The Incidence of Workplace Breastfeeding Benefits

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December 16, 2019

Abstract

Abstract: This paper investigates how workplace breastfeeding laws that require firms to provide a lactation room in the workplace affect the labor market outcomes of mothers of infants. Summers (1989) predicts that such mandated benefits depress the demand for mothers of infants and increase their supply and, thus, depress wages. Building on the insights of Lazear and Rosen (1990) and Goldin (2014), I argue that such mandated benefits can increase both the demand for and the wages of mothers of infants who have a strong propensity to increase their work attachment. Analyzing data in the National Immunization Survey and the Current Population Survey, I exploit the plausibly exogenous variation in the timing of state mandates on workplace lactation support. I find evidence consistent with my theoretical predictions.

Key words: Breastfeeding, Mandates, Maternal employment

JEL codes: J13, J22, J32

*Research Associate, Health Division, IMPAQ International. Email: sliu@impaqint.com. I am indebted to my PhD advisors, Daniel Berkowitz, Daniele Coen-Pirani, Julia Driessen, and Werner Troesken, at University of Pittsburgh. I also thank Arie Beresteanu, Rania Gihleb, Thomas Rawski, Luca Rigotti, Najeeb Shafiq, Allison Shertzer, Yang Song, Randall Walsh, Lily Yang, and Yuting Zhang, as well as participants in the Pitt Applied Micro seminar, the Pitt International Trade and Development seminar, the ALEA annual meeting, the APPAM fall conference, the Coase Institute workshop, the IAB-ZEW workshop, the PAA annual meeting, Peking University and the Pittsburgh Economics Medley for helpful suggestions. All errors are my own.

1 Introduction

The federal and state governments in the United States require employers to provide maternal benefits, including health insurance with comprehensive coverage of childbirth and maternity leaves with protected job security. Nevertheless, the labor market impact of these mandated benefits is controversial. Summers (1989) argues that these benefits depress wages because they increase the employers' hiring cost for working mothers and encourage working mothers to supply more labor. Moreover, there may be a decline in the total labor input, wherein the increase in mothers' labor supply is weaker than the fall in demand.

Evidence about the impact of such mandated benefits is mixed. Gruber (1994) finds that the costs of state-mandated health insurance coverage of childbirth substantially shift to the wages of the targeted group. In a study of nine European countries from 1969 to 1993, Ruhm (1998) finds that parental leave is associated with increases in women's employment and reductions in their relative wages at extended durations. Waldfogel (1999), who estimates the impact of the 1993 Family and Medical Leave Act, finds that mandated maternity leaves of up to twelve weeks have no significant negative effects on women's employment or wages.

This paper investigates the impact of another type of maternal benefits mandated at the workplace, breastfeeding support, which unlike the previously studied benefits such as the parental leave policies that reduce women's incentive of working, increases women's incentive of working. From 1995 to 2012, about half of the states enacted laws that require employers to provide the benefits.[1] Although the wording and detailed requirements on the breaks and space differ, most states mandate that employers must provide daily unpaid break time at the nursing employee's request and make reasonable efforts to provide a private and clean non-bathroom location.

Workplace breastfeeding support is an attractive setting in which to examine the

[1]With the exception of Utah, which passed the mandate in 2012, all of the other states that have passed the mandate did so before 2010, when the Affordable Care Act mandated the workplace breastfeeding benefits at the federal level.

labor market impacts of the mandated benefits because the reform lowers the workers' relative time costs of breastfeeding. This enables women with the most means and ability to work longer hours, which, in turn, increases their attachment to the workforce. The amount of breast milk output is determined by the frequency and thoroughness of milk removal; having breastfeeding breaks daily, usually 20 to 30 minutes every 3 to 4 hours, increases the duration of breastfeeding, allows young women to continue breastfeeding after they resuming working, and prevents the early weaning of the child.

Exploiting the plausibly exogenous variation in state-level mandates, I start by estimating the impact of workplace breastfeeding support. As I will argue subsequently, the temporal and spatial variation of the law is plausibly orthogonal to a multitude of state-level characteristics. I use two nationally representative data sets, the Current Population Survey and the National Immunization Survey. Breastfeeding outcomes include the initiation (if the mother ever breastfeeds) and the duration (the number of weeks) of breastfeeding. The labor market outcomes include outcomes during the reference week of the survey, such as labor force participation, hours worked last week, whether hourly wages were received, and the hourly wage if paid by the hour. I also examine outcomes during the previous year of the survey, such as employment last year, whether the mother worked full time last year, and last year's hourly wage.

Using a difference-in-differences framework, I find that workplace breastfeeding benefits increase the number of weeks of breastfeeding by 4.3%, although they have no impact on the initiation of breastfeeding. Using a triple difference-in-differences framework with males as the primary control group, I find that the labor force participation rate of mothers of infants increased by 1.16 percentage points. The married mothers work for 5% longer hours per day and receive a 4.6% higher wage; the single mothers do not work longer and receive a 3.8% lower wage. There appears to be little sorting of the observational characteristics, except that the married mothers in the treated states are less likely to be high school dropouts and are more likely to come from households with higher incomes; single mothers do not differ according to the treatment status. The

results are robust to a series of alternative specifications: using males who have infant children and females who do not have children as alternative control groups; using the event-study frameworks for the labor market outcomes; and using the hazard models for results on the duration of breastfeeding.

The findings are consistent with a framework of Summers (1989) extended to allow two separate labor markets for workers who have high and low productivity—i.e., the ability to increase their work attachment by working longer hours. The differential changes of supply and demand in the two markets drive several differential effects of breastfeeding support on mothers who have high and low levels of work attachment. First, breastfeeding support at the workplace increases the cost of hiring for both types, and it shifts the demand curves for both types downward. Second, both types of workers value the breastfeeding benefits and increase their labor supply. Third, the provision of longer hours of work (i.e., the increase of work attachment) leads to an increase in the desirability of the relatively more productive workers, which, in turn, leads to an upward shift of the demand curve for this high type. The upward shift of demand outweighs the downward shift of demand caused by higher costs, and so the wages and the employment of the relatively more productive mothers both increase. In contrast, the wages of less productive mothers decrease, although the change of their employment is ex ante ambiguous; the empirical results for less productive mothers seem to suggest that employment increases and that the shift of supply is larger than the shift of demand.

I assume that the workplace breastfeeding benefits affect the high- and low-type mothers differently, which is consistent with the literature on the differential compensating methods used by firms for skilled- and nonskilled-workers and for the male and female workers. For example, my assumption that workers differ in their ability to increase job attachment mirrors Lazear and Rosen (1990)'s assumption that workers differ in their willingness to leave firms. They argue that job promotion choices depend on the worker's propensity to remain on the job, which is important because any firm-specific learning is lost when a worker leaves the firm.

To estimate the incidence of the benefits in cross-section and in time series, I next estimate their spill-over effects (e.g., how workplace breastfeeding benefits affect the mothers of older children), dynamic effects (whether several years postpartum we see an effect on the labor market outcomes of mothers who had access to the benefits during the first postpartum year), and lagged effects (whether in females with infant children the passage of the workplace breastfeeding benefits created a one-time shock or a stable effects over many years). I find that the spill-over effects track the pattern of the dynamic effects, partly because of the mechanical result of the difference-in-differences specification. However, the workplace breastfeeding support demonstrates a lagged effect that is different from the dynamic and spill-over effects, and that persists for up to eight years after the enactment. These findings suggest that workplace breastfeeding support has a durable impact on the labor market outcomes of the mothers of infants.

Then, exploiting the heterogeneity in the details of the state mandates—whether state mandates allow longer years of benefits (three versus one year post-birth), allow breastfeeding in addition to pumping, prohibit discrimination, or have whistle blowers and/or retaliation protection—I estimate the heterogeneous effects of the workplace breastfeeding benefits and compare these with the benchmark effects. I find that when the workplace breastfeeding benefit is offered for more than one year or when discrimination against employees who request breaks is prohibited, the employment of the mothers of infants significantly improves. Allowing both breastfeeding and pumping does not have a significant effect but having retaliation protection does. Simply encouraging the provision of the workplace breastfeeding benefits may lead employers to hire fewer nursing mothers; but when hired, those mothers work longer hours and receive higher wages. These findings seem to imply that employers can discriminate against the less productive mothers on the extensive margins.

Finally, to investigate the channels, I examine occupational differences in temporal flexibility at the workplace, as defined in Goldin (2014), to see if the effects differ along the five dimensions of flexibility: time pressure, contact with others, establishing and

maintaining interpersonal relationships, structural vs. unstructural work, and freedom to make decisions. I find that the main impact of the workplace breastfeeding benefits is robust to the additional control of the temporal flexibility at occupational level. In addition, in occupations that have less flexibility, the increase in labor force participation is smaller, the increase in hours of work is larger, and the increase in the probability of working full-time is larger. These findings are consistent with Goldin (2014) who demonstrates that firms reward individuals who are willing to work long hours and in particular hours: jobs that provide less temporal flexibility often require higher human capital and are winner-take-all positions. These are also positions for which considerable work hours lead to a higher chance of promotion and a larger reward.

This paper contributes to three threads of literature. First, the paper contributes to the literature that examines the factors that determine the initiation and duration of breastfeeding. For example, Jayachandran and Kuziemko (2011) find that the preference for sons impacts the duration of breastfeeding; Chatterji and Frick (2005) show that the timing and intensity of returning to work affects the probability of initiating and the duration of breastfeeding. To the best of my knowledge, this paper is the first to show that breastfeeding support at the workplace causally affects the duration of breastfeeding.

Second, this paper contributes to the literature that examines the factors that determine the employment and wages of women who have young children. Previous studies have found that the female labor supply increases: if women have less commuting time (Black et al., 2014); if the mother or mother-in-law lives nearby (Compton and Pollak, 2014) or works (Fernández et al., 2004); if during the WWII the state drafted more males (Acemoglu et al., 2004); where generous childcare subsidies or child care services are available (Baker et al., 2008; Lefebvre and Merrigan, 2008; Cascio, 2009; Bauernschuster and Schlotter, 2015); if women spend less household expenditures on day care (Blau and Robins, 1988; Connelly, 1992; Blau and Currie, 2006; Hardoy and Schøne, 2015); if women have generous maternity leave (Baker and Milligan, 2008); and if women

can hire foreign domestic workers as affordable live-in help (Cortes and Pan, 2013). To the best of my knowledge, this paper is the first to evaluate the causal impacts of the workplace breastfeeding support on women's employment and wages.

Third, this paper contributes to the literature that devises quasi-experimental legal changes to identify the causal effects of labor market policies (Gruber, 1994; Angrist and Evans, 1998; Klerman, 1999; Levine et al., 1999; Waldfogel, 1999; Bailey, 2006; Baker and Milligan, 2008; Rossin, 2011; Blau and Kahn, 2013). For example, Bailey (2006) uses plausibly exogenous variation in state consent laws to evaluate the causal impact of the birth control pill on women's labor force participation. Similarly, Baker and Milligan (2008), who exploit a significant increase in Canadian maternity leave mandates, find very large increases in mothers' time away from work post-birth and in the attainment of critical breastfeeding duration thresholds. To the best of my knowledge, this paper is the first to evaluate the impact of state mandates on workplace breastfeeding support. My finding that workplace breastfeeding benefits increase wages, is different from the predictions made by Summers (1989) and Gruber (1994). My findings also contributes to the theoretical understanding of the impact of the mandated benefits.

The rest of the paper proceeds as follows. Section 2 reviews the relevant background information on breastfeeding and laws that affect workplace breastfeeding support. Section 3 outlines a simple theoretical framework, while Section 4 describes the data. Section 5 presents the empirical strategy and the results of breastfeeding outcomes. Section 6 presents the empirical strategy and the results for the labor market outcomes. Section 7 investigates the possible mechanisms and Section 8 presents additional results for the labor market effects. Section 9 concludes.

2 Background

2.1 Benefits of breastfeeding

Breastfeeding has been widely examined in both the medical and the economic literatures. In the medical literature there is broad consensus about the health benefits of breastfeeding for both the mother and the baby. For mothers, breastfeeding has been linked to a decrease in postpartum bleeding, an earlier return to pre-pregnancy weight, and a reduced risk of breast cancer, type 2 diabetes, and postpartum depression. The potential health benefits for breast milk-fed children are extensive: reduced risk of ear, skin, stomach, and respiratory infections; fewer cases of diarrhea; and less sudden infant death syndrome. Over the longer term, breast milk-fed children have a reduced risk of obesity, type 1 and type 2 diabetes, asthma, and childhood leukemia (United States Breastfeeding Committee, 2010; Rothstein, 2013).

The results of economics examinations of the causal impacts of breastfeeding on health and cognitive outcomes have been mixed. For example, Baker and Milligan (2008) found that additional breastfeeding had no impact on maternal and child health outcomes, while Belfield and Kelly (2012) found that breastfeeding protects against obesity and improves cognitive outcomes at 24 months and 54 months. Rothstein (2013) found a small, positive, and statistically significant effect of breastfeeding on the cognitive test scores of young children, but within-sibling results are insignificant.

2.2 Historical trend of breastfeeding

During the 1800s, more than 95% of infants in the U.S. were breastfed, often for two to four years (Andrews, 2012). An alternative is cow's milk, which, if tainted, can lead to diarrhea and other illnesses. With the pasteurization of milk and the sterilization of feeding vessels, artificial milk became a safe and marketable option. During the 1920s, scientists also began developing non-milk-based formulas for infants allergic to cow's milk. The first soy flour-based non-milk formula became available to the public in 1929

(Fomon, 2001). As formulas evolved, manufacturers advertised directly to physicians. In 1929, the American Medical Association formed the Committee on Foods, which approved the safety and quality of the non-milk formula composition (Stevens et al., 2009). During the 1940s, formula-feeding was the norm in the United States, and fewer than 30% of American babies were fed from the breast (Andrews, 2012).

By the 1950s, physicians and consumers had come to regard formula as a well-known, popular, and safe substitute for breastmilk, and breastfeeding steadily declined until the 1970s (Fomon, 2001). Figure 1 and Figure 2 are taken from Ryan et al. (2002), who obtained the data from the Ross Laboratories Mothers' Survey. They show trends in breastfeeding initiation and duration from the 1960s through the early 2000s. Although the popularity of breastfeeding decreased during the 1980s, since 1990 there has been a resurgence of breastfeeding. Figure 3 and Figure 4, which are based on data from the National Immunization Survey, show that the initiation and duration of breastfeeding has continued to grow into the 2000s. The American Academy of Pediatrics (United States Breastfeeding Committee, 2010) currently recommends exclusive breastfeeding (only breast milk, without water, formula or solid food) for the first six months of a child's life and then continued breastfeeding through at least the first year. In 2014, the percentage of mothers who have breastfed is 79.2%. The percentage of mothers who are still breastfeeding at various intervals after birth decreases quickly: 49.4% in the sixth month but only 26.7% in the twelfth month (Centers for Disease Control and Prevention, 2014).

2.3 Federal laws regarding workplace breastfeeding support

In 1981, the U.S. Court of appeals, Fifth Circuit, ruled that breastfeeding is a constitutional right that is linked to the protected liberties of "individual decisions respecting marriage, procreation, contraception, abortion, and family relationships." The court held that a public employer's interference with a woman's decision to breastfeed must "further sufficiently important sate interests and be closely tailored to effectuate only

those interests." However, the US supreme court has not yet examined the ruling, which is considered an anomaly (Murtagh and Moulton, 2011).

Discrimination against breastfeeding is not equivalent to discrimination based on gender, pregnancy, or disability. Breastfeeding is not protected by Title VII of the Civil Rights Act of 1964, which prohibits discrimination on the basis of gender; nor is it protected by the Pregnancy Discrimination Act of 1978, which amended Title VII to protect against discrimination "because of or on the basis of pregnancy, childbirth, or related medical conditions." Breastfeeding is a normal condition associated with pregnancy, and the courts have consistently ruled that it is not a disability or protected by the Americans With Disabilities Act (Murtagh and Moulton, 2011).

By allowing eligible employees to take a total of 12 weeks of unpaid maternity leave, the Family Medical Leave Act of 1993 indirectly promotes breastfeeding. To qualify, eligible employees must have worked for at least the 12 previous months and for a minimum of 1250 hours, must reside within 75 miles of the place of work, and must work for businesses that employ at least 50 people.

The first federal law to directly support breastfeeding at the workplace was the Patient Protection and Affordable Care Act of 2010. Section 4207 of the Affordable Care Act, which amends the Fair Labor Standards Act of 1938, requires employers to provide reasonable break time and a private location other than a bathroom to express milk for a child aged up to 1 year. The breaks are unpaid. Eligible employees are those covered by the Fair Labor Standards Act's overtime provisions. Prior to the Affordable Care Act of 2010, legal support of breastfeeding was provided at the state-level only.

2.4 State laws that provide workplace breastfeeding support

Table 1 lists the years that various states passed the "Workplace law." It summarizes state laws that require employers to provide unpaid break time and a special space for expressing breast milk. States that have passed state laws that support breastfeeding at workplace, such as Hawaii, also are included. I summarized the data using the

website of National Conference of State Legislatures[2], and tables in Andrews (2012) and Abdulloeva and Eyler (2013). Texas was the first state to pass a version of the workplace breastfeeding support law.

The details of workplace law differ from state to state. Some states specify the frequency of the breaks; Oregon, for example, requires "unpaid 30-minute breaks during each four-hour shift to breastfeed or pump." Others, such as Georgia, simply require "daily, unpaid break time." Requirements about the duration of the benefits also differ. Colorado allows for up to two years after the child's birth, while Maine allows up to 3 years. Some states do not specify the number of years that are protected. Details about the space also vary. Illinois requires "a room or other location, other than a toilet stall, where an employee can express her milk in privacy," while Indiana goes so far as to require that the employer "make reasonable efforts to provide for a refrigerator to keep breast milk that has been expressed."

Some state mandates specify that discrimination is prohibited. For example, Maine stipulates that "the employer may not discriminate against an employee who chooses to express breast milk in the workplace." Other states allow for exemptions. Georgia, for example, stipulates that "the employer is not required to provide break time if to do so would unduly disrupt the workplace operations."[3]

As for enforcement, some states establish a specific committee that collects information about possible violations. For example, Rev. Stat. 367-3 requires the Hawaii Civil Rights Commission to collect, assemble and publish data concerning instances of discrimination involving breastfeeding or expressing breast milk in the workplace. Other states specify penalties against violations. California requires that "(a) An employer who violates any provision of this chapter shall be subject to a civil penalty in the amount of one hundred dollars ($100) for each violation; (b) if, upon inspection or investigation, the Labor Commissioner determines that a violation of this chapter has occurred, the

[2]http://www.ncsl.org/research/health/breastfeeding-state-laws.aspx, accessed April 2015.

[3]In one case study, Henry et al. (2011) found that employers' evaluation of feasibility was related to the size of the business. According to anecdotal evidence that they provide, some employers found it hard to define privacy in determining an appropriate space, and some employers reported that providing the breaks disrupted the productivity and elicited protest from coworkers.

Labor Commissioner may issue a citation." Oregon specifies that "In addition to any other penalty provided by law, the commissioner may assess a civil penalty not to exceed $1,000 against any person who intentionally violates ORS 653.077 or any rule adopted thereunder."

2.5 Breastfeeding breaks at the workplace

Attitudes in the workplace about breastfeeding affect whether mothers initiate and continue breastfeeding for the recommended duration. Educational interventions as well as counseling, support and training can improve the initiation rates during the hospital stay and for the next few weeks. Mothers who do not breastfeed may not know the benefits of breastfeeding, and those who stop early report difficulty with technique or express concerns that their child is not getting enough food (Baker and Milligan, 2008). Most often, the principal impediment to prolonging breastfeeding duration past the initial weeks is work. Surveyed mothers say the need to return to work is one of the main reasons that they stop breastfeeding at about six weeks and it is the principal reason that many do not breastfeed for longer durations (Schwartz et al., 2002; Fein and Roe, 1998).

Breastfeeding breaks during workdays facilitate continuing breastfeeding. The breast milk output is determined by the frequency and thoroughness of milk removal. An exclusively breastfed baby (under six months) feeds between 8 and 14 times per 24 hours. If mother and child are separated for more than a few hours, the woman herself must express milk, both to maintain production and to ensure her own health and comfort. Milk left in the breast beyond 3 to 4 hours signals the body to slow its rate of production and decrease the woman's total daily output, which leads mothers to stop breastfeeding and use formula (United States Breastfeeding Committee, 2010). Using the 2008 Infant Feeding Practice Survey, Fein et al. (2008) found that during the first month after returning to work, 31.8% of the workers keep the infant at work and breastfeed during the work day; 7.9% go to the infant to breastfeed during the

work day; 2.9% have the infant brought to them to breastfeed during the work day; 52.7% pump milk and save it for the infant; 0.6% pump and discard the milk; and only 15.9% neither pump nor feed the infant during the work day because they have stopped breastfeeding. As the proportion of women participating in the labor force after giving birth has grown, workplace attitudes about breastfeeding have increasingly affected mother's decisions about breastfeeding and whether or when to return to work postpartum. In 2010, 58.8% of women with infant children were in labor force; in 1990 that percentage was only 48.9% (the Current Population Survey).

Providing breastfeeding support at the workplace incurs a cost to the employer. According to estimates provided by the Minnesota Department of Health and the Texas Department of Health, the costs of providing a special space and basic amenities, such as a table, chair, sink, and storage, range from $145 for minimum accommodation to $525 for maximum accommodation. The costs will be higher if the employer provides additional benefits, such as coverage of the cost of pumps. An employee could use her own manual/electric pump, or she could purchase and use an individual kit when her employer rents a hospital-grade, heavy-duty multi-user pump.

2.6 The validity and relevance of the law as a natural experiment

For two reasons, the law regarding workplace breastfeeding support provides an ideal setting to study the causal impact of work on breastfeeding. First, since the 1993 change of the Fair Labor Standards Act (FLSA), the U.S. has not experienced any change in policies that might affect breastfeeding decisions. In particular, state laws that regulate workplace breastfeeding support, which were passed during the late 1990s and 2000s, provide an opportunity to examine changes in recent breastfeeding patterns.[4] Second, only 24 states and the District of Columbia passed a version of the law, and they passed

[4]The first state law that mandated workplace breastfeeding support passed in 1995. Thus, the 1993 change in the FLSA affected all states, and its effects can be absorbed by the common year fixed effects, which poses no threat to identifying the effects of the state laws.

it in different years; this difference in timing creates variation in the degree of exposure to workplace breastfeeding benefits, which, in turn, provides an opportunity to identify causal effects.

Figure 5 displays geographical variation in the timing of the workplace breastfeeding law. There is no clear spatial pattern to the passage and timing of the law. The figure provides visual evidence that the passage of the law was spatially random.

One concern is that the passage of state laws might be correlated with prior levels of breastfeeding; that is, states that already have high or low rates of breastfeeding might pass the law to encourage or further increase the rate of breastfeeding. My inspection of the institutional background indicates that both possibilities are plausible. For example, Florida passed its law as "an endorsement of the importance of Florida infants being breastfed and protect a mother's right to breastfeed whenever and wherever she needs to," and because "Florida has one of the lowest breastfeeding rates in the nation...This bill would...make women more secure in their right to breastfeed."[5] In contrast, Minnesota, which passed a version of the law in 1999, has one of the highest breastfeeding rates in the country.

State level mandates can be used as a quasi-experiment to identify the causal impact of workplace breastfeeding benefits on women's feeding and labor market outcomes only if the mandates do not reflect pre-existing differences in state-level characteristics. Next I provide empirical evidence that initial state-level characteristics cannot predict the passage and the time lag of the regulation.

I examine state-level characteristics computed for all 50 states and the District of Columbia using the 1990 IPUMS Census 1% sample. The variables include characteristics of the total population of the state and women of child-bearing age. I also use the ideology measures for individual states published in Berry et al. (1998). For example, characteristics of the total population include the percentage of state population that: lives in the central metropolitan area, is white, is in the labor force, and is employed. Also important is average wage income; average welfare income from the government;

[5] http://www.flbreastfeeding.org/legislation.htm, accessed April 2015.

average transfer income received for the child; average firm size; and the percentage of women who are aged between 15-21, 22-30, and 31-44, are of child-bearing age (aged 15-44), are college graduates, are single, are in the labor force, are employed, or have child/children. Ideology scores include those of the Republican Party, the Democratic Party, the governor of the state, the state as a whole, and citizens. These variables are proxies for the degree of conservativeness of the various states (Berry et al., 1998).

Table 2 shows that no systematic differences distinguish states that did or did not pass the law. The dependent variable is a dummy variable that equals one if the state passed the law by 2010 and 0 otherwise. Each cell shows the point estimate and standard error of the state-level characteristics of interest from a regression of the dependent variable on these characteristics. The regressions are weighted by each state's population. Only 2 of the 21 parameters are statistically significant, which suggests that passage of the law is plausibly exogenous. The significant parameters suggest that certain scenarios are particularly possible. For example, people who live in central metropolitan areas are especially likely to work for large firms for whom workplace benefits are critical. In these areas, workers are especially likely to push for passage of the workplace law. Similarly, if a large percentage of the residents of a state are women aged 31-44, politicians might be likely to appeal to these residents by passing the law. These characteristics cannot jointly predict the passage of the law; the F-statistics is 1.51.

Table 3 demonstrates that state level characteristics cannot predict whether some states passed the law earlier than others. The dependent variable is the actual year a state passed the law, minus 1995, which is the first year the law was passed—in other words, the time lag of the passage of the law. Almost all of the parameters, except for one—the average welfare income—are statistically insignificant, which indicates that the timing of the passage of the law is independent from state-level characteristics. If regressing the time lag on all characteristics, the joint F-statistics is 1.38, which, too, is insignificant.

Table 2 and Table 3 offer evidence that the issue of selection into passing the law is

not significant among the observed state level characteristics that one could test using the above method. Like Altonji et al. (2005), I assume that if the degree of selection on the observed characteristics provides insight about the degree of selection on the unobserved characteristics, it is reasonable to conclude that the state mandates on the workplace breastfeeding benefits seem to be a valid quasi-experiment. To further control for the unobserved state-level characteristics, I include in the empirical analysis state fixed-effects to control for the unobserved state level characteristics that do not vary by year, state-specific linear/quadratic time trends to control for the unobserved state level characteristics that vary within each state by year linearly/quadratically, and in the robustness tests the census-region-by-year fixed-effects to control for the unobserved region-specific characteristics that vary by year.

Because of the limitations of the data, one cannot directly observe whether employers actually provide the mandated benefits. According to the Employer Benefits Survey, the percentage of employers that provide workplace breastfeeding benefits has gradually risen. For example, the percentage of employers that provide workplace breastfeeding rooms increased from 25% in 2009 to 34% in 2013. Thus, it is plausible to interpret the empirical results as an "intention to treat" effect rather than a "treatment on the treated" effect (Angrist and Pischke, 2008).

3 Theoretical Framework

In this section, I discuss, first, the standard framework on the mandated benefits and, second, how the model should be modified when we consider workplace breastfeeding benefits and derive its implications.

Summers (1989) offers the standard framework for comparing the welfare implications of public provision and mandated benefit programs. Figure 6 illustrates how mandated benefits affect the wages of those who receive the benefits. Because it is costly to provide these benefits, the demand curve shifts downward, by an amount equal to the monetary costs of the benefits. If workers value the benefits, their supply curve

should shift downward; the magnitude of the shift depends on how much workers value the benefits. Depending on the relative magnitudes of the shifts in the supply and the demand curve, the new equilibrium will always have a lower wage, although the change in employment can occur in both directions.

Figure 7 illustrates my proposed model. Two types of workers—those with high and those with low productivity—differ in their ability of increasing their work attachment by working longer hours. Barriers separate the two markets, which I refer to as high-type and low-type markets. Differential changes in supply and demand in the two markets drive the differential effects of breastfeeding support on mothers who have high or low levels of productivity.

First, breastfeeding support at the workplace increases the cost of hiring both types because, as Oi (1962) proposes, the cost of employment includes both the wage and the cost of hiring and training. The latter is, in effect, an investment by the firm in its labor force, and it creates an element of capital in the use of labor.[6] The additional costs of hiring shift the demand curves for both types downward.

Second, both types of workers value the breastfeeding benefits and increase their labor supply. It is reasonable to assume that the high-type workers increase their supply by a larger amount than the low-type because it is easier for them to increase the work attachment and increase the hours of work, although the relative magnitudes do not affect the framework's predictions.

