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Examining long-term change in employment across men's and women's life course using the PSID: Employment stability, multiple jobholding, and women's labour force participation

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Abstract

A growing body of research examines precarious employment characteristics that have grown in in the context of a shifting labour market landscape and de-stabilizing structural and economic developments that have gained momentum in Western economies since the 1970s. However, less is known about how these characteristics manifest across the individual life course. This dynamism is conceptually salient not only because labour market activity necessarily changes for individuals over time, but also because the concept of precarious employment concerns long-term employment prospects beyond short-term conditions. Even less research examines the extent to which younger cohorts experience ever more precarious employment pathways across the life course than older cohorts, even though their experiences are increasingly embedded in a shifting labour market context. This dissertation examines how three employment phenomena linked to the proliferation of precarious employment—declining employment stability, multiple jobholding, and increases in women's labour force participation (LFP)—manifest across the individual life course and how they relate to important social factors such as the historical timing of labour market activity of different cohorts, gender, educational attainment, race, and family structure.

This dissertation addresses these research gaps by examining long-term pathways of employment that span 10 years or more across the life course, focusing on three distinct but interrelated employment characteristics related to precarious work conditions: employment stability, multiple jobholding, and women's LFP. Drawing on the life course approach, all three of the integrated articles in this dissertation use longitudinal panel data from the U.S. Panel Study of Income Dynamics. The methods used include latent class analysis, growth curve modelling, optimal matching and related sequence analysis techniques, and logistic regression. The findings highlight the benefit of examining complex long-term pathways to understand how individuals experience new labour market realities, as well as how these contribute to structural disadvantage across cohorts, gender, and other sources of labour market inequality.

Keywords

Precarious employment, life course, cohorts, employment stability, multiple jobholding, women's labour force participation (LFP), latent class analysis, growth curve modelling, sequence analysis, PSID, longitudinal methods

Summary for Lay Audience

There is growing evidence of increases in employment characteristics that are linked to economic disadvantage and instability, also known as 'employment precarity.' These changes have occurred in the context of a changing labour market and de-stabilizing structural and economic developments that have gained momentum in Western economies since the 1970s. However, little is known about how employment precarity manifests over the course of individual lives, despite the fact that employment activity necessarily changes for individuals over time and that long-term employment prospects are important for individuals' economic outcomes beyond short-term conditions. Even less research examines the extent to which individuals today experience more precarious employment pathways than individuals in the past, even though their experiences are increasingly embedded in a shifting labour market context. This dissertation examines how three employment characteristics linked to increases in precarious employment—declining employment stability, multiple jobholding, and increases in women's labour force participation (LFP)—manifest across individual lives and how they relate to important social factors such as the historical timing of labour market activity, gender, education, and family structure.

This dissertation addresses these research gaps by examining long-term pathways of employment that span 10 years or more across individual lives, focusing on three distinct but interrelated employment characteristics related to precarious work conditions: employment stability, multiple jobholding, and women's LFP. All three of the integrated articles in this dissertation use data from the U.S. Panel Study of Income Dynamics and various methods that examine change across individual lives and across historical time. The findings highlight the benefit of examining complex long-term pathways to understand how individuals experience new labour market realities, as well as how these contribute to social and economic disadvantages.

Co-Authorship Statement

Chapter 2 (“Examining Change in Long-term Employment Stability across Cohorts of Men and Women (1982-2016)”) is co-authored by Dr. Kim Shuey. Dr. Shuey contributed to the conceptualization, writing, and editing of Chapter 2.

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Chapter 1

1 Introduction

The employment landscape has undergone considerable shifts since the 1970s which have resulted in widespread changes in the structure and characteristics of labour markets in Western economies. A complex interplay of multiple historical structural and economic forces has culminated in three main outcomes that are explored in this dissertation: 1) the proliferation of precarity or instability in employment characteristics; 2) the proliferation of nonstandard forms of engagement with jobs and the job market (e.g., nonstandard hours, multiple jobs, temporary employment, frequent job change or loss); and 3) increased numbers of women in the labour force who are concentrated in employment with precarious or nonstandard characteristics. These developments have generated new employment realities for individuals across the life course that shape their long-term structural attachment to employment positions as well as long-term levels and modes of engagement in the labour force. However, prior literature is limited in the degree to which it examines changing employment across the individual life course.

This dissertation examines pathways of employment for individuals across their life course, organized into three integrated articles featuring original empirical research that examine different but related individual-level employment phenomena and address their specific knowledge gaps. The remainder of this chapter is organized as follows. I begin with a discussion of historical structural and economic forces that have changed the employment landscape. Next, I outline the main theoretical frameworks guiding each of the three integrated articles—structural risk and precarious employment, the life course approach to employment, and the cohort-historical perspective—and the importance of each for understanding changing employment. Then, I provide an overview of the dissertation and each of the three integrated articles. Finally, I conclude with a discussion of the data used in each of the three integrated articles, including differences in how the data are utilized in each article that are due to the specific requirements of each analysis.

1.1 Structural and Economic Developments since the 1970s

This section provides a broad overview of the emergence of structural labour market changes in Western economies post-1970s and how these were set in motion by various macro-level structural and economic developments. First, the rapid expansion of scientific and technical knowledge in the latter half of the 20th Century as well as accelerated advances in information and communication technologies (ICTs) post-1970s (Beck 2000) have resulted in the mechanization, automation, and restructuring of both manual and non-manual occupations (Brown, Lauder, and Ashton 2011; Kalleberg 2011; Rinehart 2006). These processes extracted higher labour productivity from and reduced the cost of a wide range of occupations which has resulted in reduced employment opportunities and lower compensation. While earlier developments in industrial technology primarily affected manual workers in primary and secondary industries, later ICT development has affected lower-skilled white-collar and service work, and in some cases even higher-skilled and knowledge-based occupations (Braverman 1974; Brown et al. 2011; Rinehart 2006). For example, computer-aided design programs complete tasks once requiring the labour of highly trained and skilled workers (Rinehart 2006). In addition, there has been growth in the prevalence of technology able to automate and supersede entire occupations in order to "increase productivity without work" (Beck 2000, p. 42).

Advances in ICTs and transportation have also facilitated globalization, or the global expansion of capital (Bakan 2004; Beck 2000; Kalleberg 2011; Rinehart 2006). In the private sector, organizations have become 'de-spatialized' and operations are relocated to geographic areas suitable for their functions (Beck 2000; Kalleberg 2011): Operations requiring skilled labour (e.g., research and development) are concentrated in countries with higher living standards which have a higher concentration of educated workers, while manual, lower-skilled white-collar, and service labour is offshored to countries with lower corporate taxation, employment regulations, environmental regulations, and labour costs (Beck 2000; Brown et al. 2011; Kalleberg 2011). For instance, Southeast Asia has become the source of customer service labour for a variety

of industries such as transport, banking and insurance, and manufacturing (Nath 2011). Global outsourcing is also facilitated by ICTs which allow for the rapid transfer of standardized manuals for a variety of work (Beck 2000; Brown et al. 2011). However, global outsourcing has more recently affected even highly skilled occupations as emerging economies rapidly develop their scientific, technical, and industrial infrastructure, leading to 'quality-cost revolutions' in countries such as India and China that generate a highly skilled workforce providing a lower wage alternative to that of Western economies (Brown et al. 2011). This has encompassed jobs in research and analysis, financial services, hardware and software design, pharmaceutical development and testing, among others (Brown et al. 2011). 2.3 million jobs in the U.S. were transferred overseas between 2001 and 2007—including over 560,000 in computer production and over 120,000 in professional and technical services (Brown et al. 2011).

Industrial shifts are another important macro-level change affecting employment in Western labour markets: Shifts from primary industries (e.g., agriculture, resource extraction) and secondary industries (e.g., manufacturing, construction) to a knowledge- and service-based economy have resulted in a decline in permanent and unionized blue-collar occupations and a concurrent increase in low wage, insecure, and non-union service sector jobs (Beck 2000; Cranford and Vosko 2006; Kalleberg 2011; Macdonald and Sirianni 1996; Rinehart 2006; Wallace and Kwak 2017). This decline in blue-collar employment opportunities has occurred due to technological and industrial development requiring fewer workers to complete the same level of production (Macdonald and Sirianni 1996; Rinehart 2006), as well as global offshoring of factories and other production capital (Beck 2000; Kalleberg 2011). While the remaining blue-collar jobs in Western economies tend to be permanent, unionized, and offer stable and living wages, these remain at risk of job loss due to further technological restructuring and offshoring, or "company uncertainty" associated with factory shutdowns or downsizing in response to heightened global competition in production (Cranford and Vosko 2006, p. 58). In Canada, for example, 45,000 manufacturing jobs were lost to downsizing and factory closures during the early 1990s (Rinehart 2006). In terms of the concurrent increase of the service sector, 79% percent of all non-agricultural jobs in 1994 were found in the service sector in the U.S.—although this is an underestimate of the prevalence of service

work because it does not include the numerous service jobs found in organizations outside the service sector proper (Macdonald and Sirianni 1996). Employment in the service sector is polarized between a numerical minority of higher paid and skilled employees and a majority of lower paid, low-skill, and insecure positions, with very few mid-level jobs (Kalleberg 2011; Macdonald and Sirianni 1996; Rinehart 2006). There are also higher concentrations of part-time and temporary employment among this lower-paid and low-skill majority of service sector employees (Cobble 1996; Cranford and Vosko 2006; Kalleberg 2011).

Since the late 1960s, inefficiencies associated with large-scale corporate structures became an impediment to profitability (Kanter 1977/1993; Lopez 1996; Ritzer 2011). Such inefficiencies included slowed communication pace and substantial resource costs due to internalized production and service provision. For example, the Fordist 'just-in-case system' involved the purchase and storage of large amounts of raw material and parts, which was found to be expensive particularly when demand is low (Ritzer 2011). These issues ushered in a new era of organizational restructuring and downsizing as a cost-cutting strategy, resulting in reduced employment opportunities and devaluation of labour in a variety of occupations. For example, ICTs allowed for more efficient supervision and coordination of employees which reduced demand for mid- and lower-level managers' internal administrative authority and responsibilities. Other cost-cutting labour strategies included the reduction of permanent employment through downsizing in favour of temporary, outsourced, or subcontracted labour (Cappelli et al. 1997; Kanter 1977/1993; Lewchuk, De Wolff, and King 2007; Rinehart 2006; Smith 2001).

A final economic development is financialization involving the rising prominence of financial capital in Western economies. The relative fluidity and material autonomy of financial as compared to industrial capital is one of the factors that have permitted private companies to expand globally and advance into diverse global markets (Pulignano 2017; Wallace and Kwak 2017). Furthermore, the development of purely financial markets allows for profit-making solely through money and stock trading. With the rising prominence of financial markets, company stock value is contingent on meeting demands from investors and stockholders of continual growth, heightening pressures to avoid

stagnation or downturn (Kalleberg 2011; Ritzer 2011). This heightens competition in the private sector and increases pressures to expand into global markets and improve productive operations through technology. While interrelated developments in financial capital, global expansion, and technological development have increased opportunity for profit-making, they have also intensified competition and uncertainty among private companies and generated difficulties in meeting profit margins and securing consumer bases (Beck 2000; Kalleberg 2011; Rinehart 2006). For example, technological advances have accelerated the pace of product development and innovation, generating unpredictable and fast-paced changes in consumer demand and increasing competition in product markets (Kalleberg 2011).

1.2 Theoretical Framework

1.2.1 Structural Risk and the Proliferation of Precarious Employment

The post-World War II period was characterized by economic growth in which profits and capital expansion lead to rising wages, employment and wage security were regulated by prominent unions and employment regulations, unemployment was low, and employers as well as the state provided benefit coverage (Kalleberg 2011; Rinehart 2006; Vosko 2006). During this period, formal employment standards adhered to the standard employment relationship (SER) model associated with characteristics such as permanent, full-time, unionized employment with fringe benefits and stable wages (Lewchuk, Clarke, and De Wolff 2008; Kalleberg 2011; Shuey and Jovic 2013; Vosko 2007). However, the previously discussed interrelated shifts in technological development, globalization, industrial shifts, organizational restructuring, and financialization post-1970s advanced profit accumulation and productive capacities yet intensified competition and structural insecurity in the private sector[1] (Beck 2000; Kalleberg 2011; Rinehart

[1] Although much of this discussion refers to employment changes in the private sector, public sector employment has also been affected by structural and economic developments such as globalization. In public and state policy, structural economic changes have been paralleled by neoliberal policy which encourages the withdrawal of state provisions and public organizations to cut costs to alleviate lack of corporate taxation or allow the market to replace public with profitable services (Bakan 2004; Rinehart

2006), made employment conditions associated with the post-WWII period more costly to employers, and lead to the erosion of employment characteristics associated with the SER. In order to understand these changes in the labour market landscape and employment characteristics, I draw on the sociology of risk framework (Shuey and O'Rand 2004) which argues that employers take on strategies that redistribute structural risk onto labour in order to maintain profitability and competitiveness in the face of heightened competition and structural uncertainty (Beck 2000; Kalleberg 2011; Shuey and Jovic 2013; Smith 2001; Vogt 2017). Risk redistribution is possible given employers' structural position in the organizational hierarchy which gives them discretion over the terms and conditions of employment. Risk redistribution mechanisms also make the quality and stability of employment more susceptible to market uncertainties, and two general types of mechanisms may be identified: a) cost reduction strategies that put downward pressure on labour compensation and job quality (e.g., wages, benefits, working conditions), and b) flexibilization in the duration and timing of work to adjust to volatile market demand (e.g., layoffs, part-time work, temporary work).

Risk redistribution has resulted in the proliferation of precarious employment characteristics associated with socio-economic vulnerability such as low or volatile wages, little to no fringe benefits, weak protection from unions or employment regulations, and unpredictable employment permanence and scheduling (Kalleberg and Vallas 2017; Shuey and Jovic 2013; Vosko 2006; Vosko 2007; Witteveen 2017). Since the 1970s, there has been downward pressure on real wages for all but the top decile of earners (Brown et al. 2011; Rinehart 2006; Vosko 2007). In contrast, these top earners have experienced wage growth and by 2006, they collected nearly half of all individual income in the U.S. (Brown et al. 2011; Kalleberg 2011). Much of this earnings increase is

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2006; Brown et al. 2011). Policy and state deficits have led to budget cuts that reduce employment opportunities in the public sector, such as in health care, education, and utilities, and has led to the privatization of these jobs which reduces the stable wages, benefits, and job stability ordinarily associated with public sector employment (Wallace and Kwak 2017).

due to increases in compensation for high-level management, whose salaries are linked to company stock value and thus benefit not only from rising profit but also growing financialization of the economy (Kalleberg 2011; Rinehart 2006). Moreover, earnings have declined or stagnated even among some segments of university or college educated workers, which is partly due to the global offshoring of scientific and technical labour (Brown et al. 2011). Other forms of employment compensation have also deteriorated, including fringe benefit provision and quality such as health insurance, pensions, childcare provisions, and vacation pay (Brown et al. 2011; Kalleberg 2011; Shuey and O'Rand 2004; Vosko 2007). For example, the proportion of private sector workers with some form of employer-provided health care coverage in the U.S. dropped from 69% in 1979 to 55% in 2006 (Kalleberg 2011). Even where provided, benefits have been modified to require more investment from workers, such as in the case of the shift from defined benefit pension plans—to which employers solely contribute based on employee wage level and years of tenure—to defined contribution plans which require joint contribution from employers and employees, and employers' portion fluctuates according to market conditions (Shuey and O'Rand 2004).

Furthermore, employers have increased the use of temporary, part-time, on-call, seasonal and other non-standard forms of labour as a lower cost alternative to permanent and full-time employment due to greater flexibility of non-standard employment contracts and their lower compensation (Beck 2000; Kalleberg 2011). Temporary agency or contingent workers, for example, tend to have lower and variable wages and lack benefit coverage compared to permanent workers (Beck 2000; Kalleberg 2011; Lewchuk et al. 2007; Shuey and Jovic 2013)—even among the highest earning temporary workers. Part-time employment is another lower-cost alternative to full-time employment, not only because of the lower paid hours but also because part-time contracts render many employees ineligible for fringe benefits (Branch and Hanley 2017; Kalleberg 2011; Macdonald and Sirianni 1996). Part-time jobs are also disproportionately non-union, have lower hourly earnings, and are at risk of job loss and high turnover (Kalleberg 2011). Part-time workers are also disadvantaged by the state as their low hours and earnings also renders them ineligible for unemployment insurance (Hirsch 2005; Kalleberg 2011).

However, most of the workforce in Western economies tends to be permanent and full-time (e.g., 72% in the U.S., 63% in Canada). Nevertheless, a degree of instability pervades even permanent employment due to previously discussed developments such as organizational restructuring, the global migration of jobs, industrial shifts, and technological change. Employers adjust for fluctuation in labour demand with greater discretion in hiring and firing, mass downsizing, and layoffs of permanent employees (Kalleberg 2011; Rinehart 2006; Vosko 2007). During the post-1970s period employment instability has become more common with shortened employer tenure and higher job mobility among workers of all occupations and education levels (Beck 2000; Hollister and Smith 2014; Kalleberg 2011; Kanter 1977/1993; Osterman 1999; Swinnerton and Wial 1995). Additionally, there is some evidence of increases in long-term unemployment as job seekers encounter difficulties in finding re-employment, with a greater likelihood of deteriorated wages and job quality upon re-employment (Kalleberg 2011; Witteveen 2017).

1.2.2 Gender and Changing Labour Market Conditions

During the post-World War II period characterized by economic expansion, rising wages, and low unemployment, employment standards associated with the standard employment relationship (SER) model (i.e., permanent, full-time, unionized employment with fringe benefits and stable wages; Kalleberg 2011; Lewchuk et al. 2008; Rinehart 2006; Shuey and Jovic 2013; Vosko 2007) primarily shaped men's rather than women's employment. The SER model was constructed around the male breadwinner/female caregiver model of gender relations (Shalla 2007; Vosko 2006; Vosko 2007), in which men are held responsible for economic production and labour market engagement which reserves them rights to stable employment and 'family' wages high enough to support a household as the sole breadwinner (Rinehart 2006). In contrast, gendered assumptions about women's nurturing role and their responsibility for household and caregiving labour provides justification for their exclusion from employment characteristics based on SER standards due to assumptions that they are unsuitable for the commitment associated with standard employment, and that they have access to financial resources other than their own wages (i.e., their male partner's wages; Cranford and Vosko 2006; Shalla 2007; Vosko 2006;

Vosko 2007). Employers have historically put downward pressure on wages to maximize profit and have particularly profited from women's labour given that it has been generally unprotected by state regulation compared to men (Glenn 2003). Evidence shows that women earn lower wages than men (Crowley 2013; Rinehart 2006) and experience lower employment stability with shorter employer tenure (Kalleberg 2011). The provision of employment fringe benefits—including pensions, parental leave, childcare provisions, and health insurance plans—is also stratified by gender given women's lower engagement in higher earning and stable employment that offers these benefits (Shuey and O'Rand 2004). Women are also concentrated in employment with little organizational or labour market commitment such as part-time or temporary forms of employment (Crowley 2013; Rinehart 2006), as opposed to permanent, full-time positions (Vosko 2006). Even within temporary employment there are gender differences with women concentrated in positions with more casual or unpredictable hours and contract length, while men are more likely employed in seasonal work that tends to be full-time and lasts for definite periods of time (Vosko 2006).

Overall, women's employment has historically been and continues to be more precarious than men's, and the erosion of employment characteristics associated with the SER during the 1970s has been considered the "feminization of employment norms" due to wider increases in employment characteristics associated with women's work (Cranford and Vosko 2006, p. 46; Shalla 2007). Furthermore, women continue to be responsible for the majority of household, childcare, and caregiving labour (Acker 1990; Glenn 2003; Kanter 1977/1993), despite working longer and less predictable hours in recent years (Shalla 2007). Vosko (2006:33) argues that there is a "gendered tradeoff" for engaging in precarious positions—in which women take on precarious work to balance either household/caregiving responsibilities or education, while men primarily engage in precarious work to allocate more time towards education. Although there may be benefits to prioritizing family over work for some women, there are structural disadvantages including less work experience, lower earnings, and reliance on others for economic security.

Nevertheless, women's labour force participation (LFP) and employment activity have increased dramatically since the 1960s in Western economies. Much of this has been attributed to delayed marriage and childbearing and higher divorce rates as women spend a shorter portion of their lives oriented towards the household and family than in the past (Casper and Bianchi 2002; Goldin 2006; Goldin and Katz 2002; Kalleberg 2011), as well as the historical expansion of the private sector into the household production of goods and services (e.g. textiles, food processing; Braverman 1974; Glenn 2003). Another explanation is declines in men's wages (Kalleberg 2011) coupled with increases in women's wages post-1960s (Doepke, Hazan, and Maoz 2015; Macunovich 2012) which resulted in both the increased ability and need for women to supplement household incomes—although women's earnings remain lower than men's. Increases in women's LFP during the 1970s may also be linked to the proliferation of precarious employment in the same period, as their higher participation provides an increasing number of workers who are historically accustomed to lower wage and precarious jobs (Kalleberg 2011). Moreover, women's increasing LFP also occurred during a period of industrial shift towards a service- and knowledge-based economy which proliferated lower earning and precarious service sector jobs and lower-skilled white-collar employment in which women tend to be concentrated (Charles and Grusky 2004; Kalleberg 2011; Macdonald and Sirianni 1996; Rinehart 2006). In the service sector, even full-time and permanent jobs tend to be more precarious than in other industries, and an estimated 30% of full-time permanent service workers earn wages that place them below the poverty level (Cranford and Vosko 2006). In U.S. major metropolitan areas, increases in precarious jobs (with low wages and lack of fringe benefits) has been directly attributed to industrial shifts associated with declines in manufacturing and the public sector and increases in the service sector (Wallace and Kwak 2017).

1.2.3 The Life Course Approach: Individual Employment Patterns

A limitation of most sociological research on employment is that it does not consider the dynamic realities of labour market activity (Blossfeld 2009; Kohli 1988; Kruger and Baldus 1999). At the individual level, much research assumes static labour market states such as being continuously full-time or part-time employed, unemployed, or out of the

labour market (Kohli 1988) and ignores how individuals may move in and out of employment positions over time. Instead, a life course approach may be applied to sensitize investigation to the fundamental importance of dynamic process and temporal context for understanding social realities (Elder Jr., Johnson, and Crosnoe 2003; Heinz and Kruger 2001; O'Rand 1998).

The life course concept of intra-individual variation—i.e., individual-level within-person patterns of stability and change (George 2009)—is instrumental for conceptualizing individuals' dynamic movement in and out of employment over time. Paying attention to intra-individual employment patterns over time helps identify empirical realities for populations that don't experience consistent stability in employment experiences. This is central for guiding research on contemporary precarious employment conditions given its focus on the instability of employment—such as job loss or temporary work—or persistent engagement in precarious jobs over time. Moreover, the concept of precarity does not only concern one's current employment position, but also about 'prospects'—e.g., the probability of continued employment or re-employment, or changes in earnings over time (Witteveen 2017). Precarity emerges across individual employment patterns and may intensify or diminish in certain periods of one's life (Witteveen 2017).

Furthermore, employment precarity or instability may be understood against the backdrop of the concept of the life course, which is conceptualized as individual movement through a series of age-graded, theoretically significant statuses and roles within various life domains such as the labour market across the entire life span (Cain 1964; Giele and Elder Jr. 1998; O'Rand 2003; O'Rand 2006). Other concepts may be used to conceptualize employment phenomena as elements across the life course (George 2002; Giele and Elder Jr. 1998; Settersten 2003), including life course 'states' which conceptualize discrete statuses (e.g., full-time employed, part-time employed), 'events' conceptualizing short-term change in state (e.g., job loss indicating exit from permanent employment), or 'transitions' between states (e.g., movement from permanent to temporary positions, or from part-time to full-time). Multiple states, events, and transitions may be linked together over time using the concept of life course 'trajectories'

(Clipp, Pavalko and Elder Jr. 1992; George 2009; Pavalko 1997). Trajectories may be used to identify individuals' long-term experiences of precarity in employment such as, for example, patterns of frequent movement in and out of full-time and part-time employment and unemployment (e.g., Witteveen 2017), or consistent churning through temporary jobs over time.

1.2.4 The Life Course Approach: The Cohort-historical Perspective

An important aspect of the life course approach is its emphasis on historical context for examining individual outcomes (Elder Jr. 2003; Mortimer and Moen 2016; Settersten 2003). Life course trajectories are not only structured by individual pathways over time as individuals age, but also the wider context such as historical conditions (Giele and Elder Jr. 1998). The cohort-historical perspective prioritizes the relationship between historical conditions and human lives, which are connected by a variety of cultural, demographic, and institutional mechanisms (Elder Jr. et al. 2003). The cohort-historical perspective also uses the concept of the birth cohort to link individual-level processes across the life course to macro-level change (Elder Jr. 2003). Birth cohorts are defined as groups of individuals born during the same historical period who thereby share a similar historical experience (Alwin and McCammon 2002; Elder Jr. 2003; Elder Jr. et al. 2003). The primary goal of cohort-historical life course research is to determine inter-cohort differences which allows researchers to determine how the wider historical context during which cohorts experience period of their life course lead to different cohort characteristics, such as different life course patterns (Elder Jr. 2003; George 2002; Settersten 2003).

Some literature has conceptualized a 'Fordist life course contract' reflective of the standard employment relationship (SER) of the post-WWII period, characterized by stable work patterns with a single employer, bolstered by internal hiring practices, promotions, and benefits that retain organizational loyalty (Marshall and Taylor 2005). Structural and economic changes since the 1970s necessitate new understandings of employment conditions over the life course in the context of globalization, rapid technological development, heightened market competition, and industrial shifts leading

to declines in blue-collar industrial work and the expansion of the service sector (Blossfeld 2009; Marshall and Taylor 2005; Mortimer and Moen 2016; O'Rand 2006). These developments and resulting increases in employment precarity have also affected employment patterns across the life course, such as through greater discontinuity in long-term employment (Witteveen 2017). This may be examined, for example, as differences across cohorts in life course patterns of precarious employment, such as whether younger cohorts experience more frequent patterns of job loss or displacement, or frequent movement out of permanent full-time employment and into precarious forms such as part-time or temporary work.

1.3 Overview of Dissertation

This dissertation consists of three integrated articles, each of which empirically examine individuals' long-term pathways of employment over the life course, with a particular focus on employment characteristics that may be linked to wider shifts in the employment landscape.

Chapter 2 advances existing research on employment stability by examining stability over the life course of individual workers and whether historical declines in employment stability as found in prior research (Hollister and Smith 2014; Kalleberg 2011; Osterman 1999; Swinnerton and Wial 1995) extend to less stable employment trajectories for younger cohorts of workers. This chapter examines a latent construct of employment stability derived from three longitudinal measures including involuntary job loss, full-time hours, and multiple jobs. Each of the three measures captures different aspects of employment stability: Involuntary job loss is a common measure of instability used in the literature and focuses on termination of tenure in an employment position; Full-time employment is a broader measure of stability that is used to capture whether individuals maintain full-time engagement over time; and holding multiple jobs simultaneously or consecutively has been identified in the literature as a risk-management strategy in response to unstable employment as well as an inability to secure ongoing attachment to a single permanent job. These three measures are then used in a latent variable analysis to identify four employment patterns over a 10-year period in mid-life that reflect pathways that can be characterized by the labels *Least stable, Full-*

time discontinuity and multiple jobs (men only), *Low employment activity* (women only), and *Most stable*. This latent construct of employment stability is measured separately for men and women, and the analysis begins by examining the overall extent of employment stability during the post-1980s period available in the data. Next, differences in these gender patterns are analysed across cohort to determine historical changes in terms of whether younger cohorts of men and women experience less stable employment over the life course than older cohorts over the period available in the data (1982-2016). The analysis further examines forms of labour market inequality other than gender to determine how patterns of employment stability over the life course are related to educational attainment, race, and family structure.

The results show that the overall levels of employment stability across 10 years of midlife for the sample is high, evidenced by low incidence of involuntary job loss, continuity in full-time employment (albeit for men only, while women experience substantially less continuity), and infrequent engagement in multiple jobs over the long-term. Nevertheless, the results show evidence of declining stability across cohorts in the latent measure and across all three longitudinal indicators—particularly for men, and to a lesser extent for women. Finally, the results show that employment stability over the life course is significantly related to and runs parallel with other sources of labour market inequality including educational attainment and race. For women, parenthood was found significantly related to lower employment stability as well as lower employment activity overall, particularly for women who become mothers at younger ages, which is consistent with prior research showing the destabilizing influence of childbearing on women's long-term employment (Cranford and Vosko 2006; Damaske and Frech 2016; Ponomarenko 2016).

Chapter 3 focuses more closely on the practice of multiple jobholding (MJH) or 'moonlighting' which may be considered a labour market risk-management strategy that individuals use to offset employment precarity and instability (as suggested by results in Chapter 2) as well as to offset economic disadvantage and low earnings more generally. While most existing research is cross-sectional, Chapter 3 advances this literature by examining MJH across long-term individual pathways and its long-term relationship with

labour income. The key measure is a longitudinal indicator of whether individuals hold two or more jobs simultaneously during an observed year over the period 2002-2018. Although the sociological literature associates MJH with labour market precarity and declining earnings in the context of structural economic shifts and employment precarity proliferation (e.g., Beck 2000; Kalleberg 2011), in the broader literature there is ongoing debate concerning whether MJH is more closely related to structural advantage by way of diversification of job skills and experience and due to its positive relationship to higher education. To investigate this, the analysis examines the association between MJH and labour income and whether MJH is associated with upward or downward earnings growth for individuals over the long-term. The analysis further investigates variation by education in terms of whether the labour income advantage/disadvantage associated with MJH as well as its influence on earnings growth differs between higher and lower educated workers.

The results from Chapter 3 generally show that MJH is related to lower labour income, on average, and that this relationship holds true for both higher and lower education workers. However, there is significant variation by education in terms of the influence of MJH on earnings growth across individual pathways of employment: Higher educated workers—particularly those with a bachelor's degree—experience significant growth in earnings from MJH, to the extent that they are able to offset lower average labour income compared to single jobholders. This advantage in earnings growth is not found among less educated workers, and the findings reveal flat earnings for the less educated over time regardless of single or multiple jobholding. While wider increases in precarious conditions such as labour market instability and declining earnings across all segments of the labour force may make strategies such as MJH appealing to workers, results from Chapter 3 suggest that persistent labour market inequality by education reserves benefits of such strategies primarily for the higher educated.

Chapter 4 examines women's long-term labour force participation (LFP) across 12 years of the life course starting from when women are in their mid-20s until their early 40s, as well as changes in these long-term patterns across cohorts spanning the period 1978-2018. Women's LFP frequently features part-time employment as well as

interruptions in participation due to domestic work, often in response to gendered divisions of labour and family and household responsibilities (Casper and Bianchi 2002; Vosko 2006), so the analysis in Chapter 4 examines a longitudinal measure of LFP that reveals patterns of full-time employment, part-time employment, unemployment, domestic work, and a final 'other' not-in-labour force (NLF) category. The analysis begins with an examination of common patterns of LFP across women's work trajectories during the period observed (post-1970s). Cross-sectional research also shows widespread increases in women's LFP during this period (Anyadike-Danes and McVicar 2010; Casper and Bianchi 2002; Goldin 2006; Kalleberg 2011), with some evidence showing a stalling or slight decline during the 1990s and 2000s (England 2010; Goldin 2006; Huang 2018). However, limited research has examined whether these trends have also been paralleled by increases in women's long-term LFP across the life course, and so the analysis in Chapter 4 continues by examining the extent to which women's patterns of LFP over the life course have increased across cohorts. Due to the negative relationship between women's LFP and childbearing (also found in the results in Chapter 2) and the fact that historical increases in women's LFP have been attributed to delayed childbearing and lower fertility, the analysis also examines how long-term LFP patterns across cohorts differ between women who have children at earlier or older ages, as well as between women with a lower or higher number of children.

Results from Chapter 4 reveal a rare empirical portrait of the variety in women's pathways of LFP from their mid-20s to early 40s during the post-1970s period, in which just under a third of women in the sample experience long-term LFP in terms of substantial periods of continuous full-time engagement. Of these women experiencing trajectories described by the label *Continuous full-time,* the majority still experience some incidence of part-time employment or, less frequently, unemployment, domestic work, and other forms of labour force inactivity. Over two-thirds of women in the sample experience substantially lower LFP with particularly frequent periods of part-time employment and domestic work, which can be described by several distinct trajectories labelled as *Continuous part-time, Domestic work and part-time, Transition to part-time,* and *Transition to full-time*. These results highlight not only the prevalence of lower participation among women, but also illustrate the concentration of women in precarious

employment with low, nonstandard part-time hours as found in prior research (Cranford and Vosko 2006; Kalleberg 2010; Vosko 2006). They also illustrate how access to employment with characteristics associated with the SER has historically excluded women (Shalla 2007; Vosko 2006; Vosko 2007).

