Covid-19 and Multiple Job Holding in Canada

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A Thesis in the Department of Economics

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Arts (Economics) at
Concordia University
Montréal, Québec, Canada

June 2023

CONCORDIA UNIVERSITY
School of Graduate Studies

This is to certify that the Thesis prepared

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Entitled: Covid-19 and Multiple Job Holding in Canada

and submitted in partial fulfillment of the requirements for the degree of

Master of Arts (Economics)

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Abstract

Multiple job holding can be stimulated for various reasons, from financial difficulties to interest in a different career. Remote working, a newly dominant phenomenon in the working environment, can be a driving force for multiple job holding. This paper investigates how pandemic and remote working affects the decision to moonlight during and after the Covid-19 pandemic in Canada using data from the Labor Force Survey of Canada between 2007 and 2022. The findings suggest that, in general, the probability of taking a second job and hours spent in that have not increased during the pandemic and post-pandemic.

Acknowledgements

I would like to express my deepest appreciation to my supervisor Dr. Christian Sigouin for helping me through this process, my family, friends for their support, and my husband for supporting and encouraging me throughout this experience. Thanks to everyone.

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1 Introduction

Non-traditional work arrangements are becoming more prevalent in today's job market. These arrangements often deviate from the standard Monday to Friday, 9-5 work schedule. One frequently cited example of such an arrangement is having multiple jobs simultaneously, a practice known as moonlighting or multiple job holding. This can involve holding more than one job concurrently, whether as a paid employee or self-employed, and whether working full-time or part-time.

Newspaper articles and broadcasting corporations, including The Guardian and CBC News, have argued that the Covid-19 pandemic has caused a surge in remote working. They said that between 2019 and 2020, the percentage of people working from home almost doubled. [1] [2] Seemingly as a result of the increase in the prevalence of remote working, there has been a rise in online communities of workers who moonlight in multiple jobs, sometimes even up to four full-time occupations. In other words, technical progress in the working environment, leading to the increased potential for remote work, has made it more feasible to hold two jobs simultaneously. Lund et al. (2021) argue that in advanced economies, between 20 and 25 percent of the workforce might work from home three to five days each week, which means four to five times more remote work than before the pandemic. Moreover, the favorable experiences with remote work during the pandemic encouraged the companies to maintain the new working environment. Gallacher and Hossain (2020) estimate that 41 percent of jobs in Canada can be done from home. There appears to be a prevailing notion among journalists that the prevalence of moonlighting has increased due to the ability to work remotely and newspaper articles provide anecdotal evidence to support their claims.

Researchers have studied the incidence of moonlighting as well as the characteristics of those who engage in it (e.g see Shishko and Rostker 1976; Cohen 1994; Krahn 1995). People traditionally may engage in moonlighting for a variety of reasons. Pouliakas (2017) argues that individuals who experience adverse financial shocks may choose to find a second job as an opportunity for preventive savings to preserve their consumption level. However, Böheim and Taylor (2004) show that second job holding is not always a temporary effort to adjust for instabilities in labor supply. Financial shocks sometimes trigger these fluctuations, but second job holding is constant over time. They argue that job heterogeneity might be another reason to moonlight. Lale (2019) illustrates that highly educated employees working

1. the Guardian. "'It's the Biggest Open Secret out There': The Double Lives of White-Collar Workers with Two Jobs," November 16, 2021. https://www.theguardian.com/lifeandstyle/2021/nov/16/its-the-biggest-open-secret-out-there-the-double-lives-of-white-collar-workers-with-two-jobs.

2. CBC news. "Forget Quiet Quitting: The Latest Work Trend Is 2 or More Jobs — without Any Bosses Knowing," September 13, 2022. https://www.cbc.ca/news/business/two-jobs-pandemic-1.6577522.

in professional, service, arts and entertainment, or education fields more probably tend to engage in a second job and typically the main reason for taking up a second job is to supplement the income earned from the primary job with some additional earnings. Overall, researchers argue that the main reasons for individuals engaging in multiple job holding might be constraints on hours worked in their primary profession, financial necessity, the need for continuous employment, and the desire to acquire skills and expertise in other occupations. In addition to the usual reasons for moonlighting, remote work can facilitate holding two jobs, potentially leading to an increase in multiple job holding.

Although moonlighting may not be widespread, it is still a significant aspect of labor market activity in North America. Figure 1 in the appendix shows how the population of workers holding multiple jobs evolved over time in Canada. In 2022, more than 1 million people in Canada, 5.7 percent of all workers, held more than one job, compared to 704,100 or 2.1 percent in 1976. The rate increased rapidly in the 1980s, then fluctuated around 5.0 percent through the 1990s and early 2000s. From 2005 to 2015, the rate was stable between 5.2 percent and 5.4 percent, then in 2022 the rate increased to 5.7 percent.

The Covid-19 pandemic caused significant disruption to labor markets globally in 2020. The short-term effects were severe, with millions of people losing their jobs or being furloughed, and many having to adapt quickly to work from home as offices closed. Other workers were deemed essential and continued to work under new protocols to prevent the spread of the virus in hospitals, grocery stores, warehouses, and on garbage trucks. The public health restrictions in Canada led to considerable job losses in the labor market, which caused the rate of multiple job holding to plummet by 1.3 percent in 2020, the biggest yearly decline since 1976. Despite a 0.6 percent recovery in 2021, the rate remained below the 2019 level because of continued public health restrictions that were relaxed and reintroduced in response to different pandemic waves. However, the rate of holding multiple jobs increased significantly in 2022, almost reaching its pre-pandemic peak in 2019.

The primary objective of this study is to investigate whether the propensity of multiple job holdings increased during the pandemic and post-pandemic periods as suggested by newspaper articles. Moreover, it analyzes the characteristics of individuals who hold multiple jobs, using a comprehensive dataset obtained from the Labor Force Survey of Canada, covering the years from 2007 to 2022. In addition, it examines the cyclical nature of moonlighting based on monthly employment data as a feature of the business cycle. To assess the impact of Covid-19 on the trend of moonlighting, I employed the Tobit and Probit regression models, allowing for an analysis of the effect of Covid-19 on the probability and intensity of multiple jobs holding while providing different margins, intensive versus extensive. The results reveal that, in general, the intensity and the incidence of multiple job

holding did not increase during the pandemic and post-pandemic periods. Regarding the characteristics of multiple job holders workers in some industries were more prone to work two jobs. Likewise, the labor market in Canada has shown a cyclical pattern in terms of individuals holding multiple jobs.

The paper is structured as follows: Section 2 reviews the literature on the motives for multiple job holding and related concerns. Section 3 presents the theoretical model. Section 4 provides an overview of the data. Section 5 outlines the empirical methodology. Section 6 presents the estimated results. Finally, Section 7 concludes the study.

2 Literature Review

Multiple job holding is a complex phenomenon with important effects on individuals and the economy. Understanding why people engage in this behavior and which factors trigger it is a matter of ongoing debate in the literature. In this review, first, I discuss the motives and factors reported in the international literature that may affect the decision for taking on a second job outside of one's primary employment, then look at the cyclical feature and economic consequences of moonlighting, as well as the transitory nature of multiple job holding. Analyzing these factors provides a deeper understanding of the motivations and implications of engaging in multiple job holding.

Multiple motives underlie the practice of moonlighting, but two reasons have received particular attention in past research: limitations on hours or income in the primary job, and the non-pecuniary benefits of a second job. For instance, Friesen (2001) suggests that overtime pay regulations in Canada have driven many workers to seek second jobs. However, using a panel sample of UK employees from the British Household Panel Survey between 1991 and 2005, Wu, Baimbridge, and Zhu (2009) challenge this view. They find that British moonlighting is not primarily due to limited hours or job insecurity in the primary job, but rather to workers' diverse interests and the financial rewards of a second job. Moreover, they show that job satisfaction in the primary occupation is a crucial factor in the decision to hold a second job, regardless of gender. Employees dissatisfied with their primary job's overall compensation are more likely to hold multiple jobs.

Several studies emphasize the hour constraints in the main job as the primary reason for moonlighting (e.g see Shishko and Rostker 1976; O'Connell 1979; Krishnan 1990). However, Kimmel and Smith Conway (1998) and Lilja (1992), besides hours constraints in the primary job, allow for non-pecuniary benefits and costs as other reasons for taking two jobs. They estimate a labor supply model for prime-aged male moonlighters in the U.S. The authors argue that the decision to participate in two jobs has a positive relationship with job wage

variations in both occupations and results from both motives. Based on the monthly Current Population Survey data, Hipple (2010) remarks that economic difficulties during the period of the study, between 1994 and 2009, are the dominant reason for secondary job holding, although one out of five multiple job holders noted enjoyment as the reason behind taking part in second jobs. Moreover, they indicate that educated workers in public administration or education and health services are more likely to moonlight.

Panos, Pouliakas, and Zangelidis (2014) use the same database over a shorter period of time to investigate multiple job holding as a source of future occupational choice. They illustrate that while multiple job holding can occur because of financial difficulties, it can be seen as a way people use to prepare for a new career. They argue that employees who are hired for a long time in their initial job often have little interest in choosing a different occupation for their second job. Moreover, they illustrate that employees who feel financially secure, in their primary job, probably do not continue the same occupation in their secondary occupation and are more likely to be self-employed and leave their main job in the future.

The dynamics of dual job holding were different in the 1980s. Both the United States and Canada experienced a significant increase in moonlighting rates over the years between 1980 and early 1990. However, the composition of the multiple job holders and the reason for that may not be the same for both countries. Kimmel and Powell (1999) provide a cross-country comparison of the moonlighting trends and the reason behind that. They remark that moonlighting rates have increased in both countries among women, young people, never-married individuals and service workers. In addition, in terms of the reason for moonlighting, financial reasons were more prevalent in both countries. However, fewer male workers in both countries held second jobs compared to women because of the financial hardships. Yet women in the US most likely took part in the second job for nonpecuniary reasons.

Regardless of personal reasons that may affect decisions to hold multiple jobs, employees in some regions are more prone to work multiple jobs. Hirsch, Husain, and Winters (2017) examine the geographical patterns of multiple job holding in the United States. Their study reveals substantial differences across regions, states, and metropolitan areas. They report that the most important stimuli for multiple job holdings differences are MSA-level variables that measure the distribution of industries and occupation shares, differences in population ancestry shares, and commute times. In addition, workers in densely populated markets show lower interest in second job holdings, which can be explained by better primary job matching and the high cost of commuting in those areas. However, the relationship between holding a second job and the economic situation is ambiguous.

Renna (2006) analyzes the effect of hour regulation, such as the standard workweek and overtime premiums, on the decision of workers to either work overtime or engage in

moonlighting. The study uses data from nine OECD countries and estimates the factors behind the decision to moonlight with a Probit model. The results show that reducing the standard workweek increases the probability of moonlighting, but the effect of the overtime premium is ambiguous on moonlighting. He emphasizes that reduced workweek legislation can affect employment rates. Also, the relationship between hour regulation and dual job holding has important policy implications, as it can affect the effectiveness of work-sharing policies in increasing employment and time-sharing.

