

# Changes in the Prevalence of Nonstandard Employment during the COVID-19 Pandemic

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[See table of contents](#)

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Article abstract

This paper addressed two research questions related to employment throughout the COVID-19 pandemic. First, how did the prevalence of different types of nonstandard employment change before and during the COVID-19 pandemic? Second, how did these changes differ by gender, immigration status, and age group? These questions are important to understanding how economic uncertainty and downturn may impact the types of employment that workers enter and who is impacted.

This study pools together 10 Canadian Labour Force Surveys from May 2017 to November 2021 and employs a multivariate linear regression analysis to answer the previously stated research objectives. Within these regression models, we examined the likelihood of entering temporary employment, part-time employment, and nonstandard self-employment before and throughout the pandemic. We also ran several interaction models to test whether changes to different types of nonstandard employment differed by sex, immigration status, and age. These interactions tested whether the likelihood of nonstandard employment differs by each demographic group before and during the pandemic.

The findings demonstrate that the COVID-19 pandemic differed from previous economic crises in its impact on nonstandard employment. The main finding was that rates of nonstandard wage work (temporary and part-time employment) decreased during the first initial lockdown and returned to pre-pandemic levels by the end of 2020. Meanwhile, own-account and part-time self-employment increased during the first wave of the pandemic. During the first few months of the pandemic, the rate of nonstandard employment had a narrower gender gap and a wider immigrant/non-immigrant gap. There is also some evidence that the nonstandard self-employment rate increased among immigrants and women during the first few months.

**Abstract**

The COVID-19 pandemic has drastically impacted employment across Canada. While several reports show an increase in job loss and unemployment, there is little mention of changes in types of employment during the pandemic. Drawing on the Canadian Labour Force Surveys from 2017-2021, this article explored how the pandemic affected nonstandard employment rates while examining whether these impacts differed by certain sociodemographic variables. Namely, differences in rates of nonstandard employment were explored by gender, immigrant status, and age group. The main finding was that rates of nonstandard wage work (temporary and part-time employment) decreased during the first initial lockdown and returned to pre-pandemic levels by the end of 2020. Meanwhile, own-account and part-time self-employment increased during the first wave of the pandemic. While these increases were uniformly experienced across different groups of workers, there is some evidence of widening or narrowing gaps in rates of nonstandard employment depending on the sociodemographic group.

# Changes in the Prevalence of Nonstandard Employment during the COVID-19 Pandemic

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## **Summary**

This paper addressed two research questions related to employment throughout the COVID-19 pandemic. First, how did the prevalence of different types of nonstandard employment change before and during the COVID-19 pandemic? Second, how did these changes differ by gender, immigration status, and age group? These questions are important to understanding how economic uncertainty and downturn may impact the types of employment that workers enter and who is impacted.

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The findings demonstrate that the COVID-19 pandemic differed from previous economic crises in its impact on nonstandard employment. The main finding was that rates of nonstandard wage work (temporary and part-time employment) decreased during the first initial lockdown and returned to pre-pandemic levels by the end of 2020. Meanwhile, own-account and part-time self-employment increased during the first wave of the pandemic. During the first few months of the pandemic, the rate of nonstandard employment had a narrower gender gap and a wider immigrant/non-immigrant gap. There is also some evidence that the nonstandard self-employment rate increased among immigrants and women during the first few months.

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**Keywords:** nonstandard employment; COVID-19 pandemic; unemployment; Canada; Gender; Lockdown

## Résumé

Comment la prévalence de différents types d'emplois atypiques a-t-elle changé avant et pendant la pandémie de COVID-19 et comment ces changements diffèrent-ils selon le sexe, le statut d'immigration et le groupe d'âge ? Ces questions sont importantes pour comprendre comment l'incertitude et le ralentissement économique peuvent avoir un impact sur les types d'emploi auxquels les travailleurs accèdent.

Cette étude regroupe 10 enquêtes canadiennes sur la population active de mai 2017 à novembre 2021 et utilise une analyse de régression linéaire multivariée pour répondre aux questions de recherche énoncées précédemment. Dans le cadre de ces modèles de régression, nous avons examiné la probabilité d'entrer dans un emploi temporaire, un emploi à temps partiel et un emploi indépendant avant et pendant la pandémie. Nous avons également vérifié si les changements vers différents types d'emplois atypiques différaient selon le sexe, le statut d'immigrant et l'âge.

Nos résultats montrent que la pandémie de COVID-19 diffère des crises économiques précédentes par son impact sur l'emploi atypique. Principalement, les taux d'emploi salarié atypique (emploi temporaire et à temps partiel) ont diminué pendant le confinement initial et sont revenus aux niveaux d'avant la pandémie à la fin de 2020. En même temps, le travail indépendant à son propre compte à temps partiel a augmenté pendant la première vague. Au cours des premiers mois de la pandémie, le taux d'emploi atypique présentait un écart plus restreint entre les sexes et alors que l'écart était plus large entre les immigrants et les non-immigrants. Certains éléments indiquent également que, de manière générale, le taux d'emploi indépendant atypique a augmenté chez les immigrants et les femmes au cours des premiers mois.

## Précis

La pandémie de COVID-19 a eu un impact considérable sur l'emploi au Canada. Alors que plusieurs rapports montrent une augmentation des pertes d'emploi et du chômage, peu s'attardent aux changements dans les types d'emploi pendant la pandémie. En s'appuyant sur les enquêtes canadiennes sur la population active de 2017 à 2021, cet article explore comment la pandémie a affecté les taux d'emplois atypiques tout en examinant si ces impacts différaient selon certaines variables sociodémographiques. Plus précisément, les différences dans les taux d'emploi atypique ont été explorées selon le sexe, le statut d'immigrant et le groupe d'âge. La principale conclusion est que les taux d'emploi salarié atypique (emploi temporaire et à temps partiel) ont diminué pendant le premier verrouillage initial et sont revenus aux niveaux pré-pandémiques à la fin de 2020. Parallèlement, le travail indépendant à son propre compte et à temps partiel a augmenté pendant la première vague de la pandémie. Si ces augmentations ont été constatées de manière uniforme dans les différents groupes de travailleurs, certains éléments indiquent que les écarts entre les taux d'emploi atypique se creusent ou se réduisent selon le groupe sociodémographique.

**Mots-clés:** emploi atypique; COVID-19; chômage; Canada; Genre; Confinement; Immigration; âge

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## Introduction

The coronavirus (COVID-19) pandemic has drastically impacted employment across Canada. As governments took unprecedented measures to curb the spread of infection, including the temporary shutdown of non-essential economic sectors and workplaces, the first wave brought historic declines in labour market activity and extremely high unemployment rates (Statistics Canada, 2020). In times of economic crisis, researchers focus on job losses and unemployment. However, overemphasis on job losses may cause one to overlook complex changes in the labour market characteristics of those who remain employed (Green and Livanos, 2013). Specifically, there has been little mention of changes in nonstandard employment rates, as well as the people affected. Nonstandard employment refers to working arrangements that deviate from the standard employment model, where workers have a single employer who employs them full-time, year-round, and for whom they can expect to be employed indefinitely (i.e., full-time, permanent employment) (Kalleberg, 2009; 2011). Nonstandard employment does not provide standard working hours and job permanency (Zeytnoglu, Cooke, and, Montreuil, 2005). It includes temporary and part-time employment contracts, as well as own-account self-employment (see Cranford, Vosko, and Zukewich, 2003; Fuller and Vosko, 2008; Kalleberg, 2009).

Examining the changes in rates of nonstandard employment is important for two reasons. First, slack labour markets are associated with changes in the composition of the labour force (Green and Livanos, 2013; Hijman, 2009; Lewchuk, 2013; Peters, 2012; Shaefer, 2010). During the financial crisis of 2007-2008, already rising nonstandard employment rates rose even further, as companies laid off full-time permanent employees and replaced them with workers on temporary or part-time contracts (Peters, 2012). Given that the pandemic caused historic declines in the operating revenues of major industries (Statistics Canada, 2021), employers may have moved toward a more flexible labour force to make up for those losses.