The results in Chapter 4 also reveal increases across cohorts in women's long-term LFP across the life course, determined by higher probabilities of engagement in the *Continuous full-time* trajectory for younger cohorts of women. The analysis further found this result to hold among women with different parenthood characteristics, including women who bear children at a younger age and who have a higher number of children. Nevertheless, despite increases across cohorts, long-term patterns of LFP are higher among women with no children, who have children at older ages, or who have fewer children, as is consistent with the general literature. While these results generally highlight women's advances in the labour force, this should not be seen simply as an outcome of declining labour market disadvantage among women but should rather be understood in the context of wider structural changes in employment. Namely, much of the increase in women's LFP occurred post-1970s (Goldin 2006; Kalleberg 2011) during which there was also a wider erosion of the SER and increases in precarious employment, as well as industrial shifts towards a service- and knowledge-based economy which proliferated lower earning and precarious service sector jobs and lower-skilled white-collar employment (Kalleberg 2011; Rinehart 2006)—jobs in which women tend to overrepresented (Charles and Grusky 2004; Macdonald and Sirianni 1996; Rinehart 2006).

1.4 Data

All three of the integrated articles in this dissertation use longitudinal panel data from the Panel Study of Income Dynamics (PSID; Johnson et al. 2018; McGonagle et al. 2012; PSID 2019). The PSID has a long-running collection period that has collected ample longitudinal data on multiple cohorts and more than 82,000 individuals from 1968 to 2019, collecting information on various themes including employment, income, education, and socio-demographics such as gender and race. The PSID's data collection strategy involves a stratified random sampling of families in the U.S., and data are

collected on each individual belonging to the sampled family unit. The analytic samples used in this dissertation consist only of those respondents who are identified as the "Reference Person" or "Spouses" in the family unit. This is because the most consistent and detailed employment data are collected only for these individuals. To adjust for unequal probabilities of sample selection, as well as the PSID's complex sampling method and non-independence of individual cases belonging to the same family unit, all analyses are adjusted using sample weights, as well as the strata and cluster variables provided with the PSID.

However, there are several differences across the integrated articles in terms of the analytic samples, which are due to the specific requirements of each analysis including age- and employment-related sample restrictions. Furthermore, PSID data collection occurred annually between 1968-1997 and was thereafter collected biannually with the final wave collected in 2019, so the integrated articles also contain differences in terms of whether they use an annual or biannual longitudinal measurement strategy. All of these differences between the articles are discussed in turn below.

The primary objective of Chapter 2 is to examine employment stability over the long term, and to control for the higher incidence of employment instability and lower employment activity during early adulthood due to educational attainment, as well as the higher incidence at older ages approaching retirement, the sample restricted to individual cases during their mid-life—between ages 34 and 45—which are the ages most strongly associated with employment stability and higher participation. While the variables used to generate two of the measures used to construct the latent measure of employment stability (full-time employment and multiple jobs) are available at earlier waves of the PSID, the analysis is restricted to the 1983-2017 waves because a consistent measure of the variables used to generate the involuntary job loss measure are only available in waves 1983 onwards. Finally, the longitudinal measures retain an annual measurement strategy (see Chapter 2, Footnote 2) because the variables used to generate the job loss, full-time, and multiple jobs measures are continuous in their collection of annual employment information.

While a variable indicating whether individuals held multiple jobs in a given year is available in waves 1968 onward of the PSID, the analysis in Chapter 3 examines a more precise measure of multiple jobholding that directly measures whether jobs are held simultaneously—i.e., whether there is overlap in the start and end dates of two or more jobs. Given that this type of measurement is only possible using the 2003-2019 waves of the PSID which are the only waves providing variables indicating the start and end dates of each job held, the analysis retains only these waves. Furthermore, because the analysis is concerned with different types of employment engagement (i.e., multiple vs single jobholding), as opposed to comparing differences between the employed, unemployed, or labour force non-participants, the sample is restricted to individuals who report being employed at some point in each wave observed. The analytic sample is further restricted to individuals who are not self-employed on their primary job because prior research suggests that much theory and evidence on MJH is not easily extendable to the main-job self-employed (Atherton et al. 2016). The final sample restriction is based on age, and the sample is limited to individuals who are between the ages of 25 and 44 in the first observed wave in 2003, who are followed longitudinally until they are between the ages of 41 and 60 in the final observed wave in 2019. This is a less restrictive age limitation than Chapters 2 and 4 because the analysis is primarily interested in MJH over the long term regardless of age, which is nevertheless used as a control variable in the multivariate analyses. Finally, while the 2003-2019 waves are collected biannually, the variables used to derive the multiple jobholding variable cover the entire two-year period preceding data collection and as such contain annual information on the start and end dates of each job. In contrast, however, the labour income variable refers only to the prior year and thus does not collect complete annual information on labour income. Since data on labour income is only available biannually, each longitudinal measure in the analysis including MJH uses a biannual measurement strategy.

Chapter 4 focuses only on women's LFP, and so the sample is restricted only to women. Furthermore, the analysis excludes younger adults for whom lower LFP may be due to educational attainment and training, as well as older adults who may be approaching retirement; this restricts the sample to individuals who are 26 in the first observed wave until they are 39 in the final observed wave. The analysis is further

limited to the 1979-2019 waves of the PSID. This is because the variable used to determine whether women are unemployed or engage in domestic work to construct the measure of LFP are only available from waves 1979 on for those individuals identified as 'Spouses' in the family unit, and the majority of women in the PSID are 'Spouses.' Finally, the variable used to determine unemployment or domestic work refers only to the prior year and does not collect complete annual information on employment status, and thus the analysis uses a biannual measurement strategy.

1.5 A Note on the Integrated Article Format

Although Chapters 2, 3 and 4 focus on different aspects of employment and contain unique empirical analyses, due to the integrated article approach there is some repetition between chapters in the description of the common source of data used and in some of the substantive discussion of prior literature.

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Chapter 2

2 Examining Change in Long-term Employment Stability Across Cohorts of Men and Women (1982-2016)

Research from North America suggests historical declines in employment stability starting in the last quarter of the 20th century including decreased employer tenure and increases in corporate downsizing (Boisjoly, Duncan, and Smeeding 1998; Cappelli 1999; Hollister and Smith 2014; Kalleberg 2011; Osterman 1999; Swinnerton and Wial 1995). Although women have historically experienced less stable connections to the labour market than men, research suggests that patterns of declining stability have been concentrated among men while women experienced increases during the post-WWII period, followed by stalls or decreases post-1990s (Hollister and Smith 2014; Osterman 1999; Swinnerton and Wial 1995). The empirical approach of this research commonly examines employment stability at one point in time using aggregate measures such as job loss or change, or employer tenure (length of time with one employer; e.g., Hollister and Smith 2014; Kalleberg 2011; Osterman 1999; Swinnerton and Wial 1995). However, less research has examined patterns of employment stability for individual workers and whether broader labour market forces of instability extend to less stable employment histories for men and women over the life course.

This study uses longitudinal panel data from the 1983-2017 waves of the Panel Study of Income Dynamics (PSID) to examine the extent to which men and women maintain stable employment over a portion of their work life course. We examine multiple dimensions of employment stability using latent class analysis (LCA) to capture the interrelationship between three distinct dimensions: involuntary job loss, continuity of hours worked, and multiple jobs. The results are used to answer three research questions, each of which is examined separately for men and women. We first determine the extent of employment stability for men and women over a 10-year period in mid-life. We next explore historical changes in employment stability, asking whether younger cohorts of men and women experience less stable patterns of employment than older cohorts over

this period. Finally, we examine inequalities in patterns of stability associated with education, race, and family structure.

2.1 The Changing Employment Landscape

Broader socioeconomic changes during the post-1960s period provide the impetus for declining employment stability among workers. In particular, four interrelated structural and economic forces gained momentum post-1960s that have had wide-ranging influence on workers across occupations, education and earnings levels. Technological developments in the mechanization and automation of industrial production and corporate operations are associated with declining employment stability by way of reduced employment opportunities as occupations are restructured to extract higher labour productivity and reduce labour costs, particularly in primary and secondary industries (Beck 2000; Brown, Lauder, and Ashton 2011; Kalleberg 2011; Rinehart 2006). Likewise, advances in information and communication technologies (ICTs) have been applied to restructure and reduce costs of both manual and non-manual employment, including white-collar and knowledge-based occupations (Braverman 1974; Brown et al. 2011; Rinehart 2006). Technological developments in communications and transportation have also facilitated globalization and the global expansion of capital (Bakan 2004; Beck 2000; Kalleberg 2011; Rinehart 2006). In the private sector, globalization has allowed efficient relocation strategies, such as moving specific operations to other countries with lower corporate taxation, fewer employment and environmental regulations, and lower labour costs (Beck 2000; Brown et al. 2011; Kalleberg 2011). This has contributed to a decline in employment opportunities for both higher and lower educated workers in Western economies, particularly as emerging economies such as that of China and India have expanded their scientific and technical infrastructure in recent decades and increasingly provide a highly educated but lower cost alternative to Western workforces for various industries (Brown et al. 2011).

Post 1970s, the costs associated with large-scale corporate structures ushered in a new era of ongoing organizational restructuring and downsizing as a cost-cutting strategy, leading to employment loss for workers (Bakan 2004; Kanter 1977/1993; Lopez 1996; Rinehart 2006; Ritzer 2011). Such strategies have been used, particularly between

the 1980s and 90s, to lower costs by reducing the share of permanent and increasing the use of temporary, outsourced, or subcontracted labour (Cappelli et al. 1997; Rinehart 2006; Smith 2001). A final development in Western economies beginning in the 1970s included industrial shifts away from employment in primary and secondary industries combined with an increase in knowledge-based industries and service industries where jobs are relatively less permanent, low wage and non-union (Wallace and Kwak 2017).

Post-1960s structural and economic developments are associated with the erosion of standard employment norms and practices (Beck 2000; Kalleberg 2011; Rinehart 2006). The s*tandard employment contracts* that are considered to have served as a model for industrial employment relations during the 1940s-1960s reflected a social contract in which employees exchanged labour in return for permanent and full-time work, as well as collective bargaining opportunities, stable and living wages, and fringe benefits (Kalleberg 2011; Lewchuk, Clarke, and de Wolff 2008; Rinehart 2006; Shuey and Jovic 2013; Vosko 2007). Newer *precarious* norms have become more influential in recent decades, placing greater responsibility for structural labour market risks on the employee across all segments of the labour market—across occupation, education level, earnings, and gender (Beck 2000; Brown et al. 2011; Kalleberg 2011; Kalleberg and Vallas 2017; Kiersztyn 2017; Shuey and Jovic 2013). The institutionalization of employment precarity is associated with broad increases in a range of structural employment characteristics that suggest greater employment instability including temporary contracts, flexible schedules, and higher likelihood of losing permanent employment (Kalleberg and Vallas 2017; Vosko 2006; Vosko 2007).

2.2 Conceptualizing Employment Stability in a Changing Landscape

The literature on trends in employment stability resulting from these broader historical changes has typically focused on worker attachment to a single employer or position as an indicator of stability, captured empirically through measures of tenure. Other research focuses on the termination of this attachment using measures of involuntary job loss, which is a de-stabilizing event often involving the loss of access to earnings and benefits. Moreover, some studies show that involuntary job loss has longer term economic

consequences for workers, including lower rates of re-employment, reduction in later wages following re-employment, and lower likelihood of full-time re-employment (Couch and Placzek 2010; Davis and Wachter 2011; Farber 2004; Farber 2015). Research and available labour market data also highlight how less educated workers without a college or university education are most at risk of employment instability, particularly in the form of lower tenure and retention rates, as well as higher unemployment rates (Bureau of Labor Statistics 2022a; Kalleberg 2011). Wider racial disadvantages in the labour market also extend to employment instability, which is more pronounced among non-White populations: Prior research finds higher rates of involuntary job loss, layoffs, and unemployment among Black and other non-White workers, compared to White workers (Bureau of Labor Statistics 2022b; Kalleberg 2011; Strully 2009; Wilson and McBrier 2005).

The conceptualization of employment stability as focused on single-employer attachment has roots in norms of the post-war standard employment contracts that prioritized permanent tenure with a single employer. Based on this conceptualization of stability, research using measures such as employer tenure generally show aggregate declines in employment stability over the period of the 1980s to 2000s, although findings are not consistent (Farber 2008; Hollister and Smith 2014; Kalleberg 2011; Osterman 1999; Swinnerton and Wial 1995). However, since newer precarious norms hold less promise of attachment to a single employer or position, conceptualizing and measuring employment stability solely in terms of continuity in a single employment position may be insufficient for understanding the heterogenous experiences of more recent cohorts of workers.

The changing landscape of employment contracts suggests that to better understand variations in employment stability it is important to move beyond measuring single-employer attachment to consider more contemporary qualities of employment histories, such the ability to maintain continuous full-time employment, the ability to avoid involuntary job loss, and the ability to avoid churning through multiple jobs over a period of the work life course. Full-time employment provides eligibility for certain social benefits unavailable to those working part-time or fewer hours, and full-time

employment is more strongly associated with higher hourly earnings, permanent contracts, and collective bargaining opportunities (Cranford and Vosko 2006; Vosko 2006; Witteveen 2017). At a minimum, maintaining full-time employment indicates some stability and predictability in employment earnings. In fact, recent research shows that the maintenance of full-time employment over a period of time (measured longitudinally across five years) is significantly associated with a premium in later earnings, controlling for other employment characteristics (Witteveen 2017). The percentage of White workers in full-time employment is somewhat higher than among Black (0.5% higher), Hispanic (0.7%), and Asian workers (1.1%; Bureau of Labor Statistics 2022c). However, racial differences are more pronounced in terms of long-term full-time employment, with Black, Hispanic, and other non-White workers having been found significantly less likely than White workers to maintain trajectories of continuous full-time employment, net of other characteristics (Witteveen 2017).

Within the context of precarious employment norms, structurally advantageous forms of employment may be increasingly difficult for individuals to maintain. Indeed, there is evidence that full-time employment is becoming less common and has declined as a proportion of total employment from the 1970s to the early 2000s in the U.S. and Canada, while part-time and temporary forms of employment have seen increases over the period (Kalleberg 2011; Vosko 2006; Vosko 2007; Vosko and Clarke 2009). However, this evidence of cross-sectional trends does not indicate how these changes are reflected in individual workers abilities to maintain full-time employment over their work life course or how individual employment trajectories change over time across cohorts of workers.

Further, maintaining continuous full-time employment may necessitate managing multiple jobs in order to obtain the desired number of hours and earnings. For example, individuals may need to hold several positions simultaneously, which is referred to as multiple jobholding or ‘moonlighting’ (Campion, Caza, and Moss 2020). Prior research finds that the most commonly reported motivations for moonlighting include insufficient hours or insufficient earnings from a primary job (Averett 2001; Hipple 2010; Paxson and Sicherman 1996) and that moonlighters tend to receive lower wages and are poorer

on average than other workers (Kimmel 1995). As such, moonlighting has been identified as a risk-management strategy if an individual's present employment is perceived as unstable or insecure and earnings are volatile (Campion et al. 2020; Cowell 1981; Guariglia and Kim 2004; Hlouskova et al. 2017; Throsby and Zednik 2011). However, simultaneous multiple jobholding may not be the only way that individuals engage in several jobs or positions as a way to reach sufficient hours and earnings or as a risk-management strategy: An individual may also do so through frequent job changes between several short-term or temporary positions over a period of time. Indeed, any engagement in more than one job—whether consecutively or simultaneously—may be indicative of less employment stability and an inability to secure an attachment to one single job that provides sufficient hours, earnings, and benefits.

2.3 Gender and Employment Stability

Overall, women experience less employment stability than men with shorter employer tenure (Kalleberg 2011). Research indeed shows that women have substantially different employment patterns across the life course than men, including less employment activity overall (Damaske and Frech 2016). There are several explanations for women's lower attachment to the labour force and reduced employment stability, including their relatively higher number of hours allocated towards family and domestic responsibilities and gender-based labour market constraints and structural disadvantages that make stable employment less possible (Cranford and Vosko 2006; Damaske and Frech 2016; Ponomarenko 2016; Widmer and Ritschard 2009). Not only do caregiving responsibilities reduce employment stability for women, but also childbirth at younger ages, as well as a greater number of children, are related to more traditional domestic roles for women and higher hours of domestic work, which can impact time available for paid employment (Wheeler and Gunter 1987). Although there may be benefits in prioritizing family over work for some women, there are structural disadvantages associated with women's lower employment stability including less work experience, lower earnings, and reliance on others for economic security.

While prior research shows declines in employment stability for men during the post-WWII period, there is evidence that broad advances in labour market attachment

among women have actually contributed to increases in women's employment stability over the period of the 1970s to 1990s (Boisjoly et al. 1998; Cappelli 1999, Kalleberg 2011; Osterman 1999; Valletta 1999). However, more recent evidence suggests stalls or declines in employment stability for women post-1990s (Hollister and Smith 2014). Few of these studies have examined differences in employment stability beyond the single-employer approach, and fewer still have considered gender differences in employment histories across a period of the life course. The single-employer approach is particularly problematic for understanding women's employment histories, as historically many women have been engaged in precarious, non-standard employment contracts combined with periods of non-employment or part-time employment during their childrearing years. More nuanced measures that reflect both the changing employment landscape as well as gender differences in labour force attachment are necessary to capture over time changes in patterns of employment stability.

A final note must be made regarding heterogeneity in women's employment stability and labour market activity, particularly regarding education and race. Namely, despite women's lower employment stability overall, educational and racial disadvantages exacerbate this with job loss and unemployment being more pronounced among less educated women (Kalleberg 2011; U.S. Department of Labor 2021), as well as among Black and other non-White women compared to White women (Bureau of Labor Statistics 2022b; Strully 2009). However, it should also be made clear that these racial disadvantages are not contradicted by findings of White women's lower employment activity and lower rates of full-time employment compared to Black and other non-White women as found in prior research (Cranford and Vosko 2006; Kalleberg 2011; Macunovich 2012). Rather, the higher employment engagement of racialized women is primarily due to necessity given wider disadvantages associated with earnings and household incomes (Kalleberg 2011). Among Black women, household economic disadvantage is particularly due to higher rates of single motherhood (Casper and Bianchi 2002) and the lower participation rates and higher incarceration rates of Black men (Kalleberg 2011). As a result, racialized women have been less able to reduce hours allocated towards the labour market in favour of family and domestic responsibilities (Glenn 2003; Holvino 2010).

2.4 Research Questions

At the core of this study of employment stability is a dynamic approach that draws on life course theory (Elder, Johnson, and Crosnoe 2003) which provides the conceptual tools for building a dynamic framework focused on continuity or change in experience. This study applies a person-orientated analytic approach which focuses on individual pathways and identifies common patterns of experience over time (Bergman and Magnusson 1997; Laursen and Hoff 2006; Magnusson 1998). To do so, we use latent class analysis (LCA), which is appealing for its inductive logic and ability to identify emergent characteristics and allows the discovery of substantively meaningful empirical patterns in the data. Such person-oriented approaches have been commonly applied in life course sociology and are increasingly used in research on employment in general (e.g., Härenstam et al. 2003; Vanroelen et al. 2010) to identify empirical 'profiles' of individual characteristics and groups of individuals who share those same characteristics.

While existing empirical research provides information on trends in employment stability across broader populations, there is less research that conceptualizes employment stability within the context of labour market changes or examines patterns of experience for individuals across the life course. Given the institutionalization of employment precarity in recent decades, the historical period of the 1980s to 2000s that is covered by this study is important. So is the consideration of multiple cohorts, as we would expect that changing labour market norms impacts employment trajectories differently depending on the timing in the work life course at which they are encountered. The age of the individuals examined is also important, since during some stages of the life course it is more common to experience unstable employment and lower labour market attachment. This is more common, for example, among individuals younger than 30 who are transitioning from education to employment, for individuals older than 50 who are approaching retirement, and among women in their childbearing years. We would expect unstable employment to be less common among men in mid-life, as this period represents the 'prime' working years for attaining experience and wages. Among women, we would expect less stable mid-life pathways due to employment interruptions associated with the gendered division of family and caregiving labour. Given the rise of

precarious work, we would expect less stable pathways to be more common for recent cohorts of men and women overall.

Using panel data from the PSID over the period 1983-2017, this study examines longitudinal measures of employment for individuals between the ages of 34 and 45 across three cohorts who were mid-career in the 1980s, 1990s, and 2000s. Three indicators of employment stability measured annually, including full-time hours, multiple job-holding, and involuntary job loss, are examined using LCA to determine the extent and form of employment stability separately for men and women during this period of the life course. Second, to address discrepant literature on whether employment instability is growing over time or remains concentrated among younger cohorts (Kalleberg 2011), we ask whether younger cohorts of men and women experience less employment stability over the life course than older cohorts. Employment stability is measured separately for men and women, and these gender and cohort patterns are investigated within the context of other forms of labour market inequality associated with educational attainment and race.

2.5 Methods

2.5.1 Data

This study uses longitudinal panel data from the Panel Study of Income Dynamics (PSID; Johnson et al. 2018; McGonagle et al. 2012; PSID 2019) on a representative sample of the U.S. population. The PSID is ideal because its survey collection period (1968-2019) is sufficiently long running to have collected longitudinal data on multiple cohorts post-1970s. It also provides longitudinal data on a range of themes including employment and socio-demographic characteristics such as gender, race, and education.

Employment stability is measured longitudinally at the individual level across six waves of data; each wave captures a continuous two-year[2] period for each individual,

[2] PSID data collection occurred annually between 1968-1997, and was thereafter collected biannually, with select variables from biannual waves (including the variables used to derive the job loss, full-time employment, and multiple jobs measures) covering the full two-year period between waves. This study pools data from both the annual and biannual waves of the PSID, and to retain measurement consistency

with the first observation starting at age 34 or 35 and the sixth and final wave ending at age 44 or 45. Thus, the six waves of data cover a continuous 10-year period of employment for each individual. Because this analysis is interested in cohort difference, individuals born between 1947 and 1972 were grouped into three cohorts representing those begin their mid-career (at age 34 or 35) in the 1980s, 1990s, and 2000s. As such, the analysis is structured by both historical context and age, which is detailed in Table 2.1.

The PSID's data collection strategy involves a stratified random sampling of families in the U.S. The analytic sample of this study is comprised only of those respondents who are identified as the "Reference Person" or "Spouses" of these families, on whom the most consistently collected and detailed employment data are collected. Missing cases include attritors who exited the PSID before complete longitudinal data were collected (54.2% [3] missing) and cases without complete available data on covariates (4% missing). The final analytic sample includes 2,045 men and 2,694 women.

The PSID's data collection involves a complex sampling method with individuals sampled together as family unit. To adjust for the non-independence of individual cases belonging to the same family unit in the final results, standard errors for all statistics are adjusted using BRR weights produced using Wesvar 5 and the strata and cluster variables provided with the PSID (Heeringa, Berglund, and Khan 2011). All results are also

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between annual and biannual waves, every second annual wave is combined with the previous wave to construct a 'biannual' wave covering a period of two years that mimics the construction of the biannual waves.

[3] The amount of attrition that occurs within this sample generates a high percentage of missing cases (54.2%), which may bias results particularly if attritors have significantly different characteristics than non-attritors with regards to outcomes. Unfortunately, attrition is high when using surveys consisting of many waves (Zabel 1998), which is an unavoidable limitation of the broad analytic scope of the current study which uses data from 40 waves of the PSID. However, there is little evidence that attrition substantially reduces the representativeness of the PSID (Fitzgerald, Gottschalk, and Moffitt 1998), or that attrition bias significantly affects estimates of labour market behaviour (Zabel 1998). Furthermore, the amount of attrition present in the current study is comparable to baseline attrition rates of the PSID (see Fitzgerald et al. 1998; Zabel 1998). Nevertheless, it should be mentioned that attritors and non-attritors *have* been found to have different labour market behaviours (Zabel 1998), that attrition is disproportionately experienced by those of lower socio-economic status and unstable earnings (Fitzgerald et al. 1998).

adjusted for population weights provided for Reference Persons and Spouses by the PSID to produce representative results. All statistics are produced using Stata 16.

Table 2.1: Age of individual cases in the analytic sample at each year[a] observed, by two-year cohorts. Source: PSID 1983-2017.

Birth cohort	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004
1947-48[b]	34-35	36-37	38-39	40-41	42-43	44-45						
1949-50		34-35	36-37	38-39	40-41	42-43	44-45					
1951-52			34-35	36-37	38-39	40-41	42-43	44-45				
1953-54				34-35	36-37	38-39	40-41	42-43	44-45			
1955-56					34-35	36-37	38-39	40-41	42-43	44-45		
1957-58						34-35	36-37	38-39	40-41	42-43	44-45	
1959-60							34-35	36-37	38-39	40-41	42-43	44-45

	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	
1961-62	34-35	36-37	38-39	40-41	42-43	44-45						
1963-64		34-35	36-37	38-39	40-41	42-43	44-45					
1965-66			34-35	36-37	38-39	40-41	42-43	44-45				
1967-68				34-35	36-37	38-39	40-41	42-43	44-45			
1969-70					34-35	36-37	38-39	40-41	42-43	44-45		
1971-72						34-35	36-37	38-39	40-41	42-43	44-45	

[a]Each PSID wave collects data on the prior year and, for waves 1997 on, the prior two years. Each year listed represents the actual year observed, not the PSID wave during which it was collected.
[b]The colour corresponding to each two-year birth cohort shown here corresponds to the categories of the cohort variable used in the analyses. Blue represents the category "Midcareer begins in the 1980s," green represents "Midcareer begins in the 1990s," and yellow represents "Midcareer begins in the 2000s."

2.5.2 Measures

Three long-term measures of employment stability are examined in this study: i) *involuntary job loss*, ii) *full-time employment*, and iii) holding *multiple jobs*. These three employment measures are observed repeatedly at each of the six waves used in this study. The construction of each of the three measures is detailed in turn below.

Involuntary job loss – For waves 1983 onwards, the PSID provides a variable indicating the year in which an individual last exited a primary job, which is used in conjunction with another variable derived from the survey question “What happened to

[that] previous job?" Three response options were offered in each wave (actual wording or number labels may differ slightly across waves): 1 "Company folded, went out of business, changed hands, or moved/employer died," 2 "Strike/lockout," 3 "Laid off/fired," 4 "Quit/resigned/retired/pregnant/wanted to change jobs," 5 "Other/drafted into service or any kind of service/transfer," and 6 "Job was completed/seasonal work/temporary job." Individuals who report exiting a primary job with response options "Company folded, etc.," or "Laid off/fired," which is indicative of involuntary job loss during the two years observed were coded as 1 = "Involuntary job loss during the prior two years."

Employed full-time – The PSID provides a variable of 'total annual hours worked for money in the prior year' available at each wave. First, we use this variable to calculate total annual hours averaged across 52 weeks of the year. Next, we collapse this into a binary variable indicating whether the individual worked 'Full-time,' or worked at least 35 hours per week (or 1820 hours or higher annually). The other category of this binary variable indicates whether the individual worked part-time or fewer hours (34 hours or fewer per week, or 1819 hours or fewer annually). Individuals who work 'Full-time' in each of the two years observed were coded as 1 = "employed full-time during the prior two years" for the final *employed full-time* variable.

Multiple jobs – Waves 1983-2001 of the PSID ask whether the individual held "extra (multiple) jobs" during the prior year, which was then collapsed across two years and used to construct the multiple jobs variable coded as 1 = "held additional jobs during the prior two years". However, for the 2003 and later waves, the PSID eliminated some of these more direct questions asked about employment, including questions about "extra jobs", and instead began to collect employment data by prompting respondents to input calendar information on each job held during the reference period (the prior two years and the months up until the interview). These data are available as a series of variables that contain the start and end dates for each job. For waves 2003 onwards, this study uses each of these calendar variables to determine whether the individual held at least one additional job in addition to their self-reported primary job at any point during the observed year. The final *multiple jobs* variable is constructed as a binary variable coded

as 1 = “held additional jobs during the prior two years” if the individual reported at least one additional job at any point during the two-year reference period in addition to a primary job.

The latent class analysis uses observations from six survey waves indicating *involuntary job loss*, *employed full-time*, and *multiple jobs*, and range from 0 to 6. The categorical variable for *involuntary job loss*, hereby referred to as JLOSS, is first generated using a count of the number of waves in which the individual reports involuntary job loss, which is then collapsed into two categories of “no incidence of involuntary job loss,” and “one or more incidences of involuntary job loss.” These two categories were chosen because of the relatively low incidences of involuntary job loss in this sample. The categorical variable for *employed full-time* (FT) is a count of waves where full-time employment is reported, collapsed into the categories “0-1 waves employed full-time,” “2-3 waves,” “4-5 waves,” and “6 waves.” The categorical variable for *multiple jobs* (MULTJOB) is a count of the number of waves where multiple jobs are reported, with categories “No incidence of multiple jobs,” “1 incidence,” and “2+ incidences.”

Gender and cohort - Given substantial gender differences in employment activity and stability, *gender* is a primary stratifying variable and measured using the categories “men” and “women.” In addition, since childbirth at younger ages is related to more traditional domestic roles for women and higher hours of domestic work, we control for the presence of children and *age at birth of first child*, with categories “No children,” “14-19,” “20-29,” and “30+”. Since the number of children is also related to higher hours allotted to parenting, we examine a binary variable of whether the individual has *ever had more than three children*. Finally, controls were included for *marital status* at age 34 or 35 with categories “married/cohabiting,” “never married single,” and “previously married” (widowed, divorced, or separated).

The other primary independent variable, *cohort*, is first constructed by using individuals’ birth year (which in this sample ranges between 1947-1972), to calculate the year in which they are 34 at the first age of observation, which in this sample ranges

between 1982-2006. Next, this year is collapsed into three-decade categories with the following labels to create the final *cohort* variable: “Midcareer begins in the 1980s,” “Midcareer begins in the 1990s,” and “Midcareer begins in the 2000s.” The ages of observation at each wave are also presented separately for each cohort category in Table 2.1 using colour coding.

Education and race - The third research question explores the intersection between gender and other characteristics related to long-term employment stability. Historically, non-White and racialized groups, as well as the less educated, have experienced lower employment stability compared to White populations and the higher educated (Branch and Hanley 2017; Kalleberg 2011). In this analysis, *race* is measured using categories of “White,” “Black,” and “other.” Education is measured using the highest level of education ever achieved, with categories “less than high school,” “high school,” “some postsecondary” (below a bachelor’s degree), and “bachelor’s degree and above.” In order to control for the potential for further educational attainment resulting in interruptions in employment, we also examine *educational mobility* as a binary variable indicating whether the respondent’s education level increased at least once during the observation period.

2.5.3 Analytic Strategy

We employ a person-oriented analytic strategy to estimate ‘profiles’ of long-term employment stability by using latent class analysis (LCA) to detect statistical associations between categorical measures of involuntary job loss (JLOSS), full-time employment (FT), and multiple jobs (MULTJOB). The estimated latent classes produced from this analysis represent sample subgroups of individuals who have similar patterns of values on the three measures, which may be interpreted as groups experiencing employment stability similarly over the long term. The properties of LCA have the advantage of allowing empirical patterns to emerge from the data, rather than being pre-modelled by the researcher. As such, this method is suitable for a study investigating new ways of conceptualizing and measuring employment stability over the life course as a latent construct within a changing labour market. The statistical associations revealed by the LCA are hypothesized as being caused by an unmeasured or latent phenomenon that may

be defined by “mutually exclusive and exhaustive latent classes” based on their responses to the selected categorical measures (Shuey and Willson 2014, p. 53; Collins and Lanza 2010). The optimal number of latent classes that may be used to represent the data is chosen using several statistical tests and comparisons of fit statistics (Collins and Lanza 2010).

To examine employment stability across gender and cohort we begin with a descriptive analysis of how the three longitudinal employment stability measures differ across these groups. Next, we estimate and examine the results of latent class models in order to determine the number of unique classes and their substantive meaning. Finally, we estimate multivariate logistic regression models predicting class membership in comparison to those identified as experiencing the *least stable* pattern, with results presented separately by gender.

2.6 Results

2.6.1 Sample Description

Table 2.2 presents the sample’s distribution of relevant characteristics as proportions, separately for men and women. Cohort sizes in our sample are uneven and vary in proportion as shown in Table 2.2. This is due to changes in PSID sample collection strategies across the years and is important to bear in mind when interpreting results as it may result in relatively higher significance and smaller standard errors of statistics for larger cohorts. In terms of other characteristics, this sample is primarily White, totalling 87% of men and 81% of women. Only 10% of men and 15% of women are Black, with less than 4% of both falling into the ‘Other’ category. The sample is also relatively highly educated, with 39% of men and 36% of women holding a bachelor’s degree or higher. In terms of educational mobility, 19% of men and 28% of women reported increasing their educational level over the analytic period.

The majority of the sample was partnered at the first observation (77% of men and 71% of women either married or cohabiting), and individuals who reported never having had children are a minority in this sample (17% of men and 15% of women). Having children, particularly having more children and a younger age of parenthood, is

associated with lower employment stability and activity for women, but not men. In this sample, just over half of both women (51%) and men (52%) had only one or two children, while 34% of women and 31% of men had three or more. Most women (48%) and men (51%) in the sample had their first child between the ages of 20 and 29, with a notably higher proportion of women reported having their first child between the ages of 14-19 and more men (26%) than women (16%) having their first child at age 30 or older.

