Is Health Insurance a Barrier to Women's Entrepreneurship? Evidence from State Infertility Insurance Mandates in the United States

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Abstract

One in seven couples in the United States experiences infertility. Despite improved medical technology to treat infertility problems, infertility treatments remain prohibitively expensive. I study the effects of infertility insurance mandates in the United States on women's entrepreneurship, exploiting state-level policy changes that require employer-sponsored health insurance plans to cover infertility treatments. Using a triple difference estimation strategy and data from the March Current Population Survey, I find that women of later childbearing age (30-45) are less likely to be self-employed as a result of the mandates. Further investigation shows a larger effect for women lacking alternative health insurance coverage through a spouse. My results provide evidence of entrepreneurship lock, implying that a tightened link between health insurance and wage-and-salary employment could discourage entrepreneurship.

Keywords: Infertility, insurance mandates, entrepreneurship lock, self-employment

JEL Classification: I1, L26

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1 Introduction

Entrepreneurs are vital to the competitiveness of the economy. They boost economic growth by contributing to job creation and innovation. The field of entrepreneurship has typically been considered male-dominated due to gender differences in access to capital, risk preferences, work experience, networks, and the work-family interface (Boden Jr and Nucci [2000]; Jennings and McDougald [2007]; Bönte and Piegeler [2013]; Howell and Nanda [2019]; Ewens and Townsend [2020]). For instance, women are more risk-averse and are less competitively inclined than men (Croson and Gneezy [2009]; Bönte and Piegeler [2013]). According to the Global Entrepreneurship Monitor report, around 42% of all entrepreneurs across the globe in 2020 were women (Elam et al. [2021]). In the United States (US), women are also under-represented among the self-employed, representing 35% of them (Current Population Survey, 2010). However, women entrepreneurs play a vital role in poverty reduction, social stability, wealth creation, and gender equity (Langowitz and Minniti [2007]; Brush and Cooper [2012]; Valdivia [2015]). Understanding the motivation behind women's entrepreneurial activities can aid in developing policies that help promote economic success among women and reduce gender disparities in the entrepreneurial field.

When potential entrepreneurs make decisions about whether to quit jobs and start their own business, health insurance costs can be an important factor. This is because, without universal health insurance coverage in the US, the majority of Americans (54.4%) obtain health insurance through their employers (Current Population Survey, 2020).[1] This implies that individuals leaving a job could face the risk of being uninsured or having to pay a higher premium in the individual health insurance market.[2] The fear of losing health insurance coverage may reduce individuals' willingness to start their own business, resulting in so-called "entrepreneurship lock" (i.e., workers tend to stay in wage-and-salary employment due to the health insurance benefits, even if starting their own business may be preferable), a phenomenon described in an emerging body of literature

[1] The vast majority of employers (95%) that offer health insurance also provide coverage for eligible dependents, such as spouses and children (Kaiser Family Foundation [2020a]).

[2] It costs the self-employed 10% to 40% more for health insurance expenditures compared to those in wage-and-salary employment for comparable insurance plans (Holtz-Eakin et al. [1996]; Velamuri [2012]). Although the Tax Reform Act of 1986 has allowed self-employed people to deduct up to 100% (increased from 25% in 1986) of their health insurance premiums since 2003, the deduction only happens when they earn net profits from self-employment.

(e.g., Fairlie et al. [2011]; Gumus and Regan [2015]; Bailey [2017]; Fossen and König [2017]).[3]

Rising infertility problems and improved medical technology to treat these problems raise concerns that people are more likely to fall into entrepreneurship lock due to their increased demand for health insurance. Infertility affects a sizeable portion of the population in the US; one-fifth (19%) of heterosexual women between the ages of 15 and 49 with no prior births have difficulty getting pregnant (CDC [2022]). However, infertility treatment is highly expensive. The average cost of fertility treatments per pregnancy can range anywhere from $6,000 for medications only to more than $60,000 (2006 dollars) for in vitro fertilization (IVF) treatment (Katz et al. [2011]).[4] This highlights a more prominent role of health insurance, rendering entrepreneurship a riskier decision. It is especially relevant for women, who have been found to be more risk-averse than men (Croson and Gneezy [2009]). This paper adds to the emerging (though limited) research on entrepreneurship lock by empirically testing the relationship between access to infertility insurance and entrepreneurship, with a focus on women.

This paper examines whether a tightened link between health insurance and wage-and-salary employment discourages women from becoming entrepreneurs. Infertility treatment is rarely covered by insurance plans unless there is state-level legislation mandating the insurance coverage of infertility treatments. To increase access to infertility services, 19 states have passed legislation that mandates private insurers cover infertility treatment in some form as of August 2022. Coverage for infertility is not mandated at the federal level in the US, and existing mandates vary state by state.

New Jersey's mandate (formally known as New Jersey Family Building Act) is particularly well-suited to study the topic of entrepreneurship lock. In August 2001, New Jersey enacted a mandate that requires employer-sponsored health insurance plans to cover infertility treatment; however, this does not apply to individual insurance plans that people purchase on their own. Additionally, the high usage rate of assisted reproductive technology (ART) in New Jersey prior to its law's passage allows for widespread awareness of the law change among women of reproductive age. In 2000, New Jersey ranked fifth in ART usage, despite ranking tenth in state-level population size (Wright et al.

[3]Following the literature, I use the term "entrepreneurship lock" to represent a lockout effect.

[4]IVF is the most well-known type of assisted reproductive technology, which generally involves in vitro (outside the body) handling of eggs and/or embryos to address infertility. IVF per cycle can cost $12,400 in 2003 and $19,200 in 2013 (Schmidt [2005]; Wu et al. [2014]).

[2003]).

To empirically test the causal effects of the infertility insurance mandate on women's entrepreneurship as measured by self-employment, I implement a triple difference strategy exploiting the variation across states, time, and age groups. Specifically, I compare self-employment of women aged 30-45 between the mandate state of New Jersey and non-mandate states, before and after the enactment of the mandate, relative to that of women in age groups unlikely to be affected by the infertility insurance mandate. Although self-employment is not identical to entrepreneurship, self-employment is the most commonly used measure of entrepreneurship in both the economics and business literatures (e.g., Holtz-Eakin et al. [1996]; Blanchflower and Oswald [1998]; Hamilton [2000]; Cagetti and De Nardi [2009]; Faggio and Silva [2014]; Baliamoune-Lutz and Garello [2014]). I examine total self-employment (including the incorporated and unincorporated) to identify entrepreneurial changes.[5]

Using data from the March Current Population Survey (CPS) from 1990 to 2007, I find that the infertility insurance mandate decreases the probability of being self-employed among women of later child-bearing age (30-45) by 0.9 percentage points. This is an approximate 15 percent decrease from the sample mean of 6 percent.[6] Results are robust to using different control groups (e.g., women of younger age, women of older age, and/or single men), different sample restrictions (e.g., women in the labor force), and a different estimation approach (synthetic control method). I also conduct several placebo tests with respect to both unrelated samples and the timing of the mandate. To assess the external validity of a mandate in settings other than New Jersey, I also look at self-employment in other mandate states and find a smaller and significant decline in self-employment in three other states with a similar but weaker mandate.[7]

[5]Besides total self-employment, this paper also examines incorporated and unincorporated self-employment separately. Incorporated self-employment refers to individuals who have formed a registered legal corporation and are paid by their own corporation. Unincorporated self-employment refers to self-employed individuals who work for themselves in an unincorporated business. More details are discussed in Sections 4 and 6.

[6]The magnitude of my estimates is comparable with the previous studies on the Child Health Insurance Program that increased health insurance coverage for children in moderate-income families and promoted self-employment among parents by around 15 percent (e.g., Olds [2016]).

[7]Besides New Jersey, five other states have also enacted a mandate that only applies to employer-sponsored health insurance, including Texas (1987), California (1989), Illinois (1991), New Hampshire (2020), and Colorado (2020). The mandates in Texas (1987), California (1989), and Illinois (1991) are weaker compared to New Jersey's. I also examine the effects in other mandate states and discuss the results in Section 6.

To explore the potential channel of entrepreneurship lock, I examine whether the impact differs by the availability of spousal insurance. The presence of the mandate likely made self-employment a riskier decision for individuals without alternative sources of coverage via their spouse to a greater extent than their counterparts with alternative coverage. Results show the negative effect is stronger for married women without an alternative insurance source from the spouse's employer. Taken together, these findings suggest that infertility insurance mandates, which solely expand employer-sponsored health insurance coverage, have strengthened women's attachment to wage-and-salary employment and limited entrepreneurship. Given that married women can be insured as dependents on a spouse's insurance plan, I further examine the effects on self-employment among married men and find weaker negative effects.

This study makes two distinct contributions to the literature. First, this paper contributes to the literature on entrepreneurship lock. The emerging literature on entrepreneurship lock is rooted in the job lock literature, in which a large body of studies have looked at wage-and-salary workers and shown that concerns over health insurance reduce job mobility, with the main focus on job-to-job transitions (see Gruber and Madrian [2002] for a review). Another branch of literature on employment lock analyzes the effects of health insurance coverage on decisions to work (e.g., Garthwaite et al. [2014]; Baicker et al. [2014]; Leung and Mas [2016]). In contrast to the large literature on job lock (i.e., workers are locked into their current jobs), only a handful of studies have examined the connection between health insurance access and entrepreneurial choices and provided mixed results (e.g., Holtz-Eakin et al. [1996]; Wellington [2001]; Heim and Lurie [2010]; Fairlie et al. [2011]; Gumus and Regan [2015]; Bailey [2017]). My paper fills in the gap by providing additional evidence that health insurance access is a critical factor that locks workers into wage-and-salary jobs and out of entrepreneurship. Recent empirical work mainly documents an increase in entrepreneurship by exploiting healthcare reforms and tax reforms that loosen the link between health insurance and wage-and-salary jobs (e.g., Heim and Lurie [2010]; Olds [2016]). For example, Heim and Lurie [2010] examine the effects of changes to the 1986 Tax Reform Act in the US that allow self-employed individuals to deduct increasing portions of health insurance premiums they purchase on their own; they find an increase in self-employment. This paper provides a different perspective by documenting a decline in entrepreneurship through tightening the link between health

insurance and wage-and-salary jobs.