When it comes to moonlighting, it is commonly believed that taking on additional jobs is a strategy that employees use to counterbalance the reduction of household income during economic downturns. This phenomenon is often viewed as a form of cyclicality. However, in poor economic conditions, the number of available jobs decreases. Thus, the opportunity of getting a second job for workers shrinks. Using data from the National Longitudinal Survey of Youth during the 1980s, 1990s, and early twentieth century, Amuédo-Dorantes and Kimmel (2009) try to give a better picture of the cyclical nature of moonlighting with emphasis on gender differences. They indicate that females and males do not respond to the business cycles similarly. While moonlighting behavior of male workers does not change remarkably with respect to the business cycle, women respond accordingly. More precisely, they report that females' multiple job-holding behaviors over the period of 1980 to the early 1990s is countercyclical. This result is consistent with the common belief that people are more willing to hold more than one job during economic downturns. However, moonlighting became procyclical in the early 2000s.

Hirsch, Husain, and Winters (2016) seek to understand how workers respond to changing economic conditions at the local level. To accomplish this, they use a micro-level dataset spanning from 1998 to 2013 to investigate the impact of business conditions on multiple job holding for different worker groups in US labor markets. The authors illustrate that, while labor markets characterized by high unemployment tend to exhibit slightly lower rates of multiple job holding, no clear relationship between the two variables is observed over time. More precisely, they argue that multiple job holding has a procyclical relationship with unemployment, but the magnitude is small.

Although moonlighting is a common aspect of non-traditional employment, there is still a lack of research on the topic, with most studies only examining the factors that influence the decision to hold multiple jobs. Kimmel and Smith Conway (2001) examine the reasons for moonlighting and more importantly its economic consequences using the 1984 Survey of Income and Program Participation. As in their earlier study, they argue that both motives contribute to holding more than one job, while constraints in the main job are identified as the primary reason for taking secondary jobs. They also find that moonlighters are

more likely to be poorer on average than single job holders despite having a full-time job in their primary occupations and a part-time job. This is partly attributed to the fact that moonlighters tend to be relatively younger. Additionally, the study shows that a quarter of the people in their sample, including more educated workers, receive a higher wage in their second jobs which is consistent with the job-packaging motive or the desire for new skills and experiences.

Martinez Jr et al. (2014) use panel data from the Indonesia Family Life Survey (1993 - 2007) to illustrate that less educated men who are household heads are more likely to engage in inferior jobs that do not affect long-term income mobility. However, highly skilled workers at the top of the socioeconomic hierarchy experience a rapid increase in their earnings in their second jobs. This job arrangement contributes to labor market segmentation, which has important implications for employment and economic growth in developing countries like Indonesia.

Schulz, Urbig, and Procher (2017) use data from British Household Panel Survey between 1991 and 2008 to argue that individuals who hold multiple jobs often earn higher hourly wages in their second job compared to their primary job. This result could be due to the fact that self-employment is more common among individuals with multiple jobs than those with a single job, and engaging in self-employment as a secondary job significantly increases the likelihood of earning higher average wages in this job than being paid employees in both occupations. Interestingly, they illustrate that while the earning structures for men and women holding multiple jobs appear similar in the long run, they seem to be different in the short term upon entering multiple job holding.

Multiple job holding may be transitory, because workers at some time in their lives may need extra income, to pay off debts or save for the future. Lalé (2016) using new estimates of transition probabilities into and out of multiple job holding, quantitatively analyze their contribution to the observed decline in the rate of multiple job holding in the U.S. between 1995-2016. He demonstrates that the decline in the share of multiple job holding in the last 20 years, which is more than 20 percent, is mainly driven by the reduced propensity toward taking two jobs by single job holders. The reasons behind this trend can be attributed to both economic and non-economic factors. At the same time, the author links this diminished tendency to the underlying worker flows. In other words, he argues that a lower trend toward participation in the labor force by prime-age U.S. employees contributes to the declined participation in holding a second job.

Guariglia and Kim (2006) focus on the dynamics of the informal economy. Their findings suggest that moonlighting is transitive. More precisely, moonlighting serves as a trial period for individuals contemplating a job switch, allowing them to experiment before fully

committing to a new role. In addition, they clarify that the past self-employed multiple jobholders in Russia amount to one-fourth of self-employed businesses in the present, which is quite beneficial for the economy.

Although previous research has examined the motivation for multiple job holding and its economic consequences, little attention has been given to the characteristics of moonlighters, particularly in Canada. Moreover, the Covid-19 pandemic has brought about a new normal in the working environment with remote work that could ease engaging in multiple job holding, which needs to be thoroughly investigated. Therefore, this paper aims to contribute to the literature on multiple job holding by exploring the impact of remote work stimulated by the pandemic situation on the likelihood and intensity of multiple job holding, as well as examining the characteristics of individuals that influence their desire to hold multiple jobs.

3 Theoretical Model

3.1 Basic Model of Labor Supply

Labor supply decision can be understood through a simple textbook model in which a worker's preference over consumption goods (c) and leisure (l) are described by a strictly increasing, strictly quasi-concave utility function ($U(c, l)$). The total amount of time is T. The worker can divide his time between leisure (l) and work (h). Therefore, the time constraint is:

$$T = h + l. \tag{1}$$

The worker earns a wage w for each hour worked. In a static model of labor supply, where there is no saving, the worker faces the budget constraint:

$$\begin{aligned} c &= w(T - l) + y \\ &= wT + y - wl \end{aligned} \tag{2}$$

in which y is non-labor income.

The direct approach to finding the agent's labor supply function is to maximize the utility function subject to budget and time constraints. Hence, the maximization problem is:

$$\max_{c,l} U(c,l) \tag{3}$$

subject to

$$c \leq wT + y - wl \tag{4}$$

The Lagrangian function associated with this problem is:

$$L(c,l,\lambda) = U(c,l) - \lambda[wT + y - wl - c] \tag{5}$$

and the first-order conditions are:

$$\begin{aligned} \frac{\delta L(c,l,\lambda)}{\delta c} &= \frac{\delta U(c,l)}{\delta c} - \lambda = 0, \\ \frac{\delta L(c,l,\lambda)}{\delta l} &= \frac{\delta U(c,l)}{\delta l} - w\lambda = 0, \\ \frac{\delta L(c,l,\lambda)}{\delta \lambda} &= -[wT + y - wl - c] = 0. \end{aligned} \tag{6}$$

The solution c^* and l^* to (6) is given by:

$$-w = -\frac{(\frac{\delta U(c^*,l^*)}{\delta l^*})}{(\frac{\delta U(c^*,l^*)}{\delta c^*})} \tag{7}$$

and

$$c^* = w(T - l^*) + y. \tag{8}$$

This solution indicates that individuals select their optimal combination of consumption and leisure time by equating the marginal rate of substitution between the two with the slope of their budget constraint.

Figure 2 in the appendix shows the concept of the consumer optimization solution in a graphical form. The optimal consumption-leisure pair, represented by c^* and l^* is situated on the highest possible indifference curve and the consumer's budget constraint where the indifference curve is tangent to the budget constraint. Therefore, the optimal labor supply at wage rate w will be $h^* = T - l^*$.

3.2 Basic Model of Labor Supply-Moonlighting

To account for the option of holding multiple jobs in labor supply decisions, the maximization problem of a representative agent can be formulated as follows:

$$\max_{c,l,h_2} U(c,l) \tag{9}$$

subject to

$$c \leq w_1 h_1 + w_2 h_2 + y, \tag{10}$$

and

$$h_1 + h_2 = T - l, \tag{11}$$

where h_1 is the hours at the first job, h_2 is the hours at the second job, and w_1 and w_2 are the wage rates at the primary and the secondary job respectively. Economists commonly attribute moonlighting to a situation where an employee's primary job does not offer sufficient hours. In the case of hours constrained in the primary job, the optimal level of leisure time (l^*) may not be achievable, and individuals are forced to take more leisure than desired, leading to a lower indifference curve.

Figure 3 in the appendix demonstrates how this optimization problem can be addressed. As it is illustrated in this situation, moonlighting provides individuals with the opportunity to allocate their extra hours towards a second job (h_2^*). By surpassing the maximum allowable hours in their primary job ($\bar{h}_1$), individuals can attain an optimal balance of leisure and consumption, equivalent to what they would achieve if there were no constraints on their primary job's working hours.

To be more specific, when considering the maximization problem of a representative agent with constrained hours in the primary job, two scenarios can arise: $w_2 < w_1$ or $w_2 > w_1$. Figure 4 in the appendix depicts the first scenario and the potential action individual may take in response. It is illustrated in the figure that even if the second job pays less than the primary job, moonlighting can still lead to a higher level of utility, placing workers on a higher indifference curve and allowing them to maintain their desired level of leisure.

Although it is important to note that the lowest wage rate at which individuals would agree to work is the w_2, which is tangent to the indifference curve at the point where h_1 is constrained, as illustrated in Figure 5 in the appendix. Any wage rate below this level would place workers on a lower indifference curve and would not be worth it. The second scenario, where $w_2 > w_1$, is shown in Figure 6 in the appendix. The figure shows that moonlighting enables individuals to achieve a higher level of utility by placing them on a higher indifference

curve while maintaining their desired level of leisure. However, at a certain stage, the worker decides to reduce their hours in the second job (h_2^*). This decision is driven by the realization that leisure time has become more valuable compared to consumption. By increasing their wage in the second job w_2, the worker can achieve the same level of consumption while working fewer hours. This income effect has been demonstrated in Figure 7 in the appendix.

In addition to the traditional reasons for moonlighting, advances in technology that enable remote work can also be a significant factor driving moonlighting. However, the relative value that individuals place on leisure versus consumption can impact their decision to engage in moonlighting. Figure 8 in the appendix illustrates the scenario where workers have a preference for consumption over leisure. Remote work can help individuals balance their time between their primary and secondary jobs. The time saved by not being forced to commute to work adds to their total available time to work (h) and they reach a higher amount of available time (T'). Therefore this additional time could be allocated to working more hours at a second job without sacrificing too much leisure time. However, if workers place a higher value on leisure than consumption, they may choose to work fewer hours in their second job, resulting in a lower intensity of multiple job holding. Figure 9 in the appendix demonstrates this situation.

4 Data

This paper uses two different data sources: micro-data from the Labor Force Survey of Canada (LFS) obtained from odesi metafiles and data on monthly employment in Canada gathered from Statistic Canada. To lower the computational burden the analysis uses a random sample corresponding to 10 percent of the LFS data of each survey year, resulting in 1 172 784 observations out of 19 675 993 data recorded. All calculations are done using weighted data in a period of 15 years, from 2007 to 2022. In addition to providing a perspective over an extended period, this time period includes two significant economic recessions that impacted Canada in 2008 and 2020, allowing me to examine the fluctuating trends of holding multiple jobs during the business cycle.

- First recession started in November 2008 and lasted seven months until May 2009 (2008 recession),
- Second recession started in March 2020 and lasted two months until April 2020 (Covid-19 recession).

The dates are in agreement with the ones identified by the C.D. Howe Institute Business Cycle Council. In addition to these two time periods, I also specified a time period for the

post-covid recession, starting from May 2020 to December 2022, to analyze whether after Covid-19 the probability and intensity of holding multiple jobs increased.

The Labor Force Survey is a significant source of information on the state of the Canadian economy, particularly in terms of employment and unemployment. It is considered crucial because the survey results are released just ten days after data collection, making it the earliest among the major monthly economic data series to be published. The LFS uses a probability sample based on a stratified multi-stage design. Each province is divided into large geographic strata, and dwellings are selected from clusters. The LFS covers about 70 percent of all Nunavut residents aged 15 years and over. The sample is allocated to different geographic levels, and selected dwellings remain in the sample for six consecutive months. The LFS collects basic demographic information for all household members and labor force information for all civilian household members aged 15 and over. The monthly LFS sample size is approximately 56,000 households, covering approximately 100,000 individuals.