Finally, the provision of longer hours of work—that is, an increase in the work attachment—leads to an increase of the desirability of the relatively more productive workers, which, in turn, leads to an upward shift in the demand curve for the high type only. Because this upward shift of demand outweighs the downward shift of demand the wages and employment of the relatively more productive mothers both increase. In

[6]The assumption that labor is a quasi-fixed factor is essential in explaining short-run labor market behaviors such as occupational differences in the stability of employment and wages. Oi (1962) argues that because the firm incurs certain fixed employment costs, such as hiring and training costs, the amortization of these fixed employment costs drives a wedge between the marginal value product and the wage rate. This creates buffer absorbing short-run variations in product demands, which leads to occupational differences in the stability of employment and wages.

contrast, the wages of the less productive mothers decrease, although the change in their employment is ex ante ambiguous.

My assumption, that the heterogeneous effects of workplace breastfeeding benefits affect the high- and low-type mothers differently, is consistent with the literature on the differential compensating methods that firms use for skilled- and nonskilled-workers and for male and female workers. For example, Lazear and Rosen (1990) assume that more productive jobs coexist with less productive jobs and that job promotion choices depend both on the worker's ability and her propensity to remain on the job, which is important because any firm-specific learning is lost when a worker leaves the firm. My assumption that workers differ in their ability to increase job attachment mirrors Lazear and Rosen's assumption that workers differ in their propensity to leave firms (females are more likely than males to leave, and thus they receive a lower wage).

Similarly, Goldin (2014) argues that any explanation of the residual of gender-wage gap should rely on a labor market equilibrium that has compensating differentials and, in particular, examines how firms reward individuals who can work long hours and particular hours. My assumption that productivity is the ability to increase the work attachment is consistent with Goldin's (2014) key idea that persistence and continuous time on the job matter for the residual of the gender-wage gap.

In summary, following Summers (1989), I extend the standard framework on mandated benefits by assuming that there are two types of workers who differ in their levels of productivity, which we can also describe as the ability to increase the work attachment. I derive the following implications for mandated breastfeeding benefits: for the more productive mothers, their wages and employment both increase; for the less productive mothers, their wages decrease, although the change on employment is ex ante unclear. In the next few sections I test these hypotheses empirically.

4 Data

I examine data from two nationally representative surveys. First, to estimate the effects on the labor market outcomes, I use the March Current Population Surveys (CPS), 1990-2010, which I downloaded from the IPUMS. I do not include years later than 2010 because on March 23, 2010, the Affordable Care Act amended the Fair Labor Standards Act and made the provision of reasonable break time and space for an employee to express breast milk a federal mandate. To the extent that women's labor market outcomes depend on their marital status or, in the case of married individuals, their partner's characteristics, I merge partner's characteristics using the spouse location variable. The spouse characteristics include age, levels of education, race, and labor force participation status.[7] The main sample of interest consists of people aged 18-44. Because our identification comes from state level mandates, and to reduce confounding factors that are linked to migration, I drop individuals whose migration status one year ago was moving between states, moving from abroad, or unknown. My sample includes individuals who during the previous year of the survey have continued to reside in the same house, have moved only within their county, or have moved between counties but have remained in the same states.

Second, to estimate the effects on the breastfeeding outcomes, I use the National Immunization Survey (NIS) waves of 2003-2013; the sample consists of babies born between 2001 and 2010.[8] The NIS is conducted jointly by the National Center for Immunizations and Respiratory Diseases, the National Center for Health Statistics, and the Centers for Disease Control and Prevention. It is the only source of nationally representative repeated cross-sectional data about the initiation and duration of breastfeeding. The NIS has collected information on breastfeeding behavior since 2003. The feeding outcome

[7]The CPS's spouse location variable also defines non-married partners as spouses. Therefore, one can have a spouse without being married.

[8]The NIS data do not report the baby's year of birth, but they do report the babies' age as a categorical variable: 19-23 months, 24-29 months, and 30-35 months. I estimate the year of birth on the basis of the year of the survey and the age categories. First, I subtract from the survey year of the babies in these three age categories by 1.75 (=(19+23)/24), 2.21 (=(24+29)/24), and 2.71 (=(30+35)/24), respectively. Then, to find the actual years of birth I round the numbers up or down.

variables of interest are determined by the answers to the following two questions: 1. Was [FILL CHILD'S NAME] ever breastfed or fed breast milk? 2. How old was [FILL CHILD'S NAME] when [FILL CHILD'S NAME] completely stopped breastfeeding or being fed breast milk? These answers are generated from recalled memory. Because the measurement error of the dependent variable can be absorbed by the disturbance of the regression and ignored as long as the regressors are measured properly (Greene, 2008, p.326), one need not be concerned about the measurement error of these recalled variables.

5 Empirical results on breastfeeding

5.1 Econometric frameworks

Because the unit of observation in the NIS for breastfeeding outcomes is each baby, the main framework is a difference-in-differences, or a DD specification:

$$y_{ist} = \alpha + \beta Workplace_{st} + X_{ist}^{'}\Gamma + \theta_s + \theta_t + \theta_s \cdot t + \epsilon_{ist}, \tag{1}$$

where the outcome variable is one of the following variables: $EverBf_{ist}$, a dummy variable that equals one if the baby is ever breastfed, or 0 otherwise; $log(WeeksBf_{ist})$, the log of the number of weeks of breastfeeding, where the number of weeks is censored at 104 weeks.

The variable $Workplace_{st}$ is a dummy variable that equals one if the state s passed a version of the workplace breastfeeding support mandates during year t; otherwise it is 0. The parameter β, which is the parameter of interest, can be interpreted as the causal impact of providing workplace breastfeeding benefits on the outcome variables, under the identifying assumption that access to the law is orthogonal to the unobserved characteristics that also affect the baby's feeding pattern at the individual level. Therefore, one needs to control for the observed baby and mother characteristics, state (θ_s) and year fixed-effects (θ_t), and state-specific time trends ($\theta_s \cdot t$). X_{ist}, which is the vec-

tor of covariates, includes the following characteristics: baby's gender; race categories (Hispanic, black, and other; white is the omitted category); a dummy variable that equals one if the child ever receives benefits from the WIC (the Women, Infant, and Child program); a dummy variable that equals one if the baby is a first-born; age categories of the mother (less than 19 years old, greater than 30 years old, and the omitted category is aged between 19-30); level of the mother's education (high school dropout, high school graduate, and some college, with college graduates the omitted category); a dummy variable that equals one if the mother is married; the number of children in the household; and the ratio of household income to the poverty line. ϵ_{ist} is a random error term. I use the OLS model for the impact on $EverBf_{ist}$ and a Tobit model for the impact on $log(WksBf_{ist})$.[9]

To test for the existence of anticipation effects (whether the effects started before the actual enactment of the law) I include $PreLaw_{st}$, which is a dummy variable that equals 1 if the state s during year $t+1$ has the law (otherwise it is 0). The goal is to determine whether the outcome variables change significantly just before the enactment of the workplace breastfeeding law.

In some specifications, I also include three dummy variables that indicate the passage of three other state-level mandates related to breastfeeding ($AnyPlace_{st}$, $Jury_{st}$ and $Indecency_{st}$). These variables control for the culture of and attitude about breastfeeding at the state level. The variable $AnyPlace_{st}$ equals one if state s during year t passed a version of the mandate that allowed nursing mothers to breastfeed in any public and private space. The variable $Jury_{st}$ equals one if state s during year t passed a version of the mandate that exempted nursing mothers from jury duty. $Indecency_{st}$ equals one if state s during year t passed a version of the mandate that exempted breastfeeding in the public from being classified as public indecency. Table C.1 in the appendix summarizes these three other state level breastfeeding-related mandates.[10]

[9]The estimates of the marginal effects on $EverBf_{ist}$ when a probit model is used resemble those obtained when the OLS is used. Thus, to ease interpretation, I use the OLS model. The results using the probit model are available upon request.

[10]The information is summarized according to the website of National Conference of State Legislatures, Andrews (2012), and Abdulloeva and Eyler (2013).

Table 4 provides the summary statistics for the NIS data. The first two columns present summary statistics for the babies born in states that never passed the workplace breastfeeding law. Columns 3 and 4 present summary statistics for babies born in states that have passed the law, but during the period before the law was passed. Columns 5 and 6 present summary statistics for babies born in states that have passed the law, but during the period after the law was passed.

5.2 Main results on breastfeeding

Table 5 panel A shows the OLS estimates for equation (1) regarding the initiation of breastfeeding. Column 1, the base line result, is positive but statistically insignificant. In column 2, there seems to be no anticipation effect: the estimate for the one-year-before-law dummy, or $PreLaw_{st}$, is almost zero and it is statistically insignificant. In column 3, the estimate for the workplace breastfeeding support law (which is of a similar magnitude) remains statistically insignificant; the jury exemption law seems to increase the probability of breastfeeding. Column 4 controls for region-by-year fixed effects and column 5 does not weigh the observations using the replication weight; in each case the estimates remain insignificant. In summary, the workplace breastfeeding support law does not seem to promote the initiation of breastfeeding.

Table 5 panel B shows the Tobit estimates for equation (1) on the log weeks of breastfeeding. The estimate for Column 1, 0.0434, is statistically significant at the 5% level, which suggests that the workplace breastfeeding support increases the latent (uncensored) duration of breastfeeding by about 4.34%. Given that the average duration of the observed (censored) duration of breastfeeding is about 20.3 (exp(3.01)) weeks, the impact is about 6 days (0.88 weeks, or 20.3×4.34 weeks). The estimate in column 2 is smaller but it remains statistically significant at the 10% level. The estimate for the one-year-before-law dummy is very small and statistically insignificant, which suggests that there is no anticipation effect. The estimate in column 3 is statistically significant, while the estimates for the other three types of state laws are statistically insignificant,

suggesting that the causal impact of the workplace breastfeeding support law is robust after controlling for cultural shifts towards breastfeeding. Column 4 controls for the region-by-year fixed effects and column 5 does not weigh the observations using the replication weights; the estimates remain similar and statistically significant. In summary, the workplace breastfeeding support law increases the duration of breastfeeding by about 4.3%.

5.3 Alternative explanations for breastfeeding outcomes

As an alternative to the Tobit model, we can estimate the impact of workplace laws on the duration of breastfeeding using hazard model specifications. This approach allows me to determine whether access to workplace breastfeeding support impacts the likelihood of stopping breastfeeding.

Figure 8 plots the nonparametric Kaplan-Meier survival estimates for babies born during state-years who did and did not have access to workplace breastfeeding benefits. The x-axis, which is the number of weeks of breastfeeding, ranges from 0 to 104 weeks (the duration is censored at two years). The y-axis is the percentage of babies that, among all babies are ever breastfed, still are breastfed each sequential week after birth. Figure 8 shows that babies born in states that offer the workplace breastfeeding benefits are more likely to be breastfed each week after birth. The difference is statistically significant at the 5% level.

Table 6 shows the results of the duration of breastfeeding using the hazard model specifications. The first column employs the exponential proportional hazard model of the following specification:

$$\lambda_t = \alpha \exp[\gamma_t + \beta_1 Workplace_{st} + \beta_2 Mother_{ist} + \beta_3 Workplace_{st} \times Mother_{ist} + X'_{ist}\Gamma + \theta_s + \theta_t + \theta_s \cdot t + \epsilon_{ist}]. \quad (2)$$

Columns 1 to 3 of Table 6 show the estimate of $\exp(\beta_3)$, assuming that ϵ_{ist} has ex-

ponential, Weibull or Gompertz distributions. Column 4 shows the result using the Cox proportional hazard model. The estimate in column 1, -0.036, is statistically significant at the 10% level, which suggests that access to workplace breastfeeding benefits reduces the probability of stopping breastfeeding by 3.6 percentage points. The estimates in columns 2 to 4 are of a larger magnitude and are statistically significant at the 5% level, implying that access to workplace breastfeeding benefits consistently reduces the probability of stopping breastfeeding by about 4 percentage points.

5.4 Subsample estimates for breastfeeding outcomes

Table 7 and Table 8 show, respectively, the subsample results of the effects of the workplace breastfeeding benefits on the initiation and duration of breastfeeding. The characteristics of interest include: levels of education (high school dropouts, high school graduates, some college, and college plus), age (younger than 19, 19-30, and older than 30 years old), marital status, race (White, Black, Hispanic, and other), and household income level (due to top coding I report the estimate for each of the first 5 deciles and I group the top 5 deciles together as the top 50%).

Table 7 shows that only among single mothers and mothers aged 19-30 do we see a statistically significant increase in the initiation of breastfeeding. This result suggests that these two groups probably lack the knowledge and support that would allow them to start breastfeeding the most, as the initiation of breastfeeding happens at the hospital and within the first few hours of giving birth. For the other groups, workplace breastfeeding benefits have no impact on their initiation decisions.

Table 8 shows that workplace breastfeeding benefits increase the duration of breastfeeding among mothers who are high school dropouts yet it decrease the duration among mothers who have some college education. Among mothers aged 19-30, mothers who are Hispanic, and mothers who belong to the top half of the household income distribution, the duration of breastfeeding increases significantly. Workplace breastfeeding benefits may reduce the racial inequality among nursing mothers yet increase financial inequal-

ity. In addition, married mothers enjoy a statistically significant increase in duration, but the increase among single mothers is not statistically significant; this difference between women of different marital statuses also appears in the effects on labor market outcomes.

6 Empirical results of labor market outcomes

6.1 Econometric frameworks

To estimate the effects on labor market outcomes, I use a differences-in-differences-in-differences, or a DDD specification of the form

$$\begin{aligned} y_{ist} = \alpha + \beta_1 Workplace_{st} + \beta_2 \text{Mother of infants}_{ist} \\ + \beta_3 Workplace_{st} \times \text{Mother of infants}_{ist} + X_{ist}^{'}\Gamma + \theta_s + \theta_t + \epsilon_{ist}. \end{aligned} \tag{3}$$

The variable $Workplace_{st}$ is a dummy variable that equals one if the state s during year t passed a version of the workplace breastfeeding support law; otherwise it is 0. The variable Mother of infants$_{ist}$ is a dummy variable that equals one if the individual is a mother of an infant child or if her youngest child is less than one year old. I consider several ways of defining the control group. My preferred control group is the sample of males, because they are not eligible for the benefits.

The outcome variable y_{ist} is one of the following variables. lfp_{ist} is a dummy variable that equals one if individual i living in state s during year t is in the labor force; otherwise it is 0. emp_{ist} is a dummy variable that equals one if, conditional on in the labor force, the individual is currently employed; otherwise it is 0. $AtWork_{ist}$ is a dummy variable that equals one if, conditional on being employed, the individual is working during the reference week of the survey; otherwise it is 0. $log(HoursWork_{ist})$ is the log weekly working hours if the individual worked during the reference week. $PartTime_{ist}$ is a dummy variable that equals one if the individual worked less than 35 hours during

the reference week, conditional on working during the reference week; otherwise it is 0. $HourlyPaid_{ist}$ is a dummy variable that equals one if the individual was paid by the hour during the reference week, conditional on working during the reference week. $log(HourlyWageLastWeek_{ist})$ is the log real hourly wage if the individual was paid by the hour during the reference week, conditional on working during the reference week.[11]

The parameter of interest is the parameter before the interaction term, β_3. My identifying assumption is that following the establishment of the workplace breastfeeding support mandates, there should be no systematical differences in outcome variables in the treated and the control group. Thus, β_3 can be interpreted as the causal effects of workplace breastfeeding benefits on the outcome variables. Because states passed different versions of the mandate over a period of years, it is difficult to identify alternative explanations that could invalidate this assumption. Nonetheless, it is meaningful to use alternative control groups and perform placebo tests. The control group should *not* be affected by workplace breastfeeding support mandates; thus, males are the best control group. I devise two alternative control groups: males who have infant children and females who do not have children.

X_{ist} is a vector of individual characteristics, which includes age, age squared, a dummy variable that indicates non-white status, marital status, female, an interaction term between female and marital status, levels of education (high school graduates, some college, and college graduates, with the high school dropouts as the omitted category), and dummies for industry (the omitted category is the no-industry-information dummy). θ_s and θ_t are state and year fixed-effects, respectively. ϵ_{ist} is a random error term.

Because the marginal effects of interaction terms in non-linear models are difficult to interpret, I use OLS models for the DDD specification. The regressions are weighted by the personal supplemental weights of the CPS. The robust standard errors are clustered at the state level.

[11] Note that all the variables are defined conditionally in order to give them a more accurate meaning. The results—for example, lfp_{ist} and emp_{ist}—can be multiplied to derive the unconditional result (the employment-to-population in this case). The selection issue is resolved by the balance checks that are reported in the next section.

So far, the outcome variables, which measure the "flow" of the labor market changes, are all measured during the reference week of the survey. Alternatively, the CPS includes variables that describe the individuals' labor market outcomes during the previous year of the survey, and they measure the "stock" of the labor market changes. Therefore, I also estimate the following equation:

$$y_{ist} = \alpha + \beta_1 Workplace_{s,t-1} + \beta_2 \text{Mother of 1-year-old}_{ist} + \beta_3 Workplace_{s,t-1} \times \text{Mother of 1-year-old}_{ist} + X_{ist}^{'}\Gamma + \theta_s + \theta_t + \epsilon_{ist}. \quad (4)$$

where the variable Mother of 1-year-old$_{ist}$ is a dummy variable that equals one if the individual is a mother whose youngest child is 1 year old. The variable $Workplace_{s,t-1}$ equals 1 if state s during the previous year $(t-1)$ had already passed the workplace breastfeeding mandate. The outcome variables under this framework are: $EmpLastYear_{ist}$, a dummy variable that equals one if the individual was employed last year (not conditional on being in the labor force last year, based on how the variable is defined in the CPS); $FullTimeLastYear_{ist}$ is a dummy variable that equals one if the individual is employed full time, conditional on being employed last year; and $HourlyWageLastYear_{ist}$, a log of real hourly wage (it includes both the salary and wage earners' hourly wages). The intuition is that for mothers of 1-year-olds, the variables that describe labor market outcomes during the previous year of the survey measure the labor market outcomes when they were within one year postpartum. These outcomes are likely to be affected by the workplace breastfeeding benefits, if the state passed the mandate one year ago.

6.2 Summary Statistics of the CPS data

Table 9 provides the Summary statistics for the covariate variables in the CPS sample for samples of males and females who have infant children, both before and after the enactment of the workplace breastfeeding support law. The upper panel presents individual level characteristics, while the lower panel presents spouse characteristics for

married individuals only (excluding cohabiting couples). For both the treatment and control groups, access to workplace breastfeeding benefits is associated with more people who are non-white and have college or more advanced degrees. There are no significant differences along the lines of age, marital status and household incomes.

Table 10 presents the Summary statistics of the outcomes of the treated and the primary control samples, both before and after the enactment of the workplace breastfeeding support law. The upper panel presents the outcome variables collected during the reference week of the survey; these describe the contemporaneous, or flow, outcomes of interest. Thus, the treated sample consists of females who have infant children. The lower panel presents the outcome variables that describe the labor market outcomes during the previous year of the survey; these describe stock outcomes of interest. In other words, the treated sample consists of the females whose youngest child is 1-year old. For both panels, the control group consists of all males.

Because access to workplace breastfeeding benefits started in different states during different years, the effects of the workplace breastfeeding benefits on labor outcomes are hard to interpret from simple comparisons of sample means. Therefore, we need to investigate this impact using the DDD frameworks.

6.3 Main results on labor market effects

Table 11 presents the basic estimates from equation (3), which includes a full set of state and year dummies for outcome variables during the survey's reference week, when the mothers of infant children were the main treated group. The primary control group consists of all males, while the alternative control group consists of males who have infant children. Of concern is the possibility that having an infant child could affect the new fathers' labor market outcomes; by identifying males who have infant children as the control group, one can control for the common shocks that affect the parents of infants. Columns 1-4 and 5-8 show the results using the primary and alternative control group, respectively. The first column shows the estimate of equation (3), while

the second column shows the estimate for the sample of singles. The next two columns show the estimates of equation (3) for the married sample, with (column 4) and without (column 3) the spouse characteristics as additional controls. The spouse characteristics include the spouse's age, race, level of education, and labor force participation status.

Panel A shows that workplace breastfeeding benefits increased the labor force participation of females who have infant children by 1.16 percentage points, and it is statistically significant at the 1% level. This suggests that workplace breastfeeding benefits have a significant and positive impact on the extensive margin. The effects are significant for both singles and whose who are married; adding spouse characteristics, the estimate is still positive and statistically significant at the 1% level. The estimate is larger (1.42 percentage points) when males who have infant children are the control group.

Panel B shows that workplace breastfeeding benefits do not affect, and perhaps decrease, the probability of being employed, conditional on being in the labor force. The results are highly similar across all columns. The combined results of Panel A and B suggest that workplace breastfeeding benefits increase the employment-to-population ratio of females who have infant children.

Panel C shows that, among the married, and conditional on having a job, workplace breastfeeding benefits do not affect the probability that females who have infant children are working during the reference week of the survey; the estimates are positive but insignificant. This might imply that workplace breastfeeding benefits do not affect the length of the maternity leave that married mothers take. This is not surprising, given that the U.S. has no paid maternity leave policies and that mothers can only take a maximum of 12 weeks' unpaid maternity leave. Workplace breastfeeding benefits do not cause mothers to take shorter or longer maternity leaves. Column 6 indicates that among singles, the probability of working during the reference decreased by about 3.2 percentage points; the estimate is statistically significant if males who have infant children are the control group. The fact that labor force participation increased by

about 1 percentage points (column 6 panel A) and that the employment rate (column 6 panel B) did not change indicates that fewer singles mothers with infant children worked during the reference week.

Panel D shows that, conditional on working during the reference week, females with infant children worked 3.38% more hours during that week. The mean hours of work for females who have infant children but no access to the workplace breastfeeding benefits is 28.53 ($= e^{3.351}$); workplace breastfeeding benefits increase mothers' hours of work per week by about 1 hour ($= .96 = 28.53 \times 3.38\%$). The effect is negative and not significant for singles, but is very positive and significant for the married sample. When spouse characteristics are controlled for, workplace breastfeeding benefits increase the hours of work per week for the married mothers of infant children by 5.04%. When males with infant children are the control group, the increase is about twice as great—6.49% more hours.

Panel E shows that, conditional on working during the reference week, females who have infant children are less likely to work part-time if they have access to workplace breastfeeding benefits. The probability that the mothers of infant children would work less than 35 hours per week decreased about 3.13 percentage points. Before passage of the law, the mean probability that these women would have a part time job was 43% (column 2 of Table 10); after passage of the law, the probability of their being employed part-time decreased by about 7.3% ($= 3.13/43.0 \times 100\%$). The results are driven by the married sample, and in the estimates in which males who have infant children are the control group the results are very robust. Single mothers are more likely to work part-time, although when males with infant children are the control group the results are not significant.

Panel F shows that workplace breastfeeding benefits do not increase or decrease the probability that the females who have infant children were paid hourly wages if they worked during the reference week. Although all estimates are negative, only the one in column 5 is statistically significant (at the 10% level), and its magnitude is small (1.1

percentage points decrease).

Panel G shows that workplace breastfeeding benefits do not significantly affect the hourly wage of females who have infant children, if they were paid hourly during the reference week. All estimates are positive, but none are statistically significant at the 10% level; the large standard errors are the results of the small sample sizes of the number of individuals who earn hourly wages.

These results from Table 11 show the effects on the flow variables when females with infant children are the treated group. Derived from estimating equation (4), Table 12 shows the results on the stock variables when the treatment group is females whose youngest child is 1-year old. In Table 12, columns 5-8 are estimated with the alternative control group—that is, males whose youngest child is one year old.

Panel A of Table 12 shows that workplace breastfeeding benefits decreased the probability that females with 1-year olds were employed during their first postpartum year. The effects are driven by the married sample: the probability decreased by about 2 percentage points (column 4) and it is statistically significant at the 1% level; when males whose youngest child is 1 year old are the control group the results are similar.

How can this result be reconciled with those in the Panel A and B of Table 11? The intuition is that workplace breastfeeding benefits are not only associated with an increase in the probability that nursing workers are employed at a typical point during the first postpartum year; they also are associated with a lower probability that nursing workers are employed during the first postpartum year.[12] Workplace breastfeeding benefits allow nursing mothers to increase their employment.

Panel B of Table 12 shows that workplace breastfeeding benefits increased the probability of being employed full-time (working longer than or equal to 35 hours, conditional on being employed) by about 3.9 percentage points, which is statistically significant at the 1% level. Among mothers whose youngest child is one year old, and in the absence

[12]Mathematically, the former is the derivative of the latter with respect to time. Their relationship can be described as $\frac{dE(t)}{dt} = lfp \times emp(t)$, where $E(t)$ is the amount of employment (unconditional on labor force participation) during the first postpartum year and $lfp \times emp(t)$ is the unconditional probability that the individual is looking for a job at time t. The estimated results suggest that workplace breastfeeding benefits are associated with higher $lfp \times emp(t)$ but lower $E(t)$.

of the breastfeeding law, the mean of the probability of being employed full-time is 0.643. When workplace breastfeeding benefits are introduced the probability of having a full-time job increased by 6.1% ($= 3.9/64.3 \times 100\%$). The estimates are similar when the control group consists of males whose youngest child is one year old.

Panel C shows a striking result: workplace breastfeeding benefits increased the hourly wage that married mothers received during their first year postpartum by about 4.6% (column 4, statistically significant at 1% level), but they decreased the hourly wage that single mothers received during first year postpartum by about 3.8% (column 2, statistically significant at 10% level). The results are more significant when the control group consists of males whose youngest child is one year old. Combining results in panels B and C, we see that the increase in the hourly wages can be explained by the increase in the probability of working full-time. For married mothers, the magnitudes of the increase in the probability of working full time and the magnitude of the increase in wages are comparable (4.3% and 4.6% respectively, column 4), although in the case of single mothers other factors might explain the greater drop in wages (0 and -3.8% respectively, column 2). In the case of married mothers, the change in the probability of working full-time or part-time explains the change in hourly wages that occurs when workplace breastfeeding benefits are in place.

The fact that the effects of workplace breastfeeding benefits differ according to marital status warrants further consideration. Marital status does not affect the impact of breastfeeding benefits on the extensive margins (panels A, B, C, F and G in Table 11 and panels A in Table 12), but affects the impacts on the intensive margins (panels D and E in Table 11 and panels B and C in Table 12). Workplace breastfeeding benefits appear to have the greatest impact on the number of hours worked per day and, thus, on wages. The latter, of course, affect overall labor market outcomes. Within the group that consists of the mothers of infants, workplace breastfeeding benefits might also increase inequality according to marital status.

Marital status can serve as a proxy for high- and low-type workers. The empirical

results show that the effects of the workplace breastfeeding benefits differ according to marital status: after passage of the workplace breastfeeding benefits law, wages increased for married mothers and decreased for single mothers. These findings are consistent with those of Pal and Waldfogel (2016). Pal and Waldfogel (2016) found that the most striking effect of the law is a change in the family gap in pay, which is defined as the differential in hourly wages between women who have children and women who do not have children. Between 1967 and 2013, the family gap declined for married mothers and was replaced a positive wage differential. Among unmarried mothers, the wage gap persisted.

Appendix Table C.2 shows the estimates of equations (3) and (4) in the case of a third control group: females without children. The concern is that females without children may control for the common labor market shocks that affect females in general: because they have no children, they are not directly affected by the workplace breastfeeding law. The results are qualitatively similar to those just described, although most of the time the estimates are of a smaller magnitude than those shown in Table 11 and Table 12. This is so because females without children are potentially affected if they and their employers anticipate that they would have children in the future, which would attenuate the treatment effects.

In summary, during the first postpartum year, workplace breastfeeding benefits increased the extensive margins (an increase in labor market participation and no change in conditional employment) of both married and single mothers, and they increased the intensive margin (hours of work) of married mothers but not the intensive margin of single mothers (hours of work). However, in the case of stock outcomes during the first year postpartum, workplace breastfeeding benefits: decreased the extensive margin (unconditional employment) of both married and single mothers; increased the intensive margin (full time) and hourly wage of married mothers; did not affect the intensive margin (full time) of single mothers; and decreased the hourly wage of single mothers. Therefore, in the case of married mothers, workplace breastfeeding benefits increase their hours of

work, and, consequently, increased their wages; in the case of single mothers, workplace breastfeeding benefits do not increase their hours of work, and, consequently, decreased their wages.

6.4 Robustness checks

Table 13 checks the robustness of the main results for the four outcome variables that are statistically significant and for the married sample. Column 1 is the baseline—that is, the results of column 4 in Table 11. To determine whether the results are driven by certain observations that have extreme values, Column 2 estimates without using weights. To control for the labor market shocks that affect each state each year, Column 3 adds two additional state level covariates that vary by year: the unemployment rate and the growth rate of the GDP. To further control for unobserved factors that affect each state linearly in time, Column 4 adds the state-specific time trends $\theta_s \cdot t$. To control for unobserved shocks that are common for each region each year, Column 5 includes the region-by-year fixed effects, where regions are defined as the Census divisions.

