Career Antecedents of Female Entrepreneurship

TIANTIAN YANG
Duke University
Department of Sociology
Ty41@duke.edu

ALEKSANDRA (OLENKA) KACPERCZYK
London Business School
okacperczyk@london.edu

LUCIA NALDI
Center for Family Enterprise and Ownership
Jönköping International Business School
lucia.naldi@ju.se

ABSTRACT

The need to resolve work-family conflict has long been considered a central motive for women's pursuit of atypical careers, such as entrepreneurship. Combining insights from the motherhood penalty literature and career mobility research, we uncover a new mechanism driving female entrepreneurship: diminishing advancement options due to motherhood discrimination. Based on our theory, we predict that women will disproportionately launch a new business in effort to further their advancement, when work conditions diminish their further career progression. By contrast, we expect women will disproportionately sort into self-employment in efforts to reconcile work-life conflict, when work conditions increase job strain. We test our arguments using matched employer-employee data from Sweden (1990-2016) and the Swedish Work Environment Survey. We find that motherhood has a positive effect on women's likelihood of founding a new organization, and that such tendency is more pronounced when women are employed in occupations with a greater motherhood earnings penalty. We further show that motherhood earnings penalty amplifies the effect of motherhood on founding a new organization, but not on self-employment. By contrast, greater work-family conflict intensifies the relationship between motherhood and self-employment, but not business founding. Overall, this study sheds light on the different antecedents of female entrepreneurship and contributes to the understanding of when women pursue irregular and atypical careers, such as entrepreneurship.

INTRODUCTION

Inequality is a defining feature of organizations and thus a subject of a long-standing inquiry for organizational scholars (Baron and Bielby 1980; Nelson and Bridges 1999; Reskin et al. 1999). Ample research shows that women, in particular, are put at a systematic disadvantage within organizations and that this disadvantage tends to be amplified when women become mothers (Budig and England 2001; Williams 2001; Jacobs and Gerson 2004; Correll et al. 2007; Ely and Padavic 2020). Indeed, a growing body of research suggests that becoming a mother pushes women into alternative, less typical work arrangements, and that the pursuit of entrepreneurship is among the most frequent choices (Carr 1996; Loscocco 1997; Budig 2006a; 2006b; Jennings and Brush 2013; Thébaud 2015). For example, studies show that twenty percent of women in the United States have accumulated entrepreneurial experience by their mid-40s (Ferber and Waldfogel 1998; Guzman and Kacperczyk 2019), suggesting that women commonly turn away from paid employment in favor of entrepreneurship.

Despite the prevalence of entrepreneurship among women, we know relatively little about the mechanisms responsible for such transitions. Conventional views attribute such entries to the pressure women face to fulfill their family obligations and childcare duties. A common argument has been that motherhood increases family responsibilities such that women turn to entrepreneurship as a fallback option—a Plan B—when wage employment fails to accommodate childcare (Carr 1996; Loscocco 1997; Budig 2006a; 2006b; Jennings and McDougald 2007; Thébaud 2015; Burton et al. 2019). The need to reconcile work-family conflict is thus commonly considered to be the main reason why women enter entrepreneurship.

Yet work-family conflict is not the sole challenge women face when they become mothers. Rather, research on motherhood penalties has established that women are exposed to systematic employer or institutional discrimination based on their motherhood status (Budig and England 2001; England et al. 2016; Weisshaar 2018), even when mothers pledge commitment to employer following childbirth (i.e., they take limited time off and work the same hours). Notably, mothers face substantial earning gaps relative to childless women because employers perceive them as less committed to work or because the

clockwork of careers does not tolerate interruptions (Budig and England 2001; Blair-Loy 2003; Correll et al. 2007; Abendroth et al. 2014). However, despite the critical importance of such challenges arising within paid work, past studies have not considered whether and how diminishing opportunities due to motherhood affect women's entry into entrepreneurship.

In this study, we therefore broaden the theory of female entrepreneurship by uncovering a distinct and largely unexplored mechanism accounting for transition into entrepreneurship among women: reduced advancement chances among mothers. Integrating insights from research on the motherhood penalty and recent literature on entrepreneurship as a mobility process (Sørensen and Fassiotto 2011; Kacperczyk 2012; Burton et al. 2019), we propose that career constraints will fuel entrepreneurship among women who become mothers, making them more willing and more motivated to launch new ventures than to switch employers. We further posit that these barriers to advancement will push women into new-venture founding more frequently than into self-employment—based on the premise that entry via organizational founding is more suitable for advancing one's career than is becoming self-employed (Carroll and Mosakowski 1987; Budig 2006a; Levine and Rubinstein 2017; 2018). [1] By contrast, we expect that work-life conflict, a well-established mechanism behind female entry into entrepreneurship, will primarily motivate women to enter self-employment, given that becoming self-employed is expected to facilitate home production and work flexibility. In short, we anticipate the two challenges of motherhood to stratify mothers into different types of entrepreneurship: founding a new, incorporated business will be primarily driven by the motivation to mitigate career obstacles, while transition into self-employment will be primarily driven by the motivation to mitigate work-family conflict.

Testing the hypothesized relations poses stringent empirical challenges because it requires data on career history, demography, and experience for a large sample of individuals who experienced extended employment and, for at least some of them, spells in entrepreneurship. We obtained data that meet such

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[1] Entrepreneurs rarely switch between the two legal forms for their business, and the choice of legal form largely reflects the *ex-ante* nature of the business (Kwon et al. 2013; Levine and Rubinstein 2017; Levine and Rubinstein 2018).

requirements from the employee-employer registry in Sweden between 1990 and 2016. These data track career histories, life events, and work conditions for the entire Swedish adult population. We supplement the employee-level data with the Swedish Work Environment Survey (SWES), which contains information about job attributes, to directly evaluate the effects of diminishing career prospects and job stints on entrepreneurship. Sweden offers a strategic research site for our study primarily because the country's generous family-friendly policies have created more flexible wage jobs for parents than in other countries (e.g., the United States), thereby increasing the labor participation rate for women in general and for mothers in particular. However, family-friendly policies can also dramatically reduce women's economic attainment and increase motherhood earnings penalties by amplifying employer discrimination against mothers (Mandel and Semyonov 2005; 2006). In brief, the dual challenge of advancement barriers and work-life conflict is highly pertinent to the Swedish context, allowing us to examine these challenges with greater precision.

Analyzing the large-scale matched employer-employee data from Sweden, we find that women are more likely to enter entrepreneurship following their transition to motherhood, but the particular type of entrepreneurship they choose is highly dependent on the specific motherhood challenge encountered in wage employment. Specifically, we show that women disproportionately opt to found new ventures when work conditions impose a greater motherhood earnings penalty following their transition to motherhood. Conversely, when wage jobs available to women provide less schedule control and thus intensify work-family conflict, mothers are more likely to fall back on self-employment to mitigate the conflict between work and family demands. These findings contribute to theories of female entrepreneurship and offer important implications for how organizational inequality and career challenges in wage employment affect women's pursuit of alternative, irregular career paths (Campbell 2013; Kacperczyk and Marx 2016; Burton et al. 2017).

THEORY

The Prior Literature: Work-Family Conflict as the Mechanism

In examining the antecedents of individuals' transition to entrepreneurship, scholars have recognized that women and men differ profoundly in their entry motives (Freeman 1986; Arum and Müller 2004; Kacperczyk 2012; Burton et al. 2019) and that women's transitions appear to be heavily influenced by their parenthood (Carr 1996; Budig 2006a; Jennings and Brush 2013; Thébaud 2015). In large part, past studies have attributed this tendency to intensified work-family conflict—the challenge of managing both paid work and childcare, and the sense that time for work or family is inadequate given the disproportionate family obligations that women face. From this perspective, entrepreneurship provides mothers with a fallback option because it gives them greater control over their schedule and work location, increasing women's flexibility needed to fulfill their childcare obligations (Budig and England 2001; Budig 2006b; Thébaud 2015). Overall, women's attempts to attend to their family demands and childcare duties are thought to profoundly shape their decisions to enter entrepreneurship.

Despite this past work, however, research in entrepreneurship has not fully theorized the mechanisms which underlie women's entry into entrepreneurship. Whereas scholars have devoted disproportionate attention to work-life conflict, childbirth may additionally impose challenges associated with career advancement. Sociological theories of motherhood penalties, in particular, posit that, following transition into entrepreneurship women face diminished career opportunities due to discrimination against mothers within wage work. Two interrelated processes, employer and institutional discrimination, have been posited to hinder women's career progression.

With regard to employer discrimination, scholars consider motherhood to be a salient status characteristic, biasing employers' expectations and systematically disadvantaging mothers at work (Budig and England 2001; Correll et al. 2007; Hochschild and Anne 2012; England et al. 2016). For example, ample empirical evidence suggests that employers discriminate against mothers and that the resulting career penalties are highly prevalent; only a third of the motherhood earnings penalty reflects women's interruptions from work, part-time employment, and decreased seniority/experience (Budig and England 2001; England et al. 2016). And even when mothers and nonmothers demonstrate equivalent productivity, employers still view mothers less favorably, exhibiting strong negative bias in hiring and promotion

decisions against women who have children (Correll et al. 2007; Weisshaar 2018). Finally, drawing on in-depth interviews, multiple studies indicate that, despite demonstrating extreme commitment to their careers (e.g., by closing a financial deal the day one gives birth), mothers continue to receive intense scrutiny and exclusion on the basis of their motherhood (Blair-Loy 2003; Turco 2010).

These negative consequences of employer discrimination are further amplified by institutional discrimination in wage work, which additionally blocks mobility paths available to mothers. For example, career clocks in many professions, especially those with lucrative opportunities, are institutionalized to fit employees free of family obligations; these professions are thus incompatible with the biological clocks of women who have children during their prime childbearing years (Jacobs and Gerson 2004; Cha 2010; Goldin 2014). To the extent that occupations have been institutionalized to make forgone opportunities unrecoverable for employees, even small career disadvantages that emerge during women's transition to motherhood may accumulate over time and become substantial (Abendroth et al. 2014). Thus, as the argument of institutional discrimination suggests, opportunities for mothers' advancement and higher earnings may continuously decline in the long run, even when the impact of motherhood on their human capital or commitment to employer is negligible at the moment of childbirth.

Overall, the transition to motherhood triggers a dual challenge of work-life conflict and the declining opportunity structure in paid employment. Hence, to the extent that both obstacles influence women's mobility decisions, including transition into entrepreneurship, both should be taken into consideration when theorizing women's entry into entrepreneurship.

Dual Motherhood Challenge and Female Entry

Theories of entrepreneurship have focused on the need to fulfill family obligations as the key driver of female entry into entrepreneurship. However, there is a strong reason to expect that the other source of the motherhood penalty—barriers to advancement in wage work—may exert a similarly profound influence on female entry into entrepreneurship.

First, past research has long associated entrepreneurial activities with the promise of upward mobility and career attainment, especially among individuals facing exclusion or career obstacles in

regular work. For example, early sociological accounts associate the growing appeal of entrepreneurship in the early twentieth century with upward mobility, noting that working on one's own is an admired feature of the American dream, in contrast to the soul-deadening situation of white-collar workers trapped in large bureaucracies (Mills 1951; Chinoy 1955). More recent developments in organizational sociology and career research have rekindled this long-standing tradition by conceptualizing entrepreneurship as a vehicle for acquiring social standing and for advancing one's career (Sørensen and Sharkey 2014; Burton et al. 2016; Burton et al. 2019).[2] For example, entrepreneurship is generally seen as an important avenue to become a self-made man or woman, with successful entrepreneurs expected to become part of society's new economic elite (Aldrich and Yang 2012; Keister 2014). Importantly, this perspective suggests that individuals will find entrepreneurship more attractive and more viable when their advancement through regular routes in wage work becomes blocked. Indeed, the odds of pursuing entrepreneurship increase when opportunities in paid labor become relatively more depleted or less plentiful: for example, software engineers opt for entrepreneurship when they are employed at firms with fewer opportunities for promotion, higher wages, or internal resources (Kacperczyk and Marx 2016). Similarly, entrepreneurship rates are higher when employees are provided with fewer or less enticing offers from other firms, conditional on their turnover (Carnahan et al. 2012). Together, these studies suggest that launching a new organization is widely perceived as a viable path to advancing one's career and that its pursuit is particularly appealing when regular career routes are less available.