To investigate the effect of variables of interest on the decision to spend hours on the second job, I computed the total number of hours that each respondent moonlighted per week based on LFS data. This was done by subtracting actual hours worked per week at the main job from actual hours worked per week at all jobs.

In addition, in order to investigate the effect of being self-employed or employed and working in the public or private sector at the main job on the decision to hold multiple jobs, two new variables were generated based on the class of worker at the main job in LFS data.

Regarding data on monthly employment in Canada, I have used labor force characteristics by industry, monthly, unadjusted for seasonality data series. Employment is determined by counting the number of individuals who worked for payment or voluntarily or who were unable to work due to personal reasons like illness, disability, family responsibilities, vacation, labor disputes, or other reasons during a specific week. However, individuals who were laid off or had a future job start date are not counted as employed. Figure 10 in the appendix represents monthly employment in Canada from 2007 to 2022. The most striking feature of this figure is the sharp increase in employment in 2020 after the surge decline because of the pandemic.

5 Empirical Method

The first part of this study examines the extent of second job holding by analyzing the number of hours spent on secondary employment. In individual data analyses, it is common for the dependent variable to be censored. This means that the dependent variable is zero

or otherwise limited for a significant portion of the observations. In this part, the dependent variable is the number of hours spent in a second job which is left-censored because it is conditional on the individual having a second job. When the dependent variable is censored, obtaining parameter estimates using conventional regression methods, such as ordinary least squares (OLS), can result in biased estimates. To obtain consistent estimates, the Tobit model proposed by Tobin (1958) is often used. This model is a special case of the more general censored regression model. In the second part of the estimation, I employ a Probit estimator, utilizing the same set of independent variables as the Tobit model. The objective here is to specifically examine the occurrence of dual job holding. In this case, the dependent variable is a binary indicator that determines whether an individual holds a second job.

5.1 Standard Tobit Model

In the standard Tobit model introduced by Tobin (1958), we have a dependent variable y that is left-censored at zero:

$$y_i^* = x_i'\beta + \epsilon_i, \tag{12}$$

where

$$y_i = \begin{cases} y_i^* & y_i^* > 0, \\ 0 & \text{otherwise}, \end{cases} \tag{13}$$

and

$$\epsilon_i \mid x_i \sim N(0, \sigma^2). \tag{14}$$

In these equations, the subscript $i = 1, ..., N$ represents each individual observation, y_i^* is an unobserved variable, x_i' is a vector of explanatory variables, β is a vector of unknown parameters, and ϵ_i represents the disturbance term. Also, the probability models which assume that ϵ_i has a normal distribution are:

$$\begin{aligned} Pr(y_i^* = 0 \mid x_i) &= 1 - \Phi(\frac{x_i'\beta}{\sigma}), \\ Pr(y_i^* > 0 \mid x_i) &= \Phi(\frac{x_i'\beta}{\sigma}), \end{aligned} \tag{15}$$

where Φ is the cumulative distribution function (CDF) of the standard normal distribution. Moreover, the conditional expectation is:

$$E[y_i \mid y_i > 0, x_i] = x_i'\beta + \sigma \frac{\phi(\frac{x_i'\beta}{\sigma})}{\Phi(\frac{x_i'\beta}{\sigma})}, \tag{16}$$

where ϕ is the standard normal probability density function (PDF).

5.2 Estimation Method-Tobit Model

Censored regression models, including the standard Tobit model, are usually estimated by the Maximum Likelihood (ML) method. Assuming that the disturbance term (ϵ) follows a normal distribution with mean zero and variance σ^2, the likelihood function is:

$$l(\sigma, \beta) = \prod_{i=1}^{N} \Big[\frac{1}{\sigma}\phi(\frac{y_i - x_i'\beta}{\sigma})\Big]^{I_i} \Big[1 - \Phi(\frac{x_i'\beta}{\sigma})\Big]^{1-I_i}, \tag{17}$$

where I is an indicator function that is set to 1 if the observation is uncensored and is set to 0 if the observation is censored. The log-likelihood $L(\sigma, \beta) = ln[l(\sigma, \beta)]$ can now be written as:

$$L(\sigma, \beta) = \sum_{i=1}^{N} I_i \Big[- ln(\sigma) + ln[\phi(\frac{y_i - x_i'\beta}{\sigma})]\Big] + \sum_{i=1}^{N}(1 - I_i) ln\Big[1 - \Phi(\frac{x_i'\beta}{\sigma})\Big]. \tag{18}$$

The values of β and σ that maximize the likelihood function are the Tobit estimators of the parameters. Although the Tobit model is a tool for analyzing censored data, it assumes that any changes in a regressor consistently affect both the likelihood of having a second job and the number of hours worked in that job. To further investigate the impact of Covid-19 on the likelihood of holding multiple jobs, I use a Probit estimator with the same regressors as the Tobit model.

5.3 Standard Probit Model

The standard Probit model is defined as:

$$y_i^* = x_i'\beta + \epsilon_i, \tag{19}$$

where

$$y_i = \begin{cases} 1 & y_i^* > 0, \\ 0 & \text{otherwise}, \end{cases} \tag{20}$$

and

$$\epsilon_i \mid x_i \sim N(0, 1), \tag{21}$$

where $i = 1, ..., N$ represents each individual observation, y_i^* is unobserved and can be seen as a latent variable, x_i' is a vector of explanatory variables, β denotes unknown parameters that need to be estimated, and ϵ_i represents the disturbance term. The random variable y_i^*

has a Bernoulli distribution with probabilities:

$$\begin{aligned} Pr(y_i = 1 \mid x_i) &= \Phi(x_i'\beta), \\ Pr(y_i = 0 \mid x_i) &= 1 - \Phi(x_i'\beta). \end{aligned} \tag{22}$$

5.4 Estimation Method-Probit Model

The estimator β in the Probit model could be calculated by maximizing the log-likelihood function. The likelihood function for the observed data, assuming that all observations in the sample are independent and identically distributed is:

$$l(\beta) = \prod_{i=1}^{N} \Big[\Phi(x_i'\beta)\Big]^{y_i} \Big[1 - \Phi(x_i'\beta)\Big]^{1-y_i}, \tag{23}$$

The likelihood maximization is always done in terms of the log-likelihood function:

$$L(\beta) = \sum_{i=1}^{N} \Big[y_i ln[\Phi(x_i'\beta)] + (1 - y_i) ln[1 - \Phi(x_i'\beta)]\Big]. \tag{24}$$

5.5 Explanatory Variables

The vector x_i takes into account several factors that can influence multiple job holding patterns, including years and months, personal and family characteristics, primary-job characteristics, worker location and the business cycle indicators. Years and months serve to control for any time-related factors that may affect the decision for multiple job holding and the number of hours devoted to it. For instance, seasonal trends in the data could affect the number of hours dedicated to a second job at different times of the year.

The personal and family characteristics considered include dummy variables for gender and marital status, categorical variables for respondents' highest education level, type of economic family, which mainly distinguishes between dual-earner or single-earner households, and age groups. These variables are included in the model based on a significant body of research that highlights the impact of personal and family characteristics on the decision to pursue a second job (e.g see Shishko and Rostker 1976; Cohen 1994; Krahn 1995; Kimmel and Smith Conway 2001).

Primary-job characteristics are included with a categorical variable indicating the industry at the main job, a continuous variable representing tenure, and dummy variables capturing the status at the primary job, sector of employment, and whether the individuals are self-employed or paid employees. These factors are presented in the analysis to account for their potential influence on multiple job holding patterns. For example, Borowczyk-Martins and

Lalé (2019) illustrate working part-time is a significant way for individuals to adjust their hours of employment and hence can affect the decision to spend some hours on a second job.

Worker location is considered in the analysis by incorporating two variables, the province of residence and whether workers live in the nine largest Census Metropolitan Areas. It is important to account for worker location as individuals residing in specific provinces or cities may exhibit different tendencies towards multiple job holding. For instance, research conducted by Hirsch, Husain, and Winters (2017) demonstrates that individuals in densely populated cities are less likely to engage in a second job. By including these variables in the model, I can effectively capture and map these trends.

Lastly, the impact of business cycles is accounted for by incorporating two dummy variables representing the 2008 recession and the Covid-19 recession, as well as a continuous variable for employment. The behavior of workers regarding multiple job holding exhibits variations over different business cycles. Amuédo-Dorantes and Kimmel (2009) argue that however, the multiple job holding behavior of females over the period of 1980 to the early 1990s was countercyclical, it became procyclical in the early 2000s. In Table 1 of the appendix, the explanatory variables are defined.

6 Results

The findings of this paper are categorized into two sections: the intensive margin and the extensive margin of moonlighting. The intensive margin analysis explores the number of hours devoted to moonlighting, while the extensive margin analysis examines whether a worker has a second job. This analysis takes into account various factors, including worker and job characteristics, business cycles, interactions between the Covid-19 recession and the industry of the main job and interactions between the post-Covid recession and the industry of the main job. The inclusion of these interaction terms allows for an investigation into whether there was an increased propensity toward multiple job holding during or after the Covid-19 recession. The primary source and reference for the research conducted in this study is the paper written by Amuédo-Dorantes and Kimmel (2009).

According to the standard interpretation of linear statistical models, marginal effects are used to quantify the change in the expected value of variable y when an independent variable increases by one unit while all other variables are kept constant.

$$ME = \frac{\delta E(y \mid y > 0)}{\delta x_i} \tag{25}$$

However, in the case of categorical variables, which is predominant in this paper, the marginal effect on the expected value is determined by the difference between the expected values of the indicated category and the reference category.

$$ME = E[y \mid y > 0, x'] - E[y \mid y > 0, x], \tag{26}$$

where x' is the indicated and x is reference category.

6.1 Intensive Margin

6.1.1 Worker and Job Characteristics

The Tobit model results presented in Table 2 provide insights into how many hours are spent on moonlighting, as reflected by the marginal effect. The findings in Table 2, Panel B, reveal a significant correlation between the worker's age and the amount of time dedicated to a second job. Middle-aged individuals, who are between 45 to 49 years old, exhibit an increase of 1.03 hours in secondary job engagement compared to young individuals aged between 15 to 19 years old. Conversely, workers aged 70 and above allocate 0.6 hours less to their second jobs than their younger counterparts. Although almost all the coefficients are significant, the impact is relatively small.

In addition, the result, in Table 2, Panel B, shows that married individuals are less likely to work longer than their single counterparts in a second job. One explanation might be that married people put more value on their relationships and personal life than they do on their careers. In contrast, more educated individuals are more likely to spend more hours in a second job. Highly educated people might have more in-demand knowledge and specialized abilities in the labor market, which could boost their chances of finding freelance or part-time work. The result for the type of economics family coefficients further supports the notion that couples are less likely to spend more hours in their secondary employment than singles. These results align with previous research by Amuédo-Dorantes and Kimmel (2009) on moonlighting.

