanent Layoffs in Canada, 1978-2016

René Morissette and Theresa Hanqing Qiu



## ABOUT THIS STUDY

This study was published as part of The Future of Skills and Adult Learning research program, under the direction of Natalia Mishagina. The manuscript was copy-edited by Alison Smith, proofreading was by Robyn Packard, editorial coordination was by Francesca Worrall, production was by Chantal Létourneau and Anne Tremblay, and art direction was by Anne Tremblay.

**René Morissette** is a senior economist in the Social Analysis and Modelling Division at Statistics Canada. He has worked on a wide range of issues related to the Canadian labour market such as income and wealth inequality, worker displacement, youth employment and changes in the wage structure. His current research focuses on the impact of local economic conditions on outcomes for workers.

**Theresa Hanqing Qiu** is a senior analyst in the Social Analysis and Modelling Division at Statistics Canada. Her research interests include the economics of the labour market, immigration and education. Her work is published by Statistics Canada as well as by academic journals. She is also responsible for the development of the Canadian Employers and Employees Dynamic Database, which is widely used for research in labour market dynamics and earned the 2017 Statistics Canada Agatha Chapman Innovation Award.

To cite this document:

Morissette, René, and Theresa Hanqing Qiu. 2020. *Turbulence or Steady Course? Permanent Layoffs in Canada, 1978-2016*. IRPP Study 76. Montreal: Institute for Research on Public Policy.

---

The opinions expressed in this study are those of the authors and do not necessarily reflect the views of the IRPP or its Board of Directors.

IRPP Study is a refereed monographic series that is published irregularly throughout the year. Each study is subject to rigorous internal and external peer review for academic soundness and policy relevance.

If you have questions about our publications, please contact [irpp@irpp.org](mailto:irpp@irpp.org). If you would like to subscribe to our newsletter, *IRPP News*, please go to our website, at [irpp.org](http://irpp.org).

Cover photo: Shutterstock.com.

## CONTENTS

Summary .....	2
Résumé.....	3
Introduction .....	5
Layoff Rates.....	8
Re-employment Rates .....	12
Changes in Earnings Following Job Loss .....	20
Profiles of Displaced Workers .....	25
Conclusion.....	30
Appendix .....	34
References .....	37

## SUMMARY

As Canada tentatively reopens its economy after several months of curtailed activity due to the COVID-19 pandemic, it remains to be seen to what extent the unprecedented number of layoffs that have taken place will become permanent. Moreover, the ways firms adjust to the new set of imperatives brought about by the crisis could have further impact on the labour market. It is thus too early to accurately assess the full ramifications of these disruptions. In this context, it is useful to look at the long-term trends in job displacement in order to put recent layoff statistics in perspective.

Combining several Statistics Canada data sets, René Morissette and Theresa Hanqing Qiu trace the evolution of permanent job losses – when workers do not return to their employers within a year – in mass and nonmass layoffs in Canada from 1978 to 2016. They report layoff-rate trends and examine short- and long-term employment and earnings outcomes for laid-off workers on the basis of their age, gender and job tenure.

This study reveals several important findings. In particular, despite globalization and the demographic, technological and environmental forces affecting the Canadian economy over the past four decades, Morissette and Qiu find no evidence that the likelihood and consequences of job displacement for laid-off workers have worsened overall. If anything, the likelihood of losing one's job has trended downward for many groups of workers. One exception is long-tenured workers (those who have been with the same employer for six years or more), who systematically fare worse than other groups of displaced workers after layoff, especially if they were laid off from manufacturing. Another group with poor post-displacement outcomes is recent immigrants, even though they are not more likely than Canadian-born workers to lose their jobs.

Underneath the overall stability of layoff and re-employment rates, however, the authors uncover important sectoral trends as employment shifted away from manufacturing toward the construction and service sectors. These trends vary by gender and by industry of employment before job loss.

Finally, although mass layoffs typically get considerable media attention, the authors find that the majority (between 53 and 87 percent) of the layoffs that occurred from 1995 to 2015 were nonmass layoffs. As well, among laid-off men with long tenure, those displaced in nonmass layoffs are less likely to be re-employed after one or five years.

Designing appropriate policy responses to job loss depends on detailed and up-to-date evidence. This study provides important insights for policy-makers. For instance, assistance policies that focused solely on workers who lost their jobs in mass layoffs would miss a large proportion of laid-off workers. Moreover, optimal assistance policies may have to vary depending on the type of layoff. For example, workers displaced in nonmass layoffs may require different employment support from those who lose jobs in mass layoffs. Similarly – if deemed desirable – policies that specifically target

workers at risk of poor post-displacement outcomes, such as long-tenured workers, may be more effective and less costly than policies that treat all laid-off workers the same. Establishing assistance policies that are best suited for specific groups of displaced workers is likely to become even more salient in the coming months, as the labour market settles into a new normal.

## RÉSUMÉ

Alors que le Canada rouvre prudemment son économie après plusieurs mois de confinement et d'activités interrompues par la pandémie de COVID-19, on ne sait pas encore combien d'emplois seront définitivement perdus par suite du nombre exceptionnel de mises à pied. Tout comme on ignore de quelle façon les aménagements que la crise sanitaire aura imposés aux entreprises se répercuteront sur le marché du travail. Il est donc trop tôt pour mesurer précisément tous les effets de ces perturbations. D'où l'intérêt d'examiner les tendances à long terme des suppressions d'emplois pour mettre en perspective les dernières données sur les mises à pied.

En combinant plusieurs ensembles de données de Statistique Canada, René Morissette et Theresa Hanqing Qiu retracent sur la période 1978-2016 l'évolution des pertes d'emplois permanentes (salariés n'ayant pas retrouvé leur poste au bout d'un an) causées par les licenciements collectifs et individuels. Ils rendent compte des taux de mises à pied et en examinent les résultats à court et à long terme sur l'emploi et le revenu des travailleurs mis à pied selon l'âge, le sexe et l'ancienneté.

Leur étude permet de tirer plusieurs conclusions clés. Elle montre notamment qu'en dépit de la mondialisation et des pressions démographiques, technologiques et environnementales exercées depuis 40 ans sur notre économie, aucune donnée n'indique une aggravation généralisée du risque des suppressions d'emploi et de leurs conséquences chez les travailleurs mis à pied. En fait, le risque de perdre son emploi aurait plutôt diminué chez les salariés de nombreuses catégories. Sauf chez les travailleurs de longue date (ayant au moins six années au service du même employeur), dont la situation est toujours moins favorable après une mise à pied, surtout s'ils travaillaient dans le secteur manufacturier. La même observation vaut pour les nouveaux immigrants mis à pied, même s'ils ont les mêmes chances de conserver leur emploi que les travailleurs nés au pays.

Mais derrière cette stabilité des taux de mise à pied et de réemploi, les auteurs décelent de fortes tendances sectorielles qui ont vu le déplacement des emplois du secteur manufacturier vers celui des services et l'industrie de la construction, ces tendances variant selon le sexe et le secteur touché.

Et bien que ce sont généralement les licenciements collectifs qui captent l'attention médiatique, les auteurs notent que la majorité des mises à pied (53 à 87 p. 100) survenues de 1995 à 2015 étaient individuelles. De plus, parmi les travailleurs masculins

de longue date, ceux perdant leur emploi suite à une mise à pied individuelle étaient moins susceptibles d'avoir retrouvé un emploi un an ou même cinq ans plus tard.

L'élaboration de mesures pour répondre aux pertes d'emploi doit reposer sur des données récentes et détaillées. De ce point de vue, cette étude offre d'utiles informations aux décideurs. Par exemple, elle montre qu'un soutien exclusivement destiné aux travailleurs touchés par un licenciement collectif laisserait de côté une grande partie des travailleurs mis à pied. Pour qu'il soit optimal, il est possible qu'il faille varier ce soutien en fonction du type de mise à pied. Selon qu'ils sont licenciés individuellement ou collectivement, les travailleurs pourraient nécessiter une aide à l'emploi différente. De même, dans la mesure où elles seraient jugées désirables, des mesures ciblant les travailleurs qui risquent d'être durement touchés par une perte d'emploi, comme les salariés de longue date, pourraient se révéler plus efficaces et moins coûteuses qu'une aide identique pour tous. À l'heure où le marché du travail doit s'adapter à une « nouvelle normalité », il pourrait être encore plus important au cours des prochains mois d'établir des mesures d'aide à l'emploi bien arrimées aux besoins de différentes catégories de travailleurs mis à pied.

## INTRODUCTION

The Canadian labour market has experienced important changes since the late 1970s. As a result of technological progress and globalization, employment has shifted away from manufacturing and moved toward both low- and high-paid jobs in the service sector.<sup>1</sup> In many sectors, the skill requirements have increased, triggering greater demand for workers with university degrees. Computer-based technologies have reduced the demand for labour in some segments of the economy while creating new occupations such as web security analysts and application developers. New forms of employment – for example, contract and gig employment – have emerged, reflecting changes in the employer-employee relationship. Declining unionization rates have weakened the bargaining power of workers in many sectors of the economy, and employers' provision of traditional defined-benefit registered pension plans has dropped substantially. Since the mid-1990s, in response to increased life expectancy and lower long-term returns in financial markets, a growing proportion of older Canadians have – either by choice or necessity – been remaining in the labour market. And the consequences of population aging are being felt in health-related occupations, where employment has risen sharply since the early 2000s.

More recently, new technologies made possible by advances in artificial intelligence and increasing computing power have raised concerns about their potentially disruptive effect on the task composition of jobs and about the ability of advanced economies to create enough jobs in the coming years (Brynjolffson and McAfee 2014; Acemoglu and Restrepo 2019). Meanwhile, growing pressures to reduce greenhouse gas emissions are prompting some national governments to reduce their economies' reliance on sectors such as coal mining and oil and gas extraction. Hence, just as was the case with manufacturing in the past, employment shifting away from traditional energy-producing sectors is likely to cause job displacement in these sectors in the not too distant future.<sup>2</sup>

Of course, concerns about job displacement have taken on a new importance in the context of the COVID-19 pandemic. Public health measures to prevent the spread of the virus have led to an unprecedented number of layoffs. At this time, it is still too soon to predict what the full labour market ramifications of the pandemic might be. There remains much uncertainty regarding the severity and duration of the resulting economic downturn, and hence the extent to which the layoffs could become permanent. Moreover, the ways firms react to the new set of imperatives brought about by the pandemic may significantly transform business models, with potentially profound effects on employment. Firms may be quicker to adopt new technologies that

<sup>1</sup> Labour Force Survey data show that 1 in 10 workers were employed in manufacturing in 2019, down from 1 in 5 in 1981. The decline in manufacturing employment observed from 2000 to 2015 had a sizable adverse effect on the wages and full-year full-time employment rates of men, especially less-educated men (Morissette 2020). For example, two-thirds or more of the decline in male full-year full-time employment rates observed from 2000 to 2015 in census metropolitan areas such as Montreal, Ottawa-Gatineau, Windsor, Oshawa, Toronto, Hamilton, St. Catharines-Niagara, Kitchener-Cambridge-Waterloo and Guelph can be attributed to the decline in manufacturing employment.

<sup>2</sup> Throughout this study the term “job displacement” refers to permanent layoffs. A permanent layoff is deemed to occur when a laid-off worker does not return to the same employer in the year of the layoff or the following year. Otherwise, a layoff is deemed to be temporary.

automate some tasks to reduce their reliance on workers. In the same vein, a greater take up of teleworking and reduced business operating capacity due to physical distancing restrictions in the service sector could also have broad repercussions on jobs.

Whether caused by globalization, technological change, environmental pressures or a pandemic-induced economic downturn, the resulting employment disruptions pose challenges for the workers affected and for policy-makers looking for ways to help them adjust. In particular, given potential changes in the types of workers at risk of job loss and in the kinds of skills needed in a labour market in transition, it is unclear whether the training, job search assistance and transfer programs being offered – some of which were designed several years ago – will best serve the needs of the upcoming cohorts of displaced workers.

To gain perspective on these issues, we need to assess how the magnitude of job displacement and post-displacement labour market outcomes have evolved over the past few decades in Canada. It is also important to provide recent evidence on, first, which workers face the greatest risk of job loss and, second, among those who are laid off, which face the most adverse financial consequences. The goal of this study is to provide this long-term perspective and recent evidence. Drawing on data from Statistics Canada's Longitudinal Worker File (LWF), Labour Force Survey (LFS), and the 2001 Census of Population, we have produced a rich set of findings to inform the discussion on appropriate policies to help displaced workers.

The vast literature on job displacement has highlighted several patterns. Research from the United States (Jacobson, Lalonde, and Sullivan 1993; Couch and Placzek 2010), Canada (Morissette, Zhang, and Frenette 2007; Morissette, Qiu, and Chan 2013) and the United Kingdom (Hijzen, Upward, and Wright 2010) shows that displaced workers with long job tenure often suffer significant and persistent earnings losses post-layoff. Earnings losses are also more substantial when displaced workers live in regions with slack labour markets (Jacobson, Lalonde, and Sullivan 1993), or when their new jobs require different skills (Poletaev and Robinson 2008; Gendron 2011). And, while displaced workers who are re-employed are often laid off again (Stevens 1997), having more education helps displaced workers adjust to job loss (Riddell and Song 2011). Finally, job displacement is often associated with subsequent poor health outcomes and increased mortality rates (Sullivan and von Wachter 2009).<sup>3</sup>

Yet several questions remain. One is whether workers displaced in mass layoffs – a group that typically gets considerable media attention – represent the bulk of laid-off workers. Another is whether workers displaced in mass layoffs fare worse or better than other laid-off workers in the short and medium terms.

Answering these questions is important for a variety of reasons. First, it allows policy analysts to assess what fraction of laid-off workers would be overlooked if policies

---

<sup>3</sup> This list of findings is selective and is not meant to cover the whole body of literature on job displacement.



focused solely on workers who lost their jobs in mass layoffs. Second, it raises the possibility that the optimal assistance policies for workers might vary depending on the type of layoff they have experienced. For example, retraining programs designed for workers displaced in mass layoffs might not be appropriate for those who lose their jobs in nonmass layoffs if the latter are less capable and possess fewer marketable skills than the former.

As we will show, while mass layoffs attract considerable media attention, they do not account for the majority of displaced workers. On average, between 53 and 87 percent of the layoffs that took place in the commercial sector occurred in nonmass layoffs.<sup>4</sup>

Several statistics on job displacement in Canada also need to be updated. First, previous research showed that layoff rates did not trend upward between 1978 and 2008, and that short-term aggregate re-employment rates following job loss did not trend downward (Morissette, Qiu, and Chan 2013), but it is not known whether these patterns hold after 2008. Second, relatively little is known about gender differences in re-employment rates for workers displaced from the same sector. It has been argued, for example, that social norms may prevent men who are displaced from manufacturing jobs from moving into industries or occupations that are considered “feminine” (Miller 2017). Third, the degree to which displacement trends observed for older workers (aged 55 to 64), if any, differ from those observed for younger workers is an issue that has received relatively little attention.<sup>5</sup> In light of the growing labour force participation of older workers since the mid-1990s, this question warrants examination.