Second, the pandemic did not affect all workers equally. Economic recession has greater impact on women, immigrants and youth because of pre-existing inequalities (Belad et al., 2020; Qian and Fuller 2020). Research during the onset of the pandemic shows that these groups were already experiencing unequal outcomes in their employment rates and hours of work (Brochu et al., 2020; St-Denis, 2020). Even as employment recovers, steep losses will remain in highly impacted sectors of the economy (Statistics Canada, 2020). These concentrated impacts should affect Canadian workers inequitably because the abovementioned groups tend to be concentrated in employment sectors that are more likely to reduce staff hours while not offering the option of remote work (St-Denis, 2020). Other inequalities include child care restrictions and an uneven distribution of household labour, all of which push women to take leave or work fewer hours (Fuller and Qian 2021; Qian and Fuller 2020). Therefore, the pandemic may have increased not only the number of workers in nonstandard employment but also the rate of such employment among vulnerable groups.

To this end, we examine the changing rates of several types of nonstandard employment during the COVID-19 pandemic. Specifically, to show how economic crises affects nonstandard employment we will pursue two goals. First, we will quantify the growth in nonstandard employment before and during the pandemic. Second, we will determine whether the pandemic exacerbated differences between sociodemographic groups in nonstandard types of employment. To answer these questions, we will append 10 Canadian Labour Force Surveys (LFS) from 2017 to 2021 to investigate how the pandemic affected the prevalence and likelihood of several types of nonstandard employment.

This paper will contribute to the literature on the impacts of the COVID-19 pandemic and the literature on nonstandard employment in a Canadian context by examining the changing rates of nonstandard employment before and during the pandemic. Our findings demonstrate that the rates of certain types of nonstandard employment decreased during the first wave of the pandemic, perhaps because of industrial and occupational factors together with high job losses. Meanwhile, own-account or part-time self-employment increased during the pandemic's first wave. While these increases were uniformly experienced across different groups, there is some evidence that the rate of nonstandard employment is now higher among immigrants, and that gender gaps in part-time employment narrowed during the onset of the pandemic.

## Background

### Crisis and Nonstandard Employment

Beginning in March 2020, the COVID-19 pandemic had a great impact on the Canadian economy and labour force. Federal and provincial governments took drastic measures to fight the spread of infection, specifically by closing non-essential workplaces and encouraging work at remote locations. As a result, there were unprecedented declines in economic and labour market activity. The unemployment rate nearly tripled from 5.6 percent in February 2020 to 14.7 percent in May 2020 (Statistics Canada, 2020). There was an estimated 32 percent decline in aggregate weekly work hours among workers aged 20 to 64 (Lemieux et al., 2020), and Statistics Canada (2020) estimates that the economic shutdown affected the jobs of approximately 5.5 million Canadians. But while several reports show declines in overall employment or aggregate hours worked (Statistics Canada, 2020; Lemieux et al., 2020), there has been little mention of changes to specific types of employment, particularly nonstandard employment.

Certain types of nonstandard employment have been steadily increasing since the 1990s, and the literature has argued that economic crisis accentuates such growth (Peters, 2012). During the financial crisis of 2007-2008, steep unemployment rates were quickly followed by higher rates of atypical labour arrangements in post-industrial countries. In the UK, for instance, the 2007-2008 financial crisis saw involuntary nonstandard employment rise above the pre-crisis level (Green and Livanos, 2013). The rate of involuntary part-time work was four percentage points higher after the crisis than it was before, and the rate of involuntary temporary work was nine percentage points higher. Similarly, the part-time employment rate in the European Union rose by almost one percentage point in the immediate aftermath of the 2007-2008 financial crisis (Hijman, 2009). This is a relatively large increase, considering that the share of part-time employment increased by only 0.1 percentage point between 2006 and 2007. There was a similar trend in Canada, where part-time employment as a percentage of total employment increased from 18.6 to 19.2 percent between 2008 and 2011 (Peters, 2021). Moreover, successive economic downturns seem to have accelerated a long-term trajectory of growing nonstandard employment in Canada. Caldbrick and colleagues (2014) have documented that the nonstandard employment rate rapidly increased during each recession in Canada, thus boosting a trajectory of growth in this type of employment.

Nonstandard employment was already increasing due to macro-level processes, such as globalization, de-industrialization, technological change and a shift toward neoliberal political regimes (Kalleberg, 2003, 2009). However, the aftermath of the 2007-2008 financial crisis caused a restructuring of the Canadian labour market to meet the need to maintain profit levels. As Thomas and colleagues (2020) have outlined, the 2007-2008 financial crisis intensified the erosion of stability and security among workers, while bringing employment regulations and contracts more into line with employer needs. As a consequence, cash-strapped businesses and organizations sought to replace full-time, permanent employees with a more flexible workforce (Shaefer, 2010).

For example, workers in the public sector with high job security were replaced with privatized contract workers (Ross and Thomas, 2019; Thomas et al., 2020), and unionized workers with low skills were laid off and replaced with part-time employees (Peters, 2012). We suspect that flexible labour contracts may increase after the easing of COVID-19 provincial and federal restrictions because businesses will need to recover the profits they lost during the temporary shutdowns/restrictions, especially if there is not enough work to create standard jobs. At the same time, economic crises may push workers into gig work due to job loss or financial struggle during or in the immediate aftermath of an economic crisis. For example, Jeon et al. (2019) demonstrate that the size of the gig economy increased from 6% in 2008 to 6.8% in 2009 after the 2007-2008 financial crisis, as many workers who lost employment during that time were pushed into own-account self-employment (Jeon and Ostrovosky, 2020). Such self-employment may have increased because gig workers are classified as own-account or solo self-employed (Degryse, 2020).

The COVID-19 pandemic may also be unlike previous economic crises in its impact on the labour force. Unlike the usual response during a recession, the Canadian government responded to the pandemic by directly subsidizing employment wages (Government of Canada, 2022). These direct transfers encouraged employers to keep their employees on the payroll and not focus on cutting labour costs. Employment also rebounded faster. Jones and colleagues (2021) found that workers who were laid off in the first two months of the pandemic were expecting to be called back to their jobs and not looking for new employment. The pandemic may therefore cause fewer changes in the characteristics of jobs, and an eventual return to pre-pandemic employment conditions.

### **Nonstandard Employment and Inequality during the COVID-19 Pandemic**

Standard employment is also associated with the working experiences of white men, whereas women, immigrants and youth are overrepresented in nonstandard employment (Galarneau, 2010). This overrepresentation comes from persistent inequalities within and outside the labour market that relegate these groups to poorly paid, insecure and unstable work (Fuller and Vosko, 2008). During the pandemic, early reports showed that these groups were more likely to experience economic difficulties due to their already vulnerable situation in the labour market (Beland et al., 2020; Fuller and Qian, 2021; Qian and Fuller, 2020).

Women have traditionally been in nonstandard employment because of social norms that have pushed them into flexible labour. The ‘breadwinner’ norm requires that women perform most of the childrearing and domestic duties and that men be economic providers for the family (Acker, 1992; Fudge and Vosko, 2001). The unequal division of household labor has encouraged women to enter part-time or temporary employment, which gives them the flexibility they need to manage the household while earning an income. During the last economic crisis before the pandemic, however, the gender gap in nonstandard employment narrowed because middle-aged men were experiencing difficulties finding secure employment after job loss (Lewchuk, 2013). This finding implies that employment norms have become feminized, in which the working experiences of women and other marginalized groups (e.g., low pay, low job security) have become more widespread and affect not only those groups but also workers in general (Cranford et al., 2003; Lewchuk, 2013). Yet, research during the first year of the pandemic has found a wider gender gap in nonstandard employment among parents (Fuller and Qian, 2021; Mooi-Reci and Riseman, 2021; Qian and Fuller, 2020). This is because school closures and childcare restrictions transferred child care back to mothers, who responded by reducing their hours of work, taking leave or becoming unemployed (Fuller and Qian, 2021)<sup>1</sup>. For similar reasons, women may have also chosen employment that provided greater flexibility because they needed to care for their children during working hours.