Results in Table 2, Panel C, illustrates that the industry in which an individual's main job is located has a notable impact on the amount of time allocated to moonlighting activities. Across various sectors, employees are generally less inclined to devote extensive hours to secondary employment compared to those working in the agriculture sector. The seasonal nature of agricultural work may contribute to a reduced workload during certain months of the year, allowing individuals to invest their spare time in a second job.

Findings in Table 2, Panel C, show that employees who have been in their primary job

for an extended period are generally less inclined to allocate additional time to a second job. However, the impact of this tendency is not particularly significant. This phenomenon could be attributed to the fact that more experienced workers typically have heavier workloads compared to their less experienced counterparts, leaving them with limited availability to pursue secondary employment opportunities.

Based on the results shown in Table 2, Panel C, there is a positive correlation between the number of hours devoted to a second job and the job status of an individual's primary employment. Workers who hold part-time positions in their main job often find it necessary to seek additional employment to augment their income. Furthermore, their flexible schedules allow them to dedicate extra hours to a second job. Part-time workers tend to allocate approximately 1.5 hours more to their secondary employment, if they moonlight, compared to full-time workers. likewise, self-employed workers may have greater control over their schedules, making it easier to devote part of their available time to a second job. Self-employed workers tend to invest approximately 0.7 additional hours in their secondary employment compared to individuals who are employed in a traditional work arrangement.

Results shown in Table 2, Panel C illustrate that workers in Manitoba and Saskatchewan tend to allocate approximately one additional hour to a second job compared to their counterparts in Newfoundland and Labrador. These regional differences in employment patterns can be influenced by various factors, such as the types of industries and job opportunities available, differences in job availability and wages, cost of living, and cultural norms.

However, individuals residing in the nine largest CMAs in Canada tend to work fewer hours in their secondary jobs compared to those living in non-CMA. These results are consistent with the findings of Hirsch, Husain, and Winters (2017), who argue that workers in densely populated cities show lower interest in second job holdings, which can be explained by better primary job matching and the high cost of commuting in those areas.

6.1.2 Business Cycle

The findings in Table 2, Panel C, demonstrate a clear cyclicality pattern in the number of hours spent on secondary employment as there is a strong positive correlation between the intensity of moonlighting and employment. Specifically, a one percentage point increase in employment is associated with a 0.69 percent increase in devoted time to a secondary job for those moonlighting. These findings support the idea that during economic growth when the opportunity to get a job increases, the intensity of moonlighting also increases.

6.1.3 Interactions Between the Covid-19 Recession and the Industry of The Main Job

Results in Table 2, Panel D, illustrate that employees in the manufacturing industry, retail trade, transport and warehousing, professional, scientific and technical services, health care and social assistance and other services were less likely to spend more hours on a second job than workers in the agriculture industry during the Covid recession. Healthcare workers, in particular, may have been busier during the pandemic, caused by increased demands on their primary jobs and less time available for a second job.

To further investigate the effect of Covid-19 on the hours spent on moonlighting among different industries the decomposition of marginal effects for interaction terms of Table 2, Panel D is given in table 4. It is well established that If the 95 percent confidence intervals do not overlap then the coefficients are significantly different from one another (e.g see Browne 1979; Ci and Rule 1987). I follow the same rule. Based on the results in Table 4, the difference between the marginal effects with and without the Covid-19 recession is statistically significantly different from zero in manufacturing - durables, retail trade, transport and warehousing, professional, scientific and technical services, health care and social assistance industries. Among these sectors, the manufacturing - durables goods, transport and warehousing, and professional, scientific and technical services exhibit the most pronounced impact of the Covid-19 recession. Specifically, employees working in these industries experienced a reduction of 4.4, 3.3, and 3.3 hours, respectively, in their secondary job hours compared to their counterparts in the agriculture industry during the Covid-19 recession.

6.1.4 Interactions Between After Covid-19 Recession and the Industry of The Main Job

Results in Table 2, Panel E, show that after the Covid-19 recession among all industries, employees in manufacturing non-durable goods and educational services were more likely to stretch hours spent on their part-time job than workers in the agriculture section. There was an increase in demand for some goods during the pandemic, including cleaning supplies and personal protective equipment. This might have increased the production of non-durable goods, opening up more chances for part-time employment in that industry. Similar to the previous point, the move to remote learning might have increased the demand for educational services, which would have resulted in more part-time employment opportunities in that industry.

However, the findings derived from the decomposition of marginal effects for the interaction term after the Covid-19 recession in Table 5 demonstrate no significant difference between the marginal effects with and without the post-Covid period. Overall, There is no evidence to suggest that people increased their hours of part-time work following the Covid-19 recession.

6.2 Extensive Margin

6.2.1 Worker and Job Characteristics

Table 3 showcases the Probit model results, providing valuable insights into the prevalence of multiple job holding, as evidenced by the marginal effect. The findings, in Table 3, Panel B, reveal that there is a significant correlation between the worker's age and the decision to engage in a second job. Middle-aged workers are 2 percent more likely to moonlight than very young workers, while senior citizens are approximately 1 percentage point less likely to moonlight compared to their younger counterparts.

Moreover, figures in Table 3, Panel B, illustrate that married individuals are less likely to take a second job. However, more educated workers are more likely to opt for a second job than workers with a high school degree. The findings regarding the coefficients for the type of economic family provide additional evidence that couples are less inclined to engage in multiple job arrangements.

The results, in Table 3, Panel C, show that employees in almost all sectors are less likely to work two jobs than those in the agriculture sector. For example, workers in forestry, fishing, mining, oil and gas are 4 percent less likely to take a second job than those working in the agriculture sector. Possibly workers in the agricultural sector may experience lower wages and job insecurity, leading them to seek additional employment to supplement their income.

In addition, results, in Table 3, Panel C, reveal a negative statically significant correlation between tenure and the decision to moonlight. Typically employees who have been in their primary job for a longer period of time are more stable in their role and have higher earnings, which may lead to a lower likelihood of holding a second job. However, the scope of the effect is minimal. This suggests that while job stability and income play a role in the decision to hold a second job, there might be other factors influencing this decision as well.

Based on results in Table 3, Panel C, part-time workers and self-employed individuals are more likely to engage in second jobs than those who have full-time jobs in their main occupations and are paid employees. Having part-time jobs increase the incidence of moonlighting more than having a full-time job by 4.3 percent. Being self-employed increases the

probability of working multiple jobs by 1.7 percent more than being a paid employee in the main profession. Self-employed individuals often have more variable income streams and may require additional income to maintain financial stability. Conversely, working in the private sector decreases the likelihood of holding multiple jobs by 0.1 percent compared to the public sector. The private sector usually offers better pay and benefits than the public sector, which could encourage workers to stick with a single job.

Regarding location, results in Table 3, Panel C, show that working in Manitoba and Saskatchewan is associated with a 2.8 percent higher probability of engaging in a second job compared to working in Newfoundland and Labrador. This disparity could be attributed to the greater availability of work opportunities in those provinces. According to data from Statistics Canada, the unemployment rate in Newfoundland and Labrador is nearly twice as high as that of Manitoba and Saskatchewan, indicating a potentially more challenging job market in the former province. In addition, individuals residing in the nine largest CMAs in Canada are approximately 0.7 percentage points less likely to engage in moonlighting.

6.2.2 Business Cycle

The findings in Table 3, Panel C, indicate a pronounced cyclical pattern in the likelihood of individuals holding multiple jobs, as there is a robust positive correlation between moonlighting and employment. More precisely, a one percentage point increase in employment increases the incidence of multiple job holding by 4.49 percent. Based on the elasticity of hours worked per worker in a second job with respect to employment and the elasticity of the proportion of workers engaging in a second job relative to employment, it is possible to analyze the elasticity of total hours worked in the second job in relation to employment. The total number of hours worked in the second job (H) can be determined using the following calculation:

$$H = h \times p \times E, \tag{27}$$

where h denotes the number of hours spent per worker in the second job, p indicates the proportion of workers with a second job, and E represents the total employment. Therefore, the elasticity of total hours worked in the second job in relation to employment can be

calculated as follows:

$$\begin{aligned} ln(H) &= ln(h) + ln(p) + ln(E), \\ \frac{\partial ln(H)}{\partial ln(E)} &= \frac{\partial ln(h)}{\partial ln(E)} + \frac{\partial ln(p)}{\partial ln(E)} + \frac{\partial ln(E)}{\partial ln(E)}, \\ \frac{\partial ln(H)}{\partial ln(E)} &= \frac{\partial ln(h)}{\partial ln(E)} + \frac{\partial ln(p)}{\partial ln(E)} + 1. \end{aligned} \tag{28}$$

The average elasticity is obtained by taking the expectations:

$$\frac{\partial E[ln(H)]}{\partial ln(E)} = \frac{\partial E[ln(h) \mid h > 0]}{\partial ln(E)} + \frac{\partial E[ln(p)]}{\partial ln(E)} + 1, \tag{29}$$

where $\frac{\partial E[ln(h) \mid h>0]}{\partial ln(E)]}$ is equal to 0.69 (from Table 2, Panel C) and $\frac{\partial E[ln(p)]}{\partial ln(E)}$ is equal to 4.49 (from Table 3, Panel C). Therefore, the elasticity of total hours worked in the second job in relation to employment is equal to 6.18, which means that a one percentage point increase in employment results in a 6.18 percent increase in the total hours worked in the second job. To further analyze this relationship, one can divide the elasticity of the proportion of workers engaging in a second job relative to employment by the elasticity of total hours worked in the second job in relation to employment. This calculation reveals that approximately 73 percent of the change can be attributed to the higher proportion of individuals who opt for a second job when employment increase.

6.2.3 Interactions Between the Covid-19 Recession and the Industry of The Main Job

Based on results in Table 3, Panel D, employees in the manufacturing industry, retail trade, transport and warehousing, professional, scientific and technical services, educational services, health care and social assistance and other services were less likely to engage in a second job than workers in the agriculture industry during the Covid-19 recession. Due to the nature of their jobs, employees in some sections, such as health care and social support, may have had a higher risk of Covid-19 exposure during the epidemic. As a result, they might have become cautious about accepting work outside of their principal position.

The findings presented in Table 6 demonstrate the difference between the marginal effects with and without the Covid-19 recession, for the Probit model. The results indicate that the difference between the marginal effects with and without the Covid-19 recession is statistically significantly different from zero in the manufacturing - durables good industry. However, the difference is relatively small.

6.2.4 Interactions Between After Covid-19 Recession and the Industry of The Main Job

Predicated upon results in Table 3, Panel E, after the Covid-19 recession, individuals working in the information, culture, and recreation industry were less likely to engage in a second job than those in the agriculture industry. This may be due to the influence of public health measures designed to stop the virus' spread. Especially the demand for recreational services may have decreased. As a result, there were fewer options for second or part-time jobs in those parts.

Based on the results in Table 7 there was no statistically significant difference in the likelihood of holding a second job after the Covid-19 recession compared to other time periods in different industries. This implies that, overall, the occurrence of multiple job holding did not experience a significant change in post Covid-19 recession.

7 Conclusion

In this paper, motivated by newspaper articles that said that moonlighting is on the rise because of the possibility of working remotely, the incidence and intensity of multiple job holding in response to the Covid-19 pandemic and the shift to remote work in Canada were studied, using micro-data from the Labor Force Survey of Canada (LFS) from 2007 to 2022. Furthermore, to account for the cyclical nature of moonlighting which could be the possible reason for increased moonlighting reported in newspapers, monthly employment was included in the analysis. Additionally, the characteristics of multiple job holders were investigated. The Tobit model was used in the first stage to examine the impact of Covid-19 on the hours spent on a second job, while the Probit model was employed to assess the effect of Covid-19 on the likelihood of working two jobs.