Second, this paper expands the literature by examining the effects of infertility insurance mandates. Previous studies have demonstrated that state infertility mandates in the United States have led to increased treatment utilization, higher first birth rates among older women, and higher multiple birth rates (Schmidt [2007]; Bitler and Schmidt [2012]; Buckles [2013]). A handful of studies have examined labor market effects associated with infertility insurance mandates. They find mixed results for women, including reduced labor input due to increased insurance costs for women between the ages of 28 and 42 (Lahey [2012]), increased labor force participation for women under the age of 35 and decreased participation for women above 35 (Buckles [2007]), and increased professional occupations among working-age women beyond college (Kroeger and La Mattina [2017]).[8] However, little attention has been paid to the effects on entrepreneurship, despite its importance to business creation in the economy. This paper is the first in the literature to evaluate the unintended consequences of infertility insurance mandates on women's entrepreneurship, recognizing the limited presence of women in entrepreneurial activities. In addition, this paper focuses on a different policy component than previous studies; rather than the passage of any infertility insurance mandates, I exploit whether such a mandate excludes individual insurance plans.

Subsequent sections of this paper proceed as follows. In Section 2, I describe the background and introduce infertility insurance mandates in the US. In Section 3, I describe the conceptual framework and discuss potential channels. Sections 4 and 5 describe the data and empirical strategy. Section 6 presents my results. Finally, Section 7 concludes with a discussion of policy implications.

[8]The existing literature does not speak directly to the impact of infertility insurance mandates on women's entrepreneurial choices. Lahey [2012] argues that employers may discriminate against women of later childbearing age in the face of increased insurance costs and finds that infertility insurance mandates lead to a decline in labor force participation and weeks worked among those women. Her paper focuses on the demand-side of the labor market, which potentially affects a group of women who incline to work for a company but are unable to because of discrimination. In contrast, the findings in my paper are driven by the supply-side of women who want to be self-employed but are forced to be locked out of self-employment. Section 2 discusses the cost of infertility coverage to the employer. Section 3 discusses potential channels underlying the effects on self-employment, including hiring discrimination.

2 Background

Infertility is defined as the inability to conceive after one year (or longer) of unprotected intercourse. As a global health issue, infertility affects on average 1 in 7 couples in western countries and 1 in 4 couples in developing countries (Vander Borght and Wyns [2018]). In the United States, infertility also affects a sizeable portion of the population, with approximately 1 in 7 (15%) couples dealing with infertility problems (ASRM [2015]). According to the U.S. Centers for Disease Control and Prevention (CDC), one-fourth (26%) of heterosexual women between the ages of 15 and 49 with no prior births have difficulty conceiving their first child or sustaining a pregnancy to term.

Infertility is a health problem of the male or female reproductive system. While several causes (e.g., tubal occlusion, uterine fibroids, and abnormal sperm function) can contribute to infertility problems, advanced maternal age is the most common factor today (UCLA Health [2017]). Fertility declines as women age, mostly due to diminishing egg quantity and quality over time. Women's fertility is known to drop sharply in the late 20s and more rapidly by the late 30s (Dunson et al. [2002]).

With recent technological advancements, there are various ways to treat infertility, including drugs that help with hormones and ovulation, surgical procedures that restore fertility (e.g., opening blocked fallopian tubes), intrauterine insemination (IUI), and a group of treatments known as assisted reproductive technology (ART). ART generally involves in vitro (outside the body) handling of eggs and/or embryos to address infertility, and the most well-known type of ART is in vitro fertilization (IVF), the costliest component of infertility treatment that averaged $12,400 per cycle in 2003 and $19,200 in 2013 (Schmidt [2005]; Wu et al. [2014]).[9] The first child conceived with IVF in the U.S. was born in 1981, and the use of ART has increased dramatically since then. The CDC reported that 12.2% of women aged 15 to 49 who were surveyed between 2015 and 2019 had utilized infertility services at some point, and ART contributed to more than 2% of all US infants born in 2019 (CDC [2019b,c]).

However, infertility treatment is extremely expensive and rarely covered by insurance plans

[9] Multiple cycles can be needed since the pregnancy rate after one cycle of IVF is around 60% (Margalioth et al. [2006]).

unless there is state-level legislation in place mandating the insurance coverage of infertility treatments (Schmidt [2007]; Bitler and Schmidt [2012]). The average cost of fertility treatments per pregnancy can range anywhere from $6,000 for medications only to more than $60,000 (2006 dollars) for in vitro fertilization (IVF) treatment (Katz et al. [2011]). As a result, many infertile couples who are financially constrained have no access to this service. In absence of coverage, people are more likely to make risky choices. According to RESOLVE, the National Infertility Association, if individuals experience financial constraints and are restricted to what they can afford out of pocket, they will be more inclined to take risks in the hopes of achieving pregnancy faster and cheaper. For instance, individuals might decide to transfer more embryos during an IVF cycle because they may feel under pressure to maximize their chances of having a live birth through the transfer of multiple embryos, which raises the risk of multiple births and complications (Reynolds et al. [2003]; Buckles [2013]). This highlights the key role of developing proactive legislation to meet the needs of infertile individuals and make infertility services affordable and accessible.

To increase access to infertility services, 19 states have passed legislation mandating that private insurers provide infertility insurance as of August 2022. Coverage for infertility is not mandated at the federal level in the US, and existing mandates vary state by state. However, a growing number of states and the federal government are joining the effort to attempt to legislatively eliminate barriers to infertility treatment (Hughes and Giacomini [2001]; Peipert et al. [2022]).[10] Table 1 summarizes coverage details in a list of states with existing mandates, as well as the year the laws passed. The mandate was first enacted in West Virginia in 1977. After that, many states enacted mandates in the late 1980s and early 1990s, and Maine passed the law as recently as 2022. There are considerable variations across states in the specifics of each mandate. A mandate-to-offer law requires private insurance companies to offer health plans with infertility coverage to employers but employers are not obligated to choose these plans for their employees. A mandate-to-cover law is stronger and requires private health insurance companies to cover infertility treatments as part of every policy within the state (i.e., employers must cover certain treatments of infertility for their employees). The state mandates also differ in coverage scope, including whether IVF, the most

[10]The Access to Infertility Treatment and Care Act (H.R. 4450/S. 2352) which requires private health insurance as well as government-sponsored insurance to provide infertility coverage was introduced to Congress in 2021 and is still under consideration.

expensive and invasive fertility intervention, is included. The mandates in 14 states currently cover IVF, while the remaining state mandates exclude the coverage of IVF. Additionally, some mandates contain lifetime benefit maximums, some exclude health maintenance organizations (HMO) plans, and some apply only to HMO plans.

Even in states with some form of a mandate, coverage exemptions exist. Importantly, self-insured employers are exempt from state-level mandates under the Employment Retirement Income Security Act (ERISA) of 1974. Although the exemption allows self-insured employers, which are typically larger firms, to decide whether or not to provide infertility insurance coverage to their employees, many large companies have opted to provide such plans voluntarily in their efforts to keep employees satisfied and recruit a competitive workforce. There are also exemptions available in most states for religious employers and/or small employers with fewer than 50 workers. Only private health insurance is subject to the mandate. Public and federal insurance programs, such as federal employees, Medicaid, Medicare, and Veterans Administration benefits, generally do not include infertility treatment coverage.

One key feature of these mandates is what insurance market(s) they apply to. As shown in the last column of Table 1, mandates generally apply to group health plans, which are mostly known as employer-sponsored health insurance plans, and also to individual plans, which are sold directly to individuals instead of their employers. HMO plans are also a major choice (53% in 2017) for consumers purchasing individual health insurance. However, a few states, including Texas, California, Illinois, New Jersey, New Hampshire, and Colorado, have mandates that solely apply to group health plans. This implies that individuals living in these states cannot purchase the infertility coverage on their own. For self-employed residents of these states, the only options for infertility coverage are to work for an employer who includes the infertility insurance coverage in their plans, to persuade their present employer to opt in, or to purchase a group health insurance plan if they own a company.

New Jersey's mandate (New Jersey Family Building Act) passed in 2001 is particularly well-suited to study entrepreneurship lock for several reasons. New Jersey's common usage of ART prior to its mandate allows for widespread awareness of the policy change among women of reproductive age. In 2000, it ranked fifth regarding ART usage, despite a ranking of tenth according to state-level

population size (Wright et al. [2003]). New Jersey enacts a strong and comprehensive mandate-to-cover law, with IVF coverage as well as limited restrictions to patient eligibility, procedure types, and lifetime caps (e.g., unlimited cycles of artificial insemination).[11] This is in contrast to weaker mandate-to-offer laws in Texas (1987) and California (1989). Additionally, infertility rates are rising over the past 40 years. In light of this, the presence of a mandate in more recent years is expected to be more effective at shifting women's career choices. Most importantly, only employer-sponsored insurance plans are subject to the infertility insurance mandate in New Jersey.[12]

Arguments in opposition to insurance coverage involve perceptions that IVF coverage can result in expensive claims and premiums. However, growing evidence suggests that the costs associated with providing infertility services are manageable for employers. For example, the overwhelming majority (97%) of respondents from the Survey on Fertility Benefits report that including infertility coverage hasn't led to noticeably higher medical plan costs (Mercer [2021]). According to data from Massachusetts, Connecticut, and Rhode Island, the cost of infertility coverage is estimated to be less than 1% of total premium expenditures in all three states, where infertility coverage has been mandated for over 30 years (Kaiser Family Foundation [2020b]).

As a result of state-level mandates, employers in the US are increasingly covering infertility services for their employees. According to the Employee Benefits Survey in 2018, almost one-third (31%) of firms with 500 or more employees in 2018 provided some fertility benefits, up from 24% in 2016. Employers most typically cover IVF treatments (23%) and fertility drugs (18%). Small firms are less likely to offer fertility benefits; 10% with 50 employees or less included some fertility coverage as benefits in 2018, up from 4% in 2016 (the International Foundation of Employee Benefit Plans [2019]).

[11] Illinois, Massachusetts, New Jersey, and Rhode Island are four states typically considered as states with comprehensive coverage, including all or almost all expenses related to IVF (e.g., coverage for at least four cycles of IVF) (Sunderam et al. [2015]).