Immigrants were another group that more likely experienced significant labour market disadvantages during the pandemic. Overall, immigrants, especially newcomers, are more likely to work in nonstandard employment than their Canadian-born counterparts (Hira-Freisen 2016; Fuller, 2011). Various studies have found that immigrants are concentrated in insecure and unstable employment through discriminatory hiring practices (Hira-Freisen, 2018; Hira-Freisen, 2016) and lack of credential recognition by employers (Buzdugan and Halli, 2009). These inequalities may increase if they enter the Canadian labour market during a recession, when they are less likely to find high-paying permanent jobs (Hira-Freisen, 2018). When the labour market conditions are in slack, employers tend to hire more selectively and make fewer 'risky' hiring choices. Consequently, screening will be more discriminatory (e.g., screening out ethnic-sounding name, audible accent) during applicant vetting (Baret et al., 2015; OECD, 2020). Such discrimination may cause immigrants to enter involuntary part-time or temporary employment, where employers feel they can make riskier employment decisions (Fuller, 2011). Even established immigrants are negatively impacted during economic recessions. During the 2007-2008 financial crisis, they were more likely to be laid off and work fewer hours than their Canadian-born counterparts (Peters, 2012).

Prior to the pandemic, Canadian youth had experienced a rising rate of nonstandard employment for several decades. In 1989, 80.8% of men and 77.1% of women aged 15 to 30 held full-time employment, whereas these numbers were only 73% and 67.3% by 2019 (Morissette, 2021). During the pandemic, youth reduced their hours of work and had high rates of unemployment due to business restrictions in employment sectors that traditionally employed youth (e.g., retail, tourism, hospitality). These sectors experienced a higher probability of staff reduction because they require in-person services and are difficult to adapt to remote work (St-Denis, 2020). As a consequence, young people became the first to be laid off, put on leave or placed in insecure work (Barford, Coutts, and Sahai, 2021). For instance, between 2019 and 2020 the employment rate fell more among youth not in school than among older workers. It fell by nearly 7 percentage points among young women, and by over 8 percentage points among young men (Morrisette, 2021).

While there exists an understanding of how previous economic crises have impacted nonstandard employment rates, these impacts have not yet been investigated during the current pandemic. Moreover, the economic impacts of the pandemic have in most cases been studied only for the first couple of months, or at most the first year (Jones et al., 2020; Lemieux et al., 2020; Brochu et al., 2020). To address the gaps in the literature, we asked two research questions:

1. How have rates of nonstandard employment in Canada changed during the COVID-19 pandemic?
2. How has the likelihood of nonstandard employment changed among members of different sociodemographic groups in Canada during the COVID-19 pandemic?

These questions are imperative for a few reasons. First, while not problematic in itself, nonstandard employment is often associated with precarious working conditions, such as low wages, low union certification rates and unstable working hours (Cranford, Vosko, and Zukewich, 2003; Vosko, 2006). Because most nonstandard employment falls outside federal and provincial legislation, it is poorly regulated and lacks various statutory entitlements (Cui, 2021; Kalleberg, 2009). Second, a few studies suggest that nonstandard employment is not experienced in the same way by everybody. For example, established immigrants in temporary employment earn less than their Canadian-born counterparts (Hira-Freisen, 2018). Women also earn less, have lower unionization rates and have poorer access to benefits than do men in nonstandard employment (Young, 2010). Finally, in the context of the COVID-19 pandemic, the disadvantages associated with nonstandard employment leave that category of workers more vulnerable to discharge, unemployment and financial insecurity.

# Methodology

## Dataset Construction

We used data from the Canadian Labour Force Survey (LFS) Public-Use Microdata Files (PUMFs) from 2017 to 2021. The LFS is a mandatory survey collected monthly by Statistics Canada, and is representative of the Canadian population aged 15 years and older in the ten provinces. Its purpose is to measure unemployment rates and other standard labour force indicators, such as the labour force participation rate. In addition to labour force information, the LFS also collects information on individual sociodemographic indicators, which are important to our research questions. The LFS uses a rotating stratified multi-stage design to select dwellings within each geographic cluster. A rotating panel sample design is used to randomly select 56,000 households who are then interviewed for six consecutive months while rotating in another 56,000 households at the beginning of each month. Approximately 100,000 individuals are thus interviewed every month (Statistics Canada, 2022).

Because respondents are required to retake the survey for six consecutive months, the LFS PUMFs cannot be treated as repeated cross-sections. This is problematic for creation of pooled samples because observations from two consecutive LFS PUMFs may or may not include the same individuals. Thus, causing a serial-correlation error that cannot be controlled (Brochu, 2021). To address this problem and ensure individuals appear in the dataset only once, two PUMFs per year that are six months apart were appended together (for a similar study that follows this approach, see Morissette and Johnson, 2005). Specifically, we drew on the months of May and November of each year from 2017 to 2021. These months were chosen to avoid months of the year when employment patterns have a strong seasonal component (Fuller, 2005). In total, ten LFS PUMFs (May and November 2017 to 2021) were pooled to construct the dataset for this study ( $n=962,202$ ). However, we excluded respondents outside the core working age of 25 to 59 to keep our focus on individuals most likely to participate in the labour force. In addition, we further excluded unpaid family workers ( $n=418$ ) because they do not fall into the employment typology that we used to construct the outcome variables. This left us with an analytical sample size of  $n=525,535$ .

## Variable Measures

Our outcome variables were constructed from nine mutually exclusive employment typologies from Cranford, Vosko and Zuchwisch (2003). These are: 1) full-time permanent; 2) part-time permanent; 3) full-time temporary; 4) part-time temporary; 5) self-employed owner full-time; 6) self-employed owner part-time; 7) self-employed own account full-time; 8) self-employed own account part-time; and 9) unemployment. This employment typology was constructed by using the following variables: labour force status; class of worker (employed vs. self-employed); full- or part-time status of job (full-time being defined as working 30 hours or more); and job permanency (permanent vs temporary).

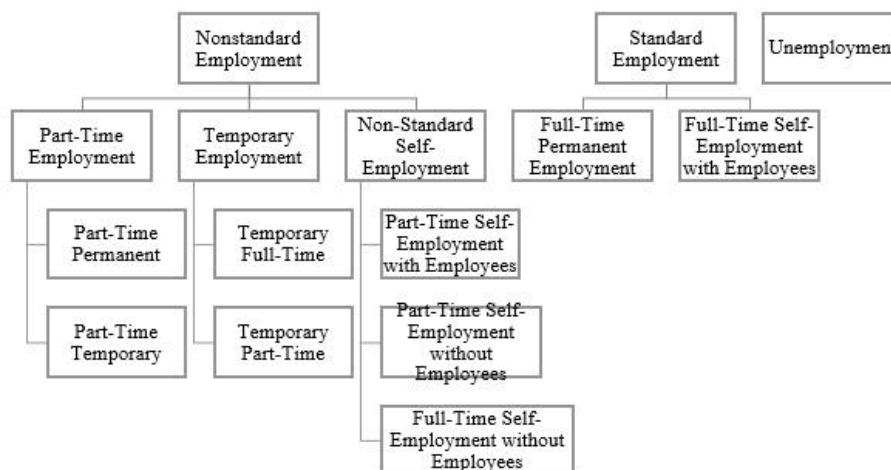
Our employment typology was then used to derive our main binary outcome variable: nonstandard employment, i.e., any employment arrangements not considered to be full-time and permanent or full-time and self-employed. Own-account self-employment was considered to be nonstandard self-employment because workers are arguably in a more precarious position than are entrepreneurs (Cranford et al., 2003). Similarly, part-time ownership was included as nonstandard self-employment because this situation is more tenuous than that of employers who work full-time hours. A full-time employer would follow the standard employment relationship more closely than would other types of self-employment. Nonetheless, we recognize that nonstandard employment consists of several distinct employment arrangements. Therefore, we also derived binary outcomes for temporary wage work, part-time wage work, and nonstandard



self-employment from our employment typology. To clarify how we categorized our binary employment types, we provide in Figure 1 a breakdown of different employment types for each outcome variable.

Figure 1

### Categorization of Employment Types



The first explanatory variable for this study is survey month, which represents the LFS PUMF survey month (either May or November from 2017 to 2021). November 2019 is chosen as the reference month in all models to provide a comparison prior to the onset of the pandemic in Canada. The three other explanatory variables are the respondent's gender, immigration status and age group. Gender and immigration status are measured dichotomously, with men and non-immigrants representing the reference category. Age group is measured categorically with three groups, including 25 to 39, 40 to 49, and 50 to 59, and used the age group of 25 to 39 as the reference category.