On the one hand, younger workers, highly educated, self-employed, individuals with part-time jobs were more likely to take up a second job and dedicate more hours to their additional employment. Meanwhile, employees in the agriculture sector tended to moonlight more than those working in other industries. On the other hand, married individuals, couples, workers with longer tenures in their primary jobs, workers in the private sector, and those who resided in the nine largest Census Metropolitan Areas in Canada were less prone to work multiple jobs. Also, the result of the study revealed that hours spent in a second job and the probability of taking multiple jobs are strongly correlated with employment. This indicates that holding all other factors constant, changes in moonlighting behavior appear to be more

responsive to demand-side factors rather than supply-side factors.

Finally, there was no evidence suggesting that people increased the hours spent in part-time work during the Covid-19 recession and after that. Similarly, the incidence of holding multiple jobs did not appear to have risen during or after the pandemic. Thus, the reported increase in multiple job holdings may have been anecdotal and related to the significant surge in employment following the Covid-19 recession, rather than a true shift in working styles.

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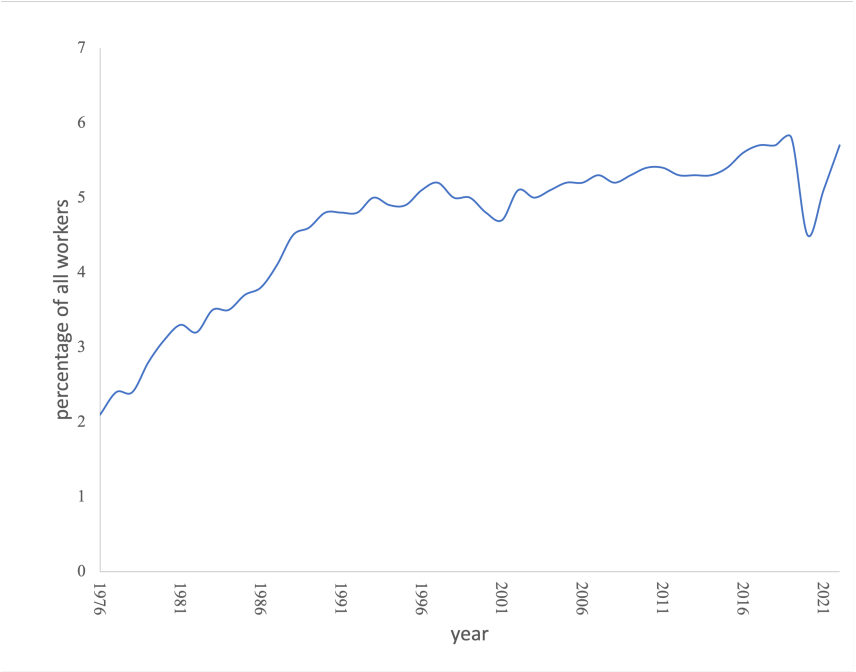
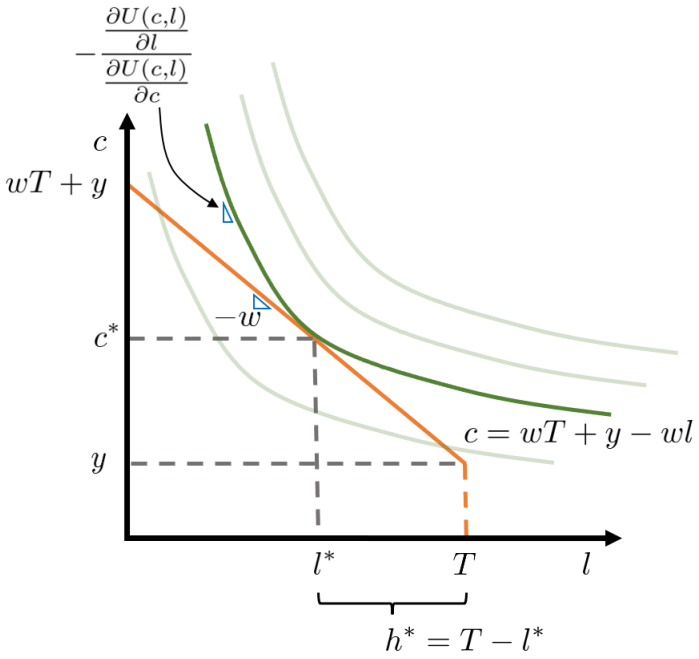
Appendices

Figure 1: Proportion of Workers Holding More Than one Job in Canada (1976-2022)



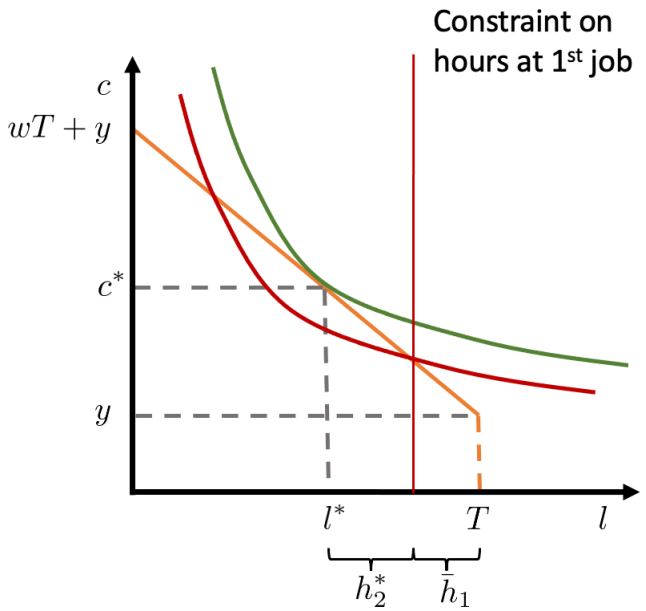
Note: The data is gathered from the Odesi website. Due to rounding, percentages may differ slightly between different sources.

Figure 2: Utility Maximization Solution



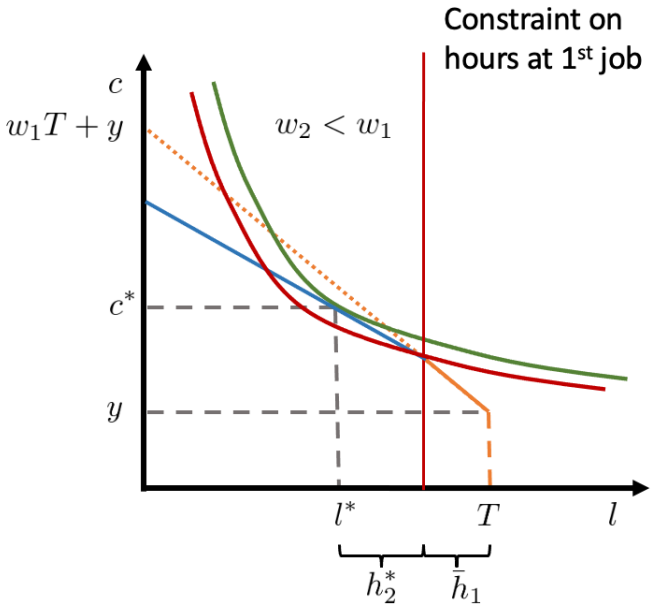
Note: x-axis denotes the amount of time of leisure and the y-axis shows the level of consumption. The curves are indifference curves.

Figure 3: Utility Maximization Solution-Hours Constrained (1)



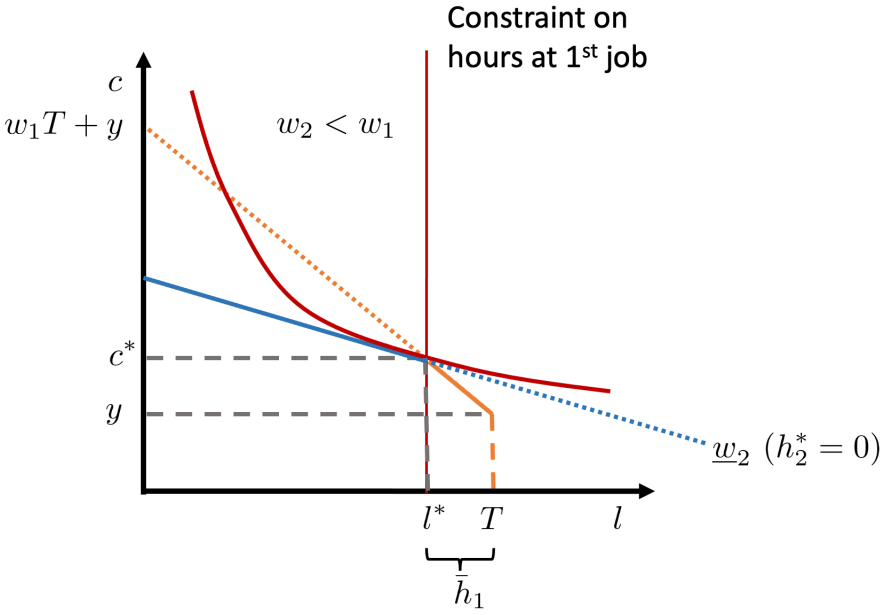
Note: x-axis denotes the amount of time of leisure and the y-axis shows the level of consumption. The curves are indifference curves.

Figure 4: Utility Maximization Solution-Hours Constrained (2)



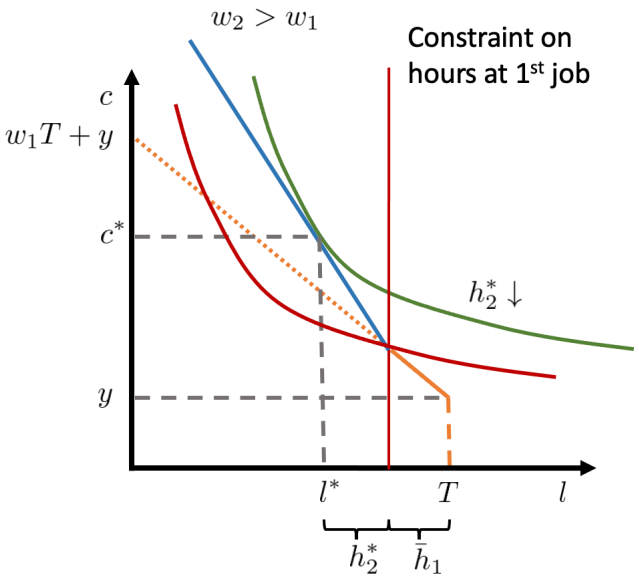
Note: x-axis denotes the amount of time of leisure and the y-axis shows the level of consumption. The curves are indifference curves.

Figure 5: Utility Maximization Solution-Hours Constrained (3)



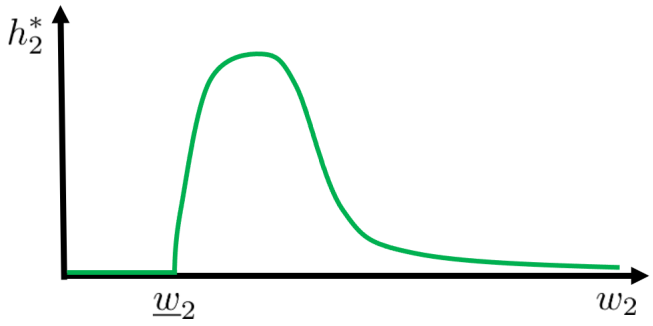
Note: x-axis denotes the amount of time of leisure and the y-axis shows the level of consumption. The curves are indifference curves.