[12] Besides New Jersey, several other states have also enacted a mandate that only applies to employer-sponsored health insurance, including Texas (1987), California (1989), Illinois (1991), New Hampshire (2020), and Colorado (2020). I examine the effects of mandates in these states and discuss the results in Section 6.

3 Conceptual framework

This section discusses how infertility insurance mandates may affect a woman's decision to become self-employed. In the United States, employment-based health insurance remains the largest source of health insurance coverage, covering 54.4% of the country's total population in 2020 (Keisler-Starkey and Bunch [2021]). This reliance on employment-based health insurance could potentially lead to job lock in the labor market, where people are afraid of switching jobs due to concerns about losing health insurance (Holtz-Eakin et al. [1996]; Gruber and Madrian [2002]; Fairlie et al. [2011]). Job lock is a phenomenon marked by reduced job mobility when people are worried about disruptions in healthcare coverage due to a waiting period on the new job, loss of a specific insurance policy, or not being able to afford a health plan in the individual market. The fear of being uninsured, combined with the high premium of purchasing health insurance, also creates large disincentives to leaving insured employment and launching one's own business, a phenomenon called "entrepreneurship lock" (Fairlie et al. [2011]; Bailey [2017]). Although self-employed individuals obtain some tax benefits for their purchases of health insurance, they generally pay a substantially higher price for health insurance, in addition to the costs of giving up the health insurance provided by their current employer.[13]

Theoretically, the effects of infertility insurance mandates on self-employment are ambiguous and can be linked to four main channels. The first channel is through increased fertility. As noted above, previous studies have demonstrated that state infertility mandates have led to increased treatment utilization, higher first birth rates, and higher multiple birth rates (Schmidt [2007]; Bitler and Schmidt [2012]; Buckles [2013]). The existing studies frequently argue that having children brings positive effects on women's likelihood of self-employment, which offers greater flexibility to balance family and career (e.g., Wellington [2006]; Noseleit [2014]). Given that infertility insurance mandates make women more likely to have children or expect to have more children, it is possible that the self-employment rate among women of later age may rise.

[13] As noted above, it costs small businesses and the self-employed 10% to 40% more for health insurance expenditures compared to those in wage-and-salary employment for comparable insurance plans (Holtz-Eakin et al. [1996]; Velamuri [2012]). Although the Tax Reform Act of 1986 has allowed self-employed people to deduct up to 100% (increased from 25% in 1986) of their health insurance premiums since 2003, the deduction only happens when they earn net profits from self-employment.

The second channel by which mandates have an impact is through alleviating credit constraints. Lai et al. [2021] use data from the largest online crowdfunding platform, GoFundMe, to study infertility-related fund-raising campaigns (with an average funding goal $18k) and find that states with insurance mandates have fewer campaigns per capita than states without insurance mandates. Insurance coverage mitigates financial burdens and frees up income, which may increase funding for start-up costs and promote self-employment. On the other hand, access to infertility insurance coverage may have a negative income effect that decreases working incentives and reduces labor force participation along with self-employment. Therefore, the channel of alleviating credit constraints suggests insurance mandates have an ambiguous effect on self-employment.

The third channel is related to the increased insurance costs that decrease employers' demand for women of later childbearing age. Lahey [2012] argues that employers may discriminate against women of treated age groups in the face of increased insurance costs and finds that infertility insurance mandates lead to reduced labor force participation as well as reduced employment in terms of weeks worked per year among these women. If women of later childbearing age are forced to become self-employed because firms are induced to hire fewer of them, this suggests a positive impact on self-employment following a mandate.

The fourth channel by which mandates have an impact is through entrepreneurship lock. The mandates have strengthened the link between health insurance and paid employment by expanding the benefits of employer-sponsored health insurance. This implies that mandates potentially raise the relative attractiveness of wage-and-salary jobs, making self-employment a riskier decision. As a result, the self-employment rate may fall as some self-employed individuals switch to wage-and-salary jobs and more individuals stay in their current positions to retain their insurance benefits, suggesting intensified entrepreneurship lock.

4 Data

In this section, I describe the dataset used in the empirical analysis and present summary statistics for my main sample. This study uses data from the Census Bureau's March Current Population Survey (CPS) for the years 1990 to 2007. I restrict my analysis to years before 2008 to eliminate

confounding effects from the 2008 recession, which began in December 2007 based on NBER Business Cycle Dating Committee (Berge and Jordà [2011]). The main advantage of the CPS data set is the large sample size and the detailed employment status. The March CPS sample used here is nationally representative of the United States and includes more than 150,000 male and female observations for each survey year. As the official source of statistics on employment in the United States, the CPS provides reliable information on women's type of labor force participation, including self-employment, as well as their demographic and socioeconomic characteristics. The main sample is women between the standard working ages of 25 and 64. A woman's treatment status is mainly determined by her state of residence and age. Other individual characteristics such as marital status, race/ethnicity, education, and spousal health insurance coverage are also used when conducting heterogeneous analyses and mechanism investigations.

In the March CPS, the class of a worker is determined by the individual's longest-held job within a year. The main dependent variable, whether an individual is self-employed, is derived from the question about the class of employment, which identifies three major categories: wage-and-salary workers, the self-employed, and unpaid family workers.[14] I distinguish between two employment states: self-employment if an individual is self-employed, and non-self-employment if an individual has other types of jobs, is unemployed, or is out of the labor force. Therefore, my outcome of interest is a dummy variable of self-employment, which takes a value of 1 if the individual is self-employed in his/her longest-held job and a value of 0 otherwise.

There are two types of self-employment: incorporated self-employment and unincorporated self-employment. The former refers to individuals who have formed a registered legal corporation and are paid by their own corporation, while the latter refers to self-employed individuals who work for themselves in an unincorporated business. In the United States, the majority of unincorporated businesses are concentrated in service-related occupations, whereas most incorporated businesses are centered in managerial and professional occupations that need higher skill levels and resources (Özcan [2011]). Typically, incorporated self-employed workers are more entrepreneurial than unincorporated self-employed workers. In contrast to previous studies using these

[14]Wage-and-salary workers correspond to private sector employees, federal government employees, state government employees, and local government employees. Unpaid family workers are people working without pay for a family-operated firm or a family farm.

two subcategories of self-employment, incorporated and unincorporated, to distinguish between "entrepreneurs" and other business owners (e.g., Levine and Rubinstein [2017]), this paper is interested in examining total self-employment (both incorporated and unincorporated self-employment) to identify entrepreneurial changes. Although self-employment is not identical to entrepreneurship, self-employment is the most commonly used measure of entrepreneurship in both the economics and business literatures (e.g., Holtz-Eakin et al. [1996]; Blanchflower and Oswald [1998]; Hamilton [2000]; Cagetti and De Nardi [2009]; Faggio and Silva [2014]; Baliamoune-Lutz and Garello [2014]). The self-employed can be considered as latent entrepreneurs (Bönte and Piegeler [2013]), and including unincorporated self-employment in this group also allows me to examine far-reaching effects on entrepreneurial activities in low-income families. Additionally, focusing on self-employment is helpful for comparing my estimates with other studies, given that previous studies on entrepreneurship lock have also used self-employment as a proxy for entrepreneurship (e.g., Fairlie et al. [2011]; Liu and Zhang [2018]; Lee [2019]).

Table 2 shows the summary statistics for the 1990–2007 sample of women between the standard working ages of 25 and 64 from the March CPS. It contains the statistics for women in New Jersey, in all other mandate states except New Jersey, and in non-mandate states, respectively. The mandate and non-mandate samples exhibit similar labor market characteristics in terms of the employment rate and labor force participation rate. However, mandate and non-mandate samples differ slightly in terms of education and racial/ethnic composition. Particularly, women in New Jersey are more educated than those in other states. As such, individual characteristics such as education and race/ethnicity are controlled for in the empirical analysis.[15] Among women aged 25-64 in New Jersey, 83% have ever married, 72% are in the labor force, 69% are employed, 3% are unincorporated self-employed, 2% are incorporated self-employed, and 80% are covered by private insurance plans.

[15]To further address the concern that the mandate state of New Jersey is systematically different from non-mandate states, a synthetic control method, which constructs a missing counterfactual for New Jersey using weighted averages of non-mandate states, is implemented as a robustness check. More details are discussed in Section 6.

5 Empirical Strategy

To study the effect of state infertility insurance mandates on self-employment, one option is to utilize a difference-in-differences (DID) strategy, which compares the mandate state New Jersey to non-mandate states before and after the state's passage of the law. The treatment group consists of one state, New Jersey, that enacted a mandate in 2001, whereas the control group consists of 36 states that never passed any type of infertility coverage mandate during my sample period of 1990-2007. The treated sample consists of women aged between the ages of 30 and 45. I restrict the analyses to women aged beyond 30, since the probability of pregnancy begins to decrease with age after women reach their late 20s (Dunson et al. [2002]). Women aged 30 and above constitute nearly 89% of all assisted reproductive technology treatments conducted in the United States in 2002 (Wright et al. [2003]; Bitler and Schmidt [2012]). Additionally, the mandates have been found to increase the use of treatment and delivery rates only for women 30 and above (Bundorf et al. [2007]; Bitler and Schmidt [2012]). The cutoff age of 45 is chosen because New Jersey restricts eligible women to those under the age of 46. To estimate a causal effect using the DID approach, the key identifying assumption—that women's self-employment rate in the treatment state and control states would follow similar trends in the absence of the policy change—should be valid. Although it is not feasible to directly test this common trend assumption, it is natural to probe if women in the mandate state and non-mandate states exhibit parallel pre-existing trends before the mandate's enactment. The dark blue line in Figure 1 plots the time pattern of self-employment rate for women aged 30-45 in New Jersey and in non-mandate states for years around 2001, the year in which New Jersey passed the mandate. Following the enactment, there is suggestive evidence that the self-employment rate slightly increased in non-mandate states while it declined in New Jersey. However, the weighted average of self-employment rates prior to the enactment trend differently in New Jersey and non-mandate states, which invalidates the common trend assumption of the DID approach. In addition to pre-trend problems, other confounding factors may also raise an issue about making a causal interpretation from the DID estimates. One common concern occurs if New Jersey experienced some other changes during the same period, or if a national shock happened at the same time that brought unbalanced impacts on women in New Jersey and control states.