Extending this logic to motherhood and female entrepreneurship, it follows that attempts to increase the balance between work and family demands are unlikely to be the sole driver of female entry into entrepreneurship. Rather, women will pursue entrepreneurship in response to greater obstacles to advancement due to employer discrimination against mothers. In addition, because negative bias toward mothers is a widely pervasive feature of labor markets (Budig and England 2001; Correll et al. 2007) and

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[2] In many other developed countries, founding a new business is considered an appealing career option. For example, the 2016 Global Entrepreneurship Monitor documents that most respondents in all but two of 61 countries agree that "successful entrepreneurs receive high status," and a majority in nearly 89 percent of those countries consider founding a business to be "a good career choice."

status-based discrimination tends to be stronger at the point of hire (Petersen et al. 2000), inter-firm mobility will be unlikely to offer a viable alternative for progressing within paid work. As a result, entrepreneurship will emerge as a most feasible and enticing route for attainment, dominating potential moves to another employer.

In brief, scholars have assumed that mitigating work-family conflict is the sole motive for female entry into entrepreneurship and thus the key motive driving the disproportionate entry of mothers into entrepreneurship. But motherhood also triggers serious impediments to women's careers, implying the so-far overlooked role of career constraints in shaping women's decisions to transition into entrepreneurship. Overall, we propose that seeking an alternative route to advance in face of employer bias against mothers will represent an equally important yet so-far neglected driver of female entrepreneurship.

Dual Outcomes: Self-employment and Organizational Founding

Our theory implies that two principal challenges, such as work-family conflict and barriers to advancement, will in tandem account for female entrepreneurship. As a test of our claims, we consider the pursuit of different types of entrepreneurship in response to the differential motherhood challenges. Ample research suggests that flexible work arrangements (e.g., job interruptions, short hours, part-time work, and flexibility during the workday) and career opportunities (e.g., pay, promotion, and upward mobility) are difficult to secure simultaneously within a single job (Coser 1974; Acker 1990; Edwards and Rothbard 2000; Hamilton 2000; Cha 2010). Based on this premise, we anticipate that mothers will pursue two distinct kinds of entrepreneurship, by either founding a new venture or becoming self-employed, and that their choice will depend on whether advancing one's career or reconciling work-life conflict becomes more pressing.

Career Advancement via New-Venture Founding

First, there is a strong reason to expect that reduced career opportunities in wage work will prompt women to favor the pursuit of entrepreneurship via organizational founding. Entrepreneurship research suggests that the act of creating a new, fledgling business entity is generally more appealing

when individuals seek to increase their earnings or to get ahead in their careers through alternative routes (Carnahan et al. 2012; Kacperczyk 2012; Sørensen and Sharkey 2014). For example, prospective founders associate business ownership with expectations of greater career progression and higher financial returns (Rosti and Chelli 2005; Kacperczyk and Marx 2016). In this respect, identifying opportunities and mobilizing resources to launch a new venture requires overwhelming time and effort, which might raise expectations about the future payoffs (Aldrich and Yang 2012). Similarly, aspirations of advancing through social ranks generally motivate individuals to found an incorporated firm, which can grow over the longer run, leading to higher social standing for the founders and their employees alike (Sarachek 1978; Audia and Rider 2005). Indeed, the widespread cultural appeal of social mobility via entrepreneurship is mainly tied to business ownership, indicated by the rags-to-riches stories depicting individuals advancing through the social ranks by assuming the role of the founder. Finally, founders of incorporated ventures are more likely than sole proprietors to have the option to recruit other members, including cofounders or employees. These members can add significant value to the new firm by fostering resource acquisition or clarifying organizational identity, both of which are crucial for the survival and profitability of a new venture (Aldrich and Ruef 2006; Guillén 2013; Yang and Aldrich 2017). Indeed, new businesses are more likely to go beyond the founders' self-provision of resources to attract external resources when their workforce is larger and more visible (Yang et al. 2020).

Hence, for women facing greater career disadvantage due to their motherhood status, the act of launching a new organization holds the promise of assuming a leadership role impossible to attain in wage work because of negatively biased employers. In addition, by becoming founders of new organizations, mothers may expect to shape their work environment according to their preferred blueprints, fostering positive attitudes toward mothers or setting norms about the ideal worker type (Phillips 2005; Baron et al. 2007; Burton and Beckman 2007). Therefore, as regular routes for advancement become depleted or blocked, we expect that women with children will be increasingly attracted to business ownership, anticipating the benefits of reduced discrimination, access to leadership positions, and the prospect of earning higher returns to their human capital (Guillén 2013).

By contrast, self-employment, which involves starting smaller, unincorporated, home-based, and conveniently located businesses (i.e., residential or personal properties), will be less conducive to progressing in one's career, given that such home-based arrangements rarely grow beyond the founder and rarely result in substantial earnings. Although the transition to self-employment eliminates exposure to employer discrimination, it will likely come at a cost of future earnings or attainment. Indeed, consistent with this notion, past research has found that self-employment leads to earnings' penalties among mothers in part because the unstructured setting of home-based businesses and the lack of routines reinforced by others encourage mothers to devote more time to childcare and less time to work (Loscocco and Leicht 1993; Carr 1996; Budig and England 2001; Budig 2006b).

In brief, we expect that barriers to advancement will lead women to disproportionately launch a new organization. Although both types of entrepreneurship are, in principle, conducive to reducing employer discrimination, new-venture founding offers greater promise of career progression and financial returns than does self-employment; thus, we expect that mothers will disproportionately launch new, incorporated ventures when their work conditions impose more serious advancement constraints. In those instances, mothers will enter entrepreneurship more frequently via incorporated ventures than self-employment.

Hypothesis 1 (H1): *Following their transition to motherhood, women will pursue new-venture founding at higher rates than self-employment, as career opportunities diminish in wage work.*

Work-Family Balance via Self-employment

By contrast, we expect that work-family conflict to disproportionately increase transition rates into self-employment among women who become mothers. Compared with founding and running a new organization, self-employment is more conducive to flexible work arraignments and schedule control (i.e., reduced work hours, convenient locations, and flexible schedules) (Loscocco and Leicht 1993; Budig 2006a), given that such an arrangement tends to be home-based and thus associated with the anticipated benefits of flexible work hours and schedule control. Given that becoming self-employed helps fulfill childcare obligations, we further anticipate that, following their transitions to motherhood, women will

find self-employment more appealing than founding a new venture, when work conditions amplify job strain, and reconciling family and work demands becomes difficult.

Conversely, the anticipated benefits of flexible work arrangements will be less significant and less certain in instances of founding a new venture. Although the act of launching an incorporated organization may still be viewed as offering greater flexibility and schedule control over paid employment, such benefits will be less salient than it would be the case for self-employment. For example, founding a new organization demands greater commitment than self-employment because founders are charged with growing their ventures, attracting and selecting early employees, and generating profits (Levine and Rubinstein 2017; Yang and Aldrich 2017). The undivided commitment required to establish an incorporated business may therefore be less conducive to providing childcare or achieving work-life balance than self-employment.[3] In short, we expect that, following transition into motherhood, women will disproportionately enter entrepreneurship via self-employment than via new-venture founding, when work-life conflict becomes more severe.

> Hypothesis 2 (H2): *Following their transition to motherhood, women will pursue self-employment at higher rates than new-venture founding as wage work becomes less compatible with family responsibilities.*

METHODS AND DATA

Data

Our theory makes predictions about how motherhood creates work and life challenges for women and how such challenges, in turn, affect their transition to entrepreneurship. The ideal data to test our predictions need to meet three requirements. First, the data should track a large sample of women over their career histories and observe various forms of job mobility, including moves to entrepreneurship

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[3] Indeed, highlighting such challenges, a *Wall Street Journal* article (Koh 2018) noted: "Taking little to no maternity leave is the norm for most female founders, especially those whose companies are just getting off the ground. Tight deadlines, daily crises and the potential for missed opportunities demand it, said Ms. Loviglio. She said she pitched a potential investor in Boon and Gable from her hospital bed the day after giving birth to her daughter Joscelin, who is now 4 years old."

(either to self-employment or to the founding of a new organization), moves to other organizations, and moves to unemployment (i.e., being let go/laid off) or nonemployment (voluntarily dropping out of labor force). Because the rate of entrepreneurship is prohibitively low, our analyses require a large sample size to produce reliable estimates. Second, testing our hypotheses requires that we observe and characterize with precision the employment conditions that women face. Third, to accurately estimate the effect of motherhood on women's career mobility, it is necessary to leverage detailed information about female fertility events and family conditions, including information about husbands' employment and income, which could be correlated with women's childcare responsibilities and their attachment to the labor market. Thus, detailed information about the extent to which mothers experience work-family conflict as well as discrimination on the basis of motherhood status is required.

We obtained a data set that meets all three requirements from the population-based registry maintained by Statistics Sweden (SCB). These matched employer-employee data track the population of Swedish residents aged 16 years or older and the population of employer organizations from 1990 to 2016, allowing for longitudinal analyses of individuals' parenthood status and labor market status. For individuals who are married or living with partners, spousal information can be matched based on a couple's identifier. Every November, records are updated with each individual's age, education level, income, family characteristics, and extensive employer information, including number of employees, industry, and institutional sector. We supplemented these data with an additional data set sourced from the Swedish Work Environment Survey (SWES), which includes self-reported measures of work conditions for people working in different occupations (Petersen et al. 2014). The compiled data enabled us to conduct direct, stringent tests of our hypotheses.

The Context of Sweden

Sweden presents an analytically valuable research site for our study for two reasons. First, Sweden is known to be an exemplary egalitarian society that offers the blueprints for family-friendly policies (Evertsson and Nermo 2004); cross-national comparisons indicate that the country lies "in the family-friendly corner of the world at the forefront of family policies" (Petersen et al. 2014:1436). Indeed,

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a variety of family-friendly policies are available to the country's citizens, including an 18-month paid parental leave with at least three months dedicated to either the father or the mother, generous subsidized childcare, and opportunities to work part-time, especially in the public sector (Hegewisch and Gornick 2011).

Yet family-friendly policies have proven to be a double-edged sword, enabling more women to be economically active but stifling their attainment (Charles 1992; Mandel and Semyonov 2005; Mandel and Semyonov 2006). Evidence from cross-national studies shows that when family policies allow for a long absence from work or reduced working hours for mothers, employers tend to discriminate against mothers, especially for positions that require costly qualifications and training (Mandel and Semyonov 2006).[4] As Hansen (1995:3) explicitly argued, "if women have social rights that do not apply to men or are seldom used by men, and the practices of these rights are unprofitable for the employers, employers may choose to discriminate against female job applicants." In brief, the flexible work arrangements available to mothers reinforce the expectation that women with children will be less committed to work and less invested in their careers.

Second, although the family-friendly policies in Sweden mitigate work-family conflict for working mothers, they do not resolve it entirely because gendered cultural norms remain salient in the family domain. Many studies have shown that the pace of progressive change in the family domain in Sweden lags behind that in the public domain, with couples still making traditional arrangements in childcare. For example, in more than 80 percent of couples, wives take at least three quarters of the parental leave, and husbands continue to be the primary earner in most family households (Sundström and Duvander 2002); this pattern has been stable over the past two decades (Brandén et al. 2016). Other

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[4] In a cross-national comparative study of 22 countries, Mandel and Semyonov (2006) showed that Sweden ranks highest in rates of both female labor participation and mothers' labor participation, but it ranked only 13th in women's representation in managerial positions. Although long parental leave, reduced working hours, and tolerance toward absenteeism from work all increase female labor participation, evidence shows that they indirectly harm women's career attainment by undermining women's labor market experience and encouraging employer discrimination (Mandel and Semyonov 2006).

studies suggest that work-family conflict is on the rise in Sweden, especially among women with children (Lundberg and Frankenhaeuser 1999).