Figure 6: Utility Maximization Solution-Hours Constrained (4)



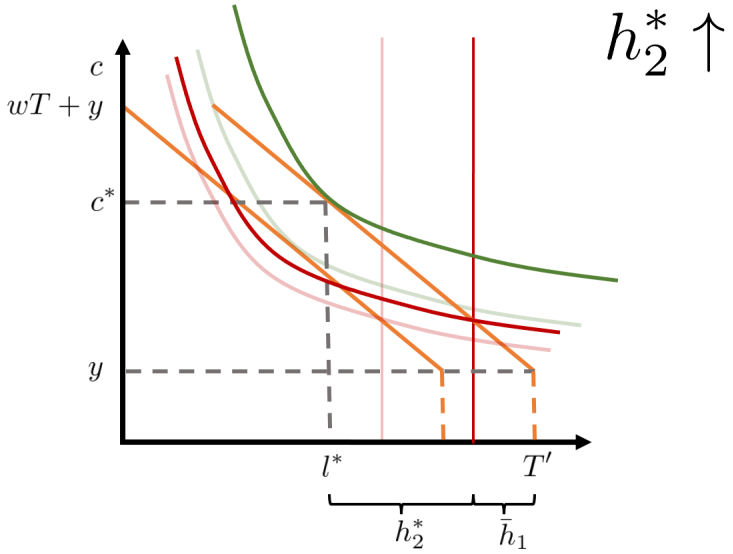
Note: x-axis denotes the amount of time of leisure and the y-axis shows the level of consumption. The curves are indifference curves.

Figure 7: Second Job Wage



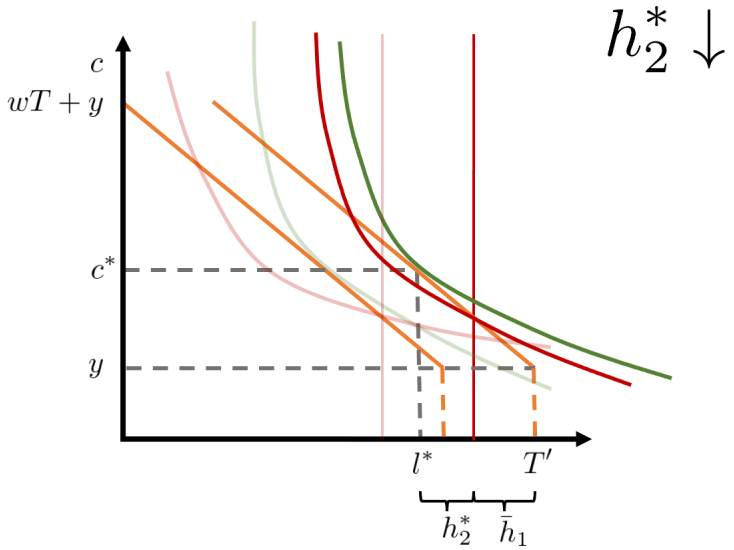
Note: x-axis denotes the wage rate in the second job and the y-axis shows the hours in second job.

Figure 8: Technical Progress (1)



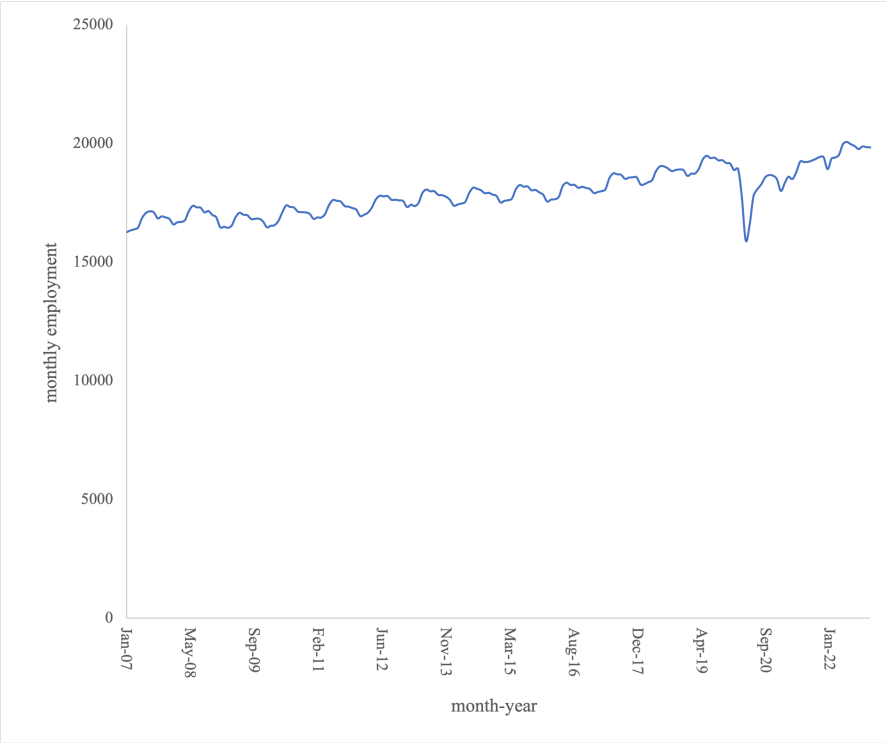
Note: x-axis denotes the amount of time of leisure and the y-axis shows the level of consumption. The curves are indifference curves.

Figure 9: Technical Progress (2)



Note: x-axis denotes the amount of time of leisure and the y-axis shows the level of consumption. The curves are indifference curves.

Figure 10: Monthly Employment in Canada (2007-2022)



Note: The data is gathered from Statistic Canada. The figures are rounded to the nearest hundred and reported in thousands.

Table 1: Definitions of Explanatory Variables

Variable name	Variable definition
Survey year	The year in which each observation was collected in the survey
Survey month	The month in which each observation was collected in the survey
Sex	Gender of respondent
Age	Age of respondent measured in years at the date of interview
Marital status	The respondent is married
Education	Highest educational attainment of respondent
Type of economic family	Indicate if the worker is in an economic family or not
Industry at main job	Industry of current main job
Tenure	Employment duration at the time of the survey at main job
Part-time status at main job	Part-time status at main job
Private sector employee	Worker in the private sector at main job
Self employed at main job	Worker self-employed at the main job
Province	Living place of the worker
Nine largest CMAs	Worker living in nine largest census metropolitan areas
log-employment	Logarithm of the monthly employment
2008 recession	Time period of the 2008 recession
2020 recession	Time period of the 2020 recession
After Covid-19 recession	Time period of after the 2020 recession

Table 2: Tobit Model of Moonlighting
Panel A

Variable	Coefficient	Std	ME on E ($h \mid h > 0$)	Std
Survey year				
2008	-0.513	0.472	-0.070	0.065
2009	-0.516	0.463	-0.071	0.063
2010	-0.278	0.457	-0.038	0.063
2011	-0.636	0.554	-0.087	0.077
2012	-1.842***	0.650	-0.250***	0.091
2013	-1.880**	0.783	-0.255**	0.109
2014	-2.026**	0.818	-0.275**	0.113
2015	-1.996**	0.894	-0.271**	0.124
2016	-1.802*	0.943	-0.245*	0.130
2017	-1.905*	1.150	-0.259*	0.158
2018	-2.205	1.348	-0.299	0.184
2019	-2.094	1.578	-0.284	0.215
2020	-3.915**	1.867	-0.523**	0.250
2021	-1.655	2.615	-0.225	0.355
2022	-2.471	3.036	-0.334	0.408
Survey month				
February	1.058***	0.404	0.142***	0.054
March	0.525	0.418	0.070	0.056
April	0.661	0.413	0.088	0.055
May	1.129***	0.407	0.152***	0.054
June	1.417***	0.450	0.191***	0.060
July	-0.537	0.525	-0.071	0.069
August	-0.985*	0.552	-0.130*	0.073
September	0.143	0.523	0.019	0.070
October	0.247	0.507	0.033	0.067
November	-0.241	0.484	-0.032	0.064
December	0.746	0.479	0.100	0.064

Table 2: Tobit Model of Moonlighting
Panel B

Variable	Coefficient	Std	ME on E $(h \mid h > 0)$	Std
Personal and family characteristics				
Sex				
female	-0.150	0.187	-0.020	0.025
Age				
20-24 years	6.936***	0.452	0.893***	0.056
25-29 years	6.591***	0.502	0.846***	0.062
30-34 years	6.408***	0.523	0.821***	0.065
35-39 years	7.037***	0.522	0.906***	0.065
40-44 years	6.763***	0.524	0.869***	0.065
45-49 years	7.932***	0.520	1.030***	0.065
50-54 years	7.176***	0.530	0.926***	0.066
55-59 years	5.623***	0.543	0.715***	0.067
60-64 years	2.947***	0.584	0.366***	0.072
65-69 years	-1.207	0.740	-0.144	0.088
70 and over	-5.701***	0.921	-0.656***	0.103
Marital status				
married	-1.436***	0.318	-0.193***	0.043
Education				
postsecondary certificate or diploma	3.717 ***	0.207	0.489***	0.027
bachelor's degree and above	4.694***	0.253	0.624***	0.033
Type of economic family				
dual-earner couple	-1.432***	0.350	-0.194***	0.048
single-earner couple, male employed	-2.149***	0.434	-0.290***	0.058
single-earner couple, female employed	-4.432***	0.502	-0.587***	0.065
other families	-1.292***	0.304	-0.175***	0.041

Table 2: Tobit Model of Moonlighting
Panel C

Variable	Coefficient	Std	ME on E $(h \mid h > 0)$	Std
Primary-job characteristics				
Industry at main job				
forestry, fishing, mining, oil and gas	-13.962***	0.788	-1.870***	0.100
utilities	-11.595***	1.245	-1.556***	0.151
construction	-12.742***	0.610	-1.684***	0.081
manufacture - durables	-10.124***	0.670	-1.396***	0.089
manufacture - non - durables	-9.046***	0.692	-1.187***	0.092
wholesale Trade	-8.494***	0.713	-1.144***	0.096
retail Trade	-7.318***	0.551	-1.065***	0.078
transport and warehousing	-8.143***	0.640	-1.141***	0.087
finance, insurance, real estate and leasing	-7.237***	0.620	-1.046***	0.085
professional, scientific and technical services	-8.637***	0.603	-1.178***	0.083
business, building and other support services	-6.897***	0.659	-0.924***	0.090
educational services	-1.354**	0.627	-0.141	0.091
health care and social assistance	-0.650	0.553	-0.114	0.080
information, culture and recreation	-1.599***	0.621	-0.311***	0.089
accommodation and food services	-3,901***	0.592	-0.566***	0.084
other services	-7.132***	0.618	-0.971***	0.085
public Administration	-5.861***	0.686	-0.803***	0.095
tenure	-0.029***	0.001	-0.003***	0.000
part-time status at main job	10.873***	0.208	1.550***	0.031
private sector employee	-0.398	0.314	-0.053	0.042
self employed at main job	5.426***	0.247	0.754***	0.035
Location				
Province				
Prince Edward Island	5.461***	0.562	0.720***	0.074
Nova Scotia	2.023***	0.504	0.258***	0.064
New Brunswick	0.851	0.518	0.107*	0.065
Quebec	1.067**	0.458	0.135***	0.057
Ontario	3.861***	0.435	0.501***	0.055
Manitoba	8.254***	0.460	1.116***	0.059
Saskatchewan	8.504***	0.462	1.153***	0.060
Alberta	5.495***	0.464	0.724***	0.059
British Columbia	5.328***	0.467	0.701***	0.057
nine largest CMAs	-2.053***	0.191	-0.275***	0.025
Business cycle				
log-employment	31.742***	11.417	0.696***	0.121
2008 recession	0.015	0.499	0.002	0.067
2020 recession	5.393	4.622	-0.619***	0.178
after Covid-19 recession	-2.698	2.027	-0.258	0.181

Note: The figure reported as marginal effect of log-employment is the derivative of $E[ln(h)|h > 0]$.