Also of concern is the possibility that other labor policies, such as paid family leave, might be driving the results. California was the first state in the nation to start a paid family leave program (in 2004). The program includes six weeks of partially paid leave to the parents of a newborn or a recently-placed foster or adoptive child. The leave has a wage replacement of 55% up to a ceiling that is based on the state's average weekly wage. Mothers of infant children can use this paid family leave immediately after their maternity leave, which gives them more time for breastfeeding, and many mothers remain on the job to take advantage of the benefit. To determine whether the main effects are driven by the paid family leave law, Column 6 drops the observations obtained in California. As expected, all estimates remain statistically significant, although they have somewhat smaller magnitudes, which is reassuring.

Another concern is that the effects might reflect a change in bargaining power within couples; for example, a female might experience an increase in bargaining power relative

to that of her spouse. This might lead to the spouse becoming more involved in childcare and other domestic responsibilities, which could give the mother of the infant children more incentive to work. Consequently, in the subsample of married couples in which both the husband and the wife report an hourly wage, I calculate the wage gap (the ratio of the wife's wage to the husband's wage) and include it as an additional covariate. Column 7 reports the estimates. The effect of the probability of being paid an hourly wage becomes negative and is statistically significant; the real hourly wage during the previous year becomes statistically insignificant. It would seem that bargaining power within couples affects part of the effects on wages.

Yet another concern is the possibility that the cultural shift during the past two decades in culture in favor of breastfeeding might explain the results. Column 8, which shows the robustness check, adds dummy variables that indicate three other state-level mandates related to breastfeeding ($AnyPlace_{st}$, $Jury_{st}$ and $Indecency_{st}$) and their interaction terms with the $Mother_{ist}$ in equation (3). In the case of labor force participation (panel A), the estimate for workplace benefits is positive but not significant; the effects are picked up by the other three laws, which suggests that at least part of the effect of workplace breastfeeding benefits coincides with effects from these three other mandates. Adding the combined effects of all four benefits, the labor force participation still increases statistically, which suggests that the breastfeeding mandates together have increased the extensive margin of the flow outcomes. In the case of the hours of work (panel D), the estimate for workplace breastfeeding benefits remains positive and is statistically significant, which suggests that the effects on the intensive margin are robust to the inclusion of the other three mandates. In the case of employment last year (panel H), the estimate for workplace breastfeeding benefits remains negative and is statistically significant, which suggests that the effects on the extensive margin of the stock variable are robust to the inclusion of the other three mandates. In the case of full-time employment last year, the estimate of workplace breastfeeding benefits is no longer significant; it seems that its effect is picked up by the "Any place" mandate,

although all four breastfeeding mandates increased the intensive margin of the stock variable. Similarly, the effects on the log hourly wage last year are picked up by the "Any place" mandate, and the four breastfeeding mandates significantly increased last year's hourly wage. In summary, in the case of certain outcome variables, the effects of workplace breastfeeding coincide with the effects of the three other state-level breastfeeding mandates. Yet because of the correlation of the passage of the four mandates, the direction and magnitude of the effects on the outcome variables are robust.

6.5 Threats to identification of effects on labor market outcomes

6.5.1 Existence of pre-trends: alternative specifications using event-study frameworks

Because the main specification of a DDD framework might not capture the dynamic impact of the benefits—for example, anticipation effects might precede the implementation of the law, or it might take years for the labor market impact to he expressed—I use in this section another framework, the event-study framework, with leads and lags of the law dummies, to investigate the dynamic impact of workplace breastfeeding benefits. Also, using the event-study frameworks, I present visual evidence of the effects of workplace breastfeeding benefits. In this section the sample includes only married individuals because the married sample drives the main results.

The event-study specification is of the form

$$\begin{aligned} y_{ist} &= \alpha + Mother_{ist} + \sum_{\tau=-5}^{-1} Workplace_{\tau,st} + \sum_{\tau=1}^{8} Workplace_{\tau,st} \\ &\quad + \sum_{\tau=-5}^{-1} \delta_\tau Workplace_{\tau,st} \times Mother_{ist} + \sum_{\tau=1}^{8} \eta_\tau Workplace_{\tau,st} \times Mother_{ist} \\ &\quad + X_{ist}^{'}\Gamma + \theta_s + \theta_t + \epsilon_{ist}, \end{aligned} \tag{5}$$

where the variable $Workplace_{\tau,st}$ equals 1 if during year t, state s occurs τ years after

the enactment of the breastfeeding law and if τ ranges from -5 to 8. The year of the enactment ($\tau = 0$) is the omitted category and the effect is zero. $x = -5$ denotes the years 5 or more than 5 years before the enactment of the workplace breastfeeding law. $x = 8$ denotes the years 8 or more than 8 years after the enactment of the law. For example, $Workplace_{-3,st}$ means that state s during year t is three years prior to the enactment of the breastfeeding law. The definition of $Mother_{ist}$ remains the same; it equals 1 if the individual is a female who has an infant child and it equals 0 if the individual is male.

Figure 9 plots the event-study estimates of the yearly effects of the workplace breastfeeding support law on the extensive margin of the flow outcomes. The x-axis denotes the number of years since the passage of state-level workplace breastfeeding mandates. The y-axis plots the estimates of the δ's and η's in equation (5) for labor force participation. Before the enactment of the breastfeeding law, although the estimate of δ_{-5} is both negative and statistically significant, the effects of the law are close to zero. From the fact that the curve is relatively flat I conclude that there is no existence of a pre-trend. During the first year after the law's enactment, the effect became much larger, and four years later it became statistically significant. Five years after passage of the law, the effect is negative, although it is estimated with a much larger standard error. The effects for η_7 and η_8 are positive and statistically significant at the 95% level. After enactment of the law, there is an increasing trend in its annual impacts.

Similarly, Figure 10 plots the event-study estimates of the yearly effects of the workplace breastfeeding support law on the intensive margin of the flow outcomes. In the case of log hours work and the log hourly wage if paid hourly, the marginal effects before the law are small and close to zero, but after the law the effects show a clear pattern of growth. In the case of the probability of working part-time, the marginal effects prior to the passage of the law are positive, but after the law all of the effects are negative.

Finally, Figure 11 plots the event-study estimates of the yearly effects of the workplace breastfeeding support law on stock outcomes. The most striking results are the

estimates of the effects on the probability of being employed last year: after the mandates a significant reduction occurs.

6.5.2 Selection on pregnancy and other observables

In an alternative explanation, the estimated results could be driven by a compositional change in the sample of females who have infant children. We wish to know whether females who have infant children and who live in state-years with and without workplace breastfeeding benefits are characterized by a statistically significantly difference in their observed individual level characteristics. To this end, we estimate the following equation:

$$x_{ist} = \alpha + \beta Workplace_{st} + \theta_s + \theta_t + \epsilon_{ist}. \tag{6}$$

The dependent variable is one of the following individual-level characteristics: age, non-white, education (high school dropouts, high school graduates, some college, and college graduates), married status, the log of real household income, spouse's age, the spouse's education levels, whether spouse is in the labor force, whether the spouse is non-white, and whether the infant is a first child. The explanatory variable is the $WorkplaceLaw_{st}$ dummy. Year- and state-fixed effects are included in order to control for the common shocks for each year and for each state.

To determine whether the results of the flow variables are driven by selection, Table 14 shows the balance check of the observed characteristics of females who have infant children. To determine whether there is a selection for living in a state that has the law, Panel A checks the balance among all females who have infant children. To determine whether among those participating in the labor force there is a selection for living in a state that has the law, Panel B includes females who have infant children and are in the labor force. To determine whether among women who resume working post-birth there is a selection for living in states that have the law, Panel C looks at females who have infant children and whose hours of working per day during the reference week are known. To determine whether among those who earned hourly wages during the reference week

there is a selection for living in a state that has the law, Panel D looks at females with infant children whose hourly paid wages are known.

Across panels, the estimates for the variable "high school dropouts" are both negative and statistically significant, which suggests that fewer mothers who have the least education participate in the labor market when the breastfeeding law is in effect. Similarly, in all panels except for the last one, mothers who live in states that have breastfeeding mandates are associated with a higher level of household income, which is not surprising: mothers from wealthier households are more likely to work, but they are less likely to receive hourly paid wages.[13]

Other types of sorting also affect the extensive margin and the intensive margin. In panel A, mothers who live in states that have breastfeeding laws are associated with a higher probability of having received a high school degree. This is plausible given that workplace breastfeeding benefits increase labor force participation rates. In panel D, however, mothers who live in states that have breastfeeding laws and receive an hourly paid wage are associated, first, with a higher probability of being non-white and, second, of being married to a non-white spouse. Given that the negative selection bias affects the hourly wages downward, the true effects of workplace breastfeeding benefits on hourly wages (paid by the hour) should be more positive and larger. Across the panels, there seems to be no selection with regards to age, the child's status as a first child, the spouse's age, or the spouse's labor force participation status.

In summary, females who have infant children and in live in states that offer the breastfeeding benefit are less likely to be high school dropouts and are more likely to be new mothers. Those who have a higher than average attachment to the labor force tend to come from households that have higher real incomes.

To see if the results on the stock variables are driven by selection, Table 15 shows the balance check of the observed characteristics for females whose youngest child is one year old. The main dimensions of sorting remain the same, though there appears to

[13]In the main results, the covariates do not include household income. The results are largely the same when income is included as an additional covariate. Appendix D shows the results.

be more selection among this sample of females whose youngest child is one year old than among the sample of mothers of infants. That the selections are same across the samples defined conditionally for all outcome variables, suggest that the interpretation about the effects on the conditional variables should be similar to the interpretation about the effects on the unconditional variables.

7 Channels

7.1 Detailed requirements of state mandates

To investigate the potential channels of the impact of workplace breastfeeding benefits on labor market outcomes, I exploit in this section inter-state variation in the degree of specificity of the benefit regulations. Table 16 shows the results using alternative definitions of the workplace breastfeeding law ($Workplace_{st}$), as specified in equation (3). In Table 16, each panel examines a different dimension of the mandate. In all regressions, $Workplace_{st}$ equals 1 if state s during year t passed a "stronger" version of the workplace breastfeeding mandate; if these states have not yet passed the law, and in states that have never passed a version of the mandate, $Workplace_{st}$ equals 0.

Most states require that the benefits should be provided for one year. However, five states (Colorado, Maine, New York, Oregon, and Vermont) require a longer period (from 18 months to 36 months). In all panels Column 1 compares labor market outcomes in these states and in states that have never passed the law; the objective is to see how these estimates differ from the estimates provided in my main results. A striking result, shown in Panel B, is the estimate of the probability of being employed conditional on the labor force. Here the estimate is positive and statistically significant at 1 percent level, which suggests that when mothers are entitled to breastfeeding breaks at the workplace for more than one year, the impact on the probability of being employed conditional on the labor force increases by about 1.43 percentage points. This insignificant impact on the main results could indicate that the duration of the benefits is too short. In Panel E,

the estimate of the increase in the log hours of work (increased by about 9.8%) is almost double that of the main effect (5.04%). In Panel G, the hourly wage (if paid hourly) increased by about 2%; in the main results the increase was insignificant. In Panel H, the employment (stock) does not decrease; this finding contrasts with the main results, which show that employment last year did not decrease significantly. Finally, in Panel J, the hourly wage last year increased by about 8.12%; in the main results the increase is only 4.6%. In summary, giving women the workplace breastfeeding benefit for more than one year significantly improved the labor market outcomes of nursing mothers, particularly in the case of employment outcomes, during both the reference week and the first postpartum year.

In most states women are only allowed to pump breast milk and only during break time, but four states (Connecticut, Oklahoma, Oregon and Rhode Island) allow both pumping and breastfeeding. As shown in Column 2, the effects are not statistically significant except in the case of labor force participation (a smaller magnitude than the main results) and the log hourly wage last year (a much larger magnitude than the main results). This result would seem to indicate that allowing both breastfeeding and pumping has little effect on outcomes because most nursing workers use breaks for pumping.

Some states clearly state that employees who request breastfeeding breaks at the workplace should not suffer discrimination. The states are Connecticut, D.C., Hawaii, Maine, Mississippi, Montana, New York, Vermont and Washington. The results are shown in Column 3. In contrast to the main results, Panel B shows that when discrimination is prohibited, and conditional on in the labor force, the probability that females with infant children will be employed increases by about 1.05 percentage points. Panel H shows that employment last year decreased by about 1.06 percentage points, which is about half of the decrease seen in the main results. In other words, prohibiting discrimination against nursing employees at the workplace increases employment both during the reference week and during the first postpartum year. Moreover, the hourly

wage last year also increased by a modestly larger percentage than the base line results.

Some states provide retaliation protection for whistleblowers who report discrimination and violation of the law (Maine, Minnesota, New York, Tennessee and Vermont). Column 4 compares labor market outcomes in these states to states that have never passed the law. Most striking are the results for (1) the probability of working during the reference week, conditional on having a job (panel C), and (2) the probability of receiving an hourly paid wage (panel F). The results suggest that when workplace breastfeeding rights are protected by law, women who have infant children (1) will be about 1.57 percentage points less likely to work during the reference week (i.e., perhaps more likely to take a longer maternity leave) and (2) will be about 3 percentage points more likely to receive hourly paid wages. This probably is the product of two processes. First, employers who are likely to discriminate against nursing employees or who violate the law tend to provide shorter maternity leaves. Second, prohibiting discrimination has the unintended consequence of forcing more nursing workers to find hourly jobs.

Finally, some states that do not require the provision encourage employers to provide the benefits or allow the employer to include "baby-friendly" or "infant-friendly" designations in their promotional materials. Such states include North Dakota, Texas, Virginia, Washington and Wyoming. The results are shown in Column 5. Compared to my main results, the breastfeeding benefit in these states is associated with a significant reduction of the probability of being employed (panel B), a significant reduction in the probability of receiving hourly paid wages (panel D), a substantial increase in the hourly paid wage (panel G), and a somewhat smaller increase in the hourly wage last year (panel J). This result is consistent with another finding: that where providing breastfeeding benefits are voluntarily, employers are more likely to hire fewer workers. This, in turn, suggests that if employers can legally avoid paying the additional costs, they will respond in the extensive margin. Yet in keeping with our model, and conditional on hiring these workers, employers still pay a significantly higher wage. This, too, constitutes clear evidence of the differential responses to workplace breastfeeding

benefits, whether on the extensive or the intensive margins.

In summary, requiring that workplace breastfeeding benefits be provided for more than one year and prohibiting discrimination against employees who request breaks significantly improves the employment of nursing mothers, both during the reference week and during the first postpartum year. Allowing both breastfeeding and pumping does not seem to have much of an effect on female labor force participation. However, in terms of their effects, the difference between requiring retaliation protection and simply encouraging voluntary workplace breastfeeding benefits is very significant: employers may wish to hire fewer nursing workers, but conditional on hiring, those females who do work tend to work longer hours and receive higher wages.

7.2 Temporal flexibility of occupations

In this section, I look at the features of the workplace environment in order to explore the possible channels of the impact. Consider the costs of providing the benefits across different occupations. Whether a woman can take any breastfeeding break or two to three breaks of 20 to 30 minutes each depends on the temporal flexibility of her job. As Goldin (2014) argues, how flexible an occupation is with respect to the number of hours worked, the precise times worked, and the predictability and ability to schedule one?s own hours affects whether it is relatively easy for the worker to be excused from work without interrupting the work flow or disturbing the coworkers. To proxy how costly it is for the employer to provide the workplace breastfeeding benefits, I use five characteristics of occupations categorized in version 20.3 (released April 2016) of the Occupation Information Network (O*NET) database.

The O*Net dictionary includes hundreds of occupational characteristics. I adopt the five characteristics in the categories of "work context" and "work activities", following Goldin (2014): time pressure, contact with others, establishing and maintaining interpersonal relationships, structured versus unstructured work, and freedom to make

decisions.[14] The variable $LessFlexibility_i$ is defined as the average of the five characteristics for each occupation. I merge the occupational characteristics for individuals whose occupational is known in the CPS sample. Table 17 shows the Summary statistics of the occupational characteristics.[15] Table 17 shows that in the case of women who have an infant child, the workplace under breastfeeding benefits seems to be associated with more flexibility (a mean of .137 versus .0725); the same holds in the case of women whose youngest child is one year old. However, in the case of males, the workplace under breastfeeding benefits seems to be associated with less flexibility (a mean of -.035 versus -.050).

To determine whether the impact of the workplace breastfeeding benefits moves through the channel of the temporal flexibility of occupations, I estimate the following equation

$$\begin{aligned} y_{ist} &= \alpha + \beta_1 Workplace_{st} + \beta_2 Mother_{ist} + \beta_3 LessFlexibility_i \\ &\quad + \beta_4 Workplace_{st} \times Mother_{ist} + \beta_5 Workplace_{st} \times LessFlexibility_i \\ &\quad + \beta_6 Mother_{ist} \times LessFlexibility_i \\ &\quad + \beta_7 Workplace_{st} \times Mother_{ist} \times LessFlexibility_i \\ &\quad + X'_{ist}\Gamma + \theta_s + \theta_t + \epsilon_{ist}, \end{aligned} \tag{7}$$

where parameter β_4 captures the main effects of the workplace breastfeeding benefits.

The parameter of interest is β_7, and it can be interpreted as whether within each

[14]The following definitions describe the five characteristics: (1) Time pressure: How often does this job require the worker to meet strict deadlines? (2) Contact with others: How much does this job require the worker to be in contact with others—i.e., face-to-face, by telephone, or otherwise—in order to perform it? (3) Establishing and Establishing and maintaining interpersonal relationships: Developing constructive and cooperative working relationships with others, and maintaining them over time. (4) Structured versus unstructured work: To what extent is this job structured for the worker; i.e., does it allow the worker to determine tasks, priorities, and goals? (5) Freedom to make decisions: How much decision making freedom, without supervision, does the job offer.

[15]The occupation variable in the CPS is "occ2010." I use the crosswalk between "occ2010" and "2010SOC" to link the occupation to its characteristics in O*NET. Because O*NET occupations are cross-referenced by industry, I weigh the detailed occupation characteristics by the number of observations in each occupation. This allows me to match the characteristics to the CPS occupations. Then, following the approach outlined by Goldin (2014), I normalize the characteristics to arrive at a mean of zero and a standard deviation of 1.

industry difference in the temporal flexibility of occupations affects the impact of the workplace breastfeeding benefits on the female workers' labor market outcomes. Because the occupations are primarily determined by an individual's human capital, workers are not likely within one year of giving birth to sort across occupations on the basis of unobserved factors that also affect their labor market outcomes. Controlling for industry-fixed effects (included in the vector X_{ist}), the variable $LessFlexibility_i$ is plausibly orthogonal to the error term ϵ_{ist}. If β_7 is statistically significant, the workplace breastfeeding support will affect workers' labor market outcomes through the temporal flexibility of their occupations.

Table 18 shows the estimates for β_4 (the main impact of workplace breastfeeding benefits) and β_7 for different labor market outcomes. The regressions are estimated for the sample of the married with the covariates of the spousal characteristics. Column 1 shows the estimates of equation (7) for different outcomes. To better understand which dimension of the flexibility drives the results, I replace the $LessFlexibility_i$ in equation (7) with each of the five characteristics. The estimates of β_4 and β_7 are shown in columns 2-6.

In Panel A, the estimates of the parameter precedes $Workplace_{st} \times Mother_{ist}$ are positive in all columns, which is reassuring. The estimate for β_7 in Column 1 is negative and is statistically significant at the 1% level. This suggests that a one-standard deviation in the dimension of "less time flexibility" decreases the impact of workplace breastfeeding benefits on labor force participation by about 1.11 percentage points; this is about half the reduction of the main effects (2.13, estimate for β_4 in row 1). The estimates in columns 2-6 show that the effects seem to come from the "time pressure," "contact with others," and "structured workplace."

Similarly, in Panel D, the estimates for β_4 are positive in all columns, which is reassuring. The estimate for β_7 in Column 1 is positive and statistically significant at the 5% level. This finding suggests that a one-standard deviation in the dimension of "less time flexibility" increased the impact of workplace breastfeeding benefits on the log

hours of work by an additional 3.1%, which is about two thirds of the increase that comes from the main effects (4.26%, estimate for β_4 in row 1). This result confirms Proposition 2's prediction that if the employer faces a higher cost of providing the benefits (less time flexibility), the effects of the benefits on the hours of work will be larger still (a 3.1% larger increase on the hours of work). The estimates in columns 2-6 show that the effects seem to come from the dimension of "establishing relationships."

In Panel H, the estimates for β_4 once again are positive in all columns; although the estimate for β_7 in Column 1 is not statistically significant, the estimate for β_7 in column 6 is positive and it is statistically significant at the 5% level. This result suggests that a one-standard deviation in the dimension of "freedom of making decisions" increased the impact of workplace breastfeeding benefits on the log hourly wage last year by an additional 2.24%, which is about a half of the increase that comes from the main effects (4.38%, estimate for β_4 in row 1). This result shows that although the theory makes no prediction about the comparative statics for the hourly wage with respect to the cost of providing the benefit, the effects of the benefits on the hourly wage will be larger still if the higher cost is due to the freedom to make decisions.

In summary, in the case of occupations that have less flexibility, the increase in labor force participation is smaller, the increase in hours of work is larger, and the increase in the probability of working full-time is larger, than the changes when the occupations have more flexibility. That these findings are consistent with those of Goldin (2014) demonstrates that firms reward individuals who are willing to work long hours and particular hours. Jobs that entail less temporal flexibility often require higher human capital and are winner-take-all positions; they also are positions for which considerable work hours lead to a higher chance of promotion and a larger reward.

7.3 Alternative channels

Other characteristics at the workplace might have affected the impacts of workplace breastfeeding benefits. Among these is the concern that firm size (the number of em-

ployees in the firm) might affect the cost of providing benefits. Still another is the concern that firm location—for example, whether the firm locates in a central city—could affect costs. Furthermore, an employer's willingness to provide workplace breastfeeding benefits might be affected by whether the workplace has a high turnover (whether the worker has more than one employer during the last year). To rule out these alternative explanations I examine whether their interaction term with $Workplace_{st} \times Mother_{ist}$ is significant. To this end, I replace $LessFlexibility_i$ with individual-level variables that capture other dimensions of the workplace environment. The dummy variable $LargeFirm_i$ equals 1 if the individual's firm has more than 99 employees; the dummy variable $CentralCity_i$ equals 1 if the individual lives in a central city (conditional on whether the metropolitan status information is known); and the dummy variable $ChangeEmployer_i$ equals 1 if during the last year the individual has had more than 1 employer (conditional on her having had at least one employer).

Yet another concern is that the results might be driven by unobserved shocks on child care costs, which would affect the opportunity costs of using breastfeeding breaks at the workplace. I estimate whether the effects differ in accordance with childcare costs, which are proxied by the number of individuals in the CPS sample who work in childcare occupations (variable "occ1990" equals 468) and the number of workers who work in the childcare industries (variable "ind1990" equals 862 or 863), by state-year level.

Table 19 shows the estimates for the married sample with spouse covariates. For a few outcomes, the interaction term β_7 could be significant, but the estimates, such as random estimates for β_4, are not robust. It is plausible to conclude that these dimensions do not capture the main effects of the workplace breastfeeding benefits.

8 Additional effects of the benefits

8.1 Lagged effects

Several years after the law's initial enactment, does the law still affect females who have infant children? That is, are the effects simply a one-time shock or do they permanently change the interaction between nursing workers and firms? I use the following specification to estimate the lagged impact of the workplace breastfeeding benefits:

$$\begin{aligned} y_{ist} = \alpha + \beta_1 Workplace_{s,t-k} + \beta_2 \text{Mother of infant child}_{ist} \\ + \beta_3 Workplace_{s,t-k} \times \text{Mother of infant child}_{ist} + X_{ist}^{'}\Gamma + \theta_s + \theta_t + \epsilon_{ist}, \end{aligned} \tag{8}$$

where the dummy variable $Workplace_{s,t-k}$ equals 1 if state s during year $(t-k)$ passed the workplace breastfeeding mandate (otherwise it is 0) and where $k \in \{0, 1, \cdots, 7\}$. The dummy variable Mother of infant child_{ist} equals 1 if the youngest child of individual i is 0 years old, and it equals 0 if the individual is male.[16] The parameter of interest is β_3, which can be interpreted as the lagged effects of the workplace breastfeeding benefits k years after the state has enacted the mandate.

8.2 Spill-over effects

The spill-over effects can be estimated using the following specification:

$$\begin{aligned} y_{ist} = \alpha + \beta_1 Workplace_{st} + \beta_2 \text{Mother of k years old}_{ist} \\ + \beta_3 Workplace_{st} \times \text{Mother of k years old}_{ist} + X_{ist}^{'}\Gamma + \theta_s + \theta_t + \epsilon_{ist}. \end{aligned} \tag{9}$$

where the parameter of interest is β_3; it can be interpreted as the spill-over effects of workplace breastfeeding benefits for females whose youngest child is k years old.

Through several channels we may observe the spill-over effects in the case of women

[16] To conserve space in the equation of the lagged, spill-over and dynamic effects, I only present the specification for the flow outcome variables; the specification for the stock variables is adjusted accordingly, and it is omitted here.

whose youngest child is older than 0 year old. First, the worker may anticipate that in the future she will enjoy the benefits if she has another child, and this may lead her to be less likely to give up work. Second, the employer, too, can anticipate the change and treat females who have older children in the same manner that they treat females who are breastfeeding. Finally, because of the general equilibrium effects, other workers, too, will experience some effects, although the specific directions and magnitudes of these effects have yet to be established through empirical research.

8.3 Dynamic effects

Equation (3) identifies the contemporaneous effects of workplace breastfeeding benefits on females who have infant children—that is, the effects on females during their first postpartum year. One might be curious about whether the effects persist—for example, does having access to workplace breastfeeding benefits during the first postpartum year continue to affect the labor market outcomes of females two or three years after giving birth?

I use the following specification to estimate the dynamic impact of workplace breastfeeding benefits:

$$\begin{aligned} y_{ist} = \alpha + \beta_1 Workplace_{s,t-k} + \beta_2 \text{Mother of k years old}_{ist} \\ + \beta_3 Workplace_{s,t-k} \times \text{Mother of k years old}_{ist} + X_{ist}^{'}\Gamma + \theta_s + \theta_t + \epsilon_{ist}, \end{aligned} \quad (10)$$

where the dummy variable $Workplace_{s,t-k}$ equals 1 if state s during year $(t-k)$ has passed the workplace breastfeeding mandate; otherwise it is 0. $k \in \{0, 1, 2, \cdots, 7\}$. The dummy variable Mother of k years old$_{ist}$ equals 1 if the youngest child of individual i is k years old and it equals 0 if the individual is male. The parameter of interest is β_3, which can be interpreted as the effects of workplace breastfeeding benefits k years after the state enacted the mandate. The hypothesis is that having access to workplace breastfeeding support during the first postpartum year (k years ago, when the female

was still nursing her child) impacts a mother's labor market outcomes during later years (when her child is k years old). Note that when $k = 0$, equation (10) is the same as the equation (3); the latter describes the contemporaneous effects of the benefits.

Why might we observe dynamic effects several years after the law has been implemented? Several explanations come to mind. First, several years after implementation of the law the productivity of workers could be higher because firm-specific human capital has been acquired. Second, due to the sticky wage effect, firms might adjust wages later. Finally, some psychological and health benefits might emerge only over the long term. It is reasonable to expect dynamic effects because of path-dependence.

8.4 Comparing the spill-over, dynamic and lagged effects

Figure 12 to Figure 21 show the relative magnitudes of the spill-over, dynamic, and lagged effects on all outcome variables of interest. With regards to spill-over effects, the y axis denotes the estimates for β_3 in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$; for the long-term effects, the y axis denotes the estimates for β_3 in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. The x-axis denotes the k in the variable $Workplace_{s,t-k}$ and Mother of k years old$_{ist}$, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for β_3 in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$. The x-axis denotes the k in the variable $Workplace_{s,t-k}$, $k \in \{0, 1, 2, \cdots, 7\}$. For example, Figure 12 shows that a positive and stable effect of the lagged effects lasts for years. The spill-over and the dynamic effects track each other: both are significantly smaller than the lagged effects but both decrease in k. Similarly, 19 shows that a negative and stable effect of the lagged effects persists across the years. The spill-over and the dynamic effects track each other: both are significantly less negative than the lagged effects, and the magnitudes of both decrease in k.

In summary, the dynamic effects of the law account for at least some of the spill-over effects. In the case of the extensive margin (labor force participation and employment last year) we can clearly separate the main effects of the mandates from the spill-over effects: certain shocks that are specific to the mothers of infants (rather than females

with older children) remain statistically significant for up to eight years after the law's enactment.

9 Conclusion

This paper looks at how workers' employment and wages in the U.S. have been affected by workplace breastfeeding benefits that have been mandated by law. From 1995 to 2009, about half of all states passed mandates that require employers to provide unpaid break time and a special private space so that nursing employees can express milk at the workplace. Mothers enjoy this benefit for a period of one to three years after giving birth.