Table 2.3 presents descriptive statistics for indicators of employment stability, summarized from longitudinal data from age 34 to 45. The incidence of involuntary job loss over the long term is low: Only 5% of men and 9% of women reported involuntary job loss at any wave. There were no reports of involuntary job loss in more than three waves. The data highlight gender differences in long-term full-time employment: 51% of men in the sample reported full-time employment in every wave, while only 12% of women reported the same. This is consistent with prior research finding that women are less likely to be employed full-time and more likely to be employed part-time, unemployed, or not working (Cranford and Vosko 2006; Vosko 2006; Witteveen 2017). In terms of multiple jobs, only 7% of men reported multiple jobs in four or more waves, compared to only 3% of women. Over 50% of men reported no waves with multiple jobs, 25% reported only one wave, and 17% report 2-3 waves. Among women, 61% reported no multiple jobs in any wave, 22% reported multiple jobs in only one wave, and 14% reported 2-3 waves. In the following section, we further analyze how these three long-term measures of employment stability—involuntary job loss, continuous full-time hours, and multiple jobs—are interrelated over time.

First, however, we turn to other results in Table 2.3 that help provide an answer to the second research question regarding how long-term employment stability differs over time, across cohorts. The results provide some indication of declining stability across cohorts, with a slight decrease in the proportion of both men and women who reported no involuntary job loss in any wave, and a decrease for more recent cohorts in the proportion of men employed full-time in every wave. A much lower proportion of women reported full-time employment in every wave, and that increased slightly across cohorts. Finally,

we see a significant decline across cohorts in the proportion reporting no multiple jobs in any wave, for both men and women.

Table 2.2: Sample proportions by gender. Source: PSID 1983-2017.

	Men	Adjusted 95% C.I. (Lower, Upper)	Women	Adjusted 95% C.I. (Lower, Upper)
Cohort				
Midcareer begins 1980s	0.196	(0.174, 0.221)	0.217	(0.198, 0.236)
Midcareer begins 1990s	0.450	(0.425, 0.476)	0.437	(0.413, 0.461)
Midcareer begins 2000s	0.360	(0.322, 0.387)	0.349	(0.325, 0.369)
Race				
White	0.866	(0.831, 0.895)	0.814	(0.766, 0.854)
Black	0.097	(0.072, 0.128)	0.149	(0.114, 0.192)
Other	0.037	(0.024, 0.058)	0.038	(0.024, 0.058)
Education				
Less than high school	0.101	(0.083, 0.123)	0.116	(0.097, 0.138)
High school only	0.282	(0.252, 0.314)	0.274	(0.252, 0.297)
Some postsecondary	0.226	(0.207, 0.246)	0.249	(0.234, 0.265)
Bachelor's degree or above	0.391	(0.357, 0.425)	0.361	(0.338, 0.384)
Increased education	0.192	(0.165, 0.222)	0.283	(0.260, 0.306)
Marital status age 34/35				
Married/cohabiting	0.774	(0.751, 0.795)	0.711	(0.677, 0.742)
Never married single	0.124	(0.103, 0.149)	0.143	(0.120, 0.170)
Previously married	0.102	(0.083, 0.124)	0.146	(0.130, 0.163)
Number of children				
None	0.174	(0.155, 0.195)	0.148	(0.130, 0.167)
1-2	0.521	(0.494, 0.547)	0.512	(0.486, 0.538)
3+	0.305	(0.283, 0.329)	0.340	(0.314, 0.368)
Age at birth of first child				
No children	0.174	(0.155, 0.195)	0.148	(0.130, 0.167)
14-19	0.062	(0.046, 0.083)	0.215	(0.191, 0.242)
20-29	0.508	(0.479, 0.536)	0.481	(0.455, 0.508)
30+	0.256	(0.232, 0.281)	0.155	(0.136, 0.178)
N	2,045		2,694	

Notes: Weighted using population weights provided with the PSID. Standard errors for the C.I.'s are adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

Table 2.3: Longitudinal employment stability indicators from age 34 to 45, by gender. Source: PSID 1983-2017.

	Men	Adjusted 95% C.I. (Lower, Upper)	Women	Adjusted 95% C.I. (Lower, Upper)
Employment stability indicators (Number of waves)				
Involuntary job loss				
0 (None)	0.945	(0.930, 0.957)	0.912	(0.894, 0.927)
1-2	0.047	(0.036, 0.062)	0.075	(0.061, 0.092)
3+	0.007	(0.004, 0.012)	0.013	(0.009, 0.019)
Full-time hours				
6 (All waves)	0.509	(0.483, 0.534)	0.123	(0.108, 0.140)
4-5	0.321	(0.299, 0.344)	0.250	(0.227, 0.275)
2-3	0.109	(0.093, 0.129)	0.205	(0.186, 0.225)
0-1	0.061	(0.047, 0.080)	0.422	(0.398, 0.446)
Multiple jobs				
0 (None)	0.520	(0.496, 0.544)	0.607	(0.580, 0.633)
1	0.246	(0.227, 0.266)	0.223	(0.206, 0.242)
2-3	0.168	(0.149, 0.189)	0.137	(0.120, 0.155)
4+	0.067	(0.055, 0.081)	0.033	(0.023, 0.046)
Proportion with greater stability, by cohort:				
No job loss in any wave				
Mid-career begins ‘80s	0.967	(0.941, 0.982)	0.923	(0.891, 0.946)
Mid-career begins ‘90s	0.952	(0.927, 0.969)	0.905	(0.882, 0.925)
Mid-career begins 2000s	0.925	(0.901, 0.944)	0.914	(0.881, 0.939)
Full-time hours in every wave				
Mid-career begins ‘80s	0.543	(0.481, 0.604)	0.108	(0.079, 0.145)
Mid-career begins ‘90s	0.538	(0.498, 0.577)	0.116	(0.095, 0.140)
Mid-career begins 2000s	0.452	(0.410, 0.495)	0.142	(0.116, 0.173)
No multiple jobs in any wave				
Mid-career begins ‘80s	0.577	(0.515, 0.636)	0.643	(0.593, 0.690)
Mid-career begins ‘90s	0.606	(0.559, 0.652)	0.645	(0.606, 0.681)
Mid-career begins 2000s	0.378	(0.338, 0.421)	0.538	(0.500, 0.575)
N	2,045		2,694	

[a]Each longitudinal wave observed covers a two-year period. For example, a wave that is counted as "with job loss" means that individual experienced job loss at any point during that two-year period.

Notes: Weighted using population weights provided with the PSID. Standard errors for the C.I.'s are adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

2.6.2 Results from the Latent Class Model: Profiles of Long-term Employment Stability

The preceding section presented an empirical description of how individuals experience employment stability across a decade in mid-life and how these patterns differ across cohorts. However, it is unclear how the three indicators capturing different aspects of employment stability over the long term—involuntary job loss, full-time engagement, and multiple jobs—are interrelated over the long term. To explore this, and to provide a richer answer to the first research question about changing employment stability, we begin by constructing three summary measures (JLOSS, FT, and MULTJOB) corresponding to each of the three employment stability measures. Latent class analysis (LCA) is then used with these three categorical summary variables to estimate latent classes of individuals who report similar patterns of responses on each of the three variables. Results from the latent class model could indicate whether individuals who report experiencing involuntary job loss over the long term are also more likely to report patterns of multiple jobs or less full-time engagement. Latent class models with one through seven latent classes were conducted—however, only results with a maximum of three classes were able to be identified using these data. This suggests that the covariance of response patterns of the three summary employment stability variables is limited to that represented by the three-class model.

To choose the model representing these data with the optimal number of classes, we compare fit statistics between the one- and three-class models presented in Table 2.4, including the G-squared statistic, information criteria (AIC, BIC, and adjusted BIC), and entropy index. A comparison of these statistics favouring a one-class model would suggest little relationship between the measures among the sample. Information criteria, or "penalized fit statistics" are used to compare fit between two or more models, with smaller values indicating more optimal fit (Collins and Lanza 2010:88). Similarly, smaller values of the G-squared statistic indicate better fit. Entropy is an index ranging from 0 to 1 used to determine how precisely latent class membership can be assigned, with higher values indicating greater precision. When choosing the optimal latent measurement model, the goal is to strike a balance between assessing model fit,

parsimony, and substantive interpretability of the latent classes (Collins and Lanza 2010). However, optimal model choice is not always clear as fit statistics, information criteria, and entropy values may favour different models.

Table 2.4: Model fit statistics for latent class models of employment stability, by gender. Source: PSID 1983-2017.

	Men						Women					
Number of Latent classes	df	G^2	AIC	BIC	aBIC	Entropy (Scaled)	df	G^2	AIC	BIC	aBIC	Entropy (Scaled)
1	17	245	257	291	272	1.00	17	173	185	220	201	1.00
2	10	36	62	136	94	0.67	10	55	81	158	116	0.37
3	**3**	**15**	**55**	**168**	**105**	**0.46**	**3**	**11**	**51**	**169**	**106**	**0.50**
4	-4	5	59	212	126	0.36	-4	3	57	217	131	0.36

Note: Indicators of fit for models with one through four latent classes.

After comparing fit statistics from Table 2.4, as well as substantive interpretability of results from each latent class model, the data favoured a three-class model for both men and women. Results from this model are presented in Table 2.5 for both men and women and include the *latent class prevalence*, or proportion of the sample associated with each latent class representing a particular profile of long-term employment stability. Table 2.5 also reports *item-response probabilities*, or the probability of each of the variable categories associated with each latent class.

Each of the three latent classes constitutes a profile or subgroup of workers who experience similar patterns of long-term employment stability. We begin by identifying and labelling the latent class whose item-response probabilities reflect the *least* employment stability: Latent Class 1, hereafter referred to as the *Least stable* class, is associated with the highest estimated probability of involuntary job loss in at least one wave, for both men and women. This probability is higher among women than for the respective class of men (41% vs 32%). This class for both men and women is also associated with a very low, almost zero probability of being employed full-time at all six

waves. Members of this class are not particularly likely to take on multiple jobs over the long term, with an estimated 61% probability of no multiple jobs in any wave for this class among men, and 45% for women. Although the pattern of responses is similar overall for men and women, women in this class have a higher probability of job loss, fewer waves with full-time hours, and a higher probability of multiple jobs. This class is the smallest of all the classes estimated for this sample population, with a prevalence of 0.16 for men and 0.10 for women.

Next, we examine Latent Class 2 (labelled *Most stable*), whose item-response probabilities reflect the *most* employment stability. This is the largest class for both men and women (LC prevalence = 0.60 for men and 0.52 for women). It is associated with the lowest probability of involuntary job loss in any wave, at near zero for both men and women. This class is also associated with the highest probability of full-time hours in every wave—although this probability is higher for men (71%) than for women (21%). Notably, this class appears to have a moderate propensity for holding multiple jobs over the long term with, for example, an estimated 20% probability for men of two or more waves of multiple jobs compared to a 25% probability for women.

For men, Class 3 (labelled *Full-time discontinuity and multiple jobs*) presents a similar pattern of item-response probabilities as Class 2, with two exceptions. This class has a lower probability of full-time hours in every wave (30%), and a higher probability of full-time hours in four or five waves (49%) or two or three waves (21%), suggesting less continuity in full-time engagement compared to Class 2. Class 3 also has a higher probability of more than two waves with multiple jobs (42%) than either of the other two classes. This mid-sized class of men (LC prevalence of 0.25) experiences lower full-time engagement across their 30s and 40s compared to the *Most stable* class, despite often managing multiple jobs in order to possibly accumulate more hours.

In contrast, women's Class 3 (labelled *Low employment activity*) has a notably high estimated probability (83%) of only one or no waves with full-time hours, as well as a high probability of no multiple jobs in any wave (75%). This class reflects a group of women (estimated at 39% of women of the population from which this sample was drawn) who engage in low and intermittent employment activity during their 30s and 40s.

Table 2.5: Item-response probabilities for a latent class model of long-term employment stability, by gender. Source: PSID 1983-2017.

	Men			Women		
	Class 1 (*Least stable*)	Class 2 (*Most stable*)	Class 3 *(Full-time discontinuity and multiple jobs)*	Class 1 (*Least stable*)	Class 2 (*Most stable*)	Class 3 (*Low employment activity*)
Latent class prevalence	0.16	0.60	0.25	0.10	0.52	0.39
Item-response probabilities[a]						
Involuntary job loss in at least one wave	**0.32**	0.00	0.04	**0.41**	0.00	0.13
Num. of waves with full-time hours (max = 6)						
6	0.01	**0.71**	**0.30**	0.00	**0.21**	0.04
4-5	**0.32**	**0.27**	**0.49**	**0.34**	**0.41**	0.02
2-3	**0.33**	0.01	**0.21**	**0.46**	**0.23**	0.11
0-1	**0.34**	0.02	0.00	**0.21**	0.15	**0.83**
Num. of waves with multiple jobs (max = 6)						
None	**0.61**	**0.58**	**0.32**	**0.45**	**0.53**	**0.75**
1	**0.32**	**0.22**	**0.25**	**0.40**	**0.22**	0.18
2+	0.07	0.20	**0.42**	0.14	**0.25**	0.07

Note: Item-response probabilities > .20 bolded to facilitate interpretation.

2.6.3 Results from the Latent Class Model with Covariates

Next, we examine several models containing additional independent variables, again estimated separately for men and women. Results from these models are analogous to a multinomial logistic regression model predicting membership in the *Least stable* class (compared to *Most stable*, and *Full-time discontinuity and multiple Jobs* [for men]/*Low employment activity* [for women]). Results are presented in Table 2.6 for both men and women and are discussed here to answer the second and third research questions.

Table 2.6: Odds ratios from multinomial logistic regression models predicting membership in latent classes of long-term employment stability (three-class model), by gender. Source: PSID 1983-2017.

	Model 1				Model 2			
	Men		Women		Men		Women	
	Class 2[a] (*Most stable*)	Class 3 (*Full-time disc. & multiple jobs*)	Class 2[a] (*Most stable*)	Class 3 (*Low emp. activity*)	Class 2[a] (*Most stable*)	Class 3 (*Full-time disc. & multiple jobs*)	Class 2[a] (*Most stable*)	Class 3 (*Low emp. activity*)
Cons.	11.074***	4.990*	11.183*	11.600+	9.992***	1.228	10.392***	3.644*
Midcareer begins '80s (ref)	-	-	-	-	-	-	-	-
Midcareer begins '90s	0.615	0.466	0.373	0.601	0.785	0.535+	0.734	0.665
Midcareer begins 2000s	0.163***	0.707	0.549	0.322+	0.644	1.890+	1.240	0.926
High school only (ref)	-	-	-	-	-	-	-	-
Less than high school	-	-	-	-	0.281***	0.587	0.369***	0.464**
Some postsecondary	-	-	-	-	1.009	0.945	1.671+	1.916*
Bachelor's degree or above	-	-	-	-	2.703***	2.336*	5.274***	10.042***
Increased education	-	-	-	-	0.791	1.589	0.847	0.589*
White (ref)	-	-	-	-	-	-	-	-
Black	-	-	-	-	0.575**	0.474**	0.392***	0.247***
Other	-	-	-	-	0.377***	0.560+	0.260***	0.193***
Married/cohabiting (ref)	-	-	-	-	-	-	-	-
Never married single	-	-	-	-	0.190***	1.154	0.661	0.342***
Previously married	-	-	-	-	0.289***	0.751	0.641*	0.250***
Age at birth of first child (ref = No children)								
14-19	-	-	-	-	0.862	0.606	1.654	3.114**
20-29	-	-	-	-	1.392	1.144	0.922	2.987**
30+	-	-	-	-	0.745	0.613	2.040*	7.703***
Ever had 3+ children	-	-	-	-	0.750	0.917	0.302***	0.675+
N	2,045		2,694		2,045		2,694	

[a]Reference category is Class 1 (*Least stable*).

The second research question investigates declining employment stability across cohorts. Results from Model 1 in Table 2.6, which is a bivariate model including only cohort as a covariate and unadjusted for other factors, show that compared to men who are midcareer beginning in the 1980s, men from more recent cohorts are less likely to be in the *Most stable* class (OR = 0.615 and OR = 0.163 [P<.001] for 1990s and 2000s respectively), than in the *Least stable* class. Compared to women whose midcareer begins

in the 1980s, women midcareer in the 1990s are less likely to be in the *Low employment activity* class (OR = 0.601) and the *Most stable* class (OR = 0.373) than in the *Least stable* class; women midcareer in the 2000s are also less likely to be in the *Low employment activity* class (OR = 0.322, P<0.10) and the *Most stable* class (OR = 0.549) than in the *Least stable* class. This suggests some lower employment stability across cohorts, although there is little significance found among these results for women. When examining results from the same models across different reference categories, presented in Appendix A, the comparisons generally show the same pattern with relatively higher likelihood of *Least stable* and relatively lower likelihood of *Most stable* for the youngest cohort of workers whose midcareer begins during the 2000s. Overall, while these results provide some suggestion of lower employment stability across the life course for younger cohorts of men and women, evidence of significant cohort differences across the classes of stability is limited.

Other results from Model 2 show the relationship between education and stability, with higher education associated with greater odds of membership in the *Most stable* and *Full-time discontinuity and multiple jobs* classes than the other two classes for men. For women the relationship between higher education and stability is particularly strong, although not exactly as expected. Higher education is associated with both a higher odds of *Most stable* as well as greater odds of *Low employment activity*. Being non-White is associated with significantly lower odds of membership in the more stable classes, compared to *Least stable* for both men and women.

In terms of family characteristics, for men stable employment appears to be only significantly positively related to being partnered: Single men, including never married and previously married, have lower odds of membership in the *Most stable* class compared to married or cohabiting men. However, the results suggest no significant differences between men with or without children.

Among women, being single is also negatively related to stable employment. Women who are single are less likely to be in the *Low employment activity* (OR never married = 0.342, P<.001; OR previously married = 0.250, P<.001) or the *Most stable*

classes (OR never married = 0.661, insig.; OR previously married = 0.641, P<.05) compared to the *Least stable* class. However, unlike for men, there are significant differences between women with and without children. In particular, the results show that the older a woman is when she has her first child, the significantly higher the odds of membership in the *Low employment activity* class, compared to women who have never had children—possibly reflecting the close temporal proximity between later childbearing and the observation period—as well as membership in the *Most stable* (vs the *Least stable)* class. Also, for women, having multiple children is associated with lower odds of membership in both the *Low employment activity* (OR = 0.675, P<.10) and the *Most stable* classes (OR = 0.302, P<.001) compared to *Least stable*.

2.7 Discussion and Conclusion

While prior research has examined trends in employment stability across broader populations, less work has been done to understand patterns of employment stability across the life course. As such, the first objective of this study is to examine the extent to which men and women maintain stable employment in mid-life in the post-1980s period. The institutionalization of newer precarious employment arrangements and broader changes in employment contracts over time involve greater instability through temporary contracts and flexible schedules and research suggests that contemporary employment histories reflect lower attachment to a single employer, position, or contract. This study goes beyond previous research that tends to focus on tenure to investigate a latent measure of stability over time that incorporates three dimensions that align with more precarious labour market contracts experienced by workers in recent decades.

First, involuntary loss of employment can signal a de-stabilizing life course event for individuals, abrupt change in labour market position, and forfeiture of earnings and benefits. This concept is exceptionally important to examine over the work life course because job loss has long-term economic consequences for workers, including lower rates of re-employment, reduction in later wages following re-employment, and lower likelihood of full-time re-employment (Couch and Placzek 2010; Davis and Wachter 2011; Farber 2004; Farber 2015). The overall incidence of involuntary job loss for individuals over a decade in midlife is low in this sample. This may in part be a reflection

of the age of observation, which covers prime working years and a period of greater stability relative to other ages for men, combined with a period of higher labour force attachment following childbearing years for women. This study further conceptualizes employment stability as involving an individuals' ability to maintain continuous full-time labour market attachment over a period of their work life course. Full-time employment is structurally advantageous, given its privileged legal status and association with employment characteristics such as higher earnings and permanent employment (Cranford and Vosko 2006; Vosko 2006; Witteveen 2017). While over half of men in the sample reported full-time engagement in every wave, only 11% of women did the same, and evidence suggests significant and continued gender differences in the maintenance of full-time status across cohorts. Third, findings suggest that engagement in multiple jobs is a relatively infrequent occurrence across the life course for most men and women, but is not uncommon, with 48% of men and 39% of women reporting holding an additional job at least once between their mid-30s to mid-40s. Engagement in more than one job—whether consecutively or simultaneously—may be indicative of the inability to secure an attachment to one single job that provides sufficient hours, earnings, or benefits. This argument is somewhat supported by the empirical research on 'moonlighting' (Averett 2001; Campion et al. 2020; Cowell 1981; Guariglia and Kim 2004; Hipple 2010; Hlouskova et al. 2017; Kimmel 1995; Paxson and Sicherman 1996; Throsby and Zednik 2011).

This study explores a person-centred analytic model to determine how these three dimensions interrelate over the long term for individuals by estimating a latent model capturing patterns of employment stability (Bergman and Magnusson 1997; Laursen and Hoff 2006; Magnusson 1998). Latent class analysis (LCA) revealed three latent classes constituting subgroups of workers who experience similar patterns on the three long-term employment stability measures. The *Least stable* class is associated with the highest probability of involuntary job loss in any wave (32% for men and 41% for women) and lowest probability of full-time engagement across the waves. This is also the smallest class for both men and women. The *Most stable* class is the largest class and is associated with the lowest probability of involuntary job loss and highest probability of full-time engagement over the long term.

The analysis also revealed a third class for women, labelled *Low employment activity*, which captures a group of women with low probabilities on all three employment stability measures—involuntary job loss, full-time engagement, and multiple jobs. These results characterize a group of women who engage in very low and intermittent employment activity across their mid-30s to mid-40s—a class not found among men. For men, a third class, *Full-time discontinuity and multiple jobs*, is characterized by a probability of involuntary job loss that is lower than the *Least stable* class, combined with a lower probability of continuous full-time engagement than the *Most stable* class. This is also the class of men with the highest probability of multiple jobs. These results suggest that engagement in multiple jobs is most common among workers who experience at least some interruption in their long-term full-time engagement. It may be that holding multiple jobs is a labour market risk management strategy that helps some workers avoid unstable employment and is a practice less common among those workers who experience the highest probability of stable employment. In this case, individuals' management, or 'juggling' of multiple jobs, or the churning of individuals between many different jobs over time, may signal labour market risk and disadvantage. There is also the question of individual outcomes regarding multiple jobs, such as whether frequent changes in schedule between different jobs (some of which may have unorthodox or unpredictable hours) has long-term effects on health or on the ability to accumulate wealth over time.

Research from North America suggests historical declines in employment stability starting in the last quarter of the 20th century (Boisjoly et al. 1998; Cappelli 1999; Hollister and Smith 2014; Kalleberg 2011; Osterman 1999; Swinnerton and Wial 1995), with women historically experiencing lower stability than men. Research further suggests that historical declines have been concentrated among men while women experienced increases during the post-WWII period (Boisjoly et al. 1998; Cappelli 1999; Hollister and Smith 2014; Kalleberg 2011; Osterman 1999; Swinnerton and Wial 1995; Valletta 1999), with declines for women occurring later during the 1990s (Hollister and Smith 2014). This study examined whether younger cohorts of men and women experience less employment stability over the life course than older cohorts over the post-1980s period. Consistent with prior research, this study found evidence for declines in

employment stability over the life course for younger cohorts of men in terms of long-term patterns of job loss—primarily for those men whose midcareer begins in the 2000s. For women, the descriptive results suggest overall lower employment stability in terms of job loss for younger cohorts of women whose midcareer begins in the 1990s and the 2000s, which is consistent with recent findings showing declines for women starting in the 1990s (Hollister and Smith 2014). However, when adjusted for other factors such as education and race, the results for women are insignificant. One important consideration is that the three cohorts examined in this analysis cover remarkably different periods with different economic and labour market conditions which may affect employment stability in the decades examined. For example, there were recessions during the observed analytic period in the years 1981-82, 1990-91, 2000-01, and 2007-09 (Brown and Pagan 1998; Ohanian 2018), which may reduce short-term employment stability among individuals in our analytic sample. Nevertheless, this analysis captures long term patterns of employment stability across 10 years of the individual life course beyond short-term recession periods, which typically last between 2-18 months. The analysis is also oriented towards examining broader cohort differences rather than identifying causal macro-level factors, and the cohort variable is used to represent the broader economic context to give insight into changing cohort experiences over time as they enter historically different types of labour markets.

Moreover, this study also examined differences in full-time engagement over the life course across cohorts of men and women, which has not been examined in prior literature. The results show overall declines in long-term full-time engagement for younger cohorts of men, as well as increases in multiple jobs. However, multivariate results adjusted for other variables including education, race, and family structure suggest a *higher* probability for cohorts of men whose midcareer begins in the 2000s of long-term full-time engagement and multiple jobs compared to younger cohorts, which may suggest that declining full-time engagement among men is due to changes in the composition of working men such as education, race, or family structure. For women, the results show an increase in long-term full-time engagement among younger cohorts, which is consistent with prior research showing historical increases in women's labour force participation

(Goldin 2006; Kalleberg 2011). However, when adjusted for other variables, these results are insignificant.

For both men and women, employment stability over the long-term parallels other forms of inequality associated with educational attainment and race, as well as family structure. In particular, higher education and being White were found to be significantly related to patterns of higher employment stability. Furthermore, employment stability in terms of lower job loss and greater full-time continuity over the life course was also found related to being partnered (married or cohabiting) for men. This may signal the positive influence of marriage on employment activity, as prior literature suggests married men are incentivized to specialize in the labour market as household breadwinners (McDonald 2020), thereby increasing their productivity, earnings, and employment prospects which would enhance access to stable employment. Cohabiting men share similar characteristics with married men (Xie et al. 2003) and may therefore be similarly incentivized to specialize in the labour market, albeit to a lesser degree. Alternatively, some research finds more evidence for selection theory in the positive effect of employment on partnership, which would suggest that men with stable employment and earnings have higher marriage and partnership prospects (Ludwig and Buderl 2018; McDonald 2020). For women, partnership is also related to higher employment stability in terms of lower job loss and full-time continuity over the life course, although only the comparison to previously married singles (i.e., being separated, divorced, or widowed) is significant.

Being partnered, as well has parenthood, were found strongly related to patterns of low employment activity over the life course for women. Parenthood was also found to be related to less employment stability (higher job loss, less full-time continuity) over the life course, and this relationship was found to be particularly strong for women who had a higher number of children. This is consistent with prior research highlighting the destabilizing effects of partnership and parenthood on women's employment histories (Cranford and Vosko 2006; Damaske and Frech 2016; Ponomarenko 2016). A note should be made, however, of the particularly high odds of low employment activity found among women with an advanced degree. This finding may be indicative of the practice of

‘opting out’ of labour market activity among higher educated women, who are financially able to allocate more labour hours towards the family due to their higher likelihood of having a higher educated and higher earning male partner (Landivar 2017; Stone and Hernandez 2012). Prior research, however, does not show a dramatic decline in employment activity among partnered higher educated women with children that is suggestive of a widespread practice of ‘opting out’ (Landivar 2017)—although much of this research examines aggregate labour force participation rates as opposed to higher engagement in terms of full-time employment, as is done in this study. Moreover, there is evidence of aggregate declines in full-time employment and concurrent increases in part-time hours post-1970s (Kalleberg 2011; Vosko 2006; Vosko 2007; Vosko and Clarke 2009), which may have increased part-time employment among higher educated women. In contrast, lower educated women may be less able to remain in part-time employment given the lower likelihood of a higher earning male partner—as well as lower earnings overall—and may be more motivated to seek out full-time employment or to supplement part-time hours with multiple jobs.

This study concludes with a brief discussion of its limitations. The first is that, although the LCA reveals the optimal representation of empirical patterns among the sample according to latent class fit statistics (Collins and Lanza 2010), entropy values from the latent class models for both men and women are low, meaning that the variation in these empirical patterns across the sample exceeds capture by the chosen model and measures. Entropy values may increase if the variables used in the LCA had more categories to allow for more detailed patterns to emerge. However, when a higher number of categories is used in the variables included in the LCA, sparseness in the model due to insufficient sample size and low cell counts between variable categories generates item-response probabilities too close to 0 and 1 for some of the latent classes and causes problems with identification.

A second limitation relates to the focus on mid-life stability in this study. Further research should examine stability for workers in periods other than mid-life to address whether some groups experience relatively more employment stability in earlier or later life stages than others. For example, historical labour market changes may result in less

stability for certain groups today, such as individuals younger than 30 who are transitioning from education to employment, or individuals older than 50 who are approaching retirement or old age. For women, the age of investigation is additionally important because they are more likely to experience interruptions in employment due to family and caregiving work at some life stages and not others.

Overall, this analysis represents an attempt at modelling dynamically some of the significant complexities that contribute to job stability over the life course within the context of changing labour markets. Changes that have accompanied the decline of non-standard employment contracts create additional challenges for defining and measuring the concept of employment stability as more complex than merely working for the same employer for life, which is now a rare occurrence. Here we used multivariate techniques that allowed us to examine multiple dimensions of a dynamic latent construct that are in motion over time, conceptualizing stability as the ability to maintain full-time employment, avoid involuntary job loss and the potentially harmful effects of holding multiple jobs at the same time or churning through different employers. More work is needed to refine measurement and to look beyond this one decade of mid-life.

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Chapter 3

3 Multiple Jobholding, Labour Income, and Education over the Long-term

National data from the U.S. and Canada suggest an uptrend in recent decades in the practice of multiple jobholding (MJH)/'moonlighting,' or holding more than one job simultaneously (Bailey and Spletzer 2020; Glavin 2020; Statistics Canada 2022), and a similar trend has also been identified in several European countries (Conen and Buschoff 2021). According to most estimates, multiple jobholders remain a statistical minority among North American workers: In the U.S. in 2021, for example, multiple jobholders were estimated to be 4.6% of the employed workforce (U.S. Bureau of Labor Statistics 2022); in Canada this rate is slightly higher at 5.1% (Statistics Canada 2022). However, some argue that traditional labour market measures under-estimate the prevalence of MJH due to their limited ability to capture new forms of employment, such as gig work, and alternative measures place this rate higher at 19% (in 2019; Glavin 2020).

The uptrend in MJH has socio-economic implications given that prior research shows it to be related to economic disadvantage, low earnings, and precarious or insecure employment (Hamersma, Heinrich, and Mueser 2014; Kimmel and Conway 2001; Partridge 2002; Piasna, Pedaci, and Czarzasty 2021). The increase in MJH over the decades may also be considered part of the wider uptrend in employment precarity since the 1970s, given that precarious conditions are strongly associated with MJH (Conen and Stein 2021; Jonsson et al. 2021; Standing 2011; Zangelidis 2014). For example, non-standard and often precarious employment arrangements such as flexible, temporary, or part-time contracts are increasing or more prevalent among multiple jobholders than single jobholders (Conen 2020; Conen and de Beer 2021; Hamersma et al. 2014). Precarious employment may also increase pressures for higher employment activity through MJH in order to offset declining wages or as insurance against risks to one's primary job (Beck 2000; Standing 2011). The uptrend in MJH also has other implications for workers given that research has linked it to various individual outcomes including increased work-family conflict (Conen and Stein 2021; Boyd, Sliter, and Chatfield 2016;

Webster, Edwards, and Smith 2019), emotional exhaustion (Walsh et al. 2016), poor sleeping patterns (Marucci-Wellman, Lombardi, and Willetts 2016), and risk of physical injury on the job (Marucci-Wellman et al. 2014).

However, other research challenges the notion that MJH is primarily linked to economic and social disadvantage, based on evidence that multiple jobholders are more educated than single jobholders, on average (Conen and de Beer 2021; Marucci-Wellman et al. 2014)—with one study actually finding *higher* earnings and household incomes for multiple jobholders (Conen and Stein 2021). As a result of disparate findings, an alternative view has become popular—particularly in the economic, management, and organizational literatures—of multiple jobholders as a highly skilled and productive group of workers who use one or more additional sources of employment to diversify their skills and career experience while also supplementing some income. This has been encapsulated in various theories and frameworks which generally emphasize that individual motivations for MJH are not necessarily a result of immediate financial need or economic disadvantage (Campion, Caza, and Moss 2020). Going further, however, the economic realities of multiple jobholders may be more nuanced still: With historical earnings declines for both middle- and low-income earners (Brown, Lauder, and Ashton 2011; Rinehart 2006; Vosko 2007), both higher and lower educated workers may be incentivized to engage in additional employment to offset low or declining income. Since there are wide-ranging differences in earnings and income even among workers of similar education (Brown et al. 2011), it may be that the lowest earning individuals of a given education level are particularly likely to engage in MJH.

In addition, it should be made clear that, despite the common empirical approach in analyses of MJH of identifying differences between multiple and single jobholders, these are not necessarily mutually exclusive labour force groups. Rather, MJH is a *practice* that some workers may engage in at one or more period during their working life which should ideally be analyzed longitudinally (e.g., Conen and Stein 2021; Dempster-McClain and Moen 1989; Panos, Pouliakas, and Zangelidis 2014). It is also important to examine how multiple jobholding relates to labour income for individuals over time, particularly to determine the extent to which economically disadvantaged workers are

able to increase their earnings through additional jobs. Evidence from the U.K., Germany, and the Netherlands suggests the affirmative, finding positive wage effects when workers transition from a single to multiple jobs (Conen and Stein 2021). However, there may be variation in the earnings growth that workers gain from MJH. In this study, we are particularly interested in whether there is variation by education, and whether and by how much both higher and lower educated workers experience earnings growth from MJH.