In order to shed light on these issues, we use the LWF to construct time series of layoff and re-employment rates from 1978 to 2016, and we document gender differences in the industry of re-employment for workers previously employed in the same sector. We also examine how age differences in layoff rates and post-displacement employment rates have evolved over the last few decades.

The study is organized as follows. First, we assess whether the likelihood of job loss has worsened over the past four decades by tracing the evolution of layoff rates from 1978 to 2016. We then look at the relative importance of mass and nonmass layoffs, and analyze how re-employment rates and earnings changes following job loss have evolved since the late 1970s. In order to examine the outcomes for displaced workers across education levels, we link the 2001 Census to the LWF for a sample of workers aged 25 to 44 in 2001. We track these workers during the 2000s and sketch gender-specific profiles of the employees most likely to (1) be laid off; (2) be re-employed in a paid job in the year following job loss; and (3) experience a decline in earnings in the year following job loss. We examine a wide range of characteristics, including workers’ age, job tenure, education level, immigration and disability status, as well as industry of employment, firm size and province of employment. Finally, we summarize our findings and conclude with a few remarks to inform the discussion on job displacement policies in Canada.

<sup>4</sup> The commercial sector is composed of all industries except public services, including public administration, education, health care and social assistance.

<sup>5</sup> The one exception is Schirle (2012), who analyzes the wage losses of displaced older men.

## LAYOFF RATES

To assess how the risk of job loss and post-displacement outcomes have evolved over the past four decades, we pool three waves of LWF data: 1978 to 1989, 1983 to 2010 and 1989 to 2017. The first two waves represent a 10 percent random sample of all employees, and the third covers all employees. To produce comparable figures, we use the 10 percent version of the 1989-2017 wave whenever we document long-term trends. In this way we can ensure our analyses are based on consistent definitions of layoffs and post-displacement outcomes and levels of disaggregation by workers' age, sex, tenure and province. Due to changes in industry classification in the early 1990s, we cannot produce displacement statistics by industry for the 1978-2016 period, only by sector (manufacturing and nonmanufacturing).<sup>6</sup> Since the third wave of the LWF ends in 2017 and one extra year of data is needed to identify whether a layoff is permanent, our observation period ends in 2016.

In figure 1, we report the layoff rates for Canadian employees aged 25 to 64 from 1978 to 2016. As expected, layoff rates increased during the recessions of 1981-82, 1990-92 and 2008-09 and fell in the subsequent expansionary years. Yet despite globalization, technological progress and other major changes in the economic environment, layoff rates have not trended upward in Canada since the late 1970s. In 2007 – before the last recession – layoff rates were more than 2 percentage points lower than in 1989 (6.1 and 8.5 percent, respectively), at the peak of the economic expansion that took place during the second half of the 1980s. Although layoff rates increased from 2007 to 2009, by 2010 they had already fallen to lower levels than those observed in the late 1970s or in the second half of the 1980s. Layoff rates averaged 6.6 percent from 2010 to 2016, about 1.5 percentage points lower than the 8.3 percent average from 1978 to 1980.

Overall, layoff rates did not trend upward for men or for women,<sup>7</sup> in either manufacturing or other sectors.<sup>8,9</sup> While layoff rates in the oil-producing provinces of Alberta, Saskatchewan, and Newfoundland and Labrador rose sharply in 2015 and 2016 following declines in oil prices, layoff rates in other provinces were fairly stable from 2010 to 2016.<sup>10</sup>

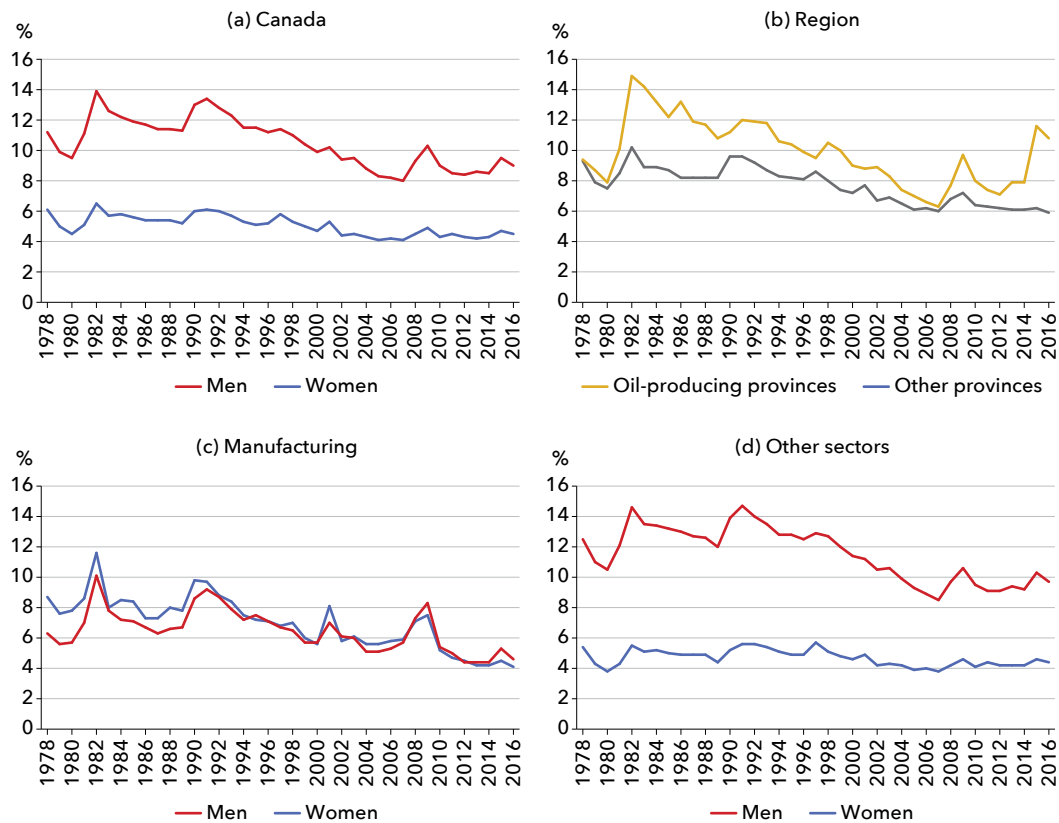
<sup>6</sup> The Standard Industrial Classification, used during the 1980s, was replaced by the North American Industry Classification System (NAICS) from 1991 onward.

<sup>7</sup> Outside manufacturing, women are laid off at lower rates than men. Morissette, Lu and Qiu (2013) show that about 80 percent of this gender difference reflects the overrepresentation of women in industries that typically have low layoff rates.

<sup>8</sup> It may seem surprising that layoff rates in manufacturing did not rise from 2000 to 2016, as manufacturing employment fell by about half a million during this period. However, this is largely because manufacturing firms adjusted to reduced labour demand by reducing hiring rates (Morissette, Lu, and Qiu 2013).

<sup>9</sup> To assess whether layoff rates have been trending downward when holding labour market conditions constant, we regress annual changes in layoff rates on annual changes in the unemployment rate of men aged 25 to 54 (a proxy for labour market tightness) and a constant term. Finding a negative and statistically significant constant term would provide evidence that conditional layoff rates have been trending downward. While we find a negative constant term when annual changes in layoff rates of both sexes (or of men) are used as the dependent variable, this constant term is not statistically significant at conventional levels (or even at the 40 percent level). When annual changes in women's layoff rates are the dependent variable, the constant term is slightly positive but not statistically significant. Taken together, these results confirm that conditional layoff rates have not trended upward since the late 1970s.

<sup>10</sup> Morissette and Qiu (2020) show layoff rates for each province from 1978 to 2016.

**Figure 1. Layoff rates by gender, region and sector, Canada, 1978-2016**

Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Note: Includes workers aged 25 to 64 in all industries.

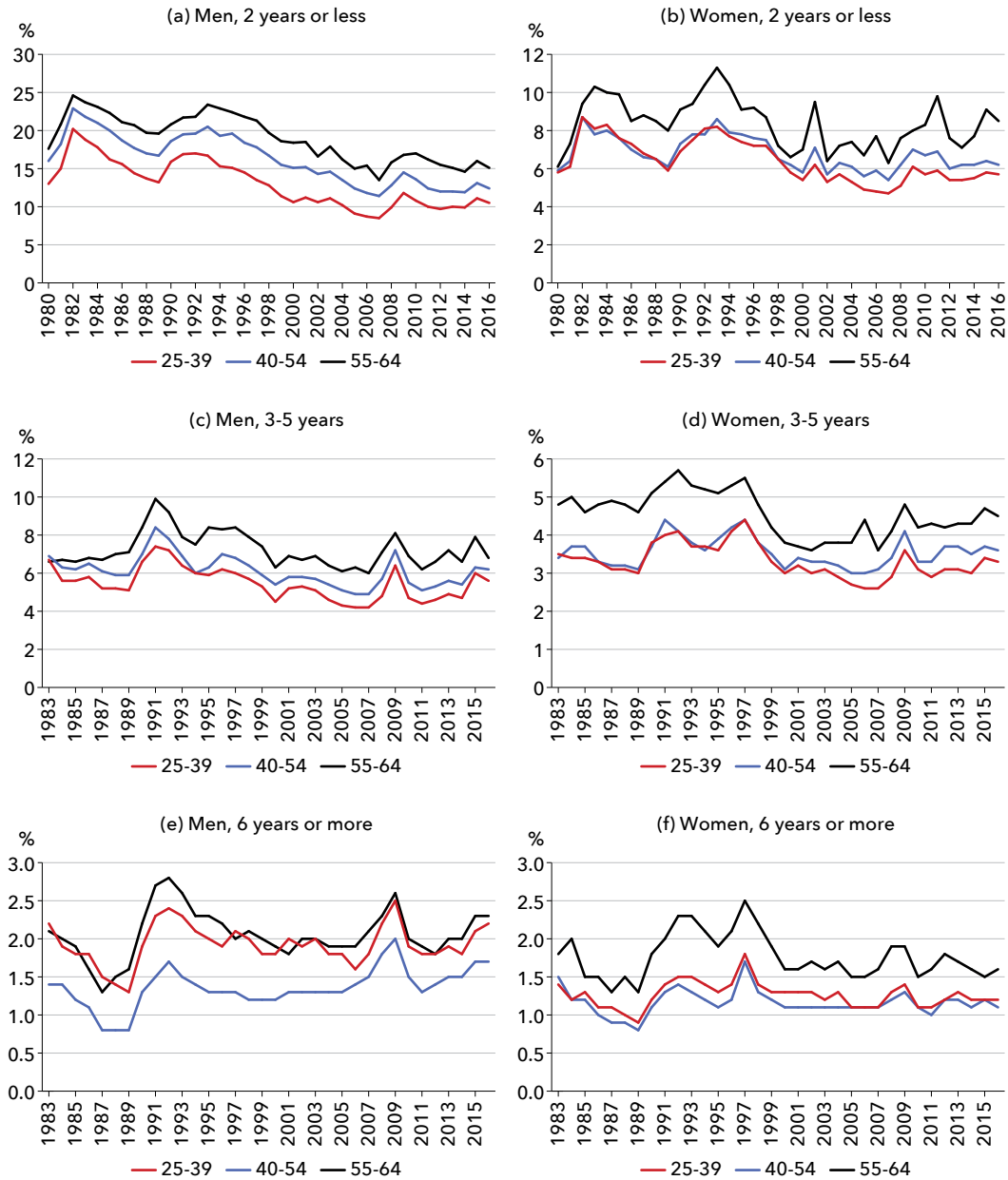
The absence of an upward trend in layoff rates is a robust finding at the national level. Even when data are disaggregated by workers' age, gender and job tenure, there is generally no evidence of an upward trend (figure 2).<sup>11</sup> Long-tenured men – those who have been employed with the same firm for six years or more – are the only exception. Their likelihood of job loss appears to be between 0.5 and 0.7 percentage points higher during the 2010s than it was during the late 1980s. For all other combinations of age, gender and tenure, there is no evidence that the risk of job loss increased over the past few decades.<sup>12</sup>

While overall the risk of job loss has not increased in Canada since the late 1970s, media reports often highlight mass layoffs that take place in particular cities or regions. Generally, little attention is paid to job losses that occur outside mass layoffs. This raises the following question: Of all job losses that occur in a given year in Canada, what percentage are the result of mass layoffs?

<sup>11</sup> Figure 2 also shows that (1) layoff rates are negatively correlated with tenure; and (2) among workers with the same tenure, those aged 55 to 64 are more likely to lose their jobs than those aged 25 to 39. The first pattern likely, and reflects the fact that in many firms, layoffs are implemented on a "last-in-first-out" basis. Understanding the second pattern is a task for subsequent empirical analyses.

<sup>12</sup> Analyses of layoff rates by broad industrial sectors defined using the NAICS of 2012 also reveal no upward trends in layoff rates from the early 1990s (or the late 1990s) onward.

**Figure 2. Layoff rates by age, gender and job tenure, Canada, 1980-2016**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: Includes workers aged 25 to 64 in all industries. For laid-off workers with five or more years of tenure, data are not available before 1983.

**Table 1. Mass and nonmass layoffs as a proportion of total layoffs, Canada, 1995-2015**

	Total layoffs (N)	Mass layoffs, firms with 50 or more employees (%)	Nonmass layoffs, firms with fewer than 50 employees (%)	Nonmass layoffs, firms with 50 or more employees (%)
1995	716,172	8.2	61.0	30.8
2000	687,080	12.8	54.8	32.4
2005	630,042	9.7	54.9	35.4
2007	618,924	12.0	51.9	36.1
2009	780,761	18.6	49.3	32.1
2010	688,737	9.9	52.0	38.1
2011	659,319	8.5	52.4	39.1
2014	698,151	15.2	46.8	38.0
2015	786,013	24.1	44.1	31.8

Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: Includes workers aged 25 to 64 in all industries except public services. Jobs terminated in mass layoffs are those ending with a permanent layoff in year  $t$  (where  $t$  is the year of the layoff) from firms (1) that had at least 50 employees in  $t-1$ ; (2) that had positive payroll (i.e., that paid workers for at least part of the year) in both  $t-1$  and  $t$ ; (3) whose total permanent layoffs in  $t$  represented 10 percent or more of employment in  $t-1$ ; and (4) whose total payroll fell by at least 10 percent from  $t-1$  to  $t+1$ . All other layoffs are considered to be nonmass layoffs.