Sample

We constructed our sample with several needs in mind. First, because our central argument concerns women's transition to entrepreneurship upon motherhood, our main analyses included only women. For robustness, we analyzed the sample of Swedish men and conducted cross-gender comparisons to validate our argument that parenting has a stronger effect on women's careers than men's because of the salience of motherhood status in the labor market and mothers' greater childcare responsibilities. Second, our data span 27 years, 1990 through 2016, allowing us to identify whether and when a woman gave birth to a child in 1991 or later. Thus, 1991 is the first year that individuals in our sample were at risk of leaving paid employment to found a new incorporated venture or to become self-employed. To avoid left-truncation, we excluded women who were already mothers in 1990, for whom the precise timing of first motherhood is unclear. Because the risk set consists of women participating in the labor market, we excluded from our sample women who were unemployed. We focused on women aged 20–60, who are in the prime years labor force participation.[5] Finally, in modeling entry into entrepreneurship, we allowed for repeated transitions from wage employment but controlled for previous startup experience.[6]

Dependent Variables

Mobility events. We modeled a comprehensive set of job mobility events: the first two are transitions from wage employment to entrepreneurship through either founding a new business or becoming self-employed, and the other two are moving to another employer organization and leaving the

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[5] Based on the consideration that transition to entrepreneurship is unlikely after age 50, we also performed the same analyses on a more restricted sample of women aged 20–50 years old and found highly consistent results.
[6] Right-censoring individuals at the point of first entry has some advantages but doing so would mechanically place the motherhood transition before the transition to entrepreneurship. Instead, allowing for multiple entries affords a more precise point estimate of the causal relationship between the transition to motherhood and the transition to entrepreneurship.

labor force entirely. To differentiate founding a new business and self-employment, we followed previous research that considered whether a new venture is incorporated. The decision to incorporate an entrepreneurial venture marks the key distinction between founding an organization and becoming self-employed because incorporated ventures exhibit attributes of fledgling organizations (Guzman and Stern 2015; Levine and Rubinstein 2017; 2018). We therefore treated incorporation as a key proxy for new-business founding, as distinct from being self-employed in an unincorporated business. Consistent with Levine and Rubinstein (2017; 2018), most new businesses in our data maintained the same legal form: only .28 percent of new businesses founded by women and .43 percent of new businesses founded by men ever switched between the two legal forms. That is, incorporated businesses almost never become unincorporated sole proprietorships, and unincorporated businesses rarely incorporate later. The choice of a legal form thus largely reflects the *ex ante* nature of the business.

Accordingly, we created four dummy variables for the four types of job mobility: (1) *organizational founding* equals 1 when individuals exit wage employment to launch an incorporated organization; (2) *self-employment* equals 1 when individuals exit wage employment and become self-employed in an unincorporated business; (3) *interfirm move* equals 1 when individuals stay in wage employment but move to another employer organization as an employee; and (4) *out of labor force or unemployment* equals 1 when individuals exit wage employment and no longer participate in the labor force or become unemployed. For all four outcomes, staying in the same employer organization is the reference group.

Independent Variables

Motherhood status. Prior studies lacked detailed information on timing of childbirths and age of children in a household. For example, information on children, including their age or number in the household, is rarely available on a large scale, making any attempts to estimate the effect of motherhood on entrepreneurship challenging. In the rare instances of having available data on children's ages, scholars have used imprecise proxies for the presence of young children in households, prohibiting rigorous tests of childbirth-related conditions. By contrast, we obtained fine-grained measures of motherhood timing

from data on women's biological children. Specifically, we measured whether *a woman has given birth to a child* (0/1) using a time-varying dichotomous indicator equal to 1 for all observation years after a woman had a child, and 0 otherwise. As an alternative measure, we considered *the number of children*, a time-varying count variable. For robustness checks, we created two equivalent measures based on children in the household where a woman is a parent but not necessarily a biological parent: (1) *whether a woman has any children in the household* and (2) *the number of children in the household.* Both variables vary annually. Finally, even when we used biological children or children in the household to proxy for parenting responsibilities, our results (available upon request) were consistent.

Moderating Conditions

Our theory suggests that intensified work-family conflict and constraints on advancement options propel women's entry into entrepreneurship upon motherhood. Hence, our theory implies a comparison between conditions of entrepreneurship and conditions available in current employment as well as those that could be accessed via interfirm mobility. Because interfirm mobility events occur typically within a single occupation and individuals rarely consider other occupations as pertinent or accessible (Barnett et al. 2000; Bidwell and Briscoe 2009; Bidwell and Mollick 2015), we consider occupation to be the relevant unit of analysis for investigating women's experiences with work-family conflict and their career opportunities (Petersen and Morgan 1995; Petersen and Saporta 2004; England et al. 2016). In addition, prior research has found occupations to be a particularly important source of motherhood penalties (Rosenfeld 1992; Kelly et al. 2014; Yu and Kuo 2017), making occupations even more relevant for our study. Hence, following past research, we measured the occupational conditions that influence women's experience with work-family conflict and opportunities for advancement.

Work-family conflict. Prior research has traditionally proxied for work-family conflict with employers' schedule control, or control over the timing of employees' work, including the number of hours their employees work and the location of that work (Kelly et al. 2014:487). Following this approach, we focused on schedule control at the occupation level, using the SWES. Between 1995 and 2015, the SWES surveyed about 10,000 to 15,000 individuals every two years, asking a variety of

questions about work conditions.[7] We drew on two of these questions to construct a measure of schedule control: (1) *whether individuals have the ability to decide about their work hours* (1 = yes, and 0 = no), and (2) *how often individuals can decide the pace of their work* (1 = less than 10 percent of the time, 2 = a quarter of the time, 3 = one half the time, 4 = about three quarters of the time, and 5 = almost all the time). We used individual tax registration IDs to match the SWES with the employer-employee data and to construct two measures at the occupation level (three-digit occupation codes): (1) *the proportion of employees in an occupation who reported the ability to decide their work hours* (ranging from 0 to 1), and (2) *on average, the extent to which workers in an occupation think they can determine their work pace* (ranging from 0 to 5). Higher values of the latter measure indicate perceptions of greater control over the work pace. For robustness, we used an alternative measure of control over work pace by coding each category into a numerical value and then taking the average (e.g., 1 = less than 10 percent of the time, 2 = one quarter of the time, 3 = one half the time, 4 = about three quarters of the time, and 5 = almost all the time). The interval measure and the continuous measure yield quantitatively and qualitatively results.

Diminishing career opportunities. Following prior research, we used the residual earnings penalty that incurs to mothers to proxy for diminishing opportunities due to discrimination against mothers in an occupation (Petersen and Saporta 2004; Petersen et al. 2014). Our construction of the earnings penalty measure is in line with a common approach used in past research (Budig and England 2001; England et al. 2016): for each occupation (three-digit occupation codes) in each year, we constructed a measure of residual log earnings for mothers and nonmothers, net of a large array of observable characteristics at the individual, employer, and institutional levels. First, we accounted for human capital attributes known to affect earnings, including an individual's years of labor market experience, organizational tenure, and age, and whether the individual was born in Sweden (Budig and England 2001; England et al. 2016). Importantly, for the earnings penalty to reflect changing opportunities due to workplace discrimination, it

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[7] The survey is conducted by the Work Environment Authority biennially in the fourth quarter of the year to ask employees about their work environment and work-related stress. A phone interview is supplemented by a postal questionnaire. Because the SWES data are collected every two years, we imputed the missing values from the previous year for off-survey years.

is necessary to account for women's commitment to wage work by controlling for the percentage of time an individual is fully employed. Thus, the earnings penalty for mothers estimated in our regressions does not reflect women's reduced work hours upon motherhood. At the organizational level, we accounted for employer size, age, percentage of female employees, and institutional sector (i.e., private or public sector). We then computed the difference between nonmothers' and mothers' residual wage within an occupation, net of individuals' human capital, work hours, and employer characteristics. We used the percentage difference between nonmothers' and mothers' earnings to proxy for the motherhood earnings penalty in an occupation in a given year. For example, a value of 15 percent for this variable indicates that childless women in the occupation, on average, earn 15 percent more than observably equivalent mothers. Hence, higher values of this measure indicate a larger motherhood earnings penalty in wage work (i.e., occupation) arising from discrimination on the basis of motherhood status.

Individual-level controls. We controlled for additional individual-level characteristics by including covariates for an individual's age and tenure prior to entry. We also controlled for labor market experience, measured by the number of years in wage employment, because experience is a strong predictor of entrepreneurial entry (Shane 2003). We included indicator variables for marriage status (with single or cohabitating with a partner as the reference group) and whether an individual was born in Sweden. Finally, we added a control for job-switching propensity, measured by the number of times an individual previously changed employers.

Family-level controls. We controlled for husband's employment status by accounting for whether he is unemployed, a wage worker, self-employed in an incorporated business, or self-employed in an unincorporated business. We constructed a dummy variable for each of the last three labor market conditions, with unemployment being the reference group. Finally, we accounted for husband's income because it may be an important predictor of whether the focal woman is willing and able to enter entrepreneurship.

Occupation-level controls. At the occupation level, we included three controls to alleviate the concern that women who self-sort into certain types of occupations may also be more likely to become

mothers prior to entering entrepreneurship. Specifically, we accounted for an occupation-specific rate of new businesses founded by men to mitigate the possibility that women who transition into entrepreneurship may exhibit a disproportionately higher tendency to join occupations with ample entrepreneurial opportunities. For a similar reason, we also included a control for self-employment rate among men in the focal occupation. Our models further included controls for work hours at the occupation level because at their own discretion, parents in Sweden can reduce their regular work hours by 20 percent, 50 percent, or even more. We captured this level of involvement at work in each occupation by calculating the average percentage of full-time employment in an occupation for mothers and nonmothers. Finally, we controlled for the earnings difference between fathers and nonfathers to mitigate the possibility that mothers' transitions to entrepreneurship simply reflect earnings differences between parents and nonparents.

Firm-level controls. We included annually updated workplace variables to control for organizational conditions that shape careers. First, we controlled for workplace size and age because employees' propensity to enter entrepreneurship differs across distributions of these characteristics. Firm size is the natural logarithm of the number of employees, and the measure encompasses all establishments founded and owned by the same parent organization. Firm age is the number of years since founding. We included dummies for the employer's sector: (1) private sector (the reference group), (2) governmental and municipal administrations, (3) government-owned organizations in the public sector, and (4) foreign companies. Finally, because the presence of close peers may affect entrepreneurship, we accounted for female representation in a firm by computing the percentage of female employees per firm.

[Insert Table 1 about here]

ANALYTIC STRATEGY

We estimated discrete-time competing risk models to assess how motherhood affects women's job mobility outcomes, including the transition to entrepreneurship. These models are particularly suitable for our analyses because they consider the possibility of temporal variations in the probability of transition to available states, such as motherhood and entrepreneurship. Moreover, our data include

annual records of women's career histories and life courses, which give rise to discretely measured durations. The dependent variables in our analyses are instantaneous rates of transition to different, mutually exclusive jobs in a specific year, and the competing risk models allowed us to evaluate the relationship between covariates and the specific transitions, including how the transition to motherhood affects each of the four types of job mobility.

In all our models, we included an *individual fixed-effect* estimator to mitigate the concern that unobserved heterogeneity at the individual level can confound our results, leading to biased estimates. For example, stable individual dispositions or personal traits might be correlated with women's decisions on motherhood and their preferences for certain occupations and entrepreneurship activities. By estimating results within an individual, it is possible to net out individuals' time-invariant, individual dispositions or socioeconomic conditions. In our specific setting, we estimated the impact of motherhood on mobility events by directly comparing the rates of transition before and after a given woman became a mother.

Our models further included two-digit industry and county fixed effects to mitigate the possibility that industry or geographic characteristics, which are time-invariant, drive the findings concerning motherhood. Similarly, in models investigating occupational-level conditions, we included three-digit occupation fixed effects to estimate our results net of any unobserved and time-invariant attributes of occupations. These rigorous specifications (i.e., individual fixed effects and a comprehensive set of time-varying variables at the individual, occupation, and firm levels) enabled us to investigate more rigorously how motherhood affects women's transition to entrepreneurship over time, relative to other forms of mobility.