Table 2: Tobit Model of Moonlighting
Panel D

Variable	Coefficient	Std
Iteraction of Covid-19 recession and industry in the main job		
20REC × forestry, fishing, mining, oil and gas	-7.832	10.845
20REC × utilities	-3.019	9.509
20REC × construction	-6.042	5.793
20REC × manufacture - durables	-26.561***	6.519
20REC × manufacture - non - durables	-11.331	7.684
20REC × wholesale trade	-6.801	7.781
20REC × retail trade	-13.273**	5.410
20REC × transport and warehousing	-17.049***	6.082
20REC × finance, insurance, real estate and leasing	-5.018	5.892
20REC × professional, scientific and technical services	-16.895**	7.514
20REC × business, building and other support services	-5.520	6.565
20REC × educational services	-8.379	5.758
20REC × health care and social assistance	-12.201**	5.200
20REC × information, culture and recreation	-7.989	7.089
20REC × accommodation and food services	-5.866	6.306
20REC × other services	-12.140**	6.110
20REC × public administration	-2.433	6.567

Note: The marginal effects are found in Table 4.

Table 2: Tobit Model of Moonlighting
Panel E

Variable	Coefficient	Std
Iteraction of after Covid-19 recession and industry in the main job		
ACR × forestry, fishing, mining, oil and gas	-0.421	2.441
ACR × utilities	0.852	3.570
ACR × construction	1.531	1.775
ACR × manufacture - durables	0.940	1.966
ACR × manufacture - non - durables	3.529*	1.990
ACR × wholesale trade	2.058	2.117
ACR × retail trade	-0.894	1.646
ACR × transport and warehousing	0.671	1.892
ACR × finance, insurance, real estate and leasing	-0.994	1.812
ACR × professional, scientific and technical services	1.842	1.730
ACR × business, building and other support services	2.414	1.956
ACR × educational services	2.791*	1.661
ACR × health care and social assistance	-0.027	1.587
ACR × information, culture and recreation	-2.630	1.875
ACR × accommodation and food services	0.275	1.772
ACR × other services	2.076	1.836
ACR × public administration	1.469	1.806
Regression fit statistics	Observations	1.172.784
	log likelihood	-1.232e+08
	Pseudo R2	0.0217

Note: The reference individual in this analysis is a male, single, aged between 15 and 19 years, with a high school degree. He is employed in the agriculture industry as his main job, working full-time in the public sector. Additionally, he is self-employed in his main job and resides in Newfoundland and Labrador, specifically in an area classified as "other CMA or non-CMA. 20REC and ACR stand for the 2020 recession and after the Covid-19 recession. The marginal effects are found in Table 5.

Table 3: Probit Model of Moonlighting
Panel A

Variable	Coefficient	Std	ME on Prob ($h > 0$)	Std
Survey year				
2008	-0.017	0.015	-0.001	0.001
2009	-0.015	0.015	-0.001	0.001
2010	0.002	0.015	0.000	0.001
2011	-0.014	0.018	-0.001	0.001
2012	-0.056**	0.021	-0.005**	0.002
2013	-0.056**	0.026	-0.005**	0.002
2014	-0.058**	0.027	-0.005**	0.002
2015	-0.062**	0.030	-0.006**	0.003
2016	-0.053*	0.031	-0.005*	0.003
2017	-0.058	0.038	-0.005	0.003
2018	-0.068	0.045	-0.006	0.004
2019	-0.063	0.052	-0.006	0.005
2020	-0.119*	0.062	-0.011*	0.005
2021	-0.038	0.087	-0.003	0.008
2022	-0.066	0.101	-0.006	0.009
Survey month				
February	0.035***	0.013	0.003***	0.001
March	0.018	0.014	0.001	0.001
April	0.019	0.013	0.001	0.001
May	0.033**	0.013	0.003**	0.001
June	0.045***	0.015	0.004***	0.001
July	-0.026	0.017	-0.002	0.001
August	-0.042**	0.018	-0.003**	0.001
September	0.002	0.017	0.000	0.001
October	0.012	0.017	0.001	0.001
November	-0.005	0.016	0.000	0.001
December	-0.027*	0.016	0.002*	0.001

Table 3: Probit Model of Moonlighting
Panel B

Variable	Coefficient	Std	ME on Prob ($h > 0$)	Std
Personal and family characteristics				
Sex				
Female	0.009	0.006	0.000	0.000
Age				
20-24 years	0.232***	0.015	0.019***	0.001
25-29 years	0.216***	0.017	0.018***	0.001
30-34 years	0.206***	0.017	0.017***	0.001
35-39 years	0.230***	0.017	0.019***	0.001
40-44 years	0.221***	0.017	0.018***	0.001
45-49 years	0.258***	0.017	0.022***	0.001
50-54 years	0.232***	0.017	0.019***	0.001
55-59 years	0.179***	0.018	0.014***	0.001
60-64 years	0.092***	0.019	0.006***	0.001
65-69 years	-0.053**	0.024	-0.003**	0.001
70 and over	-0.178***	0.031	-0.010***	0.001
Marital status				
married	-0.050***	0.010	-0.004***	0.001
education				
postsecondary certificate or diploma	0.127 ***	0.006	0.011***	0.000
bachelor's degree and above	0.168***	0.008	0.015***	0.000
Type of economic family				
dual-earner couple	-0.050***	0.011	-0.005***	0.001
single-earner couple, male employed	-0.077***	0.014	-0.007***	0.001
single-earner couple, female employed	-0.153***	0.017	-0.014***	0.001
other families	-0.051***	0.010	-0.005***	0.001

Table 3: Probit Model of Moonlighting
Panel C

Variable	Coefficient	Std	ME on Prob ($h > 0$)	Std
Primary-job characteristics				
Industry at main job				
forestry, fishing, mining, oil and gas	-0.448***	0.026	-0.041***	0.002
utilities	-0.353***	0.042	-0.034***	0.002
construction	-0.409***	0.020	-0.038***	0.002
manufacture - durables	-0.317***	0.022	-0.032***	0.002
manufacture - non - durables	-0.288***	0.023	-0.028***	0.002
wholesale trade	-0.262***	0.023	-0.027***	0.002
retail trade	-0.229***	0.018	-0.025***	0.002
transport and warehousing	-0.255***	0.021	-0.027***	0.002
finance, insurance, real estate and leasing	-0.220***	0.020	-0.024***	0.002
professional, scientific and technical services	-0.264***	0.020	-0.027***	0.002
business, building and other support services	-0.217***	0.022	-0.022***	0.002
educational services	-0.005	0.021	0.000	0.002
health care and social assistance	0.002	0.018	0.000	0.002
information, culture and recreation	-0.023	0.020	-0.005**	0.002
accommodation and food services	-0,122***	0.019	-0.014***	0.002
other services	-0.216***	0.020	-0.023***	0.002
public administration	-0.165***	0.023	-0.018***	0.002
tenure	-0.001***	0.000	0.000	0.000
part-time status at main job	0.381***	0.007	0.043***	0.000
private sector employee	-0.019*	0.010	-0.001*	0.001
self employed at main job	0.167***	0.008	0.017***	0.000
Location				
Province				
Prince edward island	0.192***	0.018	0.017***	0.001
Nova scotia	0.076***	0.016	0.006***	0.001
New brunswick	0.039**	0.017	0.003**	0.001
Quebec	0.046***	0.015	0.003***	0.001
Ontario	0.140***	0.014	0.012***	0.001
Manitoba	0.289***	0.015	0.028***	0.001
Saskatchewan	0.289***	0.015	0.028***	0.001
Alberta	0.190***	0.015	0.017***	0.001
British Columbia	0.191***	0.015	0.017***	0.001
nine largest CMAs	-0.074***	0.006	-0.007***	0.000
Business cycle				
log-employment	1.033***	0.382	4.492***	0.802
2008 recession	0.001	0.016	0.000	0.001
2020 recession	0.168	0.151	-0.012***	0.003
after Covid-19 recession	-0.084	0.067	-0.007*	0.004

Note: The figure reported as marginal effect of log-employment is the derivative of $E[ln(p)]$.

Table 3: Probit Model of Moonlighting
Panel D

Variable	Coefficient	Std
Iteraction of Covid-19 recession and industry in the main job		
20REC × forestry, fishing, mining, oil and gas	-0.359	0.339
20REC × utilities	-0.066	0.321
20REC × construction	-0.184	0.193
20REC × manufacture - durables	-0.902***	0.210
20REC × manufacture - non - durables	-0.365	0.251
20REC × wholesale trade	-0.194	0.260
20REC × retail trade	-0.442**	0.179
20REC × transport and warehousing	-0.577***	0.199
20REC × finance, insurance, real estate and leasing	-0.158	0.194
20REC × professional, scientific and technical services	-0.576**	0.238
20REC × business, building and other support services	-0.172	0.221
20REC × educational services	-0.313*	0.189
20REC × health care and social assistance	-0.401**	0.173
20REC × information, culture and recreation	-0.213	0.246
20REC × accommodation and food services	-0.207	0.205
20REC × other services	-0.412**	0.199
20REC × public administration	-0.118	0.208

Note: The marginal effects are found in Table 6.

Table 3: Probit Model of Moonlighting
Panel E

Variable	Coefficient	Std
Iteraction of after Covid-19 recession and industry in the main job		
ACR × forestry, fishing, mining, oil and gas	-0.025	0.081
ACR × utilities	-0.004	0.115
ACR × construction	0.033	0.058
ACR × manufacture - durables	0.001	0.064
ACR × manufacture - non - durables	0.101	0.066
ACR × wholesale trade	0.040	0.069
ACR × retail trade	-0.049	0.054
ACR × transport and warehousing	0.011	0.062
ACR × finance, insurance, real estate and leasing	-0.058	0.059
ACR × professional, scientific and technical services	0.040	0.056
ACR × business, building and other support services	0.059	0.063
ACR × educational Services	0.071	0.054
ACR × health care and social assistance	-0.023	0.052
ACR × information, culture and recreation	-0.113*	0.062
ACR × accommodation and food services	-0.021	0.058
ACR × other services	0.053	0.060
ACR × public administration	0.034	0.059
Regression fit statistics	Observations	1.172.784
	log likelihood	-63773140
	Pseudo R2	0.0431

Note: The reference individual in this analysis is a male, single, aged between 15 and 19 years, with a high school degree. He is employed in the agriculture industry as his main job, working full-time in the public sector. Additionally, he is self-employed in his main job and resides in Newfoundland and Labrador, specifically in an area classified as "other CMA or non-CMA. 20REC and ACR stand for the 2020 recession and after the Covid-19 recession. The marginal effects are found in Table 7.