To address these concerns, I estimate the effect of the mandate using a triple difference (DDD) specification, an approach that is commonly used in the literature on infertility insurance mandates in the US (e.g., Lahey [2012]; Kroeger and La Mattina [2017]). The DDD approach contains three dimensions of differences: the mandate state New Jersey versus non-mandate states, pre-mandate (1990-2000) versus post-mandate (2001-2007), and the treated age group (women aged 30-45) versus untreated age group (women aged 25-29 or 46-64). Different from the DID approach, I also exploit variation across women's age groups. Specifically, women who are aged 25-29 or 46-64 serve as a within-state control group. Women aged 25-29 have been placed in the control group since they help to capture important trends among younger women and are not as likely to be affected by the mandate as women of later childbearing age. Women aged 46-64 have been included in the control group since they become ineligible for infertility coverage based on the mandate's age limits on female patients in New Jersey.[16]

I employ a linear probability model for ease of interpretation, following the literature on infertility insurance mandates (e.g., Bitler and Schmidt [2012]; Abramowitz [2014]).[17] To exploit the variation across states, time, and age groups, I implement a DDD model that yields the following:

$$\begin{aligned} y_{iast} =& \alpha + \beta_1 \delta_s + \beta_2 \tau_t + \beta_3 \eta_a + \beta_4 (\eta_a \times \tau_t) + \beta_5 (\delta_s \times \eta_a) + \beta_6 PostMandate_{st} + \\ & \beta_7 (PostMandate_{st} \times Age3045_a) + \theta X_{iast} + \varepsilon_{iast} \end{aligned} \tag{1}$$

where y_{iast} represents the outcome variable of self-employment for women i of age a in state s and year t. $PostMandate_{st}$ takes value 1 if the survey year is after 2001 in the mandate state of New Jersey and 0 for all years for all control states (without mandates). A full set of state fixed effects δ_s, year fixed effects τ_t, and age fixed effects η_a are included to control for time-invariant differences in outcome by state (β_1), national time-series changes in outcome (β_2), and time-invariant differences in outcome by age (β_3). I also include the second-level interactions to account for age-specific changes over time (β_4), state-specific differences in the age-series changes of outcome (β_5), and changes over time (pre- and post-mandate) in the mandate state (β_6). The key coefficient of interest is β_7,

[16] One might be concerned that young women's perceptions and decisions may start to change even before they face the actual need of using procedures themselves. As a robustness check, I exclude women aged 25-29 from my control group and find a similar and robust estimate. More details are discussed in Section 6.

[17] I also estimate specifications using a probit model, which yields very similar results. These results are available upon request.

which is the triple difference estimate of the effect of the mandates on self-employment. It captures variation specific to the treatment age group (relative to the control age group) in the mandate state New Jersey (relative to non-mandate states) in the years after the mandate was passed (relative to before the law). X_{iast} is a vector of individual-level characteristics that may be related to women's career decisions, including race/ethnicity and education.[18] Throughout my analysis, the data is weighted to represent the U.S. population, and standard errors are clustered at the state level.

The DDD approach does not require that New Jersey and control states would have evolved similarly in the absence of the mandate. Instead, the identifying assumption in the DDD framework is that differences in the outcome between women in the age group 30-45 and women not in this age group would have evolved similarly in the mandate state of New Jersey and non-mandate states, in the absence of the mandate. Put differently, it requires the relative outcome of women in the age group 30-45 and women not in this age group in the treatment state of New Jersey to trend in the same way as the relative outcome of these two groups of women in the control states if there wasn't a mandate (Gruber [1994]; Garthwaite et al. [2014]; Olden and Møen [2022]). To probe the validity of this assumption, I look at the sample mean of self-employment among the two groups of women in New Jersey and non-mandate states, respectively. Figure 1 presents the weighted average self-employment rate by two-year cells, in which the green dashed line depicts the age group differences for the treatment state of New Jersey and the control states. Prior to the mandate, the difference in self-employment rates between women in the age group 30-45 and women not in this age group is broadly constant over time and evolves similarly in both New Jersey and the non-mandate states, supporting the trend assumptions in the DDD framework. After the mandate's enactment in 2001, women in the two age groups show distinct divergence in New Jersey; women in the age group 30-45 exhibit a downward trend, while women in control age groups exhibit an upward trend. By contrast, the two age groups of women in control states exhibit no divergence and trend upward in the post-period, closely following each other.

One important reason behind the control group's post-period rising trend is the series of amend-

[18] Although Kroeger and La Mattina [2017] find that infertility insurance mandates increase women's probability of pursuing a professional degree, my analysis results are not sensitive to the inclusion of education controls. Abramowitz [2014] finds the effects of infertility insurance mandates on women's marriage timing and Cintina and Wu [2019] show a reduced likelihood of divorce following the mandates. For this reason, my main specification does not include marital status as a control variable. My estimates are robust with or without controlling for marital status, and these results are available upon request.

ments made to the 1986 Tax Reform Act in the US. The federal income tax amendments were made to the 1986 Tax Reform Act between 1996 and 2003, allowing for increasingly generous tax deductions of health insurance premiums for the self-employed.[19] In 2002 and 2003, self-employed individuals who paid to insure themselves, their spouse, and any dependents may deduct up to 70% in 2002 and 100% in 2003 for federal income tax purposes, which is an increase from 60% in 1999-2001. Heim and Lurie [2010] find that the change from 60% to 100% deductibility due to this policy lead to a 1.5-percentage-point increase in self-employment.

The triple difference approach helps alleviate the concern that my results are driven by time-varying national shocks that may change differently across the states. For example, since New Jersey's self-employment was much lower to begin with, it is possible that its self-employment may be induced to grow faster than other states after the amendments to Tax Reform Act in 2002 and 2003. Therefore, it is essential to have the within-state comparison group of women because they are unlikely to be affected by the mandate in New Jersey but they still respond to other contemporaneous changes. The within-state comparison group also helps to capture any New Jersey-specific shocks taking place at the same time. To ensure that my estimate indeed captures the causal impacts of the infertility insurance mandate, I also explore the impact on self-employment in states other than New Jersey (discussed in Section 6).

There could be a concern about the endogeneity of the implementation of the mandate if a state's decision to enact mandates is driven by state-level characteristics that are related to women's career decisions. However, previous studies in the literature have offered some compelling evidence that this is not the case. For example, Hamilton and McManus [2012] use data to demonstrate that variations in the availability of infertility insurance mandates largely come from governing tastes, acting as the desires of voters for government involvement in a wide variety of healthcare markets. Similarly, Abramowitz [2014] argues that a major determinant of whether a state imposed any specific mandate, including the infertility insurance mandates, was the state's general attitude toward mandates, rather than its residents' demand for the specific benefits required to be covered by a mandate. At the same time, it has been well documented that states with mandates do not

[19]The original 1986 Tax Reform Act allowed the self-employed to deduct 25% of health insurance costs from their taxable income if a self-employed individual has no access to employer-sponsored health plans through his/her own job or the spousal employer.

vary fundamentally from those without mandates after comparing a variety of pre-reform state-level characteristics, especially regarding the labor force participation rate and the unemployment rate for both men and women (Hamilton and McManus [2012]; Kroeger and La Mattina [2017]). I also find similar labor market characteristics in mandate states and non-mandate states, as discussed in Section 4.

Knowledge of infertility prevalence and the availability of insurance mandates to address the issue may extend the affected population far beyond women who actually use ART. Therefore, I use the DDD approach to estimate the intent-to-treat effects since all women considering fertility concerns could be impacted if the policy changes were widespread enough to potentially influence the perspectives of women of later childbearing age. This paper examines the effects of the mandates on all women of later childbearing age through their fertility expectations, regardless of whether they will ever actually need treatment.

6 Results

6.1 Main results

The estimated effects of the state infertility insurance mandate on self-employment are provided in Table 3. When I compare the change of self-employment among women before and after the introduction of the mandate, in the treated state and control states, the DDD estimates reflect a significant reduction in self-employment among women in the age group most likely to be affected by the mandate (30-45 years old) relative to women not in this age group. Although the magnitude of the coefficient decreases slightly from column (1) to column (2) after controlling for individual characteristics including race/ethnicity and education, two estimates are not virtually different from each other. The estimated effect from my main specification, as shown in column (2) of Table 3, suggests a 0.92-percentage-point drop in self-employment for New Jersey women of later childbearing age after the passage of the mandate. This is an approximate 15% decrease from the sample mean of the self-employment rate (6%). In terms of the coefficients on "Post Mandate", they cannot be interpreted as a causal effect of the mandate on women in control age groups. Instead, these DID estimates capture a differential trend in New Jersey and control states, as discussed in Section 5.

Overall, the DDD estimates suggest that the enactment of the infertility insurance mandate leads to a significant decrease in the probability of self-employment among women of later childbearing age.

6.2 Robustness checks

To test the robustness of my results, I re-estimate the effects using different control samples, different sample restrictions (women in the labor force or those employed), and a different estimation approach (synthetic control method). I also conduct several placebo tests with respect to both unrelated samples and the timing of the mandate.

One may be concerned that the mandate might affect some women of the control group if the diffusion of coverage availability is relatively widespread, thereby attenuating the estimated effects. To test if my results are sensitive to the control group, I check the robustness of my estimates using different control groups and present the results in Table 4. Panel A shows the main results, whereas Panels B, C, and D display the estimated effects by placing only younger women (25-29 years old) or older women (46-64 years old or 50-64 years old) in the control group. In Panel E, single males (25-29 years old) are also included in the control group because they are theoretically unlikely to be treated directly. Although the estimates change slightly across specifications, the general patterns are qualitatively identical. This suggests that the main results are robust to different age groups of women in the control group, and further adding untreated single males also gives similar results to those in the main specification.

The main results are based on regressions on the whole sample of women, in which individuals in other types of employment and those in non-employment are both included in the analysis and coded as zero for the self-employment outcome. To ensure the robustness of my analysis, I apply two sample restrictions. Instead of studying the whole sample of women in the main specification, I restrict to a sample of women in the labor force or a sample of employed women.[20] Table 5 reports the results when limiting to women in the labor force or women working in the previous year, respectively. Again, I find negative and significant coefficients across sample restrictions, although

[20]Restricting to working individuals is consistent with many studies in the job-lock literature, such as Madrian [1994], Hamersma and Kim [2009] and Boyle and Lahey [2010].

the magnitude in Panels B and C (1.34-1.36 percentage points) is slightly greater than my main results. These results provide compelling evidence that some negative impacts on self-employment are driven by women switching from self-employment into paid employment.