I argue that workplace breastfeeding benefits increase the cost to firms of hiring and reduce the cost to young mothers of breastfeeding. A simple extension of the standard framework indicates that if firms are willing to increase the labor demand for mothers who are most productive, mandated benefits can increase the demand for and the supply of the mothers of infants, which, in turn, increases the wages of and, in all likelihood, the work attachment of these women.

Consistent with these expectations, the empirical results suggest that workplace breastfeeding benefits increase the duration of breastfeeding, although the impact on the initiation of breastfeeding is insignificant. The labor force participation of mothers of infants increases. Married mothers work longer hours and receive a higher wage, although single mothers do not work longer and receive a lower wage. The results are robust to alternative specifications, including the event-study framework for the labor market outcomes and hazard models for the duration of breastfeeding. Analyzing the detailed requirements of the state mandates, I show that the effects work through the differential interactions of the extensive and intensive margins, and I find evidence of discrimination. I present evidence that the effects work through occupational differences in temporal flexibility.

The empirical results suggest that workplace attitudes about breastfeeding causally

affect the duration of breastfeeding and the extensive and the intensive margins of labor market outcomes. My finding that workplace breastfeeding benefits increase the hourly wages of females who have infant children runs counter to the general theory that states that mandated benefits depress wages (Summers, 1989; Gruber, 1994).

My findings do not address the efficiency and welfare consequences of workplace breastfeeding benefits. My model is a partial-equilibrium model: the workers consist only of the mothers of infants. Although the model provides no prediction about the general equilibrium effects, the empirical results show that spill-over effects are limited: workplace breastfeeding benefits also affect the labor market outcomes of females who have older children, perhaps because of the existence of the dynamic effects, including anticipation effects. Nonetheless, analysis of workplace breastfeeding support reveals that the impact of labor market outcomes on the mothers of infants persists for up to eight years after enactment of the law.

That fact that providing workplace breastfeeding support can be mutually beneficial to both the employee and the employer suggests that public policies are needed to educate and incentivize employers to be more willing to provide that support. Because it allows more nursing employees to work more and receive a higher wage, workplace breastfeeding benefits would seem to constitute a step towards the promotion of gender equality in the corporate world. Women might be able to "have it all" (more breastfeeding and more working) if employers provided a more supportive environment at the workplace. The empirical evidence suggests that providing these benefits for more than one year and prohibiting discrimination and retaliation improves the labor market outcomes of nursing workers.

My findings predict that in states that have not yet passed comparable mandates the Affordable Care Act would improve the breastfeeding and labor market outcomes of women who have infant children. To estimate the impact of the ACA's workplace breastfeeding support mandate, researchers could use these states as the treated group, and they could use states that have already passed versions of the mandate as the

control group. To study the impact of these benefits on employers, future researchers might want to analyze matched employer-employee data.

References

Abdulloeva, Safina and Amy A Eyler, "Policies on Worksite Lactation Support Within States and Organizations," *Journal of Women's Health*, 2013, *22* (9), 769–774.

Acemoglu, Daron, David Lyle et al., "Women, war, and wages: The effect of female labor supply on the wage structure at midcentury," *Journal of Political Economy*, 2004, *112* (3), 497–551.

Altonji, Joseph G, Todd E Elder, and Christopher R Taber, "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools.," *Journal of Political Economy*, 2005, *113* (1), 151.

Andrews, Sarah, "Lactation Breaks in the Workplace: What Employers Need to Know About the Nursing Mothers Amendment to the FLSA," *Hofstra Lab. & Emp. LJ*, 2012, *30*, 121.

Angrist, Joshua D and Jörn-Steffen Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton university press, 2008.

_ **and William N Evans**, "Children and Their Parents? Labor Supply: Evidence from Exogenous Variation in Family Size," *The American Economic Review*, 1998, *88* (3), 450–477.

Bailey, Martha J, "More power to the pill: the impact of contraceptive freedom on women's life cycle labor supply," *The Quarterly Journal of Economics*, 2006, pp. 289–320.

Baker, Michael and Kevin Milligan, "Maternal Employment, Breastfeeding, and Health: Evidence From Maternity Leave Mandates," *Journal of Health Economics*, 2008, *27* (4), 871–887.

_ **, Jonathan Gruber, Kevin Milligan et al.**, "Universal Child Care, Maternal Labor Supply, and Family Well-Being," *Journal of Political Economy*, 2008, *116* (4), 709–745.

Bauernschuster, Stefan and Martin Schlotter, "Public child care and mothers' labor supplyEvidence from two quasi-experiments," *Journal of Public Economics*, 2015, *123*, 1–16.

Belfield, Clive R and Inas Rashad Kelly, "The Benefits of Breast Feeding across the Early Years of Childhood," *Journal of Human Capital*, 2012, *6* (3), 251–277.

Berry, William D, Evan J Ringquist, Richard C Fording, and Russell L Hanson, "Measuring Citizen and Government Ideology in the American States, 1960-93," *American Journal of Political Science*, 1998, pp. 327–348.

Black, Dan A, Natalia Kolesnikova, and Lowell J Taylor, "Why do so few women work in New York (and so many in Minneapolis)? Labor supply of married women across US cities," *Journal of Urban Economics*, 2014, *79*, 59–71.

Blau, David and Janet Currie, "Pre-school, day care, and after-school care: who's minding the kids?," *Handbook of the Economics of Education*, 2006, *2*, 1163–1278.

Blau, David M and Philip K Robins, "Child-care costs and family labor supply," *The Review of Economics and Statistics*, 1988, pp. 374–381.

Blau, Francine D and Lawrence M Kahn, "Female Labor Supply: Why Is the United States Falling Behind?," *The American Economic Review*, 2013, *103* (3), 251–256.

Cascio, Elizabeth U, "Maternal labor supply and the introduction of kindergartens into American public schools," *Journal of Human resources*, 2009, *44* (1), 140–170.

Centers for Disease Control and Prevention, "Breastfeeding Report Card United States/2014," *Retrieved from http://www.cdc.gov/breastfeeding/pdf/2014breastfeedingreportcard.pdf*, 2014.

Chatterji, Pinka and Kevin D Frick, "Does Returning to Work After Childbirth Affect Breastfeeding Practices?," *Review of Economics of the Household*, 2005, *3* (3), 315–335.

Compton, Janice and Robert A Pollak, "Family proximity, childcare, and womens labor force attachment," *Journal of Urban Economics*, 2014, *79*, 72–90.

Connelly, Rachel, "The effect of child care costs on married women's labor force participation," *The Review of Economics and Statistics*, 1992, pp. 83–90.

Cortes, Patricia and Jessica Pan, "Outsourcing household production: Foreign domestic workers and native labor supply in Hong Kong," *Journal of Labor Economics*, 2013, *31* (2), 327–371.

Fein, Sara B and Brian Roe, "The Effect of Work Status on Initiation and Duration of Breast-feeding.," *American Journal of Public Health*, 1998, *88* (7), 1042–1046.

_ , Bidisha Mandal, and Brian E Roe, "Success of strategies for combining employment and breastfeeding," *Pediatrics*, 2008, *122* (Supplement 2), S56–S62.

Fernández, Raquel, Alessandra Fogli, and Claudia Olivetti, "Mothers and sons: Preference formation and female labor force dynamics," *The Quarterly Journal of Economics*, 2004, pp. 1249–1299.

Fomon, Samuel J, "Infant feeding in the 20th century: formula and beikost," *The Journal of nutrition*, 2001, *131* (2), 409S–420S.

Goldin, Claudia, "A grand gender convergence: Its last chapter," *The American Economic Review*, 2014, *104* (4), 1091–1119.

Greene, William H., *Econometric analysis*, 6th ed., Boston: Prentice Hall, 2008.

Gruber, Jonathan, "The Incidence of Mandated Maternity Benefits," *The American Economic Review*, 1994, pp. 622–641.

Hardoy, Inés and Pål Schøne, "Enticing even higher female labor supply: The impact of cheaper day care," *Review of Economics of the Household*, 2015, *13* (4), 815–836.

Henry, Beverly W et al., "What employers and health care providers can do to support breastfeeding in the workplace: aiming to match positive attitudes with action," *ICAN: Infant, Child, & Adolescent Nutrition*, 2011, p. 1941406411419849.

Jayachandran, Seema and Ilyana Kuziemko, "Why Do Mothers Breastfeed Girls Less than Boys? Evidence and Implications for Child Health in India," *Quarterly Journal of Economics*, 2011, *126* (3).

Klerman, Jacob Alex, "US Abortion Policy and Fertility," *American Economic Review*, 1999, pp. 261–264.

Lazear, Edward P and Sherwin Rosen, "Male-female wage differentials in job ladders," *Journal of Labor Economics*, 1990, pp. S106–S123.

Lefebvre, Pierre and Philip Merrigan, "Child-care policy and the labor supply of mothers with young children: A natural experiment from Canada," *Journal of Labor Economics*, 2008, *26* (3), 519–548.

Levine, Phillip B, Douglas Staiger, Thomas J Kane, and David J Zimmerman, "Roe v Wade and American fertility.," *American Journal of Public Health*, 1999, *89* (2), 199–203.

Murtagh, Lindsey and Anthony D Moulton, "Working mothers, breastfeeding, and the law," *American Journal of Public Health*, 2011, *101* (2), 217–223.

Oi, Walter Y, "Labor as a quasi-fixed factor," *The Journal of Political Economy*, 1962, pp. 538–555.

Pal, Ipshita and Jane Waldfogel, "The Family Gap in Pay: New Evidence for 1967 to 2013," *RSF*, 2016.

Rossin, Maya, "The Effects of Maternity Leave On Children's Birth and Infant Health Outcomes In the United States," *Journal of Health Economics*, 2011, *30* (2), 221–239.

Rothstein, Donna S, "Breastfeeding and Children's Early Cognitive Outcomes," *Review of Economics and Statistics*, 2013, *95* (3), 919–931.

Ruhm, Christopher J, "The Economic Consequences of Parental Leave Mandates: Lessons from Europe," *Quarterly Journal of Economics*, 1998, pp. 285–317.

Ryan, Alan S., Zhou Wenjun, and Andrew Acosta, "Breastfeeding Continues to Increase Into the New Millennium," *Pediatrics*, 2002, *110* (6), 1103–1109.

Schwartz, Kendra, Hannah JS D Arcy, Brenda Gillespie, Janet Bobo, Marylou Longeway, and Betsy Foxman, "Factors Associated with Weaning in the First 3 Months Postpartum," *Journal of Family Practice*, 2002, *51* (5), 439–444.

Stevens, Emily E, Thelma E Patrick, and Rita Pickler, "A history of infant feeding," *The Journal of perinatal education*, 2009, *18* (2), 32–39.

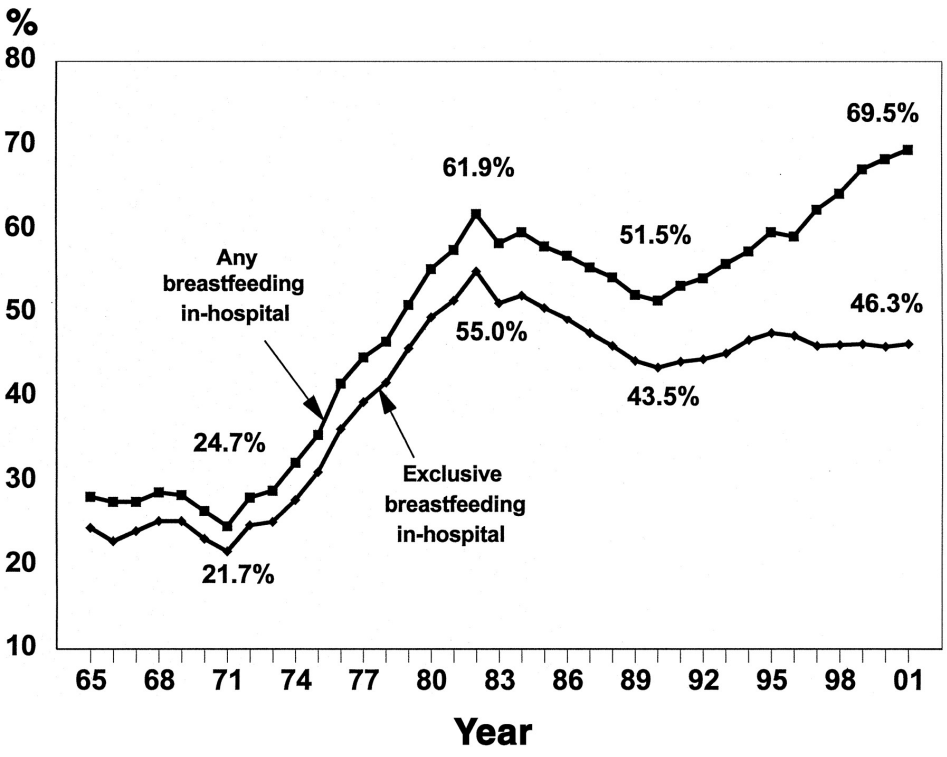
Summers, Lawrence H, "Some simple economics of mandated benefits," *The American Economic Review*, 1989, *79* (2), 177–183.

United States Breastfeeding Committee, "Workplace Accommodations to Support and Protect Breastfeeding," 2010.

Waldfogel, Jane, "The Impact of the Family and Medical Leave Act," *Journal of Policy Analysis and Management*, 1999, *18* (2), 281–302.

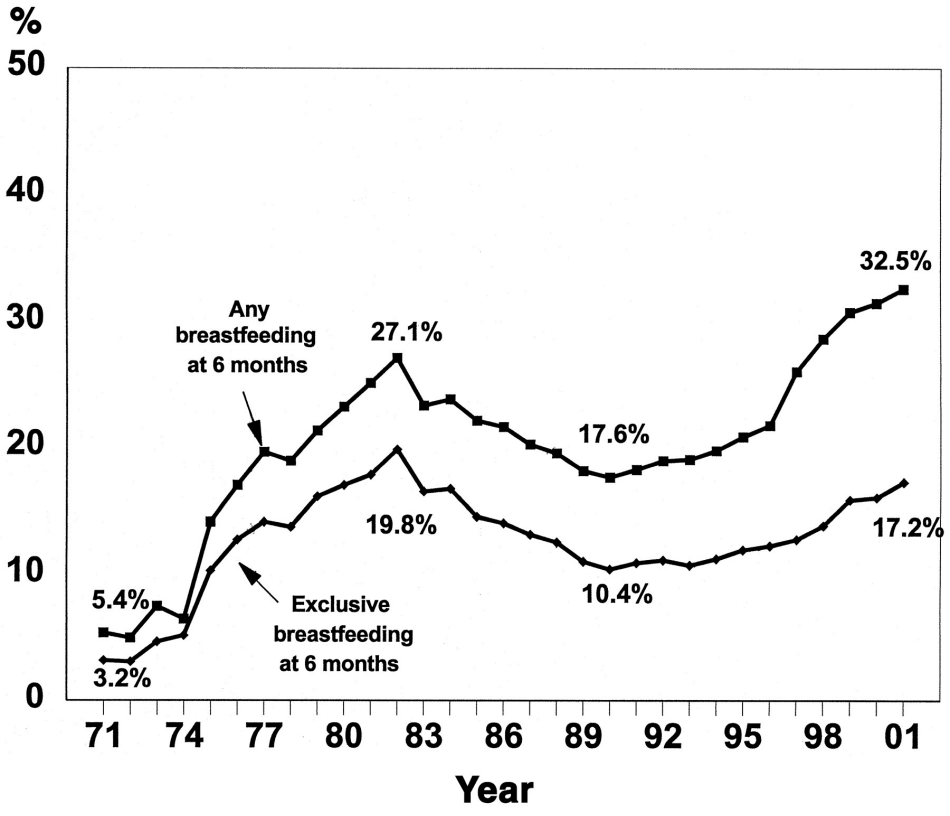
A Figures

Figure 1: Trend of In-Hospital Breastfeeding Initiation Rates, 1965-2001



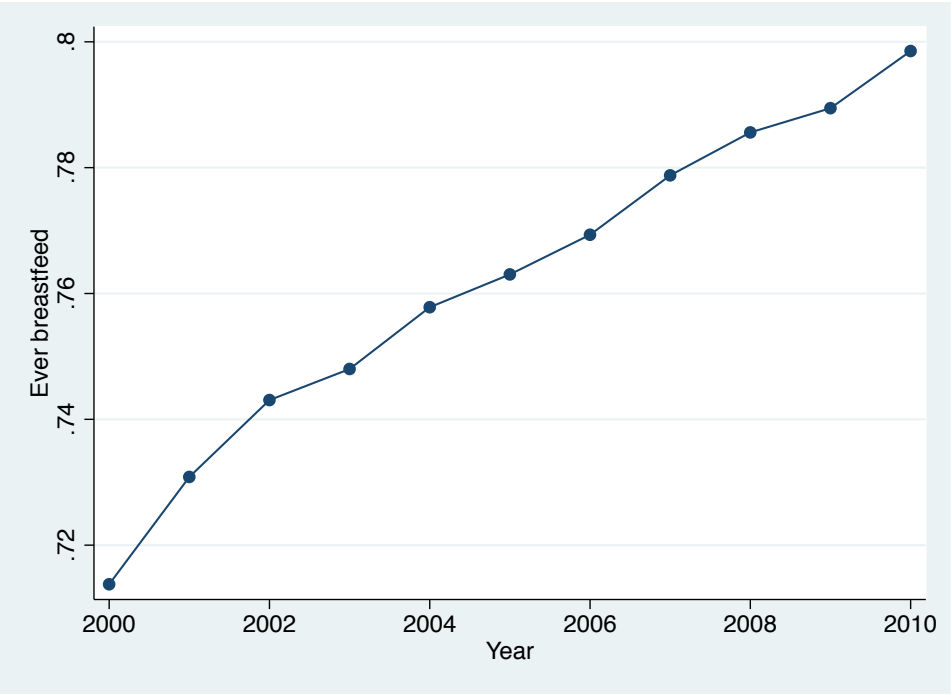
Source: Ryan et al. (2002)

Figure 2: Trend of The Percentage of Babies Breastfed at Month 6, 1971-2001



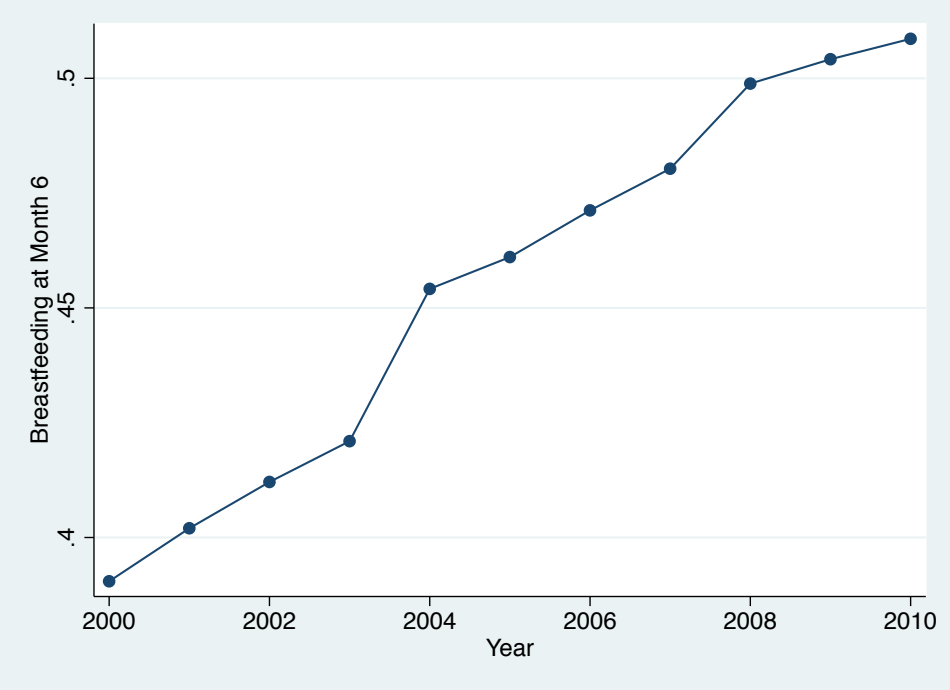
Source: Ryan et al. (2002)

Figure 3: Breastfeeding Initiation, 2000-2010



Source: Author's calculation using National Immunization Survey, 2003-2013.

Figure 4: Breastfeeding at Month 6, 2000-2010



Source: Author's calculation using National Immunization Survey, 2003-2013.