Table 1 reports for selected years the share of layoffs resulting from mass layoffs in the commercial sector.<sup>13</sup> Results are shown for employees aged 25 to 64. Mass layoffs are defined as layoffs that take place in enterprises (1) that had at least 50 employees in year  $t-1$ , the year before job loss; (2) that had positive payroll (that is, that paid workers for at least part of the year) in both year  $t-1$  and year  $t$ ; (3) whose total permanent layoffs in year  $t$  represented 10 percent or more of employment in year  $t-1$ ; and (4) whose total payroll fell by at least 10 percent from year  $t-1$  to year  $t+1$ . All other layoffs are deemed nonmass layoffs.<sup>14</sup>

Ideally, we would measure mass layoffs at the establishment level, rather than at the firm level.<sup>15</sup> As the LWF does not allow us to do so, we disaggregate layoffs that take place in nonmass layoffs into those occurring in firms with fewer than 50 employees and those with 50 employees or more. Since layoffs that occur in firms with fewer than 50 employees are, by definition, nonmass layoffs, calculating the share of all layoffs that take place in such firms provides a lower bound on the share of layoffs that would be labelled as nonmass layoffs if the LWF had establishment-level data. Conversely, since some of the nonmass layoffs in larger firms

<sup>13</sup> Our goal here is to answer the following question: Of all workers who are laid off in a given year, what percentage are laid off in mass layoffs versus nonmass layoffs? A related question is, for every worker laid off in mass layoffs, how many workers quit pre-emptively – i.e., shortly before the layoff – as a precautionary measure? Addressing this second issue is beyond the scope of the study.

<sup>14</sup> We follow Jacobson, Lalonde, and Sullivan (1993) by restricting our definition of mass layoffs to firms with at least 50 employees.

<sup>15</sup> One limitation of the LWF is that layoffs are measured at the firm level rather than at the establishment level. This distinction is important. If a firm has many establishments in Canada, the closure of one will not necessarily lead the firm to experience layoffs equivalent to 10 percent or more of its aggregate employment in year  $t-1$  (part of our definition of mass layoff). An establishment is a unit of production for which the business maintains accounting records (e.g., sales, shipments, inventories). A firm or company may have multiple establishments, but an establishment belongs to a single company.

mask some establishment-level closures and mass layoffs, such job losses would be labelled as mass layoffs if the LWF had establishment-level data. Therefore, adding nonmass layoffs that take place in larger firms to those taking place in smaller firms provides an upper bound on the true share of layoffs that come from nonmass layoffs, that is – those that would be labelled as nonmass layoffs if the LWF had establishment-level data.

Table 1 shows that of all layoffs experienced by men and women aged 25 to 64 in 2015, 44 percent were nonmass layoffs in firms with fewer than 50 employees, and 32 percent were nonmass layoffs in larger firms. Hence, between 44 and 76 percent (44 plus 32 percent) of all layoffs that took place among employees in the commercial sector in 2015 were nonmass layoffs, compared with between 61 and 92 percent in 1995. Averaging these ranges of estimates – upper and lower bounds – over the entire 21 years from 1995 to 2015 indicates that between 53 and 87 percent of the layoffs in the commercial sector from 1995 to 2015 were nonmass layoffs.<sup>16</sup> The corresponding average range of estimates for long-tenured men and women is roughly 45 to 80 percent. Hence, assistance policies targeting only employees displaced in mass layoffs would miss a considerable share of displaced workers in Canada.

## RE-EMPLOYMENT RATES

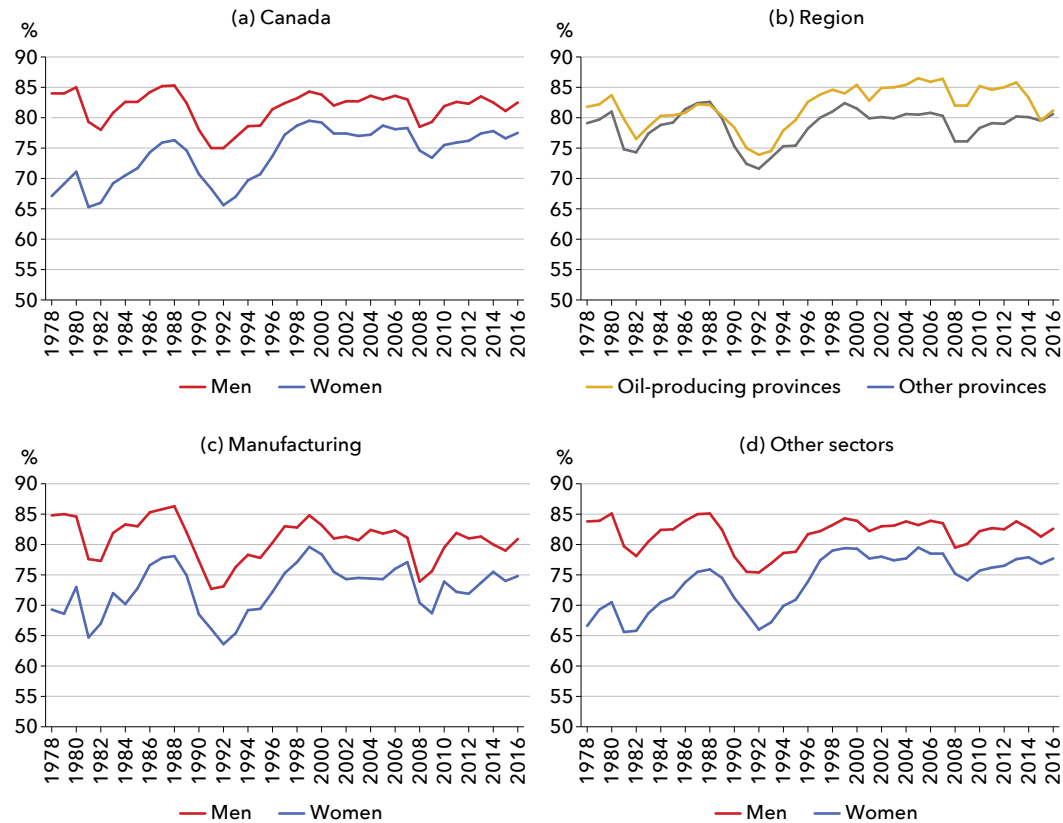
While layoff rates did not trend upward for men or for women, short-term re-employment rates – the percentage of laid-off workers who found new, paid jobs in the year following job loss – had gender-specific trajectories. As women participated in the labour force in greater numbers, the percentage of laid-off women who had paid employment in the year following job loss grew over time, reaching 78 percent in 2016, up from 67 percent in 1978 (figure 3).<sup>17</sup> In contrast, the percentage of displaced men who were re-employed in the year following job loss displayed cyclical fluctuations but no clear trend. As a result of the 2015 oil bust, workers laid off in 2015 and 2016 in the oil-producing provinces had lower re-employment rates than those who lost their jobs between 2010 and 2014. Likewise, proportionately fewer men displaced from manufacturing during the 2010s found paid jobs in the year following job loss, compared with those who lost their jobs in the late 1970s. This may in part reflect the long-term decline in the relative importance of manufacturing in the Canadian labour market.

Short-term re-employment rates evolved differently for men and women of different ages and job tenures. Since the mid-1980s, re-employment rates of older women (aged 55 to 64) with fewer than six years of job tenure increased significantly, although they remained considerably lower than those of younger women or older men with

<sup>16</sup> These percentages would obviously increase if mass layoffs were defined as involving, say, at least 20 percent of a firm's initial employment level, rather than at least 10 percent of it.

<sup>17</sup> Taking into account labour market conditions, multivariate analyses suggest that women's re-employment rates trended upward at 0.3 percentage points per year. No such effect is detected for displaced men.

**Figure 3. Percentage of laid-off workers with paid employment one year after job loss, by gender, region and sector, Canada, 1978-2016**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Note: Includes workers aged 25 to 64 in all industries who were laid off in year  $t$ .

equivalent tenure (figure 4).<sup>18</sup> Re-employment rates also increased for displaced men aged 55 to 64, especially those with three or more years of job tenure.<sup>19</sup> These patterns undoubtedly reflect, at least in part, the rising participation of older men and women in the labour market.<sup>20</sup>

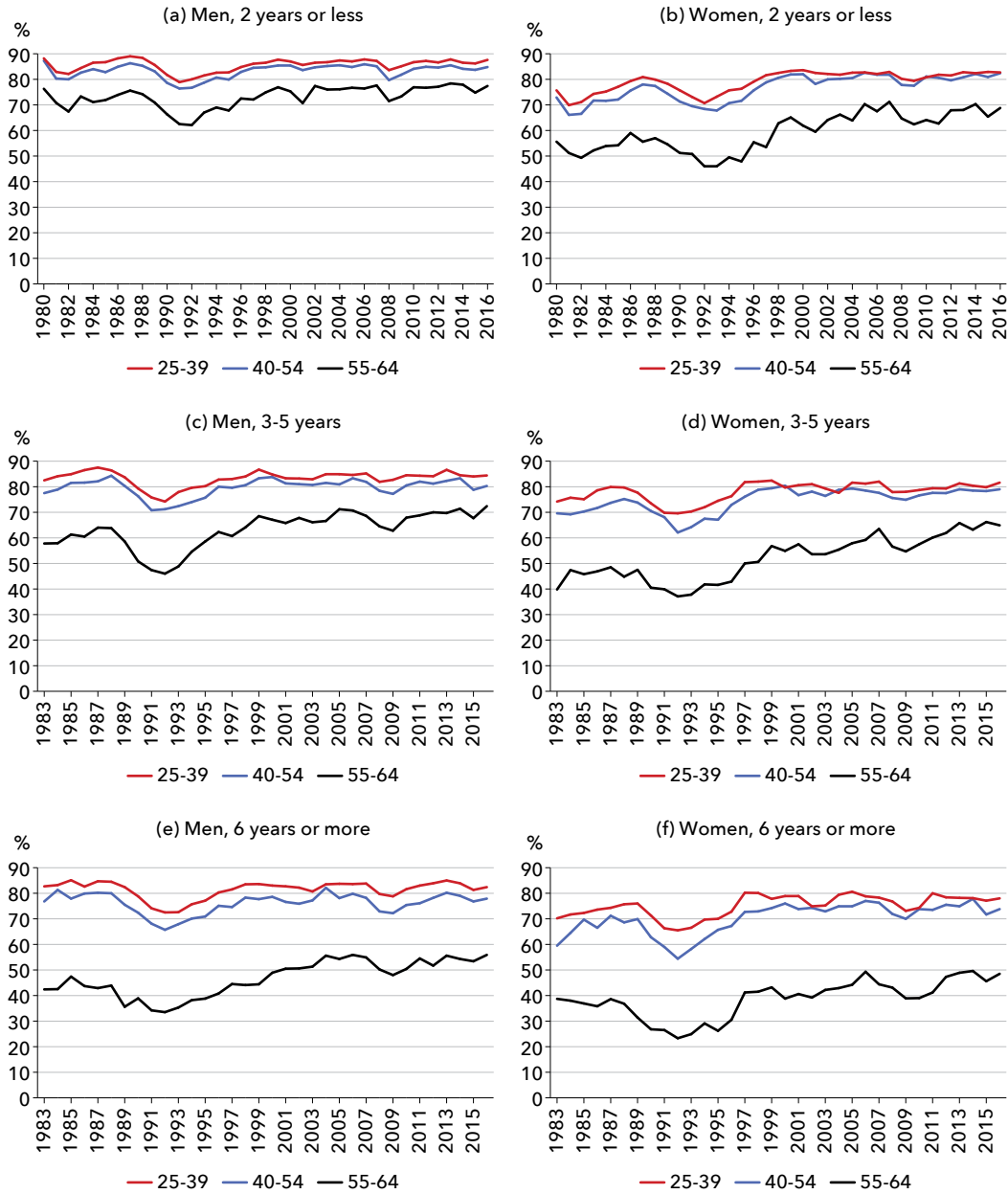
Among displaced long-tenured men, short-term re-employment rates were somewhat higher for those displaced in mass layoffs than for those displaced in nonmass layoffs. For example, 87 percent of those aged 25 to 54 who were part of mass layoffs in 2013 found new jobs in the following year (figure 5). The corresponding number for those who lost their jobs in nonmass layoffs was 80 percent. Except in the 2000s, long-tenured women displaced in mass layoffs also had higher re-employment rates

<sup>18</sup> Regardless of their tenure, displaced men and women aged 55 to 64 have lower re-employment rates than younger workers. Part of the difference is likely driven by the fact that job loss may prompt some older displaced workers to retire.

<sup>19</sup> Nevertheless, displaced men aged 55 to 64 with three or more years of tenure still had lower re-employment rates than their younger counterparts by 2016.

<sup>20</sup> Part of the increase in the labour force participation of older men since the mid-1990s is driven by the increase in the labour force participation of their wives (Schirle 2008). The degree to which the growing participation rate of older men also results from their falling pension coverage is not known.

**Figure 4. Percentage of laid-off workers with paid employment one year after job loss, by age, gender and job tenure, Canada, 1980-2016**

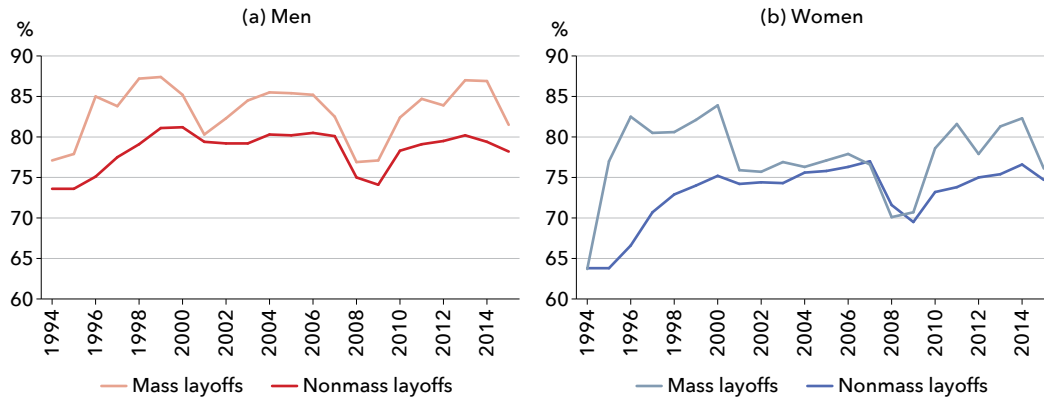


Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: Includes workers aged 25 to 64 in all industries who were laid off in year  $t$ . For laid-off workers with five or more years of tenure, data are not available before 1983.