Table 4: Tobit Model Decomposition of Marginal Effects for Interaction Term (Covid-19 recession)

Industry	ME on E ($h \mid h > 0$)	Std	Proportion overlap
Forestry, fishing, mining, oil and gas			
Not at Covid-19 recession	-1.859***	0.100	1.195
At Covid-19 recession	-2.989**	1.331	
Utilities			
Not at Covid-19 recession	-1.551***	0.151	0.419
At Covid-19 recession	-2.106	1.296	
Construction			
Not at Covid-19 recession	-1.675***	0.082	0.420
At Covid-19 recession	-2.604***	0.862	
Manufacture - durables			
Not at Covid-19 recession	-1.367***	0.090	-1.316
At Covid-19 recession	-4.444***	0.856	
Manufacture - non - durables			
Not at Covid-19 recession	-1.172***	0.093	0.392
At Covid-19 recession	-2.749***	1.037	
Wholesale trade			
Not at Covid-19 recession	-1.134***	0.096	0.323
At Covid-19 recession	-2.166**	1.093	
Retail trade			
Not at Covid-19 recession	-1.047***	0.078	-0.055
At Covid-19 recession	-2.862***	0.822	
Transport and warehousing			
Not at Covid-19 recession	-1.120***	0.087	-0.379
At Covid-19 recession	-3.339***	0.863	
Finance, insurance, real estate and leasing			
Not at Covid-19 recession	-1.039***	0.086	0.350
At Covid-19 recession	-1.841**	0.898	
Professional, scientific and technical services			
Not at Covid-19 recession	-1.158***	0.083	-0.101
At Covid-19 recession	-3.353***	0.982	
Business, building and other support services			
Not at Covid-19 recession	-0.916***	0.091	0.340
At Covid-19 recession	-1.784*	0.978	
Educational services			
Not at Covid-19 recession	-0.129	0.091	0.367
At Covid-19 recession	-1.409	0.899	
Health care and social assistance			
Not at Covid-19 recession	-0.097	0.080	-0.038
At Covid-19 recession	-1.898**	0.820	
Information, culture and recreation			
Not at Covid-19 recession	-0.300***	0.089	0.310
At Covid-19 recession	-1.518	1.060	
Accommodation and food services			
Not at Covid-19 recession	-0.558***	0.084	0.324
At Covid-19 recession	-1.475	0.963	
Other services			
Not at Covid-19 recession	-0.955***	0.085	0.229
At Covid-19 recession	-2.650***	0.890	
Public administration			
Not at Covid-19 recession	-0.799***	0.095	0.346
At Covid-19 recession	-1.239	1.011	

Note: The base person is working in the agriculture industry. Proportion overlap is the proportion of the average length of the two Confidence Interval arms that do the overlapping, one arm from each Confidence Interval. A negative proportion of overlap indicates the presence of a gap between intervals.

Table 5: Tobit Model Decomposition of Marginal Effects for Interaction Term (After Covid-19 recession)

Industry	ME on E ($h \mid h > 0$)	Std	Proportion overlap
Forestry, fishing, mining, oil and gas			
Not After Covid-19 recession	-1.877***	0.103	1.050
After Covid-19 recession	-1.836***	0.292	
Utilities			
Not After Covid-19 recession	-1.587***	0.158	1.099
After Covid-19 recession	-1.411***	0.418	
Construction			
Not After Covid-19 recession	-1.730***	0.085	1.076
After Covid-19 recession	-1.470***	0.232	
Manufacture - durables			
Not After Covid-19 recession	-1.428***	0.093	1.081
After Covid-19 recession	-1.246***	0.253	
Manufacture - non - durables			
Not After Covid-19 recession	-1.276***	0.096	0.558
After Covid-19 recession	-0.770***	0.261	
Wholesale trade			
Not After Covid-19 recession	-1.200***	0.099	1.068
After Covid-19 recession	-0.884***	0.274	
Retail trade			
Not After Covid-19 recession	-1.053***	0.081	1.067
After Covid-19 recession	-1.115***	0.222	
Transport and warehousing			
Not After Covid-19 recession	-1.166***	0.091	1.076
After Covid-19 recession	-1.026***	0.247	
Finance, insurance, real estate and leasing			
Not After Covid-19 recession	-1.033***	0.089	1.088
After Covid-19 recession	-1.108***	0.238	
Professional, scientific and technical services			
Not After Covid-19 recession	-1.230***	0.086	1.072
After Covid-19 recession	-0.940***	0.230	
Business, building and other support services			
Not After Covid-19 recession	-0.988***	0.094	0.958
After Covid-19 recession	-0.627**	0.259	
Educational services			
Not After Covid-19 recession	-0.214**	0.093	0.711
After Covid-19 recession	0.197	0.232	
Health care and social assistance			
Not After Covid-19 recession	-0.114	0.083	1.099
After Covid-19 recession	-0.113	0.218	
Information, culture and recreation			
Not After Covid-19 recession	-0.249***	0.092	0.968
After Covid-19 recession	-0.597**	0.250	
Accommodation and food services			
Not After Covid-19 recession	-0.578***	0.087	1.067
After Covid-19 recession	-0.513**	0.239	
Other services			
Not After Covid-19 recession	-1.027***	0.089	1.029
After Covid-19 recession	-0.711***	0.243	
Public administration			
Not After Covid-19 recession	-0.845***	0.099	1.151
After Covid-19 recession	-0.611**	0.244	

Note: The base person is working in the agriculture industry. Proportion overlap is the proportion of the average length of the two Confidence Interval arms that do the overlapping, one arm from each Confidence Interval. A negative proportion of overlap indicates the presence of a gap between intervals.

Table 6: Probit Model Decomposition of Marginal Effects for Interaction Term (Covid-19 recession)

Industry	ME on Prob ($h > 0$)	Std	Proportion overlap
Forestry, fishing, mining, oil and gas			
Not at Covid-19 recession	-0.041***	0.002	0.315
At Covid-19 recession	-0.074***	0.027	
Utilities			
Not at Covid-19 recession	-0.034***	0.003	0.351
At Covid-19 recession	-0.050	0.034	
Construction			
Not at Covid-19 recession	-0.038***	0.002	0.339
At Covid-19 recession	-0.063**	0.025	
Manufacture - durables			
Not at Covid-19 recession	-0.031***	0.002	-0.075
At Covid-19 recession	-0.085***	0.024	
Manufacture - non - durables			
Not at Covid-19 recession	-0.028***	0.002	0.321
At Covid-19 recession	-0.066**	0.026	
Wholesale trade			
Not at Covid-19 recession	-0.026***	0.002	0.285
At Covid-19 recession	-0.053*	0.029	
Retail trade			
Not at Covid-19 recession	-0.025***	0.002	0.307
At Covid-19 recession	-0.068***	0.024	
Transport and warehousing			
Not at Covid-19 recession	-0.026***	0.002	0.150
At Covid-19 recession	-0.075***	0.024	
Finance, insurance, real estate and leasing			
Not at Covid-19 recession	-0.024***	0.002	0.315
At Covid-19 recession	-0.047*	0.026	
Professional, scientific and technical services			
Not at Covid-19 recession	-0.027***	0.002	0.185
At Covid-19 recession	-0.075***	0.025	
Business, building and other support services			
Not at Covid-19 recession	-0.022***	0.002	0.300
At Covid-19 recession	-0.047*	0.028	
Educational services			
Not at Covid-19 recession	0.000	0.002	0.321
At Covid-19 recession	-0.040	0.026	
Health care and social assistance			
Not at Covid-19 recession	0.000	0.002	0.150
At Covid-19 recession	-0.049**	0.025	
Information, culture and recreation			
Not at Covid-19 recession	-0.005**	0.002	0.268
At Covid-19 recession	-0.034	0.032	
Accommodation and food services			
Not at Covid-19 recession	-0.014***	0.002	0.305
At Covid-19 recession	-0.042	0.027	
Other services			
Not at Covid-19 recession	-0.022***	0.002	0.333
At Covid-19 recession	-0.065**	0.025	
Public administration			
Not at Covid-19 recession	-0.018***	0.002	0.327
At Covid-19 recession	-0.037	0.028	

Note: The base person is working in the agriculture industry. Proportion overlap is the proportion of the average length of the two Confidence Interval arms that do the overlapping, one arm from each Confidence Interval. A negative proportion of overlap indicates the presence of a gap between intervals.

Table 7: Probit Model Decomposition of Marginal Effects for Interaction Term (After Covid-19 recession)

Industry	ME on Prob ($h > 0$)	Std	Proportion overlap
Forestry, fishing, mining, oil and gas			
Not After Covid-19 recession	-0.042***	0.002	1.111
After Covid-19 recession	-0.037***	0.006	
Utilities			
Not After Covid-19 recession	-0.035***	0.003	1.217
After Covid-19 recession	-0.031***	0.008	
Construction			
Not After Covid-19 recession	-0.039***	0.002	1.058
After Covid-19 recession	-0.032***	0.006	
Manufacture - durables			
Not After Covid-19 recession	-0.033***	0.002	1.176
After Covid-19 recession	-0.028***	0.006	
Manufacture - non - durables			
Not After Covid-19 recession	-0.030***	0.002	0.667
After Covid-19 recession	-0.018***	0.006	
Wholesale trade			
Not After Covid-19 recession	-0.028***	0.002	1.111
After Covid-19 recession	-0.021***	0.006	
Retail trade			
Not After Covid-19 recession	-0.025***	0.002	1.125
After Covid-19 recession	-0.026***	0.005	
Transport and warehousing			
Not After Covid-19 recession	-0.028***	0.002	1.125
After Covid-19 recession	-0.023***	0.006	
Finance, insurance, real estate and leasing			
Not After Covid-19 recession	-0.024***	0.002	1.250
After Covid-19 recession	-0.026***	0.006	
Professional, scientific and technical services			
Not After Covid-19 recession	-0.028***	0.002	1.125
After Covid-19 recession	-0.022***	0.005	
Business, building and other support services			
Not After Covid-19 recession	-0.024***	0.002	1.058
After Covid-19 recession	-0.016**	0.006	
Educational services			
Not After Covid-19 recession	-0.001	0.002	1.000
After Covid-19 recession	0.007	0.006	
Health care and social assistance			
Not After Covid-19 recession	0.000	0.002	1.066
After Covid-19 recession	-0.002	0.005	
Information, culture and recreation			
Not After Covid-19 recession	-0.003	0.002	0.823
After Covid-19 recession	-0.014**	0.006	
Accommodation and food services			
Not After Covid-19 recession	-0.014***	0.002	1.666
After Covid-19 recession	-0.015**	0.006	
Other Services			
Not After Covid-19 recession	-0.024***	0.002	1.111
After Covid-19 recession	-0.016***	0.006	
Public administration			
Not After Covid-19 recession	-0.019***	0.002	1.222
After Covid-19 recession	-0.013**	0.006	

Note: The base person is working in the agriculture industry. Proportion overlap is the proportion of the average length of the two Confidence Interval arms that do the overlapping, one arm from each Confidence Interval. A negative proportion of overlap indicates the presence of a gap between intervals.