Figure 5: The Years of Passage of State Laws on Workplace Breastfeeding Support

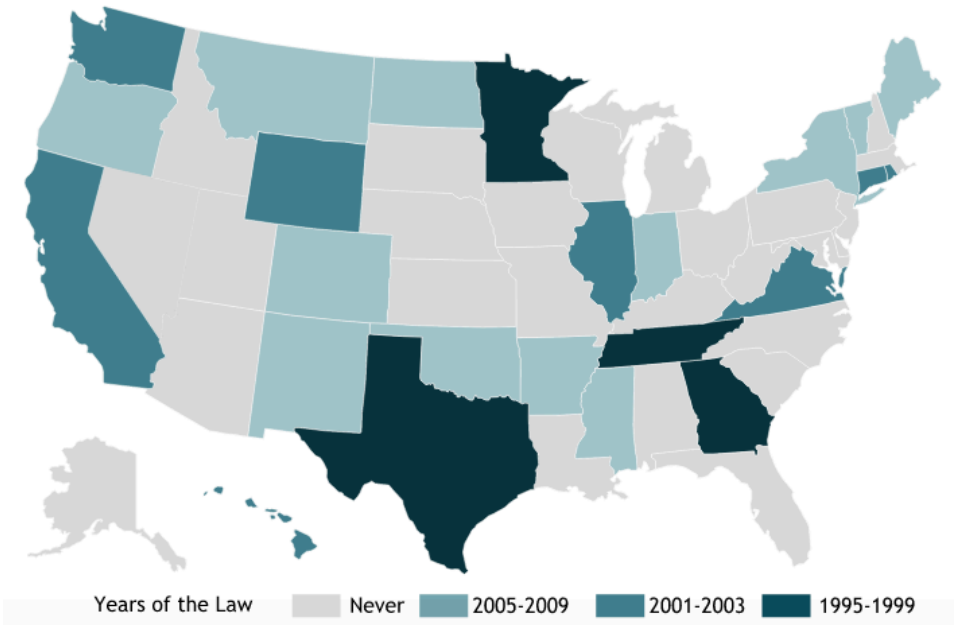


Figure 6: Theoretical Framework, Mandated Benefits in General

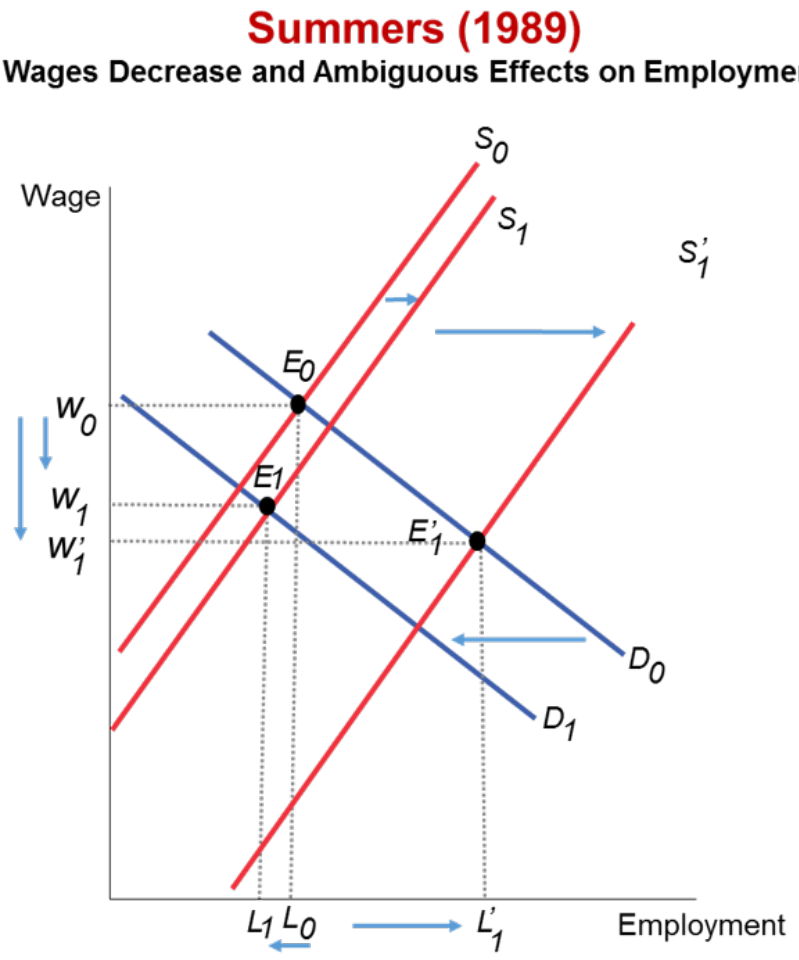


Figure 7: Theoretical Framework, Workplace Breastfeeding Benefits

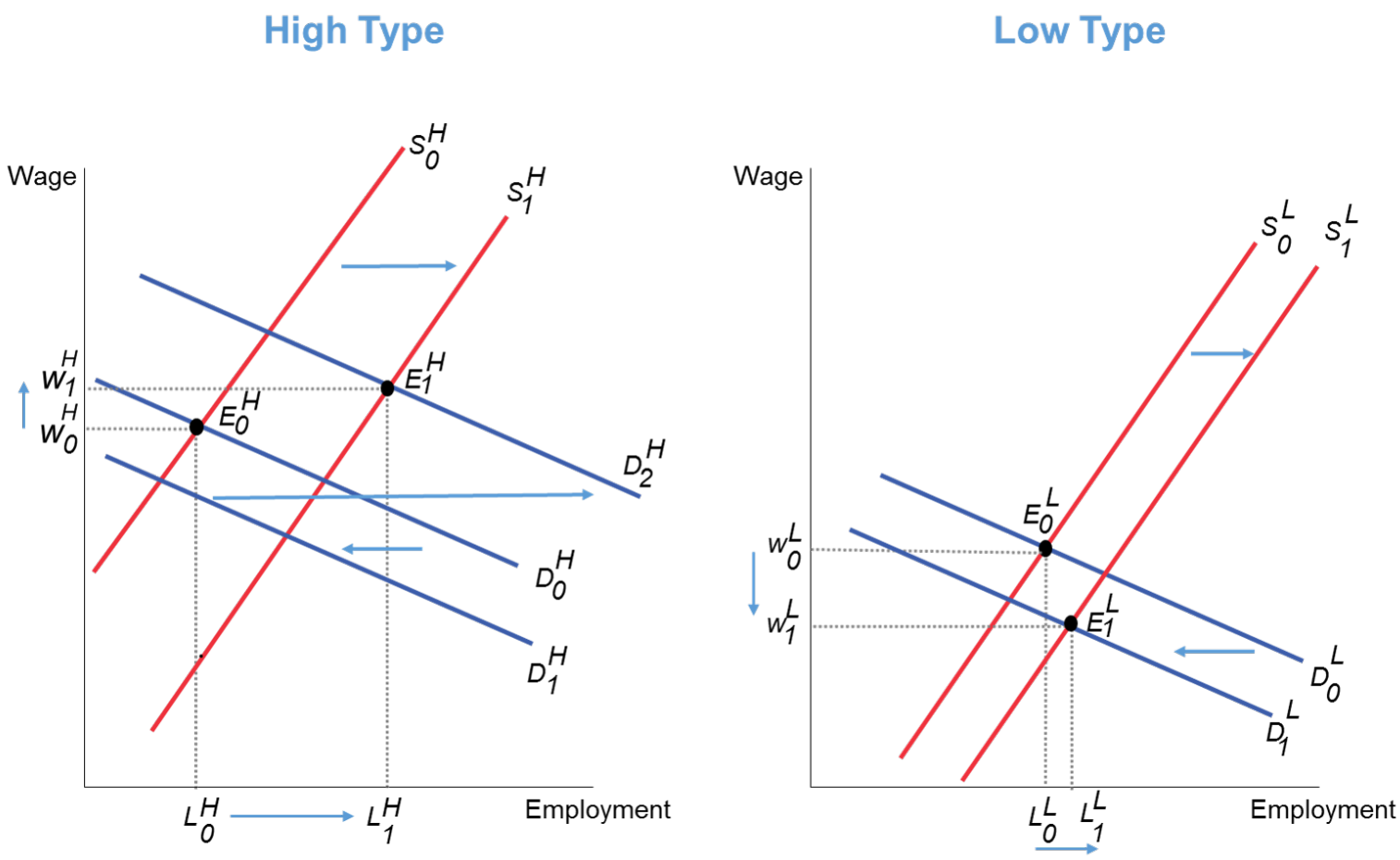
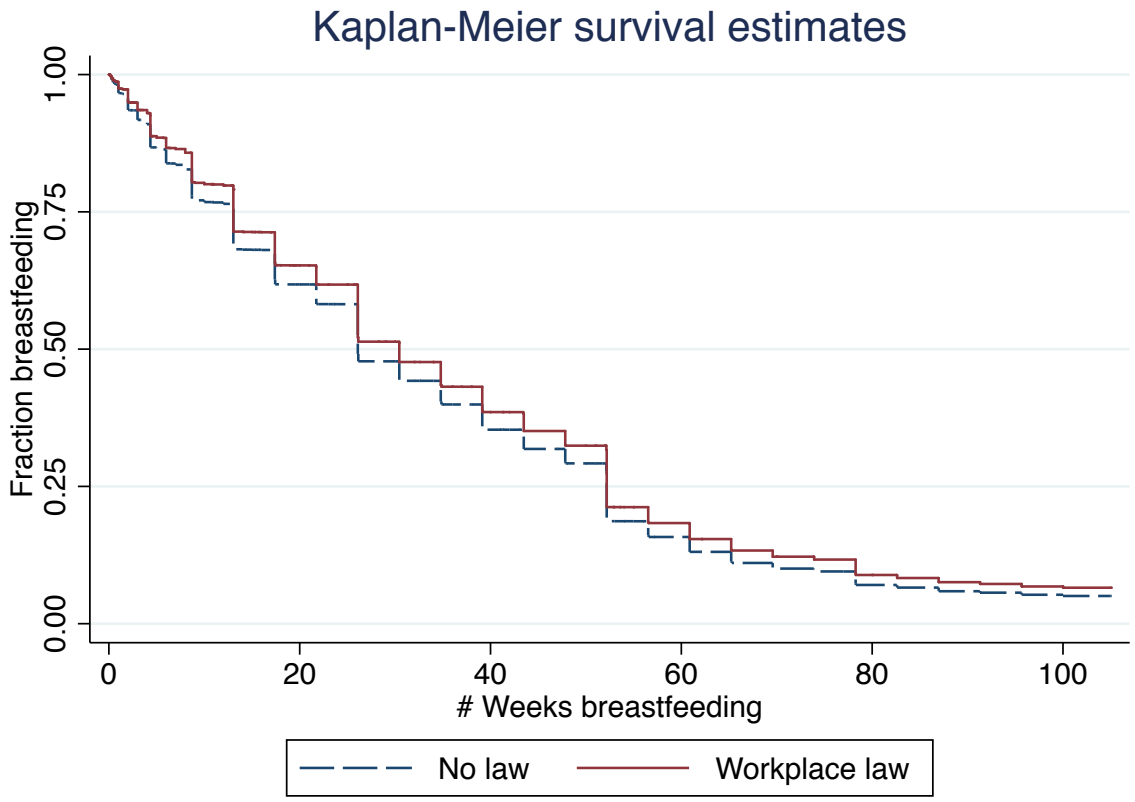
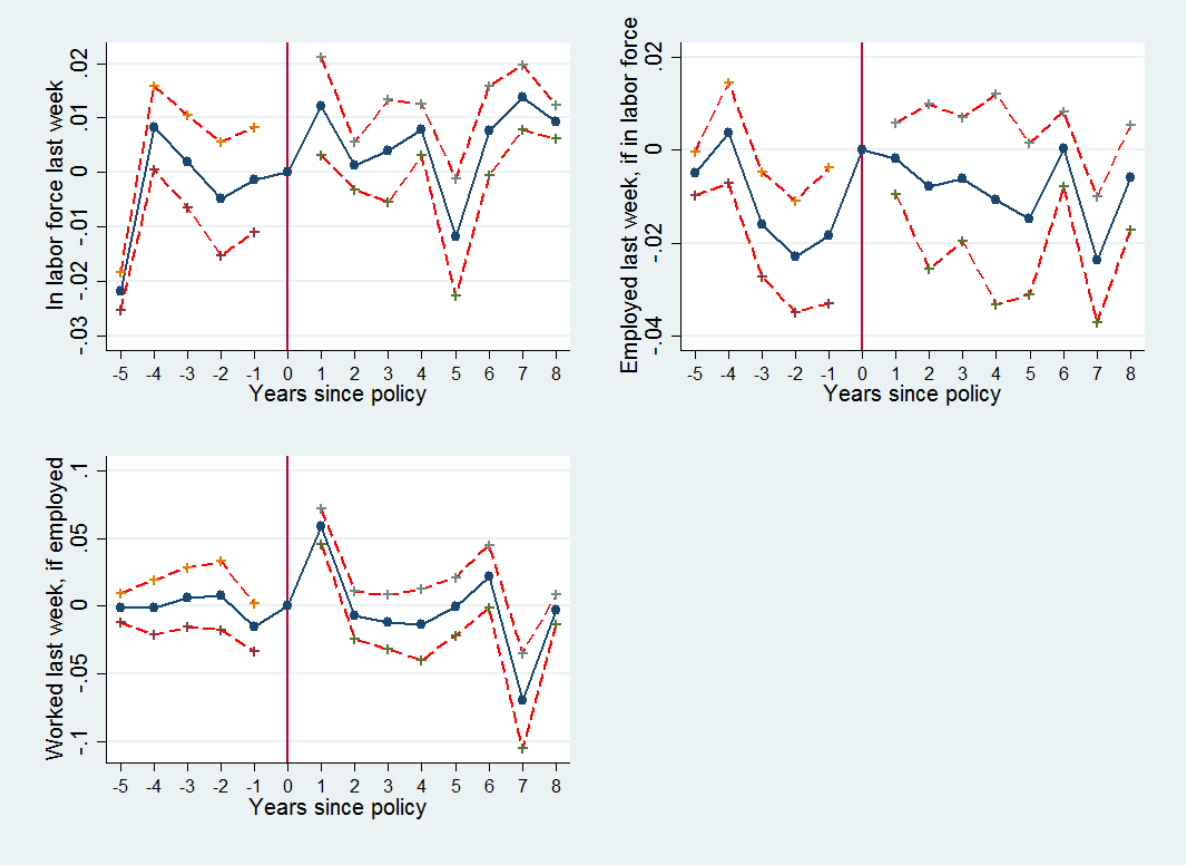


Figure 8: Effects of the Workplace Breastfeeding Benefits Mandates on the Duration of Breastfeeding



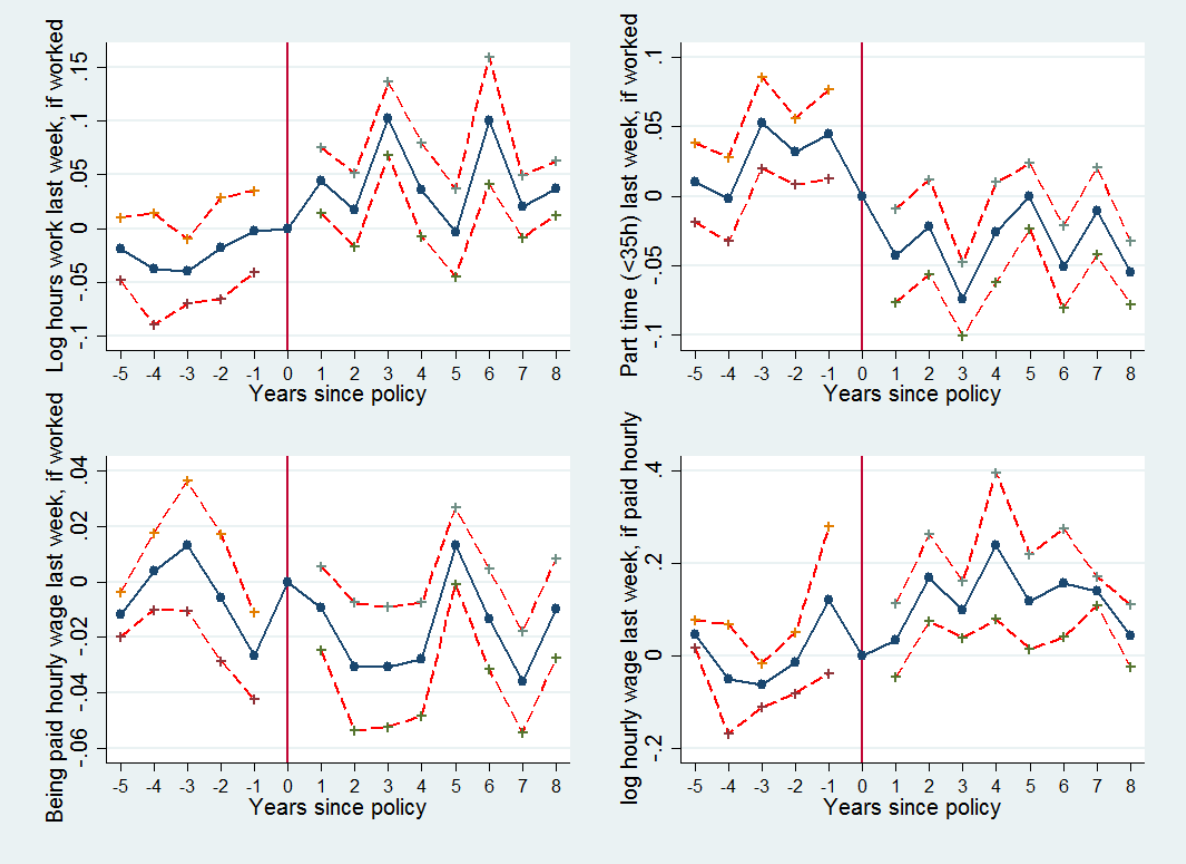
Notes: The figure shows the Kaplan-Meier survival curves for the number of weeks of breastfeeding with and without the access to the workplace breastfeeding law. The y-axis is the fraction of babies that are still being breastfed at each week after birth. The difference between the two groups is statistically significant at 5% level.

Figure 9: Labor Market Effects of the Workplace Breastfeeding Benefits Mandates, Extensive Margins



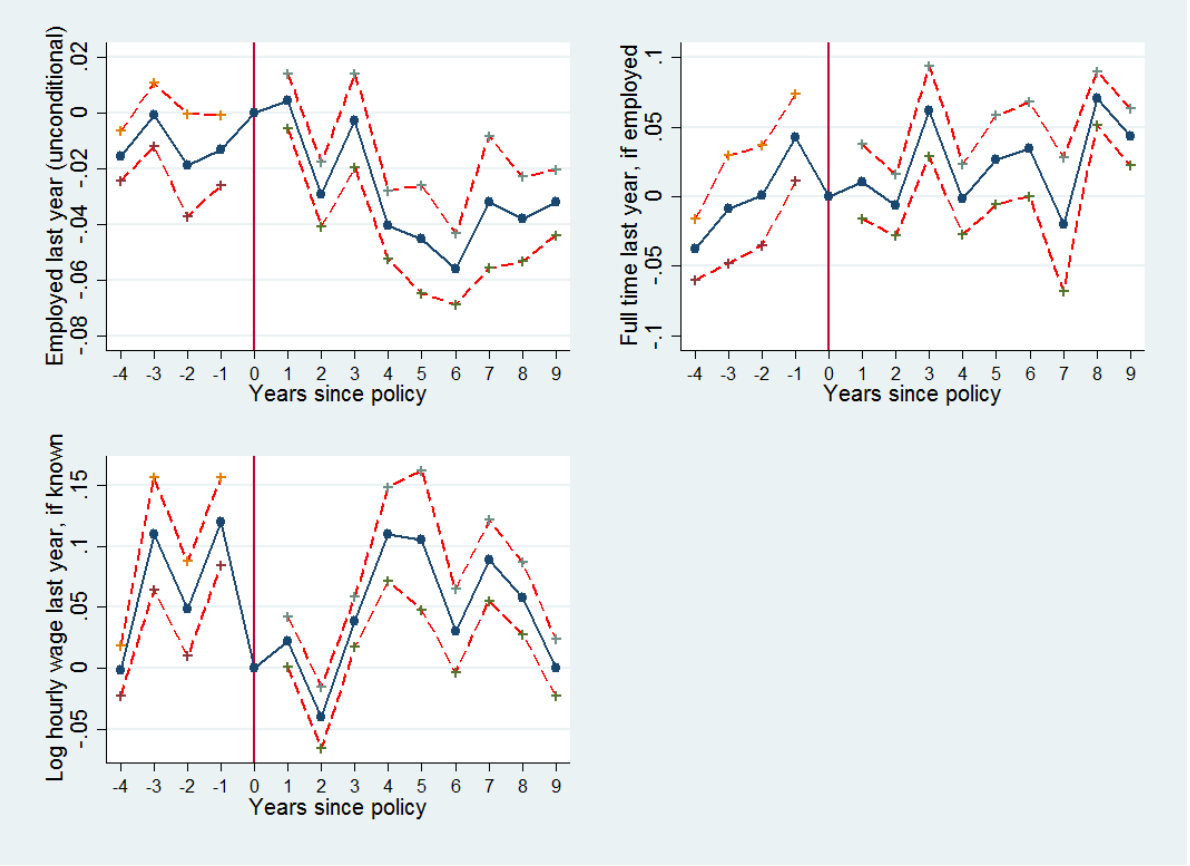
Notes: The y-axis plots the estimate and the 95% confidence intervals for the interaction term of the Women with infant children dummy and the dummy variable denoting k years post the enactment of the state level mandate. Note that $k = -5$ denotes that the year is 5 or more than 5 years before the state mandate, and $k = 8$ denotes the year is 8 or more than 8 years following mandate. The covariates include the state specific time trends.

Figure 10: Labor Market Effects of the Workplace Breastfeeding Benefits Mandates, Intensive Margins



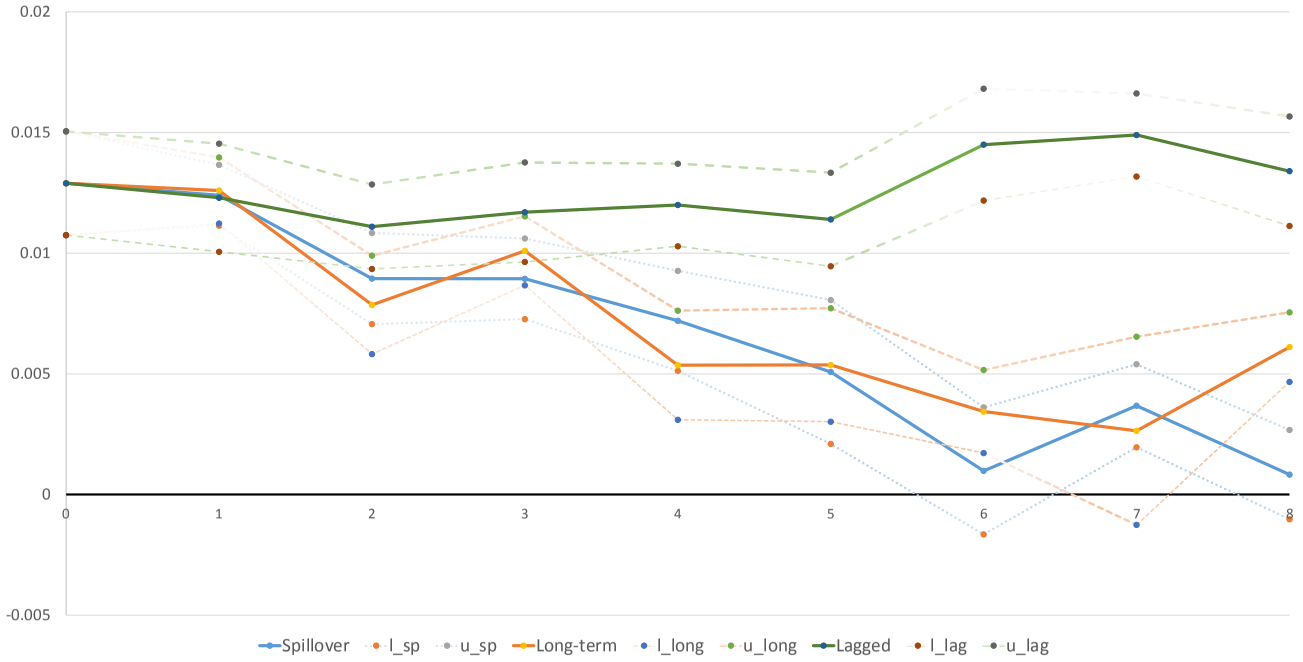
Notes: The y-axis plots the estimate and the 95% confidence intervals for the interaction term of the Women with infant children dummy and the dummy variable denoting k years post the enactment of the state level mandate. Note that $k = -5$ denotes that the year is 5 or more than 5 years before the state mandate, and $k = 8$ denotes the year is 8 or more than 8 years following mandate. The covariates include the state specific time trends.

Figure 11: Labor Market Effects of the Workplace Breastfeeding Benefits Mandates, Outcomes in the previous year



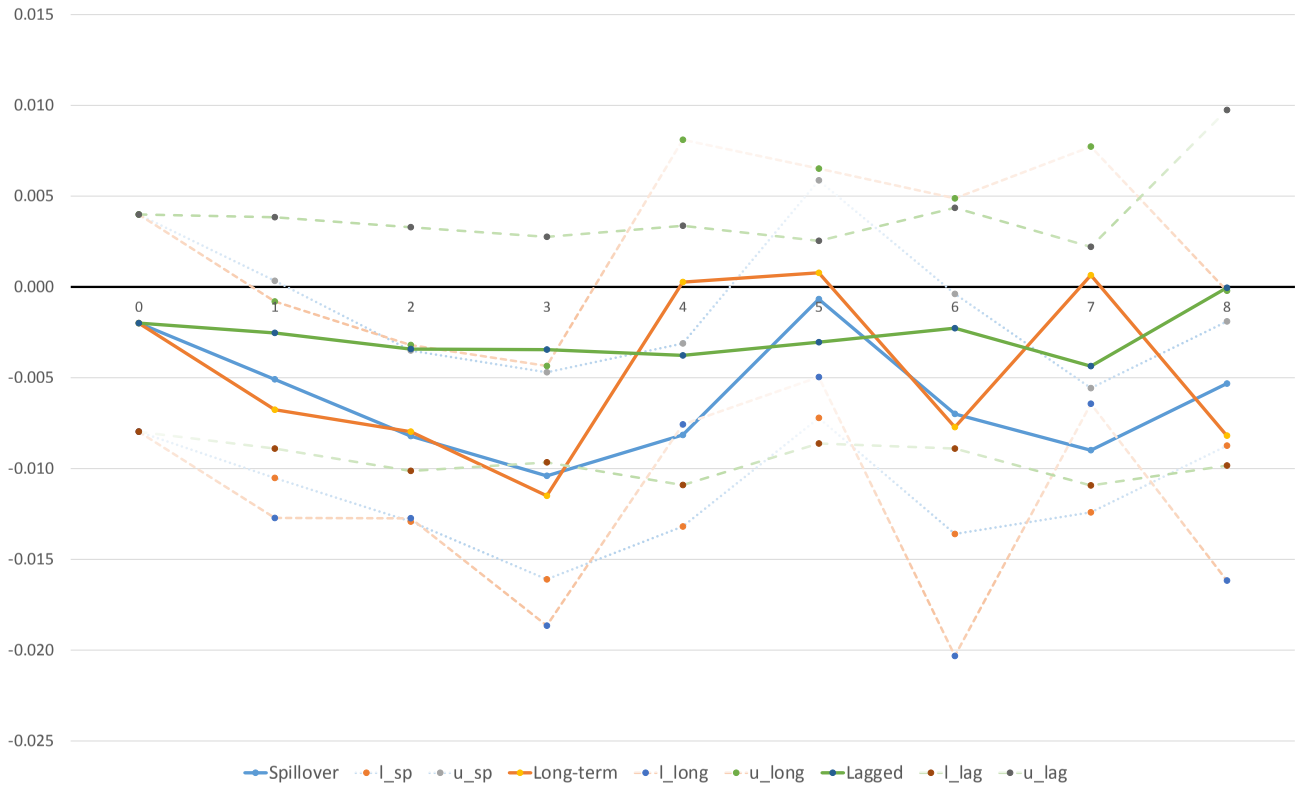
Notes: The y-axis plots the estimate and the 95% confidence intervals for the interaction term of the Women with infant children dummy and the dummy variable denoting k years post the enactment of the state level mandate. Note that $k = -5$ denotes that the year is 5 or more than 5 years before the state mandate, and $k = 8$ denotes the year is 8 or more than 8 years following mandate. The covariates include the state specific time trends.

Figure 12: Long-Term, Spill-Over, and Lagged Effects on Labor Force Participation



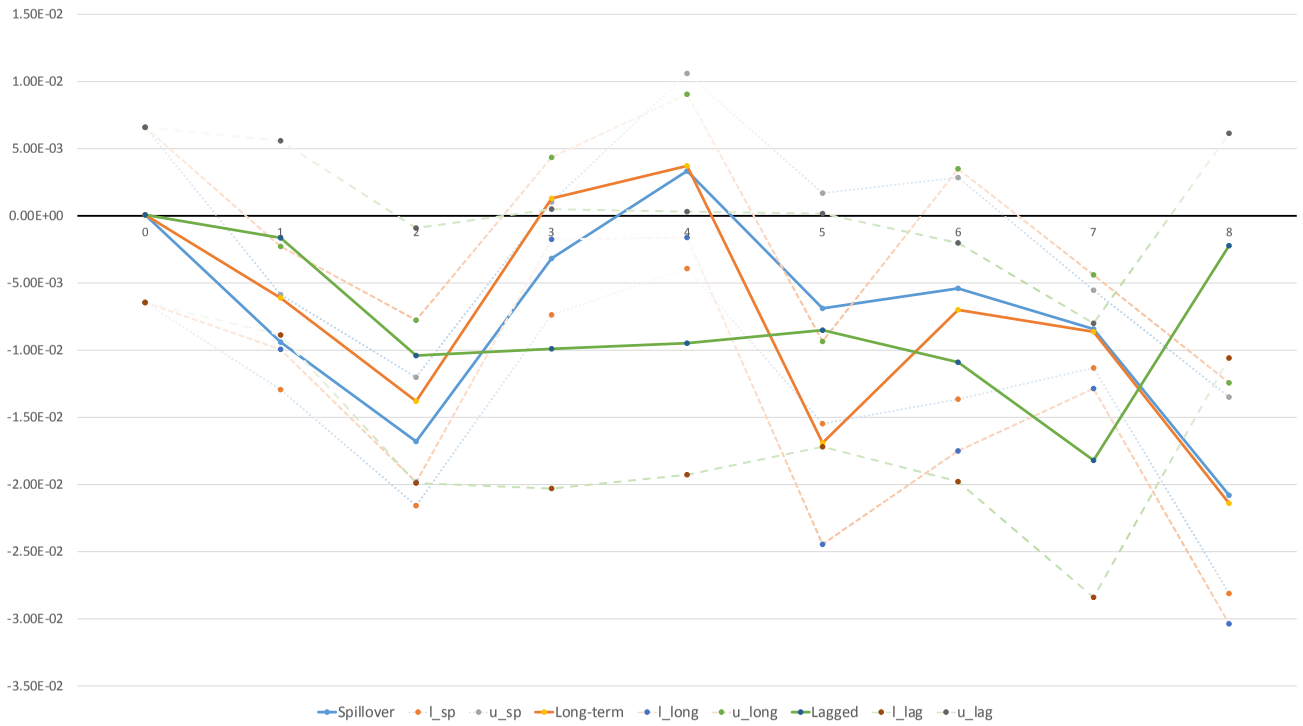
Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 13: Long-Term, Spill-Over, and Lagged Effects on Probability of Being Employed



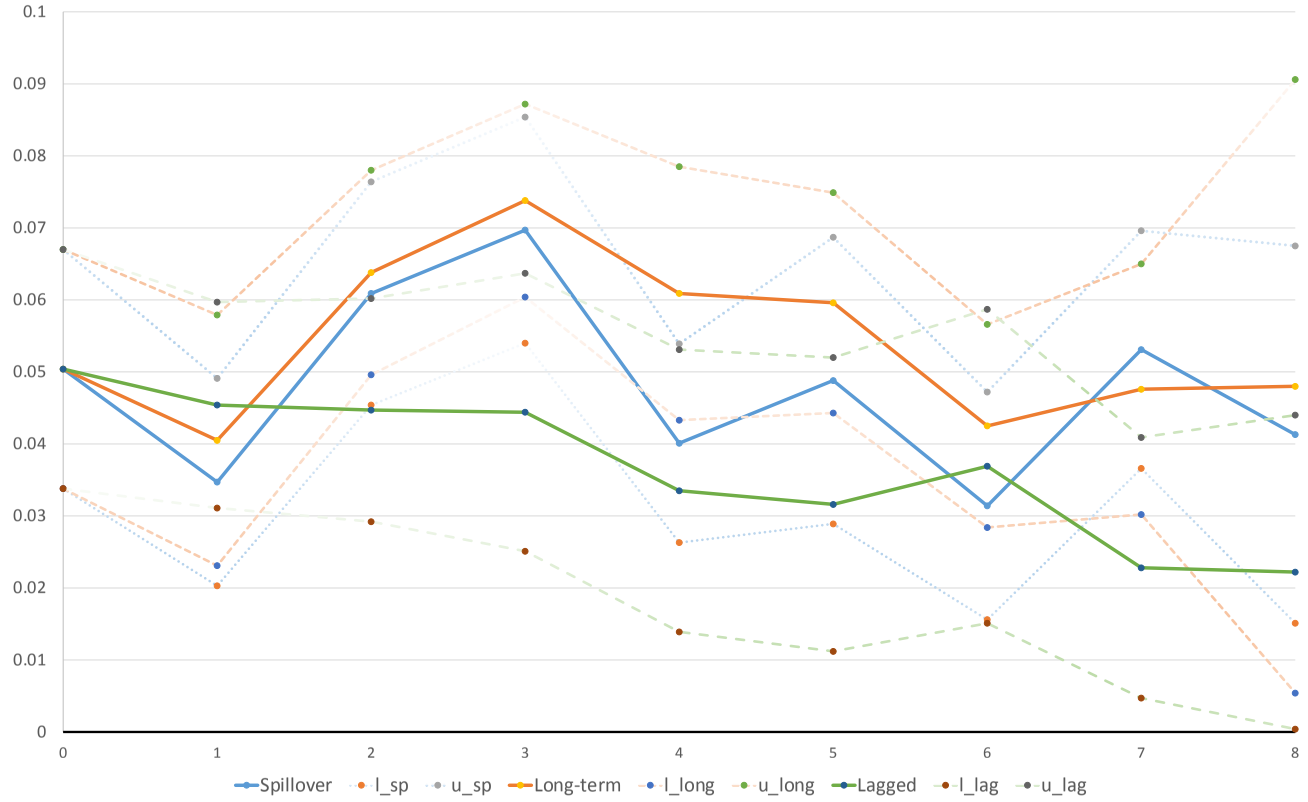
Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 14: Long-Term, Spill-Over, and Lagged Effects on Probability of Working



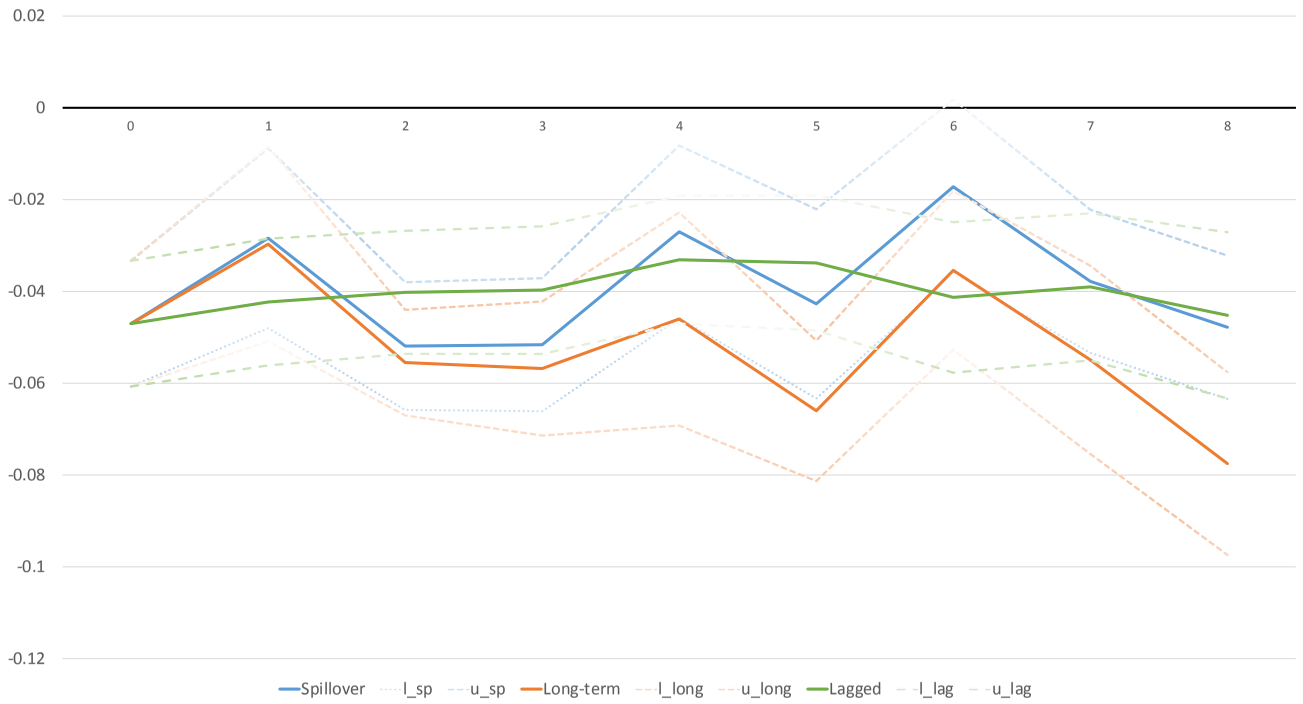
Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 15: Long-Term, Spill-Over, and Lagged Effects on Hours of Work