**Figure 5. Percentage of laid-off, long-tenured workers with paid employment one year after job loss, by gender and type of layoff, Canada, 1994-2015**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: Includes long-tenured workers aged 25 to 54 who were laid off in year  $t$  in all industries except public services. Long-tenured workers are those who have been with the same employer for six years or more. Jobs terminated in mass layoffs are those ending with a permanent layoff in year  $t$  (where  $t$  is the year of the layoff) from firms (1) that had at least 50 employees in  $t-1$ ; (2) that had positive payroll (i.e., that paid workers for at least part of the year) in both  $t-1$  and  $t$ ; (3) whose total permanent layoffs in  $t$  represented 10 percent or more of employment in  $t-1$ ; and (4) whose total payroll fell by at least 10 percent from  $t-1$  to  $t+1$ . All other layoffs are considered to be nonmass layoffs.

than those who lost their jobs in nonmass layoffs.<sup>21</sup> From 1994 onward – the earliest year for which mass layoff statistics can be computed for long-tenured workers<sup>22</sup> – no obvious trend can be detected for men or women.

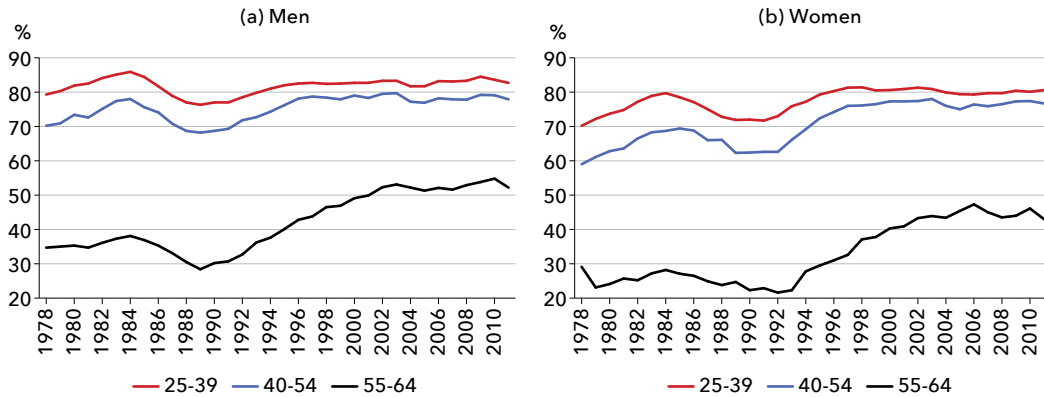
In sum, the short-term re-employment rates of laid-off workers either trended upward or were fairly stable over the past few decades. Re-employment rates five years after job loss showed similar patterns. This is true whether one is focusing on men and women of different ages (figure 6) or on long-tenured workers who lost their jobs in mass or in nonmass layoffs (figure 7).<sup>23</sup> In all years, the long-term re-employment rates of displaced men and women aged 55 to 64 are much lower than those of their younger counterparts. This finding is unsurprising, because five years after losing their jobs, many displaced older workers (having reached the ages of 60 to 69) may have decided to retire. Nevertheless, the gap in long-term re-employment rates between older and younger displaced workers narrowed sharply after the mid-1990s.

<sup>21</sup> Several factors may explain why short-term re-employment rates tend to be higher among workers displaced in mass layoffs than in nonmass layoffs. First, employment standards requirements, such as advance notice of layoffs and provisions requiring employers to assist laid-off employees, may be more stringent for mass than for nonmass layoffs. Second, employees involved in mass layoffs may be more productive and have more marketable skills than those involved in nonmass layoffs. Third, employees who lose their jobs in mass layoffs might have observable characteristics (for example, education) that differ from those of other laid-off workers and are conducive to higher re-employment rates. Disentangling these factors is beyond the scope of this study.

<sup>22</sup> To distinguish between mass and nonmass layoffs, we use the 1989-2017 wave of the LWF, which includes all workers in Canada. As long-tenured workers must be observed with the same firm for at least six years starting in 1989, statistics on long-tenured workers involved in mass layoffs can start no earlier than 1994.

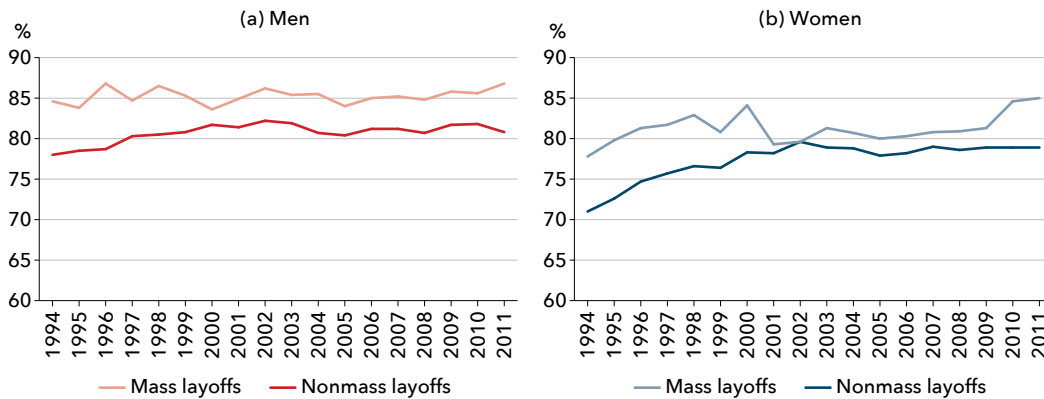
<sup>23</sup> The upward trend in the long-term re-employment rates of older workers in figure 6 poses new policy challenges to address the needs of older workers who do not have sufficient retirement savings to retire early but are also reluctant or unable to invest in training (due to lack of opportunities).

**Figure 6. Percentage of laid-off workers with paid employment five years after job loss, by age and gender, Canada, 1978-2011**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Note: Includes workers in all industries who were laid off in year  $t$ .

**Figure 7. Percentage of laid-off, long-tenured workers with paid employment five years after job loss, by gender and type of layoff, Canada, 1994-2011**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Notes: Includes long-tenured workers aged 25 to 54 who were laid off in year  $t$  in all industries except public services. Long-tenured workers are those who have been with the same employer for six years or more. Jobs terminated in mass layoffs are those ending with a permanent layoff in year  $t$  (where  $t$  is the year of the layoff) from firms (1) that had at least 50 employees in  $t-1$ ; (2) that had positive payroll (i.e., that paid workers for at least part of the year) in both  $t-1$  and  $t$ ; (3) whose total permanent layoffs in  $t$  represented 10 percent or more of employment in  $t-1$ ; and (4) whose total payroll fell by at least 10 percent from  $t-1$  to  $t+1$ . All other layoffs are considered to be nonmass layoffs.

The stability of short-term re-employment rates masks important industry-specific movements in the types of jobs held in the year following job loss. From the second half of the 1990s to the first half of the 2010s, the likelihood of displaced manufacturing workers finding new jobs in manufacturing fell. For example, only one-fifth of women laid off from manufacturing between 2010 and 2015 found jobs in manufacturing in the year following job loss (table 2). The corresponding number for those laid off between 1995 and 2000 was about 30 percent, 10 percentage points higher. The likelihood of finding new jobs in manufacturing also fell for displaced workers previously employed in construction, mining, oil and gas extraction, low-skill services

(such as retail trade and accommodation and food services) and high-skill services.<sup>24</sup> Again, this pattern may in part reflect the decline in the relative importance of the manufacturing sector in overall employment. If so, it highlights the consequences of labour-saving technological changes and globalization – the two main drivers of the decline in manufacturing employment – for workers’ adjustment to job loss.

In contrast, the likelihood of workers displaced from construction finding new jobs in that industry between 2010 and 2015 was higher than it was between 1995 and 2000. For example, 55 percent of men displaced from construction between 2010 and 2015 found new jobs in that industry in the year following job loss, up from 51 percent for those displaced between 1995 and 2000. Likewise, the likelihood of men and women displaced from low-skill services finding new jobs in the same sector rose slightly.

The patterns were more nuanced for workers displaced from mining and oil and gas extraction. A smaller proportion of men displaced from this industry between 2010 and 2015 found new jobs in the same sector in the year following job loss (21 percent) than those displaced between 1995 and 2000 (24 percent).<sup>25</sup> However, a greater proportion found new jobs in construction in 2010-15 (29 percent) than in 1995-2000 (23 percent). In contrast, proportionately more of the women displaced from mining and oil and gas extraction found new jobs in that sector or in construction during the first half of the 2010s.

Table 2 also highlights the gender-specific nature of the new jobs held by men and women displaced from manufacturing firms. Men displaced from manufacturing were much more likely than women to find new jobs in construction, and they were much less likely to find new jobs in low-skill services and public services.

The greater likelihood of women displaced from manufacturing finding jobs in public services is worth noting, for two reasons. First, their ability to find jobs in public services may ease their post-displacement transitions, given that labour demand in the health care sector will likely grow in the next few years. Second, it is an interesting question for future research whether such gender differences in the industry of re-employment reflect skills differences or preferences influenced by social norms.

In sum, the sectors in which displaced workers found new jobs a year after job loss have changed somewhat since the mid-1990s, reflecting intersectoral shifts in employment driven by automation, globalization, population aging, volatility in world oil prices and increases in the relative importance of high-skill services.

<sup>24</sup> High-skill services are transportation and warehousing; information and cultural industries; finance and insurance; real estate, rental and leasing; professional, scientific and technical services; management of companies and enterprises; administrative and support services; and waste management and remediation services.

<sup>25</sup> If Canada reduces its reliance on oil and gas extraction, the likelihood of displaced workers finding new jobs in this sector is expected to decrease.

**Table 2. Percentage of laid-off workers with paid employment one year after job loss, by gender and industry of re-employment, Canada, 1995-2000 and 2010-2015**

Industry of layoff	Industry of re-employment								Unknown
	All industries	Mining, oil and gas	Construction	Manufacturing	High-skill services	Low-skill services	Public services	Other	
<b>Manufacturing, men</b>									
1995-2000	82.0	1.6	12.8	32.3	14.1	5.3	3.5	12.3	0.2
2010-2015	80.5	1.8	14.1	26.8	16.5	6.5	3.2	11.0	0.6
Change (percentage points)	-1.5	0.2	1.3	-5.5	2.4	1.2	-0.3	-1.3	0.4
<b>Manufacturing, women</b>									
1995-2000	75.3	0.2	1.6	29.6	14.0	11.1	7.4	11.2	0.2
2010-2015	73.5	0.4	2.9	19.8	17.1	12.8	9.6	10.4	0.7
Change (percentage points)	-1.8	0.2	1.3	-9.8	3.1	1.7	2.1	-0.9	0.5
<b>Low-skill services, men</b>									
1995-2000	77.7	0.7	6.2	9.7	13.1	30.3	5.2	12.2	0.2
2010-2015	78.8	0.8	6.9	6.0	15.6	33.2	5.3	10.2	0.9
Change (percentage points)	1.1	0.2	0.6	-3.7	2.5	2.8	0.1	-2.0	0.7
<b>Low-skill services, women</b>									
1995-2000	75.6	0.3	1.2	6.0	12.3	36.7	9.7	9.2	0.2
2010-2015	77.7	0.3	1.7	3.8	12.7	38.0	12.0	8.0	1.1
Change (percentage points)	2.1	0.0	0.5	-2.2	0.3	1.4	2.3	-1.2	0.9
<b>High-skill services, men</b>									
1995-2000	81.4	1.8	12.2	11.5	32.3	5.9	5.9	11.4	0.2
2010-2015	81.1	2.0	12.1	9.2	36.3	6.5	5.3	8.7	0.9
Change (percentage points)	-0.3	0.2	-0.1	-2.3	4.0	0.6	-0.6	-2.7	0.7

**Table 2 (cont.)**

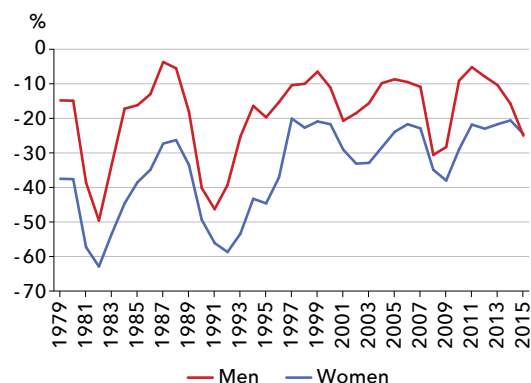
Industry of layoff	Industry of re-employment									
	All industries	Mining, oil and gas	Construction	Manufacturing	High-skill services	Low-skill services	Public services	Other	Unknown	
<b>High-skill services, women</b>										
1995-2000	79.0	0.5	1.7	8.3	34.7	11.4	12.8	9.5	0.2	
2010-2015	78.3	0.8	2.8	5.8	34.7	11.3	13.3	8.4	1.1	
Change (percentage points)	-0.7	0.3	1.1	-2.5	0.0	0.0	0.5	-1.0	0.9	
<b>Construction, men</b>										
1995-2000	86.0	2.5	50.8	9.0	10.3	2.8	3.1	7.4	0.2	
2010-2015	86.6	3.2	54.9	5.8	11.1	2.8	2.1	5.9	0.7	
Change (percentage points)	0.6	0.7	4.2	-3.2	0.8	0.0	-1.0	-1.4	0.5	
<b>Construction, women</b>										
1995-2000	76.3	1.2	14.8	7.5	17.6	14.2	11.2	9.7	0.2	
2010-2015	79.8	2.7	23.6	4.8	17.4	11.9	9.6	8.8	1.0	
Change (percentage points)	3.4	1.4	8.8	-2.7	-0.1	-2.3	-1.7	-0.8	0.8	
<b>Mining, oil and gas, men</b>										
1995-2000	86.6	24.1	23.4	10.5	13.9	2.4	3.0	9.1	0.1	
2010-2015	86.8	21.1	28.9	6.5	15.4	3.2	2.7	8.5	0.5	
Change (percentage points)	0.2	-3.0	5.4	-4.0	1.5	0.8	-0.3	-0.6	0.4	
<b>Mining, oil and gas, women</b>										
1995-2000	76.0	10.9	7.0	5.8	20.9	8.7	13.4	9.3	0.0	
2010-2015	80.1	14.7	13.8	3.8	20.2	10.2	9.4	7.5	0.6	
Change (percentage points)	4.0	3.8	6.7	-2.0	-0.7	1.6	-4.0	-1.9	0.6	

Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Note: Includes workers in all industries who are aged 25 to 64 and are laid off in year t.

## CHANGES IN EARNINGS FOLLOWING JOB LOSS

The numbers presented so far show how the likelihood of losing one's job and of being re-employed after job loss have changed since the late 1970s. Another important aspect of job displacement is the extent to which being laid off has affected workers' earnings in the short and longer terms. How has the magnitude of these earnings changes post-layoff evolved over the past few decades?<sup>26</sup>

**Figure 8. Median percentage change in earnings experienced by laid-off workers one year after job loss, by gender, Canada, 1979-2015**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: Median percentage change in annual earnings from the year before job loss ( $t-1$ ) to the year following job loss ( $t+1$ ) for workers aged 25-54 laid off in year  $t$  who earned at least \$10,000 (2016 dollars) in year  $t-1$ . Includes laid-off workers with no paid employment one year after job loss.