Additional control variables were used in the regression analyses. These controls include whether or not the respondent had a bachelor's degree, marital status (married or not), presence of children 18 years of age or younger, region of residence (Atlantic provinces, Québec, Ontario, Prairies, Alberta, British Columbia), industry based on the North American Industry Classification (21 categories), occupation based on the National Occupation Classification (10 categories) and union status.

### Analytical Plan

To examine rates of nonstandard employment over time and between groups, we plotted nonstandard employment rates for each of the 10 LFS PUMF months from 2017 to 2021. Rates were also plotted by gender, immigration status and age group. We could thus examine trends in nonstandard employment rates before and during the pandemic for different sociodemographic groups. We examined these trends not only for nonstandard employment overall but also for the six mutually exclusive nonstandard employment types, for standard employment and for

unemployment. T-tests were conducted to test whether the average rate of nonstandard employment before the pandemic (May 2017 to November 2019) was significantly different from the average rate of nonstandard employment during the pandemic (November 2020 to November 2021). May 2020 was excluded from the comparison, so that the pandemic average would not be significantly affected by the massive spike in unemployment when the pandemic reached Canada in March 2020. T-tests were conducted over time for each employment type and between groups in the defined pre-pandemic and pandemic months. These test results are available upon request.

Next, we performed regression analysis using linear probability models (LPMs) to predict the probability of nonstandard employment (aggregate), part-time wage work, temporary wage work and nonstandard self-employment as a function of time (i.e., date/survey month) and our explanatory variables. Nested LPMs were used to see whether the addition of sociodemographic controls and labour force characteristics affected the probability of nonstandard employment over time. Our fully adjusted model, which includes both individuals' sociodemographic and labour force characteristics, excludes respondents not in the labour force and those unemployed because this information is missing on the variables for occupation and industry. Our sample size was therefore reduced to  $n=421,496$ .

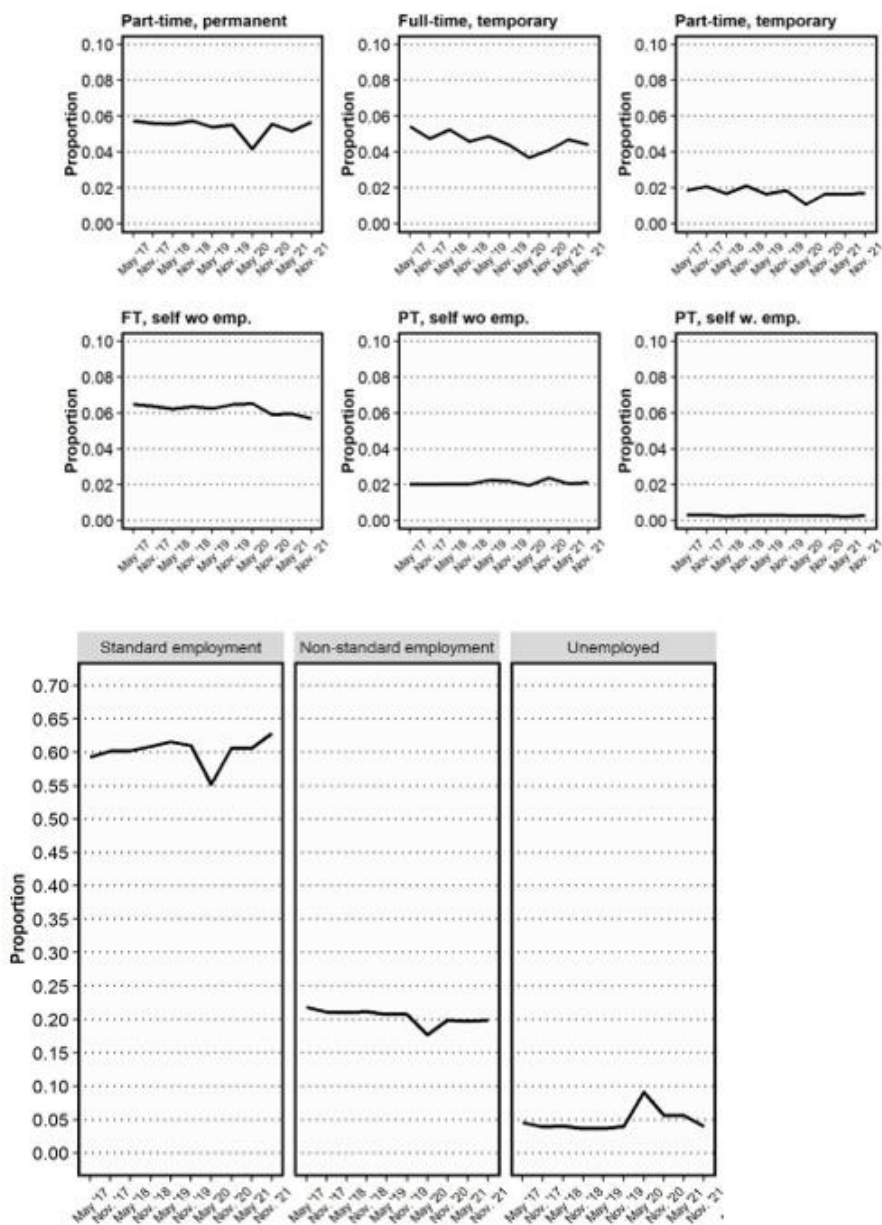
Several iterations of this model were performed using an interaction term between date (survey month) and each explanatory variable (gender, immigration status, age group). We explicitly tested whether women, immigrants and older respondents were more likely to be working in nonstandard employment than their respective reference category. This is also known as the average marginal effect (AME). In addition, we tested whether AMEs between groups in a given month were significantly different from the AME observed in November 2019. Such differences are also known as second differences (Mize, 2019). To this end, we present AMEs for each sociodemographic group and model graphically. All estimates were weighted using the survey weights provided by Statistics Canada in the LFS PUMFs.

## Results

Figure 2 presents the rates of different types of nonstandard employment to assess how this employment changed during the pandemic. These rates were also shown in conjunction with the share of workers in standard employment and unemployment. We found that standard and nonstandard employment rates declined when the pandemic began in May 2020. The declines were short-lived, however, and both types of employment returned to pre-pandemic levels by the fall of the same year, in line with trends in unemployment. Once the nonstandard employment variable is disaggregated, the results reveal declines in both part-time and full-time temporary employment during the pandemic. These two types of temporary employment were, on average, significantly less likely during the pandemic months. Although the rate of solo self-employment slightly increased in May 2020, it was, on average, significantly lower during the pandemic ( $p<0.05$ ).