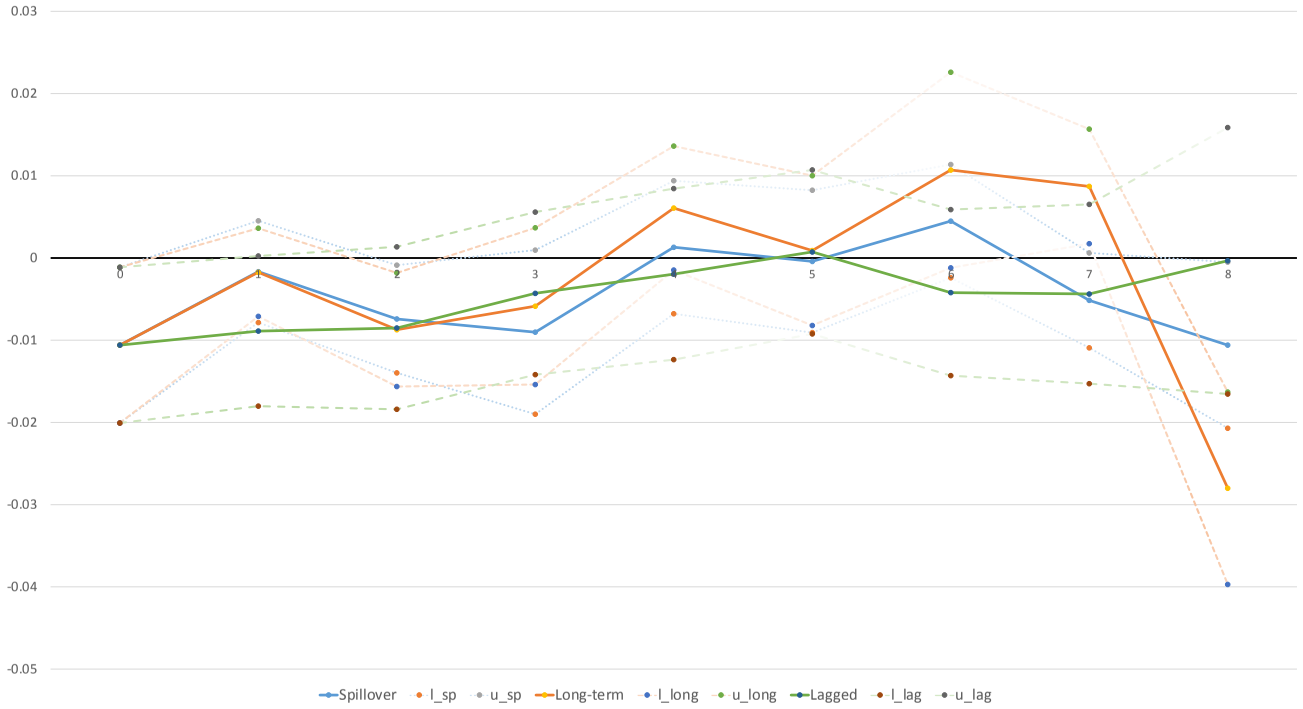
Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 16: Long-Term, Spill-Over, and Lagged Effects on Probability of Working Part Time



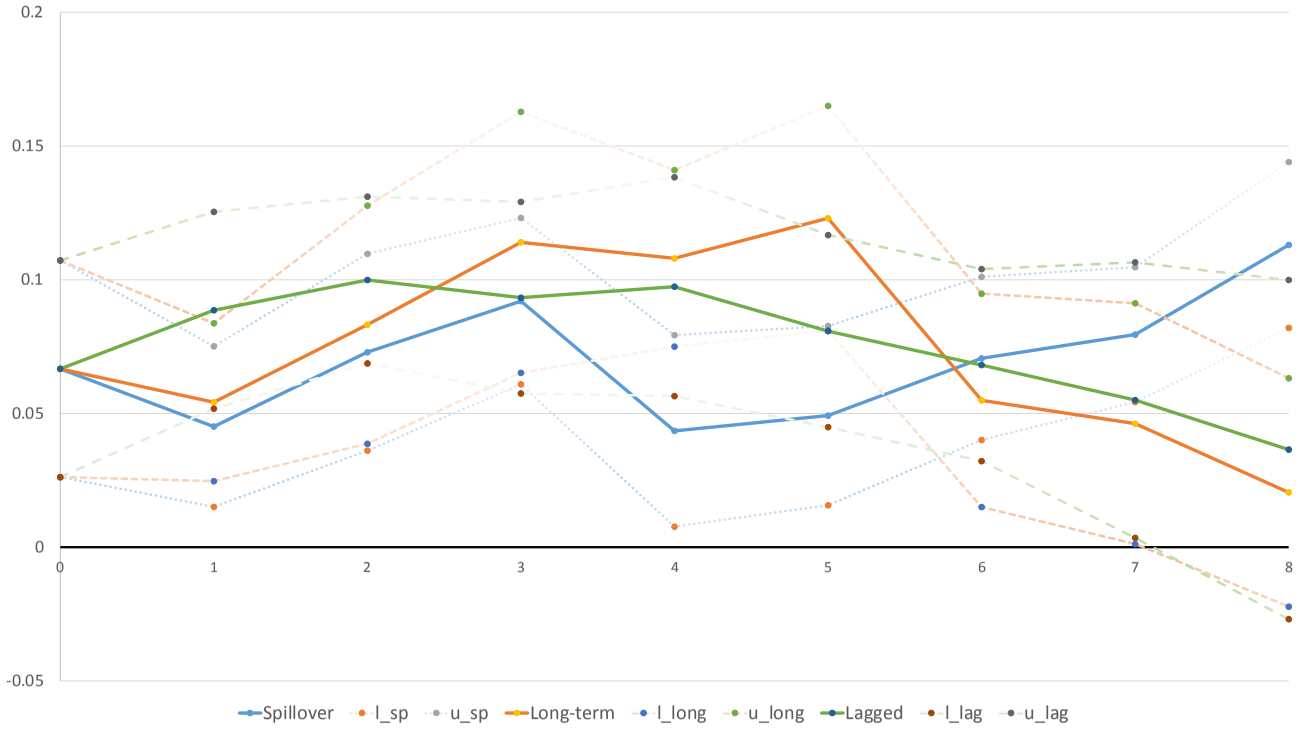
Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 17: Long-Term, Spill-Over, and Lagged Effects on Probability of Being Paid Hourly



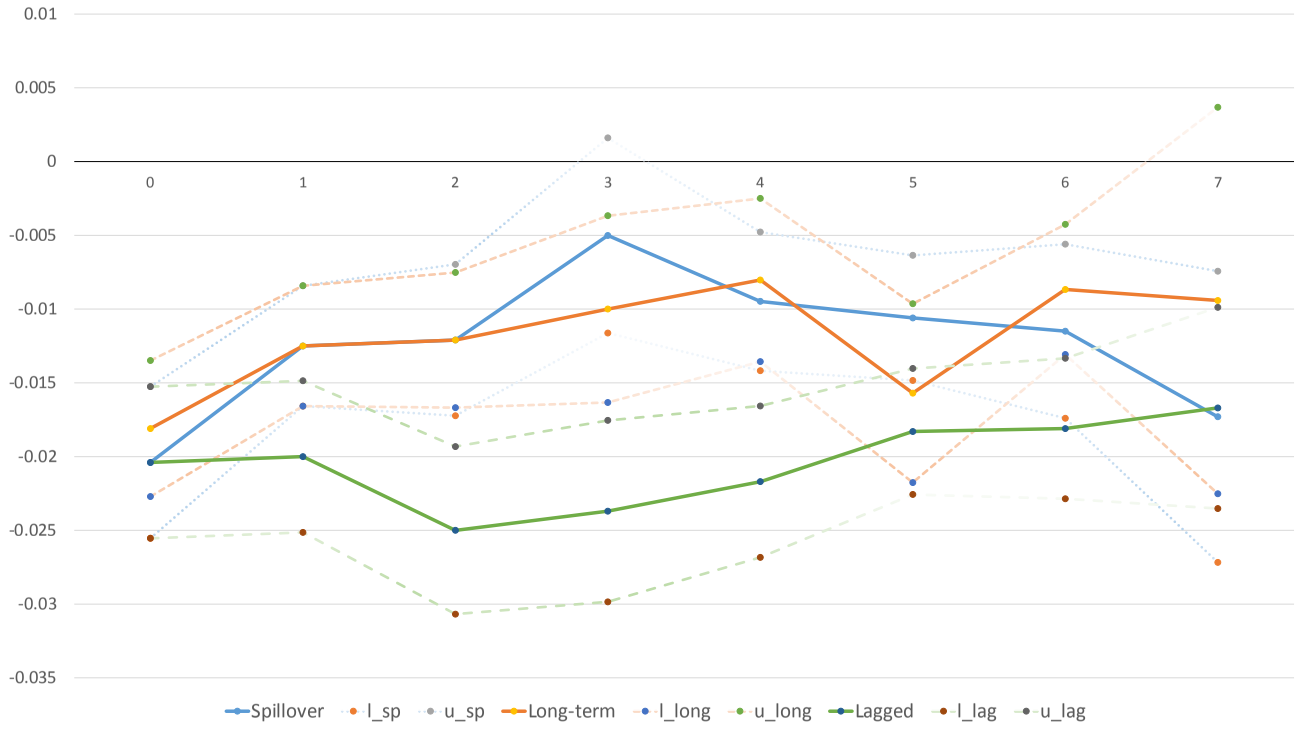
Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 18: Long-Term, Spill-Over, and Lagged Effects on Hourly Wage (if Being Paid Hourly)



Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 19: Long-Term, Spill-Over, and Lagged Effects on Employment Last Year (Unconditional)

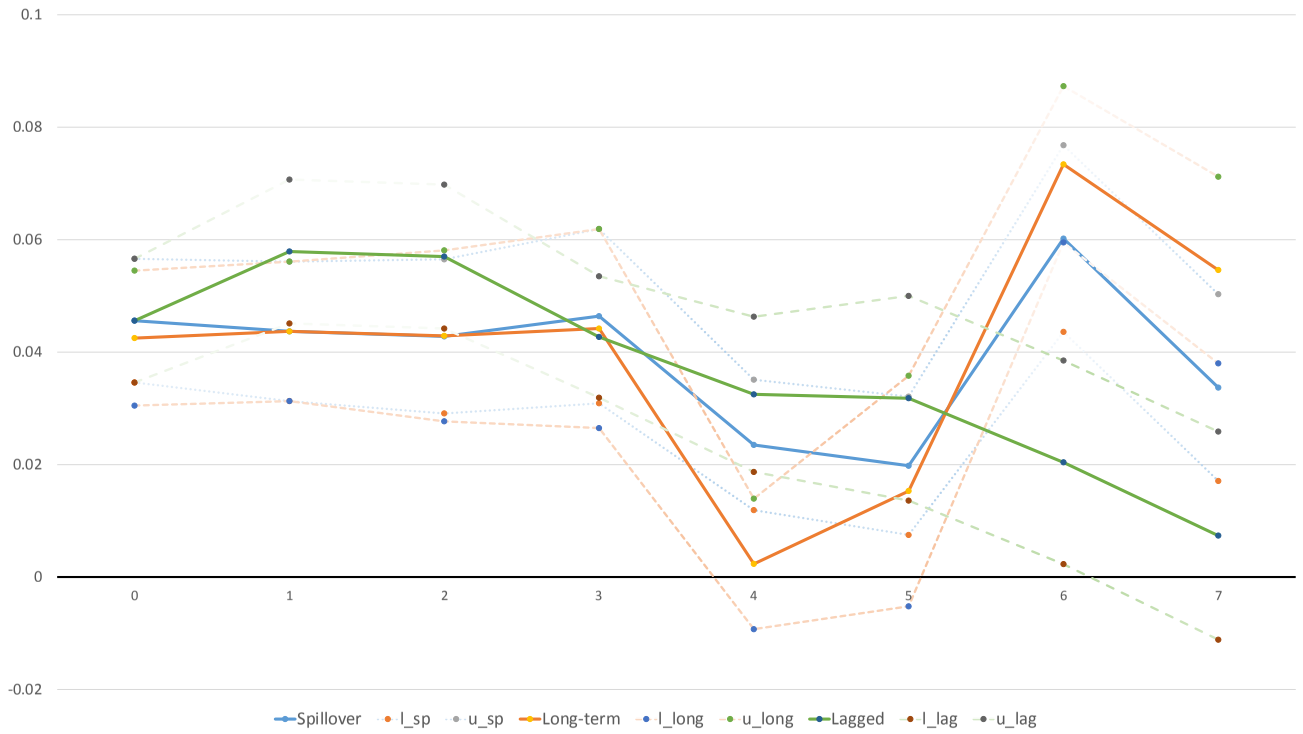


Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 20: Long-Term, Spill-Over, and Lagged Effects on Probability of Being Employed Full Time

Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

Figure 21: Long-Term, Spill-Over, and Lagged Effects on Hourly Wage Last Year



Notes: The figure shows the relative magnitudes of the long-term effects and the spill-over effects. For the long-term effects, the y axis denotes the estimates for $beta_3$ in equation (10) for $k \in \{0, 1, 2, \cdots, 7\}$. For the spill-over effects, the y axis denotes the estimates for $beta_3$ in equation (9) for $k \in \{0, 1, 2, \cdots, 7\}$. The x axis denotes k, $k \in \{0, 1, 2, \cdots, 7\}$. For the lagged effects, the y axis denotes the estimates for $beta_3$ in equation (8) for $k \in \{0, 1, 2, \cdots, 7\}$.

B Tables

Table 1: Mandates on Workplace Breastfeeding Support

State	Year	Words for break	Reasonable break time	Lengths	Words for space	Employer definition	Reasonable effort
Arkansas	2009	require	Y	not	require	N	Y
California	2001	shall	Y	Infant	shall	N	Y
Colorado	2008	shall	Y	2 years	shall	≥1 employees	Y
Connecticut	2001	may	NOT	not	shall	≥1 employees	Y
D.C.	2007	shall	Y	not	shall	N	Y
Georgia	1999	may	Y	infant	may	N	Y
Hawaii	1999[17]	shall	disallow employer to prohibit	during any meal period or other break	no	N	NO
Illinois	2001	shall	Y	infant	shall	>5 exclusive of the employer's immediate family	Y
Indiana	2008	shall	Y	infant	shall	state and public subdivisions of the state AND ≥25 employees	Y
Maine	2009	shall	Adequate	3 years	shall	N	Y
Minnesota	1998	must	Y	infant	must		
Mississippi	2006	no employer shall prohibit	during any meal period or other break	no			NO
Montana	2007	shall	Shall	not	must		NO
New Mexico	2007	shall	NOT	NOT	shall	an employer including state and its political	NOT

Continued on Next Page...

Table 1 – Continued

State	Year	Words for break	Reasonable break time	Lengths	Words for space	Employer definition	Reasonable effort
						subdivisions	
New York	2007	shall	Y	3 years	shall		Y
North Dakota	2009[18]	designation					
Oklahoma	2006	may	Y	not	may		Y
Oregon	2007	shall	30 min during each 4 hour work period	18 months	shall		Y
Rhode Island	2003	may	Y	Infant	shall		Y
Tennessee	1999	shall	Y	Infant	shall		Y
Texas	1995[19]	designation					
Vermont	2008	shall	Y	3 years	shall		Y
Virginia	2002[20]	encourage	Y	Infant	encourage		Y
Washington	2001[21]	designation					
Wyoming	2003[22]	encourage	whenever flexible	infant	encourage		whenever feasible

Notes: The table lists the years different states passed the "Workplace law", which summarizes the state laws requiring employers to provide unpaid break time and a special space for expressing breast milk. States that passed state laws supporting breastfeeding at workplace are also included, such as Hawaii. The information is summarized on the website of National Conference of State Legislatures[23], Andrews (2012), andAbdulloeva and Eyler (2013). Y denotes yes, and N denotes no.

[23]http://www.ncsl.org/research/health/breastfeeding-state-laws.aspx, accessed April 2015.

[18]Hawaii only "Disallows employers to prohibit an employee from expressing breastmilk during any meal period or other break period required by law to be provided by the employer or required by a collective bargaining agreement. (HB266 CD1)" http://www.capitol.hawaii.gov/session1999/status/hb266_his_.htm

[19]North Dakota only regulates about the designation of "infant friendly" employers: An employer may use the designation "infant friendly" on its promotional materials if the employer adopts a workplace breastfeeding policy that includes the following: a. Flexible work scheduling, including scheduling breaks and permitting work patterns that provide time for expression of breast milk; b. A convenient, sanitary, safe, and private location, other than a restroom, allowing privacy for breastfeeding or expressing breast milk; c. A convenient clean and safe water source with facilities for washing hands and rinsing breast-pumping equipment located in the private location specified in subdivision b; and d. A convenient hygienic refrigerator in the workplace for the temporary storage of the mother's breast milk.

[20]Texas only regulates about the businesses designated as "mother-friendly". Sec. 165.003. Business Designation as "Mother-Friendly". (a) A business may use the designation "mother-friendly" in its promotional materials if the business develops a policy supporting the practice of work-site breastfeeding that addresses the following: (1) work schedule flexibility, including scheduling breaks and work patterns to provide time for expression of milk; (2) the provision of accessible locations allowing privacy; (3) access nearby to a clean, safe water source and a sink for washing hands and rinsing out any needed breast-pumping equipment; and (4) access to hygienic storage alternatives in the workplace for the mother's breast milk. (b) The business shall submit its breastfeeding policy to the department. The department shall maintain a list of "mother-friendly" businesses covered under this section and shall make the list available for public inspection. Added by Acts 1995, 74th Leg., ch. 600, Sec. 1, eff. Aug. 28, 1995. See http://www.statutes.legis.state.tx.us/Docs/HS/htm/HS.165.htm#165.003

[21]Virginia encourages employers to recognize the benefits of breastfeeding and to provide unpaid break time and appropriate space for employees who need to breastfeed or express their milk for their infant children. http://leg1.state.va.us/cgi-bin/legp504.exe?021+sum+HJ145S

[22]Washington regulates about "infant-friendly" employers: (1) An employer may use the designation "infant-friendly" on its promotional materials if the employer has an approved workplace breastfeeding policy addressing at least the following: (a) Flexible work scheduling, including scheduling breaks and permitting work patterns that provide time for expression of breast milk; (b) A convenient, sanitary, safe, and private location, other than a restroom, allowing privacy for breastfeeding or expressing breast milk; (c) A convenient clean and safe water source with facilities for washing hands and rinsing breast-pumping equipment located in the private location specified in (b) of this subsection; and (d) A convenient hygienic refrigerator in the workplace for the mother's breast milk. http://app.leg.wa.gov/RCW/default.aspx?cite=43.70.640

[23]Wyoming: "That the Legislature encourages breastfeeding and commends employers, both in the public and the private sector, who make accommodations for breastfeeding mothers whenever feasible." http://legisweb.state.wy.us/2003/enroll/hj0005.pdf

Table 2: 1990 State-level Prediction of the Passage of the Workplace Breastfeeding Support Laws

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Pct of pop living in central metro areas	Pct white	Pct in labor force	Pct employed	Mean wage income	Mean welfare income	Mean child welfare income	Mean firm size
Point Est.	1.485***	-0.835	-1.288	-1.913	2.39e-05	0.00240	-0.00385	-0.372
S.e	(0.547)	(0.683)	(2.325)	(2.343)	(4.07e-05)	(0.00198)	(0.00582)	(0.327)
R-squared	0.143	0.020	0.008	0.018	0.009	0.061	0.011	0.040
	Pct of women aged 15-21	Pct of women aged 22-30	Pct of women aged 31-44	Pct of women who are college grads	Pct of women aged 15-44 who are single	Labor force participation of women aged 15-44	Employment rate among women aged 15-44	Pct of women aged 15-44 that are mothers
Point Est.	9.510	3.490	7.608**	3.915	2.394	-1.458	-1.458	-0.00158
S.e	(8.461)	(5.390)	(3.517)	(2.607)	(2.586)	(1.884)	(1.884)	(3.818)
R-squared	0.043	0.012	0.068	0.069	0.025	0.017	0.017	0.000
	Ideology score of Rep party	Ideology score of Dem party	Ideology score of the governor	Ideology score of the state institution	Ideology score of all citizens			
Point Est.	0.00517	0.0168	0.00348	0.00473	0.00457			
S.e	(0.00888)	(0.0113)	(0.00390)	(0.00371)	(0.00563)			
R-squared	0.007	0.044	0.017	0.033	0.014			

Notes: The dependent variable is a dummy variable that equals 1 if the state ever passed the law by 2010, and 0 otherwise. Each estimate is the parameter of the variable of interest in a separate regression of the dependent variable on the state-level characteristics of interest. The number of observation is 51 in panel A and B, and 50 in panel C (D.C. is excluded). All regressions are weighted by the population weights. The F-statistics of the regression of the passage on all characteristics is 1.51. *** p<0.01, ** p<0.05, * p<0.1.
Source: 1990 Census. Berry et al (1998).

Table 3: 1990 State-level Prediction of the Time Lag of the Passage of the Workplace Breastfeeding Support Laws

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Pct of pop living in central metro areas	Pct white	Pct in labor force	Pct employed	Mean wage income	Mean welfare income	Mean child welfare income	Mean firm size
Point Est.	7.506	-1.239	-14.69	-19.72	0.000157	0.0279*	0.0197	-3.432
S.e	(7.670)	(6.876)	(23.85)	(23.01)	(0.000370)	(0.0159)	(0.0484)	(2.828)
R-squared	0.040	0.000	0.011	0.020	0.004	0.091	0.003	0.037
	Pct of women aged 15-21	Pct of women aged 22-30	Pct of women aged 31-44	Pct of women who are college grads	Pct of women aged 15-44 who are single	Labor force participation of women aged 15-44	Employment rate among women aged 15-44	Pct of women aged 15-44 that are mothers
Point Est.	-22.23	2.892	36.49	37.90	19.41	-10.82	-10.82	2.268
S.e	(83.00)	(43.96)	(40.53)	(26.05)	(28.25)	(18.38)	(18.38)	(28.20)
R-squared	0.003	0.000	0.017	0.071	0.018	0.010	0.010	0.000
	Ideology score of Rep party	Ideology score of Dem party	Ideology score of the governor	Ideology score of the state institution	Ideology score of all citizens			
Point Est.	0.0867	0.151	0.0316	0.0146	0.0358			
S.e	(0.108)	(0.111)	(0.0438)	(0.0489)	(0.0572)			
R-squared	0.016	0.029	0.011	0.003	0.007			

Notes: The dependent variable equals the year of passage minus 1995, i.e. the lag from the first state that passed the law. Each estimate is the parameter of the variable of interest in a separate regression of the dependent variable on the state-level characteristics of interest. The number of observation is 51 in panel A and B, and 50 in panel C (D.C. is excluded). All regressions are weighted by the population weights. The F-statistics of the regression of the passage on all characteristics is 1.38. *** p<0.01, ** p<0.05, * p<0.1.
Source: 1990 Census. Berry et al (1998).

Table 4: Summary Statistics of the National Immunization Survey Sample

	(1)	(2)	(3)	(4)	(5)	(6)
	Control states		Treated states: before law		Treated states: after law	
VARIABLES	Mean	SD	Mean	SD	Mean	SD
Ever breastfeed	0.734	0.442	0.766	0.423	0.793	0.405
Male Child	0.513	0.500	0.513	0.500	0.511	0.500
Married	0.731	0.444	0.766	0.423	0.740	0.439
Hispanic	0.144	0.351	0.154	0.361	0.264	0.441
White	0.628	0.483	0.680	0.466	0.519	0.500
Black	0.142	0.349	0.0892	0.285	0.103	0.304
Other race	0.0860	0.280	0.0770	0.267	0.114	0.318
Non white	0.372	0.483	0.320	0.466	0.481	0.500
High School Dropouts	0.107	0.309	0.102	0.303	0.131	0.338
High School Graduates	0.222	0.416	0.237	0.425	0.199	0.399
Some College	0.238	0.426	0.226	0.418	0.232	0.422
College Graduates	0.433	0.495	0.435	0.496	0.438	0.496
First born	0.426	0.494	0.424	0.494	0.429	0.495
Number of children	1.888	0.614	1.888	0.620	1.887	0.612
Income poverty ratio (topcoded at 3)	1.939	1.104	1.918	1.076	1.886	1.127
Child Ever Received WIC	0.428	0.495	0.435	0.496	0.448	0.497
Child Receiving WIC	0.246	0.431	0.243	0.429	0.273	0.445
Mother Age$\leq$19	0.0201	0.140	0.0197	0.139	0.0204	0.141
Mother 19<Age< 30	0.361	0.480	0.396	0.489	0.337	0.473
Mother Age$\geq$30	0.619	0.486	0.585	0.493	0.643	0.479
Number of observations	115,522		25,923		111,689	

Table 5: Effects of the Workplace Breastfeeding Benefits on Breastfeeding Outcomes

	(1)	(2)	(3)	(4)	(5)
	A: ever breastfeed				
Mean of dependent var			0.76		
Workplace Law	0.0121	0.0143	0.0115	0.0128	0.00579
	(0.0110)	(0.0108)	(0.0113)	(0.0113)	(0.00625)
One Year Before Law		-0.00704			
		(0.0107)			
Indecency Law			-0.00846		
			(0.0143)		
Jury Law			0.0191**		
			(0.00753)		
Any-place Law			-0.00580		
			(0.0103)		
Observations	253,134	253,134	253,134	253,134	253,134
R-squared	0.121	0.121	0.121	0.121	0.119
	B: log weeks of breastfeeding				
Mean of dependent var (censored)			3.01		
Workplace Law	0.0434**	0.0423*	0.0407**	0.0428**	0.0455*
	(0.0208)	(0.0233)	(0.0191)	(0.0186)	(0.0248)
One Year Before Law		0.00338			
		(0.0183)			
Indecency Law			0.0640		
			(0.0549)		
Jury Law			0.00768		
			(0.0532)		
Any-place Law			-0.0244		
			(0.0430)		
Observations	193,142	193,142	193,142	193,142	193,142
Statetrend	Y	Y	Y	Y	Y
Other Policies			Y		
Region by Year FE				Y	
Unweighted					Y

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Hazard Model Estimates of the Effects of Workplace Breastfeeding Benefits on Duration of Breastfeeding

VARIABLES	(1) exponential	(2) Weibull	(3) Gompertz	(4) Cox
Workplace law	-0.0359*	-0.0389**	-0.0387**	-0.0408**
	(0.0188)	(0.0188)	(0.0188)	(0.0188)
Observations	193,174	193,174	193,174	193,174

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Subsample Effects of Workplace Breastfeeding Benefits on the Initiation of Breastfeeding

ever bf	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	high dropout	high grad	some college	college +	age≤19	19-30	age≥30
Workplace law	0.0535	0.0268	-0.00926	-0.0121	0.126	0.0237*	0.00209
	(0.0322)	(0.0225)	(0.0104)	(0.0159)	(0.110)	(0.0140)	(0.0140)
Observations	29,666	53,997	59,307	110,164	5,109	89,603	158,422
R-squared	0.164	0.094	0.063	0.036	0.163	0.118	0.098
VARIABLES	married	single	White	Black	Hispanic	other race	
Workplace law	-0.00578	0.0561***	0.00895	0.0269	0.0162	0.0217	
	(0.0100)	(0.0204)	(0.0122)	(0.0222)	(0.0167)	(0.0208)	
Observations	186,862	66,272	148,156	30,232	50,109	24,637	
R-squared	0.069	0.111	0.129	0.150	0.036	0.138	
VARIABLES	1st inc decile	2nd decile	3rd decile	4th decile	5th decile	top 50% inc dist	miss inc info
Workplace law	0.0361	0.0275	0.00575	-0.00398	0.0435	-0.0125	0.0372
	(0.0278)	(0.0281)	(0.0391)	(0.0244)	(0.0416)	(0.0177)	(0.0340)
Observations	22,899	22,916	22,892	22,912	22,941	114,406	24,168
R-squared	0.157	0.128	0.122	0.103	0.096	0.077	0.135

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Subsample Effects of Workplace Breastfeeding Benefits on the Duration of Breastfeeding

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	high dropout	high grad	some college	college +	age≤19	19-30	age≥30
Workplace law	0.206***	0.0885	-0.137***	0.0558	-0.188	0.136***	-0.00221
	(0.0748)	(0.0580)	(0.0493)	(0.0438)	(0.191)	(0.0421)	(0.0262)
Observations	18,765	34,419	44,951	95,007	2,704	63,147	127,291
VARIABLES	married	single	White	Black	Hispanic	other race	
Workplace law	0.0370*	0.0588	-0.00191	-0.129	0.223***	0.0381	
	(0.0190)	(0.0536)	(0.0355)	(0.164)	(0.0554)	(0.0541)	
Observations	153,164	39,978	117,447	17,040	39,621	19,034	
VARIABLES	1st inc decile	2nd decile	3rd decile	4th decile	5th decile	top 50% inc dist	miss inc info
Workplace law	0.163	0.00781	0.0586	0.0283	-0.108	0.0645**	0.00725
	(0.109)	(0.125)	(0.106)	(0.0607)	(0.0666)	(0.0298)	(0.0911)
Observations	13,582	15,445	16,208	16,814	17,690	95,407	17,996

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Summary Statistics of the Covariate Variables, the Current Population Survey, 1990-2010

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Treat: Females with infant children				Control: Males			
	Workplace law=0		Workplace law=1		Workplace law=0		Workplace law=1	
VARIABLES	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Individual covariates:								
Age	28.55	5.724	28.98	5.880	31.71	7.826	31.58	7.940
Married	0.817	0.386	0.792	0.406	0.607	0.488	0.576	0.494
Non white	0.166	0.372	0.202	0.401	0.151	0.358	0.214	0.410
High school dropout	0.205	0.404	0.179	0.383	0.202	0.401	0.188	0.391
High school graduates	0.264	0.441	0.260	0.438	0.303	0.459	0.301	0.459
Some college	0.287	0.452	0.266	0.442	0.293	0.455	0.282	0.450
College plus	0.244	0.429	0.296	0.456	0.202	0.402	0.229	0.420
Having one child	0.370	0.483	0.357	0.479	0.151	0.358	0.148	0.355
log real hh income last year	10.33	1.161	10.38	1.215	10.62	0.908	10.65	0.957
Jury exemption law	0.0662	0.249	0.375	0.484	0.0565	0.231	0.387	0.487
Indecency exemption law	0.264	0.441	0.374	0.484	0.261	0.439	0.366	0.482
Any-place law	0.360	0.480	0.892	0.311	0.359	0.480	0.890	0.313
N	34,392		10,864		493,318		151,748	
Spouse characteristics:								
Spouse age	31.84	6.242	32.37	6.596	33.68	6.876	33.90	7.036
Spouse married*	0.943	0.231	0.910	0.287	0.948	0.223	0.916	0.277
Spouse nonwhite	0.115	0.320	0.163	0.369	0.114	0.318	0.171	0.376
Spouse high school droupout	0.171	0.376	0.174	0.379	0.154	0.361	0.144	0.352
Spouse high school graduate	0.274	0.446	0.263	0.440	0.288	0.453	0.262	0.440
Spouse some college	0.269	0.444	0.241	0.428	0.304	0.460	0.285	0.451
Spouse college plus	0.286	0.452	0.322	0.467	0.254	0.435	0.309	0.462
Spouse in labor force	0.961	0.193	0.960	0.196	0.736	0.441	0.704	0.457
N	27,257		8,668		274,873		84,013	

Notes: *The CPS links a person's spouse/partner as the "spouse" used here. Therefore, it is possible to have a "spouse" but is never married.