RESULTS

Descriptive Results

Table 1 presents descriptive statistics summarizing all individual-year observations. First, over their career histories, about 11 percent of women in our sample became self-employed (7 percent) or founded a new business (4 percent) by their mid-50s. The numbers are relatively lower than estimates of female entrepreneurship in the United States, consistent with findings from cross-national comparative

studies (Elam and Terjesen 2010; Thébaud 2015). The lower rate of female entrepreneurship in Sweden is primarily driven by the country's smaller percentage of self-employed women than in the United States, reflecting Sweden's more abundant flexible job opportunities in wage employment (Ferber and Waldfogel 1998; Guzman and Kacperczyk 2019).

Second, at the individual-year level, our analyses show that motherhood is more commonly associated with female founders (83 percent) and self-employed women (76 percent) than with female wage workers (62 percent). This finding suggests a positive relationship between motherhood and women's participation in entrepreneurship.

Third, our results indicate profound differences between incorporated and unincorporated businesses founded by women in Sweden. Incorporated businesses founded by women are more likely to have employees: the average size of an incorporated business is 9, compared with 1.45 for self-employment. Indeed, nearly 80 percent of incorporated businesses have at least one employee, whereas only 20 percent of unincorporated businesses do. In terms of the location of a new business, we found that incorporated businesses are much less likely than unincorporated businesses to be home-based. About 65 percent of unincorporated businesses are located at home, compared with only one quarter of incorporated businesses. However, incorporated businesses generate higher financial returns to female entrepreneurs than do unincorporated businesses: female entrepreneurs in incorporated businesses earn, on average, 450,500 Swedish krona (kr) per year (about 49,500 U.S. dollars), compared with 217,500 kr for self-employed women (about 24,000 U.S. dollars) and 305,000 kr for female salaried workers (about 33,600 U.S. dollars).

Overall, these differences confirm that organizational founding is less likely than self-employment to provide individuals with flexible home arrangements and thus to help mitigate work-family conflict. But founding a new organization is also associated with higher average earnings, suggesting that this type of entry is associated with greater advancement chances (Guillén 2013).

Model Results

The Baseline Effect of Motherhood

We begin by establishing the baseline effect of motherhood on entrepreneurship by assessing whether becoming a mother leads to higher rates of entrepreneurship (either self-employment or business founding) relative to other forms of mobility events, including moving to another organization or staying with the current employer. Table 2 presents these baseline findings from discrete-time competing-risk models, showing the effects of motherhood on women's transitions to founding a new business (column 1), becoming self-employed (column 2), switching jobs (column 3), and leaving the labor force or entering unemployment (column 4). Consistent with our expectation in H1, columns 1–2 show that motherhood increases women's likelihood of exiting wage employment to pursue entrepreneurship, either by founding a new business or becoming self-employed. By contrast, as can be seen in column 3, motherhood is negatively associated with interfirm mobility; as the rate of interfirm moves decreases by 9% (= $1 - \exp[-.0978]$, $p < .0001$). Hence, motherhood status increases women's propensity to found a new business more rapidly than their propensity to move to another organization: the difference between the two estimates is statistically significant at conventional levels ($\chi^2 = 6.26, 1 \ df$).

A further comparison of the motherhood coefficient across different mobility outcomes leads to two other important findings. First, a comparison of columns 1 and 2 shows that motherhood increases the likelihood of founding a new business by 39 percent (= $\exp[.331] - 1$, $p < .0001$), whereas the likelihood of self-employment increases by 15 percent (= $\exp[.1367] - 1$, $p < .0001$). This finding suggests that Sweden's family-friendly policies facilitate flexible wage employment for some women such that the motivation to enter self-employment as a fallback strategy to mitigate work-family conflict has been partly suppressed. This comparison also lends compelling evidence that diminishing career opportunities represent a distinct challenge to women with children. Second, column 4 shows that women are significantly more likely to quit the labor force or become unemployed when they become mothers (= $\exp[1.91] - 1$, $p < .0001$). This finding lends support to our argument that women might exhibit greater tendency to exit wage employment when they have children.

The preceding results provide strong support for the prediction that motherhood increases the propensity to transition to entrepreneurship. We conducted additional analyses to mitigate a potential

concern that the observed effects simply reflect the broader dynamics of parenthood and that comparable or even stronger effects might hold for men. To investigate this possibility, we re-estimated our baseline specifications for men to examine differences between fatherhood and motherhood (see results in Appendix Table 1). Across all four types of job mobility, the effects of fatherhood appear to be significantly smaller in magnitude than the effects of motherhood. For example, parenthood increases the rate of founding a new business by 8% for men but by 39% for women. Similarly, parenthood increases the rate of self-employment by 3% for men but by 15% for women. We interpret these estimates as suggesting that the challenges of motherhood are more acute than the challenges of fatherhood, thus leading to a stronger effect of parenthood on entrepreneurship for women than for men.

Taken together, the differential effects of motherhood on the four types of moves suggest that motherhood increases women's transitions out of wage employment: some women will opt out of paid work or become unemployed, whereas others will self-sort into entrepreneurship. Importantly, the significant effects of motherhood on both types of entrepreneurship (self-employment and founding a new business) imply two different processes inclining women to pursue entrepreneurial activities. In the next section, we examine those processes in further detail.

[Insert Table 2 about here]

Moderating Effects of Career Opportunities and Work-Family Conflict

We next turn to H1 and H2 and the conditions predicted to moderate the effects of motherhood on women's transitions to entrepreneurship. Given that occupational conditions encompass relevant wage opportunities in the current organization and possible future employers, we argued that occupational conditions will determine job strain in wage work. Our hypotheses state that such conditions will moderate the influence of motherhood on entrepreneurship, leading women to pursue a particular type of entrepreneurial activity. Specifically, we expected that the transition to motherhood will incline women to disproportionately found new ventures when mothers in general face less attractive advancement opportunities and experience greater earnings penalties in their occupations (H1). By contrast, the

transition to motherhood will incline women to disproportionately enter self-employment when their occupations in general create higher levels of work-family conflict (H2).

Diminishing career opportunities. To test our claims formally, we first examine the interaction term between motherhood status and the residual earnings penalty in Table 3.[8] Recall that we proxied for diminishing career opportunities for mothers with the residual difference between mothers' and nonmothers' wages within an occupation net of a large battery of controls. In column 1, we estimate the transition from wage employment to becoming a founder of a new business; in column 2, we estimate the transition from wage employment to self-employment. As expected, the interaction effect of motherhood and the motherhood earnings penalty in the occupation is positive and statistically significant. In occupations where nonmothers earn 9.25 percent more than mothers, becoming a mother will increase a woman's odds of founding a new organization by about 8.0 percent ($= \exp(.0085 \times 9.25) - 1, p < .0001$). By contrast, women's transition to self-employment does not depend on the earnings penalty in their occupation, as shown by the insignificant coefficient of the interaction term of motherhood status and the motherhood earnings penalty in an occupation. Furthermore, the earnings penalty in an occupation has a stronger positive effect on mothers' decision to found a new venture than their transition to self-employment, and the difference is significant at conventional levels ($\chi^2 = 22.85, 1df$). These results support our argument that, when faced with diminishing career options and earnings' penalty due to employer discrimination, mothers will more likely opt for entrepreneurship via founding an incorporated business rather than via self-employment.

One potential concern with our moderating effect is that mothers who are more prone to founding a new business might also be more likely to self-sort into occupations that exhibit a greater motherhood earnings penalty. We first mitigated this concern by including in our specifications an occupation-fixed effect in addition to the individual-fixed effects. Our estimates continue to hold, indicating that

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[8] Based on the availability of occupational codes, our analyses of the moderating conditions use data between 2002 and 2016. However, when we re-estimated the baseline models on this subsample, we found consistent results (See Appendix Table 2).

unobserved differences across individuals or occupations are unlikely to drive our findings. Despite this rigorous specification, however, one might still be concerned that the residual wage gap varies within an occupation across time and that such variance can be spuriously correlated with entrepreneurial opportunities, thus fostering entrepreneurship. However, this alternative explanation is unlikely because such selection would also need to correlate with the propensity to become a mother, yet there is no obvious reason to expect that mothers will disproportionately self-sort into occupations with richer opportunities for new-venture founding. We nevertheless account for time-varying entrepreneurial opportunities within an occupation by controlling in our models for the rate of new businesses founded by men in a given year and occupation and the rate of self-employment among men within a given year and occupation. Including these controls has no bearing on motherhood coefficients or on coefficients of occupational conditions (results available upon request). Overall, these findings help rule out alternative explanations for our results, supporting H1.

[Insert Table 3 about here]

Work-family conflict. We also proposed in H2 that the effect of motherhood on self-employment should be amplified for mothers in occupations that impose more intense work-family conflict. Accordingly, the effect of motherhood on women's entry into self-employment should decline for women in occupations with greater schedule control or flexible work arrangements (Rosenfeld 1992; Kelly et al. 2011; Kelly et al. 2014; Yu and Kuo 2017). We test this possibility by interacting the transition into motherhood with work-family conflict, as measured by the proportion of individuals within the occupation who can determine their work hours (ranging from 0 to 1) and the extent to which individuals in an occupation can determine the pace of their work (ranging from 1 to 5). Columns 1 and 3 in Table 4 show estimates for the transition from wage employment to launching a new business, and columns 2 and 4 show estimates for the transition from wage employment to self-employment in an unincorporated business.

The results for both measures lend consistent support to our argument that women who become mothers are less likely to fall back on self-employment when they work in occupations with greater schedule control. For example, on average, 6 of 10 employees reported having the ability to control work hours, and one standard deviation of this variable is .2. As the percentage of individuals in an occupation reporting they can determine their work hours increases by 20 percent, the effect of motherhood on women's transition to self-employment decreases by 6 percent $(= 1 - \exp[-.323 \times .20], p < .01)$. However, this condition about schedule control does not have any significant effect on women's transition to founding a new venture, regardless of whether they have children.

We find similar patterns with our second measure. Recall that employees were asked to report the extent to which they can determine the pace of their work. The average level of control over work pace in our data is about 3.6, which is between one half and about three quarters of the time. The standard deviation of this variable is about .37. As the level of control over work pace increases by .37 for workers in a given occupation, the rate of self-employment decreases by 4 percent for women with children $(= 1 - \exp[-.113 \times .37], p < .01)$.[9] However, this condition bears no effect on women's transition to entrepreneurship via founding of a new business, regardless of whether they have children.

Together, these results lend support to H2: work conditions that affect women's control over their schedule in wage employment have an amplifying influence on women's transition to self-employment, which is generally considered conducive to work-life balance. When women exert more control over their work hours and their work pace, they are less likely to retreat to self-employment to better alleviate work-life conflict. Importantly, we do not find similar results for founding a new business, in line with our expectation that business founding might intensify rather than mitigate competing work and family demands. Overall, these analyses deliver additional evidence that two parallel processes lead women

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[9] Employees' control over their work pace in an occupation is positively correlated with transition to self-employment for women without children. This finding may reflect similar characteristics of jobs in such occupations and self-employment as well as individuals' preferences for jobs with family-friendly amenities. But upon motherhood, women's mobility between self-employment and wage jobs tends to decline for two reasons: (1) the transition cost of changing jobs is higher when women have children, and (2) the marginal family-friendly benefits provided by self-employment may decline if women are already in such wage jobs.

toward entrepreneurship, with work-family conflict predominantly sorting women into self-employment and diminishing career opportunities primarily sorting women into founding a new organization.