The present study addresses the advantage/disadvantage debate surrounding MJH by way of a socio-economic analysis to examine differences by education and labour income associated with MJH, using longitudinal panel data from the 2003-2019 waves of the Panel Study of Income Dynamics (PSID) and a sample of 2,258 men and 2,464 women. We use descriptive statistics and growth curve models (GCM) to examine the following research questions: **I)** Is multiple jobholding associated with higher or lower levels of labour income, on average, than single jobholding? **II**) Is multiple jobholding associated with upward or downward earnings growth for individuals over time? **III)** How does the economic advantage or disadvantage associated with MJH vary by education? The findings generally reveal that MJH is related to lower initial income among both higher and lower educated men and women, although there is significant variation by education in terms of how MJH relates to changes in labour income over time. In particular, men and women with a bachelor's degree or advanced degrees above a bachelors who engage in MJH experience lower initial earnings than their single jobholding counterparts, but also experience sufficient earnings growth over time that allows them to meet or exceed the earnings growth of single jobholders. However, there are fewer differences in initial earnings or earnings growth between less educated workers engaging in either multiple or single jobholding, and the findings reveal relatively flatter earnings growth overall compared to the higher educated. Moreover, despite wide-ranging differences between men and women in employment, including earnings, the results reveal similarities by gender in rates of MJH over the long term, the relationship between MJH and labour income, and variation by education in the long-term influence of MJH on labour income.

3.1 Literature Review

The debate on whether multiple jobholding (MJH) is related to economic advantage or disadvantage has primarily been discussed in the literature in terms of individual motivations and how the personal decision to hold multiple jobs is influenced by individual-level 'push' or 'pull' factors, such as individuals' perceptions of their financial situation. Indeed, two hypotheses describing the primary individual motivations for MJH have received ample empirical support in the literature: The *earnings constraints* hypothesis suggests that insufficient earnings or benefits from the primary job is a primary motivation (Campion et al. 2020; Partridge 2002), and the *hours constraints* hypothesis suggests insufficient hours in the primary job as motivation (Panos et al. 2014). The focus here, however, is on *structural* dimensions rather than individual motivations, and this study views differences in workers' socio-economic position and structural employment characteristics (e.g., low earnings, low work hours) as primary determinants of engagement in MJH. Empirical evidence of lower earnings and income for multiple jobholders (Partridge 2002; Piasna et al. 2021) lends support to the view that MJH is primarily related to economic disadvantage and structural constraints in the main job. Among a sample of men in the U.S., Kimmel and Conway (2001) also found that multiple jobholders were poorer than single jobholders and that higher earnings in the main job decreased the likelihood of MJH.

Some have also argued that the uptrend in multiple jobholding in recent decades is part of the wider rise in precarious employment (Conen and de Beer 2021), which has been associated with employment conditions contributing to socio-economic insecurity such as low or volatile wages, little to no fringe benefits, weak protection from unions or employment regulations, and impermanent contracts or volatile hours (Kalleberg and Vallas 2017; Shuey and Jovic 2013; Vosko 2006; Vosko 2007). These trends have also been linked to increases in non-standard forms of employment such as temporary contracts, on-call, seasonal, and part-time work, which tend to be more strongly associated with precarious employment conditions than standard employment (i.e., permanent, full-time and standard hours; Kalleberg 2011; Shuey and Jovic 2013; Vosko 2007). These structural changes which increase the likelihood of precarious conditions in

one's main job may therefore increase incentives for multiple jobholding (Conen and de Beer 2021; Standing 2011)—particularly in cases where non-standard hours in the main job (e.g., part-time, weekend hours) can accommodate additional hours in a second or third job. Some research finds that an increasing number of multiple jobholders combine non-standard employment, namely flexible contracts and part-time (Conen 2020), and other research shows that multiple jobholding is more prevalent overall among flexible contract workers (Conen and Stein 2021) and temporary help service workers (Hamersma et al. 2014) than permanent workers. Furthermore, some research also finds that MJH is more prevalent in labour markets where part-time and short-term temporary jobs are also more prevalent (Zangelidis 2014).

Overall, much of the available evidence on MJH suggests that it is primarily related to low earnings and economic disadvantage, with emerging research also connecting it to precarious employment trends. However, some of this research also finds a higher tendency for MJH among higher educated workers than for the less educated (e.g., Conen and Stein 2021; Kimmel and Conway 2001). One study finds *higher* monthly and hourly earnings, as well as net household income, for multiple jobholders in the U.K. and Germany—but not in the Netherlands, where earnings and household income are lower for multiple jobholders (Conen and Stein 2021). Such evidence of higher education, along with limited evidence of higher earnings and income, has popularized various theories and frameworks—particularly in the economic, management and organizational literatures—which generally emphasize that individual motivations for MJH are not always a result of financial need or economic disadvantage (Campion et al. 2020). For example, the *job portfolio* framework suggests individuals may engage in MJH because they enjoy the diversity in job tasks and experiences that comes from different jobs, or because they want to diversify their skills and human capital against a context of shifting economic demand for skills (Campion et al. 2020). This reflects a model of multiple jobholders as highly skilled and productive workers who use one or more additional sources of employment primarily to diversify their skills and career experience while also supplementing some income. These findings may suggest heterogeneity among multiple jobholders in terms of socio-economic characteristics, such as education, which generate either the structural *opportunity* for individual choice to

engage in multiple jobs, or structural *constraint* which affords workers little other choice. For example, higher educated and higher earning workers may primarily experience multiple jobholding as an opportunity, and lower earning and educated workers may experience it more as a constraint.

However, it is also possible that multiple jobholding is related to economic disadvantage among *both* lower and higher educated workers, given historical earnings declines for both middle- and low-income earners (Brown, et al. 2011; Rinehart 2006; Vosko 2007). For example, between 1973 and 1996 mid-range family incomes diminished by more than 40% in Canada (Rinehart 2006). In the U.S., earnings among college- and university-educated workers have declined or stagnated since the 1970s (Brown et al. 2011). Global offshoring trends facilitated by globalization and technological development are partly responsible for earnings declines among the higher educated: Brown et al. (2011) detail how higher-skilled labour previously sourced in early industrialized Western economies (e.g., U.S., Canada) has been increasingly sourced from emerging economies such as those of India or China as these nations rapidly develop their scientific, technical, and industrial infrastructure. This leads to 'quality-cost revolutions' that generate a highly skilled workforce providing a less expensive alternative to that of Western economies. Global competition between higher- and lower-cost sites of labour allows employers to drive down compensation in both affluent and emerging economies, even among higher educated workers. A concurrent trend is income polarization among similarly educated people, as a few manage to secure lucrative positions in profitable organizations or industries in a highly competitive labour market in which competition is exacerbated by global offshoring (Brown et al. 2011). Brown et al. (2011:85) argue this to be an outcome of the "war for talent" as employers recruit a limited number of highly 'talented' workers—i.e., students of elite educational institutions and privileged employment backgrounds—thus creating a situation of limited supply of lucrative jobs for the higher educated. This process of "white-collar stratification" generates greater competition among highly educated workers and creates a context in which a smaller number of workers earn two to three times more than the majority of those of the same educational background (P. 85).

Higher educated workers, then, may be incentivized to engage in multiple jobs to offset low or declining income. Record levels of student debt in the U.S. (Federal Reserve Bank of New York 2022), as well as sharply increasing levels of consumer debt outpacing incomes since 1985 (Porter 2012) may heighten these pressures. Another incentive may be found in declines in employment fringe benefit provision and quality in recent decades among both higher and lower educated workers (Brown et al. 2011; Kalleberg 2011; Shuey and O'Rand 2004; Vosko 2007), which encompasses benefits such as health insurance, pensions, childcare provisions, and vacation pay which help offset the impact of life course insecurities, such as ill health, old age, or family crises (Shuey and O'Rand 2004). In addition, while higher education has historically ensured access to standard and non-precarious employment, this has diminished to some extent in recent years (Branch and Hanley 2017), which may provide additional incentive to engage in a second or third job. Some research also shows that an increasing share of multiple jobholders are made up of highly educated workers combining two part-time jobs (Conen and de Beer 2021). Although there is limited research on precarious and non-standard employment among the higher educated more generally, a growing body of work examines the reliance of universities on low wage, temporary, and part-time academic workers for teaching and research (Jacoby and Boyete 2020; Mason and Megoran 2021; Murgia and Poggio 2019; Spina et al. 2022; Zhang and Liu 2010).

3.2 Multiple Jobholding over the Long-term

Typically, national surveys such as those conducted by the U.S. Bureau of Labor Statistics or Statistics Canada measure the incidence of multiple jobholding (MJH) by asking respondents whether they engaged in an additional job in the week prior to the survey (Glavin 2020). While broader measures have been proposed in terms of both the referenced time frame and conceptual scope of what constitutes an 'additional job' (Glavin 2020), MJH should ideally be measured longitudinally to capture the dynamism of this growing labour force phenomenon. Furthermore, rather than define multiple and single jobholders as mutually exclusive labour force categories, multiple jobholding is instead considered here to be a *practice* that some workers engage in during one or more periods across their work history, primarily—although perhaps not necessarily—to offset

economic disadvantage. Indeed, prior research finds that longitudinal estimates of MJH show evidence that most incidences of MJH are short term and may be dispersed for individuals over time (Conen and Stein 2021; Kimmel and Conway 2001). Therefore, cross-sectional measures, particularly those focusing only on the week prior to the survey, underestimate the number of workers who engage in MJH at some point during their work lives. For example, early research finds that while 21% of men reported working at least one additional job during the year, 50% held multiple jobs at some point during their work lives (Paxson and Sicherman 1996).

Moreover, given that insufficient earnings/hours and one's financial situation are the most reported motivations for MJH, longitudinal data are necessary for determining the extent to which individuals experience labour income growth from multiple jobs. Thus far, only one study has identified positive earnings growth associated with MJH (Conen and Stein 2021). Other longitudinal research also finds that MJH increases the likelihood of attaining a new job following unemployment, as well as lowers the likelihood of unemployment or labour market inactivity (Panos et al. 2014). However, there is less information on whether labour income growth via MJH varies across levels of education, which would give further insight into the potentially complex relationship between economic disadvantage, education, and MJH.

3.3 Research Questions

A small but growing literature has found a strong empirical relationship between multiple jobholding (MJH) and economic disadvantage—primarily in terms of low earnings and labour income. Some of this research has also found a higher tendency for MJH among higher educated workers than for the less educated. These seemingly disparate findings may indicate heterogeneity among multiple jobholders, where the economically disadvantaged and less educated engage in MJH to offset disadvantage, while in contrast the higher educated and economically advantaged use it to diversify their skills and career experience. Alternatively, historical earnings declines and growing employment precarity among both higher and lower educated workers may indicate that workers of all education levels use MJH to improve their economic situation. This study investigates these possibilities by examining the first research question: **I)** Is multiple jobholding

associated with higher or lower levels of labour income, on average, than single jobholding? Going further, this study also investigates the extent to which MJH improves workers' economic situation by examining the second research question: **II**) Is multiple jobholding associated with upward or downward earnings growth for individuals over time? Finally, the third research question investigates the role of education: **III)** How does the economic advantage or disadvantage associated with MJH vary by education?

3.4 Methods

3.4.1 Data

This study uses longitudinal data from the 2003-2019 waves of the Panel Study of Income Dynamics (PSID). The PSID is an ongoing survey of U.S. families conducted annually from 1968-1997 and biannually thereafter, and has collected longitudinal data on more than 82,000 individuals (Johnson et al. 2018; McGonagle et al. 2012; PSID 2021). It is an ideal data source for studying multiple jobholding (MJH) for its wide range of variables on employment, income, education, and socio-demographics such as gender and race.

The analytic sample is restricted to individuals who were household "Reference Persons" or "Spouses" of reference persons in each wave observed. The sample is further limited to individuals who are between the ages of 25 and 44 in the first observed wave collected in 2003, on whom longitudinal data are collected until the last wave in 2019, when these individuals are between the ages of 41 and 60. This analysis is limited to the biannual 2003-2019 PSID waves because the variables used to construct the primary independent variable, MJH, are restricted to these waves. Next, because we are interested in comparing forms of employment (i.e., multiple vs single jobholding) rather than differences between the employed, unemployed, or labour force non-participants, we further restrict the sample to those individuals who report being employed at least once in each wave observed. Finally, we exclude those individuals who are self-employed on their primary job because of wide-ranging differences between the self-employed and employees, such that much theory and evidence on MJH is not easily extendable to those who are self-employed on their main job (Atherton et al. 2016). For instance, among the

main-job self-employed, MJH was found to be less related to lower earnings or hours constraints in the main job (Atherton et al. 2016). Due to the flexibility of the growth curve models used, it is not necessary to exclude cases who are missing or non-response in each wave—although to avoid estimation problems cases should be non-missing in at least three waves (Singer and Willet 2003). This provides a final analytic sample of 2,258 men (with 14,848 longitudinal observations) and 2,464 women (with 16,001 longitudinal observations). This sample has a missing data rate of 2.4%. Although all descriptive statistics are weighted to adjust for differential probabilities of sample selection, we do not weight the growth curve models because sampling is a function of independent variables included in the model which produces unbiased coefficients and standard errors (Winship and Radbill 1994). Nevertheless, standard errors for all analyses are adjusted using BRR weights produced using Wesvar 5 and the strata and cluster variables available with the PSID to adjust for non-independence of individual cases belonging to the same strata, cluster, and/or family unit (Heeringa, Berglund, and Khan 2011).

3.4.2 Measures

Wave – Each time-varying variable is collected from the full calendar year *prior* to the 2003-2019 PSID waves used in this study. The primary variable used to indicate change over time is *wave,* which follows individuals from 2002, the first year for which individual data were collected, and thereafter biannually in 2004, 2006, 2008, 2010, 2012, 2014, 2016—until the last observation in 2018.

Labour income (time-varying dependent variable) – The dependent variable is the log of total annual labour income from all jobs in the year prior to each survey wave and adjusted for inflation to 2019 dollars.

Multiple jobholding (MJH; time-varying independent variable) – The majority of prior research measures MJH using survey questions that broadly ask about additional jobs held, rather than directly measuring the number of jobs an individual holds in a given period which may lead to underestimates (Glavin 2020). Instead, we use calendar data on all jobs provided in the 2003 and later waves of the PSID (measured in the year prior to each wave). These calendar data are collected by prompting respondents to list

the start and end dates of all jobs that they engaged in starting from their most recent job, in reverse chronological order from the date of the survey back until January 1st of the prior two years. To align data on jobs with the other time-varying variables used in this study, such as labour income, we restrict observation to one year prior to the survey wave (not including the months up until the survey). Next, we compare calendar data on jobs within this reference year to determine whether there is temporal overlap in any jobs reported at any point during this period, after which individuals are coded as 1 = "multiple jobs held" or 0 = "single job held" for each wave.

Education (time-invariant independent variable) – Education is measured as the highest level of education reported across all waves, with categories "less than high school," "high school," "some postsecondary" (below a bachelor's degree), "bachelor's degree," and "above bachelor's (e.g., M.A., Ph.D., etc.)."

Gender (time-invariant independent variable) – Prior research finds differences in the propensity for MJH between men and women, although results are inconsistent with some research finding higher propensity among men and some among women (Campion et al. 2020). Some research also finds that women are more likely to hold multiple jobs when examining cross-sectional data, while longitudinal data show that men are more likely to have held multiple jobs at some point during their working lives (Ameudo-Dorantes and Kimmel 2009). Due to wide-ranging gender differences in employment characteristics including earnings and work hours (Acker 1990; Crowley 2013; Kalleberg 2011; Vosko 2007), all analyses are stratified by *gender* using the categories "men" and "women."

Age and other controls – Individuals in the sample are observed at different ages and across different stages of their lives. Earnings tend to increase over time as individuals age, and prior research also finds that younger individuals are more likely to hold multiple jobs (Campion et al. 2020). Therefore, we include a categorical control for *Age at first wave* (in 2002) with categories "25-29," "30-34," "35-39," and "40-44," as well as a continuous, time-varying control for *Age-squared*. We also include a time-varying control for *hours worked* with two categories of "full-time employed" and "part-

time employed," which is constructed as follows: First, we use the PSID variable 'total annual hours worked for money in the prior year' available at each wave and use this to calculate total annual hours averaged across 52 weeks of the year. Next, we collapse this into a binary variable with the two categories of 'full-time employed,' or whether the individual worked at least 35 hours per week (or 1820 hours or higher annually), and 'part-time employed,' or whether the individual worked part-time or fewer hours (34 hours or fewer per week, or 1819 hours or fewer annually). Additionally, because of wide-ranging employment and socio-economic differences by race, we include controls for *race* with categories "White," "Black," and "other."

3.4.3 Analytic Strategy

All analyses are conducted separately between men and women. To answer the first research question on how multiple and single jobholders differ in terms of economic disadvantage or advantage, we first examine simple descriptive statistics summarized from longitudinal data on education, labour income, and multiple jobholding (MJH), to examine baseline descriptive differences. However, these simple descriptive results do not directly model change over time and are unadjusted for other factors. Therefore, we examine the question further by estimating the longitudinal associations between MJH and labour income using growth curve models (GCMs; Bryk and Raudenbush 1987; Raudenbush and Bryk 2002). GCMs are hierarchical linear models that are applied to longitudinal data to estimate change in outcomes over time (Bryk and Raudenbush 1987; Raudenbush and Bryk 2002): They are hierarchically structured such that the level-2 model is organized around the individual, while the level-1 model is organized around repeated observations of an outcome variable that are considered 'nested' within that individual. This model estimates a mean trajectory of the outcome variable (i.e., labour income) for the sample, which can be used to identify their estimated starting level of the outcome (or model intercept) and its rate of change (or slope). Particular variables can modify the mean trajectory assumed by the growth model. To further answer the first research question and examine whether the long-term relationship between MJH and labour income is indicative of economic disadvantage, we examine several growth models: Model 1 is a baseline model including wave and MJH as a time-varying

covariate, which helps determine the average relationship between MJH and labour income over time. Model 2 further includes an interaction between MJH and wave (MJH*Wave). In this model, MJH*Wave adjusts for the changing effect of MJH on labour income over time while the MJH coefficient now indicates how MJH relates to initial labour income in the first wave. Model 3 further includes all control variables to adjust these results for the influence of other factors such as education and race.

The second research question asks whether individuals experience an increase in labour income associated with MJH over time. To answer this, we again examine results from Model 2 (no controls) and Model 3 (with controls), focusing more closely on the interaction between MJH and wave (MJH*Wave) to determine whether MJH is related to growth or decline in labour income in each wave.

The third research question asks whether the economic advantage or disadvantage associated with MJH—determined using Models 1-3—varies by education. To answer this, we examine an additional Model 4 which includes interactions between MJH, wave, and education (MJH*Wave*Education) to determine whether these patterns vary significantly by education. In Model 4, the MJH*Education interaction indicates whether initial labour income varies by education, while the MJH*Wave*Education interaction coefficient indicates whether growth/decline in labour income associated with MJH varies by education. For ease of interpretation, these results are also presented graphically using predicted labour income at each wave produced from Model 4 and plotted separately by education.

3.5 Results

3.5.1 Descriptive Results

Table 3.1 presents a statistical description of the sample. Consistent with some early research (Paxson and Sicherman 1996), these results show that just under half of both men and women in the sample have held multiple jobs in at least one wave. However, most multiple jobholders report only one or two waves with MJH (40.7% of men and 38.8% of women), while only 8.7% of men and 9.6% of women report MJH in three or more waves. In fact, no individual in the sample reports more than seven waves of MJH.

These results suggest that MJH is primarily a short-term phenomenon as found in prior longitudinal research (Conen and Stein 2021; Kimmel and Conway 2001), with similar rates found among both men and women.

Table 3.1: Sample description, by gender. Source: PSID 2003-2019.

	Men	Adjusted 95% C.I. (Lower, Upper)	Women	Adjusted 95% C.I. (Lower, Upper)
Number of waves holding multiple jobs (max = 9)				
0 (None)	0.506	(0.480, 0.533)	0.516	(0.489, 0.543)
1-2	0.407	(0.383, 0.430)	0.388	(0.363, 0.414)
3+	0.087	(0.074, 0.102)	0.096	(0.080, 0.114)
Median labour income (in 2019 $)				
Averaged across waves	58,323	-	35,281	-
At first available observation	50,944	-	33,360	-
At last available observation	60,000	-	39,240	-
Education				
Less than high school	0.113	(0.091, 0.140)	0.076	(0.062, 0.094)
High school only	0.283	(0.256, 0.310)	0.234	(0.213, 0.256)
Some postsecondary	0.222	(0.197, 0.249)	0.278	(0.250, 0.307)
Bachelor's	0.210	(0.186, 0.236)	0.206	(0.184, 0.229)
Above bachelor's	0.172	(0.149, 0.198)	0.207	(0.184, 0.231)
Age at first wave				
25-29	0.227	(0.203, 0.253)	0.225	(0.205, 0.247)
30-34	0.271	(0.255, 0.287)	0.252	(0.230, 0.277)
35-39	0.240	(0.213, 0.269)	0.234	(0.212, 0.257)
40-44	0.262	(0.239, 0.288)	0.289	(0.264, 0.315)
Average % of waves employed full-time	0.784	(0.766, 0.802)	0.542	(0.520, 0.564)
Race				
White	0.823	(0.784, 0.857)	0.808	(0.764, 0.845)
Black	0.105	(0.079, 0.138)	0.136	(0.105, 0.175)
Other	0.072	(0.056, 0.092)	0.056	(0.041, 0.076)
N	2,258		2,464	

Notes: Weighted using population weights provided with the PSID. Standard errors for the C.I.'s are adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

Other results in Table 3.1 show that the median labour income for men in the sample is $58,323 and $35,281 for women, which is produced from an individual-level average across waves. The sample overall shows evidence of some earnings growth, with the median labour income for men at the first available wave at $50,944 and increasing to $60,000 in the final available wave—equivalent to an increase of $9,056. Women in the sample experience lower initial ($33,360) and final earnings ($39,240) than men, as well as smaller growth in earnings ($5,880). In terms of education, most men in the sample report a high school education (28.3%) or some postsecondary education (22.2%); somewhat fewer report holding a bachelor's degree (21.0%) or a degree above a bachelor's (17.2%); and only 11.3% report less than a high school education. Most women in the sample report some postsecondary education (27.8%), followed by a high school education (23.4%); fewer report a bachelor's degree (20.6%) or above a bachelor's (20.7%); and only 7.6% report less than a high school education.

In terms of the ages at which individuals are observed, 27.1% of men and 25.2% of women in the sample are between the ages of 30-34 in the first wave; 24.0% of men and 23.4% of women are 35-39, and 26.2% of men and 28.9% of women are 40-44. The smallest percentages of both men (22.7%) and women (22.5%) are in the youngest age category at the ages of 25-29 in the first wave. In terms of work hours, the average percentage of waves in which men are employed full-time is 78.4%, while this is lower for women at 54.2%. In terms of race, most of the sample is White (82.3% of men and 80.8% of women), while considerably fewer are Black (10.5% of men and 13.6% of women) or fall into the 'other' race category (7.2% of men and 5.6% of women).

Tables 3.2.1 and 3.2.2 provide additional descriptive statistics that show how median labour income differs between the first and last observation for men and women in the sample, by multiple jobholding and by education, to show change in labour income over time. Table 3.2.1 presents median labour income at the first available observation and Table 3.2.2 presents median labour income at the last available observation. These results provide preliminary answers to the research questions. To answer the first research question of whether multiple jobholders have higher or lower levels of labour income than single jobholders, we primarily examine Table 3.2.1 where the results

generally show lower labour income at first observation for men who are multiple jobholders, but not for women. Men who report no MJH earn a median income of $54,927, while median income is lower for men who report 1-2 waves ($48,650) and 3+ waves ($42,485). However, women who report no MJH earn a median income of $33,716, and while median income is lower among women who report 1-2 waves of MJH ($29,190), it is *higher* among women who report 3+ waves ($36,140).

Table 3.2.1: Median labour income at first available observation (in 2019 $) by gender, education, and multiple jobholding. Source: PSID 2003-2019.

	Number of waves holding multiple jobs					
	Men			Women		
	0 (None)	1-2 waves	3+ waves	0 (None)	1-2 waves	3+ waves
Full sample	54,927	48,650	42,485	33,716	29,190	36,140
Highest completed education						
Less than high school	36,140	31,622	26,410	15,290	13,900	35,864
High school only	44,480	41,700	42,240	27,800	23,630	25,020
Some postsecondary	55,600	47,260	41,700	34,510	29,190	36,140
Bachelor's	76,450	57,746	48,650	43,090	42,909	31,970
Above bachelor's	76,460	62,550	55,440	52,820	44,480	43,090
N	2,258			2,464		

Table 3.2.2: Median labour income at last available observation (in 2019 $) by gender, education, and multiple jobholding. Source: PSID 2003-2019.

	Number of waves holding multiple jobs					
	Men			Women		
	0 (None)	1-2 waves	3+ waves	0 (None)	1-2 waves	3+ waves
Full sample	62,000	60,000	52,250	39,462	37,105	45,000
Highest completed education						
Less than high school	32,500	30,000	21,260	20,100	10,921	25,000
High school only	45,100	48,000	42,500	27,156	27,201	28,105
Some postsecondary	60,000	59,280	65,000	40,202	31,350	41,040
Bachelor's	109,000	101,826	50,250	55,000	50,251	50,005
Above bachelor's	112,000	92,000	90,100	70,010	59,000	76,300
N	2,258			2,464		

Next, to answer the second research question of whether MJH is associated with earnings growth over time, we turn to Table 3.2.2. Among men, multiple jobholders experience higher earnings at the last observation relative to their first observation, with $60,000 for 1-2 waves of MJH and $52,250 for 3+ waves at the last observation (indicating growth of $11,350 and $9,765, respectively). Men who are single jobholders also have higher earnings at the last observation that is even higher than that of multiple jobholders at the last observation with $62,000, although the relative increase is smaller at $7,073. Among women, Table 3.2.2 shows the same pattern of median income differences between multiple and single jobholders as in Table 3.2.1, with higher income at the last observation for 3+ waves of MJH ($45,000) compared to 1-2 waves ($37,105) and no multiple jobholding ($39,462). Moreover, comparing these estimates to Table 3.2.1 shows that women who are multiple jobholders experience higher relative growth in labour income, with $8,860 for 3+ waves of MJH and $7,915 for 1-2 waves, compared to $5,746 for women who are single jobholders. These results suggest that, overall, multiple jobholders do experience relatively higher growth in earnings compared to single jobholders, although their overall earnings remain lower at both initial and later earnings—with the exception of women who engage in longer term MJH in 3+ waves.

The third and final research question asks whether the economic advantage or disadvantage associated with MJH varies by education, and we first examine results by education from Table 3.2.1 to answer this question in terms of initial labour income. Table 3.2.1 shows evidence of lower initial labour income for men who are multiple jobholders than for men who report no MJH across education levels. Among women, we see a similar pattern of lower initial labour income overall for multiple jobholders for women with a high school education, a bachelor's degree, and above a bachelor's degree. However, for women with less than a high school education and with some postsecondary education, we again see the same pattern across education as in the full sample, with higher initial labour income for 3+ waves of MJH compared to single jobholders ($35,864 vs $15,290 for less than high school; $36,140 vs $34,510 for some postsecondary). These results suggest that the pattern of economic disadvantage for multiple jobholders does not vary by education for men, although it does for some groups

of lower educated women who engage in longer term MJH and also tend to have relatively higher earnings.

Comparing results in Table 3.2.1 with Table 3.2.2 also helps answer the third research question in terms of whether the earnings growth associated with multiple jobholding varies by education. Table 3.2.2 also shows evidence of generally higher labour income overall at last observation for men who are single jobholders—with a particularly pronounced difference between men with a bachelor's degree who do not hold multiple jobs ($109,000) and their counterparts who hold multiple jobs in 3+ waves ($50,250). For these college- or university-educated men, those who engage in 3+ waves of MJH are also disadvantaged in terms of earnings growth between first and last observation ($1,600) compared to single jobholders ($32,550)—although earnings growth is highest for 1-2 waves of MJH at $44,080. For those men with degrees above a bachelor's degree, single jobholders also have higher earnings growth ($35,540) than multiple jobholders of 1-2 waves ($29,450) or 3+ waves ($34,660; albeit this is a small difference). Moreover, there are two exceptions to the pattern of lower labour income at final observation for multiple jobholders: Men with a high school education who engage in 1-2 waves of MJH earn $48,000 compared to $45,000 for single jobholders, and men with some postsecondary education who engage in 3+ waves of MJH earn $65,000 compared to $60,000 for single jobholders. Furthermore, some multiple jobholders among these lower educated men experience higher earnings growth than single jobholders. For example, men with a high school degree who engage in 1-2 waves of MJH experience earnings growth of $6,300 compared to only $620 for single jobholders—although earnings growth for 3+ waves of MJH is only $260. For the postsecondary educated, however, earnings growth is higher for 3+ waves of MJH ($23,000) and 1-2 waves ($12,020) compared to single jobholders ($4,400). Finally, men with less than a high school education experience a *decline* in labour income between first and last observation, although this decline is smallest for those engaging in 1-2 waves of MJH ($-1,622), followed by single jobholders ($-3,640), and 3+ waves of MJH ($-5,150).

Next, we compare Table 3.2.1 with Table 3.2.2 to determine differences by MJH and education in earnings growth for women. The results show that a pattern of lower initial labour income for multiple jobholders is maintained at the last observation for women with a bachelor's degree—although it is reversed for women with a high school education engaging in 3+ waves of MJH compared to single jobholders ($28,105 vs $27,156), as well as for those with above a bachelor's degree ($76,300 vs $70,010). However, women with less than a high school education or a postsecondary education have *higher* initial labour income when engaging in 3+ waves of MJH, of which the pattern is maintained at the last observation ($25,000 vs $20,100 for less than high school; $41,040 vs $40,202 for postsecondary education). Although the patterns of earnings growth when comparing Table 3.2.1 and 3.2.2 do not show a clear demarcation by education, there is some evidence of an advantage associated with higher education and long-term MJH for women: Those with a bachelor's degree and 3+ waves of MJH have higher earnings growth ($18,035), than either their counterparts with single jobs ($11,910) or 1-2 waves of MJH ($7,342); those with above a bachelor's degree and 3+ waves of MJH also have higher earnings growth ($33,210), than either their counterparts with single jobs ($17,190) or 1-2 waves of MJH ($14,520). In contrast, women with less than a high school education and single jobs have higher earnings growth ($4,810) than multiple jobholders ($-2,979 for 1-2 waves of MJH; $-10,864 for 3+ waves of MJH), with the same pattern found among women with a postsecondary education ($5,692 for single jobholders, $2,160 for 1-2 waves of MJH, and $4,900 for 3+ waves of MJH). However, women with a high school education and who engage in MJH *do* experience some advantage in terms of earnings growth, with $3,571 for 1-2 waves of MJH and $3,085 for 3+ waves of MJH, compared to $-644 for single jobholders.

Overall, the results by education in Tables 3.2.1 and 3.2.2 show that men who are multiple jobholders generally experience economic disadvantage relative to single jobholders, although there is evidence of relatively higher earnings growth for multiple jobholders. Among women, there is evidence of economic *advantage* for longer term multiple jobholders compared to single jobholders—particularly for less educated women and, to a lesser extent, those with advanced degrees above a bachelor's degree. However, among women, relatively higher earnings growth for multiple jobholders occurs

primarily among the higher educated, with the exception of high school educated women. Men experience less variation by education in terms of lower labour income among multiple jobholders, although there is some variation by education in terms of earnings growth with lower growth for men with less than a high school education, as well as for some higher educated men.

3.5.2 Multivariate Results

Tables 3.3.1 (men) and 3.3.2 (women) present results from growth curve models of labour income across the observed period, 2002-2018. In each table, two columns are presented for each model, with the first displaying the coefficients (b) and the second displaying the approximate percent change in labour income associated with a one unit change in the predictor variable calculated using the following formula: $(e^b - 1) \times 100$. Models 1-3 help answer the first research question, separately for men and women, of whether multiple jobholders have higher or lower average labour income than single job holders, as well as the second research question of whether multiple jobholding is associated with upward or downward earnings growth.

We first examine the results for men presented in Table 3.3.1. Model 1 includes only coefficients for wave and the time-varying measure of multiple jobholding (MJH), and the positive coefficient associated with wave suggests that men experience a modest increase in labour income across waves. While the MJH coefficient is negative, the magnitude is low and insignificant which suggests that MJH is not strongly negatively associated with lower labour income on average over time compared to men who do not hold multiple jobs. Model 2 includes an MJH*Wave interaction that accounts for change over time in the effect of MJH on labour income. This model specification shows that the initial average difference in labour income between men who are multiple and single jobholders, after accounting for the changing effect of MJH over time, is 9.20% lower for individuals who hold multiple jobs (P<.001). However, the significant slope coefficient of MJH*Wave indicates that men who hold multiple jobs accumulate labour income 0.90% faster than their single jobholding counterparts over time (P<.001). Model 3 further includes control variables. After adjusting the results for education, work hours, race, and age, the initial average difference in labour income for men is adjusted to be

8.33% lower for multiple jobholders (P<.001), while labour income growth for men with multiple jobs is 0.80% faster than for single jobholders (P<.01). Overall, these results suggest that while men who engage in MJH have lower initial average labour income overall, MJH does provide some earnings growth that may help offset initial disadvantage.