Figure 2

**Standard and Non-Standard Employment Rates from May 2017 to November 2021**



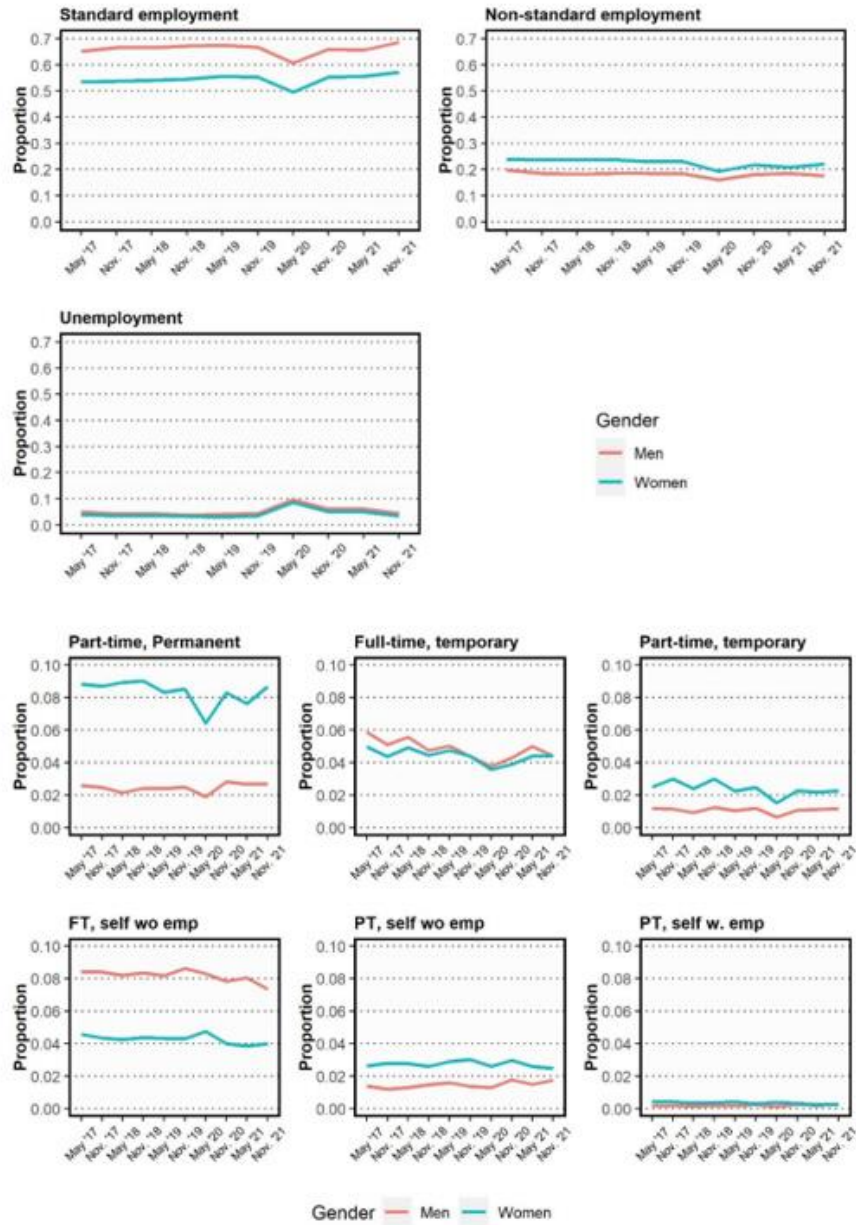
Source: May and November Labour Force Survey 2017-2021<sup>2</sup>

Figures 3 show different sociodemographic groups of workers and their rates of different types of nonstandard employment from 2017 to 2021. As in Figure 2, these figures also present the share of workers in standard employment and the unemployment rates. Figure 3 demonstrates nearly equivalent decreases in standard and nonstandard employment rates with increases in the unemployment rate when the pandemic began for both men and women. Women experienced

large declines in the rate of nonstandard wage work (part-time and temporary types of employment), especially in both temporary and permanent part-time work during May 2020. On average, they were significantly less likely to have nonstandard employment during the pandemic. While the proportion of men within these employment types also declined, they did so at a lesser rate than women. By November 2021, both groups of workers were near or at pre-pandemic proportions of nonstandard wage work. Figure 3 also demonstrates that men's full-time own-account self-employment rate declined throughout the pandemic, whereas women increased their share in this employment during May 2020. By the fall of 2020, as with other types of employment, these rates returned to near pre-pandemic levels.

Figure 3

**Standard and Non-Standard Employment and Unemployment Rates among Men and Women, 2017 to 2021**



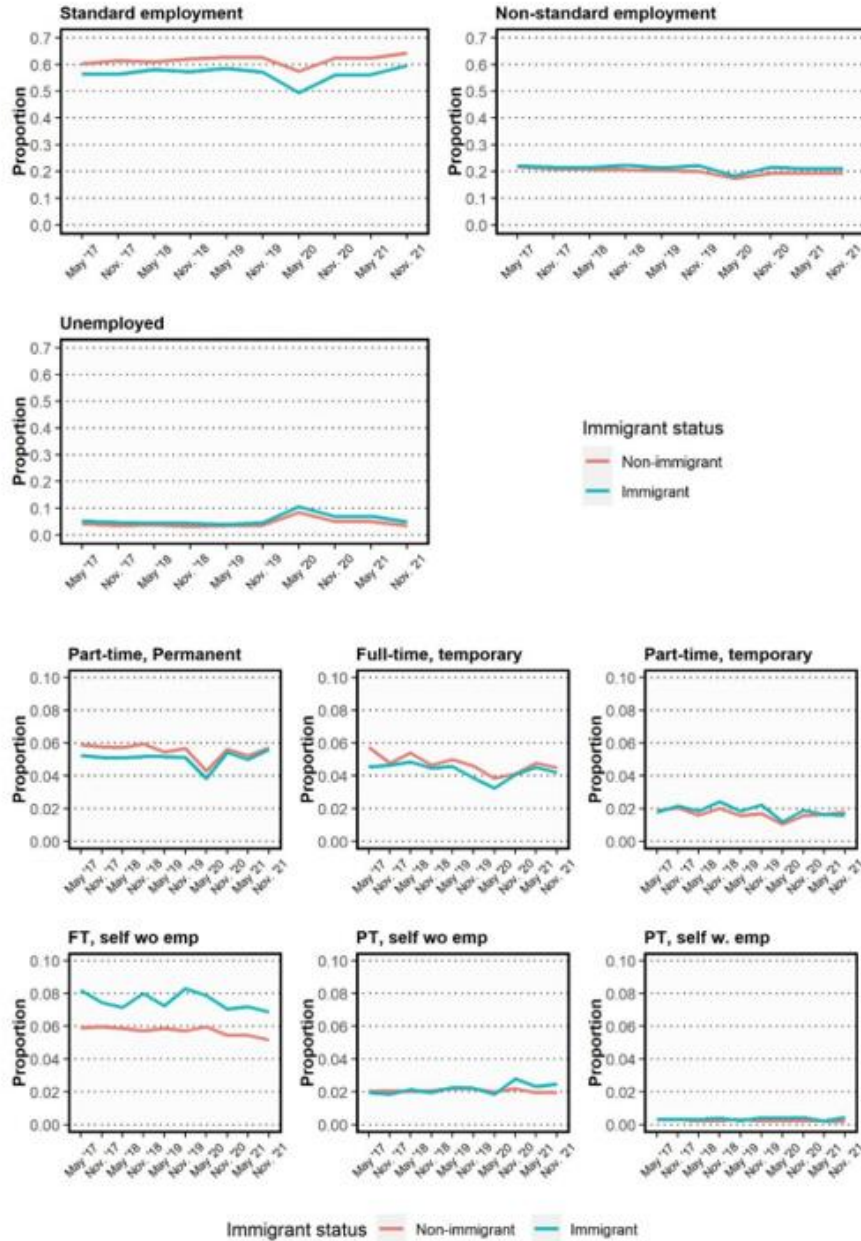
Source: May and November Labour Force Survey 2017-2021<sup>3</sup>

Figure 4 shows that both immigrants and non-immigrants had significantly higher unemployment rates throughout the pandemic, although this increase was slightly larger for immigrants. Immigrants and non-immigrants also had lower rates of standard and nonstandard wage work

during May 2020. By the fall of 2021, as with the previous figures, rates of both standard and nonstandard wage work returned to pre-pandemic levels for both immigrants and non-immigrants. Once disaggregated by different forms of nonstandard employment, Figure 4 demonstrates that both immigrants and non-immigrants decreased their share in nonstandard forms of wage work. While both groups experienced a decline, the extent of the decline was larger for immigrants than for non-immigrants. By the fall of 2020, these rates returned to pre-pandemic levels among both groups. Moreover, immigrants had lower rates of solo self-employment on a full-time basis throughout the pandemic while having higher rates of part-time solo self-employment (increase of nearly 1 percent point). Non-immigrants also had declines in full-time solo self-employment during the pandemic, but not to the same extent as immigrants.