As an alternative strategy, I use a synthetic control method (SCM), which is originally proposed by Abadie and Gardeazabal [2003]. SCM has been widely applied in studies of policy evaluations, particularly popular in estimating the effect of events or shocks on a single treated unit, such as a state or a country (Abadie et al. [2010]; Cavallo et al. [2013]; Bohn et al. [2014]). This method allows me to use weighted averages of non-mandate states to approximate the missing counterfactual self-employment that New Jersey would have experienced in the absence of the mandate. The weights are selected based on self-employment levels in pre-mandate time periods (1990-2000). Figure 2 plots self-employment in the actual New Jersey and the synthetic New Jersey that is identified by a combination of the non-mandate states that best matches the pre-intervention self-employment trend of New Jersey. It demonstrates that the average rate of self-employment for the synthetic New Jersey closely matches that of the actual New Jersey before the mandate, and the estimated effect of the infertility insurance mandate is measured as the difference in the post-period. As shown in Table 6, the non-mandate states contributing most to the synthetic New Jersey include North Carolina (weight 0.427), Mississippi (weight 0.224), Delaware (weight 0.113), and Tennessee (weight 0.100). Panel A of Table 6 presents the estimated impact from SCM and suggests that the self-employment rate decreased in New Jersey after the infertility insurance mandate, consistent with my main results from the triple difference strategy. The magnitude of the estimate using the SCM is 0.78 percentage points, which is similar to my DDD estimate (0.9 percentage points) and statistically significant at the 10% level.[21]

I also conduct several placebo tests with respect to both the sample studied and the timing of the mandate. Table 7 presents the results of my placebo tests. Examining the result on groups that are unlikely to be affected should reveal no effect following the law enactment. To empirically test this, I re-estimate the specification from Equation 1 on a sample of single men aged 25-64. Results from Panel A show a negligible and statistically insignificant coefficient for single men aged

[21] Following the inference procedure developed by Abadie et al. [2010] and Abadie et al. [2015], I perform a series of placebo studies using the control states and report statistical significance (p-values) by comparing the estimated effect of New Jersey with the distribution of placebo effects.

30-45, consistent with presumption that the mandate is not relevant for this subgroup. Second, I test whether the mandate affects self-employment of women aged 25-29 when women aged 46-64 still serve as a within-state control group. As shown in Panel B, the coefficient is indeed small and statistically insignificant, reassuring that women aged 25-29 are not as likely to be affected by the mandate as older women. Last, I conduct a placebo test in which I assign a false mandate in New Jersey that turns on five years prior to the actual mandate year (2001). One may be concerned that the DDD estimate is picking up a trend difference between New Jersey and control states if women in New Jersey would experience the same decline of self-employment in the absence of the mandate for reasons unrelated to the infertility insurance mandate. However, I find virtually zero effect when a fake mandate in 1997 is applied, as shown in Panel D of Table 7. This lends support to the pre-trend assumption in the DDD approach and a causal impact of the mandate captured in my results.

6.3 Mechanisms

As discussed in Section 3, there are two main pathways by which the infertility insurance mandate could negatively impact women's self-employment choices. To directly examine whether the state infertility insurance mandate reduces self-employment through the channel of entrepreneurship lock, I allow the estimated impact to vary by spousal insurance availability. I proxy demand for employer-sponsored health insurance by the existence of spousal coverage in the previous year. This insurance demand factor allows me to investigate the potential mechanism of entrepreneurship lock in detail. The sample of analysis is now restricted to married women since the spouse's insurance information is necessary. Self-employed individuals who lack an alternative source of health insurance, such as through a spouse, may need to rely on the individual health insurance market if staying self-employed or to switch to wage-and-salary employment. Given that only employer-sponsored insurance plans are subject to the infertility insurance mandate in New Jersey, the mandate enactment induces increased demand for employer-sponsored insurance coverage and thus discourages women from entrepreneurial activities due to their potential need for infertility insurance coverage from employers. Therefore, a greater response is expected among married women without alternatives to their own employer-sponsored insurance than their counterparts with spousal coverage alternatives.

To explore whether effects vary with or without access to spousal coverage, I refine my specification by interacting the triple interaction term with an indicator of no access to spouse's employer-sponsored insurance. Results are presented in Table 8. The triple difference estimate shows a significant 0.67-percentage-point decrease in self-employment for women with access to spousal employer-sponsored health insurance.[22] More importantly, results of the four-way interaction term present an even bigger decline for those without access to alternative employer-sponsored health insurance through a spouse, consistent with expectations. This suggests a more pronounced effect for a group that theoretically experienced a greater tightening of the link between health insurance and their own wage-and-salary jobs induced by the mandate. These results together suggest that entrepreneurship lock can be a key channel driving the decline in self-employment.

There is also a possibility that the reduced self-employment is driven by declined labor force participation rates coming from negative income effects that cause disincentives to work. If this is true, it is expected that the infertility insurance mandate in New Jersey should also decrease the labor force participation rate among women along with self-employment. To empirically test whether the mandate also affects labor force participation, I conduct an analysis of this additional labor outcome. As shown in Table A1, I find no evidence of a decline in labor force participation, implying that insurance-driven income effects are not likely to drive the main results in this paper. Additionally, recall that I conduct robustness checks and find significant and negative coefficients with a bigger magnitude when restricting the sample to women in the labor force or women who are employed. This exercise also provides evidence that the decline in self-employment cannot be explained by an effect of being out of the labor force or being unemployed alone. Taken together, I find evidence that the underlying mechanism is through entrepreneurship lock, instead of the mechanism of alleviating credit constraints.

[22] Although women whose husband has employer-sponsored insurance are less likely to worry about infertility insurance coverage, they may still face entrepreneurship lock since the coverage is not guaranteed in the husband's insurance plan due to several exemptions (discussed in Section 2). For instance, employers with fewer than 50 employees are exempt from the mandate in New Jersey.

6.4 Heterogeneity analysis

The effect of the infertility insurance mandates on women's entrepreneurial activities may be heterogeneous to individuals' characteristics that are correlated with the demand for infertility insurance coverage. CPS data provides detailed individual and family information that allows me to examine whether the estimated impact differs by observable individual characteristics. That includes age, education, race/ethnicity, and marital status.

One interesting test of the heterogeneity is how the mandate's effects on entrepreneurship differ by women's age. I group my female sample of treated age (30-45 years old) into three age groups—30 to 35, 36 to 40, and 41 to 45—and estimate the effects on them separately. Table 9 presents the impacts by women's age. Results suggest a large decline in self-employment for women aged 30-35 and 36-40, with the biggest impact (1.9 percentage points) among the latter group. However, I find a small and insignificantly negative impact on self-employment for women aged 41-45. This could be because ART is less commonly used for women aged 41-45, in contrast to women aged 40 and below, who account for 80% of ART usage in the US (CDC [2019a]).

Previous research suggests that individuals with high school education or less are much more likely to report infertility than those with a bachelor's or above. However, women with higher education levels are more likely to have ever received treatment, suggesting unequal access to ART (Bitler and Schmidt [2006, 2012]; Peipert et al. [2022]). Therefore, one might anticipate seeing differential impacts with respect to women's education. To examine this possibility, I estimate the effects separately for women with a college degree or above and women with some college education or less. As shown in Table 10, the magnitude of the impact is larger for women with a college degree or above, consistent with the literature prediction that women with more education are most likely to report infertility technology usage.

To explore whether the estimated effect differs by race/ethnicity, I look at the impacts on non-Hispanic White, non-Hispanic Black, and Hispanic subsamples and present the results in Table 11. Both estimated coefficients for non-Hispanic White women and non-Hispanic Black women are negative and significant, whereas the coefficient for the non-Hispanic Black is bigger in magnitude. Racial and ethnic minorities in the United States are generally more likely to be uninsured than

White individuals since they are underrepresented in well-paying jobs that offer insurance and are less likely to marry someone whose job includes an insurance package (Kalleberg et al. [2000]; Kail and Taylor [2014]). Therefore, the larger impact among non-Hispanic Black women might be driven by the stratified health insurance access across races/ethnicity in the US.

In terms of marital status, heterogeneity of treatment effects is also expected. Never-married women are less likely to seek fertility services and may even be denied access to such services due to marital status discrimination (Ethics Committee of ASRM [2015]). In contrast, married women should be more likely to respond behaviorally to the mandate as they consider pregnancy and discuss potential needs for reproductive care with their spouses. To explore heterogeneous effects across marital status, I cut the sample by marital status and present the results in Table 12. The mandate does not significantly affect never-married women but leads to a significant decline (1.2 percentage points) in self-employment for married women.

6.5 Types of jobs affected

To capture different types of self-employment activities, I further distinguish between the incorporated and unincorporated self-employed. Among the self-employed individuals, the percentage of unincorporated is much larger than that of incorporated. In my sample, around 4.4% of women are unincorporated self-employed, compared with 1.6% incorporated self-employed. To explore the impacts across two types of self-employment, I examine unincorporated and incorporated self-employment separately and present the results in Table 13. It is well documented that the self-employed who are incorporated are better educated and have greater access to resources, whereas the unincorporated self-employed earn much less and have less health insurance coverage (Levine and Rubinstein [2017]). Therefore, unincorporated self-employed women are expected to be more responsive to the mandate. Unsurprisingly, the negative mandate effect on self-employment is clearly driven by unincorporated self-employment; the coefficient for the unincorporated is 0.96 percentage points and significant at the 1% level. In contrast, the effect on incorporated is near zero and statistically insignificant. These results indicate that the mandate in New Jersey leads to a 0.96-percentage-point decline in unincorporated self-employment among women of later childbearing age,

in contrast to a null effect in incorporated self-employment.