Table 10: Summary Statistics of the Outcome Variables, the Current Population Survey, 1990-2010

VARIABLES	(1) N	(2) Mean	(3) SD	(4) N	(5) Mean	(6) SD	(1) N	(2) Mean	(3) SD	(4) N	(5) Mean	(6) SD
	Treat: Females with infant children						Control: Males					
	Workplace law=0			Workplace law=1			Workplace law=0			Workplace law=1		
Outcome variables in the reference week:												
In labor force	34,392	0.569	0.495	10,864	0.550	0.497	493,318	0.886	0.318	151,748	0.872	0.334
Employed (if in labor force)	19,584	0.926	0.262	5,979	0.916	0.278	437,018	0.931	0.253	132,371	0.925	0.264
At work (if employed)	18,129	0.852	0.355	5,475	0.851	0.356	406,863	0.973	0.161	122,416	0.974	0.158
Part time (if at work)	15,444	0.430	0.495	4,658	0.410	0.492	396,017	0.162	0.369	119,288	0.176	0.380
log hours work (if at work)	15,444	3.351	0.625	4,658	3.375	0.624	396,017	3.677	0.431	119,288	3.651	0.448
Paid hourly (if at work)	15,444	0.144	0.351	4,658	0.137	0.344	396,017	0.129	0.336	119,288	0.126	0.332
log hourly wage if paid hourly	1,973	2.233	0.508	438	2.278	0.521	46,962	2.375	0.472	11,072	2.380	0.488
	Treat: Females with 1-year-old children						Control: Males					
	Workplace law=0			Workplace law=1			Workplace law=0			Workplace law=1		
Outcome variables in the previous year:												
Employed last year	35,287	0.647	0.478	11,481	0.619	0.486	493,318	0.906	0.291	151,748	0.881	0.324
Full time last year (if employed)	22,819	0.643	0.479	7,108	0.672	0.469	447,171	0.885	0.319	133,718	0.879	0.326
log hourly wage last year	21,348	2.349	0.727	6,702	2.437	0.753	419,006	2.530	0.693	125,934	2.570	0.726

Notes: The table provides the summary statistics of the outcome variables for the treated and control groups, before and after the law, using the 1990-2010 Current Population Survey. The sample includes people aged between 18-44. The dummy variable "In labor force" equals 1 if the individual participates in the labor force, and 0 otherwise. The dummy variable "Employed" is defined for individuals in the labor force, and it equals 1 if the worker is employed in the reference week of the survey, and 0 otherwise. The dummy variable "At work" is defined for individuals who are employed in the reference week, and it equals 1 if the individual works during the reference week, and 0 otherwise. The dummy variable "Part time" is defined for individuals who worked in the reference week (last week), and it equals 1 if the individual works part-time (less than 35 hours) during the reference week, and 0 otherwise. The variable "log hrs work" is defined for individuals who worked in the reference week. The variable "Paid hourly" is defined for individuals who worked in the reference week, and it equals 1 if the wage is paid by hour, and 0 otherwise. The variable "log hourly wage if paid hourly" is defined for individuals who received hourly paid wage in the reference week, and the wage is adjusted by the CPI variable in the CPS. The variable "Employed last year" equals 1 if the individual is employed, and 0 otherwise; note that it is not conditional on being in the labor force last year. The variable "Full time last year" is defined for individuals who are employed last year, and it equals 1 if the individual works full time, and 0 otherwise. The variable "log hourly wage last year" is the log real hourly wage last year (both hourly and non-hourly paid) adjusted by the CPI.

Table 11: Effects of Workplace Breastfeeding Benefits on Labor Market Outcomes in the Reference Week

	(1) All	(2) Single	(3) Married	(4) Married	(5) All	(6) Single	(7) Married	(8) Married
	Panel A: Dependent variable =in the labor force last week							
Law X mom of infants (control=males)	0.0116***	0.0114**	0.0141***	0.0129***				
	(0.00229)	(0.00545)	(0.00212)	(0.00215)				
Law X mom of infants (control=fathers of infants)					0.0142***	0.0101	0.0132***	0.0125***
					(0.00273)	(0.00739)	(0.00252)	(0.00253)
Spouse characteristics				Y				Y
Observations	690,313	266,755	423,558	369,529	81,270	11,657	69,613	66,090
R-squared	0.891	0.873	0.912	0.912	0.894	0.867	0.899	0.901
	Panel B: Dependent variable =employed last week, if in the labor force							
Law X mom of infants (control=males)	-0.00669	-0.00768	-0.00520	-0.00199				
	(0.00582)	(0.0158)	(0.00569)	(0.00598)				
Law X mom of infants (control=fathers of infants)					-0.00246	-0.00962	-0.00153	0.000111
					(0.00756)	(0.0368)	(0.00586)	(0.00638)
Spouse characteristics				Y				Y
Observations	594,943	206,572	388,371	341,116	60,123	7,498	52,625	50,615
R-squared	0.101	0.118	0.055	0.052	0.112	0.168	0.079	0.074
	Panel C: Dependent variable =working, if employed last week							
Law X mom of infants (control=males)	-0.00150	-0.0193	0.000942	7.10e-05				
	(0.00804)	(0.0198)	(0.00702)	(0.00652)				
Law X mom of infants (control=fathers of infants)					0.00332	-0.0321**	0.00697	0.00543
					(0.00693)	(0.0159)	(0.00735)	(0.00660)
Spouse characteristics				Y				Y
Observations	552,876	183,111	369,765	326,560	56,346	6,292	50,054	48,341
R-squared	0.026	0.014	0.036	0.040	0.069	0.087	0.075	0.078
	Panel D: Dependent variable =log hours of work if working last week							
Law X mom of infants (control=males)	0.0338**	-0.0330	0.0447***	0.0504***				
	(0.0149)	(0.0199)	(0.0157)	(0.0166)				
Law X mom of infants (control=fathers of infants)					0.0528***	-0.0158	0.0583***	0.0639***
					(0.0163)	(0.0329)	(0.0170)	(0.0174)
Spouse characteristics				Y				Y

Continued on Next Page...

Table 11 – Continued

	(1) All	(2) Single	(3) Married	(4) Married	(5) All	(6) Single	(7) Married	(8) Married
Observations	535,400	177,537	357,863	316,077	51,975	5,791	46,184	44,665
R-squared	0.140	0.179	0.077	0.083	0.162	0.163	0.167	0.173
	Panel E: Dependent variable =part time (less than 35h) if working last week							
Law X mom of infants (control=males)	-0.0313*	0.0395*	-0.0459***	-0.0470***				
	(0.0158)	(0.0228)	(0.0139)	(0.0137)				
Law X mom of infants (control=fathers of infants)					-0.0413**	0.0246	-0.0500***	-0.0509***
					(0.0158)	(0.0304)	(0.0147)	(0.0141)
Spouse characteristics				Y				Y
Observations	535,400	177,537	357,863	316,077	51,975	5,791	46,184	44,665
R-squared	0.143	0.190	0.067	0.072	0.158	0.183	0.157	0.161
	Panel F: Dependent variable =paid hourly wage, if working last week							
Law X mom of infants (control=males)	-0.00800	-0.00227	-0.00993	-0.0106				
	(0.00836)	(0.0198)	(0.00929)	(0.00947)				
Law X mom of infants (control=fathers of infants)					-0.0106*	-0.0363	-0.0101	-0.0113
					(0.00623)	(0.0269)	(0.00707)	(0.00770)
Spouse characteristics				Y				Y
Observations	535,400	177,537	357,863	316,077	51,975	5,791	46,184	44,665
R-squared	0.035	0.028	0.036	0.038	0.051	0.076	0.052	0.054
	Panel G: Dependent variable =log real hourly wage, if paid hour last week							
Law X mom of infants (control=males)	0.0373	0.0354	0.0465	0.0667				
	(0.0307)	(0.0330)	(0.0382)	(0.0405)				
Law X mom of infants (control=fathers of infants)					0.0327	0.0513	0.0213	0.0469
					(0.0400)	(0.0768)	(0.0428)	(0.0368)
Spouse characteristics				Y				Y
Observations	60,445	25,491	34,954	29,781	5,506	930	4,576	4,356
R-squared	0.425	0.380	0.338	0.348	0.455	0.567	0.430	0.435

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table 12: Effects of Workplace Breastfeeding Benefits on Labor Market Outcomes in the Previous Year

	(1) All	(2) Single	(3) Married	(4) Married	(5) All	(6) Single	(7) Married	(8) Married
	Panel A: Dependent variable =Employed last year (not conditional on in the labor force)							
Law last year X mom of 1-yr-old (control=males)	-0.00545	0.0206	-0.0164***	-0.0204***				
	(0.00511)	(0.0149)	(0.00508)	(0.00514)				
Law last year X mom of 1-yr-old (control=fathers of 1-yr-old)					-0.0151**	-0.00827	-0.0185***	-0.0197***
					(0.00568)	(0.0187)	(0.00558)	(0.00500)
Spouse characteristics				Y				Y
Observations	691,825	266,403	425,422	370,671	83,154	10,858	72,296	67,975
R-squared	0.512	0.459	0.574	0.585	0.610	0.488	0.637	0.649
	Panel B: Dependent variable =Full time last year, if employed last year							
Law last year X mom of 1-yr-old (control=males)	0.0385**	0.00428	0.0445***	0.0426**				
	(0.0168)	(0.0220)	(0.0152)	(0.0161)				
Law last year X mom of 1-yr-old (control=fathers of 1-yr-old)					0.0431**	0.000341	0.0480***	0.0461**
					(0.0167)	(0.0262)	(0.0163)	(0.0174)
Spouse characteristics				Y				Y
Observations	610,807	216,630	394,177	345,880	65,045	7,591	57,454	54,665
R-squared	0.221	0.222	0.129	0.145	0.217	0.189	0.229	0.239
	Panel C: Dependent variable =log real hourly wage last year							
Law last year X mom of 1-yr-old (control=males)	0.0183*	-0.0379*	0.0339***	0.0456***				
	(0.0106)	(0.0220)	(0.0111)	(0.0110)				
Law last year X mom of 1-yr-old (control=fathers of 1-yr-old)					0.0193**	-0.0627**	0.0312***	0.0468***
					(0.00900)	(0.0306)	(0.0107)	(0.00955)
Spouse characteristics				Y				Y
Observations	572,983	206,925	366,058	321,120	60,887	7,310	53,577	50,949
R-squared	0.361	0.259	0.319	0.336	0.400	0.244	0.381	0.386

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table 13: Robustness: Alternative Specifications for Labor Market Outcomes

	(1) baseline	(2) unweighted	(3) state cov	(4) state trends	(5) region by year FE	(6) no CA	(7) add gender wage gap	(8) other bf law
	Panel A: Dependent variable = in labor force							
Workplace X mom of infants	0.0129***	0.0125***	0.0125***	0.0129***	0.0129***	0.0117***	0.00684**	0.00305
	(0.00215)	(0.00219)	(0.00219)	(0.00215)	(0.00215)	(0.00240)	(0.00337)	(0.00276)
July X mom of infants								0.00753***
								(0.00256)
Indecency X mom of infants								0.00985***
								(0.00273)
Any place X mom of infants								0.0116***
								(0.00287)
Observations	369,529	369,533	369,533	369,529	369,529	334,850	238,192	369,529
R-squared	0.912	0.915	0.915	0.912	0.912	0.910	0.825	0.912
	Panel B: Dependent variable = employed, if in labor force							
Workplace × mom of infants	-0.00199	-0.000141	0.000141	-0.00194	-0.00185	-0.00243	0.00363	-0.00479
	(0.00598)	(0.00621)	(0.00624)	(0.00603)	(0.00605)	(0.00760)	(0.00522)	(0.00661)
Jury × mom of infants								0.00779
								(0.00731)
Indecency × mom of infants								0.00513
								(0.00538)
Any place × mom of infants								-0.000798
								(0.00496)
Observations	341,116	341,120	341,120	341,116	341,116	309,713	230,869	341,116
R-squared	0.052	0.050	0.052	0.053	0.053	0.051	0.045	0.052
	Panel C: Dependent variable = worked in the reference week, if employed							
Workplace × mom of infants	7.10e-05	-0.000840	-0.000789	-7.76e-06	2.81e-05	0.00441	-0.00156	0.0104
	(0.00652)	(0.00646)	(0.00646)	(0.00651)	(0.00655)	(0.00686)	(0.00731)	(0.00726)
Jury × mom of infants								-0.00628
								(0.0103)
Indecency × mom of infants								-0.00115
								(0.00778)
Any place × mom of infants								-0.0139*
								(0.00752)

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Table 13 – Continued

	(1) baseline	(2) unweighted	(3) state cov	(4) state trends	(5) region by year FE	(6) no CA	(7) add gender wage gap	(8) other bf law
Observations	326,560	326,564	326,564	326,560	326,560	296,963	222,071	326,560
R-squared	0.040	0.036	0.036	0.040	0.041	0.039	0.050	0.040
	Panel D: Dependent variable = log hours worked in the reference week, if workded							
Workplace × mom of infants	0.0504***	0.0503***	0.0504***	0.0508***	0.0508***	0.0424**	0.0443**	0.0381*
	(0.0166)	(0.0172)	(0.0172)	(0.0165)	(0.0165)	(0.0193)	(0.0188)	(0.0197)
Jury × mom of infants								-0.0265
								(0.0244)
Indecency × mom of infants								-0.0127
								(0.0177)
Any place × mom of infants								0.0401**
								(0.0164)
Observations	316,077	316,081	316,081	316,077	316,077	287,341	214,865	316,077
R-squared	0.083	0.086	0.086	0.083	0.084	0.084	0.079	0.083
	Panel E: Dependent variable = part time (less than 35h) in the reference week, if worked							
Workplace × mom of infants	-0.0470***	-0.0352**	-0.0354**	-0.0473***	-0.0475***	-0.0476***	-0.0490***	-0.0442**
	(0.0137)	(0.0136)	(0.0136)	(0.0137)	(0.0136)	(0.0164)	(0.0151)	(0.0177)
Jury × mom of infants								0.0343**
								(0.0134)
Indecency × mom of infants								0.00534
								(0.0173)
Any place × mom of infants								-0.0273
								(0.0199)
Observations	316,077	316,081	316,081	316,077	316,077	287,341	214,865	316,077
R-squared	0.072	0.074	0.074	0.073	0.073	0.075	0.074	0.072
	Panel F: Dependent variable = paid by hour in the reference week, if worked							
Workplace × mom of infants	-0.0106	-0.00513	-0.00515	-0.0109	-0.0107	-0.00806	-0.0149*	-0.000740
	(0.00947)	(0.00913)	(0.00912)	(0.00946)	(0.00945)	(0.0123)	(0.00873)	(0.00974)
Jury × mom of infants								0.00360
								(0.00965)
Indecency × mom of infants								0.0141
								(0.00847)
Any place × mom of infants								-0.0216***
								(0.00756)

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Table 13 – Continued

	(1) baseline	(2) unweighted	(3) state cov	(4) state trends	(5) region by year FE	(6) no CA	(7) add gender wage gap	(8) other bf law
Observations	316,077	316,081	316,081	316,077	316,077	287,341	214,865	316,077
R-squared	0.038	0.037	0.037	0.039	0.039	0.040	0.038	0.039
	Panel G: Dependent variable = log real hourly wage in the reference week, if paid by hour							
Workplace × mom of infants	0.0667	0.0319	0.0318	0.0684*	0.0695*	0.0433	0.0718*	0.0619
	(0.0405)	(0.0290)	(0.0289)	(0.0399)	(0.0388)	(0.0448)	(0.0382)	(0.0564)
Jury × mom of infants								-0.0176
								(0.0427)
Indecency × mom of infants								0.0375
								(0.0366)
Any place × mom of infants								0.00481
								(0.0393)
Observations	29,781	29,781	29,781	29,781	29,781	27,185	22,330	29,781
R-squared	0.348	0.353	0.353	0.353	0.354	0.345	0.379	0.349
	Panel H: Dependent variable = employed last year, unconditional							
Workplace last year × mom of 1 year old	-0.0204***	-0.0137**	-0.0138**	-0.0206***	-0.0205***	-0.0161***	0	-0.0126***
	(0.00514)	(0.00586)	(0.00586)	(0.00513)	(0.00514)	(0.00588)	(0)	(0.00457)
Jury last year × mom of 1 year old								-0.00168
								(0.00917)
Indecency last year × mom of 1 year old								0.0126**
								(0.00535)
Any place last year × mom of 1 year old								-0.0136***
								(0.00440)
Observations	370,671	370,675	370,675	370,671	370,671	335,856	237,369	370,671
R-squared	0.585	0.585	0.585	0.586	0.586	0.585		0.585
	Panel I: Dependent variable = full time last year, if employed							
Workplace last year × mom of 1 year old	0.0426**	0.0367**	0.0368**	0.0426**	0.0427**	0.0442**	0.0423**	0.0221
	(0.0161)	(0.0160)	(0.0160)	(0.0161)	(0.0160)	(0.0199)	(0.0175)	(0.0173)
Jury last year × mom of 1 year old								-0.0284
								(0.0188)
Indecency last year × mom of 1 year old								-0.00831
								(0.0155)
Any place last year × mom of 1 year old								0.0519***

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Table 13 – Continued

	(1) baseline	(2) unweighted	(3) state cov	(4) state trends	(5) region by year FE	(6) no CA	(7) add gender wage gap	(8) other bf law
								(0.0152)
Observations	345,880	345,884	345,884	345,880	345,880	314,174	237,369	345,880
R-squared	0.145	0.150	0.150	0.145	0.145	0.151	0.164	0.145
	Panel J: Dependent variable = log real hourly wage last year							
Workplace last year × mom of 1 year old	0.0456***	0.0387***	0.0388***	0.0453***	0.0454***	0.0414***	0.0118	0.0238
	(0.0110)	(0.0110)	(0.0111)	(0.0110)	(0.0108)	(0.0112)	(0.0111)	(0.0165)
Jury last year × mom of 1 year old								0.00632
								(0.0161)
Indecency last year × mom of 1 year old								-0.00809
								(0.0126)
Any place last year × mom of 1 year old								0.0342**
								(0.0170)
Observations	321,120	321,123	321,123	321,120	321,120	291,927	237,369	321,120
R-squared	0.336	0.336	0.336	0.337	0.337	0.332	0.566	0.336

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table 14: Balance check: Characteristics among females with infant children, by Workplace Breastfeeding Benefits

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: all							
VARIABLES	age	nonwhite	hdropout	hgrad	somecol	colgrad	married	firstchild
Workplace Law	0.109	0.00973	-0.0213***	0.0127*	0.00632	0.00226	-5.41e-05	0.0133
	(0.103)	(0.00665)	(0.00696)	(0.00770)	(0.00801)	(0.00764)	(0.00701)	(0.00869)
Observations	45,256	45,256	45,256	45,256	45,256	45,256	45,256	45,256
R-squared	0.033	0.084	0.116	0.038	0.011	0.053	0.018	0.004
VARIABLES	log hh inc	sp age	sp nonwhite	sp married	sp hgrad	sp somecol	sp colgrad	sp in lab force
Workplace Law	0.0486**	-0.0645	0.00427	-0.00192	-0.00988	0.00926	0.00725	0.00515
	(0.0217)	(0.128)	(0.00667)	(0.00496)	(0.00869)	(0.00878)	(0.00900)	(0.00401)
Observations	43,786	35,925	35,925	35,925	35,925	35,925	35,925	35,925
R-squared	0.033	0.031	0.069	0.031	0.042	0.015	0.042	0.004
	Panel B: in labor force							
VARIABLES	age	nonwhite	hdropout	hgrad	somecol	colgrad	married	firstchild
Workplace Law	0.145	0.00775	-0.0211***	0.00416	0.0122	0.00477	-0.00157	0.00868
	(0.134)	(0.00897)	(0.00787)	(0.0101)	(0.0111)	(0.0108)	(0.00929)	(0.0119)
Observations	25,563	25,563	25,563	25,563	25,563	25,563	25,563	25,563
R-squared	0.036	0.099	0.114	0.036	0.013	0.056	0.022	0.008
VARIABLES	log hh inc	sp age	sp nonwhite	sp married	sp hgrad	sp somecol	sp colgrad	sp in lab force
Workplace Law	0.0677***	-0.198	-0.000261	-0.00374	-0.00969	0.0146	0.00190	0.00751
	(0.0255)	(0.163)	(0.00905)	(0.00663)	(0.0115)	(0.0122)	(0.0123)	(0.00540)
Observations	25,306	20,585	20,585	20,585	20,585	20,585	20,585	20,585
R-squared	0.033	0.034	0.084	0.032	0.039	0.016	0.041	0.006
	Panel C: hours worked last week>0							
VARIABLES	age	nonwhite	hdropout	hgrad	somecol	colgrad	married	firstchild

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Table 14 – Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Workplace Law	0.220	0.00892	-0.0192**	-0.00186	0.0149	0.00618	0.00142	0.00551
	(0.150)	(0.00981)	(0.00858)	(0.0114)	(0.0126)	(0.0123)	(0.0102)	(0.0134)
Observations	20,102	20,102	20,102	20,102	20,102	20,102	20,102	20,102
R-squared	0.034	0.098	0.121	0.037	0.014	0.056	0.023	0.008
VARIABLES	log hh inc	sp age	sp nonwhite	sp married	sp hgrad	sp somecol	sp colgrad	sp in lab force
Workplace Law	0.0777***	-0.00121	0.00249	0.00294	-0.0148	0.0210	-0.000273	0.00597
	(0.0270)	(0.182)	(0.00999)	(0.00736)	(0.0129)	(0.0136)	(0.0137)	(0.00614)
Observations	19,955	16,459	16,459	16,459	16,459	16,459	16,459	16,459
R-squared	0.033	0.033	0.083	0.032	0.039	0.016	0.039	0.008
	Panel D: hourly wage (paid by hour) known							
VARIABLES	age	nonwhite	hdropout	hgrad	somecol	colgrad	married	firstchild
Workplace Law	0.230	0.0683**	-0.0356	0.0181	-0.00607	0.0236	-0.00789	-0.00597
	(0.464)	(0.0314)	(0.0290)	(0.0375)	(0.0385)	(0.0295)	(0.0348)	(0.0403)
Observations	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411
R-squared	0.060	0.176	0.177	0.064	0.043	0.050	0.070	0.033
VARIABLES	log hh inc	sp age	sp nonwhite	sp married	sp hgrad	sp somecol	sp colgrad	sp in lab force
Workplace Law	0.0113	0.252	0.110***	0.0306	0.0423	0.0770*	-0.0636*	-0.00582
	(0.0845)	(0.586)	(0.0346)	(0.0266)	(0.0445)	(0.0444)	(0.0373)	(0.0182)
Observations	2,390	1,804	1,804	1,804	1,804	1,804	1,804	1,804
R-squared	0.074	0.064	0.158	0.091	0.090	0.056	0.063	0.055

Notes: The table shows estimates of β in equation (6): whether each individual characteristics differs by the workplace breastfeeding benefits status, for females with infant children. *** p<0.01, ** p<0.05, * p<0.1.