Model 3 in Table 3.3.1 provides other results of note, showing differences in average labour income in terms of the covariates among men—all of which are significant at P<.001. Compared to men with a high school degree, men with less than a high school education earn 39.10% less in labour income, while those with some postsecondary education earn 15.72% more, those with a bachelor's degree earn 65.53% more, and those with a degree higher than a bachelor's earn a dramatic 82.03% more. Working part-time hours, as opposed to full-time, is associated with a substantial 70.40% reduction in labour income among men. There are also significant differences by race, with Black men earning 29.31% less than White men, while men who fall into all other racial/ethnic groups earn 18.41% less than White men. Finally, the ages at which men are observed also contribute to differences in labour income, with older mean earning higher income: Compared to men who are between the ages of 25-29 in the first wave, those who are 30-34 earn 24.48% more, those who are 35-39 earn 42.33% more, and those who are 40-44 earn 66.70% more.

Next, we examine Models 1-3 presented in Table 3.3.2 to answer the first question for women, of whether multiple jobholders have higher or lower average labour income than single jobholders, as well as the second research question of the association between MJH and earnings growth. Model 1 includes only wave and MJH, and the positive coefficient associated with wave suggests that women experience a 1.72% average increase in labour income across waves (P<.001), which is higher than the 0.60% increase found among men. The magnitude of the MJH coefficient is low and insignificant which suggests that, for women, MJH is not strongly associated with lower or higher labour income on average over time compared to women who are single jobholders. Model 2 includes an MJH*Wave interaction which accounts for changing effect of MJH on labour income over time and shows that the initial difference in labour

income is 2.63% lower for women who hold multiple jobs—although this result is insignificant. Nevertheless, the significant slope coefficient of MJH*Wave indicates that women who hold multiple jobs accumulate labour income at a somewhat faster pace of 0.50% over time compared to women who are single jobholders (P<.05). Model 3 adjusts these results for control variables (education, work hours, race, and age), and the initial difference in labour income for women is adjusted to be 5.55% lower for multiple jobholders (P<.05), while labour income growth for women with multiple jobs is only 0.40% faster than for single jobholders (P<.10). Overall, these results suggest that women who engage in MJH have lower initial labour income overall when adjusting for factors such as education and race. MJH also provides some modest earnings growth among women, although this is smaller compared to the same rate of growth among men.

For women, we again turn to other results of note by examining Model 3 in Table 3.3.2 which shows differences in average labour income across the covariates—all of which are significant at P<.001 (with the exception of age). Women with less than a high school education earn 46.52% less in labour income than women with a high school degree, while those with some postsecondary education earn 20.68% more, those with a bachelor's degree earn 70.23% more, and those with a degree higher than a bachelor's earn a dramatic 100.17% more. For women, working part-time hours is associated with a 69.55% reduction in labour income compared to working full-time hours. In terms of race, Black women earn 13.09% less than White women, and women who fall into all other racial/ethnic groups earn 17.23% less than White women. Finally, women who are observed at older ages earn higher income, with women who are between the ages of 30-34 in the first wave earning 9.75% more than younger women observed at ages 25-29 (P<.01), women who are 35-39 earn 23.86% more (P<.001), and women who are 40-44 earn 29.82% more (P<.001).

Table 3.3.1: Hierarchical linear models of log(labour income), men only. Source: PSID 2003-2019.

	Model 1 Baseline		Model 2 MJH * Wave Interactions		Model 3 MJH * Wave interaction, controls		Model 4 MJH * Wave * Education interaction	
	b	%Δ(y)	b	%Δ(y)	b	%Δ(y)	b	%Δ(y)
Intercept	10.769***		10.777***		10.755***		10.758***	
Multiple jobholding (MJH)	-0.025	-0.250	-0.088***	-9.199	-0.080***	-8.329	-0.029	-2.942
Wave	0.006***	0.602	0.005***	0.501	0.024***	2.429	0.020***	2.020
MJH*Wave			0.009***	0.904	0.008**	0.803	0.002	0.200
Education								
Less than high school (LHS)					-0.330***	-39.097	-0.311***	-36.343
High school only (HS) (ref)					-	-	-	-
Some postsecondary (SPS)					0.146***	15.720	0.140***	15.027
Bachelor's degree (BD)					0.504***	65.533	0.477***	61.123
Above bachelor's (AB)					0.599***	82.030	0.575***	77.713
*MJH*Wave* Education*								
LHS*Wave*MJH							-0.004	-0.401
HS (ref)*Wave*MJH							-	-
SPS*Wave*MJH							-0.009	-0.904
BD*Wave*MJH							0.020**	2.020
AB*Wave*MJH							0.005	0.501
*MJH*Education*								
LHS*MJH							-0.072	-7.466
HS (ref)*MJH							-	-
SPS*MJH							-0.053	-5.443
BD*MJH							-0.176*	-19.244
AB*MJH							-0.072	-7.466
*Education * Wave*								
LHS * Wave							-0.007*	-0.702
HS * Wave (ref)							-	-
SPS * Wave							0.002	0.200
BD * Wave							0.011***	1.106
AB * Wave							0.009**	0.904
Employed hours								
Full-time (ref)					-	-	-	-
Part-time					-0.533***	-70.404	-0.530***	-69.893
Race								
White (ref)					-	-	-	-
Black					-0.257***	-29.305	-0.256***	-29.175
Other					-0.169***	-18.412	-0.170***	-18.530
Age at first wave								
25-29 (ref)					-	-	-	-
30-34					0.219***	24.483	0.219***	24.483
35-39					0.353***	42.333	0.349***	41.765
40-44					0.511***	66.696	0.504***	65.533
N	2,258 (14,848 Observations)							

Notes: Model also controls for age-squared. Results are bootstrapped using the strata and cluster variables provided with the PSID. Variance components for all models available upon request. +P<.10, *P<.05, **P< .01, ***P<.001.

Table 3.3.2: Hierarchical linear models of log(labour income), women only. Source: PSID 2003-2019.

	Model 1 Baseline		Model 2 MJH * Wave Interactions		Model 3 MJH * Wave interaction, controls		Model 4 MJH * Wave * Education interaction	
	b	%Δ(y)	b	%Δ(y)	b	%Δ(y)	b	%Δ(y)
Intercept	10.206***		10.211***		10.250***		10.263***	
Multiple jobholding (MJH)	0.009	0.904	-0.026	-2.634	-0.054*	-5.548	-0.002	-0.200
Wave	0.017***	1.715	0.017***	1.715	0.022***	2.224	0.016*	1.613
MJH*Wave			0.005*	0.501	0.004+	0.401	0.002	0.200
Education								
Less than high school (LHS)					-0.382***	-46.521	-0.392***	-47.994
High school only (HS) (ref)					-	-	-	-
Some postsecondary (SPS)					0.188***	20.683	0.187***	20.563
Bachelor's degree (BD)					0.532***	70.233	0.501***	65.037
Above bachelor's (AB)					0.694***	100.171	0.599***	82.030
*MJH*Wave* Education*								
LHS*Wave*MJH							-0.006	-0.602
HS (ref)*Wave*MJH							-	-
SPS*Wave*MJH							-0.003	-0.300
BD*Wave*MJH							0.013+	1.308
AB*Wave*MJH							0.003	0.300
*MJH*Education*								
LHS*MJH							-0.118	-12.524
HS (ref)*MJH							-	-
SPS*MJH							-0.013	-1.308
BD*MJH							-0.130*	-13.883
AB*MJH							-0.075+	-7.788
*Education*Wave*								
LHS * Wave							-0.004	-0.401
HS * Wave (ref)							-	-
SPS * Wave							0.001	0.100
BD * Wave							0.005+	0.501
AB * Wave							0.014***	1.410
Employed hours								
Full-time (ref)					-	-	-	-
Part-time					-0.528***	-69.554	-0.527***	-69.384
Race								
White (ref)					-	-	-	-
Black					-0.123***	-13.088	-0.123***	-13.088
Other					-0.159***	-17.234	-0.157***	-17.000
Age at first wave								
25-29 (ref)					-	-	-	-
30-34					0.093**	9.746	0.087**	9.090
35-39					0.214***	23.862	0.200***	22.140
40-44					0.261***	29.823	0.237**	26.744
N	2,464 (16,001 Observations)							

Notes: Models also control for age-squared. Results are bootstrapped using the strata and cluster variables provided with the PSID. Variance components for all models available upon request. +P< .10, *P< .05, **P< .01, ***P< .001.

Finally, we use the results in Model 4 from Tables 3.3.1 and 3.3.2 to answer the third research question of whether differences in labour income as well as earnings growth vary by education. First turning to results for men in Table 3.3.1, the MJH*Education coefficients suggest that men who engage in MJH and who have a bachelor's degree experience an additional 19.24% *lower* initial average labour income than their single jobholding counterparts (P<.05), when comparing the same differences between multiple and single jobholders among men with only a high school education. These comparisons are not significant for the other education categories. Next, we examine relative differences in earnings growth for men by examining the MJH*Wave*Education interaction coefficients, which suggest that men with a bachelor's degree who engage in MJH experience an additional 2.02% increase in their labour income growth over time (P<.01), compared to the same differences in the rate of growth between multiple and single jobholders with only a high school education.

Next, we use Model 4 in Table 3.3.2 to examine these same results for women. The MJH*Education coefficients for women suggest that women who engage in MJH and who have a bachelor's degree experience an additional 13.88% lower initial average labour income than their single jobholding counterparts (P<.05), which is similar to the result found among men. The MJH*Education coefficients further show that women who are multiple jobholders with above a bachelor's degree also experience an additional 7.79% lower initial average labour income compared to single jobholders (P<.10). These comparisons are not significant for the lower education categories. Next, we examine relative differences by education in earnings growth for women: The MJH*Wave*Education interaction coefficients suggest that women with a bachelor's degree who engage in MJH experience an additional 1.31% increase in their labour income growth over time (P<.10), compared to the same differences in the rate of growth between multiple and single jobholders with only a high school education. However, none of the other MJH*Wave*Education coefficients are significant.

For ease of interpretation, these findings are presented visually in Figure 3.1.1 for men, which plots estimated labour income across the observed period separately by education using results from Model 4 (adjusted for all controls) in Table 3.3.1. For

women, Figure 3.1.2 also plots labour income across each wave by education produced from Model 4 in Table 3.3.2. Figures 3.1.1 and 3.1.2 generally corroborate results in Tables 3.3.1 and 3.3.2 to show that, for both men and women with higher education, MJH is particularly related to early disadvantage in labour income, although multiple jobholders experience subsequent growth in labour income that meets or exceeds that of their single jobholding counterparts. However, Figures 3.1.1 and 3.1.2 show greater detail in these patterns that are not revealed by Tables 3.3.1 and 3.3.2. In particular, men and women with a bachelor's degree and who engage in MJH appear to have lower labour income in earlier waves—2002-2010 for men and 2002-2006 for women—than their single jobholding counterparts, although MJH appears to provide for subsequent growth in labour income that offsets this disadvantage as their labour income increases to meet or exceed that of their single jobholding counterparts in later waves. For men, Figure 3.1.1 shows that the pattern of early lower labour income is significant given lack of overlap in standard errors until 2010, although for women Figure 3.1.2 suggests less significant differences in early lower labour income given substantial overlap in standard errors in all but the first wave. Unlike those with a bachelor's degree, however, Figures 3.1.1 and 3.1.2 suggest that men and women with advanced degrees above a bachelor's who engage in MJH have lower labour income in every single wave except for the final wave in 2018, where their income meets that of single jobholders. This pattern is particularly pronounced among men, with Figure 3.1.1 suggesting significant differences in waves 2006 and 2008 given lack of standard error overlap. In contrast, Figure 3.1.2 suggests there fewer significant differences between women with advanced degrees who hold multiple or single jobs given standard error overlap in all but the first wave.

Finally, Figures 3.1.1 and 3.1.2 show that show that multiple and single jobholders do not differ substantially in terms of labour income at any wave for men or women with less than a high school education, a high school education, or some postsecondary education. In general, change in labour income appears largely flat for these individuals across time, unlike for their higher educated counterparts.

A final note should also be made of women's generally lower labour income across education levels compared to men, which is not visually apparent between Figures

3.1.1 and 3.1.2 given difference in scale of labour income on the y-axes, which is required to compare levels of labour income within each gender category between multiple and single jobholders and by education, rather than across gender. For those with a high school education or less, men's labour income is generally higher than women's by about $10,000 or more at each wave, and for higher education categories this difference grows to about $20,000 or more at each wave.

Figure 3.1.1: Predicted individual trajectories of labour income (adjusted to 2019 $) for men, by education, from a hierarchical linear model. Source: PSID 2003-2019.

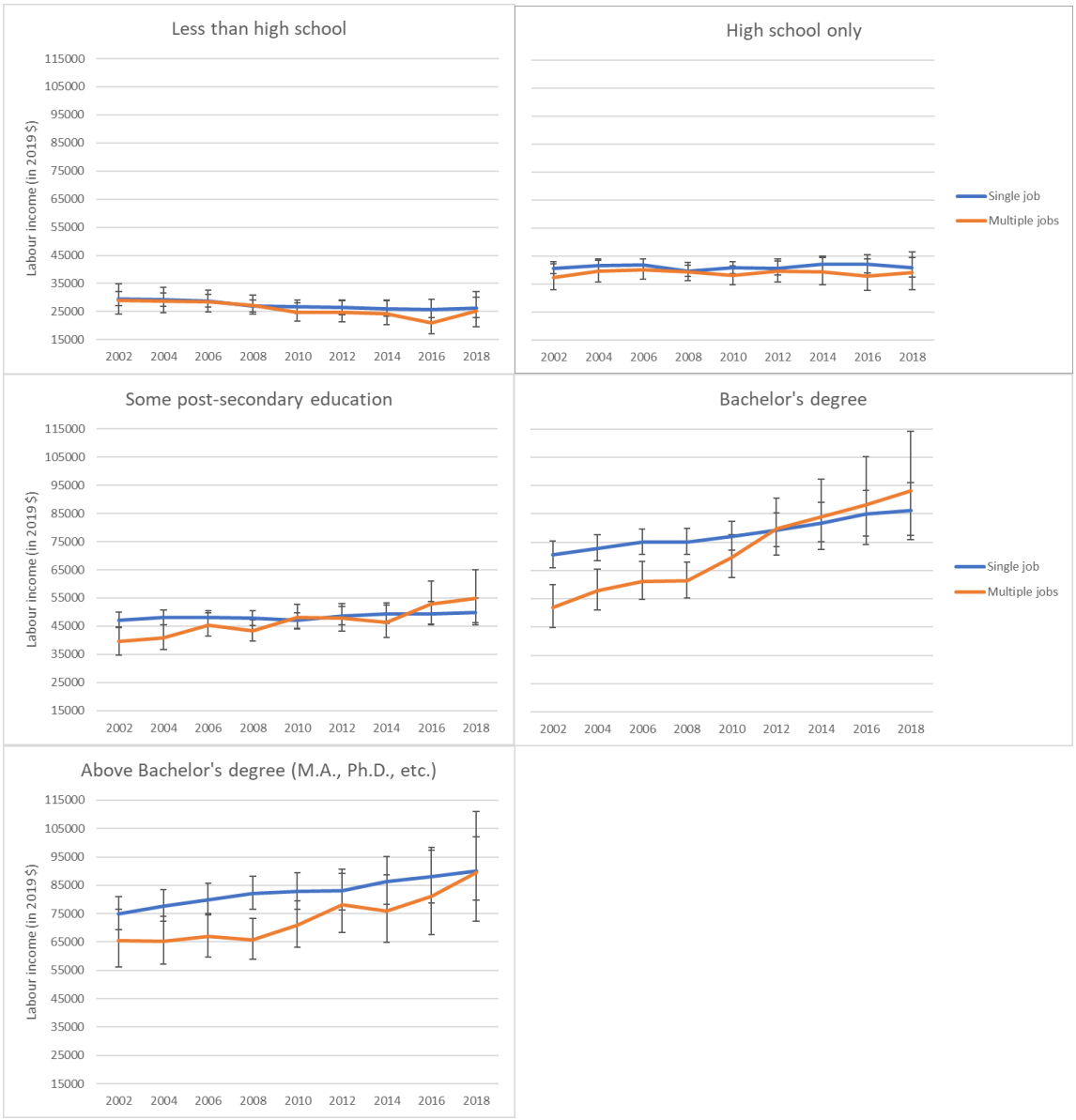
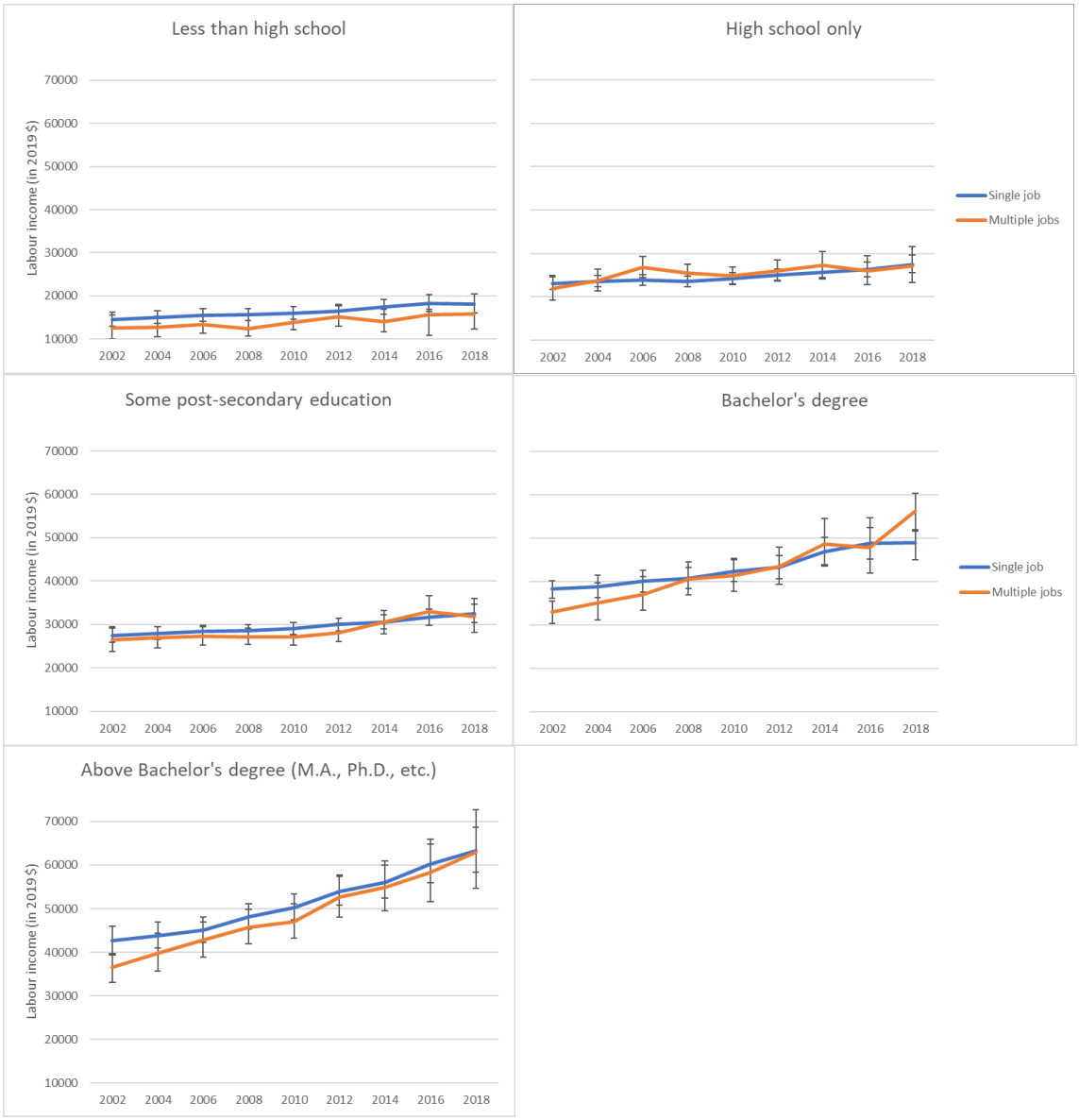


Figure 3.1.2: Predicted individual trajectories of labour income (adjusted to 2019 $) for women, by education, from a hierarchical linear model. Source: PSID 2003-2019.



3.6 Discussion and Conclusion

Multiple jobholding (MJH) is a growing labour force phenomenon, although there is less consensus in the literature in terms of whether it is primarily a labour market practice

associated with economic disadvantage and low earnings, or whether it is a practice associated with higher educated workers who may use it for reasons other than low earnings, such as to diversify their work experience. This study provides insight into structural differences between multiple and single jobholding, using longitudinal data to examine how labour income differs by multiple and single jobholding over time and whether there are differences in this long-term relationship between higher and lower educated workers. The findings suggest that, overall, both men and women who hold multiple jobs earn lower labour income, among both higher and lower educated workers. This lends support to the notion that that MJH is related to economic disadvantage and structural constraints in the main job as supported by prior research (e.g., Kimmel and Conway 2001; Partridge 2002; Piasna et al. 2021)—although the current findings additionally reveal that multiple jobholding is not only concentrated among the lowest educated and lowest earning individuals as suggested by prior research, but that men and women who earn relatively lower than others of similar education levels engage in MJH to offset relative disadvantage. This practice may have increased in recent decades due to historical declines in earnings among middle-income earners as well as lower earners (Rinehart 2006; Vosko 2007), as well as wider increases in student and consumer debt (Federal Reserve Bank of New York 2022; Porter 2012) and declines in fringe benefits which necessitates supplementary income (Brown et al. 2011; Kalleberg 2011; Shuey and O'Rand 2004; Vosko 2007).

Going further, however, the findings suggest that higher educated workers may be particularly motivated to engage in MJH to offset lower income compared to their similarly educated peers, and that this pattern is found among both men and women. For instance, among the higher educated, the multivariate findings suggest a lower initial labour income at first observation associated with multiple jobs compared to single jobs, while there is little difference in initial labour income between multiple and single jobholding among lower educated workers when controlling for other variables. The findings reveal this pattern for both men and women with a bachelor's degree, as well as for workers with education above a bachelor's (e.g., M.A./M.S., Ph.D., M.D., etc.). There are several possible explanations for particularly lower relative earnings among some segments of higher educated workers, including growing income polarization among

similarly educated workers due to heightened labour market competition and wider structural economic changes such as global offshoring of skilled labour (Brown et al. 2011), which may increase incentives for MJH. Another explanation may be related to other mechanisms of disadvantage such as race, in that higher educated non-White workers may be particularly likely to engage in MJH to offset lower earnings relative to similarly educated White workers that is due to persistent labour market discrimination. Increasing educational attainment among Black and other non-White populations (Morgan 2005) lend further support to this possibility. However, little is known of the race/ethnicity composition of multiple jobholders. While the current study controls for race in the multivariate models, more research is needed to examine this possibility. This line of inquiry is particularly important given that MJH may heighten inequality for racialized workers—not only in terms of earnings, but also in terms of health and well-being given that prior research has linked it to outcomes such as work-family conflict (Boyd et al. 2016; Conen and Stein 2021; Webster et al. 2019), emotional exhaustion (Walsh et al. 2016), poor sleeping patterns (Marucci-Wellman et al. 2016), and job-related physical injury (Marucci-Wellman et al. 2014).

Although findings from this study revealed differences by gender in terms of labour income, as well as descriptive differences in work hours and education (see Table 3.1), there were fewer gender differences in MJH. Aggregate rates of MJH were found to be similar between men and women, which may be reflective of prior findings of increasing numbers of women engaging in MJH (Conen and de Beer 2021; Partridge 2002). Moreover, this study found that the relationship between education, MJH, and labour income follows a similar pattern between men and women, in which both men and women with higher education engage in MJH to offset early disadvantage in labour income compared to their similarly educated peers. Increases in women's educational attainment over the decades—to the extent that women constitute the majority of younger adults with a bachelor's degree or above (Kalleberg 2011; OECD 2022)—may heighten this practice among women. One exception to the similarities in MJH by gender found in this study is the descriptive finding among women, but not among men, of higher median income for women who engage in long term MJH in three or more waves, which was found among some groups of both higher and lower educated women. This may suggest

that some women engage in particularly high employment activity by way of MJH over the long term which serves to raise, to some extent, the low earnings associated with women's work in general.

Although the current findings present evidence of economic disadvantage for both higher and lower educated workers who engage in MJH, there are particular advantages for the higher educated in terms of earnings growth over time. In particular, the findings show significant differences by education in earnings growth associated with MJH, with higher educated men and women, but not the less educated, experiencing faster growth in labour income over time associated with multiple jobs. However, this earnings growth is stronger among men and women with a bachelor's degree who engage in MJH, than among those with advanced degrees. In fact, the findings show some evidence that despite lower initial labour income, workers with a bachelor's degree engaging in MJH experience sufficient growth in earnings to surpass the earnings of their single jobholding counterparts. In contrast, the multivariate findings adjusted for other factors show that earnings growth for workers with education below a bachelor's—i.e., some postsecondary education, high school only, or less than a high school education—is primarily flat, regardless of multiple or single jobholding. This provides evidence of a structural advantage for higher educated multiple jobholders, who may experience access to higher quality and higher earning employment in their secondary jobs that may not be afforded to the less educated. These secondary jobs may also give higher educated workers the opportunity to engage in employment that enhances or diversifies their skills and experience, which may also increase their chances of obtaining higher earning main jobs in future employment (Panos et al. 2014). Future research should continue to examine variation by education in MJH in terms of earnings and other indicators of job quality.

One limitation of this study is that it focuses on how only one indicator of job quality, earnings, relates to MJH. However, as mentioned previously, MJH is closely associated with precarious or insecure forms of employment (Conen and de Beer 2021), and the degree to which workers experience precarious conditions in their main or secondary jobs may be a strong determinant of earnings and other measures of job

quality. Such research could also provide further insight into differences in earnings and other mechanisms of disadvantage between higher and lower educated multiple jobholders. For instance, it may be that the lack of earnings growth for less educated multiple jobholders, as found in this study, is primarily due to their engagement in low earning precarious and non-standard forms of employment distributed across multiple jobs (e.g., two or more part-time jobs). A second limitation of this study relates to the broad categories used to measure education, and future research may benefit from more detailed measures that take into account field of study and other credentials which may give insight into differences in earnings, job quality, and the propensity to hold multiple jobs among workers that fall into the same broad education categories.

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Chapter 4

4 Women's Work Trajectories and Patterns of Labour Force Participation (1978-2018)

Women's labour force participation (LFP) has increased dramatically during the post-WWI period in the U.S. and other Western economies, particularly since the 1960s (Anyadike-Danes and McVicar 2010; Casper and Bianchi 2002; Goldin 2006; Kalleberg 2011). By 2008, women occupied nearly half of all jobs in the U.S. (Kalleberg 2011). Historical changes such as delayed marriage and childbearing and higher divorce rates are cited as partly responsible for these shifts, as increasing numbers of women spend a delayed or shortened portion of their lives oriented towards the family and household (Casper and Bianchi 2002; Goldin 2006; Goldin and Katz 2002). More specifically, throughout the 20th Century rates of LFP have increased among unmarried/single women and childless married women, while much of the increase among married mothers, including mothers of young children, occurred during the 1970s (Casper and Bianchi 2002; Goldin 2006; Hynes and Clarkberg 2005). A portion of the increase in LFP among mothers has been attributed to historical changes in the timing of motherhood, with delayed childbirth associated with increased labour force experience pre-childbirth, expedited returns to employment, and higher levels of LFP post-childbirth (Lu, Wang, and Han 2017; O'Connell 2002). In addition, some evidence suggests a stalling or decline in women's LFP during the 1990s and 2000s, much of which has been attributed to population aging (England 2010; Goldin 2006; Huang 2018). The proliferation of precarious forms of employment and the erosion of the standard employment relationship (SER) may also be linked to declines in women's LFP during the 1990s and 2000s given the decreasing availability of permanent and full-time forms of employment, pronounced declines in employer tenure during the 1990s, and a growth in long-term unemployment during the 2000s (Kalleberg 2011; Rinehart 2006; Vosko 2007).

Most of this existing evidence is based on cross-sectional data which provide snapshots of women's employment at a single point in time. Prior research has not examined the extent to which women's LFP patterns have changed across cohorts or investigated patterns and sequences of women's participation across the childrearing

years. To this end, this study uses longitudinal panel data from the 1979-2019 waves of the Panel Study of Income Dynamics (PSID) and sequence analysis to examine women's LFP patterns across a 12-year period when women are between the ages of 26 and 39. These rich longitudinal data are used to examine: 1) patterns across women's work trajectories across the post-1970s's period; 2) the extent to which these patterns, as embedded in broader historical changes related to gender and work, indicate higher or lower levels of LFP over time across cohorts of women; and 3) whether there are cohort differences in women's work trajectories associated with the timing of motherhood and the number of children.

4.1 Background

Dramatic increases in LFP among married women in the U.S. occurred between the 1930s and 1950s (Casper and Bianchi 2002). In contrast, single unmarried women have historically had stronger ties to the labour force since the late 19th century (Goldin 2006). Prior to the 1920s, it was primarily unmarried and lower income women who were employed, most often in manufacturing or domestic service jobs which were considered unsuitable for married women due to long hours, physically intensive labour, and unclean working conditions (Goldin 2006). Increased demand for clerical work starting in the early 1900s, as well as increased high school graduation rates, provided more clerical jobs with cleaner working conditions, less physical work, and shorter or part-time hours that were considered suitable for married women and compatible with domestic work. This led to higher LFP among married women particularly post-1940s (Goldin 2006).

The trend toward greater LFP among married women initially occurred among childless women or women with older children, while dramatic increases among married mothers of younger children occurred later post-1970. For example, the participation rate of married women aged 20-44 with a child under one year of age increased from 23% in 1973 to 62% in 2000 (Goldin 2006). Several factors have played a part in this trend, including delayed marriage and childbearing (Casper and Bianchi 2002; Goldin 2006; Goldin and Katz 2002), which increases the length of time that women spend in the labour force prior to family formation. This lengthens women's pre-childbirth levels of labour force experience, which is associated with expedited returns to employment and

higher levels of LFP or employment continuity post-childbirth (Lu et al. 2017; O'Connell 2002). Declining fertility post-1960 leading to fewer children born per woman is also associated with less time spent childrearing and more time allocated towards employment (Agüero and Marks 2008; Casper and Bianchi 2002). Women who bear children in their 30s are particularly likely to return to the labour force given longer time spent in employment and education/training prior to marriage and childbearing and thus higher commitment to employment and careers (Goldin 2006). Higher divorce rates are another factor that may shorten the length of time that women spend oriented towards the family and increase economic dependence on the labour market (Goldin 2006). Another factor bolstering LFP among mothers is a decline in public disapproval surrounding working mothers. For example, findings from the General Social Survey between 1977 and 1994 show declines in traditional views of the household division of labour and negative attitudes surrounding mother's employment and its impact on children's wellbeing (Casper and Bianchi 2002). However, attitudes favouring working mothers remain lower among men than among women. For instance, in 1994 only 25% of women but nearly 40% of men reported that working mothers have less secure and warm relationships with their children compared to non-working mothers (Casper and Bianchi 2002).

Unmarried single mothers have historically been economically disadvantaged and low-income. Supporting a family on the low earnings associated with women's employment in general has necessitated their higher rates of employment relative to married women (Blank 2000). Single mothers have also been found to be more likely to work nonstandard hours (Moilanen et al. 2019), which tends to be characteristic of unstable and lower earning jobs (Kalleberg 2011; Vosko 2006). Welfare reform post-1996 in the U.S substantially reduced the number of households and families receiving public assistance and put added pressure on the economic situation of single mothers (Blank 2000; Casper and Bianchi 2002; Mink 1998). Furthermore, racialized women—particularly Black women—face higher rates of single motherhood than do White women (Casper and Bianchi 2002), which contributes to greater economic disadvantage.

When discussing women's employment in conjunction with family structure, a final note should also be made about cohabitation. Cohabiting women differ somewhat

compared to married women in that they have higher employment rates and work more hours (Casper and Bianchi 2002). However, alongside changing rates of cohabitation, cohabiting and married women have become more similar over time in terms of LFP and earnings (Casper and Bianchi 2002). Moreover, as cohabitation becomes increasingly common and an increasing number of married couples have cohabited at some point in their lives (particularly during younger ages), it may be that cohabiting and married couples are not mutually exclusive populations but rather represent couples at different stages of their life course and family formation pathways.