Figure 8 answers this question in the case of laid-off workers aged 25 to 54 who earned at least \$10,000 (in 2016 dollars) in the year before job loss.<sup>27</sup> Median percentage changes in annual earnings from the year before job loss (year  $t-1$ ) to the year after job loss ( $t+1$ ) (which we refer to in this study as short-term earnings changes or declines) are computed for the period from 1979 to 2015. Laid-off workers with no paid employment income in the year following job loss are included.

Several points are worth noting here. First, regardless of the year considered, median percentage changes in earnings from year  $t-1$  to year  $t+1$  are always negative, which indicates that the typical laid-off worker usually ends up in a worse financial position in the year following job loss than in the year before job loss.<sup>28</sup>

Second, as expected, laid-off men and women experience greater proportional declines in earnings during recessions than during expansionary periods. Third, for most years from 1979 to 2015, the short-term earnings declines were proportionally worse for women than they were for men.<sup>29</sup> The difference is in part due to the fact that women have lower re-employment rates than men in the year following job loss (see figure 3). Fourth, while there is no clear trend for men, the short-term earnings declines for women have become less pronounced over time. For example, women who were laid off in 2015 had a median

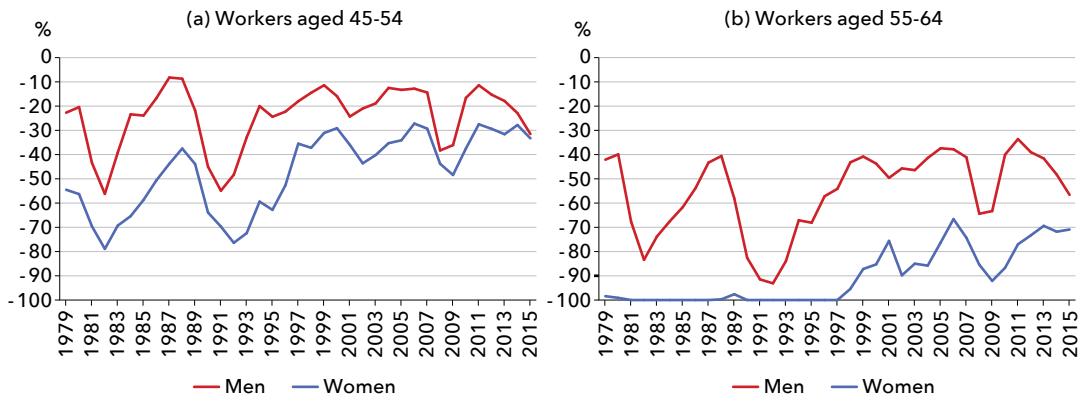
<sup>26</sup> For simplicity, we focus on observed rather than estimated changes in earnings. Contrary to observed changes, estimated changes include increases in earnings that are forgone as a result of job loss.

<sup>27</sup> We focus on employees who earned at least \$10,000 in the year before job loss in order to exclude workers who are minimally attached to the labour market. We do so both for short-term changes in earnings (one year after job loss) and longer-term changes in earnings (five years after job loss). For this reason, the samples used to calculate changes in earnings are smaller than those used to calculate employment rates after job loss.

<sup>28</sup> Part of the declines in earnings experienced from year  $t-1$  to year  $t+1$  may reflect spells of unemployment during year  $t+1$ , as some displaced workers may work only a few months (or none) in the year following job loss.

<sup>29</sup> Interestingly, this gender difference appears to narrow during recessions.

**Figure 9. Median percentage change in earnings experienced by laid-off older workers one year after job loss, by gender and age, Canada, 1979-2015**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: Median percentage change in annual earnings from the year before job loss ( $t-1$ ) to the year after job loss ( $t+1$ ) for older workers who were laid off in year  $t$  and earned at least \$10,000 (2016 dollars) in year  $t-1$ . Includes laid-off workers aged 45 to 64 who had no paid employment one year after job loss.

percentage drop in earnings of 25 percent, compared with a 38 percent decline for those who were laid off in 1979. The rising re-employment rates of displaced women over the past four decades likely explain part of this improvement.

In the context of an aging population when governments are encouraging more workers to retire at a later age, it is important to know what happens to displaced older workers. Figure 9 plots the median percentage change in annual earnings from the year before job loss to the year after job loss for men and women aged 45 to 54 and 55 to 64. As in figure 8, figure 9 highlights the cyclicity of short-term earnings declines and reveals interesting gender differences: for instance, for women, the magnitude of the earnings declines in the year after job loss has fallen since the late 1970s.<sup>30</sup> It also shows that, regardless of the year considered, short-term earnings declines were larger for displaced workers aged 55 to 64 than for those aged 45 to 54.

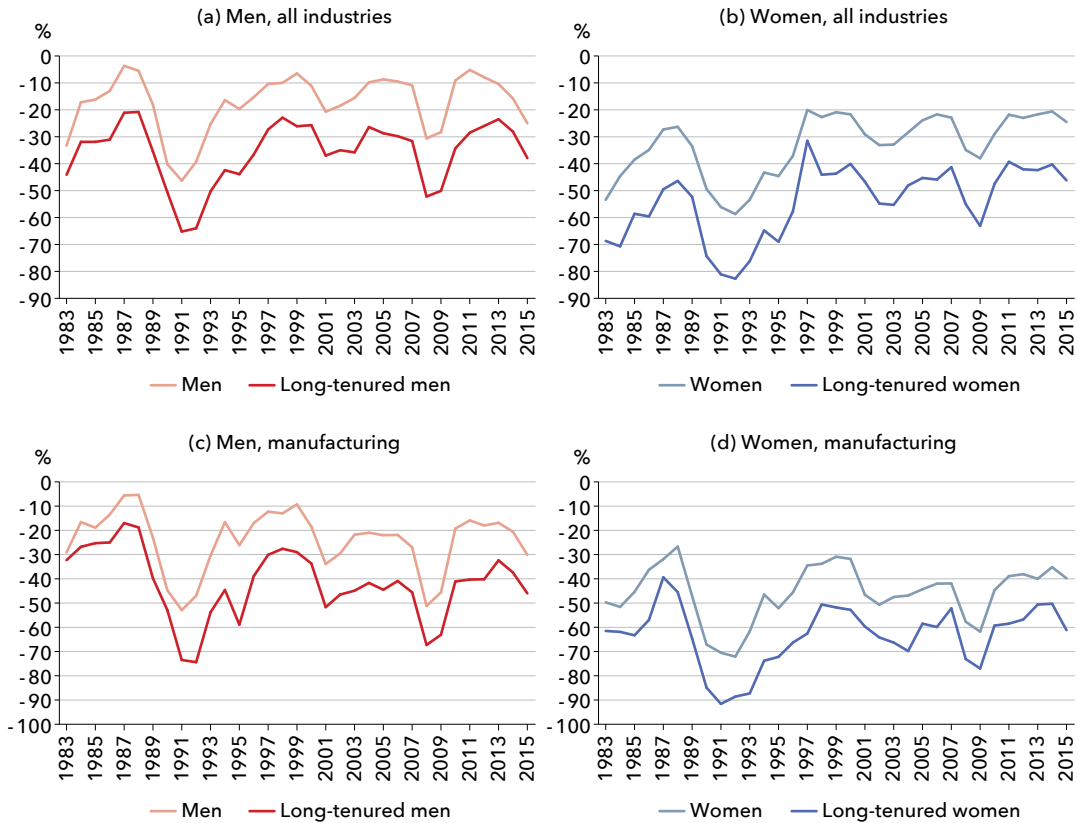
How do proportional short-term earnings declines vary across groups of displaced workers? Figure 10 shows that regardless of the year considered, long-tenured workers in manufacturing and in all industries experienced larger than average earnings declines after losing their jobs.<sup>31</sup> In addition, comparing 1987 and 1997 with 2007 suggests that the short-term earnings declines of long-tenured men and women displaced from manufacturing have become more pronounced over time.<sup>32</sup>

<sup>30</sup> From 1979 to the mid-1990s, the median decline in earnings for laid-off women aged 55 to 64 is as much as 100 percent. This indicates that for several years over that period, more than half of these women were not re-employed in the year following job loss.

<sup>31</sup> Displaced long-tenured workers may have larger earnings declines than other workers because (1) they are overrepresented in large firms and high-paying firms; (2) their displacement involves the loss of a good match between their skills and the job requirements; and (3) they accepted wages below their productivity when they started a job with their employer in return for wages above their productivity as they accumulate seniority with this employer.

<sup>32</sup> Morissette, Qiu, and Chan (2013, table 7) show that the average short-term declines in earnings of displaced manufacturing workers who had paid employment in year  $t+1$  worsened by about 15 percentage points from the late 1990s to 2005-06.

**Figure 10. Median percentage change in earnings experienced by laid-off workers one year after job loss, by gender, job tenure and sector, Canada, 1983-2015**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Notes: Median percentage change in annual earnings from the year before job loss ( $t-1$ ) to the year after job loss ( $t+1$ ) for workers who were laid off in year  $t$  and earned at least \$10,000 (2016 dollars) in year  $t-1$ . Includes laid-off workers aged 25 to 54 who had no paid employment one year after job loss.

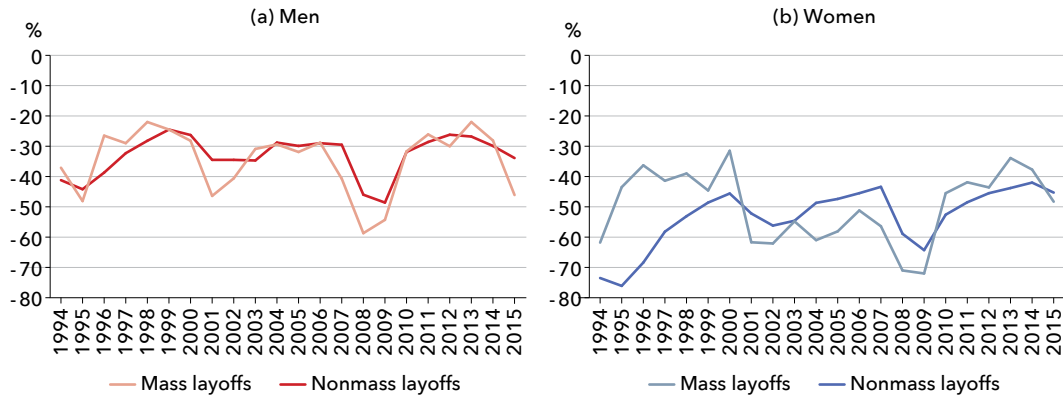
Figure 11 shows that displaced long-tenured men who lost their jobs in mass and nonmass layoffs experienced similar declines in earnings in the short term. In light of the fact that the former group generally had higher short-term re-employment rates than the latter (see figure 5), this finding is worth noting.<sup>33</sup> During the 2000s, long-tenured women displaced in mass layoffs had somewhat greater relative earnings declines than those who lost their jobs in nonmass layoffs. However, this pattern does not hold prior to 2000 or after 2010.

Looking beyond the short-term declines in earnings experienced by displaced workers following job loss, we now focus on the earnings changes five years after job loss.

<sup>33</sup> When we focus only on displaced long-tenured men who have paid employment in the year following job loss, we find that from 1994 onward, the short-term declines in earnings of men displaced in mass layoffs are, on average, about 7 percentage points higher than those of men who lost their jobs in non-mass layoffs. Since large firms pay higher wages than smaller firms for observationally equivalent workers (Morissette 1993), and since mass layoffs are, by our definition, nonexistent in firms with fewer than 50 employees, part of the difference in short-term declines in earnings between the two groups may be because long-tenured men displaced in mass layoffs were initially paid higher wages than those displaced in nonmass layoffs.



**Figure 11. Median percentage change in earnings experienced by laid-off long-tenured workers one year after job loss, by gender and type of layoff, Canada, 1994-2015**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: Median percentage change in annual earnings from the year before job loss ( $t-1$ ) to the year after job loss ( $t+1$ ) for long-tenured workers aged 25 to 54 laid off in year  $t$  who earned at least \$10,000 (2016 dollars) in year  $t-1$ . Laid-off workers with no paid employment one year after job loss are included. Long-tenured workers are those who have been with the same employer for six years or more. Jobs terminated in mass layoffs are those ending with a permanent layoff in year  $t$  (where  $t$  is the year of the layoff) from firms (1) that had at least 50 employees in  $t-1$ ; (2) that had positive payroll (i.e., that paid workers for at least part of the year) in both  $t-1$  and  $t$ ; (3) whose total permanent layoffs in  $t$  represented 10 percent or more of employment in  $t-1$ ; and (4) whose total payroll fell by at least 10 percent from  $t-1$  to  $t+1$ . All other layoffs are considered to be nonmass layoffs. Excludes public services.

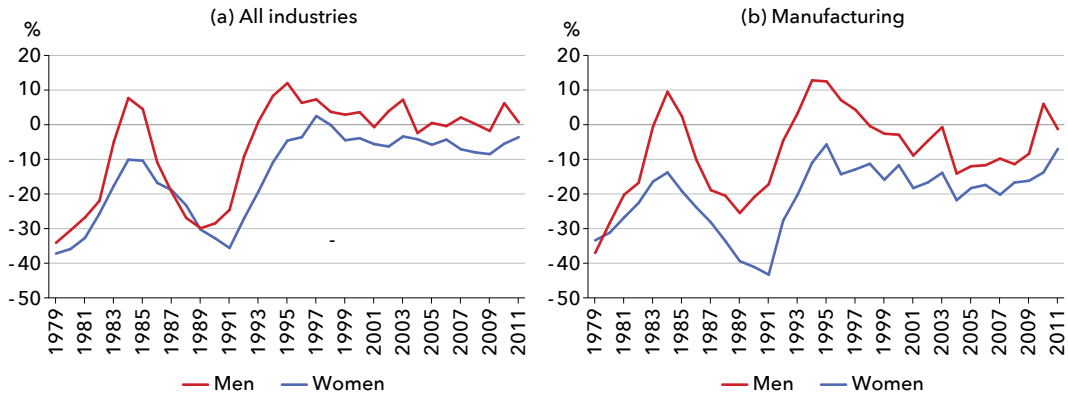
Figures 12 and 13 show that men and women displaced from manufacturing during the mid-1990s fared better than those displaced from this sector in the first half of the 2000s.<sup>34</sup> However, there is no compelling evidence that the long-term changes in earnings experienced by laid-off workers worsened over time. Nevertheless, as figure 13 shows, real earnings five years after job loss were still at least 10 percent lower than pre-displacement earnings for more than 40 percent of laid-off men and women.<sup>35</sup> This is true (with few exceptions) throughout the period considered, whether we look only at the manufacturing sector or at all industries. Figure 14 shows that laid-off long-tenured workers experienced declines in earnings of at least 10 percent in greater proportions than laid-off workers on average. Among long-tenured workers, men displaced in mass layoffs generally experienced such earnings declines more often than those who lost their jobs in nonmass layoffs (figure 15).