[Insert Table 4 about here]

Additional Analyses, Robustness Checks, and Alternative Explanations

Differential returns to entrepreneurship. Central to our argument is the notion that the act of founding a new business, rather than becoming self-employed, is associated with the expectation of future rewards and greater career advancement. Although ample evidence suggests that individuals launch new ventures in anticipation of higher returns to their skills or talent (Carnahan et al. 2012; Sørensen and Sharkey 2014; Manso 2016), we nevertheless conducted additional analyses to validate this assumption empirically in our setting. We first assessed differences in earnings across mothers founding new ventures versus mothers remaining in paid employment or entering self-employment. In Table 5, we estimate the main effects of self-employment and founding a new business on earnings in column 1; we then add the interaction of motherhood and each of the two variables in column 2. Results from Ordinary Least Squares regressions show that, consistent with our claim, mothers who found an incorporated business earn, on average, 2,500 kr more than comparable salaried mothers. Moreover, self-employed mothers earn, on average, 110,400 kr less than comparable salaried mothers. We further assess the earnings penalty between mothers and nonmothers in each of the three groups. Our results show a substantial motherhood earnings penalty in wage employment, with employed mothers earning 51,000 kr less than employed nonmothers ($p < .001$). However, self-employment amplifies the motherhood earnings penalty, whereas founding a new business mitigates it. Together, these results lend some support to the notion that founding a new venture offers mothers a more attractive path to attainment than either remaining in wage work or entering self-employment.

[Insert Table 5 about here]

Strategic Sorting. A potential concern pertains to strategic sorting, whereby women may anticipate heavier workloads associated with starting a new business and thus choose to time motherhood to precede entrepreneurial entry to free up time for their new businesses later. However, strategic sorting is unlikely to drive our findings for two reasons. First, this alternative explanation implies joint planning for motherhood and entrepreneurship based on an individual woman's (fixed) intrinsic preference for both motherhood and career advancement. By including individual-fixed effects and various time-varying controls in our models, we should have already mitigated this possibility.

Second, to offer an alternative explanation, strategic sorting would need to imply that women with a desire to advance their careers are more likely than their counterparts to have children or to have children earlier. However, ample literature documents empirical patterns that directly contradict this claim. Specifically, previous studies generally found delayed pregnancy effects, whereby women pursuing time-intensive and demanding careers typically become mothers later rather than earlier in their life course. For example, an extensive review of studies on women's fertility generally shows a negative relationship between women's labor force participation rate and fertility rate, suggesting delayed transition to marriage and motherhood as women pursue their careers (Brewster and Rindfuss 2000). Blossfeld and Huinink (1991) provided more detailed evidence, showing that competitive professions have more requirements for educational credentials and that women's extended schooling delays their transition to motherhood, an effect aligned with normative expectations that young women in school are not ready for marriage and motherhood. A similar pattern can be seen in our data. As shown in Figure 1, women in managerial or professional occupations tend to have children later than women in other occupations. In fact, on average, women who occupy nonmanagerial or nonprofessional occupations tend to have their first child before age 30. By contrast, women in managerial or professional occupations tend to have their first child in their early 30s. These results do not support the argument that women have children early in order to take on more time-demanding tasks.

[Insert Figure 1 about here]

Although the patterns in our data do not support the possibility of strategic sorting, we nevertheless conducted additional analyses using an instrumental variable (IV) estimation to further mitigate the concern of sorting along unobserved time-varying dimensions that could correlate with motherhood timing. An instrument uses variation unrelated to the outcome to estimate the causal effect of a treatment (Morgan and Winship 2015).

To identify such variation, we used the success of sporting events (i.e., victories of a football league) within a given county and a given year. Prior research has documented the causal effects of sporting success on birth rates: cities that celebrate football victories experience higher birth rates in the following year (Montesinos 2013). Our instrument builds on the idea that some pregnancies might be driven less by an individual's strategic choice than by transient changes in the social environment. At the same time, because winning a sport championship is unlikely to directly influence our outcome—female transition into entrepreneurship—it represents a plausible instrument for the timing of transition to motherhood. We therefore used the championship of a local football league to instrument for motherhood.

We obtained data on annual Swedish football champions for every year between 1990 and 2016.[10] We identified the county where the winning team was based to instrument the timing of transition to motherhood for women residing in the same county. Table 6 reports two-stage least squares (2SLS) models. In the first stage (6A), we regress a woman's likelihood of having a child on whether she resided in a winning county in the prior year. As expected, results from OLS estimates indicate that a local team's championship in the previous year increases a woman's likelihood of having a child in the current year by .004. The effect is significant at the .0001 level, while accounting for county- and calendar-year fixed effects. The second stage (6B) shows that the (instrumented) child births lead to similar estimates for all the transitions we considered: motherhood increases women's exit from wage employment either to become unemployed or to transition to entrepreneurship (founding a new business or becoming self-employment). Importantly, the IV estimates remain statistically significant, suggesting that even when

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[10] https://en.wikipedia.org/wiki/List_of_Swedish_football_champions

timing of childbirth arises exogenously, our results are recovered. Interestingly, the IV coefficients are relatively smaller than the estimates we obtained in previous analyses: motherhood increases women's rate of founding a business by 7 percent (versus 39 percent without IV) and women's rate of unemployment by 30 percent (versus 5 times without IV). Accounting for the potential endogeneity of motherhood timing leads to a relatively smaller but still statistically significant effect of motherhood on transition to entrepreneurship. Overall, these results provide additional evidence that our effects are unlikely to reflect the timing of motherhood strategically.

[Insert Table 6 about here]

We next turn our attention to contingencies that concern family households and may possibly affect women's transition to entrepreneurship for either work-family balance or better career opportunities. Specifically, in additional analyses, we consider (1) whether women live with their spouses/partners or are single mothers, and (2) whether their spouses/partners are also involved in entrepreneurship.

Marital status. Having a spouse might affect women's share of childcare responsibilities and their ability to take low-paying jobs, including transition into self-employment. We thus estimate the baseline models separately for women living with a husband or a partner and women who are single, separated from their spouse, or widowed. Results in Table 7 show that the transition to motherhood has a stronger effect on women's founding of a new business and their transition to self-employment when they are married or cohabiting with a partner than when they are single parents. Indeed, motherhood increases women's rate of transition to entrepreneurship by 63 percent when they are married or living with a partner (column 1) but only by 21 percent when they are single parents (column 3). This may reflect stronger constraints single mothers face when pursuing career opportunities. Furthermore, motherhood significantly increases the rate of transition to self-employment by 45 percent (column 2) for women who are married or cohabiting, but it bears no statistically significant effect on the transition to self-employment for single mothers. This finding suggests that self-employment may be a viable career choice

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when women have breadwinner husbands and can thus afford incurring the cost of being self-employed. In summary, our results are consistent with the notion that entry into entrepreneurship, either through the founding of a new venture or self-employment, is more feasible when women receive financial and childcare support from their spouse.

[Insert Table 7 about here]

Spouse's entrepreneurial status. A potential concern with our main effects is that they could be confounded by the spouse's entrepreneurial status. For example, a spouse's decision to found a new business may affect a woman's decision to found a new business, and such spousal influence might be stronger when couples have children. One possible scenario might be that women's transitions into entrepreneurship are primarily driven by their husbands' decisions to launch a new business, following their transition to parenthood. Women with children might then simply cofound new businesses with their husbands as part of the family plan for income and childcare (Yang and Aldrich 2014). Indeed, descriptive results indicate that about 40 percent of Swedish female founders also have husbands running a new business, and about 90 percent of entrepreneurial couples are running the same business. But spousal teams are less common for self-employment, with only one quarter of self-employed women having self-employed husbands.

To mitigate the concern more formally, we estimate the net effects of motherhood while controlling for husbands' labor market status. Columns 1 and 2 of Table 8 show estimates for the competing risk models for four types of moves, with controls for husband's income and employment status (i.e., whether running a new business, self-employed, or working as an employee, with unemployed as the reference group). Although women's entrepreneurial status appears to be correlated with their husbands' entrepreneurial status, this likely reflects selection of spousal couples into entrepreneurship. However, the effects of motherhood on founding a new business and self-employment remain statistically significant, although the magnitudes are relatively smaller. The effect of motherhood on women's founding of a new business and entry into self-employment, net of spousal influence, suggests that wage

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employment is an important source of motherhood disadvantage and that these conditions exert strong influence on female entry into entrepreneurship.

To further rule out the possibility that a husband's entrepreneurial status may drive our effect entirely, we re-estimate our baseline specifications but censor entrepreneurial entries which involve cofounding with a spouse, for an incorporated or unincorporated business. Results in columns 3 and 4 of Table 8 show that our findings remain fairly stable, with motherhood statistically increasing women's entry into entrepreneurship, independent from their spouses' founding status. Overall, while confirming the strong tendency of spousal cofounding, the supplemental analyses show that this explanation is unlikely to account for the effect of motherhood on women's entry into entrepreneurship.

[Insert Table 8 about here]

DISCUSSION AND CONTRIBUTIONS

Entrepreneurship has long been touted as an alternative work arrangement to wage employment, serving as the last resort for individuals to escape from greedy, modern organizations (Coser 1974; Epstein 1999; Williams 2001; Jacobs and Gerson 2004; Nomaguchi and Johnson 2009). In explaining women's decisions to enter entrepreneurship, however, prior research has focused on intensified work-family conflict as the key antecedent of female entry into entrepreneurship following the transition to motherhood (Carr 1996; Budig 2006a; 2006b; Thébaud 2015; Burton et al. 2019). Beyond work-family conflict, however, motherhood is also associated with declining career opportunities in wage work because of employer and/or institutional discrimination. By incorporating diminishing career opportunity as an additional determinant of women's entry into entrepreneurship, our study developed a more complete theory about the dual influence of motherhood on entrepreneurship. Drawing on large-scale matched employer-employee data from Sweden, our empirical analyses show that following their transition to motherhood, women are more likely to enter entrepreneurship via self-employment and the founding of a new venture and that such transitions occur at higher rates than interfirm movements.

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To shed light on the mechanisms at play, we linked the challenges of motherhood to different types of entrepreneurship: the founding of a new organization and self-employment. Specifically, we showed that women disproportionately opt to found new ventures when work conditions impose additional constraints on their advancement following their transition to motherhood. Additionally, our results indicate that this tendency is relatively higher than women's odds of transitioning into self-employment. We interpret this evidence as suggesting that the pursuit of career opportunities via entrepreneurship is more strongly associated with business founding than with self-employment and that diminishing career opportunities provide a stronger motivation for the former than the latter. In contrast, when wage jobs available to women provide less schedule control and thus intensify work-family conflict, mothers are more likely to fall back on self-employment to mitigate the conflict between work and family demands. However, we also found that the need to attend to family obligations is not an equally potent predictor of women's willingness and motivation to launch a new business.

We also investigated the contingencies of our arguments by taking into account women's marital status and spousal influence. We found that the pursuit of entrepreneurship for career opportunities or work-life balance is more likely for women who are married or cohabiting. To the extent that husbands' income provides a stable base, women can better afford the financial cost of becoming self-employed. Likewise, insofar as spousal support facilitates women's pursuit of entrepreneurship for career opportunities, attainment through entrepreneurship is less feasible for single mothers, who face more constraints in the family domain.

By developing a more complete theory to account for women's transition from wage employment to entrepreneurship, our study extends prior work on female entrepreneurship. We drew on insights from the motherhood penalty literature, research on career mobility, and literature on work-family intersections to make important contributions to each of these lines of research. First, this study contributes to a more complete understanding of women's mobility from wage employment to entrepreneurship by examining how the dual challenge facing mothers in wage employment—diminishing career opportunities and intensified work-family conflict—affects their propensity to seek alternative career options in

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entrepreneurship. Whereas prior work has characterized entrepreneurship as a fallback strategy to resolve work-family conflict, we identified an additional mechanism: female entrepreneurship can also be viewed as a path to career advancement, and women will likely pursue this route when their chances for advancement within wage work diminish as a result of employer discrimination against mothers. In this regard, our proposed theory relaxes the common assumption that women will uniformly accept lower earnings in exchange for nonpecuniary benefits, such as family-friendly amenities. An important implication of our findings is that intensified work-family conflict and increased employer discrimination might co-occur as women transition to motherhood, but these two challenges have different ramifications for how women pursue entrepreneurship. Motherhood status is strongly associated with women's likelihood of departing from wage employment and becoming their own boss, but the approaches to entrepreneurship may vary significantly depending on work conditions of that wage employment.