6.6 Effects in other states

Besides New Jersey, three other states have also enacted a mandate that only applies to employer-sponsored health insurance, including Texas (1987), California (1989), and Illinois (1991) during the sample period. Therefore, it is valuable to estimate whether mandates in these states also result in a similar negative impact on self-employment. To assess the external validity of a mandate in settings other than New Jersey, I estimate the same set of regressions but study any potential impact on self-employment in other mandate states. Specifically, I group mandate states into two groups: states with mandates that only apply to group plans (a similar mandate as in New Jersey) and states with mandates that do not solely apply to group plans. Table 14 presents the results using mandate states other than New Jersey. In column (1) of Panel A, the estimate of mandates using three states including California, Texas, and Illinois shows a negative and significant 0.6-percentage-point decrease in the propensity of being self-employed. The estimates are robust to different control age groups. Considering that mandates in California and Texas are weaker as a mandate-to-offer law and the prevalence of infertility is less common in 1980s and 1990s, this leads to a smaller magnitude of the estimated impact, compared with that of New Jersey. In contrast, the estimated effects from states with a mandate not solely applied to group plans, such as Massachusetts and Ohio, are consistently close to zero and statistically insignificant across specifications, as shown in Panel B of Table 14. These further results provide compelling evidence that my main results are indeed capturing a causal effect of reduced self-employment from the infertility insurance mandate instead of some contemporaneous shocks that affected only New Jersey. They also suggest that mandates expanding health insurance coverage that is employer-linked discourages self-employment, while a infertility insurance mandate applying to a greater scope of insurance market does not.

6.7 Effects on married men

Infertility is usually seen as a couple-level problem, so married men who are part of heterosexual couples might be directly treated as well.[23] Men of reproductive age can also experience fertility problems, leading to a demand for infertility treatment to manage male factor infertility. More importantly, married women can be insured as dependents on a husband's insurance plan; nearly 17% of employed married women were only provided health insurance via their spouses' employer (Simpson and Cohen [2017]). At the same time, married men can also be indirectly impacted, given that married couples can benefit from spousal knowledge spillovers that mutually reinforce each other's entrepreneurship decisions (Parker [2008]). To examine any potential impacts on men, the full specification is estimated for a sample of married men. A married man is considered to be treated if his wife is between the ages of 30 and 45. Table 15 presents the estimated effects for married men. Column (1) shows that the mandate also leads to a significant decline in the probability of being self-employed for married men. Compared with the impact on women (15% from the sample mean), the estimated impact on married men is smaller (9% from the sample mean). One explanation behind the weaker negative effects on married men could be that the entrepreneurial activities of men are less responsive to family responsibilities than that of women (Hundley [2001]; Eddleston and Powell [2012]; Wang et al. [2019]). Men generally could be more inclined than women to take on other responsibilities in place of parenting (Hoffman et al. [1978]; Berg et al. [1991]). At the same time, wives value having children more than husbands and are more involved in attempting to conceive (Pasch et al. [2002]). Overall, women have been found to be more treated than men, implying that unintended childlessness and corresponding treatment options might render a different meaning for men and women. In column (2) of Table 15, I explore a scenario of interacting the triple interaction term with an indicator for the wife being out of the labor force. Results show an even greater negative impact on self-employment for a husband whose wife is out of the labor force, which is consistent with the entrepreneurship lock mechanism.

[23]The focus on heterosexual couples is because same-sex marriage was not legally recognized in New Jersey during my sample period of 1990-2007. Since October 2013, same-sex couples have been able to legally marry in New Jersey.

7 Conclusion

Many economists and policymakers emphasize that entrepreneurship is a catalyst for economic growth and job creation. However, self-employment rates in the US have decreased over the past three decades; according to the US Bureau of Labor Statistics, the proportion of workers whose primary employment was self-employment declined from 11.4% in 1990 to just 10.0% in 2019. Social insurance programs can encourage entrepreneurial activities by reducing the risks of entering self-employment and easing credit constraints through reduced medical costs (Olds [2016]). But there can be welfare losses from inefficient policy design if it brings unintended consequences to the groups the policy is intended to protect. This paper provides evidence that an infertility insurance policy that tightens the link between health insurance and paid employment can reduce the number of women entrepreneurs.

In this study, I examine how state-level infertility insurance mandates requiring employers to cover infertility treatment affect women's entrepreneurship, measured by self-employment decisions. I use individual-level data from the March CPS and a triple difference approach to estimate intention-to-treat effects on the probability of self-employment among women of later childbearing age. I find unintended consequences of a 0.9-percentage-point decline in self-employment among women most likely to be affected by the mandates. The self-employment rate is found to significantly drop only in states that passed a mandate solely applied to employer-sponsored insurance policies. Further investigation shows that the negative effect is stronger for married women without an alternative insurance source from their spouse's employer. Together, these findings suggests that entrepreneurship lock can be a key channel driving the reduced self-employment. My findings are in line with the entrepreneurship lock argument that the strong link between health insurance and paid employment can limit entrepreneurship (Fairlie et al. [2011]).

This study has important policy implications for health insurance regulations and entrepreneurs. My research suggests that infertility insurance coverage expansion that distinguishes between group plans and individual plans can induce unintended consequences to some infertile individuals whom the policy is intended to protect. From this perspective, policymakers are encouraged to push for broader access and to equalize infertility coverage throughout the United States. Indeed, states are

increasingly engaging in efforts to expand the coverage, promote fertility equality, and eliminate discriminatory practices. For example, the mandate initially passed in 1989 in Connecticut was a mandate-to-offer law and only applied to group insurance plans. But in 2005, Connecticut passed a bill that not only amended its mandate to be a mandate-to-cover law, but also stipulated that individual plans are also subject to the mandate. Additionally, Illinois has a law in effect from January 1, 2022 that expands infertility insurance coverage by expanding the definition of infertility and including single individuals and LGBTQ+ couples as well. Despite continuing efforts in some regions, state-level mandates with a limited scope remain inadequate to fulfill the needs of the millions of Americans who grapple with infertility.

Although the development of additional policies is critical to equalize infertility coverage throughout the nation, moral elements associated with infertility treatment and its cost considerations make it difficult to draw policy conclusions. One common argument against broadening coverage involves cost concerns; mandates may raise the cost of insurance and increase the number of uninsured individuals. My findings highlight a possible inefficiency in the insurance market and raise concerns if high-quality female entrepreneurs are reluctant to initiate entrepreneurial activities because of limited access to reproductive healthcare. This paper serves as one of the first steps in connecting health insurance and women's entrepreneurship—a topic that deserves further exploration in future studies.

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Table 1: States with infertility insurance mandates

State	Year Enacted	"Cover" or "Offer"	IVF coverage	Market
West Virginia	1977	Cover	No	HMO
Maryland	1985	Cover	Yes	Ind & Group
Arkansas	1987	Cover	Yes	Ind & Group
Massachusetts	1987	Cover	Yes	Ind & Group
Montana	1987	Cover	Yes	HMO
Hawaii	1987	Cover	Yes	Ind & Group
Texas	1987	Offer	Yes	Group
California	1989	Offer	No	Group
Connecticut	1989, 2005	Offer, Cover	Yes, Yes	Ind & Group
Rhode Island	1989	Cover	Yes	Ind & Group
New York	1990	Cover	No	Ind & Group
Illinois	1991	Cover	Yes	Group
Ohio	1991	Cover		HMO
New Jersey	**2001**	**Cover**	**Yes**	**Group**
Delaware	2018	Cover	Yes	Ind & Group
Utah	2018	Cover	Yes	
New Hampshire	2020	Cover	Yes	Group
Colorado	2020 (effective 2023)	Cover	Yes	Group
Maine	2022 (effective 2024)	Cover		Ind & Group

Notes: This table provides a summary of state-based infertility insurance mandates in the United States. It reports the types of coverage and insurance market the mandate applies to. "Group" represents group health plans, mostly known as employer-sponsored health insurance plans that provided by an employer or by an employee organization (e.g., union). "Ind" represents individual health insurance plans that people purchase on their own through the individual marketplace, not through their employers. "HMO" represents health maintenance organization plans that have their own networks of doctors and hospitals and require a referral request to meet a specialist. Both employers and individuals can choose HMO plans. Connecticut modified its mandate from a mandate-to-offer law to a mandate-to-cover law in 2005. Utah's mandate is unique and requires Public Employees' Health Plan and Medicaid to provide certain coverage for patients with qualifying conditions. Despite the fact that Louisiana passed a law in 2001 prohibiting the exclusion of coverage for correctable medical conditions that result in infertility, Louisiana is not included in this table as it is considered to have no coverage mandate (American Society for Reproductive Medicine [2022]). Data come from a variety of sources, including Cole [1990]; Bitler and Schmidt [2012]; Kroeger and La Mattina [2017]; American Society for Reproductive Medicine [2022]; Resolve [2022]; National Conference of State Legislatures [2022] and legal sources in each state, such as New Jersey Public Law 2001 Chapter 236 (The State of New Jersey [2001]).

Table 2: Summary statistics

	(1) New Jersey	(2) Non-Mandate States	(3) Mandate States
Age	42.775	42.743	42.373
	(10.730)	(10.876)	(10.806)
Ever Married	0.827	0.868	0.838
	(0.378)	(0.339)	(0.369)
Non-Hispanic White	0.683	0.776	0.647
	(0.465)	(0.417)	(0.478)
Non-Hispanic Black	0.136	0.125	0.114
	(0.343)	(0.331)	(0.318)
Hispanic	0.116	0.056	0.161
	(0.320)	(0.230)	(0.367)
College and Above	0.307	0.234	0.262
	(0.461)	(0.423)	(0.439)
In the Labor Force	0.720	0.727	0.708
	(0.449)	(0.445)	(0.455)
Employed	0.685	0.698	0.675
	(0.465)	(0.459)	(0.469)
Self-Employed (SE)	0.044	0.061	0.057
	(0.206)	(0.240)	(0.231)
Unincorporated SE	0.027	0.045	0.043
	(0.163)	(0.208)	(0.203)
Incorporated SE	0.017	0.016	0.014
	(0.129)	(0.125)	(0.116)
Covered by Private Insurance	0.795	0.768	0.740
	(0.404)	(0.422)	(0.439)
Observations	26,171	466,247	343,618

Notes: This table presents summary statistics for women aged 25–64 from the March CPS 1990-2007. It shows the means of relevant variables by types of state. All summary statistics are computed using CPS population-representative weights. Standard deviations are included in parentheses. Non-Mandate states in column (2) include 36 states that did not have any mandate in place prior to 2007. Mandate states in column (3) include all states that passed a infertility insurance mandate prior to 2007, including New Jersey.