Overall, our study finds little evidence that over the past four decades job displacement has become a problem of greater magnitude or that it has caused greater adverse financial consequences for laid-off workers. In general, the likelihood of job loss has not risen over this period, and the likelihood of laid-off workers finding paid employment after job loss has not decreased. There is also little evidence the relative impact on earnings associated with job loss has worsened.

<sup>34</sup> Figure 12 shows the median percentage change in earnings from year  $t-1$  to year  $t+5$  for workers laid off in year  $t$ . Figure 13 shows the percentage of workers whose real earnings in year  $t+5$  were at least 10 percent lower than their real earnings in year  $t-1$ . Laid-off workers with no paid employment in year  $t+5$  are included in figures 12 to 15.

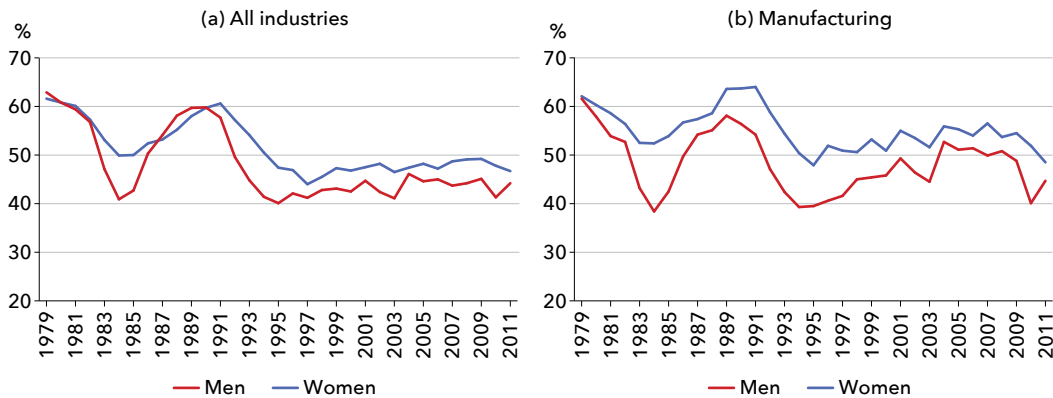
<sup>35</sup> When we look only at displaced workers who have paid employment in year  $t+5$ , the corresponding share is 30 percent.

**Figure 12. Median percentage change in real earnings experienced by laid-off workers five years after job loss, by gender and sector, Canada, 1979-2011**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Notes: Median percentage change in annual earnings from the year before job loss ( $t - 1$ ) to five years after job loss ( $t + 5$ ) for workers aged 25 to 54 who were laid off in year  $t$  and earned at least \$10,000 (2016 dollars) in year  $t - 1$ . Includes laid-off workers with no paid employment five years after job loss.

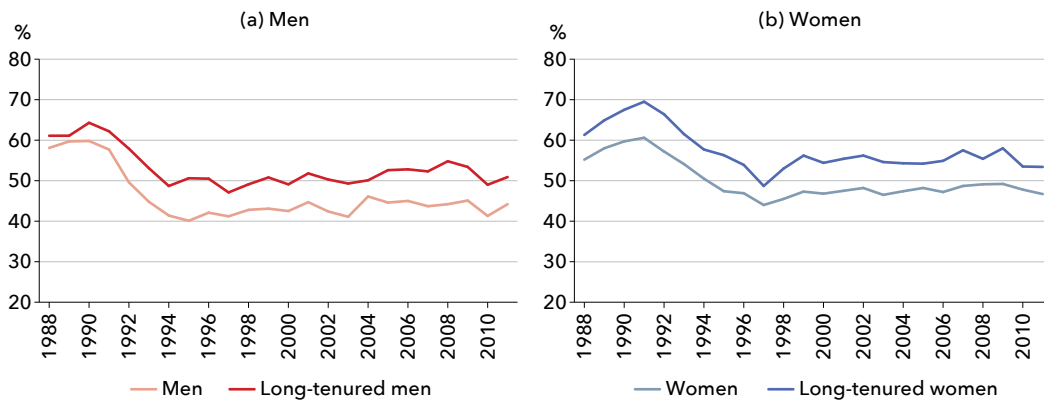
**Figure 13. Percentage of laid-off workers whose real earnings five years after job loss were at least 10 percent lower than in the year before job loss, by gender and sector, Canada, 1979-2011**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Notes: Includes workers aged 25 to 54 who were laid off in year  $t$  and earned at least \$10,000 (2016 dollars) in year  $t - 1$ . Laid-off workers who had no paid employment five years after job loss are included.

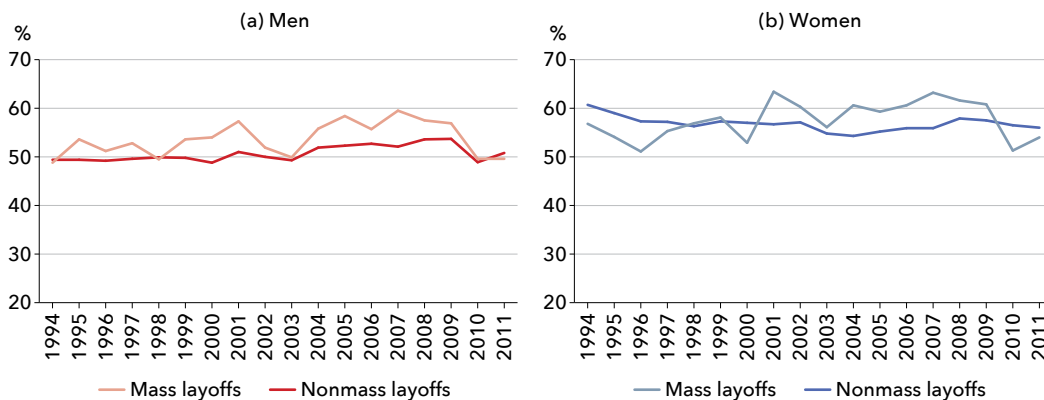
There is evidence, however, that manufacturing workers who lost their jobs in recent years have had greater difficulty adjusting than did those displaced in previous years. In addition, the data show that laid-off long-tenured workers consistently experienced higher than average earnings declines in both the short and long terms. This is worth noting, as long-tenured workers represented about half of all employed workers aged 25 to 64 in 2016, up from about 46 percent in 1978 (based on the LFS). And while long-tenured men displaced in mass layoffs have had higher re-employment rates than those displaced in nonmass layoffs, they do not necessarily have smaller earnings declines. These observations apply both one year and five years after job loss.

**Figure 14. Percentage of laid-off workers whose real earnings five years after job loss were at least 10 percent lower than in the year before job loss, by gender and tenure, Canada, 1988-2011**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Notes: Includes laid-off workers aged 25 to 54 in all industries who had real annual earnings of at least \$10,000 (2016 dollars) in  $t - 1$ . Long-tenured workers are those who have been with the same employer for six years or more. Laid-off workers who had no paid employment five years after job loss are included.

**Figure 15. Percentage of laid-off long-tenured workers whose real earnings five years after job loss were at least 10 percent lower than in the year before job loss, by gender and type of layoff, Canada, 1994-2011**



Source: Statistics Canada, Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.  
 Notes: Includes laid-off workers aged 25 to 54 in all industries who had real annual earnings of at least \$10,000 (2016 dollars) in  $t - 1$ . Excludes public services. Long-tenured workers are those who have been with the same employer for six years or more. Jobs terminated in mass layoffs are those ending with a permanent layoff in year  $t$  (where  $t$  is the year of the layoff) from firms (1) that had at least 50 employees in  $t - 1$ ; (2) that had positive payroll (i.e., that paid workers for at least part of the year) in both  $t - 1$  and  $t$ ; (3) whose total permanent layoffs in  $t$  represented 10 percent or more of employment in  $t - 1$ ; and (4) whose total payroll fell by at least 10 percent from  $t - 1$  to  $t + 1$ . All other layoffs are considered to be nonmass layoffs. Laid-off workers who had no paid employment five years after job loss are included.

## PROFILES OF DISPLACED WORKERS

To identify which workers face the greatest risk of job loss and which have the greatest difficulty adjusting to job loss, we selected a sample of workers aged 25 to 44 from the 2001 Census and linked it to the LWF. This allowed us to add important variables

such as workers' educational attainment as well as immigration and disability statuses to our analysis. We examined how the risk of layoff and post-displacement short-term outcomes vary by worker characteristics for the years 2005, 2007 and 2009.<sup>36</sup>

Table A1 (see appendix) shows that the risk of men and women being laid off varies substantially, depending on education, job tenure, industry and firm size. Less educated workers, those recently hired or those working in small firms or in construction are much more likely to lose their jobs than other workers.<sup>37</sup> These patterns, however, do not suggest that differences in workers' risk of job loss can be attributed solely to their education or place of work. They may be caused by other variables. For example, as highly educated workers tend to be overrepresented in large firms, and large firms have lower layoff rates than smaller firms, part of the differences in layoff risk across education levels may result from the overrepresentation of highly educated workers in large firms.

To determine which characteristics matter in explaining the differences in workers' risk of job loss, we conducted regression analyses that took several variables into account. Our findings, which are presented in table 3, confirm most of the patterns highlighted in table A1. For example, long-tenured men and women are, all else being equal, between 6 and 14 percentage points less likely to lose their jobs than those who have been in the firm for two years or less. Degree holders are up to 2 percentage points less likely to lose their jobs than workers with a high school diploma or less. Employees in large firms – those with 500 employees or more – are 3 to 4 percentage points less likely to be laid off than those in firms with fewer than 20 employees. Conversely, likely due to the project-specific nature of their work, men employed in construction are about 10 percentage points more likely to be laid off than those in manufacturing.

While long tenure is associated with a lower risk of job loss, it is also associated with lower re-employment rates in the year following job loss. For instance, of all long-tenured men laid off in 2009, 75 percent had paid employment in 2010 (see table A2). The corresponding estimate for laid-off men with two years or less of tenure before job loss was, at 85 percent, 10 percentage points higher. Our regression analyses indicated that, all else being equal, workers laid off from small firms, those with long tenure and those who are recent immigrants are less likely than others to have paid employment in the year following job loss (table 4). The (adjusted) difference between the re-employment rates of long-tenured workers and those of newly hired workers varies between 4 and 8 percentage points. The (adjusted) re-employment rate difference between laid-off workers who are recent immigrants and those born in Canada is also substantial: it varies between 7 and 10 percentage points.<sup>38</sup> Men and women with a disability are less likely to be

<sup>36</sup> These years include years of expansion (2005 and 2007) and recession (2009) and allowed us to select workers unlikely to consider early retirement. By 2009, the sample consisted of individuals aged 33 to 52. Choosing more recent years would not allow us to satisfy this criterion regarding early retirement.

<sup>37</sup> Bernard and Galarnau (2010) find similar qualitative patterns for employees aged 16 and older, using data from the Survey of Labour and Income Dynamics from 1993 to 2007.

<sup>38</sup> Like male immigrants, men who are not permanent residents are also less likely than men born in Canada to be re-employed in the year following job loss.

**Table 3. Likelihood of being laid off, by selected characteristics, Canada, 2005, 2007 and 2009**

	Men			Women		
	2005	2007	2009	2005	2007	2009
<b>Age in 2001</b>						
(25-29)	-	-	-	-	-	-
30-34	0.01	0.23*	0.08	-0.01	0.05	0.00
35-39	0.13	0.23**	0.19	0.09	0.15*	0.20*
40-44	0.24**	0.41***	0.41***	0.19*	0.25**	0.23**
<b>Education in 2001</b>						
(High school diploma or less)	-	-	-	-	-	-
Trades certificate	0.39***	0.39***	0.35**	-0.37***	-0.30**	-0.24*
Some post-secondary	-1.03***	-1.06***	-1.04***	-0.69***	-0.62***	-0.33***
Bachelor's degree or more	-1.79***	-1.68***	-1.78***	-0.69***	-0.50***	-0.36***
<b>Tenure in previous job</b>						
(2 years or less)	-	-	-	-	-	-
3-5 years	-9.25***	-9.20***	-10.81***	-4.59***	-4.82***	-5.48***
6 years or more	-11.61***	-11.55***	-14.38***	-5.99***	-6.28***	-7.56***
<b>Immigration status in 2001</b>						
(Canadian-born)	-	-	-	-	-	-
Landed in last 10 years	-0.22	-0.17	0.46**	0.52***	0.37***	0.91***
Landed 10 years ago or more	-0.51***	-0.63***	-0.28*	0.19*	0.09	0.41***
Not permanent resident	-0.69	-0.19	-0.96	1.95***	1.30**	0.87
<b>Disability status in 2001</b>						
(Not disabled)	-	-	-	-	-	-
Yes, sometimes	0.58***	0.53***	0.40*	0.33**	0.37**	0.70***
Yes, often	0.66**	0.40	0.56*	-0.18	0.77***	0.41*
Not stated	1.07	1.44*	0.99	0.52	0.11	-0.59
<b>Industry of previous job</b>						
(Manufacturing)	-	-	-	-	-	-
Mining, oil and gas	1.03***	1.21***	-0.03	-0.65	-0.55	-0.60
Construction	11.11***	9.31***	8.92***	3.20***	2.35***	2.22***
Low-skill services	-0.17	-0.81***	-1.57***	-1.88***	-1.71***	-2.26***
High-skill services	-2.45***	-3.13***	-4.31***	-3.08***	-3.02***	-4.36***
Public services	-0.80***	-1.17***	-2.89***	-2.57***	-2.37***	-4.17***
Other	0.58***	-0.09	-1.43***	-0.99***	-1.03***	-2.38***
Unknown	7.23***	2.37**	3.31**	3.45**	0.02	1.13
<b>Firm size in previous job</b>						
(Fewer than 20 employees)	-	-	-	-	-	-
20-99 employees	-2.85***	-2.06***	-2.25***	-2.18***	-1.62***	-1.72***
100-499 employees	-3.46***	-3.30***	-3.34***	-3.10***	-2.68***	-2.69***
500 employees or more	-4.23***	-3.39***	-4.08***	-3.76***	-2.89***	-3.20***
<b>Layoff rate (%)</b>	5.2	5.0	6.4	3.2	3.1	3.6
<b>Sample size (N)</b>	502,321	492,640	476,252	521,613	521,562	512,720

Sources: Authors' estimates based on Statistics Canada, Census of Canada, 2001, and Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: The sample includes workers in all industries who were aged 25 to 44 in 2001. Linear probability models are run separately by gender and year.