Empirically, we offer direct evidence of the influence of work-family conflict and employer discrimination on women's entry into entrepreneurship. Studies on work-family conflict have often relied on cross-national comparisons, providing suggestive evidence for how family-friendly policies ease women's need to enter entrepreneurship (Elam and Terjesen 2010; Tonoyan et al. 2010; Thébaud 2015). By analyzing long-term career histories of women in Sweden, our study probed deeper into the work-family conflict among women in wage employment. Unusually rich information on individual women and their career conditions in wage employment afford stronger evidence for the argument that women may fall back on entrepreneurship as work-family conflict intensifies (Thébaud 2015).

Theoretically, we bridge research on motherhood earnings penalty and theories of entrepreneurship by examining how employment conditions accelerate women's entry into entrepreneurship after they become mothers (Budig and England 2001; Correll et al. 2007; Stone 2007; Hochschild and Anne 2012; Petersen et al. 2014; England et al. 2016). Our analyses document frequent transitions between wage employment and entrepreneurship as well as how career challenges in wage employment incline women to found new, incorporated businesses. Most of the literature on motherhood penalties has focused on career attainment and outcomes in wage employment, but our findings

demonstrate the prevalence of entrepreneurship for women's career attainment and the theoretical

relevance of entrepreneurship for understanding motherhood penalties.

In addition, by explaining how women's overall career opportunities in wage employment affect

their entry into entrepreneurship, we contribute to the rising stream of research taking a career mobility

perspective to explaining entrepreneurship (Freeman 1986; Kacperczyk 2012; Sørensen and Sharkey

2014; Burton et al. 2019). As one of the most important developments in the entrepreneurship literature,

the career mobility perspective has brought entrepreneurship back to the context of employment

organizations to shed light on individuals' transitions to entrepreneurship. In explaining entrepreneurial

entry, however, the career mobility perspective has restricted attention to the current employer

organization (Sørensen and Sharkey 2014). Yet when examining declining career opportunities due to

workplace discrimination, women's overall career opportunities in wage employment, rather than those in

their current organizations, will determine the relative appeal of entrepreneurship (Petersen and Morgan

1995; Abendroth et al. 2014; Yu and Kuo 2017). For example, discrimination against mothers in the

current organization might incline women to switch employer organizations rather than move into

entrepreneurship. But discrimination against mothers at the occupation level will diminish women's

career opportunities in wage employment in general and thus increase the relative attractiveness of

entrepreneurship as a career option. We advance the career mobility perspective on entrepreneurship by

emphasizing how occupational conditions affect women's career opportunities in wage employment.

Several issues remain to be addressed in future research. First, our study strongly suggests that

the two types of entrepreneurial entry are associated with different motivations and different concerns, so

future work might explore in greater depth the trade-offs women face when deciding whether to transition

to self-employment or to found a new organization. For example, scholars might investigate the potential

effects of launching a new venture on women's work-life balance and their well-being more broadly. Our

descriptive analyses provide the first step toward such an understanding. We found that relative to paid

employment, newly founded firms are unlikely to offer better work-life balance (e.g., in terms of work-

home travel distance). But future research should further investigate the extent to which female founders

manage acute trade-offs between earnings and work-life balance. Such research would have important policy implications. Second, in analyzing a longitudinal data set from Sweden, we have taken the first step to test the different conditions that drive women's transitions to entrepreneurship. Past studies, with their exclusive focus on the mechanism of work-family conflict, have analyzed cross-national data to reveal how women's rate of self-employment may vary across institutional contexts (Tonoyan et al. 2010; Thébaud 2015). Although important differences exist across institutional contexts, the proposed mechanism and the empirical evidence remain generalizable across countries, with work-family conflict being an important predictor of female self-employment across a large number of nations. The magnitude of effects may vary, but we expect our proposed mechanisms to hold in other industrialized societies. In addition, Thebaud (2015:31) called for more in-depth investigations within a single country, arguing that studies relying on more *consecutive* years of data within a *single* country would be "better equipped to evaluate the theorized direction of the relationship between work–family institutions and gender stratification in entrepreneurship." Our research echoes this call by utilizing the large data sets from Sweden that include unusually detailed information on women and their work conditions.

In sum, by establishing clear linkages between the career challenges women face in wage employment and their transition to entrepreneurship, our study makes important contributions to theories and empirical work on gender inequality, career mobility, and entrepreneurship. We advance current theories by proposing an alternative view of female entrepreneurship that emphasizes career antecedents; this complements prior work that disproportionately highlighted women's motivation to accommodate the conflicting demands of job and family as a key driver of female entrepreneurship. We document that motherhood status triggers distinct processes that stratify women into different types of ventures, with organizational founding motivated by career advancement and self-employment motivated by work-life demands. Together, these findings suggest that specifying the causal path by which women enter entrepreneurship must begin with more analytical precision. Moving the debate beyond its current focus on work-life conflict and recasting the core arguments in terms of the precise mechanisms behind self-

employment versus the act of launching a new venture is the first step toward a clearer understanding of the antecedents of female entrepreneurship.

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Figure 1. Age of Having First Child for Women Across Different Occupations in Sweden
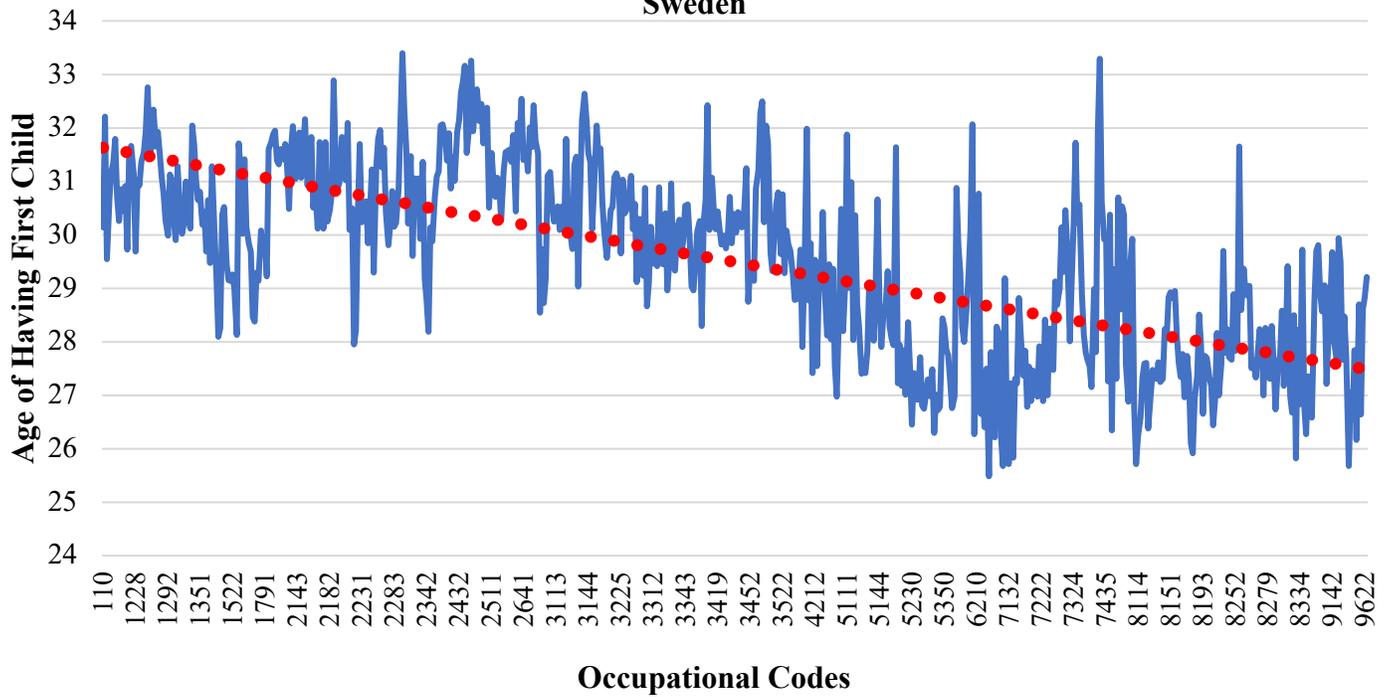
Note: First digit 1 and 2 indicate managerial and professional occupations; digit 3 and 4 indicate other professions.

Table 1. Descriptive Statistics for All Variables

Variables	Mean	SD
Transition to founding a new business	0.002	0.048
Transition to self-employment	0.005	0.071
Transition to another employer	0.260	0.439
Transition to unemployment	0.032	0.177
Mother	0.600	0.490
Earnings (per 5,000,000 kr)	0.058	0.043
Age	33.301	8.817
Single	0.571	0.495
Married	0.366	0.482
Divorced, separated, or widowed	0.063	0.243
Years of labor market experience	11.821	6.562
Establishment tenure	3.927	3.917
Years of previous startup experience	0.027	0.355
Employment size of current employer	484	1356
Number of females at current employer	321	981
Establishment age (yrs.)	12.232	7.328
Private sector	0.386	0.487
State-controlled organization	0.079	0.270
County- or municipality-owned organization	0.331	0.470
Foreign-owned companies	0.089	0.284
Spousal income (per 5,000,000 kr)	0.067	0.058
Spouse is employed	0.835	0.371
Spouse is self-employed	0.042	0.200
Spouse is running a new business	0.048	0.214
Motherhood earnings penalty in an occupation	7.640	11.292
Avg. percentage of full-time work mothers do in an occupation	13.916	11.138
Avg. percentage of full-time work nonmothers do in an occupation	16.588	9.258
Percentage of income nonfathers earn more than fathers in an occupation	−7.151	3.639
Proportion of employees in an occupation reporting that they can determine their work hours	0.601	0.227
The extent to which workers in an occupation think they can determine their work pace	3.289	0.373

Note: Although all other information is available from 1990 to 2016, occupational codes are available from 2002 to 2016. Thus, the total number of observations for all variables is 18,300,000, but the number of observations for occupation-level measures is 6,070,801.

Table 2. Discrete-Time Competing Risk Models of Women's Career Mobility

	(1)	(2)	(3)	(4)
	Transition to			
	Founding a New Business	Self-employment	Another Employer	Out of Labor Force or Unemployment
Mother	0.33147****	0.13679****	-0.09781****	1.95819****
	(0.02413)	(0.01473)	(0.00218)	(0.00900)
Earnings (per 5,000,000 kr)	0.51457***	-17.38616****	-8.82686****	-25.99097****
	(0.16878)	(0.19191)	(0.03342)	(0.15564)
Age	0.35993****	0.36638****	-0.00264**	-1.04045****
	(0.01564)	(0.00860)	(0.00123)	(0.00513)
Age × Age	-0.00428****	-0.00345****	0.00129****	-0.00218****
	(0.00013)	(0.00007)	(0.00001)	(0.00005)
Married	0.59381****	0.08281****	-0.08559****	0.06205****
	(0.03238)	(0.01809)	(0.00254)	(0.01041)
Divorced, separated, or widowed	0.14279***	-0.12141****	0.07339****	0.23952****
	(0.04989)	(0.03046)	(0.00469)	(0.01865)
Years of labor market experience	0.29279****	0.00779	-0.09391****	1.31345****
	(0.01307)	(0.00704)	(0.00107)	(0.00504)
Establishment tenure	0.07742****	0.12505****	0.03167****	0.07151****
	(0.00284)	(0.00221)	(0.00031)	(0.00134)
Years of previous startup experience	-0.90498****	-0.29597****	0.05066****	-0.05001****
	(0.00785)	(0.01246)	(0.00295)	(0.01101)
Employment size of current employer	-0.00045****	-0.00014****	-0.00021****	-0.00015****
	(0.00006)	(0.00002)	(0.00000)	(0.00001)
Number of females at current employer	0.00052****	0.00010***	0.00013****	0.00018****
	(0.00008)	(0.00003)	(0.00000)	(0.00002)
Establishment age (yrs.)	-0.09040****	-0.00488****	-0.01559****	-0.02582****
	(0.00150)	(0.00093)	(0.00015)	(0.00062)
State-controlled organization	-1.21262****	-0.44201****	-0.14620****	-0.73692****
	(0.05897)	(0.02664)	(0.00368)	(0.01799)
County- or municipality-owned organization	-1.22293****	-0.48087****	0.08473****	-0.60229****
	(0.04115)	(0.01845)	(0.00252)	(0.01025)
Foreign-owned companies	-0.95787****	0.01828	0.01552****	0.00341
	(0.03432)	(0.01909)	(0.00294)	(0.01139)
Industry-fixed effects (two-digit)	Yes	Yes	Yes	Yes
County-fixed effects	Yes	Yes	Yes	Yes
Individual-fixed effects	Yes	Yes	Yes	Yes

Note: N = 18,300,000. Clustered standard errors are in parentheses.