Despite growing LFP, women overall—regardless of marital status, motherhood status, or age of motherhood—still experience relatively lower levels of participation than men, with a greater likelihood of part-time work or time spent out of the labour market engaged in domestic work and household labour (Casper and Bianchi 2002; Vosko 2006). Although both full-time and part-time engagement are often included in estimates of women's overall LFP, it is important to distinguish between them. Part-time work indicates lower engagement in terms of fewer hours allocated towards the labour market and has been an important way that women have balanced work with domestic responsibilities (Casper and Bianchi 2002; Vosko 2006). However, part-time work is associated with structural disadvantages compared to full-time work, including ineligibility for particular social benefits, lower hourly earnings, less permanent contracts or tenure, and lack of collective bargaining opportunities (Cranford and Vosko 2006; Vosko 2006; Witteveen 2017). Moreover, some of the push towards part-time work for women is due to insufficient provision from employers of family-related benefits such as childcare assistance or paid family leave (Casper and Bianchi 2002). In addition, fewer women than men have access to flexible work schedules, which would allow them greater control over the balancing of work and family schedules (Casper and Bianchi 2002; Golden 2002). Despite women's labour force advances in terms of participation, earnings, and education, women overall remain disadvantaged compared to men, receiving lower wages and benefits and being over-represented in service and other lower paid occupations (Damaske and Frech 2016).

Finally, there is some evidence of a plateau in women's LFP participation post-1990s, as well as a slight decline post-2000s, for women of various ages, marital and

family statuses, and education levels (England 2010; Goldin 2006; Huang 2018; Macunovich 2012). According to some research, over 60% of the decline post-2000s is due to the aging of the female population (Huang 2018; Macunovich 2012). It is unclear what accounts for the decline among younger segments of the population, although some researchers surmise that it is connected to a stalling of increases in women's earnings since the 2000s (Huang 2018). Among mothers of young children, declines in LFP began post-1990s (Blank 2000), which raises the question of whether a greater number of women today are 'opting out' of the labour force and spending more time oriented towards the family and household as they have done historically (Goldin 2006), perhaps in response to lack of earnings growth over time. However, the extent to which women have been able to 'opt out' is in question given lower household incomes as a result of declines in men's earnings since the 1970s (Kalleberg 2011; Rinehart 2006; see also Macunovich 2012).

4.2 Women's Work Trajectories

Most evidence of women's changing labour force participation (LFP) over time is based on cross-sectional observations. A cross-sectional approach overlooks the process of how and when individuals enter and leave the labour market, or change their levels of engagement across the life course, and how these patterns differ across cohorts of women in response to historical change (Blossfeld 2009; Kohli 1988). Conceptual tools provided by a life course perspective suggest the importance of understanding women's LFP as a long-term process intersecting with other domains such as family that can be best observed using longitudinal empirical methods. A life course perspective focuses on how individual patterns of stability and change—or intra-individual variation—unfold over the course of individuals' lives, forming trajectories of work experience that reflect changing social relations and structures (Clipp, Pavalko and Elder Jr. 1992; George 2002; George 2009; Pavalko 1997).

Despite increases in women's LFP, their work trajectories continue to differ substantially from men's (Cain 1964; Damaske and Frech 2016; Kruger and Baldus 1999; Widmer and Ritschard 2009). Prior research shows that women's work trajectories feature less continuity in full-time employment, involving periods of part-time

employment, unemployment, or non-participation in the labour force (Anyadike-Danes and McVicar 2010; Kruger and Baldus 1999; Ponomarenko 2016; Widmer and Ritschard 2009). Overall, women are less likely to work full-time than men and are more likely to engage in part-time work or exit the labour force (Hollister and Smith 2014; Kalleberg 2011; Vosko 2006). Normative and institutional notions of men's and women's work and family roles contribute to gendered labour market segmentation, reducing opportunities for higher participation among women—even for women without family responsibilities (Kruger and Baldus 1999; Ponomarenko 2016). Due to the persistence of gendered divisions of household and caregiving labour, women's work trajectories are also more likely than men's to feature periods of domestic work and a pattern of adjusting labour market engagement (e.g., fewer employment hours or exiting the labour force) to balance employment with domestic responsibilities during periods of their life (Damaske and Frech 2016; Kohli 1988; Kruger and Baldus 1999; Ponomarenko 2016; Widmer and Ritschard 2009).

Reproduction and caregiving remain particularly impactful on women's employment. While cross-sectional data suggest a dichotomy between women who continue working and those who exit the labour force post-birth, longitudinal data suggest more of a process of adjustment with many women not completely exiting *or* staying in the labour force but rather engaging in a more complex process of intermittent employment, which may be facilitated in part by forms of employment that allow for work-family balance, such as part-time work (Hynes and Clarkberg 2005; Ponomarenko 2016). Nevertheless, past research has found that a not insignificant proportion of women do experience trajectories of continuous full-time employment, with prior estimates suggesting a range of between 36-57% (Hynes and Clarkberg 2005; Killewald and Zhuo 2019; Lu et al. 2017). In addition to marital status, factors associated with the gendered division of labour, such as family characteristics and responsibilities, as well as social class, influence women's long-term engagement. Some research finds that work trajectories characterized by less continuous and lower levels of labour force participation are more likely found among younger women and women with more children, as well as women with lower levels of education and earnings, and those in lower earning

occupations such as sales and service (Damaske and Frech 2016; Hynes and Clarkberg 2005; Killewald and Zhuo 2019; Kruger and Baldus 1999; Lu et al. 2017).

Examining the intersection of broader historical changes in gender and work with individual lives is also instrumental for understanding women's labour force participation. Much of the increase in LFP among mothers during the 1970s has been attributed to women delaying childbirth into their 30s (Goldin 2006; O'Connell 2002). This attribution is largely based on prior research showing that employment before childbirth is related to greater continuity in employment post-childbirth and speculation that women who have children in their 30s or later would have spent a longer period in the labour market and would therefore be more likely to return to the labour market post-childbirth (Lu et al. 2017). However, little research has *directly* examined how the timing of motherhood relates to historical changes in long-term labour market continuity. In particular, it is unclear the extent to which LFP has increased among mothers who bear children at ages younger than 30, or whether it occurred primarily among mothers who have children later. Moreover, while cross-sectional evidence suggests declines in mothers' LFP post-1990s (Blank 2000), longitudinal evidence suggests these cohorts of women experience more of a pause, with periods of labour force non-participation for women with children rarely exceeding two years and often followed by return to employment after this period (Goldin 2006). It is possible that during this period, the expansion of jobs in the service sector, which are disproportionately part-time and held by women, in combination with the lack of mandatory parental leave for part-time workers in the U.S., resulted in more women needing to exit the labour force during pregnancy and post-childbirth (Kalleberg 2011; Rinehart 2006; Vosko 2006). Longitudinal analysis tracking mothers' movement in and out of part-time employment would be particularly informative for examining this possibility.

Importantly, there are also significant racial and ethnic differences in women's labour force participation. Throughout the 20th century and into the present, racial minority women have experienced significant economic and labour market disadvantages compared to White women, including lower earnings, exposure to discriminatory hiring practices, and concentration in lower earning and lower quality service occupations (Creese 2007; Glenn 1996; Holvino 2010; Kalleberg 2011; Kang et al. 2016; Moss and

Tilly 1996). Nevertheless, research has also found that racial minority women—particularly Black, Latina, and Asian women—have higher rates of LFP and full-time employment than White women (Cranford and Vosko 2006; Kalleberg 2011; Macunovich 2012). Non-White women overall are also more likely to have higher LFP over the life course and engage in trajectories of continuous full-time time employment (Damaske and Frech 2016; Killewald and Zhuo 2019; Lu et al. 2017), and non-White mothers are more likely to experience greater labour force continuity pre- and post-childbirth and are less likely to exit the labour force entirely (Lu et al. 2017). However, rather than being an outcome of labour market advantages, the higher LFP of racialized women is primarily a result of economic necessity given labour market disadvantages associated with earnings, hiring practices, and working conditions. Historically, racialized women's experiences have not been consistent with the gendered male breadwinner/female caregiver model to the same degree as White women (Glenn 1996; Holvino 2010), and stereotypes concerning their subordinate position, lower standard of living, and suitability for physically intensive labour and poor working conditions have shaped higher labour force engagement among women of colour.

The proliferation of precarious forms of employment such as part-time work may be more generally linked to declines in women's LFP during the 1990s and 2000s. The expansion of precarious employment occurred in conjunction with the erosion of the standard employment relationship (SER) defined by permanent, full-time, unionized employment with fringe benefits and stable wages that served as a model for employment contracts during the post-WWII period until the 1970s (Kalleberg 2011; Lewchuk, Clarke, and De Wolff 2008; Shuey and Jovic 2013; Vosko 2007). Employment contracts reflective of the SER were constructed around the gendered male breadwinner/female caregiver model in which men reserve rights to a 'family wage' and stable employment to support dependents while women are excluded due to their primary domestic role (Shalla 2007; Vosko 2006; Vosko 2007). Cranford and Vosko (2006:46) refer to the erosion of the SER and the concurrent rise of precarious work post-1970s as the "feminization of employment norms," due to changing employment norms reflecting employment contracts associated with women's work, racialized workers, and other marginalized workers. This includes low or volatile wages, little to no fringe benefits, weak protection

from unions or employment regulations, and little control over work permanence and scheduling (Kalleberg and Vallas 2017; Shuey and Jovic 2013; Vosko 2006; Vosko 2007; Witteveen 2017). Kalleberg (2011) argues that greater labour force diversity across the 20th century—or increases in labour force participation of women, non-citizens, and non-White workers—facilitated expansion of lower wage and precarious jobs by providing a pool of workers willing to work in insecure and poorly paid positions with poor working conditions.

Although precarious employment conditions proliferated post-1970s, particular developments during the 1990s and 2000s may have culminated to affect women's LFP. Declines in employer tenure were pronounced during the 1990s, partly due to widespread corporate downsizing and layoffs during this period (Kalleberg 2011; Rinehart 2006). Although declines in real wages occurred throughout the post-1970s period, they were pronounced during the 1990s (Brown et al. 2011; Kalleberg 2011; Rinehart 2006; Vosko 2007), which may have led to more women 'opting out' of employment if they saw more benefit to allocating greater hours towards domestic work. During the 2000s, there was also a pronounced growth in long-term unemployment as workers experienced difficulties in finding re-employment and faced a higher likelihood of poorer job quality and earnings once re-employed (Kalleberg 2011). All of these historical changes may have played a role in declining LFP among women during the 1990s and 2000s given that gendered labour market disadvantage may have made declines in job permanence, earnings, and long-term unemployment particularly concentrated among women.

4.3 Research Questions

Extensive research has examined historical increases in women's labour force participation (LFP) and shown how recent trends are pronounced among married women and women with children. However, less research has examined women's long-term work trajectories across the life course and how the historical period surrounding labour market activity is reflected in cohort differences in women's patterns of employment during the childbearing years and into mid-life. This study explores these patterns and addresses the following research questions. **First,** what patterns of long-term labour force participation emerge across women's work trajectories in the post-1970s period? We are

particularly interested in the extent to which these patterns reflect higher or lower LFP during this period. **Second,** how do patterns of LFP across women's work trajectories vary by cohort? This question targets broader change in LFP patterns over time and whether certain historical periods are associated with greater or lower long-term continuity in LFP. The **third** research question focuses on married mothers given their particularly dramatic increases in LFP compared to unmarried women or non-mothers: How do patterns of LFP across women's work trajectories vary by cohort and motherhood? We examine this question in terms of the timing of motherhood—i.e., the age at which women first bear children—as well as the number of children.

4.4 Methods

4.4.1 Data

This study uses longitudinal panel data from the Panel Study of Income Dynamics (PSID; Johnson et al. 2018; McGonagle et al. 2012; PSID 2019) on a sample of women in the U.S. The PSID is ideal because its survey collection period (1968-2019) is sufficiently long running to have collected longitudinal data on multiple cohorts. It also provides longitudinal data on a range of themes including employment, socio-demographics such as gender, race, education, income, and occupation.

Generation of the final analytic sample involves several exclusions. The analytic sample includes only those respondents who are identified as "Reference Persons" or "Spouses" of reference persons in the PSID, on whom the most detailed employment data are collected. The sample is further limited to the 1979-2019 waves of the PSID. This is because the measure of labour force participation used in this study is only available from waves 1979 on for spouses of reference persons, and most women in the PSID are spouses. The final analytic sample includes 2,167 women, with the additional missing data exclusions: 1) attritors, or respondents who exit the PSID before complete longitudinal data are collected (55.2% [4] missing); 2) missing data on longitudinal

[4] Attrition in this sample generates a high percentage of missing cases (55.2%), which arguably bias results if attritors have significantly different characteristics than non-attritors with regards to outcomes.

observations of labour force participation (22.2%[5] missing); and 3) missing data on covariates (1% missing).

Labour force participation is measured longitudinally at the individual level across seven waves of data, each of which is collected biannually[6] in the prior year for each individual, with the first observation in 1978 starting at age 26 or 27, and the seventh and final wave collected for the year 2018 ending at age 38 or 39. Thus, the seven waves of data cover a 12-year period of employment measured biannually for each individual. Because this analysis is interested in cohort difference, individuals born between 1951 and 1980 were grouped into four cohorts representing the context of their early careers at which they are age 26 or 27, during the years 1978-1982, 1984-1988, 1990-1994, and 1996-2006. Therefore, the analysis is organized by both historical context and age, and the age and year in which longitudinal data are observed is detailed in Table 4.1.

Furthermore, the PSID's data collection involves a complex stratified sampling of families from the U.S. population, in which individuals are sampled together as a family unit. To adjust for the complex sampling method and the non-independence of cases belonging to the same family unit, standard errors for all statistics are adjusted using the

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Unfortunately, attrition is high when using surveys consisting of many waves (Zabel 1998), which is an unavoidable limitation of the broad analytic scope of the current study which uses data from 40 waves of the PSID. However, research shows that attrition does not substantially reduce the representativeness of the PSID (Fitzgerald, Gottschalk, and Moffitt 1998) and that attrition bias does not significantly affect labour market estimates (Zabel 1998). The amount of attrition in the current study is also comparable to baseline attrition rates of the PSID (see Fitzgerald et al. 1998; Zabel 1998). Nevertheless, it should be mentioned that attrition is disproportionately experienced by those of lower socio-economic status and earnings (Fitzgerald et al. 1998).

[5] Missing data on longitudinal observations are common in longitudinal studies, which entail a loss of information and reduced estimate precision that are directly related to the amount of missing data (Fitzmaurice, Laird, and Ware 2011). Some studies suggest that missing data on a longitudinal variable of up to 20% is typical in longitudinal research, while more severe missing data (e.g., 50%) introduce considerable bias (Peng et al. 2006; Schlomer, Bauman, and Card 2010).

[6] PSID data collection occurred annually between 1968-1997 and was thereafter collected biannually. This study pools data from the annual and biannual PSID waves of the PSID and the analysis only retains biannual observations across each wave to retain measurement consistency between individual data collected in annual and biannual waves.

strata and cluster sampling variables (Heeringa, Berglund, and Khan 2011) as well as population weights provided with the PSID. All statistics are produced using Stata 16.

Table 4.1: Ages of observation of labour force participation (LFP) data, by two-year birth cohort groupings and year[a] of observation. Source: PSID 1979-2019.

Birth cohort (2-year groupings)	1978	1980	1982	1984	1986	1988	1990	1992	1994	1996	1998
1951-52[b]	26-27	28-29	30-31	32-33	34-35	36-37	38-39				
1953-54		26-27	28-29	30-31	32-33	34-35	36-37	38-39			
1955-56			26-27	28-29	30-31	32-33	34-35	36-37	38-39		
1957-58				26-27	28-29	30-31	32-33	34-35	36-37	38-39	
1959-60					26-27	28-29	30-31	32-33	34-35	36-37	38-39
	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008
1961-62	26-27	28-29	30-31	32-33	34-35	36-37	38-39				
1963-64		26-27	28-29	30-31	32-33	34-35	36-37	38-39			
1965-66			26-27	28-29	30-31	32-33	34-35	36-37	38-39		
1967-68				26-27	28-29	30-31	32-33	34-35	36-37	38-39	
1969-70					26-27	28-29	30-31	32-33	34-35	36-37	38-39
	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2018
1971-72	26-27	28-29	30-31	32-33	34-35	36-37	38-39				
1973-74		26-27	28-29	30-31	32-33	34-35	36-37	38-39			
1975-76			26-27	28-29	30-31	32-33	34-35	36-37	38-39		
1977-78				26-27	28-29	30-31	32-33	34-35	36-37	38-39	
1979-80					26-27	28-29	30-31	32-33	34-35	36-37	38-39

Notes: Years of observation are stratified in three panels for presentation. Each cell in the above table corresponds to one of the longitudinal indicators of the *LFP* variable.
[a]Each PSID wave collects data on the prior year and, for waves 1997 on, the prior two years. Each year listed represents the actual year observed, not the PSID wave during which it was collected.
[b]The colour corresponding to each two-year birth cohort shown here corresponds to the categories of the *cohort* variable used in the analyses. Blue represents the category "Early career begins 1978-82," green represents "1984-88," yellow represents "1990-94," and red represents "1996-2006."

4.4.2 Time-varying Measure

Labour force participation (LFP) – LFP is measured in two steps. First, we use a measure of 'Total annual hours worked for money in the prior year' available in each PSID wave to generate the first two categories of the *LFP* variable. The first category of "full-time employed" is created by calculating total hours worked of 1820 hours or higher averaged across 52 weeks and identifying cases that have an average of 35hrs or higher per week. The second category of "part-time employed" is created by calculating total

hours worked of 1819 hours or fewer averaged across 52 weeks and identifying cases that have an average of 34hrs or fewer per week. Rather than using the simpler 'employed' measure used in previous studies of women's LFP, in this study we distinguish between full-time and part-time because of the importance of part-time employment for understanding women's work. The second step in creating the *LFP* variable is to generate the remaining categories by identifying those who report working zero annual hours in the prior year, and comparing them to a second 'employment status' variable available with eave wave of the PSID which identifies the respondent's employment status at the time of the survey using categories 1 "Working now," 2 "Only temporarily laid off," 3 "Looking for work, unemployed," 4 "Retired," 5 "Permanently disabled/Temporarily disabled," 6 "Housewife/Keeping house" (i.e., domestic work), 7 "Student," and 8 "Other (e.g., institutionalized)." Using this variable, individuals in the current sample who reported zero work hours in the prior year and "Looking for work, unemployed" were categorized as "unemployed"; zero hours and "Housework/Keeping house" as "domestic work"; and zero hours and "retired," "Permanently disabled/Temporarily disabled," "Student," and "Other" were categorized as "other not in the labour force (NLF)". The latter NLF categories are combined into due to low cell counts in each of these categories among the analytic sample. Therefore, the final *LFP* variable includes five categories of "full-time employed," "part-time employed," "unemployed," "domestic work," and "other NLF (retired, student, disabled, etc.)."

4.4.3 Time-invariant and Summary Measures

Cohort – This is a primary independent variable which describes the context of women's early careers at the age in which they are 26 or 27. This variable is first constructed by identifying individuals' birth year (which in this sample ranges between 1951-1980), to calculate the year in which they are 26 or 27, which in this sample ranges between 1978-2006. Next, this year is collapsed into four categories with the following labels to create the final *cohort* variable: "Early career begins 1978-1982," "1984-1988," "1990-1994," and "1996-2006." The cohort groupings are determined by the broader economic context (Brown and Pagan 1998; Gardner 1994; Margo 2018; Ohanian 2018) affecting the U.S. during women's early careers: 1978-1982 encompasses an inflationary and recessionary

period in which the labour market experienced the beginning of broad declines in labour unions; 1984-1988 is an economic boom period in which there was widespread job growth; 1990-1994 encompasses a two-year recessionary period from 1990-91 as well as high unemployment from 1991-1994; and finally 1996-2006 captures the youngest cohort who experienced the mid- to late-90s economic boom as well as the rise of globalization lasting into the millennium—although there was a mild recession 2000-2001. There may be complex relationships between historical context and labour force participation throughout women's work trajectories, which are not necessarily captured by the simple categorical measure centred on early careers used here. For example, women in the first category of our cohort variable who experience their early career at age 26 in the years 1978-1982 would also have experienced their long-term LFP until age 38 affected by not only the 1978-1982 recessionary period, but also the 1983-1989 boom period and the 1990-1994 recessionary period. However, the goal of the current analysis is simply to examine broader change in long-term LFP across cohorts, using these early career cohort categories as an anchor for examining broader differences in long-term pathways.

Age at birth of first child – This variable targets the timing of childbirth and is derived from a continuous PSID variable 'year of birth of first child.' Comparing this variable to an individual's age during that year, we generate a categorical variable with categories "no children," "age 15-19," "20-29," "30+".

Number of children – In the descriptive analyses, this variable is derived from a continuous PSID variable 'number of births for the respondent,' recoded with categories "no children," "1-2 children," and "3+ children." In the multivariate models—unless otherwise indicated—we use a binary variable of *number of children* indicating whether an individual "Ever had 3+ children" to avoid collinearity with the "No children" category of the *Age at birth of first child* variable.

Marital status at age 30 or 31 – This variable is derived from a PSID variable of marital status available at each wave which includes categories "married," "never married," "widowed," "divorced, annulment," and "separated." We collapse the original PSID categories into three categories of "married," "never married," and "previously married (widowed, divorced, or separated)." Finally, we identify the waves in which the individual is 30 or 31 and isolate the corresponding marital status variable to generate the

final variable. We also examine a binary variable of *Whether change in marital status* across ages 26-39.

Race - Race is measured using categories of "White," "Black," and "other."

Education (highest achieved) – Education is measured using the highest level of education ever achieved, with categories "less than high school," "high school," "some postsecondary" (below a bachelor's degree), and "bachelor's degree and above." We also examine a binary variable of *Whether increased education* across ages 26-39.

Labour income – This measure is derived from the PSID variable of 'total labour income' calculated from all jobs available in each wave collected for the prior year. Next, labour income in each wave is adjusted for inflation to 2019 dollars. The individual's labour income is then calculated as an individual average across all waves across ages 26-39 to generate the final variable. In the multivariate models, this is used as the log of labour income.

Occupation – This variable is derived from the occupation variables available in each wave of the PSID. In waves 1979-2001, these variables contain the 1970 three-digit U.S. Census Occupation Codes, while the 2003-2019 waves contain the 2000 three-digit U.S. Census Occupation Codes. These detailed occupation codes are collapsed into the broad categories used in this analysis of "professional and technical workers," "management, professional administration, and public administration," "sales and service workers," "clerical and office workers," "craftspeople and other trades-based workers," and "operatives, transport, and other blue-collar workers," and a final category of "unemployed/NLF throughout" is included for those individuals who did not work. Then, we produce a final time-invariant occupation variable by identifying the modal occupation across all waves for each individual. In the multivariate models, due to low cell counts of women in blue-collar occupations, we further collapse the categories "craftspeople and trades" and "operatives, transport, and other blue-collar workers" into a single category.

4.4.4 Analytic Strategy

To examine long-term patterns of labour force participation (LFP) across women's work trajectories, the first step in this analysis involves the longitudinal measurement and

descriptive analysis of the *LFP* measure using optimal matching (OM) and other sequence analysis (SA) techniques. SA is a group-based algorithmic trajectory method used to identify multiple discrete typologies of trajectories based on similar longitudinal patterns (Aisenbray and Fasang 2010). This allows for identification of heterogeneity and complexity in long-term patterns of continuity and change in LFP over time. SA has several advantages over latent class analysis (LCA)—another common group-based method used to model longitudinal trajectories using a categorical variable. While LCA allows for observation of maximum two variable categories, SA allows for the observation of multiple categories (Killewald and Zhuo 2019; Lu et al. 2017; Virtanen et al. 2011), such as our *LFP* variable which includes five categories of labour force status. This allows for observation of more detailed stability and change across work trajectories by revealing not only continuity in a single *LFP* category but also transitions between multiple categories (Killewald and Zhuo 2019). SA techniques have been variously applied to research comparing the work patterns of men and women (Anyadike-Danes and McVicar 2010; Pollock 2007; Ponomarenko 2016), as well as women's work patterns post-childbirth (Killewald and Zhuo 2019; Lu et al. 2017).

In order to conduct SA, each of the seven longitudinal observations of the *LFP* variable are defined as a *sequence* for each woman in the sample: Each individual sequence is ordered by age into *sequence positions*, and each position contains an *element* corresponding to the value of the *LFP* variable at that age. Next, we generate a dissimilarity matrix containing a measure of the degree of difference (or 'distance') between any two given sequences in the sample (Cornwell 2015). The measure of difference between any two sequences is calculated by determining the operations needed to transform one sequence into another and assigning a 'cost' to each operation, such that the total sum of 'costs' constitutes the final measure of difference (Aisenbray and Fasang 2010; Anyadike-Danes and McVicar 2010; Cornwell 2015; Studer and Ritschard 2016; Widmer and Ritschard 2009). For example, one sequence may be transformed into another by substituting one element in a position for another ('substitution operations') which preserves the *timing* of positions, or inserting or deleting an element ('indel operations') which preserves the *order* of elements. The measure of difference used here is the commonly used Levenstein Distance, which uses both substitution and indel

operations and assigns a cost of 1 to both, thus preserving both order and timing within the sequences used to define women's trajectories (Cornwell 2015). Finally, OM using the Needleman-Wunsch algorithm (Needleman and Wunsch 1970) is used to generate the most efficient dissimilarity measures based on the Levenstein Distance and to generate the final dissimilarity matrix. Then, using this dissimilarity matrix, we use hierarchical cluster analysis using the Ward's linkage (Cornwell 2015) to generate *sequence clusters*—i.e., individual sequences that are clustered together on the basis of similar patterns. Like other SA clustering techniques, this is a non-linear algorithmic method, meaning that it makes no prior assumptions about data generation and allows empirical patterns to be revealed by the data rather than being pre-determined by the researcher (Aisenbray and Fasang 2010). We examine cluster solutions with 1-10 clusters and use several different criteria to evaluate the optimal number of clusters (Cornwell 2015).

The sequence clusters unveiled by the optimal cluster solution define common patterns of *LFP* across women's work trajectories, and the mutually exclusive categories are used as a categorical variable in further analyses to help answer the research questions. To answer the first research question of what patterns of long-term labour force participation (LFP) emerge across women's work trajectories post-1970s, we first descriptively examine the sequence clusters using sequence index plots, which provide a graphic display of every sequence in the sample separately for each cluster (Cornwell 2015). We also examine descriptive statistics for each sequence cluster to explore socio-economic and demographic differences between each work trajectory represented by the clusters. This visual and descriptive examination of the sequence clusters will determine how common patterns related to greater or lower continuity in LFP are distributed among the sample of women.

Sequence clusters may also be used as categorical outcome variables in multivariate models to examine how they relate to other variables (Anyadike-Danes and McVicar 2010). To answer the second research question of how patterns of LFP across women's work trajectories vary by cohort, we first identify the sequence cluster(s) which suggest the greatest continuity in LFP, in terms of continuous full-time employment. Next, we examine multinomial logistic regression model predicting sequence cluster

membership, using the high-LFP cluster as a reference category, and including cohort as an independent variable. We also examine a second multinomial logistic model predicting cluster membership including cohort as well as all other covariates to adjust for the influence of factors other than cohort.

The third research question asks how patterns of LFP across women's work trajectories vary by cohort and motherhood among married women. To answer this, we identify the sequence cluster which suggest the greatest continuity in LFP/full-time employment used in the previous multivariate models. Next, we collapse the sequence cluster categories into a binary variable predicting membership in the high LFP category, compared to all other categories. This is to reduce issues in standard errors due to low sample size and low cell counts when examining stratification in categories of the sequence cluster, cohort, and motherhood variables. Next, we examine a multinomial logistic model including married women only and predicting high-LFP cluster membership including all covariates with the addition of an interaction term between cohort and age at birth of first child. We then use this model to produce predicted probabilities (Mize 2019) of sequence cluster membership by cohort and age at birth of first child for married women, adjusted for all covariates, which are examined graphically to examine differences across cohort. We also examine this question in terms of the number of children, again examining a multinomial logistic model predicting binary sequence cluster membership including all covariates[7] as well as an interaction term between cohort and number of children, from which we produce adjusted predicted probabilities of sequence cluster membership by cohort and number of children for married women examined graphically. Odds ratios for both models used to examine predicted probabilities are presented in Appendix C.

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[7] The previous multivariate models include the *Number of children* variable as a binary variable indicating whether an individual has three or more children, instead of a three-category variable with "no children," "1-2 children," and "3+ children," as shown in the descriptive results (see Tables 4.1 and 4.2). This is in order to avoid collinearity with the *Age at birth of first child* variable, which also includes a "no children" category. In the model including an interaction between cohort and number of children, however, we omit the *Age at birth of first child* variable and include the three-category version of the *Number of children* variable in order to compare those with "no children" to those with "1-2 children" or "3+ children." See Appendix C for the complete results from this model.

4.5 Results

4.5.1 Descriptive Results

Table 4.2 presents a description of the sample. On average, this sample of women report being employed full-time 48% of waves between the ages of 26/27 and 38/39. In comparison, part-time employment comprises a somewhat lower although quite high percentage of waves at 42%. These women also report unemployment in almost 2% of waves, while they report year-round domestic work in 8% of waves. All other categories which describe not being in the labour force—e.g., being a student, retired, or disabled—are reported in only 1% of waves.

In terms of cohort membership, the oldest cohort of women who experience their early career (at age 26 or 27) between the years 1978-1982 make up 29% of the sample, the second oldest in 1984-1988 are 30% of the sample, the third oldest in 1990-1994 are the smallest cohort at 12% of the sample, and the youngest cohort in 1996-2006 are 29% of the sample.

Next, we examine the family characteristics of this sample of women, starting with their age at the birth of their first child. The majority of women (46%) had children between the ages of 20-29, while only 16% had children at 30 or later. A moderate percentage of women had their first child at a young age between 15-19 (20%). About 18% of women also report never having children. Of those women who report having children, the majority (54%) had only one or two children across their lives, while fewer (28%) had three or more children. Furthermore, we measure marital status at age 30 or 31, of which the majority of women (68%) are legally married, fewer (20%) are never married, and the lowest percentage (12%) are previously married single (i.e., separated, divorced, or widowed). Across all waves, about 41% of women report a change in marital status.

Table 4.2: Sample description of women. Source: PSID 1979-2019.

		Adjusted 95% C.I. (Lower, Upper)
Labour force status as proportion of trajectory		
Full-time employed	0.481	(0.457, 0.504)
Part-time employed	0.415	(0.395, 0.436)
Unemployed	0.017	(0.012, 0.021)
Domestic work	0.078	(0.069, 0.087)
Other NLF (student, retired, disabled)	0.009	(0.006, 0.012)
Cohort		
Early career begins 1978-82	0.285	(0.260, 0.313)
Early career begins 1984-88	0.303	(0.276, 0.332)
Early career begins 1990-94	0.123	(0.100, 0.150)
Early career begins 1996-2006	0.289	(0.261, 0.318)
Age at birth of first child		
No children	0.177	(0.160, 0.197)
15-19	0.201	(0.173, 0.232)
20-29	0.462	(0.430, 0.493)
30+	0.160	(0.136, 0.187)
Number of children		
None	0.177	(0.160, 0.197)
1-2	0.544	(0.516, 0.572)
3+	0.278	(0.254, 0.304)
Marital status at age 30 or 31		
Married	0.681	(0.648, 0.713)
Never married	0.202	(0.175, 0.231)
Previously married single	0.117	(0.097, 0.140)
Whether change in marital status	0.412	(0.378, 0.447)
Race		
White	0.838	(0.783, 0.882)
Black	0.136	(0.096, 0.190)
Other	0.025	(0.015, 0.042)
Education		
Less than high school	0.067	(0.051, 0.090)
High school only	0.282	(0.252, 0.313)
Some postsecondary	0.262	(0.230, 0.295)
Bachelor's degree	0.187	(0.165, 0.212)
Above bachelor's	0.202	(0.175, 0.231)
Whether increased education	0.313	(0.284, 0.344)
Median labour income (all waves)	$ 32,152	-
Modal occupation across waves		
Professional and technical workers	0.226	(0.198, 0.257)
Management, professional admin., etc.	0.140	(0.114, 0.170)
Sales and service workers	0.200	(0.177, 0.223)
Clerical workers	0.315	(0.287, 0.343)
Craftspeople and trades	0.074	(0.053, 0.102)
Operatives, transport, and other blue-collar	0.026	(0.017, 0.041)
Unemployed/NLF throughout	0.020	(0.012, 0.033)
N	2,167	

Note: Standard errors for the C.I.'s are adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

Finally, we examine several other socio-economic and employment characteristics of the sample. In terms of race, the majority of the sample (84%) is White, while substantially fewer women (14%) are Black, and only 2.5% belong to another race or ethnicity group. Next, most of the sample has only a high school degree (28%) or some postsecondary education (26%), while fewer are higher educated with a bachelor's degree (19%) or a degree above a bachelor's (20%; e.g., M.A., Ph.D., M.D., etc.). Only 7% of the sample reports less than a high school education. Across all waves, 31% of this sample of women report an increase in their education. In terms of earnings, the median labour income for this sample is $32,152. Most women report clerical work (32%) as the modal occupation across all waves, professional and technical workers make up the second-highest percentage at 23%, and 20% report sales and service work. A smaller percentage (14%) report occupations in management, professional administration, or public administration. In comparison to the preceding occupations, a considerably smaller percentage of women report being employed in blue-collar occupations: Only 7% of women report occupations as craftspeople or in the trades, and only 3% in operative, transport, and other related blue-collar occupations. A small percentage of women (2%) have no modal occupation as they report being unemployed or not in the labour force in every single wave observed.