Figure 4

**Standard and Non-Standard Employment and Unemployment Rates among Immigrants and Non-Immigrants, 2017 to 2021**



Source: May and November Labour Force Survey 2017-2021.<sup>4</sup>

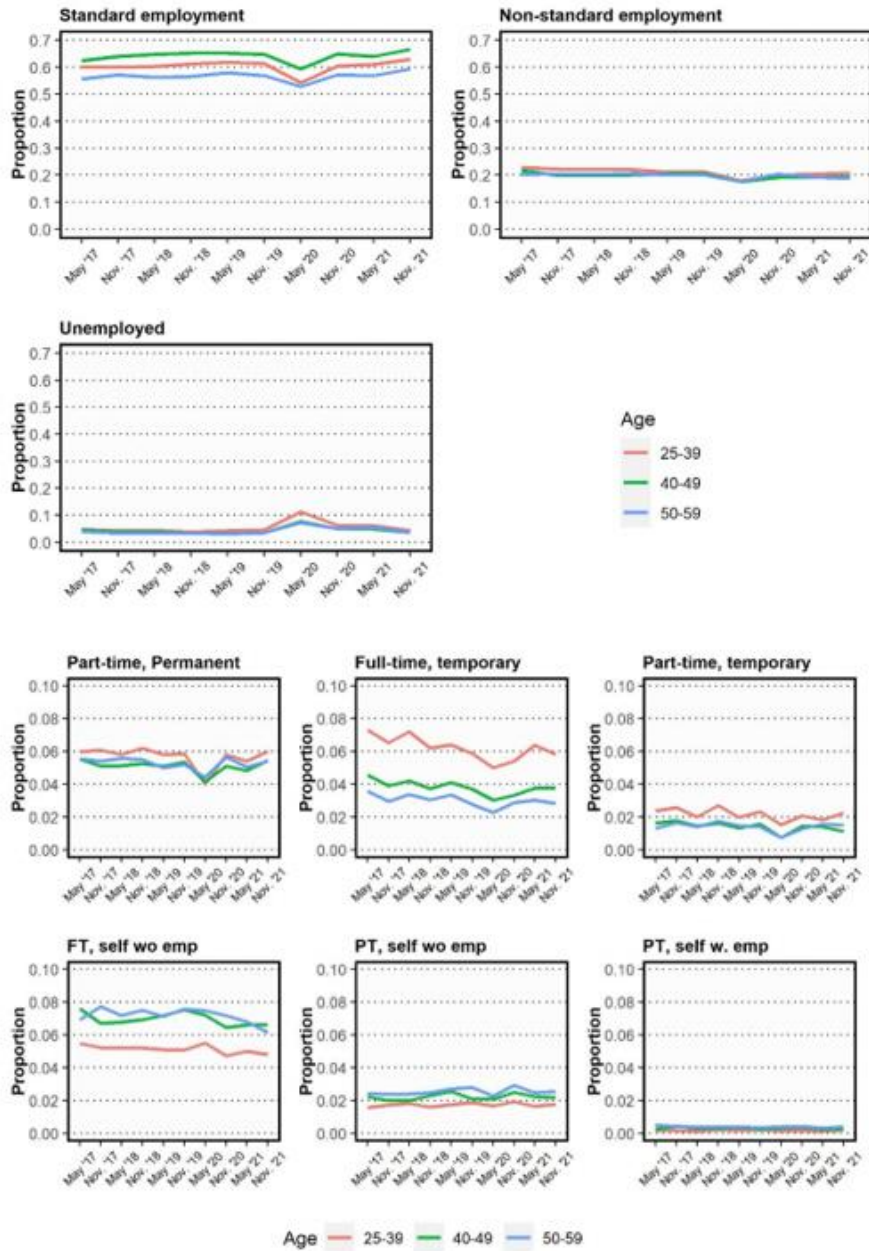
Figure 5 presents the proportional changes in unemployment, standard employment and nonstandard employment by age. Workers in each age group had lower standard and nonstandard employment rates and higher unemployment rates during May 2020. These changes were greatest

among workers between 25 and 39. When we examine the different types of nonstandard employment, we find declines in part-time permanent, full-time temporary and part-time temporary employment rates during May 2020. While each group had similar declines in rates of nonstandard employment, the decline was greater among younger workers in part-time permanent employment. By the fall of 2021, these rates returned to pre-pandemic levels for all age groups. On average, the rate of full-time solo employment was higher among older workers during the pandemic (significant at  $p < 0.05$ ), although it declined for that group throughout 2021.



Figure 5

**Standard and Non-Standard Employment and Unemployment Rates by Age Group, 2017 to 2021**

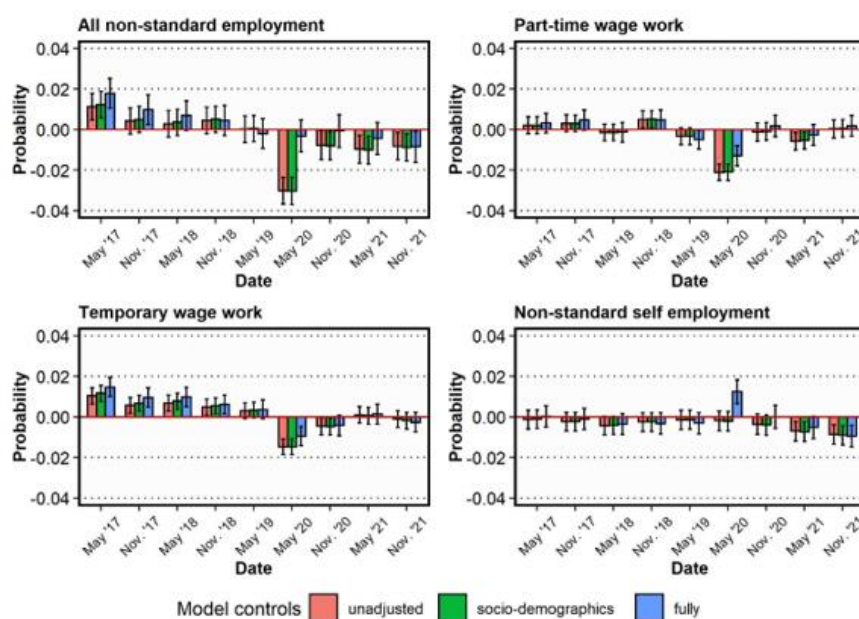


Source: May and November Labour Force Survey 2017-2021<sup>5</sup>

We now turn to the second part of the analysis, which explores employment differences throughout the COVID-19 pandemic. Figures 6-8 present three linear regression models that test differences for each type of nonstandard employment by gender, immigration status, and age group. In these figures, the results are disaggregated by different types of nonstandard employment and include three nested models to examine each group's representation in nonstandard employment. All plots within the figures represent the AMEs derived from linear probability models.

Figure 6

### Average Marginal Effect of Date on the Probability of Non-Standard Employment



Source: May and November Labour Force Survey 2017-2021<sup>6</sup>

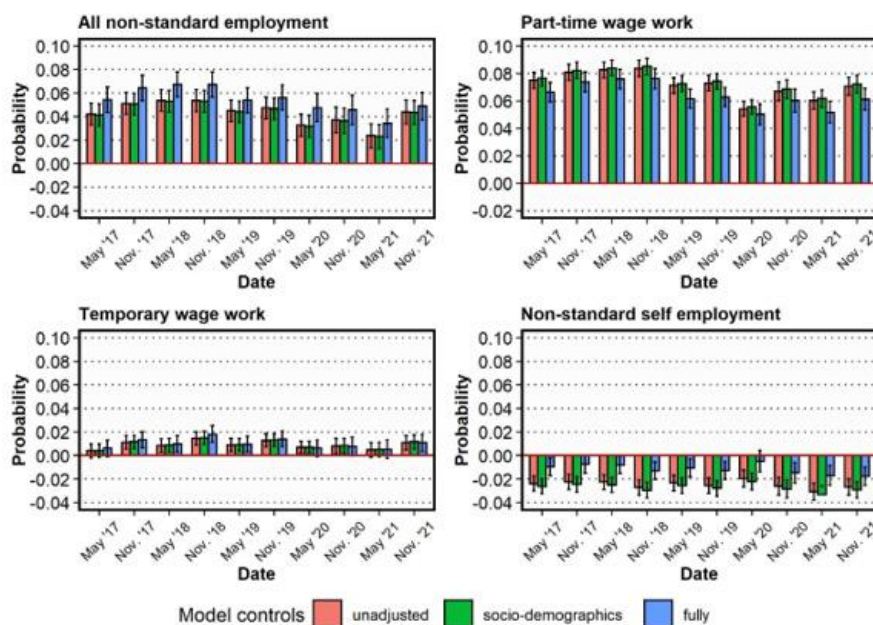
Before running these analyses, we show in Figure 6 the probability of each form of nonstandard employment before and during the COVID-19 pandemic. This figure presents the AMEs derived from three nested probability models that examine the differences in probability of different forms of nonstandard employment from May 2017 to November 2021 relative to November 2019. Figure 6 reveals that the probability of part-time and temporary employment decreased by nearly 2 percentage points during the first COVID-19 lockdown. Meanwhile, the likelihood of nonstandard self-employment increased by 2 percentage points, but only once the sample was restricted to those who were employed and controls for industry, occupation, and union status were added. By the fall of 2020, the probability of entering all forms of nonstandard employment were relatively similar to that in November 2019.