*p < .10; **p < .05; ***p < .001; ****p < .0001 (two-sided t-tests).

Table 3. Discrete-Time Competing Risk Models of Women's Career Mobility

	(1)	(2)
	Transition to	
	Founding a New Business	Self-employment
Mother	0.13620**	0.03597***
	(0.06093)	(0.01256)
Motherhood earnings penalty in an occupation	-0.00416**	-0.00056
	(0.00191)	(0.00126)
Mother × Motherhood earnings penalty in an occupation	0.00852**	0.00115
	(0.00377)	(0.00165)
Earnings (per 5,000,000 kr)	0.69534****	-17.66887****
	(0.19005)	(0.20882)
Age	0.25965****	0.31963****
	(0.01708)	(0.00918)
Age × Age	-0.00371****	-0.00307****
	(0.00014)	(0.00008)
Married	0.49214****	0.02277
	(0.03587)	(0.02007)
Divorced, separated, or widowed	0.23957****	-0.07452**
	(0.05370)	(0.03232)
Years of labor market experience	0.31463****	0.02470****
	(0.01399)	(0.00739)
Establishment tenure	0.07479****	0.12920****
	(0.00304)	(0.00234)
Years of previous startup experience	-0.94776****	-0.28011****
	(0.00854)	(0.01337)
Avg. percentage of full-time work nonmothers do in an occupation	-0.00823***	0.00227
	(0.00283)	(0.00143)
Avg. percentage of full-time work mothers do in an occupation	0.03398****	0.04364****
	(0.00315)	(0.00154)
Fatherhood earnings premium in an occupation	-0.03255****	-0.00277***
	(0.00362)	(0.00086)
Spousal income	-0.03043	0.70693****
	(0.16857)	(0.12963)
Spouse is employed	0.24492****	0.01701
	(0.03158)	(0.01972)
Spouse is self-employed	0.11629**	0.94024****
	(0.05401)	(0.02642)
Spouse is running a new business	0.89386****	-0.21990****
	(0.03975)	(0.03394)
Occupation-fixed effects (three-digit)	Yes	Yes
Industry-fixed effects (two-digit)	Yes	Yes
County-fixed effects	Yes	Yes
Individual-fixed effects	Yes	Yes

Note: $N = 6{,}070{,}801$. Clustered standard errors are in parentheses. Establishment size, age, and institutional sectors are included but not shown because of limited space.

*p < .10; **p < .05; ***p < .001; ****p < .0001 (two-sided *t*-tests).

Table 4. Discrete-Time Competing Risk Models of Women's Career Mobility

	(1)	(2)	(3)	(4)
		Transition to		
	Founding a New Business	Self-employment	Founding a New Business	Self-employment
Mother	0.32612****	0.36259****	0.29753****	0.49532****
	(0.02651)	(0.06849)	(0.03046)	(0.11063)
Proportion of workers in an occupation report they can control work hours	0.35527	0.37616**		
	(0.35170)	(0.14849)		
Mother × Proportion of workers in an occupation report they can control work hours	0.03427	-0.32283****		
	(0.21754)	(0.09292)		
Avg. level workers in an occupation report they can control work pace			0.15569	0.13815****
			(0.09514)	(0.03986)
Mother × Avg. level workers in an occupation report they can control work pace			0.06587	-0.11302***
			(0.08463)	(0.03493)
Avg. percentage of full-time work nonmothers do in an occupation	-0.01212	-0.00325	-0.01150	-0.00361
	(0.00833)	(0.00293)	(0.00835)	(0.00289)
Avg. percentage of full-time work mothers do in an occupation	-0.00812	0.00176	-0.00819	0.00227
	(0.00937)	(0.00333)	(0.00937)	(0.00329)
	(0.01520)	(0.00512)	(0.01519)	(0.00491)
Earnings (per 5,000,000 kr)	-1.03095*	-13.17323****	-1.03721*	-13.17834****
	(0.59091)	(0.40865)	(0.59066)	(0.40858)
Age	-0.09702	0.33740****	-0.08233	0.35777****
	(0.14224)	(0.05201)	(0.14208)	(0.05208)
Age × Age	-0.00137	-0.00341****	-0.00153	-0.00362****
	(0.00110)	(0.00034)	(0.00110)	(0.00034)
Married	0.03175	-0.03299	0.03582	-0.04028
	(0.11711)	(0.04420)	(0.11867)	(0.04416)
Divorced, separated, or widowed	-0.77591****	0.05292	-0.77337****	0.05008
	(0.22015)	(0.09011)	(0.22039)	(0.09006)
Years of labor market experience	1.50650****	0.09640**	1.50490****	0.09730**
	(0.12135)	(0.04798)	(0.12119)	(0.04802)
Establishment tenure	0.09751****	0.27469****	0.09730****	0.27414****
	(0.01130)	(0.00596)	(0.01130)	(0.00596)
Years of previous startup experience	-4.14854****	-0.77907****	-4.14991****	-0.78650****
	(0.07057)	(0.08064)	(0.07057)	(0.08086)
Spousal income	0.02564	0.18232	0.02643	0.12806
	(0.63298)	(0.37689)	(0.63375)	(0.37750)
Spouse is employed	0.25972**	0.06599	0.28088	0.07302
	(0.11015)	(0.04707)	(0.21059)	(0.04706)
Spouse is self-employed	0.18676	0.78317****	0.21186	0.78830****
	(0.17541)	(0.06186)	(0.24304)	(0.06182)
Spouse is running a new business	0.73292****	-0.19714***	0.75172****	-0.19304***
	(0.14104)	(0.07435)	(0.22836)	(0.07437)
Occupation fixed effects (three-digit)	Yes	Yes	Yes	Yes
Industry fixed effects (two-digit)	Yes	Yes	Yes	Yes
County-fixed effects	Yes	Yes	Yes	Yes
Individual-fixed effects	Yes	Yes	Yes	Yes

Note: $N = 6,070,801$. Clustered standard errors are in parentheses. Establishment size, age, and institutional sectors are included but not shown because of limited space.

$*p < .10$; $**p < .05$; $***p < .001$; $****p < .0001$ (two-sided t-tests).

Table 5. OLS Regressions of Earnings

	(1)	(2)
Mother	-51023.880****	-51030.527****
	(97.902)	(98.833)
Self-employment	-110087.147****	-103533.299****
	(278.343)	(474.591)
Founding a new business	-1921.180****	-22496.293****
	(360.549)	(794.386)
Mother × Self-employment		-8580.953****
		(507.323)
Mother × Founding a new business		24570.731****
		(845.293)
Age	2827.270****	2840.831****
	(56.442)	(56.444)
Age × Age	-23.456****	-23.506****
	(0.444)	(0.444)
Married	10632.222****	10639.434****
	(116.840)	(116.836)
Other	22835.508****	22865.235****
	(212.754)	(212.749)
Years of labor market experience	21081.785****	21071.948****
	(48.974)	(48.976)
Establishment tenure	-571.440****	-569.967****
	(11.271)	(11.270)
Employment size of current employer	17.180****	17.180****
	(0.109)	(0.109)
Number of females at current employer	-19.695****	-19.694****
	(0.155)	(0.155)
Establishment age (yrs.)	49.670****	49.414****
	(7.537)	(7.538)
State-controlled organization	12895.798****	12897.245****
	(179.985)	(179.978)
County- or municipality-owned organization	953.326****	949.368****
	(126.889)	(126.888)
Foreign-owned companies	36086.999****	36084.125****
	(137.802)	(137.803)
Constant	40555.080****	40270.668****
	(1134.501)	(1134.492)
Industry-fixed effects (two-digit)	Yes	Yes
County-fixed effects	Yes	Yes
Individual-fixed effects	Yes	Yes
R-squared	0.541	0.542
AIC	283543769.2	283542523.8

Note: $N = 16,786,062$. Clustered standard errors are in parentheses.

$*p < .10$; $**p < .05$; $***p < .001$; $****p < .0001$ (two-sided t-tests).

6A. Stage 1 estimate of a childbirth

Won the championship last year	0.00407****
	(0.00015)
Age	-
	(0.000006)
Year dummies	Yes
County dummies	Yes
R-squared	0.01542

6B. Stage 2 IV estimates of career mobility

	(1)	(2)	(3)	(4)
			Transition to	
	Founding a New Business	Self-employment	Founding a New business	Out of Labor Force or Unemployment
Mother	0.06119****	0.12670****	-0.86602****	0.28435****
	(0.00285)	(0.00407)	(0.02575)	(0.00753)
Earnings (per 5,000,000 kr)	0.08591****	0.06100****	-2.17999****	0.13181****
	(0.00321)	(0.00457)	(0.02893)	(0.00846)
Age	-0.00512****	-0.01053****	0.08066****	-0.05831****
	(0.00028)	(0.00040)	(0.00251)	(0.00074)
Age × Age	0.00005****	0.00010****	-0.00052****	0.00025****
	(0.00000)	(0.00000)	(0.00002)	(0.00001)
Married	0.00366****	0.00594****	-0.04455****	0.00982****
	(0.00013)	(0.00019)	(0.00120)	(0.00035)
Divorced, separated, or widowed	-0.00956****	-0.02100****	0.14560****	-0.04011****
	(0.00049)	(0.00070)	(0.00443)	(0.00130)
Years of labor market experience	0.00040****	0.00053****	-0.02355****	0.03454****
	(0.00003)	(0.00004)	(0.00028)	(0.00008)
Establishment tenure	-0.00012****	-0.00027****	0.00866****	-0.00051****
	(0.00001)	(0.00001)	(0.00007)	(0.00002)
Years of previous startup experience	-0.00924****	-0.00163****	0.01187****	-0.00124****
	(0.00006)	(0.00008)	(0.00050)	(0.00015)
Number of females at current employer	0.00000****	0.00000****	-0.00000	0.00001****
	(0.00000)	(0.00000)	(0.00000)	(0.00000)
State-controlled organization	-0.00219****	-0.00108****	-0.03860****	-0.00640****
	(0.00008)	(0.00012)	(0.00074)	(0.00022)
County- or municipality-owned organization	-0.00209****	-0.00214****	0.01227****	-0.00826****
	(0.00006)	(0.00008)	(0.00050)	(0.00015)
Foreign-owned companies	-0.00335****	-0.00111****	0.00701****	-0.00204****
	(0.00006)	(0.00009)	(0.00056)	(0.00016)
Spousal income	-0.00158***	-0.00994****	0.19927****	-0.06202****
	(0.00061)	(0.00087)	(0.00551)	(0.00161)
Spouse is employed	-0.03305****	-0.06881****	0.43689****	-0.13563****
	(0.00154)	(0.00220)	(0.01389)	(0.00406)
Spouse is self-employed	-0.03049****	-0.05086****	0.40656****	-0.12321****
	(0.00144)	(0.00206)	(0.01301)	(0.00380)
Spouse is running a new business	-0.02535****	-0.06715****	0.42909****	-0.13477****
	(0.00150)	(0.00214)	(0.01356)	(0.00397)
Industry-fixed effects (two-digit)	Yes	Yes	Yes	Yes
County-fixed effects	Yes	Yes	Yes	Yes
Individual-fixed effects	Yes	Yes	Yes	Yes

Note: $N = 18,300,000$. Clustered standard errors are in parentheses. Establishment size, age, and institutional sector are included but not shown because of limited space.

*$p < .10$; **$p < .05$; ***$p < .001$; ****$p < .0001$ (two-sided t-tests).