4.5.2 Sequence Cluster Results

Several criteria were used to determine the optimal cluster solution (Calinski and Harabasz 1974; Cornwell 2015), and an inspection of these generally point towards a five-cluster solution. A complete discussion of the criteria used and selection procedure—including inspection of a dendrogram, fusion coefficients, Calinski and Harabasz indices, as well as substantive interpretability of the cluster solutions—are presented in Appendix B.

Figure 4.1: Sequence index plots showing sequences of women (N = 2,167) in each of the five work trajectory clusters. Source: PSID 1979-2019.

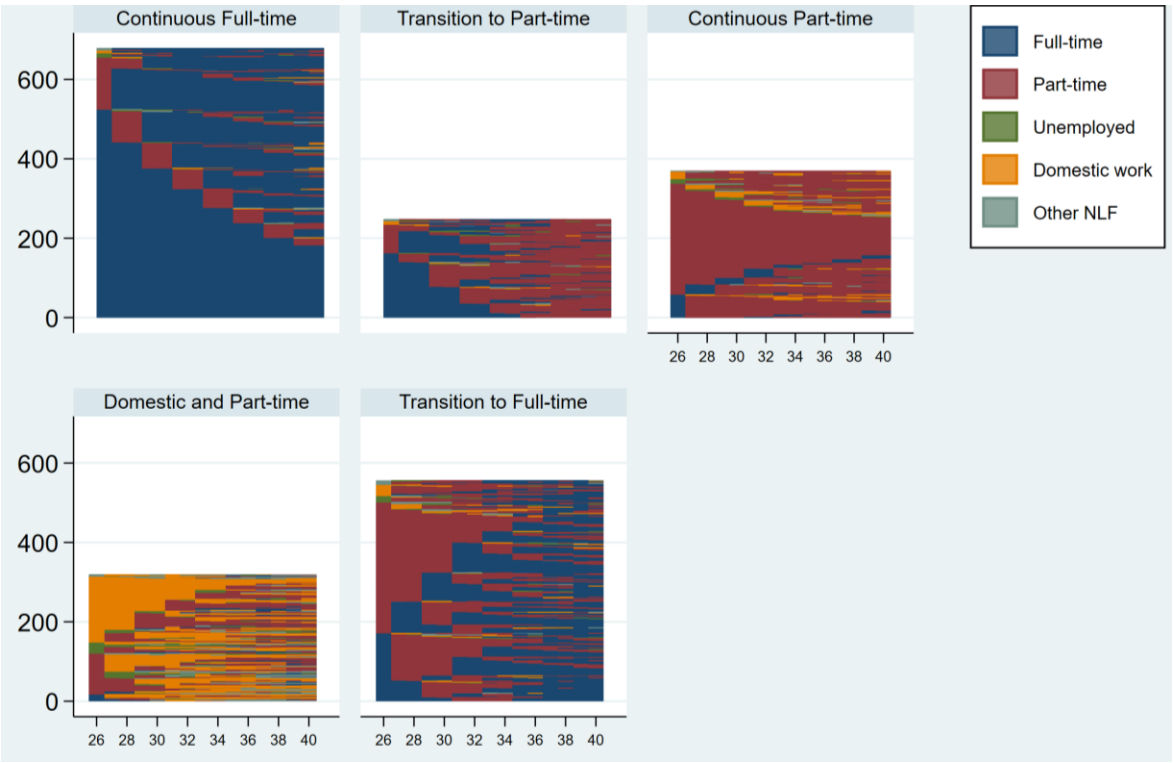

Figure 4.1 presents sequence index plots of the five-cluster solution, which provide a graphic display of each individual sequence in the sample separately for each cluster. The *y*-axis plots the sequence of each individual in the sample, while each position in the sequence (i.e., the age of each longitudinal observation) is plotted along the *x*-axis. The *y*-axis also indicates cluster size in terms of the number of individuals belonging to each cluster. Sequences are arranged such that individuals with the same sequence order are stacked together, so the width of horizontal bands indicate the frequency of particular sequences in the sample. The frequency and order of categories of *LFP* in the sample are indicated by the colour of the sequence position: blue is "full-time employed," red is "part-time employed," green is "unemployed," orange is "domestic work," and light grey is "other NLF."

Table 4.3: Work trajectory sequence cluster descriptives. Source: PSID 1979-2019.

	Continuous full-time	Adjusted 95% C.I. (Lower, Upper)	*Transition to part-time*	Adjusted 95% C.I. (Lower, Upper)	*Continuous part-time*	Adjusted 95% C.I. (Lower, Upper)
LFP category as proportion of work trajectory						
Full-time employed	0.854	(0.841, 0.867)	0.443	(0.427, 0.459)	0.075	(0.065, 0.086)
Part-time employed	0.131	(0.117, 0.144)	0.529	(0.509, 0.548)	0.853	(0.838, 0.869)
Unemployed	0.006	(0.001, 0.010)	0.008	(0.002, 0.014)	0.017	(0.009, 0.026)
Domestic work	0.006	(0.002, 0.010)	0.014	(0.006, 0.023)	0.047	(0.038, 0.056)
Other NLF (Student, retired, disabled)	0.003	(0.000, 0.006)	0.006	(0.003, 0.013)	0.007	(0.003, 0.012)
Cohort						
Early career begins 1979-82	0.224	(0.175, 0.283)	0.278	(0.214, 0.354)	0.382	(0.314, 0.455)
Early career begins 1984-88	0.206	(0.152, 0.272)	0.264	(0.197,0.343)	0.345	(0.296, 0.399)
Early career begins 1990-94	0.165	(0.121, 0.222)	0.175	(0.109, 0.269)	0.103	(0.060, 0.171)
Early career begins 1996-2006	0.405	(0.344, 0.470)	0.283	(0.227, 0.347)	0.169	(0.128, 0.221)
Age at birth of first child						
No children	0.292	(0.241, 0.347)	0.165	(0.098, 0.263)	0.110	(0.068, 0.172)
15-19	0.168	(0.132, 0.213)	0.174	(0.113, 0.258)	0.157	(0.116, 0.208)
20-29	0.335	(0.281, 0.393)	0.338	(0.258, 0.428)	0.626	(0.567, 0.682)
30+	0.205	(0.162, 0.256)	0.324	(0.223, 0.443)	0.107	(0.076, 0.149)
Number of children						
None	0.292	(0.241, 0.347)	0.165	(0.098, 0.263)	0.110	(0.068, 0.172)
1-2	0.552	(0.494, 0.608)	0.590	(0.466, 0.704)	0.536	(0.471, 0.600)
3+	0.156	(0.123, 0.197)	0.245	(0.166, 0.346)	0.355	(0.287, 0.428)
Marital status at age 30/31						
Married	0.600	(0.545, 0.653)	0.651	(0.551, 0.739)	0.778	(0.700, 0.840)
Never married	0.284	(0.237, 0.336)	0.223	(0.142, 0.333)	0.145	(0.090, 0.227)
Previously married	0.116	(0.076, 0.172)	0.126	(0.075, 0.203)	0.077	(0.050, 0.115)
Change in marital status	0.476	(0.401, 0.552)	0.525	(0.432, 0.617)	0.333	(0.263, 0.412)
Race						
White	0.834	(0.775, 0.880)	0.880	(0.747, 0.948)	0.884	(0.804, 0.934)
Black	0.138	(0.094, 0.200)	0.096	(0.035, 0.235)	0.099	(0.052, 0.181)
Other	0.027	(0.013, 0.055)	0.024	(0.007, 0.078)	0.016	(0.005, 0.048)
Education						
Less than high school	0.042	(0.023, 0.077)	0.029	(0.013, 0.063)	0.069	(0.045, 0.104)
High school only	0.274	(0.219, 0.336)	0.276	(0.210, 0.353)	0.237	(0.176, 0.311)
Some postsecondary	0.276	(0.216, 0.345)	0.245	(0.193, 0.307)	0.246	(0.195, 0.305)
Bachelor's degree	0.204	(0.153, 0.267)	0.172	(0.118, 0.244)	0.236	(0.179, 0.303)
Above bachelor's	0.204	(0.163, 0.252)	0.277	(0.224, 0.338)	0.212	(0.149, 0.292)
Increased education	0.302	(0.253, 0.356)	0.350	(0.292, 0.414)	0.298	(0.233, 0.372)
Median labour income (in $2019)	45,129	-	34,064	-	22,950	-
Modal occupation						
Professional and technical	0.215	(0.168, 0.271)	0.315	(0.252, 0.386)	0.298	(0.230, 0.377)
Mgmt, professional admin., etc.	0.213	(0.163, 0.274)	0.142	(0.107, 0.186)	0.084	(0.050, 0.137)
Sales and service	0.147	(0.112, 0.191)	0.186	(0.131, 0.257)	0.250	(0.201, 0.306)
Clerical	0.308	(0.257, 0.365)	0.303	(0.238, 0.377)	0.307	(0.239, 0.385)
Craftspeople and trades	0.080	(0.043, 0.144)	0.046	(0.015, 0.132)	0.039	(0.019, 0.075)
Operatives, transport, etc.	0.037	(0.024, 0.055)	0.008	(0.001, 0.047)	0.018	(0.006, 0.049)
Unemployed/NLF	No obs.	-	No obs.	-	0.004	(0.000, 0.049)
N	678		247		369	

Note**:** Standard errors for the C.I.'s are adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

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	Domestic work/part-time	Adjusted 95% C.I. (Lower, Upper)	*Transition to full-time*	Adjusted 95% C.I. (Lower, Upper)
LFP category as proportion of work trajectory				
Full-time employed	0.135	(0.104, 0.165)	0.517	(0.495, 0.539)
Part-time employed	0.371	(0.337, 0.405)	0.446	(0.426, 0.466)
Unemployed	0.055	(0.035, 0.075)	0.009	(0.005, 0.012)
Domestic work	0.406	(0.374, 0.438)	0.022	(0.013, 0.032)
Other NLF (Student, retired, disabled)	0.033	(0.024, 0.043)	0.007	(0.002, 0.011)
Cohort				
Early career begins 1979-82	0.619	(0.523, 0.706)	0.266	(0.208, 0.333)
Early career begins 1984-88	0.328	(0.253, 0.413)	0.317	(0.242, 0.404)
Early career begins 1990-94	0.032	(0.012, 0.083)	0.120	(0.076, 0.183)
Early career begins 1996-2006	0.021	(0.007, 0.062)	0.297	(0.253, 0.345)
Age at birth of first child				
No children	0.018	(0.005, 0.016)	0.176	(0.136, 0.224)
15-19	0.317	(0.241, 0.405)	0.219	(0.165, 0.285)
20-29	0.633	(0.551, 0.709)	0.493	(0.435, 0.552)
30+	0.031	(0.014, 0.066)	0.111	(0.075, 0.162)
Number of children				
None	0.018	(0.005, 0.016)	0.176	(0.136, 0.224)
1-2	0.480	(0.405, 0.556)	0.539	(0.478, 0.599)
3+	0.502	(0.423, 0.581)	0.285	(0.237, 0.338)
Marital status at age 30/31				
Married	0.780	(0.688, 0.851)	0.669	(0.604, 0.728)
Never married	0.091	(0.044, 0.177)	0.224	(0.182, 0.272)
Previously married	0.129	(0.075, 0.212)	0.107	(0.071, 0.158)
Change in marital status	0.342	(0.261, 0.434)	0.401	(0.346, 0.459)
Race				
White	0.801	(0.702, 0.873)	0.797	(0.719, 0.857)
Black	0.191	(0.120, 0.290)	0.161	(0.108, 0.235)
Other	0.008	(0.001, 0.044)	0.042	(0.024, 0.071)
Education				
Less than high school	0.139	(0.090, 0.211)	0.055	(0.032, 0.092)
High school only	0.438	(0.370, 0.508)	0.283	(0.230, 0.343)
Some postsecondary	0.241	(0.175, 0.322)	0.281	(0.226, 0.343)
Bachelor's degree	0.096	(0.055, 0.164)	0.162	(0.117, 0.222)
Above bachelor's	0.085	(0.053, 0.134)	0.219	(0.169, 0.278)
Increased education	0.260	(0.186, 0.351)	0.374	(0.318, 0.434)
Median labour income (in $2019)	13,040	-	31,516	-
Modal occupation				
Professional and technical	0.110	(0.071, 0.167)	0.212	(0.163, 0.271)
Mgmt, professional admin., etc.	0.046	(0.023, 0.090)	0.113	(0.079, 0.160)
Sales and service	0.298	(0.230, 0.376)	0.206	(0.166, 0.254)
Clerical	0.298	(0.230, 0.376)	0.349	(0.283, 0.421)
Craftspeople and trades	0.101	(0.064, 0.154)	0.087	(0.052, 0.142)
Operatives, transport, etc.	0.050	(0.030, 0.083)	0.033	(0.016, 0.068)
Unemployed/NLF	0.097	(0.057, 0.161)	No obs.	-
N	318		555	

Note**:** Standard errors for the C.I.'s are adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

We begin with a visual examination and labelling of each cluster in Figure 4.1. We also refer to select descriptive statistics presented in Table 4.3 which describe, separately for each cluster, each *LFP* category as a proportion of their work trajectory. We also refer to select descriptive sequence statistics generated for each cluster not shown in Table 4.3. The largest cluster at 31% of the sample is labelled *Continuous full-time* and contains individuals with the most frequent full-time employed positions, with Table 4.3 showing an average of 85% waves of full-time employment. In fact, 27% of women in this cluster (and 8% of women in the sample) experience *only* full-time positions.

Nevertheless, the majority (73%) of individuals in this cluster experience some interruption in the continuity of full-time employment, with intermittent but short-term part-time employment (13% of waves as shown in Table 4.3)—and to a much lesser extent, unemployment, domestic work, or other NLF positions, all of which individually average less than 1% of waves across their trajectory. The *Continuous full-time* cluster exhibits the highest continuity of full-time employment out of any other cluster and is therefore considered as reflective of the greatest levels of long-term LFP among women in the sample.

Two other clusters presented in Figure 4.1 also exhibit some continuity in full-time employment, although they additionally show greater continuity in part-time employment compared to *Continuous full-time*. Cluster 2, labelled *Transition to part-time,* generally exhibits continuity in full-time in the earlier portion of their trajectories, with a later transition to part-time employment in the latter half. This suggests an eventual exit from higher LFP for some women, although the cluster makes up the smallest percentage of women in the sample at 11%. Cluster 5 is larger at 26% and is labelled *Transition to full-time* due to greater continuity in full-time employment in the latter portion of their trajectories. Although 69% of this cluster begin their trajectory part-time (and to a lesser extent unemployed, in domestic work, or other NLF) and end with full-time employment, the remainder (31%) are initially employed full-time but experience an interruption with part-time (or other positions) before returning to continuous full-time employment.

The final two clusters experience the least continuity in full-time employment and thus the lowest levels of LFP in the sample. Cluster 5 labelled *Continuous part-time* makes up 17% of the sample and exhibits the greatest continuity in part-time employment throughout their trajectories. Nevertheless, only 26% experience only part-time positions in every single wave, while the majority engage in less frequent positions of full-time, domestic work, unemployment, and other NLF. Cluster 4 labelled *Domestic work and part-time* (15% of the sample) show the highest continuity in domestic work throughout their trajectory. However, a very low percentage (3%) experience only domestic work in every single position, while the majority experience intermittent part-time, full-time, unemployment, or other NLF throughout their trajectory. A not insubstantial percentage (32%) begin their trajectory with part-time employment and transition to domestic work.

Descriptive statistics in Table 4.3 also present various socio-economic, demographic, and employment-related characteristics of each sequence cluster. In this discussion, unless otherwise specified, when comparing the proportions within one cluster to another cluster, or to proportions in the wider sample in Table 4.2, we highlight only those results with no overlap in standard errors which suggest a real statistical difference in proportions. We begin with those clusters with the greatest continuity in full-time employment across their sequences. The *Continuous full-time* cluster appears to be more highly concentrated among the youngest cohort whose early career begins between 1996-2006. Women with no children are also particularly concentrated in this cluster compared to other clusters and the wider sample (with the exception of some standard error overlap with the *Transition to part-time* cluster). Never married women are also somewhat more concentrated in this cluster, although there is some overlap in standard errors with other clusters. This cluster also has the highest median income of all other clusters at $45,129. In terms of occupation, this cluster has a somewhat lower concentration of sales and service workers than the other clusters—with the exception of the *Transition to part-time* and *Transition to full-time* clusters. In fact, the *Transition to part-time* cluster, in which many women begin trajectories with greater continuity in full-time employment before transitioning to part-time work, has proportions generally similar to the *Continuous full-time* cluster. For example, both of these clusters have lower concentrations of women who have children between the ages of 20-29 and higher

concentrations of those who have children at 30+. However, women in the *Transition to part-time* cluster have a substantially lower median income at $34,064, likely due to lower full-time engagement. Of the three clusters with the greatest continuity in full-time employment, the *Transition to full-time* cluster has the lower median income at $31,516. The results suggest little other notable characteristics of this cluster that clearly distinguish them from any other cluster.

The two other remaining clusters described in Table 4.3—*Continuous part-time* and *Domestic work and part-time* exhibit the least continuity in full-time employment and greater continuity in part-time or domestic work. They also have the lowest median income of the other clusters at $22,950 for *Continuous part-time* and $13,040 for *Domestic work and part-time*, which is consistent with their lower hours worked throughout their trajectories. These clusters also have particularly high concentrations of women who bear children at ages 20-29, and lower concentrations of women bearing children at 30+—particularly for the *Domestic work and part-time* cluster with only 3% of women having children ages 30+. Unsurprisingly, the *Domestic work and part-time* cluster has the lowest concentration of women with no children, and the highest concentration of women with 3+ children. This cluster also has the lowest concentration of women in the youngest cohort who begin their early career between the years 1996-2006, at 2%. In terms of education, this cluster has the highest percentage of women with only a high school education (44%), and the lowest percentage with a degree above a bachelor's degree (8.5%) than all other clusters. This cluster also has the lowest percentage of professional and technical workers (11%), while the other clusters range between 21-32%. Interestingly, the *Domestic work and part-time* cluster appears to have a high concentration of Black women, as well as women in trades and other related blue-collar occupations, although the high overlap in standard errors with other clusters suggest this is due to the relatively low sample size of this cluster. The higher percentage of Black women may also be due to the somewhat higher number of women who experience frequent unemployment and other NLF who have been clustered together with women who experience frequent domestic work. This possibility is further discussed in the Discussion and Conclusion section in terms of the statistical properties of the hierarchical cluster analysis.

4.5.3 Multivariate Results

To answer the second research question of how patterns of LFP across women's work trajectories vary by cohort, we first examine results in Table 4.4 from Model 1—a multinomial logistic regression model predicting sequence cluster membership and including cohort as an independent variable. The sequence cluster which suggests the greatest continuity in LFP, in terms of continuous full-time employment, is the *Continuous full-time* cluster, which is used as the reference category in the model. These results generally suggest an increase in women's long-term LFP across cohorts: Compared to the *Continuous full-time* cluster, women whose early career begins between 1990-1994 are 63.2% less likely than women whose early career begins 1978-1982 to engage in the *Continuous part-time* cluster (P<.01), 91.9% less likely to engage in *Domestic work and part-time* (P<.001), and 39.0% less likely to engage in *Transition to full-time* (P<.10). Similarly, the youngest cohort of women whose early career begins 1996-2006 are 75.4% less likely than the oldest cohort to engage in *Continuous part-time* (P<.001), 97.9% less likely to engage in *Domestic work and part-time* (P<.05), and 38.2% less likely to engage in *Transition to full-time* (P<.10)—compared to the *Continuous full-time* cluster. As these results show, the decrease in engagement in the *Domestic work and part-time* cluster across cohorts is particularly pronounced, including for the second-oldest cohort of women who begin their early careers between the years 1984-1988, who are 39.1% less likely to engage in this cluster than in the *Continuous full-time* cluster compared to the oldest cohort (P<.05).

While results from Model 1 suggest baseline differences across cohort in long-term work trajectories among women, Model 2 includes the addition of covariates for which the results are also shown in Table 4.4. The results suggest that patterns of LFP across work trajectories are more strongly related to characteristics other than cohort membership for the two youngest cohorts. However, the cohort of women whose early career begins 1984-1988 are *more* likely than the oldest cohort to engage in *Continuous part-time* (OR = 2.900, P<.01), *Domestic work and part-time* (OR = 2.247, P<.10), and *Transition to full-time* (OR = 2.402, P<.05), suggesting less continuity in LFP for this cohort of women than the oldest cohort when adjusting for compositional changes in the

sample over time. Although their work trajectories begin during an economic boom period, the continuation of trajectories into an early-90s recessionary period may be related to their lower long-term LFP.

In terms of other characteristics, compared to *Continuous full-time*, lower labour income is strongly and significantly negatively related to membership in each of the four other sequence clusters. This is an unsurprising result given that lower engagement, hours, and experience in employment over time is related to lower earnings over time. Blue collar, clerical, and management or professional and public administration occupations, compared to sales and service occupations, are also more strongly related to the *Continuous full-time* cluster, particularly compared to women in the *Continuous part-time* and *Domestic work and part-time* clusters. This is consistent with prior research finding less stable employment and higher instances of part-time employment among service workers, particularly women (Vosko 2006). In terms of motherhood characteristics, women who have children between the ages of 20-29 are more likely than women who have children at age 30 or later to engage in the *Continuous part-time* (OR = 3.597, P<.01) or *Transition to full-time* clusters (OR = 2.487, P<.05) than in *Continuous full-time*. Although the odds ratio is also high for the *Domestic work and part-time* cluster, this result is insignificant. Having three or more children is also strongly positively related to the *Continuous part-time*, *Domestic work and part-time*, and *Transition to full-time* clusters compared to *Continuous full-time.* The final finding of note relates to education, in which higher educated women appear to be more likely to engage in the *Continuous part-time* than in the *Continuous full-time* cluster, compared to women with a high school education only (bachelor's degree OR = 2.550, P<.05; above bachelor's degree OR = 3.164, P<.01).

Table 4.4: Odds ratios for multinomial logistic regression models predicting women's membership in work trajectory sequence clusters. Source: PSID 1979-2019.

	Model 1				Model 2			
	Trans. to PT[a]	*Cont. PT*	*Domestic*	*Trans. to FT*	*Trans. to PT*[a]	*Cont. PT*	*Domestic*	*Trans. to FT*
Cons.	0.510***	0.951	0.915	0.924	1.386	0.682	0.450	0.205
Cohort								
Early career 1978-82 (ref)	-	-	-	-	-	-	-	-
Early career 1984-88	1.034	0.978	0.609*	1.301	1.980	2.900**	2.247+	2.402*
Early career 1990-94	0.854	0.368**	0.081***	0.610+	1.752	1.375	0.457	1.299
Early career 1996-06	0.563	0.246***	0.021*	0.618+	1.199	0.922	0.149	1.432
Age at birth of first child								
No children	-	-	-	-	0.404	0.812	0.496	1.066
15-19	-	-	-	-	0.632	1.838	5.245	2.036
20-29	-	-	-	-	0.652	3.597**	5.180	2.487*
30+ (ref)	-	-	-	-	-	-	-	-
Ever had 3+ children	-	-	-	-	1.751	2.197*	2.978***	1.623*
Marital status at age 30								
Married (ref)	-	-	-	-	-	-	-	-
Never married	-	-	-	-	1.021	1.059	0.874	1.144
Previously married	-	-	-	-	1.085	0.668	0.612	0.773
Change in marital status	-	-	-	-	0.904	1.476	1.448	1.313
Race								
White (ref)	-	-	-	-	-	-	-	-
Black	-	-	-	-	0.647	0.583	0.808	0.895
Other	-	-	-	-	0.558	0.481	0.149	1.529
Education								
< High school	-	-	-	-	0.679	1.962	1.680	1.217
High school (ref)	-	-	-	-	-	-	-	-
Some postsecondary	-	-	-	-	0.953	1.592	0.959	1.223
Bachelor's	-	-	-	-	0.844	2.550*	0.879	1.300
Above bachelor's	-	-	-	-	1.374	3.164**	1.281	1.934
Increased education	-	-	-	-	1.052	0.727	0.973	1.259
Log(labour income)	-	-	-	-	0.899+	0.843***	0.806***	0.903**
Modal occupation								
Prof. & technical	-	-	-	-	1.023	0.608	0.381+	0.608
Mgmt, prof. admin., etc.	-	-	-	-	0.519	0.231***	0.225+	.355*
Sales & service (ref)	-	-	-	-	-	-	-	-
Clerical workers	-	-	-	-	0.791	0.494*	0.437*	0.777
Craftspeople, trades.	-	-	-	-	0.371	0.248***	0.483+	0.637
N	2,124							

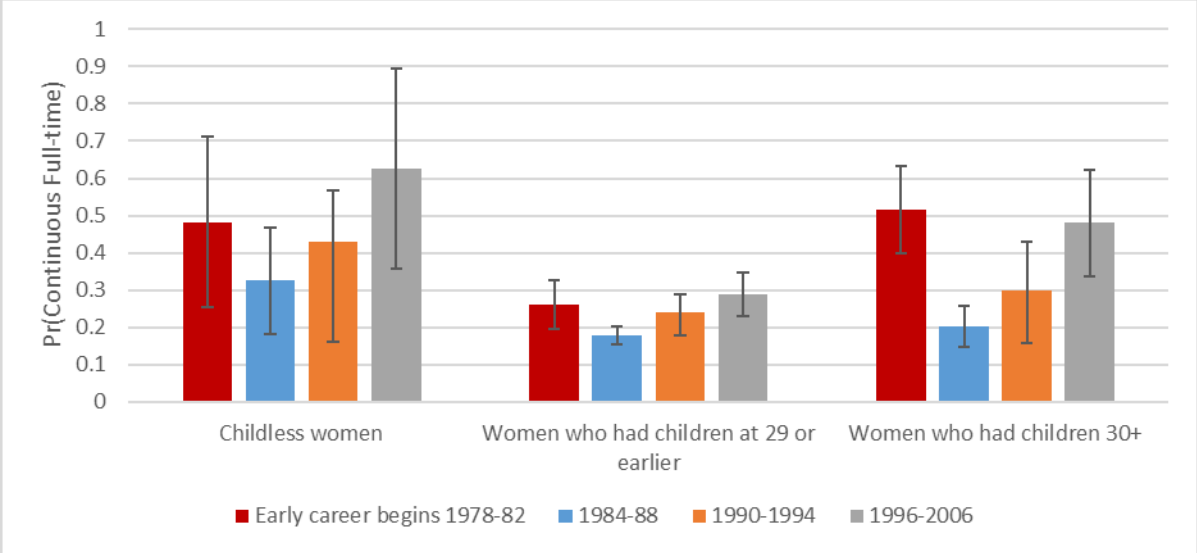
[a] Reference category is the *Continuous Full-time* sequence cluster.

Notes: Sample N size reduced from 2,167 to 2,124 after dropping cases who are 'Unemployed/NLF throughout' on the occupation variable due to high collinearity with the *Domestic work* cluster . Significance levels adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

+P<.10; *P<.05; **P<.01; ***P<.001.

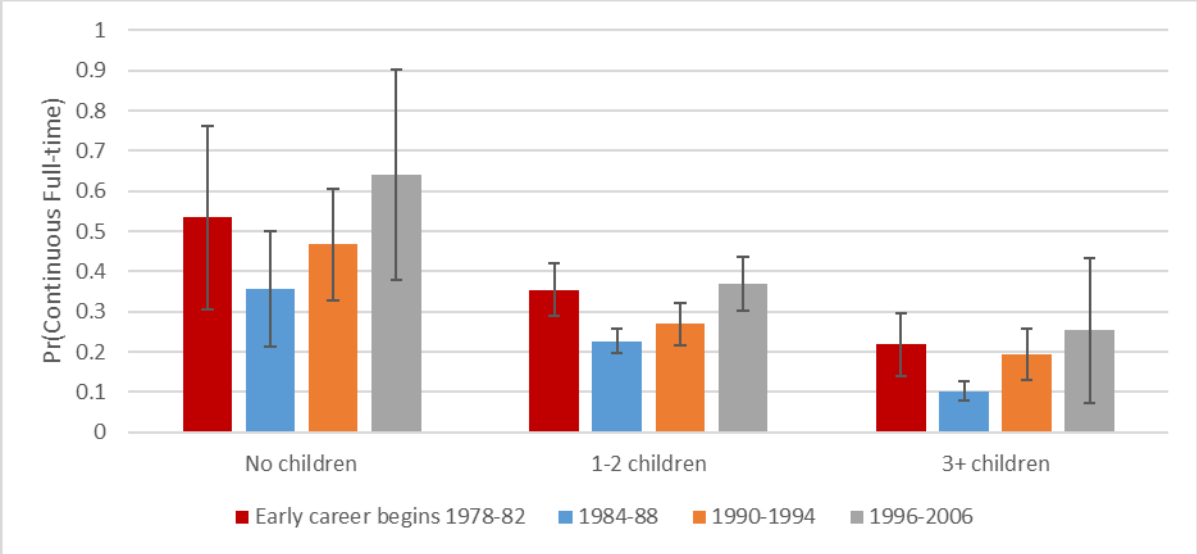
The third and final research question asks how patterns of LFP across women's work trajectories vary by cohort and motherhood among married women. To answer this, we first examine how predicted probabilities of the *Continuous full-time* vary by cohort and the timing of motherhood, which are presented in Figure 4.2 (odds ratios from the full model from which these probabilities are produced are presented in Appendix C). These probabilities generally show a lower probability of *Continuous full-time* among all women for the second-oldest cohort who begin their early careers during the years 1984-1988, while this probability is higher for the younger cohorts. However, the standard errors for childless women show substantial overlap across all cohorts, suggesting little significance in these differences across cohorts. Notably, women who have children at earlier ages prior to age 30 generally have lower probabilities of *Continuous full-time* overall, although there is some standard error overlap with women who have children later at 30+. We also answer the third research question in terms of number of children and examine how predicted probabilities presented in Figure 4.3 vary by cohort and number of children (odds ratios from this model are presented in Appendix C). Similar to Figure 4.2, predicted probabilities in Figure 4.3 also show a lower probability of *Continuous full-time* for the 1984-1988 early career cohort compared to the oldest cohort, but general increases for the youngest cohorts. Again, however, there is substantial overlap in standard errors between cohorts among childless women. Notably, women with 3+ children show generally lower probabilities of *Continuous full-time* overall.

Figure 4.2: Predicted probabilities of *Continuous full-time* sequence cluster by age at birth of first child, married women only. Source: PSID 1979-2019.



Notes: N = 1,475 married women (marital status measured at age 30 or 31). Standard errors adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

Figure 4.3: Predicted probabilities of *Continuous full-time* sequence cluster by number of children, married women only. Source: PSID 1979-2019.



Notes: N = 1,475 married women (marital status measured at age 30 or 31). Standard errors adjusted using BRR weights produced from the cluster and stratum data provided with the PSID.

4.6 Discussion and Conclusion

This study examined women's patterns of labour force participation (LFP) across a 12-year period, examining work trajectories roughly from the mid-20s to late 30s. The results present a rare statistical portrait of the variety in women's long-term pathways that unfolded across the 1978-2018 period, as well as the socio-economic, demographic, and employment characteristics associated with each type of work trajectory. During this period, 32% of women engaged in continuous full-time employment, as represented by the *Continuous full-time* trajectory revealed by the sequence cluster analysis. In fact, most of these women still experienced some interruption in full-time patterns, and only 8% of women in the sample engaged in full-time employment in every single wave observed. Women who engage in the *Continuous full-time* trajectory were found more likely to have higher labour income, engage in white-collar occupations such as management and public administration as well as blue-collar occupations, have children past age 30, and have fewer than three children.

The remainder of the sample experienced complex and intricate pathways of lower LFP through greater engagement in part-time work, domestic work, unemployment, and forms of labour force non-participation other than domestic work, as has also been found in previous research on women's work trajectories (Anyadike-Danes and McVicar 2010; Kruger and Baldus 1999; Ponomarenko 2016; Widmer and Ritschard 2009). In the sequence cluster analysis, these were organized into four distinct trajectories of *Continuous part-time*, *Transition to part-time*, *Transition to full-time,* and *Domestic work and part-time.* The patterns across each of these four distinct trajectories also highlight the prevalence of part-time employment among women (Kalleberg 2011; Ponomarenko 2016; Vosko 2006). Compared to the *Continuous full-time* trajectory, these women generally had lower labour income, were more likely to have children earlier than age 30, and have three or more children. The *Domestic work and part-time* trajectory, in which women engaged in frequent and continuous domestic work alongside occasional part-time employment, had the highest proportions of lower educated women and the lowest proportions of higher education such as a bachelor's degree or above.