In Figure 7, the analysis is similar to that of Figure 6, but the plots show the AMEs between women and men. Throughout our analysis, women remain overly represented in nonstandard employment, especially in part-time employment. However, gender gaps in nonstandard

employment (aggregate) narrowed throughout the pandemic even when controlling for other sociodemographic and labour market factors. By May 2020, the gender gap was 2 percentage points less than it had been before the pandemic in November 2019. It further narrowed to 3 percentage points in May 2021 but widened by November 2021. Once looking at different forms of nonstandard employment, our findings show that the part-time employment gap between men and women narrowed at the pandemic's start. Although, different control factors partially explain the magnitude of this narrowing. While the gender gap in other types of nonstandard employment narrowed during the beginning of the pandemic, these changes were mostly insignificant.

Figure 7

**Average Marginal Effect of Gender (Women) on the Probability of Non-Standard Employment over Time**

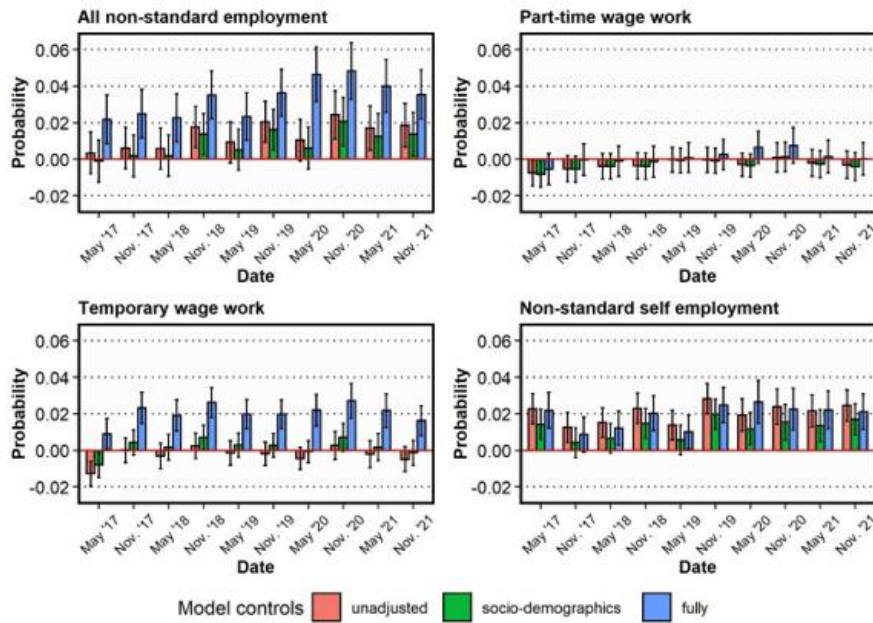


Source: May and November Labour Force Survey 2017-2021<sup>7</sup>

Figure 8 presents differences in nonstandard employment by immigration status. Our findings show a widening of the immigrant/non-immigrant gap in nonstandard employment during the first year of the pandemic, with immigrants being more represented in nonstandard employment at the aggregate level. This gap is affected by sociodemographic characteristics and occupational and industrial controls, as the gap is wider in the fully-adjusted models than in those without the controls. In addition, Figure 8 shows that the immigrant/non-immigrant gap was narrower or less significant in temporary, part-time and nonstandard self-employment than in aggregate nonstandard employment.

Figure 8

### Average Marginal Effect of Immigration Status on the Probability of Non-Standard Employment over Time

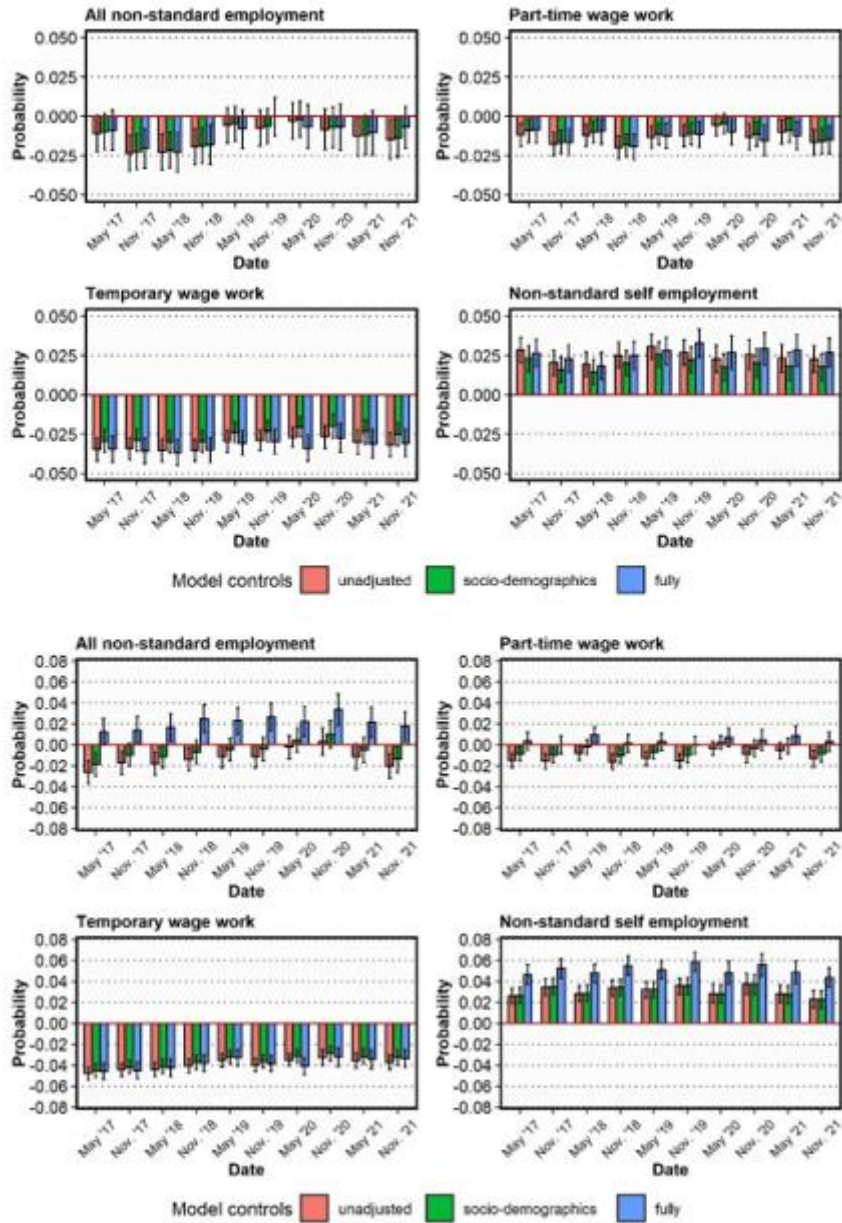


Source: May and November Labour Force Survey 2017-2021<sup>8</sup>

Although age does affect overall differences in nonstandard employment, Figure 9 shows very little change in these differences during the pandemic. Most notably, the fall of 2020 saw an increase of nearly 1 percentage point in the overall difference in nonstandard employment between workers aged 20-29 and those aged 50-59. Workers aged 20-29 a higher rate of nonstandard employment.

Figure 9

**Average Marginal Effect of Age (40-49; 50-59) on the Probability of Non-Standard Employment over Time**



Source: May and November Labour Force Survey 2017-2021<sup>9</sup>

## Discussion

In studying how the COVID-19 pandemic affected nonstandard employment, we sought to answer two research questions. First, how did the rates of different types of nonstandard employment change before and during the pandemic? Second, were changes in the rates of nonstandard employment greater for some sociodemographic groups than in others during the COVID-19 pandemic? On a broader level, we aimed to understand how an economic crisis affects the longer-term increase in nonstandard employment contracts and how an economic crisis may exacerbate pre-existing employment inequalities.