Table 3: Effects of infertility insurance mandate on self-employment of women

	(1)	(2)
Dependent variable	Self-employment	Self-employment
Post Mandate × Age 30-45	-0.0104***	-0.0092***
	(0.0015)	(0.0015)
Post Mandate	0.0061***	0.0057***
	(0.0012)	(0.0012)
Non-Hispanic White		0.0107***
		(0.0037)
Non-Hispanic Black		-0.0272***
		(0.0037)
Hispanic		-0.0194***
		(0.0027)
College and Above		0.0087***
		(0.0020)
State FE	Yes	Yes
Year FE	Yes	Yes
Age FE	Yes	Yes
Year FE*Age FE	Yes	Yes
State FE*Age FE	Yes	Yes
Mean of Dep	0.0602	0.0602
Obs	492,418	492,418

Notes: This table presents the estimates of the infertility insurance mandate in New Jersey on women's self-employment. Both columns present estimates based on a triple difference regression, with or without controlling for individual characteristics respectively. Regressions are weighted using the CPS sample weight. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 4: Robustness check: estimates with refined control group

Panel A: Main specification	
Control group is women aged 25-29 & 46-64	
Dependent variable	Self-employment
Post Mandate × Age 30-45	-0.0092***
	(0.0015)
Obs	492,418
Panel B: Robustness check	
Control group is women aged 25-29	
Dependent variable	Self-employment
Post Mandate × Age 30-45	-0.0070***
	(0.0018)
Obs	303,895
Panel C: Robustness check	
Control group is women aged 46-64	
Dependent variable	Self-employment
Post Mandate × Age 30-45	-0.0098***
	(0.0017)
Obs	429,297
Panel D: Robustness check	
Control group is women aged 50-64	
Dependent variable	Self-employment
Post Mandate × Age 30-45	-0.0106***
	(0.0022)
Obs	376,078
Panel E: Robustness check	
Control group is women aged 25-29 & 46-64 and single men aged 25-29	
Dependent variable	Self-employment
Post Mandate × Age 30-45	-0.0078***
	(0.0014)
Obs	518,811
State FE	Yes
Year FE	Yes
Age FE	Yes
Year FE*Age FE	Yes
State FE*Age FE	Yes
Controls	Yes
Mean of Dep	0.0602

Notes: This table compares the estimates from the main specification (Panel A) and from robustness checks with the refined control group (Panels B, C, D, and E). In Panel A, the control group is women aged 25-29 or 46-64. In Panel B, the control group is women aged 25-29. In Panel C, the control group is women aged 46-64. In Panel D, the control group is women aged 50-64. In Panel E, the control group includes women aged 25-29 or 46-64, as well as single men aged 25-29. Specifications include race/ethnicity and education controls. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 5: Robustness check: add sample restrictions

Panel A: Sample is all women (Main specification)	
Dependent variable	Self-employment
Post Mandate × Age 30-45	-0.0092***
	(0.0015)
Post Mandate	0.0057***
	(0.0012)
Mean of Dep	0.0602
Obs	492,418
Panel B: Sample is women in the labor force	
Dependent variable	Self-employment
Post Mandate × Age 30-45	-0.0134***
	(0.0018)
Post Mandate	0.0079***
	(0.0017)
Mean of Dep	0.0784
Obs	381,706
Panel C: Sample is women who are employed	
Dependent variable	Self-employment
Post Mandate × Age 30-45	-0.0136***
	(0.0018)
Post Mandate	0.0081***
	(0.0017)
Mean of Dep	0.0794
Obs	376,960

Notes: This table compares the estimates from the main specification (Panel A) and from robustness checks when different sample restrictions are applied (Panels B and C). In Panel A, the sample includes all women aged 25 to 64 for the years 1990 to 2007 from the March CPS. In Panel B, the sample is restricted to women in the labor force. In Panel C, the sample is restricted to employed women. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 6: Robustness check: estimates from synthetic control method

Panel A: Synthetic control method	
Dependent variable	Self-employment
Treatment effect	-0.0078*
	(0.0556)
Panel B: Weights of control states	
Control states	Weights
North Carolina	0.427
Mississippi	0.224
Delaware	0.113
Tennessee	0.100
District of Columbia	0.047
Indiana	0.015
South Carolina	0.013
Alabama	0.007
Georgia	0.005

Notes: Panel A reports the synthetic control estimate. Standardized p-value is estimated through permutation tests and reported in parenthesis. Panel B presents the estimated weights for control states when optimally weighting control states to construct a synthetic New Jersey. Some control states are assigned a weight smaller than 0.005 and are omitted from Panel B. Significance levels: * 10%, ** 5%, ***1%.

Table 7: Estimates from placebo tests

Panel A: Sample of single men	
Control group is single men aged 25-29 & 46-64	
Dependent variable	Self-employment of single men
Post Mandate × Age 30-45	0.0001
	(0.0057)
Post Mandate	-0.0076**
	(0.0035)
Mean of Dep	0.0700
Obs	74,922
Panel B: Refined treatment group of women 25-29	
Control group is women aged 46-64	
Dependent variable	Self-employment of women
Post Mandate × Age 25-29	-0.0031
	(0.0022)
Post Mandate	0.0064***
	(0.0016)
Mean of Dep	0.0596
Obs	251,644
Panel C: Pre-reform fake mandate (New Jersey, 1997)	
Treated group is women 30-45	
Control group is women aged 25-29 & 46-64	
Dependent variable	Self-employment of women
Post Fake Mandate × Age 30-45	-0.0007
	(0.0031)
Post Fake Mandate	0.0076***
	(0.0026)
Mean of Dep	0.0620
Obs	184,922

Notes: This table presents the estimates from three placebo tests. In Panel A, the main specification is re-estimated on the sample of single men aged 25-64. In Panel B, women aged 25-29 are placed in a treated group, while women aged 46-64 still serve as a control group. In Panel C, the sample is restricted to CPS 1994-2001 and a fake mandate is assigned to New Jersey that turns on in 1997. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 8: Whether effects vary with/without access to spousal coverage

Additional interaction: No access to spouse's employer-sponsored insurance (ESI)	
Dependent variable	Self-employment
Post Mandate × Age 30-45 × No Access to Spouse's ESI	-0.0076***
	(0.0006)
Post Mandate × Age 30-45	-0.0067**
	(0.0025)
State FE	Yes
Year FE	Yes
Age FE	Yes
Year FE*Age FE	Yes
State FE*Age FE	Yes
Controls	Yes
Mean of Dep	0.0725
Obs	309,412

Notes: This table presents differential effects by alternative access to health insurance through the spouse. The specification is refined by interacting the triple interaction term with "no access to spouse's employer-sponsored insurance (ESI)." The sample here is restricted to married women aged 25-64 since the spouse's insurance information is necessary. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 9: Heterogeneous effects on women of different ages

Dependent variable	Self-employment		
	(1)	(2)	(3)
Treated age groups	Age 30-35	Age 36-40	Age 41-45
Post Mandate × Treated age group	-0.0064**	-0.0188***	-0.0010
	(0.0026)	(0.0030)	(0.0029)
Mean of Dep	0.0580	0.0604	0.0614
Obs	338,808	155,265	264,328

Notes: This table presents heterogeneity effects by women's age. The female sample of treated age (30-45 years old) are grouped into three separate age groups: 30 to 35, 36 to 40, and 41 to 45. Each column displays estimates from a single regression with distinct treated age group of women specified above each column. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 10: Heterogeneous effects by women's education

Dependent variable	Self-employment	
	(1)	(2)
Education	College and above	Below college
Post Mandate × Age 30-45	-0.0251***	-0.0041**
	(0.0038)	(0.0019)
Mean of Dep	0.0688	0.0576
Obs	119,182	373,236

Notes: This table presents heterogeneity effects by women's education. The sample of analysis includes two subgroups of women, including those with a college degree or above and those with some college education or below. Each column displays estimates from a single regression with the distinct sample of women specified above each column. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 11: Heterogeneous effects by women's race/ethnicity

Dependent variable	Self-employment		
	(1)	(2)	(3)
Race/Ethnicity	Non-Hispanic White	Non-Hispanic Black	Hispanic
Post Mandate × Age 30-45	-0.0072***	-0.0083*	-0.0022
	(0.0017)	(0.0047)	(0.0041)
Mean of Dep	0.0683	0.0226	0.0374
Obs	369,701	53,773	42,944

Notes: This table presents heterogeneity effects by women's race/ethnicity. The sample of analysis includes three subgroups of women, including non-Hispanic white, non-Hispanic black, and Hispanic women. Each column displays estimates from a single regression with distinct sample of women specified above each column. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 12: Heterogeneous effects by women's marital status

Dependent variable	Self-employment	
	(1)	(2)
Marital status	Ever having married	Never married
Post Mandate × Age 30-45	-0.0118***	-0.0059
	(0.0018)	(0.0036)
Mean of Dep	0.0657	0.0312
Obs	429,545	62,864

Notes: This table presents heterogeneity effects by women's marital status. The sample of women aged 25-64 is separated into women who are or who have been married and women who have never married. Each column displays estimates from a single regression with distinct sample of women specified above each column. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 13: What types of self-employment are affected?