Interestingly, results from the multivariate models adjusted for all covariates (see Table 4.4, Model 2) suggest a particularly higher likelihood of the *Continuous part-time* trajectory than the *Continuous full-time* trajectory among women with higher education, such as a bachelor's degree or above. This finding may be reflective of the 'opt-out' phenomenon said to be common among higher educated women who reduce their labour market activity in favour of higher hours allocated towards the family. The reduction in earnings associated with 'opting out' is said to be offset by their greater likelihood of having a higher educated and high earning male partner (Landivar 2017; Stone and Hernandez 2012). Empirical evidence does not show a widespread reduction in labour force participation that suggests a wider 'opt out revolution' among higher educated women (Landivar 2017), although most of this evidence examines aggregate participation rates rather than full-time engagement. Furthermore, there is evidence of aggregate declines in full-time employment as well as increases in part-time hours post-1970s, particularly during the 2000s (Landivar 2017) across occupation levels. In this context of lower opportunities for full-time work, it may be that higher educated women opt for remaining in part-time employment, while lower educated women are relatively less able to do so over the long term given the lower likelihood of having a higher earning male partner, as well as lower earnings overall, which may increase the motivation to continue seeking out full-time employment or to supplement part-time hours with additional jobs. We ran additional models not shown here including an interaction between education and cohort to explore this possibility and the results generally suggested relatively decreased likelihood of the *Continuous full-time* trajectory and increased likelihood of *Continuous part-time* for higher educated women beginning their work trajectories during 1996-2006 compared to their lower educated counterparts, although low significance across these models overall suggest the sample size is too low to have enough power to draw definitive conclusions. More research with higher sample sizes than are available here is needed to examine the relationship between higher education and long-term part-time work among women, and would benefit from detailed examination of how additional factors affect this relationship such as family characteristics, partner characteristics (e.g., partner earnings and work hours), or women's employment constraints such as the

availability of flexible schedules—all of which would affect women's incentives for 'opting out' of full-time work.

This study also leveraged the rich longitudinal data available across multiple cohorts in the PSID to examine broader differences across cohorts in women's long-term patterns of LFP. The findings show that, at baseline and unadjusted for other factors, greater LFP, measured in terms of engagement in *Continuous full-time* trajectories, is higher among younger cohorts—even for women working during the 2000s, for whom prior research finds cross-sectional declines in LFP. This may suggest that women post-2000s primarily experienced shorter-term declines while retaining longer-term patterns of LFP. Furthermore, the results suggest that characteristics including labour income, occupation, education, timing of motherhood, and number of children are strong predictors of *Continuous full-time* engagement compared to cohort membership by itself. Finally, this study also examined how long-term LFP differed across both cohort and motherhood among married women. Although the literature suggests that increases in women's LFP is at least partly due to delays in childbirth and lower fertility among more recent cohorts (Agüero and Marks 2008; Casper and Bianchi 2002; Goldin 2006; Goldin and Katz 2002), the results show that increases across cohorts in long-term LFP in terms of continuous full-time engagement has *also* occurred among women who have children at younger ages and among women who have many children. Nevertheless, long-term LFP was found to be higher among women who bear children at age 30 or later and women with fewer children, consistent with the general literature (Goldin 2006). For women who have children at ages 20-29, this suggests that earlier childbirth has a long-term influence on later LFP observed between the ages 26-41, while a longer period pre-childbirth for women who become mothers at 30+ allows for greater continuity in long-term LFP.

One of the unfortunate limitations of using data from long-term longitudinal studies of multiple cohorts, such as that of the PSID, is the higher likelihood of encountering smaller sample sizes in comparison to other common longitudinal data sources providing information on fewer cohorts (e.g., the National Longitudinal Survey of Youth). In this analysis we prioritized rich long-term longitudinal data for multiple cohorts across 12 years, which limited the ability of the statistical analyses to examine

categories of the independent variables in greater detail, such as motherhood characteristics. For example, timing of childbirth was examined as three categories representing women with no children, women who had children before age 30, and women who had children at age 30 or later. A larger sample size would have allowed a more nuanced analysis of timing through the expansion of the number of age categories as well as the addition of the timing and spacing of multiple births, which could then be compared to the ages at which LFP continuity starts and ends for these women. This additionally limits the ability of the analysis to examine how the timing of first childbirth and subsequent births directly affect continuity or interruptions in LFP trajectories. While the descriptive analysis suggests that women who have their first child at the early ages of 15-19 are particularly concentrated in the *Domestic work and part-time* cluster (see Table 4.3), which suggests long-term impact from early childbirth on their later LFP across their mid-20s to 40s, low sample sizes of this childbirth category show no significance in their relationship with any of the sequence clusters (see Table 4.4).

A third and unavoidable limitation of this analysis is the biannual observation of LFP across waves rather than continuous annual observation, due to the fact that the PSID only collects biannual information on the variable used to generate the "unemployed," "domestic work," and "other NLF" categories of the *LFP* variable. Nevertheless, this limitation reduces the ability of the analysis to examine annual continuity and change in different categories of LFP, and there may be greater variability in women's employment participation across time that is not captured by the analysis here.

Another disadvantage related to sample size is associated with the statistical properties of the sequence analysis (SA) and the results of the cluster analysis, in which highly heterogenous sequences that do not reflect common patterns are subsumed into larger clusters which do not necessarily share similar patterns in a theoretically meaningful way. For example, a small number of cases in the sample (N = 23) have sequence patterns characterized by primarily unemployment or not-in-labour force (NLF) positions (e.g., student, retired, disabled), but these sequences were subsumed into the *Domestic work and part-time* cluster. This may also be the reason why the descriptive characteristics of the *Domestic work and part-time* cluster suggest a high concentration of

Black women due to their higher likelihood of unemployment (Cranford and Vosko 2006; Creese 2007; Kalleberg 2011). Unfortunately, the numbers of Black and other non-White women in this sample are too small to draw conclusions about their long-term LFP, despite the strong and important relationship between race and employment discussed previously.

Overall, the results presented here highlight the substantial variation in women's pathways of labour force participation and how they relate to important factors such as family, education, and employment characteristics. This study also presents longitudinal evidence of historical increases in women's long-term LFP found in terms of a higher likelihood of continuous full-time engagement for younger cohorts of women. Nevertheless, younger women's work trajectories continue to feature interruptions to continuous full-time engagement. This is reflective of the persistence of gendered divisions of household and caregiving labour which necessitate that women decrease labour market engagement, which then negatively affects earnings, employment experience, and job mobility relative to men. The proliferation of precarious employment (Kalleberg 2011; Vosko 2007) contributes to these conditions as women have added difficulty in securing permanent employment with stable, living wages and benefits such as parental leave that would support their ability to support the family as well as provide continuity in work. For example, fringe benefit provision and quality that would benefit the family—e.g., parental leave, childcare provisions, and family health insurance—has declined in recent decades (Kalleberg 2011; Shuey and O'Rand 2004; Vosko 2007). Moreover, the availability of fringe benefits is stratified by gender as women tend to have lower access to higher earning employment that offers access to fringe benefits (Shuey and O'Rand 2004). Furthermore, increases in part-time employment also suggests that an increasing number of women would turn to lower-paid part-time work to reduce labour force engagement in favour of household and caregiving labour in the absence of other employment opportunities. The persistence of these conditions necessitates that research continue to examine how long-term labour force participation changes for ever younger cohorts of women and whether and how this remains a significant source of gender inequality in the contemporary labour market.

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Chapter 5

5 Conclusion

5.1 Research Objectives

This dissertation examines employment characteristics that are part of a wider shifting labour market landscape that has been underway since the 1970s in Western economies as a result of multiple complex and interrelated structural and economic developments. Such developments include, for example, accelerated advances in information and communication technologies (ICTs) that have culminated from broader technological advances across the 20th century, the global expansion of capital, and industrial shifts from primary and secondary industries towards a knowledge- and service-based economy. As discussed in Chapter 1, while such developments have lead to advances in productivity and profit-making, they have also intensified wider economic competition and structural uncertainty (Beck 2000; Kalleberg 2011; Rinehart 2006) and have led to the redistribution of these risks onto labour and the proliferation of precarious employment characteristics that are less costly to employers (Beck 2000; Kalleberg 2011; Shuey and O'Rand 2004; Smith 2001; Vogt 2017). This dissertation examines how three employment phenomena linked to the proliferation of precarious employment—declining employment stability, multiple jobholding, and increases in women's labour force participation—manifest across the individual life course and how they relate to important social factors such as the historical timing of labour market activity, gender, educational attainment, race, and family structure.

Ample research has examined changing employment characteristics related to precarious conditions. However, less is known about how these characteristics manifest across individuals' employment pathways across the life course. This dynamism is conceptually salient because labour market activity necessarily changes for individuals over time (Blossfeld 2009; Kohli 1988; Kruger and Baldus 1999), and because the concept of precarious employment does not only concern current or short-term conditions but also long-term 'prospects' (Witteveen 2017). It encompasses, for example, the chances of continued employment which may be shortened by risks of job loss; the

chances of re-employment if an individual frequently engages in short-term temporary employment; or changes in financial stability as individuals experience wage decline, loss of earnings, and indeterminate chances of securing future employment and earnings. Even less research, moreover, examines whether and to what degree younger cohorts experience ever more precarious employment pathways across the life course, despite the fact that younger cohorts' experiences are increasingly embedded in labour market contexts affected by shifting structural and economic conditions.

This dissertation addresses these research gaps by examining long-term pathways of employment that span 10 or more years across the life course: Chapter 2 focuses on multiple interrelated indicators of employment stability; Chapter 3 focuses on multiple jobholding as a labour market risk management strategy to offset earnings disadvantages; and Chapter 4 focuses on women's long-term labour force participation which, although it has grown over time, remains more precarious and unstable than men's. Chapters 2 and 4 also apply a cohort-historical perspective and examine how these long-term patterns shift across cohorts as a result of changing labour market landscapes. All three chapters determine how these employment pathways relate to other factors related to labour market disadvantages, including gender and family structure, earnings levels, educational attainment, and race.

5.2 Overview of Major Findings and Contributions

The interrelated structural and economic developments of the post-1970s period have contributed to broad declines in employment stability for men and, during the 1990s, for women (Hollister and Smith 2014; Osterman 1999; Swinnerton and Wial 1995). However, little research has examined employment stability across life course pathways, and Chapter 2 addresses this research gap by examining the extent to which individuals experience involuntary job loss across a decade of the life course during mid-life. This is important because involuntary job loss is a significantly de-stabilizing life course event signalling abrupt transition out of a position that provides earnings and benefits and is associated with decreased chances of later re-employment as well as lower wages upon re-employment (Couch and Placzek 2010; Davis and Wachter 2011; Farber 2004; Farber 2015). Although the results show that the prevalence of involuntary job loss is low, the

results also show gender inequality in employment stability as women were found to experience more frequent incidence of job loss over the long term. Involuntary job loss was also found to be associated with other forms of labour market inequality, given its association with lower education and non-White workers.

Moreover, prior research on employment stability has primarily focused on attachment to a single employer or position using measures such as job loss or employer tenure. However, precarious employment conditions increasingly normalize lower attachment to a single employer or position, suggesting that this conceptualization is insufficient for understanding the heterogenous experiences of younger cohorts of workers. This study contributes two indicators capturing broader conceptualizations of employment stability, the first in terms of individuals' ability to maintain full-time labour market attachment over a period of their life course across mid-life, and the second in terms of engagement in multiple jobs over this period which is suggestive of the inability to secure attachment to a single job providing sufficient hours, earnings, or benefits. The findings show these to be interrelated phenomena that help identify additional groups of workers that experience instability primarily in the form of difficulties in securing strong and continuous attachment to labour market positions over time.

Finally, there is a lack of research on whether historical declines in employment stability over time also extends to less stable employment trajectories. To examine this, Chapter 2 applies a cohort-historical perspective to examine differences in cohort experiences of these long-term patterns of employment stability, finding declines in employment stability over the life course across all three indicators—involuntary job loss, continuous full-time engagement, and multiple jobs—for men, and to a lesser extent for women. These results give insight into changing cohort experiences of the shifting labour market landscape, which do not only affect individuals in terms of short-term experiences but have broader influence on wider life course patterns as individuals age over time.

Multiple jobholding (MJH)—or the practice of holding two more jobs simultaneously—is a growing labour force phenomenon that has been empirically linked

to earnings disadvantages and wider increases in precarious and non-standard employment arrangements (Conen and Stein 2021; Jonsson et al. 2021; Standing 2011; Zangelidis 2014). However, there is a wider debate in the literature concerning whether MJH is primarily related to economic disadvantage, or whether it is related to advantage given its association to higher educated workers who may hold multiple jobs to diversify their skills and labour market experience. There has also been little research on how MJH manifests for individuals across their life course pathways and its long-term influences. Chapter 3 addresses these literature gaps by examining long-term differences in earnings between multiple and single jobholders, and whether these patterns vary between higher and lower educated workers. The findings reveal that MJH is related to lower labour income among both men and women, and that this generally holds among *both* higher and lower educated workers, suggesting that it is a labour force risk management strategy that workers of all education levels engage in to offset relative earnings disadvantages and structural constraints in the primary job.

The life course approach to examining MJH and its longitudinal measurement also contribute several insights to this literature. First, it reveals that it is primarily a short-term phenomenon and that very few men or women tend to engage in MJH for substantial portions (e.g., more than five or six years) of their life course. This is salient given that much prior research and labour force statistics assume that multiple and single jobholders are mutually exclusive labour force categories, rather than viewing MJH as a practice that workers may engage in periodically—often in response to conditions of wage or employment insecurity or economic disadvantage. Furthermore, the life course approach to MJH also reveals that, while it is related to economic disadvantage for both higher and lower educated workers, there remain disparities by education in that higher educated men and women experience significant earnings growth associated with MJH over the long-term, while lower educated workers experienced largely flat earnings over time regardless of multiple or single jobholding.

A final contribution of the analyses in Chapter 3 is the examination of gender differences in MJH, which has been lacking in prior literature despite wide-ranging gender differences in employment characteristics as found by prior research including

earnings, labour force participation, and occupation (Acker 1990; Crowley 2013; Kalleberg 2011; Vosko 2006). However, the results in Chapter 3 show little evidence of gender differences in the propensity for MJH, its relationship to labour income over time, or the long-term relationship between MJH and education. These results again show that multiple and single jobholders are not necessarily mutually exclusive labour force categories, but that MJH is a practice occasionally used by individuals with wide-ranging labour market opportunities or disadvantages by gender or education.

A substantial literature has examined the dramatic increases in women's labour force participation (LFP) over time since the 1960s (Anyadike-Danes and McVicar 2010; Casper and Bianchi 2002; Goldin 2006; Kalleberg 2011). However, little research has examined women's LFP across the life course, which is problematic given that women's work trajectories feature less continuity in patterns of full-time employment and more frequent periods of part-time employment, unemployment, or non-participation in the labour force compared to men (Anyadike-Danes and McVicar 2010; Kruger and Baldus 1999; Ponomarenko 2016; Widmer and Ritschard 2009). Even less research has examined the extent to which historical increases in women's LFP extend to increases in their long-term patterns of LFP, as examined in Chapter 4. The results reveal that, not only is there evidence of women's higher LFP at the aggregate population level as found in prior research, but also that younger cohorts of women experience greater continuity in full-time employment than previous cohorts. Therefore, using a cohort-historical perspective coupled with a life course approach to women's LFP allows for examination of how younger cohorts of women have longer and less interrupted labour market experiences compared to women in the past. Nevertheless, the results also reveal that even among those groups of women who experience the most continuous full-time trajectories, there remain frequent incidences of part-time employment, which highlights the persistence of precarious employment experiences across women's work trajectories.

Although the literature suggests that historical increases in women's LFP is at least partly a result of historical shifts towards delayed childbirth and lower fertility (Agüero and Marks 2008; Casper and Bianchi 2002; Goldin 2006), the results reveal that increases across cohorts in long-term LFP in terms of continuous full-time engagement

has also been experienced by women who have children at younger ages and among women who have many children. This finding highlights the benefit of using long-term longitudinal data encompassing women's LFP surrounding childbirth and highlights greater continuity in women's employment compared to the past. Nevertheless, motherhood continues to influence women's long-term LFP, and the findings show that full-time discontinuity, frequent part-time employment, and frequent periods of domestic work remain strongly related to motherhood, motherhood at younger ages, and having more children.

5.3 Limitations and Future Directions

While each chapter prioritizes examination of detailed life course pathways and how they relate to individual employment characteristics and outcomes, a limitation of this general approach is the 'microfication' of the analyses (Hagestad and Dannefer 2001), with a limited examination of macro-level factors using variables such as national or state-level unemployment rates, the influence of political institutions such as the existence of employment policies, business cycles, or the presence of unions. These considerations would also be key for identifying causal relationships between individual-level employment outcomes such as employment stability or labour force participation. While the chapters in this dissertation are not motivated by identifying such causal patterns, but rather focus on broader individual and cohort experience of different employment characteristics and labour market contexts, it is still important to consider the influence of these wider factors to better understand the relationship between the wider structural and economic developments (e.g., globalization, industrial shifts) that are prominent in the theoretical framework guiding each chapter. Further examination of the employment characteristics examined over the life course in this dissertation should incorporate these wider considerations.

Another limitation of this dissertation is its limited examination of race in each chapter, despite the central importance of race for understanding employment and labour market inequality. For example, men's higher access to employment standards associated with the standard employment relationship (SER) model of permanent, full-time, and unionized employment offering living wages and benefits has historically excluded Black

and other non-White men (Branch and Hanley 2017; Cranford and Vosko 2006; Shalla 2007). The SER constitutes the normative basis for institutional benefits and protections—including labour laws and regulations, unemployment insurance or workers' compensation, health and safety protections, and collective bargaining rights—although these benefits have been primarily extended to employment positions in which White men are concentrated (Vosko 2006). In general, compared to White men and women, non-White men and women receive lower earnings, have less access to permanent and full-time employment, fringe benefits, and union representation, and are over-represented in precarious and non-standard employment positions (Branch and Hanley 2017; Cranford and Vosko 2006; Creese 2007; Kalleberg 2011; Shalla 2007; Shuey and O'Rand 2004; Vosko 2006; Witteveen 2017).

The limited analytic focus on race in each chapter of this dissertation is primarily due to low sample sizes of non-White individuals. The analyses prioritized examination of long-term longitudinal pathways—capturing at least 10 years across the life course—which demands non-missing observations at multiple longitudinal time points for each case in the sample. Because missingness at one or more time points is common in longitudinal data (Fitzmaurice, Waird, and Ware 2011), this leads to lower sample sizes used in the analyses. Smaller sample sizes also result in under-representation of relatively smaller non-White populations. Although the sample sizes did allow for examining some broader associations between race and employment characteristics, as done in Chapter 2 in terms of employment stability and in Chapter 4 in terms of women's LFP, the samples were too small for greater detail in analyses that could, for example, allow for examination of how these employment characteristics are moderated by both race and gender. In future research, I plan to examine the themes presented in this dissertation using longitudinal data capturing shorter periods of the life course, which would yield higher samples and allow for greater focus on race.

In Chapter 3, the limited sociological research on multiple jobholding (MJH) in general led to this chapter primarily addressing the broader debate on the relationship between MJH and structural advantage in terms of labour income and education. Although the analyses control for race, given that the findings highlight the use of MJH

to offset labour market disadvantage I plan to examine whether racialized workers are particularly likely to engage in MJH in order to offset persistent labour market discrimination. This is particularly important as MJH is also related to poor outcomes that may disproportionately affect racialized workers, such as work-family conflict and poor mental and physical health outcomes (Boyd, Sliter, and Chatfield 2016; Conen and Stein 2021; Marucci-Wellman et al. 2014; Marucci-Wellman et al. 2016).

5.4 Concluding Remarks

Overall, the research presented in this dissertation highlights the benefits of examining detailed pathways of employment across long periods of the life course for understanding employment characteristics and outcomes, as well as how they are distributed along lines of labour market inequality such as gender, education, earnings levels, and race. Life course research on employment outcomes is important given that widespread structural and economic developments since the 1970s have generated new employment realities in the context of shifting labour market conditions, which influences individuals and their socio-economic well-being throughout their lives.

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Appendices

Appendix A: Odds ratios from multinomial logistic regression models predicting membership in latent classes of long-term employment stability (three-class model), by gender. Source: PSID 1983-2017.

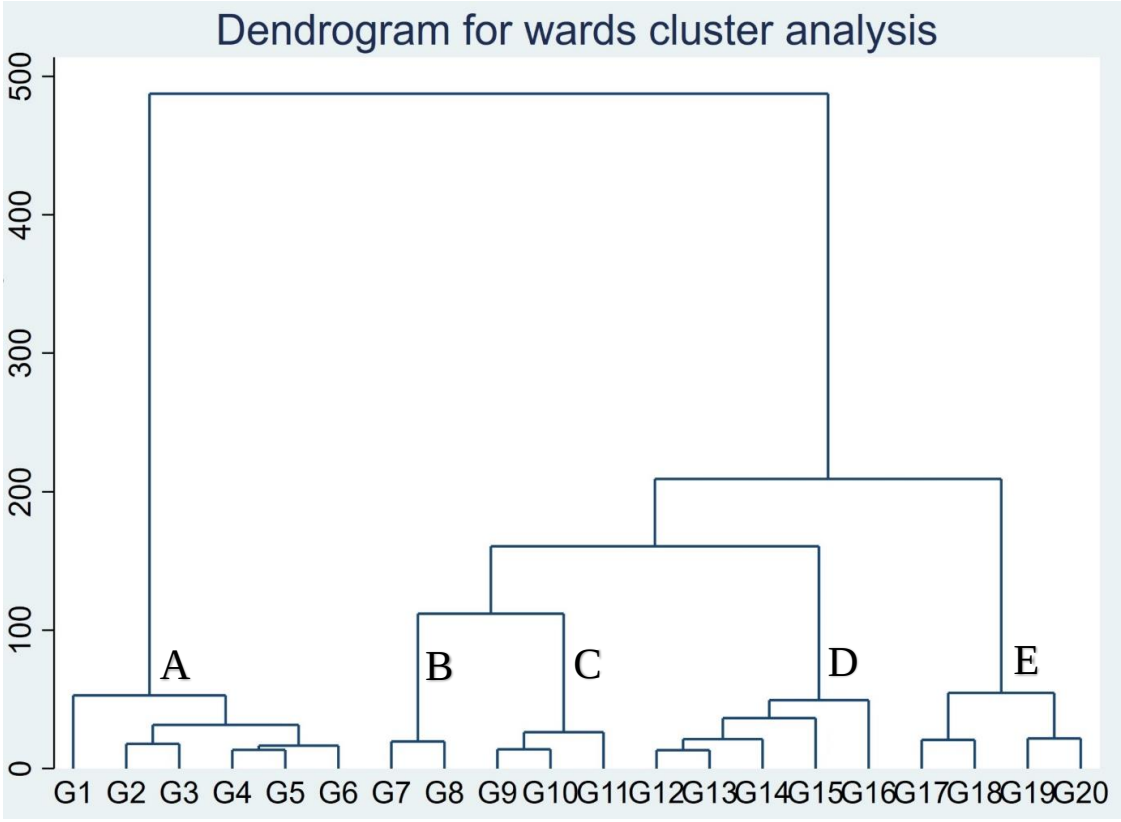
Men (N = 2,045)	Class 1 (ref; *Least stable*)	Class 2 (*Full-time discontinuity and multiple jobs*)	Class 3 (*Most stable*)	C1	C2 (ref)	C3	C1	C2	C3 (ref)
Cons.	-	4.990*	11.074***	0.188*	-	1.969	0.095***	0.508	-
Midcareer begins 80s (ref)	-	-	-	-	-	-	-	-	-
Midcareer begins 90s	-	0.466	0.615	2.111	-	1.312	1.609	0.762	-
Midcareer begins 2000s	-	0.707	0.163***	1.496	-	0.238*	6.281***	4.199*	-
Women (N = 2,694)	**Class 1 (ref; *Least stable*)**	**Class 2 (*Low employment activity*)**	**Class 3 (*Most stable*)**	**C1**	**C2 (ref)**	**C3**	**C1**	**C2**	**C3 (ref)**
Cons.	-	11.600+	11.183*	0.089*	-	0.939	0.089*	1.037	-
Midcareer begins 80s (ref)	-	-	-	-	-	-	-	-	-
Midcareer begins 90s	-	0.601	0.373	1.674	-	0.620+	2.682	1.612+	-
Midcareer begins 2000s	-	0.322+	0.549	3.050	-	1.718	1.822	0.587+	-

Note: “C1” represents Class 1; “C2” represents Class 2; “C3” represents Class 3.

Appendix B: Selection criteria for the optimal sequence cluster solution.

The first criterion used to select the optimal sequence cluster solution is a visual inspection of a diagram called a dendrogram presented in Figure B-1, which describes how the clustering algorithm determines how unique clusters are aggregated into successively larger clusters as we examine the dendrogram from the bottom to the top of the *y*-axis. Starting from the bottom of the *y*-axis, each vertical line represents a cluster which is successively joined to form a larger cluster, until the largest 2-cluster solution at the top of the *y*-axis.

Figure B-1: Dendrogram for hierarchical clustering of sequences from N = 2,167 women. Source: PSID 1979-2019.

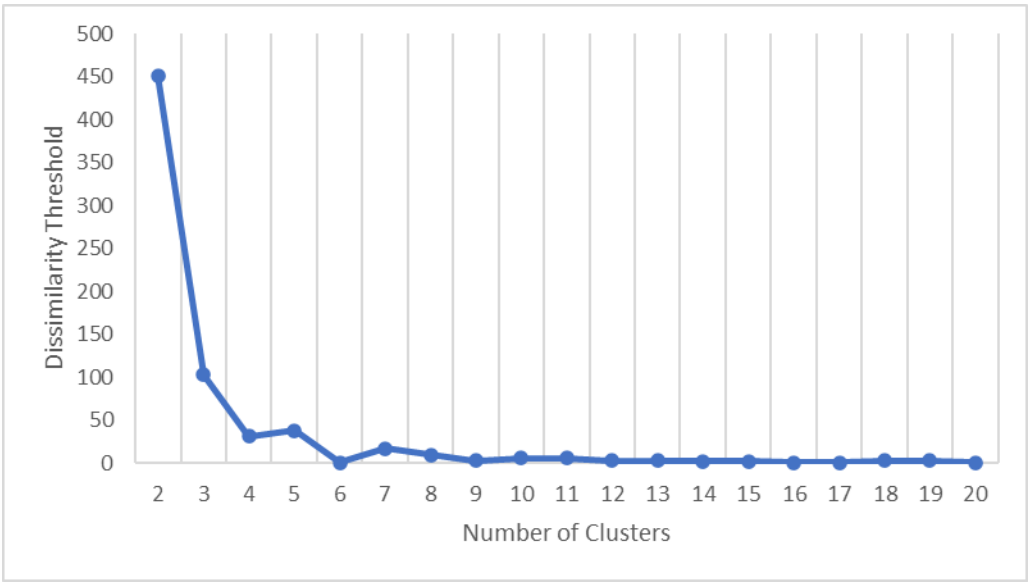


The length of each vertical line indicates the degree of similarity between two clusters, such that longer vertical lines indicate greater dissimilarity between two clusters

and the clustering algorithm has greater difficulty clustering them together. In Figure B-1, longer vertical lines begin to occur at the lines labelled A, B, C, D, and E, suggesting that the algorithm has difficulty clustering the five clusters represented by these lines into a larger cluster. Thus, the dendrogram in Figure B-1 supports the choice of a five-cluster solution.

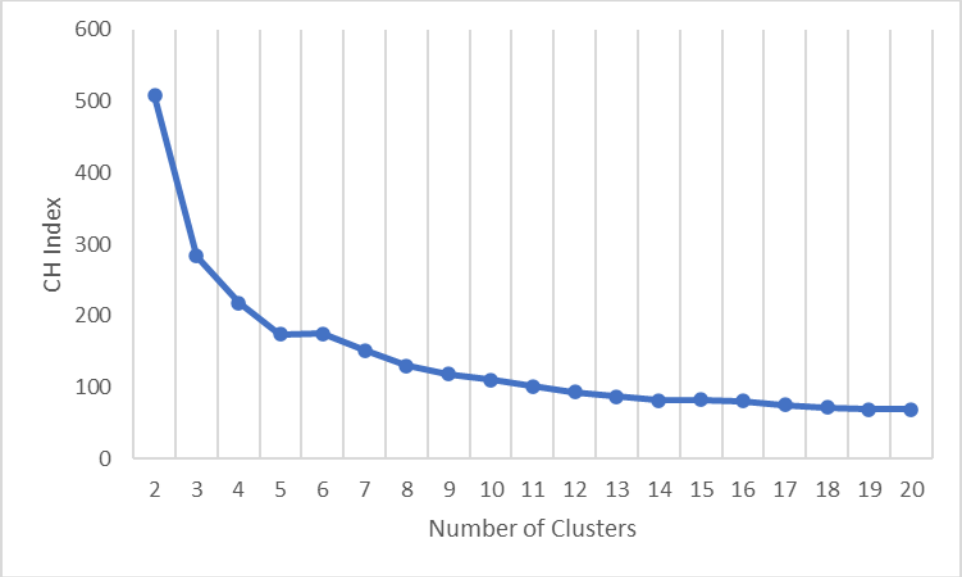
The second criterion is the examination of fusion coefficients or dissimilarity thresholds which indicate the relationship between the number of clusters in each solution, representing the values at which clusters are aggregated. A visual examination of Figure B-2, which plots the relationship between the number of clusters at each dissimilarity threshold, helps identify the optimal cluster solution at the number of clusters before which the fusion coefficient becomes small and changes the least before the following fusion coefficients—i.e., before the plotted line begins to flatten. In Figure B-2, this occurs at clusters four or five, suggesting either a four- or five-cluster solution as optimal.

Figure B-2: Line graph showing the relationship between the number of clusters at each given dissimilarity threshold in the hierarchical clustering of sequences from N = 2,167 women. Source: PSID 1979-2019.



The third criterion used is the Calinski and Harabasz (CH) index, which provides a measure of the ratio of the between-cluster sum of squares and the within-cluster sum-of-squares for each cluster solution. The optimal cluster solution is identified by a 'local maximum' value at which the CH index is the largest after decreasing or changing little from a two-cluster solution onward. Since a line plot is instructive for identifying local maxima, the CH indices for each cluster solution are plotted in Figure B-3. However, Figure B-3 shows that the CH index ascends with each subsequent cluster solution, with the exception of a small increase from 173.7 for a five-cluster solution to 174.6 for a six-cluster solution. This ascending pattern suggests little reason for preferring any one solution over the others, with some support for a six-cluster solution.

Figure B-3: The Calinski and Harabasz (CH) index for each cluster solution, from the hierarchical clustering of sequences from N = 2,167 women. Source: PSID 1979-2019.



Overall, two criteria used to choose an optimal sequence cluster solution support a five-cluster solution (the dendrogram in Figure B-1 and comparison of fusion coefficients in Figure B-2), while the third criterion (Figure B-3) shows weak support for a six-cluster solution or indicates little preference for any cluster solution. The final criterion used is

an examination of the sequence clusters themselves to determine substantive interpretability of the clusters, for which 2-10 clusters were examined. Substantive interpretability favoured a five-cluster solution which is plotted in Figure 4.1 of Chapter 4.

Appendix C: Odds ratios for multinomial logistic regression models predicting women's membership in the *Continuous full-time*[a] work trajectory sequence cluster, with interactions by age at birth of first child and number of children. Source: PSID 1979-2019.

	Model 1 - Interaction with *Age at birth of first child*	Model 2 - Interaction with *Number of children*
Cons.	0.510	0.451
Cohort		
Early career begins 1978-82 (ref)	-	-
Early career begins 1984-88	0.196*	0.432
Early career begins 1990-94	0.347	0.733
Early career begins 1996-2006	0.841	1.675
Age at birth of first child[b]		
No children	0.853	0.812
< 29	0.280*	3.597**
30+ (ref)	-	-
*Age at birth of first child * Cohort*		
30+ * 1978-82 (ref)	-	-
No children * 1984-88	2.390	-
No children * 1990-94	2.251	-
No children * 1996-2006	2.338	-
< 29 * 1984-88	3.016*	-
< 29 * 1990-94	2.540	-
< 29 * 1996-2006	1.392	-
Number of children[c]		
No children	-	-
1-2	-	0.429
3+	0.552*	0.201
*Number of children * Cohort*		
No children * 1978-82 (ref)	-	-
1-2 children * 1984-88	-	1.151
1-2 children * 1990-94	-	0.876
1-2 children * 1996-2006	-	0.639
3+ children * 1984-88	-	0.897
3+ children * 1990-94	-	1.172
3+ children * 1996-2006	-	0.746
N	1,475	

Note: Models also control for whether change in marital status, race, education, whether increased education, log(labour income), and modal occupation.

[a] Reference category is all other cluster solutions.

[b] In Model 2, *Age at birth of first child* is excluded as a covariate to avoid collinearity between its 'No children' category and the 'No children' category of the *Number of children* variable.

[c] In Model 1, *Number of children* is included as a dichotomous variable indicating whether the individual ever had 3+ children, compared to 2 or fewer children. This is to avoid collinearity with the 'No children' category of the *Age at birth of first child* variable.

+P<.10; *P<.05; **P<.01; ***P<.001.

Curriculum Vitae

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