\* $p \leq .05$  \*\* $p \leq .01$  \*\*\* $p \leq .001$

**Table 4. Likelihood of being in paid employment one year after job loss, by selected characteristics, Canada, 2005, 2007 and 2009.**

	Men			Women		
	2005	2007	2009	2005	2007	2009
<b>Age in 2001</b>						
(25-29)	-	-	-	-	-	-
30-34	-0.06	-0.92	-1.39*	-1.53	-0.07	0.66
35-39	-1.82**	-1.29*	-2.71***	1.51	2.23*	-0.13
40-44	-0.49	-1.28*	-3.91***	0.20	0.65	-2.23*
<b>Education in 2001</b>						
(High school diploma or less)	-	-	-	-	-	-
Trades certificate	3.22***	3.46***	4.65***	2.23*	1.74	2.54*
Some post-secondary	2.83***	0.60	0.60	1.83*	2.56**	2.50**
Bachelor's degree or more	-0.96	-1.01	-0.51	-1.45	-0.35	0.92
<b>Tenure in previous job</b>						
(2 years or less)	-	-	-	-	-	-
3-5 years	-4.91***	-2.46***	-3.71***	-2.47**	-3.02***	-3.65***
6 years or more	-7.77***	-4.39***	-7.79***	-5.06***	-5.10***	-5.60***
<b>Immigration status in 2001</b>						
(Canadian-born)	-	-	-	-	-	-
Landed in last 10 years	-9.16***	-8.53***	-8.17***	-8.56***	-6.68***	-10.46***
Landed 10 years ago or more	-3.43***	-5.32***	-5.69***	-5.55***	-4.73***	-7.36***
Not permanent resident	-7.58*	-15.20***	-13.69**	-7.69	-6.97	-5.21
<b>Disability status in 2001</b>						
(Not disabled)	-	-	-	-	-	-
Yes, sometimes	-4.03***	-1.59	-3.91***	-3.36*	-5.40***	-1.21
Yes, often	-8.47***	-3.58*	-2.55	-2.54	-0.25	-8.97***
Not stated	0.24	-0.68	-3.78	-5.05	-7.49	-10.12
<b>Industry of previous job</b>						
(Manufacturing)	-	-	-	-	-	-
Mining, oil and gas	2.60*	2.53*	5.79***	6.66*	1.64	6.85*
Construction	1.48*	2.21**	6.21***	-1.61	2.23	0.45
Low-skill services	-0.02	-1.61*	0.97	1.76	0.52	3.66**
High-skill services	-2.98*	-1.44	-1.53	0.81	0.72	2.73*
Public services	-6.36***	-2.17	0.19	0.23	0.73	3.53**
Other	0.30	-0.89	0.98	-0.42	0.36	1.80
Unknown	2.87	-5.64*	-0.37	-2.21	-9.69**	-4.51
<b>Firm size in previous job</b>						
(Fewer than 20 employees)	-	-	-	-	-	-
20-99 employees	3.90***	3.28***	2.98***	4.25***	0.34	1.12
100-499 employees	4.96***	4.12***	4.61***	6.10***	2.78**	3.24**
500 employees or more	4.99***	3.17***	4.29***	4.84***	1.52	3.36***
<b>Re-employment rate (%)</b>	85.9	86.2	82.1	81.5	81.7	76.3
<b>Sample size (N)</b>	26,361	24,923	30,117	16,292	15,839	17,957

Sources: Authors' estimates based on Statistics Canada, Census of Canada, 2001, and Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: The sample includes workers in all industries who were aged 25 to 44 in 2001 and were laid off in year *t*. Linear probability models are run separately by gender and year.

\* $p \leq .05$  \*\* $p \leq .01$  \*\*\* $p \leq .001$

**Table 5. Likelihood of real earnings being at least 10 percent lower one year after job loss than in the year before job loss, by selected characteristics, Canada, 2005, 2007 and 2009**

	Men			Women		
	2005	2007	2009	2005	2007	2009
<b>Age in 2001</b>						
(25-29)	-	-	-	-	-	-
30-34	1.17	-0.42	1.57	1.05	-2.39	-1.14
35-39	4.21***	1.85	2.72**	-3.34*	-2.55	0.72
40-44	2.14*	1.21	4.59***	-1.10	0.08	4.12***
<b>Education in 2001</b>						
(High school diploma or less)	-	-	-	-	-	-
Trades certificate	-8.44***	-7.74***	-1.78*	-0.31	-3.64*	-2.50
Some post-secondary	-3.52***	-2.26*	1.60	-0.72	-4.67***	-1.91
Bachelor's degree or more	-3.55*	-0.64	0.84	-1.08	-7.76***	-4.07**
<b>Tenure in previous job</b>						
(2 years or less)	-	-	-	-	-	-
3-5 years	11.69***	8.88***	10.02***	14.14***	10.24***	13.13***
6 years or more	18.64***	14.61***	15.53***	17.52***	15.80***	15.52***
<b>Immigration status in 2001</b>						
(Canadian-born)	-	-	-	-	-	-
Landed in last 10 years	8.76***	5.60***	5.08***	4.05*	5.50***	3.40*
Landed 10 years ago or more	2.80*	3.14*	0.56	4.33**	0.40	1.82
Not permanent resident	-6.54	9.39	10.95**	10.24*	0.48	-11.12
<b>Disability status in 2001</b>						
(Not disabled)	-	-	-	-	-	-
Yes, sometimes	3.93**	3.72*	3.05*	7.51***	4.36*	3.43*
Yes, often	9.32***	2.63	1.88	8.26**	2.83	1.38
Not stated	-0.06	-3.16	7.84	-8.13	13.34	9.49
<b>Industry of previous job</b>						
(Manufacturing)	-	-	-	-	-	-
Mining, oil and gas	-12.74***	-9.40***	-9.06***	-23.80***	-5.04	-9.32*
Construction	-8.87***	-15.71***	-8.98***	-7.62**	-8.84**	-3.98*
Low-skill services	-5.24***	-4.77***	-8.34***	-8.97***	-7.72***	-7.51***
High-skill services	1.13	-2.35	-5.22***	-7.31***	-9.11***	-6.23***
Public services	-7.88***	-14.70***	-15.08***	-11.59***	-17.21***	-17.01***
Other	-2.33	-7.07***	-8.79***	-5.29**	-6.23***	-7.41***
Unknown	-0.98	-7.81*	-0.25	0.57	3.76	0.18
<b>Firm size in previous job</b>						
(Less than 20 employees)	-	-	-	-	-	-
20-99 employees	-3.73***	-1.89	-0.53	-1.02	2.49	-1.34
100-499 employees	-2.89**	-1.98	-0.63	-2.34	1.20	0.57
500 employees or more	-2.82**	-4.33***	-0.44	-3.08*	1.87	-2.07*
<b>Incidence of earnings declines of at least 10% (%)</b>						
	49.3	50.6	63.8	58.2	57.8	67.1
<b>Sample size (N)</b>						
	21,515	20,986	26,587	11,093	11,231	13,954

Sources: Authors' estimates based on Statistics Canada, Census of Canada, 2001, and Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Notes: The sample includes workers in all industries who were aged 25 to 44 in 2001, were laid off in year  $t$  and earned at least \$10,000 (in 2016 dollars) in year  $t - 1$ . Linear probability models are run separately by gender and year.

\* $p \leq .05$  \*\* $p \leq .01$  \*\*\* $p \leq .001$

re-employed than those with no disability, but the estimated differences are not always statistically significant. Interestingly, there is no evidence that laid-off workers who hold degrees, whether men or women, have higher re-employment rates than laid-off workers with high school diplomas or less.

In line with the previous discussion on post-displacement changes in earnings, we find that displaced long-tenured workers are much more likely than those with shorter tenures to experience earnings declines of at least 10 percent in the year after job loss. For example, 64 percent of long-tenured men laid off in 2007 saw their earnings decline by at least 10 percent from 2006 to 2008 (table A3). The corresponding proportion for laid-off men with two years or less of tenure is 45 percent. Most of the difference between these two groups is confirmed by multivariate analyses (table 5). All else being equal, displaced workers who have long tenure, are recent immigrants, have a disability or worked in manufacturing are more likely than others to experience earnings declines of at least 10 percent after being laid off. In contrast, laid-off women with bachelor's degrees or more and men with trades certificates or diplomas are less likely than those with high school diplomas or less to experience such declines.

A key message that emerges from tables 3 to 5 is that workers who face the highest (lowest) risk of job loss do not necessarily experience the worst (best) post-displacement outcomes. For example, long-tenured workers have a relatively low probability of losing their jobs, but when they do, their short-term re-employment rates and earnings declines are worse than those of other displaced workers. Conversely, male workers who are recent immigrants are not necessarily, all else being equal, more likely to be laid off than those born in Canada, but when they are, they fare worse both in terms of short-term re-employment rates and earnings declines. Our results also show that while workers with higher levels of education have a lower risk of job loss, higher educational attainment is not always associated with better short-term post-displacement outcomes.<sup>39</sup>

## CONCLUSION

The concerns about coming waves of automation make it imperative for analysts and policy-makers to (1) update their understanding of job displacement in Canada; and (2) assess the ability of the current set of policies to assist future displaced workers. This study contributes to the first task, and it uncovers several key patterns regarding the magnitude of job losses over time and their financial consequences for displaced workers in Canada. These are our main findings:

1. In line with Morissette, Qiu, and Chan (2013), we generally find no evidence that the likelihood of losing one's job has increased in Canada over the past

---

<sup>39</sup> This does not imply that education has no impact on post-displacement outcomes. Further research is needed to understand the relationship between them.



four decades. The only exception is long-tenured men, for whom the likelihood of job loss rose slightly between the mid-1980s and the 2010s.

2. Mass layoffs accounted for only a minority of the layoffs that took place in the commercial sector from 1995 to 2015. On average, between 53 and 87 per cent of layoffs occurred in nonmass layoffs.
3. Over the past four decades, laid-off workers' likelihood of being re-employed in the year after job loss either increased – as it did for many groups of women – or was fairly stable. Re-employment rates five years after job loss show a similar pattern.
4. The stability of re-employment rates masks important industry-specific changes in the types of jobs held in the year after job loss. For example, the likelihood of finding new jobs in manufacturing decreased not only for workers displaced from manufacturing but also for those laid off from construction, mining, oil and gas extraction, and low- and high-skill services. This pattern appears to reflect, at least partly, the decline in the relative importance of the manufacturing sector in overall employment.
5. Men displaced from manufacturing jobs are much more likely than women to find new jobs in construction, and they are much less likely to find new jobs in public services or low-skill services. As the demand for workers in the health care sector will likely grow in the next few years, women laid off from manufacturing may find jobs in this and other public sectors, and thus be better able than men to weather post-displacement transitions.
6. Among laid-off workers who earned at least \$10,000 (2016 dollars) in the year before job loss, there is no compelling evidence that the median proportional declines in earnings they experienced in the year after job loss have increased since the late 1970s. This finding holds for workers aged 45 to 54 and those aged 55 to 64.
7. Regardless of the year considered, long-tenured workers experience higher than average earnings declines after job loss, both in the short term (one year) and in the long term (five years).
8. A comparison of the late 1980s and late 1990s with subsequent years (other than the period around the 2008-09 recession) suggests that the short-term earnings declines among long-tenured men and women displaced from manufacturing have become more pronounced over time.
9. Among long-tenured workers, men displaced in mass layoffs tend to have higher short- and long-term re-employment rates than those displaced in nonmass layoffs. However, long-tenured men displaced in mass layoffs do not necessarily experience lesser earnings declines than those who lost their jobs in nonmass layoffs.
10. Workers who face the lowest (highest) risk of job loss do not necessarily experience the best (worst) post-displacement outcomes. For example, male workers who are recent immigrants are, all else being equal, not necessarily more likely to be displaced than male workers born in Canada, but they experience lower re-employment rates and relatively larger earnings declines in the year after job loss.
11. Overall, we find little evidence that over the past four decades the extent of job displacement or its financial consequences for laid-off workers have

worsened. In general, the likelihood of job loss has not increased and the degree to which laid-off workers find paid employment after job loss has not decreased. There is also little evidence that the impact of job loss on earnings has worsened since the 1970s.

Hence, the data we have presented in this study provide no evidence that job displacement in Canada has become a more acute problem over the past four decades. If anything, since the late 1970s, the likelihood of losing one's job has trended downward for many groups of workers, while the short-term re-employment rates of displaced workers have been relatively stable or have risen. Of course, previous trends are not necessarily indicative of future developments. Nevertheless, these data allow us to put recent concerns about job losses in perspective.

The study has a few limitations. First, because the Longitudinal Worker File we used does not have information on workers' educational attainment, it does not allow us to assess how layoff rates have evolved by education level since the late 1970s. This limitation is worth noting, as the Canadian workforce has become more educated over the past four decades and highly educated workers tend to have lower layoff rates. For this reason, the overall stability of layoff rates for a given age group may conceal an upward trend for less educated workers in that age group.

A second limitation is that layoff rates are measured only for salaried employees and thus only measure job security for this group of workers, not for those who are self-employed. Data from the Labour Force Survey indicate that salaried employees represented 84.7 percent of all employed Canadians in 2016, down from 87.6 percent in 1978. Hence, layoff rates today provide a measure of the likelihood of job loss for a somewhat smaller segment of the workforce than they did four decades ago. They do not tell us the degree to which job security for self-employed individuals – many of whom work in the gig economy (Jeon, Lu, and Ostrovsky 2019) – has evolved over time.

Despite these limitations, the numbers presented in this study allow us to draw certain conclusions, which may help inform discussions regarding job displacement policies in Canada. First, the data make it clear that assistance policies targeting solely workers displaced in mass layoffs would miss a substantial portion of laid-off workers. Second, in line with previous research, the numbers show that long-tenured workers consistently experience substantial declines in earnings following job loss. Because they represent a minority of all the laid-off workers<sup>40</sup> (Morissette, Qiu, and Chan, 2013), policies that target long-tenured workers – if deemed desirable – would be much less costly than policies that treat all laid-off workers the same. Third, the numbers highlight the relatively low re-employment rates and the relatively large declines in earnings experienced in the short term by displaced workers who are recent immigrants. Further research is required to better understand these differences in outcomes.

---

<sup>40</sup> Of all workers aged 25 to 64 who were laid off in 2016, 14 percent had long tenure.

In the wake of the COVID-19 pandemic, which has resulted in millions of people being laid off all over Canada, our findings are especially relevant. It should be emphasized, however, that our study focuses on permanent layoffs, which occur when laid-off workers do not return to their employers within a year. To date, the degree to which layoffs caused by COVID-19 will become permanent and how the reopening of the economy will affect the job displacement process remain uncertain. It is nevertheless important to put the current layoffs in perspective by comparing them with long-term job displacement trends, while also monitoring the short-term situation of the most vulnerable groups of workers.