With respect to our first question, we found that the COVID-19 pandemic differs from previous economic crises in its impact on nonstandard employment. While other research has found that an economic crisis encourages employers to increase the number of nonstandard work contracts (Schaefer, 2010), our findings demonstrate losses in part-time and temporary employment during the first nationwide lockdown. We also found that nonstandard types of self-employment increased when the pandemic began. Although the increase was only 2 percentage points, it was still larger than the corresponding increase during the previous 2007-2008 financial crisis (Jeon et al., 2019). Both findings can be explained by short-term unemployment and withdrawal from the labour force, as well as other labour market factors. For instance, the losses in part-time and temporary employment were reduced when we controlled for occupation, industry, and union status and looked only at employed individuals. The same controls and restrictions also increased the probability of workers entering nonstandard self-employment. Taken together, these outcomes may suggest that workers who experienced job loss early in the pandemic were pushed into various types of self-employment.

The pandemic also differed from previous economic crises in that nonstandard employment rates and probabilities returned to their pre-crisis levels. As with Jones and colleagues (2020), we found a quick rebound from any losses or gains in nonstandard employment. Therefore, the COVID-19 pandemic did not impact overall growth in nonstandard employment. This lack of impact may have been due to government responses and interventions. During the 2007-2008 recession, governments had responded differently by focusing on fiscal stimuli, such as tax cuts, instead of making direct payments to workers. During the first wave of the pandemic, employee wages were subsidized through the Canadian Wage Subsidy Program and work-sharing programs, all of which were unique to this crisis (Government of Canada, 2022). Such programs may act as a disincentive for laying off staff or hiring flexible workers, thus hastening economic recovery; however, the effectiveness of these programs is outside the scope of this study.

With respect to our second research question, these impacts seemed to differ by gender and immigration status. Although the pandemic impacted nonstandard employment rates more evenly than expected, there is some evidence of a narrowing of the gender gap. Specifically, the gender gap in part-time employment was narrower during the pandemic than it had been in 2019. This narrowing of the gap, however, was caused by the rate of part-time employment declining at a faster rate among women than among men. We also found a higher rate of nonstandard employment among immigrants during the first year of the pandemic. At the aggregate level, there was a widening of the gap between immigrants and non-immigrants in the rate of nonstandard employment, with immigrants having a higher rate. This finding emerged only when we controlled for occupation, industry, and union status, and restricted the sample to employed individuals. Immigrants thus became more prevalent in nonstandard employment because they were concentrated in occupations and industries that had more of such employment. Women and immigrants also experienced a higher rate of part-time solo self-employment in May 2021, perhaps because they are more likely to go into this type of employment during times of high unemployment.

This study is not without limitations, the most conspicuous one being its time periods. The months we chose for this study were times characteristically defined by unemployment and job losses; this may be why the results show a decrease in nonstandard employment. It may be necessary to study employment data over a more extended period to capture how the pandemic affected employment. Furthermore, we only captured changes in rates of nonstandard employment contracts on an aggregate. Because we used PUMFs, which cannot be used to track individuals over time, it is impossible to say whether workers transitioned into or out of nonstandard employment. This question may be answered through future research on the confidential microdata. Lastly, our findings may not be generalizable to other contexts outside Canada, as each government introduced its own policies to fight the spread of COVID-19.

Despite the above limitations, this article is the first comprehensive study to investigate how the likelihood of nonstandard employment changed during the COVID-19 pandemic and how these changes were distributed across gender, immigration status, and age. Our findings help answer the question as to whether the impact of the COVID-19 pandemic on Canada's labour market was similar to the impacts of previous economic crises. In addition, our findings present researchers and policymakers how such crises impact the employment outcomes of different sociodemographic groups.

## Notes

[1] Fuller and Quian (2021) found that employment gaps eventually narrowed during the easing of lockdown restrictions, especially during months when children could go back to school.

[2] The above plots report the proportion of respondents ( $n=525535$ ) considered to be in standard employment arrangements, in non-standard employment arrangements, unemployed or not in the labour force (LF) in May and November from 2017 through 2021. The plots shown below report the proportion of respondents ( $n=525535$ ) considered to be in non-standard employment arrangements (all arrangements) in May and November from 2017 to 2021.

[3] The above plots report the proportion of men and women considered to be in standard or non-standard employment arrangements as well as those unemployed in May and November from 2017 to 2021. The plots shown below reports the proportion of men and women considered to be in non-standard employment arrangements (all arrangements) in May and November from 2017 to 2021.

[4] The above plots report the proportion of immigrants and non-immigrants considered to be in standard or non-standard employment arrangements as well as those unemployed in May and November from 2017 to 2021. The plot shown below reports the proportion of immigrants and non-immigrants considered to be in non-standard employment arrangements (all arrangements) in May and November from 2017 to 2021.

[5] The above plots report the proportion of respondents 25 to 39 years of age, 40 to 49 years of age and 50 to 59 years of age considered to be in standard or non-standard employment arrangements as well as those unemployed in May and November from 2017 to 2021. The plots shown below give the proportion of respondents 25 to 39 years of age, 40 to 49 years of age and 50 to 59 years of age considered to be in non-standard employment arrangements (all arrangements) in May and November from 2017 to 2021.

[6] The figures plot the regression coefficients (average marginal effects) of three nested linear probability models, each of which predicts the rate of non-standard employment as a function of date (LFS survey month). The red zero-line represents the reference group for date (November 2019). The error bars represent 95% confidence intervals. Error bars that do not pass the red zero-line indicate statistically significant AMEs at the 5% level. “Unadjusted” refers to linear probability models with no control variables ( $n=525535$ ). “Socio-demographics” refers to linear probability models that control for gender, immigration status, age, bachelor’s degree, marital status, presence of child <18 and region of residence ( $n=525535$ ). “Fully” refers to linear probability models that exclude individuals who are either unemployed or not in the labour force and which control for all socio-demographic variables as well as industry (21), occupation (10) and union status ( $n=421496$ ).

[7] The figures plot the regression coefficients (average marginal effects) of three nested linear probability models, each of which predicts the rate of non-standard employment as a function of date (LFS survey month) and gender (women), including an interaction between the two variables. The red zero-line represents the reference group for gender (Men). The error bars represent 95% confidence intervals. Error bars that do not pass the red zero-line indicate statistically significant AMEs at the 5% level. “Unadjusted” refers to linear probability models with no control variables ( $n=525535$ ). “Socio-demographics” refers to linear probability models that control for gender, immigration status, age, bachelor’s degree, marital status, presence of child <18 and region of residence ( $n=525535$ ). “Fully” refers to linear probability models that exclude individuals who are either unemployed or not in the labour force and which control for all socio-demographic variables as well as industry (21), occupation (10) and union status ( $n=421496$ ).

[8] The figures plot the regression coefficients (average marginal effects) of three nested linear probability models, each of which predicts the rate of non-standard employment as a function of date (LFS survey month) and immigration status (immigrant). The red zero-line represents the reference group for immigration status (non-immigrant). The error bars represent 95% confidence intervals. Error bars that do not pass the red zero-line indicate statistically significant AMEs at the 5% level. “Unadjusted” refers to linear probability models with no control variables ( $n=525535$ ). “Socio-demographics” refers to linear probability models that control for gender, immigration status, age, bachelor’s degree, marital status, presence of child <18 and region of residence ( $n=525535$ ). “Fully” refers to linear probability models that exclude individuals who are either unemployed or not in the labour force and which control for all socio-demographic variables as well as industry (21), occupation (10) and union status ( $n=421496$ ).

[9] The figures plot the regression coefficients (average marginal effects) of three nested linear probability models, each of which predicts the rate of non-standard employment as a function of date (LFS survey month) and age group (40-49; 50-59). The red zero-line represents the reference group for age (25-39). The error bars represent 95% confidence intervals. Error bars that do not pass the red zero-line indicate statistically significant AMEs at the 5% level. “Unadjusted” refers to linear probability models with no control variables ( $n=525535$ ). “Socio-demographics” refers to linear probability models that control for gender, immigration status, age, bachelor’s degree, marital status, presence of child <18 and region of residence ( $n=525535$ ). “Fully” refers to linear probability models that exclude individuals who are either unemployed or not in the labour force and which control for all socio-demographic variables as well as industry (21), occupation (10) and union status ( $n=421496$ ).



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