Dependent variable	Unincorporated Self-employment	Incorporated Self-employment
Post Mandate × Age 30-45	-0.0096***	0.0003
	(0.0012)	(0.0007)
Mean of Dep	0.0443	0.0159
Obs	492,418	492,418

Notes: This table presents estimated effects of the mandate on two types of self-employment activities, unincorporated and incorporated self-employment, respectively. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 14: Estimates from all mandate states except New Jersey

Panel A: all states with mandates that only apply to employer-sponsored plans			
Sample period: CPS 1980-2000			
Outcome	Self-employment	Self-employment	Self-employment
	(1)	(2)	(3)
Control age group	25-29 & 46-64	25-29	46-64
Post Mandate × Age 30-45	-0.0058**	-0.0077**	-0.0048*
	(0.0022)	(0.0036)	(0.0025)
Mean of Dep	0.0619	0.0619	0.0619
Obs	609,475	388,331	510,865
Panel B: all states with mandates that not only apply to employer-sponsored plans			
Sample period: CPS 1980-2000			
Outcome	Self-employment	Self-employment	Self-employment
	(1)	(2)	(3)
Control age group	25-29 & 46-64	25-29	46-64
Post Mandate × Age 30-45	0.0014	0.0023	0.0010
	(0.0027)	(0.0022)	(0.0034)
Mean of Dep	0.0585	0.0585	0.0585
Obs	650,226	407,935	548,798

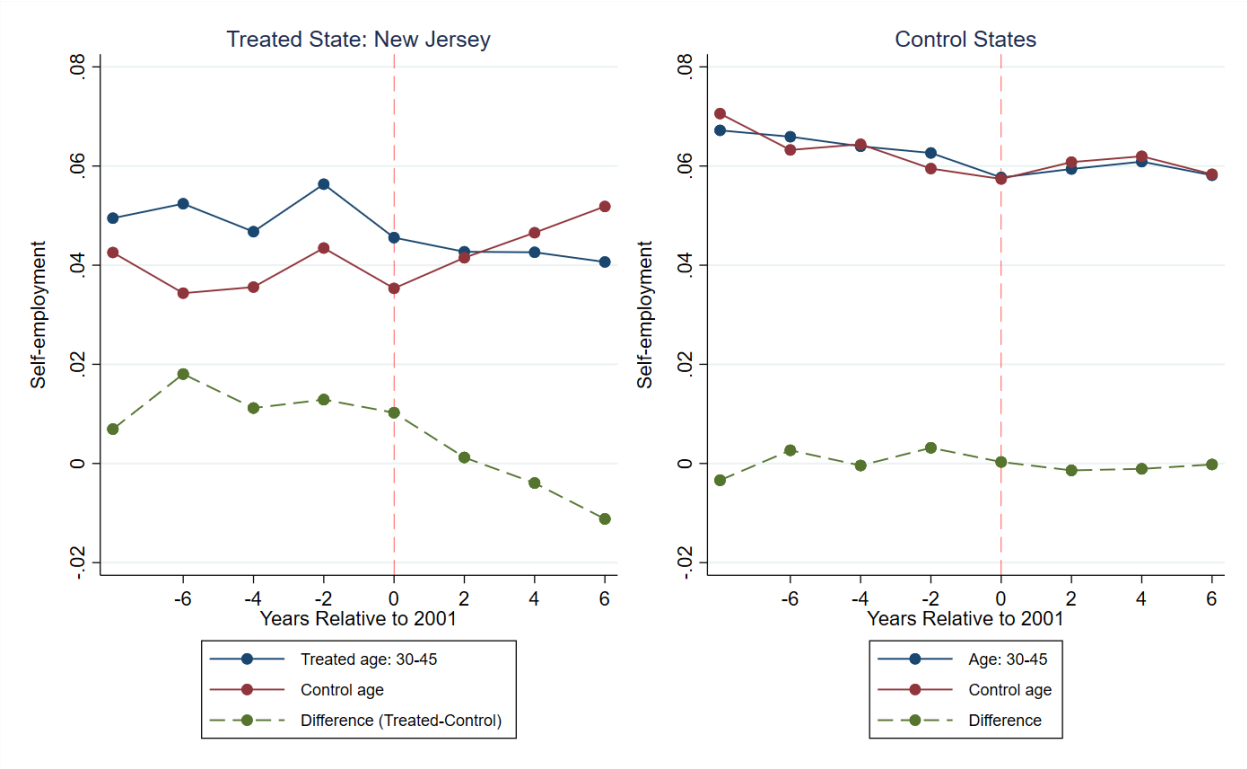
Notes: This table presents estimated effects of infertility insurance mandates on women's self-employment by types of mandate states. States in Panel A include Texas, California, and Illinois. They have mandates in place that only apply to group insurance plans. States in Panel B include those with mandates applying to individual and group plans as well as those with mandates applying to HMO plans. States in Panel B include West Virginia, Maryland, Arkansas, Massachusetts, Montana, Hawai, Connecticut, Rhode Island, New York, and Ohio. The sample includes women aged 25 to 64 for the years 1990 to 2000 from the March CPS. The main specification is presented in column (1). As a robustness check, results are estimated using different control age groups of women and displayed in columns (2) and (3). Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Table 15: Effects on married men

Treatment State: New Jersey		
	(1)	(2)
Dependent variable	Husband's Self-employment	Husband's Self-employment
Post Mandate × Wife's Age 30-45	-0.0128**	-0.0095*
	(0.0047)	(0.0049)
Post Mandate × Wife's Age 30-45 × Wife Out of Labor Force		-0.0111***
		(0.0011)
Mean of Dep	0.1438	0.1438
Obs	309,412	309,412

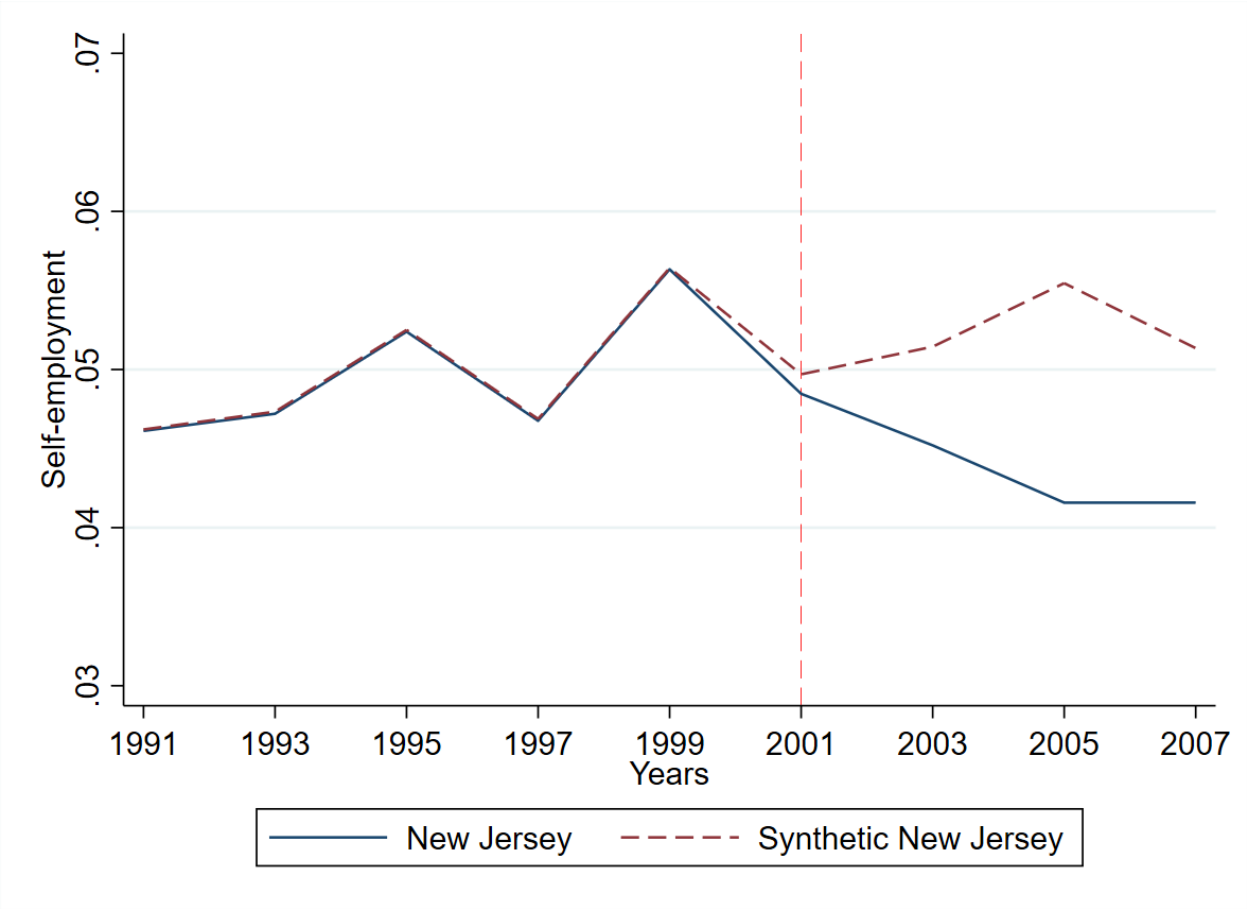
Notes: This table presents the estimates of the infertility insurance mandate in New Jersey on self-employment of married man. The sample consists of married men whose wives are aged 25-64. The treated group is defined as a husband whose wife is aged 30-45. The specification in the second column is refined by interacting the triple interaction term with "wife out of labor force." Regressions are weighted using the CPS sample weight. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.

Figure 1: Self-employment trends across states and age groups



Notes: This figure shows the weighted average of the proportion of women in self-employment in the mandate mandate of New Jersey and in control states by age groups of women. The green dashed line displays the age group differences in the self-employment rate for the treated and control states, respectively. The sample includes women aged 25 to 64 for the years 1990 to 2007 from the March CPS. Control age groups consist of women aged 25-29 or 46-64. Years are normalized and relative to the mandate year 2001.

Figure 2: Robustness check: synthetic control method



Notes: This figure shows the pre-mandate and post-mandate self-employment rate for the treated state New Jersey and the weighted average of control states (Synthetic-New Jersey). The synthetic control for New Jersey is constructed based on all pre-mandate (1990-2000) lags of self-employment. Estimation is conducted using "Synth" and "Synth Runner" packages (Abadie et al. [2010, 2015]; Galiani and Quistorff [2017]).

8 Appendix

Table A1: Estimated Effects on labor force participation

Dependent variable	Labor force participation
Post Mandate × Age 30-45	0.0065
	(0.0042)
Post Mandate	-0.0035
	(0.0035)
State FE	Yes
Year FE	Yes
Age FE	Yes
Year FE*Age FE	Yes
State FE*Age FE	Yes
Controls	Yes
Mean of Dep	0.7263
Obs	492,418

Notes: This table presents the triple difference estimate that measures the impact on labor force participation. The sample includes all women aged 25 to 64 for years 1990 to 2007 from the March CPS. Regressions are weighted using the CPS sample weight. Standard errors are clustered at the state level and presented in parenthesis. Significance levels: * 10%, ** 5%, ***1%.