That being said, determining the appropriate policy responses is contingent on specific knowledge for which evidence is sometimes scarce. For example, which assistance policies would be best suited for specific groups of displaced workers is a broad research question about which there is still considerable uncertainty. The degree to which, if any, retraining programs could have negative spillover effects (that is, would help workers who are assisted by the programs find jobs that could be held by workers who are not assisted) is an important question about which there is currently little evidence in Canada. Finally, what the optimal design is for training and education programs to foster resilience among displaced workers is another question that deserves careful investigation.

## APPENDIX

**Table A1. Layoff rates by selected characteristics, Canada, 2005, 2007 and 2009**

	Men			Women		
	2005	2007	2009	2005	2007	2009
<b>All</b>	5.2	5.0	6.4	3.2	3.1	3.6
<b>Age in 2001</b>						
25-29	6.1	5.6	7.1	3.5	3.3	3.9
30-34	5.3	5.2	6.5	3.2	3.1	3.6
35-39	4.9	4.8	6.1	3.1	3.0	3.6
40-44	4.7	4.7	5.9	3.0	2.9	3.3
<b>Education in 2001</b>						
High school diploma or less	6.5	6.4	8.0	4.1	3.9	4.5
Trades certificate	7.3	7.0	8.5	3.8	3.6	4.0
Some post-secondary	3.9	3.7	4.8	2.6	2.5	3.2
Bachelor's degree or more	2.3	2.2	3.0	2.0	2.1	2.4
<b>Tenure in previous job</b>						
2 years or less	15.1	14.9	18.9	8.0	8.1	10.0
3-5 years	4.6	4.7	6.8	2.9	2.9	4.0
6 years or more	1.4	1.5	2.0	1.0	1.1	1.3
<b>Immigration status in 2001</b>						
Canadian-born	5.4	5.3	6.4	3.0	3.0	3.4
Landed in last 10 years	4.7	4.4	6.6	4.2	3.8	5.1
Landed 10 years ago or more	3.8	3.6	5.5	3.0	2.8	3.8
Not permanent resident	5.7	5.8	6.4	6.4	5.3	5.5
<b>Disability status in 2001</b>						
Not disabled	5.1	4.9	6.2	3.1	3.0	3.5
Yes, sometimes	6.3	6.1	7.5	3.8	3.6	4.6
Yes, often	7.2	6.8	8.4	3.7	4.4	4.7
Not stated	7.2	7.5	8.5	4.2	3.5	3.5
<b>Industry of previous job</b>						
Manufacturing	3.7	4.1	5.9	5.1	4.9	6.6
Mining, oil and gas	5.1	6.0	7.8	3.7	3.9	6.2
Construction	19.6	17.8	20.5	10.7	9.4	11.3
Low-skill services	4.7	4.3	5.8	3.4	3.4	4.7
High-skill services	3.2	2.9	4.2	3.3	3.1	3.6
Public services	1.3	1.5	1.4	1.5	1.6	1.5
Other	6.2	5.6	6.7	5.4	5.0	5.5
Unknown	21.3	15.8	22.2	14.6	10.2	14.8
<b>Firm size in previous job</b>						
Fewer than 20 employees	12.2	11.2	13.5	7.2	6.6	7.7
20-99 employees	7.2	7.4	9.2	4.5	4.5	5.3
100-499 employees	5.1	4.8	6.6	3.2	3.0	3.9
500 employees or more	2.2	2.4	3.2	1.5	1.7	1.9

Source: Statistics Canada, Census of Canada, 2001, and Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Note: The sample includes workers in all industries who were aged 25 to 44 in 2001.

**Table A2. Rates of re-employment one year after job loss, by selected characteristics, 2005, 2007 and 2009**

	Men			Women		
	2005	2007	2009	2005	2007	2009
<b>All</b>	85.9	86.2	82.1	81.5	81.7	76.3
<b>Age in 2001</b>						
25-29	86.9	87.4	84.6	81.9	81.3	77.5
30-34	86.5	86.1	82.7	79.7	80.9	77.4
35-39	84.4	85.7	81.2	82.8	83.0	76.5
40-44	86.0	85.7	80.1	81.4	81.3	74.2
<b>Education in 2001</b>						
High school diploma or less	84.8	85.6	81.3	80.9	81.0	75.0
Trades certificate	89.5	90.2	87.2	83.9	83.5	79.0
Some post-secondary	87.4	85.6	80.9	83.2	83.5	78.1
Bachelor's degree or more	80.6	80.9	76.9	79.0	79.7	75.9
<b>Tenure in previous job</b>						
2 years or less	88.3	87.7	85.1	82.9	83.2	78.8
3-5 years	82.6	84.7	80.3	80.3	80.3	74.9
6 years or more	79.7	82.4	75.0	78.3	78.5	72.1
<b>Immigration status in 2001</b>						
Canadian-born	87.2	87.6	83.9	83.3	83.2	78.9
Landed in last 10 years	75.8	76.4	71.9	73.9	75.3	66.7
Landed 10 years ago or more	81.9	80.3	75.0	77.5	77.5	69.4
Not permanent resident	78.3	70.3	68.4	74.4	74.9	72.9
<b>Disability status in 2001</b>						
Not disabled	86.4	86.4	82.5	81.7	81.9	76.7
Yes, sometimes	82.7	84.9	78.4	79.3	77.7	76.1
Yes, often	77.8	82.6	79.0	79.6	82.1	68.0
Not stated	86.5	84.7	76.7	77.0	73.5	65.2
<b>Industry of previous job</b>						
Manufacturing	84.5	84.9	77.6	79.9	79.9	71.4
Mining, oil and gas	92.5	92.0	88.8	91.5	85.9	84.6
Construction	88.8	89.8	88.0	81.5	85.2	76.4
Low-skill services	85.5	83.9	80.1	82.6	81.5	77.4
High-skill services	80.7	83.5	76.6	81.5	82.1	76.5
Public services	79.9	84.4	81.3	82.6	82.8	79.7
Other	85.2	84.8	80.3	79.9	81.4	75.2
Unknown	87.3	80.1	78.7	77.7	72.4	68.7
<b>Firm size in previous job</b>						
Fewer than 20 employees	83.4	84.2	80.2	79.1	81.1	75.0
20-99 employees	87.3	87.5	82.8	82.5	81.1	75.4
100-499 employees	88.1	88.5	83.9	83.9	83.2	76.7
500 employees or more	87.4	86.4	82.8	83.4	82.1	78.4

Source: Statistics Canada, Census of Canada, 2001, and Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Note: The sample includes workers in all industries who were aged 25 to 44 in 2001 and were laid off in year *t*.

**Table A3. Percentage of laid-off workers whose real earnings one year after job loss were at least 10 percent lower than they were in the year before job loss, by select- ed characteristics, Canada, 2005, 2007 and 2009.**

	Men			Women		
	2005	2007	2009	2005	2007	2009
<b>All</b>	49.3	50.6	63.8	58.2	57.8	67.1
<b>Age in 2001</b>						
25-29	46.8	49.2	60.7	57.1	57.3	64.7
30-34	48.3	49.6	63.0	60.2	56.2	65.0
35-39	52.4	51.9	64.5	56.4	57.2	67.0
40-44	49.7	51.7	66.5	59.0	60.4	71.0
<b>Education in 2001</b>						
High school diploma or less	52.6	53.1	63.5	59.8	62.1	70.1
Trades certificate	41.5	42.6	61.2	57.4	55.8	64.8
Some post-secondary	49.3	51.4	66.2	56.9	55.6	65.9
Bachelor's degree or more	52.8	56.5	67.0	56.4	51.5	62.0
<b>Tenure in previous job</b>						
2 years or less	42.6	44.6	56.8	49.8	50.9	58.4
3-5 years	56.0	55.2	68.5	64.5	61.6	72.3
6 years or more	64.8	63.9	76.0	68.2	67.9	76.1
<b>Immigration status in 2001</b>						
Canadian-born	47.9	48.9	62.3	56.5	56.4	65.5
Landed in last 10 years	62.1	62.3	73.4	63.4	65.4	72.5
Landed 10 years ago or more	54.6	58.6	68.2	63.2	60.5	72.5
Not permanent resident	44.8	63.2	75.5	67.4	60.3	57.4
<b>Disability status in 2001</b>						
Not disabled	48.9	50.4	63.4	57.7	57.5	66.7
Yes, sometimes	51.6	54.0	67.4	63.3	60.9	70.3
Yes, often	58.3	53.4	66.4	65.5	60.8	69.4
Not stated	49.5	48.7	74.7	49.9	73.3	80.0
<b>Industry of previous job</b>						
Manufacturing	58.5	62.8	75.1	68.3	70.4	78.3
Mining, oil and gas	34.0	43.6	61.0	34.6	56.0	65.7
Construction	42.6	40.7	58.8	54.1	54.3	68.9
Low-skill services	49.4	54.7	63.1	55.8	58.1	66.9
High-skill services	58.0	58.5	66.1	58.0	57.3	68.2
Public services	46.5	43.4	54.4	52.2	47.0	54.3
Other	52.9	52.4	61.6	60.6	59.9	67.6
Unknown	53.0	48.8	65.1	64.2	64.3	71.0
<b>Firm size in previous job</b>						
Fewer than 20 employees	51.8	51.7	62.2	59.0	56.6	67.3
20-99 employees	47.6	50.3	63.2	59.6	60.4	67.4
100-499 employees	48.5	50.5	65.0	59.4	59.6	70.9
500 employees or more	47.8	49.7	65.3	55.4	56.8	64.8

Source: Statistics Canada, Census of Canada, 2001, and Longitudinal Worker File, <https://www.statcan.gc.ca/eng/rdc/lwf>.

Note: The sample includes workers in all industries who were aged 25 to 44 in 2001, were laid off in year  $t$  and earned at least \$10,000 (in 2016 dollars) in year  $t-1$ .

## REFERENCES

- Acemoglu, D., and P. Restrepo. 2019. "Automation and New Tasks: How Technology Displaces and Reinstates Labor." *Journal of Economic Perspectives* 33 (2): 3-30.
- Bernard, A., and D. Galarneau. 2010. "Layoffs in Canada." *Perspectives on Labour and Income* 11 (5): 5-17.
- Brynjolfsson, E., and A. McAfee. 2014. *The Second Machine Age: Work Progress and Prosperity in a Time of Brilliant Technologies*. W. W. Norton & Company Publishers.
- Couch, K.A., and D.W. Placzek. 2010. "Earnings Losses of Displaced Workers Revisited." *American Economic Review* 100 (1): 572-89.
- Gendron, M. 2011. "The Consequences of Occupational Mobility in Canada: How Does a Change of Skills Required by an Occupation Affect Wages?" Information note. Ottawa: Human Resources and Skills Development Canada, Labour Market Policy Directorate.
- Hijzen, A., R. Upward, and P.W. Wright. 2010. "The Income Losses of Displaced Workers." *Journal of Human Resources* 45 (1): 243-69.
- Jacobson, L.S., R.J. LaLonde, and D.G. Sullivan. 1993. "Earnings Losses of Displaced Workers." *American Economic Review* 83 (4): 685-709.
- Jeon, S., H. Lu and Y. Ostrovsky. 2019. "Measuring the Gig Economy in Canada Using Administrative Data." Ottawa: Statistics Canada, Analytical Studies Branch Research Paper No. 437.
- Miller, C.C. 2017. "Why Men Don't Want the Jobs Done Mostly by Women." *New York Times*, January 4. <https://www.nytimes.com/2017/01/04/upshot/why-men-dont-want-the-jobs-done-mostly-by-women.html>
- Morissette, R. 1993. "Canadian Jobs and Firm Size: Do Smaller Firms Pay Less?" *Canadian Journal of Economics* 26 (1): 159-74.
- . 2020. "The Impact of the Manufacturing Decline on Local Labour Markets in Canada." Ottawa: Statistics Canada, Analytical Studies Branch.
- Morissette, R., X. Zhang, and M. Frenette. 2007. "Earnings Losses of Displaced Workers: Canadian Evidence from a Large Administrative Database on Firm Closures and Mass Layoffs." Ottawa: Statistics Canada, Analytical Studies Branch.
- Morissette, R., H. Qiu, and P.C.W. Chan. 2013. "The Risk and Cost of Job Loss in Canada, 1978-2008." *Canadian Journal of Economics* 46 (4): 1480-1509.
- Morissette, R., Y. Lu, and T. Qiu. 2013. "Worker Reallocation in Canada." Ottawa: Statistics Canada, Analytical Studies Branch.
- Morissette, R., and H. Qiu. 2020. "Permanent Layoff Rates in Canada, 1978 to 2016." *Economic Insights*, Statistics Canada, Catalogue 11-626-X No. 108.
- Poletaev, M., and C. Robinson. 2008. "Human Capital Specificity: Evidence from the Dictionary of Occupational Titles and Displaced Worker Surveys, 1984-2000." *Journal of Labor Economics* 26 (3): 387-420.
- Riddell, C.W., and X. Song. 2011. "The Impact of Education on Unemployment Incidence and Re-employment Success: Evidence from the U.S. Labour Market." *Labour Economics* 18 (4): 453-63.
- Schirle, T. 2008. "Why Have the Labor Force Participation Rates of Older Men Increased since the Mid-1990s?" *Journal of Labor Economics* 26 (4): 549-94.
- Schirle, T. 2012. "Wage Losses of Displaced Older Men: Does Selective Retirement Bias Results?" *Canadian Public Policy* 38 (1): 1-13.

Stevens, A.H. 1997. "Persistent Effects of Job Displacement: The Importance of Multiple Job Losses." *Journal of Labor Economics* 15 (1): 165-88.

Sullivan, D.G., and T. von Wachter. 2009. "Job Displacement and Mortality: An Analysis Using Administrative Data." *Quarterly Journal of Economics* 124 (3): 1265-1306.







*Institute for  
Research on  
Public Policy*

*Institut de  
recherche  
en politiques  
publiques*

Founded in 1972, the Institute for Research on Public Policy is an independent, national, bilingual, not-for-profit organization. The IRPP seeks to improve public policy in Canada by generating research, providing insight and informing debate on current and emerging policy issues facing Canadians and their governments.

The Institute's independence is assured by an endowment fund, to which federal and provincial governments and the private sector contributed in the early 1970s.

Fondé en 1972, l'Institut de recherche en politiques publiques est un organisme canadien indépendant, bilingue et sans but lucratif. Sa mission consiste à améliorer les politiques publiques en produisant des recherches, en proposant de nouvelles idées et en éclairant les débats sur les grands enjeux publics auxquels font face les Canadiens et leurs gouvernements.

L'indépendance de l'Institut est assurée par un fonds de dotation établi au début des années 1970 grâce aux contributions des gouvernements fédéral et provinciaux ainsi que du secteur privé.

---

Copyright belongs to the IRPP.  
To order or request permission to reprint, contact:

IRPP  
1470 Peel Street, Suite 200  
Montreal, Quebec H3A 1T1  
Telephone: 514-985-2461  
Fax: 514-985-2559  
irpp@irpp.org