	(1)	(2)	(3)	(4)
	Married		Single, Divorced, Widowed	
	Transition to			
	Founding a New Business	Self-employment	Founding a New Business	Self-employment
Mother	0.49204****	0.37515****	0.19345****	0.02096
	(0.04077)	(0.02910)	(0.03685)	(0.01951)
Earnings (per 5,000,000 kr)	0.62259***	-15.50589****	0.00063	-17.79652****
	(0.21382)	(0.29981)	(0.34502)	(0.27945)
Age	0.25750****	0.27060****	0.42052****	0.43002****
	(0.02584)	(0.01723)	(0.02788)	(0.01251)
Age × Age	-0.00244****	-0.00164****	-0.00548****	-0.00477****
	(0.00021)	(0.00015)	(0.00022)	(0.00011)
Years of labor market experience	0.26309****	-0.04679****	0.42251****	0.05942****
	(0.02189)	(0.01415)	(0.02414)	(0.01059)
Establishment tenure	0.05983****	0.14090****	0.10968****	0.14620****
	(0.00395)	(0.00337)	(0.00497)	(0.00339)
Years of previous startup experience	-1.06078****	-0.27535****	-1.08884****	-0.33055****
	(0.01333)	(0.02084)	(0.01428)	(0.02034)
Employment size of current employer	-0.00037****	-0.00008**	-0.00093****	-0.00019****
	(0.00007)	(0.00004)	(0.00014)	(0.00003)
Number of females at current employer	0.00041****	0.00004	0.00113****	0.00017****
	(0.00010)	(0.00005)	(0.00019)	(0.00005)
Establishment age (yrs.)	-0.09025****	-0.00618****	-0.09004****	-0.00559****
	(0.00218)	(0.00155)	(0.00248)	(0.00132)
State-controlled organization	-1.08726****	-0.45014****	-1.26652****	-0.42831****
	(0.08096)	(0.04579)	(0.10527)	(0.03713)
County- or municipality-owned organization	-0.96405****	-0.39514****	-1.45107****	-0.48088****
	(0.05583)	(0.03114)	(0.07469)	(0.02608)
Foreign-owned companies	-0.88471****	0.06858**	-1.00046****	-0.08250***
	(0.04909)	(0.03155)	(0.05685)	(0.02728)
Industry fixed effects (two-digit)	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes

Note: N = 18,300,000. Clustered standard errors are in parentheses. Columns 1 and 2 are women who are married or cohabiting; columns 3 and 4 are women who are separated, divorced, widowed, or single.
*$p < .10$; **$p < .05$; ***$p < .001$; ****$p < .0001$ (two-sided t-tests).

Table 8. Discrete-Time Competing Risk Models of Women's Career Mobility

	Full Sample		Excluding Entries with Spouse	
	(1)	(2)	(3)	(4)
	Transition to			
	Founding a New Business	Self-employment	Founding a New Business	Self-employment
Mother	0.19388****	0.04916***	0.17704****	0.04574***
	(0.02689)	(0.01707)	(0.02941)	(0.01739)
Earnings (per 5,000,000 kr)	0.53687***	-17.20053****	0.02694	-17.24509****
	(0.16904)	(0.19253)	(0.18781)	(0.19658)
Age	0.35111****	0.36026****	0.36007****	0.36044****
	(0.01576)	(0.00869)	(0.01766)	(0.00887)
Age × Age	-0.00416****	-0.00338****	-0.00430****	-0.00342****
	(0.00013)	(0.00008)	(0.00015)	(0.00008)
Married	0.47061****	0.01848	0.33408****	0.01663
	(0.03409)	(0.01926)	(0.03642)	(0.01966)
Divorced, separated, or widowed	0.26048****	-0.06785**	0.20353****	-0.07081**
	(0.05066)	(0.03096)	(0.05419)	(0.03147)
Years of labor market experience	0.29079****	0.00868	0.31412****	0.01223*
	(0.01316)	(0.00712)	(0.01481)	(0.00728)
Establishment tenure	0.07707****	0.12671****	0.07727****	0.12486****
	(0.00285)	(0.00223)	(0.00312)	(0.00228)
Years of previous startup experience	-0.91063****	-0.28353****	-0.93275****	-0.31612****
	(0.00788)	(0.01242)	(0.00875)	(0.01349)
Employment size of current employer	-0.00045****	-0.00014****	-0.00044****	-0.00018****
	(0.00006)	(0.00002)	(0.00006)	(0.00002)
Number of females at current employer	0.00051****	0.00010***	0.00054****	0.00015****
	(0.00008)	(0.00003)	(0.00008)	(0.00003)
Establishment age (yrs.)	-0.09047****	-0.00544****	-0.08947****	-0.00402****
	(0.00150)	(0.00094)	(0.00159)	(0.00095)
State-controlled organization	-1.21333****	-0.44763****	-0.95544****	-0.41153****
	(0.05921)	(0.02681)	(0.06061)	(0.02713)
County- or municipality-owned organization	-1.22149****	-0.48733****	-0.86040****	-0.42254****
	(0.04136)	(0.01857)	(0.04281)	(0.01880)
Foreign-owned companies	-0.95234****	0.01240	-0.83807****	0.04549**
	(0.03446)	(0.01915)	(0.03571)	(0.01944)
Spousal income	-0.04643	0.59105****	0.59829****	0.70350****
	(0.16006)	(0.12273)	(0.16096)	(0.12494)
Spouse is employed	0.25655****	0.03861**	-0.16862****	-0.06220***
	(0.03004)	(0.01902)	(0.03225)	(0.01941)
Spouse is self-employed	0.13881***	0.93874****	0.22111****	0.88165****
	(0.05148)	(0.02556)	(0.05476)	(0.02619)
Spouse is running a new business	0.88372****	-0.22746****	0.71922****	-0.59248****
	(0.03796)	(0.03249)	(0.04217)	(0.03566)
Industry fixed effects (two-digit)	Yes	Yes	Yes	Yes
County fixed effects	Yes	Yes	Yes	Yes
Individual fixed effects	Yes	Yes	Yes	Yes

Note: N = 18,300,000. Clustered standard errors are in parentheses.

*p < .10; **p < .05; ***p < .001; ****p < .0001 (two-sided *t*-tests).

Appendix

Appendix Table 1. Discrete-Time Competing Risk Models of Men's Career Mobility

	(1)	(2)	(3)	(4)
	Transition to			
	Founding a New Business	Self-employment	Another Employer	Out of Labor Force or Unemployment
Father	0.08090****	0.03245***	-0.03121****	0.07625****
	(0.01410)	(0.01192)	(0.00244)	(0.01013)
Earnings (per 5,000,000 kr)	-2.62535****	-14.42762****	-3.75550****	-19.35762****
	(0.08614)	(0.12862)	(0.02250)	(0.13433)
Age	0.49119****	0.21038****	0.04570****	-0.73145****
	(0.00985)	(0.00616)	(0.00129)	(0.00444)
Age × Age	-0.00575****	-0.00329****	0.00051****	0.00153****
	(0.00007)	(0.00005)	(0.00001)	(0.00004)
Married	-0.05119***	-0.04978****	0.02024****	0.05487****
	(0.01650)	(0.01416)	(0.00263)	(0.01372)
Divorced, separated, or widowed	-0.18823****	-0.25103****	0.03075****	0.14012****
	(0.02764)	(0.02305)	(0.00460)	(0.01928)
Years of labor market experience	0.37684****	0.16396****	-0.10172****	0.79584****
	(0.00842)	(0.00517)	(0.00115)	(0.00412)
Establishment tenure	0.11048****	0.13210****	0.04445****	0.05090****
	(0.00148)	(0.00161)	(0.00028)	(0.00146)
Years of previous startup experience	-0.79545****	-0.33265****	0.01894****	-0.01875***
	(0.00342)	(0.00599)	(0.00157)	(0.00623)
Employment size of current employer	-0.00072****	-0.00026****	-0.00022****	-0.00017****
	(0.00003)	(0.00001)	(0.00000)	(0.00001)
Number of females at current employer	0.00092****	0.00026****	0.00020****	0.00017****
	(0.00006)	(0.00003)	(0.00000)	(0.00002)
Establishment age (yrs.)	-0.09904****	-0.00237***	-0.02155****	-0.03247****
	(0.00089)	(0.00074)	(0.00015)	(0.00071)
State-controlled organization	-1.08363****	-0.33689****	-0.00512	-0.70911****
	(0.03971)	(0.02154)	(0.00340)	(0.01902)
County-or municipality-owned organization	-1.49913****	-0.34677****	0.13981****	-0.71893****
	(0.04633)	(0.02021)	(0.00345)	(0.01748)
Foreign-owned companies	-0.97813****	0.04857****	-0.01387****	0.06070****
	(0.01849)	(0.01467)	(0.00246)	(0.01245)
Industry-fixed effects (two-digit)	Yes	Yes	Yes	Yes
County-fixed effects	Yes	Yes	Yes	Yes
Individual-fixed effects	Yes	Yes	Yes	Yes

Note: $N = 18{,}548{,}561$. Clustered standard errors are in parentheses.
*$p < .10$; **$p < .05$; ***$p < .001$; ****$p < .0001$ (two-sided t-tests).

Appendix Table 2. Discrete-Time Competing Risk Models of Women's Career Mobility (2002–2016)

	(1)	(2)	(3)	(4)
	Transition to			
	Founding a New Business	Self-employment	Another Employer	Out of Labor Force or Unemployment
Mother	0.19388****	0.04916***	-0.01874****	1.73001****
	(0.02689)	(0.01707)	(0.00263)	(0.01033)
Earnings (per 5,000,000 kr)	0.53687***	-17.20053****	-8.91601****	-25.79111****
	(0.16904)	(0.19253)	(0.03353)	(0.15630)
Age	0.35111****	0.36026****	-0.00117	-1.04492****
	(0.01576)	(0.00869)	(0.00124)	(0.00517)
Age × Age	-0.00416****	-0.00338****	0.00122****	-0.00201****
	(0.00013)	(0.00008)	(0.00001)	(0.00005)
Married	0.47061****	0.01848	-0.03581****	-0.03631****
	(0.03409)	(0.01926)	(0.00273)	(0.01080)
Divorced, separated, or widowed	0.26048****	-0.06785**	0.03362****	0.35741****
	(0.05066)	(0.03096)	(0.00477)	(0.01905)
Years of labor market experience	0.29079****	0.00868	-0.09116****	1.31168****
	(0.01316)	(0.00712)	(0.00107)	(0.00507)
Establishment tenure	0.07707****	0.12671****	0.03211****	0.07140****
	(0.00285)	(0.00223)	(0.00031)	(0.00135)
Years of previous startup experience	-0.91063****	-0.28353****	0.04943****	-0.04611****
	(0.00788)	(0.01242)	(0.00296)	(0.01105)
Employment size of current employer	-0.00045****	-0.00014****	-0.00021****	-0.00015****
	(0.00006)	(0.00002)	(0.00000)	(0.00001)
Number of females at current employer	0.00051****	0.00010***	0.00013****	0.00017****
	(0.00008)	(0.00003)	(0.00000)	(0.00002)
Establishment age (yrs.)	-0.09047****	-0.00544****	-0.01561****	-0.02580****
	(0.00150)	(0.00094)	(0.00015)	(0.00062)
State-controlled organization	-1.21333****	-0.44763****	-0.14506****	-0.73711****
	(0.05921)	(0.02681)	(0.00368)	(0.01811)
County- or municipality-owned organization	-1.22149****	-0.48733****	0.08551****	-0.60521****
	(0.04136)	(0.01857)	(0.00253)	(0.01033)
Foreign-owned companies	-0.95234****	0.01240	0.01538****	0.00215
	(0.03446)	(0.01915)	(0.00294)	(0.01143)
Industry-fixed effects (two-digit)	Yes	Yes	Yes	Yes
County-fixed effects	Yes	Yes	Yes	Yes
Individual-fixed effects	Yes	Yes	Yes	Yes

Note: N = 6,070,801. Clustered standard errors are in parentheses.
*p < .10; **p < .05; ***p < .001; ****p < .0001 (two-sided t-tests).