Table 15: Balance check: Characteristics among females with one year olds, by Workplace Breastfeeding Benefits

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Panel A: all							
VARIABLES	age	nonwhite	hdropout	hgrad	somecol	colgrad	married	firstchild
Workplace Law	0.116	0.00511	-0.0198***	-0.00468	0.0165**	0.00802	0.0110	0.0222***
	(0.103)	(0.00661)	(0.00677)	(0.00763)	(0.00798)	(0.00754)	(0.00675)	(0.00861)
Observations	46,768	46,768	46,768	46,768	46,768	46,768	46,768	46,768
R-squared	0.031	0.090	0.120	0.037	0.009	0.049	0.018	0.003
VARIABLES	log hh inc	sp age	sp nonwhite	sp married	sp hgrad	sp somecol	sp colgrad	sp in lab force
Workplace Law	0.0531***	0.155	0.00198	0.00379	0.00984	-0.00740	0.00500	-0.000735
	(0.0206)	(0.127)	(0.00664)	(0.00454)	(0.00862)	(0.00876)	(0.00899)	(0.00401)
Observations	45,439	36,624	36,624	36,624	36,624	36,624	36,624	36,624
R-squared	0.032	0.028	0.078	0.025	0.036	0.015	0.038	0.004
	Panel B: employed last year							
VARIABLES	age	nonwhite	hdropout	hgrad	somecol	colgrad	married	firstchild
Workplace Law	0.0765	0.00633	-0.0206***	-0.0180*	0.0232**	0.0154	0.00191	0.0246**
	(0.128)	(0.00832)	(0.00740)	(0.00950)	(0.0104)	(0.00997)	(0.00843)	(0.0111)
Observations	29,927	29,927	29,927	29,927	29,927	29,927	29,927	29,927
R-squared	0.034	0.105	0.124	0.037	0.009	0.048	0.022	0.005
VARIABLES	log hh inc	sp age	sp nonwhite	sp married	sp hgrad	sp somecol	sp colgrad	sp in lab force
Workplace Law	0.0487**	0.303*	-0.00186	0.00340	0.00550	-0.0103	0.0187	-0.00538
	(0.0224)	(0.156)	(0.00862)	(0.00585)	(0.0109)	(0.0114)	(0.0114)	(0.00505)
Observations	29,905	23,666	23,666	23,666	23,666	23,666	23,666	23,666
R-squared	0.035	0.031	0.090	0.025	0.035	0.014	0.036	0.006
	Panel C: full time last year							
VARIABLES	age	nonwhite	hdropout	hgrad	somecol	colgrad	married	firstchild
Workplace Law	0.0765	0.00633	-0.0206***	-0.0180*	0.0232**	0.0154	0.00191	0.0246**

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Table 15 – Continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	(0.128)	(0.00832)	(0.00740)	(0.00950)	(0.0104)	(0.00997)	(0.00843)	(0.0111)
Observations	29,927	29,927	29,927	29,927	29,927	29,927	29,927	29,927
R-squared	0.034	0.105	0.124	0.037	0.009	0.048	0.022	0.005
VARIABLES	log hh inc	sp age	sp nonwhite	sp married	sp hgrad	sp somecol	sp colgrad	sp in lab force
Workplace Law	0.0487**	0.303*	-0.00186	0.00340	0.00550	-0.0103	0.0187	-0.00538
	(0.0224)	(0.156)	(0.00862)	(0.00585)	(0.0109)	(0.0114)	(0.0114)	(0.00505)
Observations	29,905	23,666	23,666	23,666	23,666	23,666	23,666	23,666
R-squared	0.035	0.031	0.090	0.025	0.035	0.014	0.036	0.006
	Panel D: hourly wage last year known							
VARIABLES	age	nonwhite	hdropout	hgrad	somecol	colgrad	married	firstchild
Workplace Law	0.0310	0.00534	-0.0223***	-0.0178*	0.0275**	0.0126	-0.000217	0.0272**
	(0.132)	(0.00869)	(0.00768)	(0.00986)	(0.0107)	(0.0103)	(0.00880)	(0.0115)
Observations	28,050	28,050	28,050	28,050	28,050	28,050	28,050	28,050
R-squared	0.034	0.107	0.124	0.038	0.009	0.047	0.021	0.005
VARIABLES	log hh inc	sp age	sp nonwhite	sp married	sp hgrad	sp somecol	sp colgrad	sp in lab force
Workplace Law	0.0412*	0.319**	-0.00181	0.00293	0.00892	-0.0113	0.0170	-0.00554
	(0.0229)	(0.161)	(0.00903)	(0.00615)	(0.0113)	(0.0118)	(0.0118)	(0.00532)
Observations	28,040	22,036	22,036	22,036	22,036	22,036	22,036	22,036
R-squared	0.035	0.032	0.091	0.026	0.036	0.013	0.036	0.007

Notes: The table shows estimates of β in equation (6): whether each individual characteristics differs by the workplace breastfeeding benefits status, for females whose youngest child is 1 year old. *** p<0.01, ** p<0.05, * p<0.1.

Table 16: Impact of Workplace Breastfeeding Benefits on Labor Market Outcomes, by Types of Law

	(1)	(2)	(3)	(4)	(5)
	Panel A: Dependent variable = in labor force				
longer break× mom of infants	0.00566				
	(0.00574)				
bf and pump× mom of infants		0.00871*			
		(0.00480)			
no discrimination× mom of infants			0.00627*		
			(0.00349)		
protection× mom of infants				0.0116***	
				(0.00309)	
encourage× mom of infants					0.00859***
					(0.00270)
Observations	218,089	197,739	230,292	217,707	221,395
R-squared	0.911	0.910	0.912	0.912	0.910
	Panel B: Dependent variable = employed, if in labor force				
longer break× mom of infants	0.0143**				
	(0.00668)				
bf and pump× mom of infants		0.00212			
		(0.0129)			
no discrimination× mom of infants			0.0105**		
			(0.00485)		
protection× mom of infants				0.00755	
				(0.0107)	
encourage× mom of infants					-0.0186***
					(0.00522)
Observations	201,747	183,213	212,900	201,429	205,091
R-squared	0.053	0.054	0.053	0.053	0.053
	Panel C: Dependent variable = working in the reference week, if employed				
longer break× mom of infants	0.00667				
	(0.0176)				
bf and pump× mom of infants		0.0155			
		(0.0212)			
no discrimination× mom of infants			-0.00184		
			(0.00909)		
protection× mom of infants				-0.0157**	
				(0.00618)	

Continued on Next Page...

Table 16 – Continued

	(1)	(2)	(3)	(4)	(5)
encourage× mom of infants					-0.00423
					(0.00719)
Observations	193,474	175,773	204,105	193,162	196,927
R-squared	0.043	0.042	0.042	0.043	0.040
	Panel D: Dependent variable = part time in the reference week (less than 35h), if employed				
longer break× mom of infants	-0.0864**				
	(0.0329)				
bf and pump× mom of infants		0.0150			
		(0.0203)			
no discrimination× mom of infants			-0.0403		
			(0.0467)		
protection× mom of infants				-0.0559*	
				(0.0317)	
encourage× mom of infants					-0.0412
					(0.0249)
Observations	187,339	170,167	197,507	186,982	190,614
R-squared	0.080	0.082	0.079	0.079	0.077
	Panel E: Dependent variable = log hours work in the reference week, if working				
longer break× mom of infants	0.0979**				
	(0.0414)				
bf and pump× mom of infants		0.0222			
		(0.0297)			
no discrimination× mom of infants			0.0424		
			(0.0642)		
protection× mom of infants				0.0372	
				(0.0424)	
encourage× mom of infants					0.0366
					(0.0307)
Observations	187,339	170,167	197,507	186,982	190,614
R-squared	0.091	0.092	0.091	0.091	0.086
	Panel F: Dependent variable = being paid by hour in the reference week, if worked				
longer break× mom of infants	0.0229				
	(0.0147)				
bf and pump× mom of infants		0.0106			
		(0.00810)			
no discrimination× mom of infants			0.00427		

Continued on Next Page...

Table 16 – Continued

	(1)	(2)	(3)	(4)	(5)
			(0.0200)		
protection× mom of infants				0.0300***	
				(0.00896)	
encourage× mom of infants					-0.0356***
					(0.00805)
Observations	187,339	170,167	197,507	186,982	190,614
R-squared	0.041	0.042	0.042	0.043	0.040
	Panel G: Dependent variable = log real hourly wage in the reference week, if paid by hour				
longer break× mom of infants	0.201***				
	(0.0624)				
bf and pump× mom of infants		0.0609			
		(0.0515)			
no discrimination× mom of infants			0.116		
			(0.0750)		
protection× mom of infants				0.00873	
				(0.103)	
encourage× mom of infants					0.142***
					(0.0376)
Observations	17,973	16,599	19,116	18,044	18,401
R-squared	0.333	0.341	0.338	0.332	0.352
	Panel H: Dependent variable = employed last year (unconditional)				
longer break last yr× mom of 1 yr old	-0.00570				
	(0.0110)				
bf and pump last yr× mom of 1 yr old		-0.0103			
		(0.00635)			
no discrimination× mom of 1 yr old			-0.0106***		
			(0.00341)		
protection last yr× mom of 1 yr old				-0.00137	
				(0.0113)	
encourage last yr× mom of 1 yr old					-0.0246***
					(0.00381)
Observations	221,539	201,136	233,529	220,788	224,706
R-squared	0.593	0.587	0.590	0.594	0.588
	Panel I: Dependent variable = employed full time last year, if employed				
longer break last yr× mom of 1 yr old	0.0468				
	(0.0425)				

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Table 16 – Continued

	(1)	(2)	(3)	(4)	(5)
bf and pump last yr× mom of 1 yr old		-0.0198			
		(0.0388)			
no discrimination× mom of 1 yr old			0.0119		
			(0.0389)		
protection last yr× mom of 1 yr old				0.0382	
				(0.0401)	
encourage last yr× mom of 1 yr old					0.0618**
					(0.0238)
Observations	207,256	188,514	218,350	206,544	210,614
R-squared	0.156	0.160	0.158	0.153	0.151
	Panel J: Dependent variable = log real hourly wage last year				
longer break last yr× mom of 1 yr old	0.0812***				
	(0.0262)				
bf and pump last yr× mom of 1 yr old		0.0703***			
		(0.0134)			
no discrimination× mom of 1 yr old			0.0640***		
			(0.0189)		
protection last yr× mom of 1 yr old				0.0533**	
				(0.0201)	
encourage last yr× mom of 1 yr old					0.0325***
					(0.00838)
Observations	192,721	175,437	202,857	191,945	195,810
R-squared	0.326	0.330	0.327	0.326	0.337

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table 17: Occupational Characteristics of Temporal Flexibility, the CPS Sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Workplace= 0			Workplace =1			Workplace =0			Workplace =1		
VARIABLES	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Females with youngest child of 0 year old	34,392	1	0	10,864	1	0	493,318	0	0	151,748	0	0
Less Flexibility (average of the five characteristics)	20,630	0.0725	1.026	6,142	0.137	0.980	439,670	-0.0503	0.984	132,598	-0.0353	0.981
Time pressure	20,630	-0.190	1.093	6,142	-0.166	1.063	439,670	0.163	0.884	132,598	0.143	0.898
Contact with others	20,630	0.240	0.927	6,142	0.311	0.859	439,670	-0.223	1.018	132,598	-0.168	1.009
Establishing and maintaining interpersonal relationships	20,630	0.226	0.923	6,142	0.296	0.873	439,670	-0.210	1.013	132,598	-0.160	1.029
Structured vs. unstructured work	20,630	0.0863	1.008	6,142	0.124	0.955	439,670	-0.0475	1.003	132,598	-0.0533	1.001
Freedom to make decisions	20,630	-0.0709	1.061	6,142	-0.0662	1.034	439,670	0.107	0.949	132,598	0.0828	0.950

	(1)	(2)	(3)	(4)	(5)	(6)
	Workplace= 0			Workplace =1		
VARIABLES	N	Mean	SD	N	Mean	SD
Females with youngest child of 1 year old	35,287	1	0	11,481	1	0
Less Flexibility (average of the five characteristics)	22,252	0.0553	1.023	6,965	0.103	0.997
Time pressure	22,252	-0.195	1.095	6,965	-0.203	1.061
Contact with others	22,252	0.213	0.941	6,965	0.263	0.885
Establishing and maintaining interpersonal relationships	22,252	0.208	0.931	6,965	0.279	0.896
Structured vs. unstructured work	22,252	0.0820	1.008	6,965	0.111	0.973
Freedom to make decisions	22,252	-0.0726	1.054	6,965	-0.0566	1.046

Notes: The definitions for the five characteristics are: 1. Time pressure: How often does this job require the worker to meet strict deadlines? 2. Contact with others: How much does this job require the worker to be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it? 3. Establishing and maintaining interpersonal relationships: Developing constructive and cooperative working relationships with others, and maintaining them over time. 4. Structured versus unstructured work: To what extent is this job structured for the worker, rather than allowing the worker to determine tasks, priorities, and goals? 5. Freedom to make decisions: How much decision making freedom, without supervision, does the job offer. The variable $LessFlexibility_i$ is defined as the average of the five characteristics for each occupation. I merge the occupational characteristics for individual with occupational information in the CPS sample. The occupation variable in the CPS is "occ2010"; I use the crosswalk between occ2010 and the 2010 SOC to link the occupation to its characteristics in the O*NET. Because the O*NET occupations are cross referenced by the industry, I weigh the detailed occupation characteristics by the number of observations in each occupations, so that the characteristics can be matched to the CPS occupations. I then normalized the characteristics to have a mean zero and a standard deviation of 1, à la the approach in (Goldin, 2014).

Table 18: Effects of the Workplace Breastfeeding Benefits through Flexibility on Labor Force Participation

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel A: Dependent variable = in labor force					
workplace × mom of infants	0.0213***	0.0183***	0.0212***	0.0194***	0.0212***	0.0195***
	(0.00410)	(0.00379)	(0.00384)	(0.00452)	(0.00419)	(0.00384)
workplace × mom of infants ×non-flexible	-0.0110***					
	(0.00370)					
workplace × mom of infants ×time pressure		-0.0127***				
		(0.00369)				
workplace × mom of infants ×contact others			-0.00622*			
			(0.00341)			
workplace × mom of infants ×establish relationship				-0.00103		
				(0.00431)		
workplace × mom of infants ×structured workplace					-0.00865**	
					(0.00361)	
workplace × mom of infants ×freedom making decisions						-0.00477
						(0.00357)
Observations	342,640	342,640	342,640	342,640	342,640	342,640
R-squared	0.031	0.030	0.028	0.029	0.030	0.030
	Panel B: Dependent variable = employed, if in labor force					
workplace × mom of infants	-0.00167	-0.00147	-0.000747	-0.00316	-0.00318	-0.00231
	(0.00747)	(0.00602)	(0.00644)	(0.00723)	(0.00686)	(0.00639)
workplace × mom of infants ×non-flexible	-0.000440					
	(0.00659)					
workplace × mom of infants ×time pressure		-0.00878*				
		(0.00520)				
workplace × mom of infants ×contact others			-0.00541			
			(0.00445)			
workplace × mom of infants ×establish relationship				0.00514		
				(0.00550)		
workplace × mom of infants ×structured workplace					0.00771	
					(0.00542)	
workplace × mom of infants ×freedom making decisions						0.00187
						(0.00510)
Observations	340,520	340,520	340,520	340,520	340,520	340,520
R-squared	0.041	0.039	0.039	0.041	0.041	0.040

Continued on Next Page...

Table 18 – Continued

	(1)	(2)	(3)	(4)	(5)	(6)
	Panel C: Dependent variable = worked in the reference week, if employed					
workplace × mom of infants	0.00107	0.000454	0.000177	0.00178	0.00120	0.000475
	(0.00610)	(0.00673)	(0.00598)	(0.00710)	(0.00655)	(0.00644)
workplace × mom of infants ×non-flexible	0.00102					
	(0.00895)					
workplace × mom of infants ×time pressure		0.00231				
		(0.00818)				
workplace × mom of infants ×contact others			0.00378			
			(0.00849)			
workplace × mom of infants ×establish relationship				0.000964		
				(0.0119)		
workplace × mom of infants ×structured workplace					-0.00144	
					(0.0113)	
workplace × mom of infants ×freedom making decisions						-0.00226
						(0.00763)
Observations	326,160	326,160	326,160	326,160	326,160	326,160
R-squared	0.040	0.040	0.040	0.040	0.040	0.040
	Panel D: Dependent variable = log hours worked in the reference week, if worked					
workplace × mom of infants	0.0426***	0.0499***	0.0473***	0.0427**	0.0477***	0.0479***
	(0.0157)	(0.0175)	(0.0162)	(0.0170)	(0.0161)	(0.0160)
workplace × mom of infants ×non-flexible	0.0309**					
	(0.0153)					
workplace × mom of infants ×time pressure		0.0132				
		(0.0152)				
workplace × mom of infants ×contact others			0.0277			
			(0.0188)			
workplace × mom of infants ×establish relationship				0.0257*		
				(0.0147)		
workplace × mom of infants ×structured workplace					0.0131	
					(0.0115)	
workplace × mom of infants ×freedom making decisions						0.0186
						(0.0149)
Observations	315,694	315,694	315,694	315,694	315,694	315,694
R-squared	0.088	0.085	0.086	0.085	0.086	0.086
	Panel E: Dependent variable = part time (less than 35h) last week, if worked					

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Table 18 – Continued

	(1)	(2)	(3)	(4)	(5)	(6)
workplace × mom of infants	-0.0421***	-0.0468***	-0.0467***	-0.0444***	-0.0441***	-0.0460***
	(0.0124)	(0.0140)	(0.0128)	(0.0125)	(0.0137)	(0.0131)
workplace × mom of infants ×non-flexible	-0.0152					
	(0.0144)					
workplace × mom of infants ×time pressure		-0.00768				
		(0.0105)				
workplace × mom of infants ×contact others			-0.00965			
			(0.0131)			
workplace × mom of infants ×establish relationship				-0.0102		
				(0.0139)		
workplace × mom of infants ×structured workplace					-0.00860	
					(0.0112)	
workplace × mom of infants ×freedom making decisions						-0.00730
						(0.00974)
Observations	315,694	315,694	315,694	315,694	315,694	315,694
R-squared	0.075	0.074	0.073	0.073	0.074	0.073
	Panel F: Dependent variable = paid by hour last week, if worked					
workplace × mom of infants	-0.00761	-0.00937	-0.0104	-0.0120	-0.00897	-0.00757
	(0.0107)	(0.00982)	(0.00874)	(0.0110)	(0.0106)	(0.00958)
workplace × mom of infants ×non-flexible	-0.0158*					
	(0.00829)					
workplace × mom of infants ×time pressure		-0.00788				
		(0.00801)				
workplace × mom of infants ×contact others			-0.0129			
			(0.0104)			
workplace × mom of infants ×establish relationship				-0.00560		
				(0.00917)		
workplace × mom of infants ×structured workplace					-0.00891	
					(0.00675)	
workplace × mom of infants ×freedom making decisions						-0.0166**
						(0.00686)
Observations	315,694	315,694	315,694	315,694	315,694	315,694
R-squared	0.045	0.039	0.041	0.045	0.044	0.042
	Panel G: Dependent variable = log real hourly wage last week, if paid by hour					
workplace × mom of infants	0.0676*	0.0656	0.0683*	0.0557	0.0680*	0.0735*
	(0.0377)	(0.0424)	(0.0386)	(0.0366)	(0.0389)	(0.0437)

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Table 18 – Continued

	(1)	(2)	(3)	(4)	(5)	(6)
workplace × mom of infants ×non-flexible	-0.0350					
	(0.0488)					
workplace × mom of infants ×time pressure		-0.0478				
		(0.0439)				
workplace × mom of infants ×contact others			-0.0244			
			(0.0275)			
workplace × mom of infants ×establish relationship				-0.0161		
				(0.0515)		
workplace × mom of infants ×structured workplace					-0.0457	
					(0.0373)	
workplace × mom of infants ×freedom making decisions						-0.00399
						(0.0329)
Observations	29,755	29,755	29,755	29,755	29,755	29,755
R-squared	0.362	0.354	0.348	0.355	0.359	0.361
	Panel H: Dependent variable = employed last year, unconditional					
workplace last year × mom of 1 year old	0.00623	0.00733*	0.00566	0.00521	0.00572	0.00758*
	(0.00486)	(0.00414)	(0.00487)	(0.00607)	(0.00507)	(0.00434)
workplace last year X mom of 1 year old X non-flexible	0.00325					
	(0.00502)					
workplace last year × mom of 1 year old X time pressure		-0.00491				
		(0.00468)				
workplace last year × mom of 1 year old X contact others			0.00711			
			(0.00652)			
workplace last year × mom of 1 year old X establish relationship				0.00361		
				(0.00830)		
workplace last year × mom of 1 year old X structured workplace					0.00663	
					(0.00566)	
workplace last year × mom of 1 year old X freedom making decisions						0.00288
						(0.00462)
Observations	344,109	344,109	344,109	344,109	344,109	344,109
R-squared	0.026	0.025	0.024	0.025	0.025	0.025
	Panel I: Dependent variable = full time last year, if employed					
workplace last year × mom of 1 year old	0.0375**	0.0435**	0.0426**	0.0333*	0.0385**	0.0400**
	(0.0177)	(0.0169)	(0.0165)	(0.0183)	(0.0179)	(0.0174)
workplace last year X mom of 1 year old X non-flexible	0.00964					
	(0.00657)					

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Table 18 – Continued

	(1)	(2)	(3)	(4)	(5)	(6)
workplace last year × mom of 1 year old X time pressure		0.00554				
		(0.0103)				
workplace last year × mom of 1 year old X contact others			-0.00382			
			(0.00786)			
workplace last year × mom of 1 year old X establish relationship				0.0192***		
				(0.00572)		
workplace last year × mom of 1 year old X structured workplace					0.00728	
					(0.00613)	
workplace last year × mom of 1 year old X freedom making decisions						0.00395
						(0.00586)
Observations	339,029	339,029	339,029	339,029	339,029	339,029
R-squared	0.129	0.132	0.127	0.127	0.128	0.128
	Panel H: Dependent variable = log real hourly wage last year					
workplace last year × mom of 1 year old	0.0379***	0.0380***	0.0447***	0.0321***	0.0369***	0.0438***
	(0.00929)	(0.0123)	(0.0114)	(0.00728)	(0.00862)	(0.0105)
workplace last year X mom of 1 year old X non-flexible	0.00496					
	(0.0120)					
workplace last year × mom of 1 year old X time pressure		0.0161				
		(0.0119)				
workplace last year × mom of 1 year old X contact others			-0.00425			
			(0.00670)			
workplace last year × mom of 1 year old X establish relationship				-0.0124		
				(0.0160)		
workplace last year × mom of 1 year old X structured workplace					0.00438	
					(0.0144)	
workplace last year × mom of 1 year old X freedom making decisions						0.0224**
						(0.0107)
Observations	314,880	314,880	314,880	314,880	314,880	314,880
R-squared	0.349	0.338	0.339	0.346	0.350	0.347

Notes: *** p<0.01, ** p<0.05, * p<0.1.

Table 19: Alternative Channels for the Effects of Workplace Breastfeeding Benefits

	(1)	(2)	(3)	(4)	(5)
	Panel A: Dependent variable = in labor force				
workplace × mom of infants	0.0113*	0.0313***	0.0141*	0.00549	0.00978***
	(0.00585)	(0.00819)	(0.00707)	(0.00355)	(0.00298)
workplace × mom of infants ×# childcare occ	0.203				
	(0.649)				
workplace × mom of infants ×# childcare ind		-1.848**			
		(0.795)			
workplace × mom of infants ×# firm size>99			-0.0137*		
			(0.00766)		
workplace × mom of infants ×# more than 1 employer				-0.00194	
				(0.00771)	
workplace × mom of infants ×# central city					0.00507
					(0.00642)
Constant	-0.0104*	-0.00847	-0.0181***	-0.0203***	-0.00504
	(0.00584)	(0.00570)	(0.00494)	(0.00546)	(0.00608)
Observations	369,529	369,529	301,907	346,456	305,454
R-squared	0.912	0.912	0.831	0.828	0.914
	Panel B: Dependent variable = employed, if in labor force				
workplace × mom of infants	-0.0381***	-0.00746	0.00146	0.00445	0.000439
	(0.0112)	(0.0132)	(0.00754)	(0.00659)	(0.00507)
workplace × mom of infants ×# childcare occ	4.325***				
	(1.014)				
workplace × mom of infants ×# childcare ind		0.557			
		(1.280)			
workplace × mom of infants ×# firm size>99			0.00590		
			(0.00546)		
workplace × mom of infants ×# more than 1 employer				-0.0265*	
				(0.0151)	
workplace × mom of infants ×# central city					-0.0185*
					(0.00999)
Constant	-0.171***	-0.171***	-0.155***	-0.143***	-0.162***
	(0.0207)	(0.0205)	(0.0165)	(0.0189)	(0.0222)
Observations	341,116	341,116	293,623	336,843	281,560
R-squared	0.052	0.052	0.038	0.044	0.052

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Table 19 – Continued

	(1)	(2)	(3)	(4)	(5)
	Panel C: Dependent variable = worked in the reference week, if employed				
workplace × mom of infants	0.0184	0.00771	-0.0149	-0.000856	-0.00138
	(0.0155)	(0.0265)	(0.0133)	(0.00717)	(0.00727)
workplace × mom of infants ×# childcare occ	-2.240				
	(1.577)				
workplace × mom of infants ×# childcare ind		-0.803			
		(2.252)			
workplace × mom of infants ×# firm size>99			0.0226		
			(0.0220)		
workplace × mom of infants ×# more than 1 employer				0.0100	
				(0.0187)	
workplace × mom of infants ×# central city					0.000683
					(0.0153)
Constant	0.977***	0.977***	0.992***	0.970***	0.977***
	(0.0175)	(0.0171)	(0.0163)	(0.0167)	(0.0190)
Observations	326,560	326,560	283,897	324,148	269,420
R-squared	0.040	0.040	0.042	0.040	0.041
	Panel D: Dependent variable =log hours worked in the reference week, if worked				
workplace × mom of infants	0.0777	0.0455	0.0388	0.0435***	0.0493**
	(0.0608)	(0.0488)	(0.0264)	(0.0159)	(0.0223)
workplace × mom of infants ×# childcare occ	-3.274				
	(7.206)				
workplace × mom of infants ×# childcare ind		0.404			
		(4.112)			
workplace × mom of infants ×# firm size>99			0.00117		
			(0.0288)		
workplace × mom of infants ×# more than 1 employer				0.0115	
				(0.0612)	
workplace × mom of infants ×# central city					-0.0135
					(0.0262)
Constant	3.443***	3.444***	3.537***	3.441***	3.468***
	(0.0384)	(0.0387)	(0.0413)	(0.0363)	(0.0417)
Observations	316,077	316,077	274,785	313,873	260,846
R-squared	0.083	0.083	0.083	0.080	0.083
	Panel E: Dependent variable = part time (less than 35h) in the reference week, if worked				

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Table 19 – Continued

	(1)	(2)	(3)	(4)	(5)
workplace × mom of infants	-0.0760**	-0.0615**	-0.0301	-0.0426***	-0.0474***
	(0.0328)	(0.0281)	(0.0195)	(0.0132)	(0.0171)
workplace × mom of infants ×# childcare occ	3.513				
	(3.628)				
workplace × mom of infants ×# childcare ind		1.374			
		(2.319)			
workplace × mom of infants ×# firm size>99			-0.0162		
			(0.0196)		
workplace × mom of infants ×# more than 1 employer				-0.0196	
				(0.0409)	
workplace × mom of infants ×# central city					0.0218
					(0.0328)
Constant	0.425***	0.429***	0.351***	0.401***	0.413***
	(0.0363)	(0.0361)	(0.0367)	(0.0357)	(0.0364)
Observations	316,077	316,077	274,785	313,873	260,846
R-squared	0.072	0.072	0.070	0.070	0.072
	Panel F: Dependent variable = paid by hour in the reference week, if worked				
workplace × mom of infants	-0.0420**	-0.00600	-0.0129	-0.0138*	-0.0119
	(0.0203)	(0.0265)	(0.00832)	(0.00756)	(0.00827)
workplace × mom of infants ×# childcare occ	3.727*				
	(2.025)				
workplace × mom of infants ×# childcare ind		-0.425			
		(2.334)			
workplace × mom of infants ×# firm size>99			-0.000256		
			(0.00974)		
workplace × mom of infants ×# more than 1 employer				0.0223	
				(0.0414)	
workplace × mom of infants ×# central city					0.00908
					(0.0190)
Constant	0.308***	0.308***	0.282***	0.301***	0.324***
	(0.0310)	(0.0305)	(0.0292)	(0.0319)	(0.0364)
Observations	316,077	316,077	274,785	313,873	260,846
R-squared	0.039	0.039	0.042	0.039	0.039
	Panel G: Dependent variable = log real hourly wage, if paid by hour in the reference week				
workplace × mom of infants	-0.0583	-0.0688	0.0480	0.0458	0.0947***
	(0.112)	(0.154)	(0.0566)	(0.0401)	(0.0300)

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Table 19 – Continued

	(1)	(2)	(3)	(4)	(5)
workplace × mom of infants ×# childcare occ	14.88				
	(10.16)				
workplace × mom of infants ×# childcare ind		12.74			
		(12.41)			
workplace × mom of infants ×# firm size>99			-0.00459		
			(0.0638)		
workplace × mom of infants ×# more than 1 employer				0.170	
				(0.170)	
workplace × mom of infants ×# central city					-0.0517
					(0.0816)
Constant	0.783***	0.770***	0.863***	0.869***	0.830***
	(0.0626)	(0.0618)	(0.0781)	(0.0645)	(0.0674)
Observations	29,781	29,781	25,100	29,529	24,468
R-squared	0.348	0.348	0.356	0.352	0.352
	Panel H: Dependent variable = employed last year, unconditional				
workplace last year × mom of 1 year old	-0.0289**	-0.0253	0	0	-0.0173***
	(0.0110)	(0.0157)	(0)	(0)	(0.00463)
workplace last year × mom of 1 year old × # childcare occ	1.032				
	(1.364)				
workplace last year × mom of 1 year old × # childcare ind		0.376			
		(1.382)			
workplace last year × mom of 1 year old × central city					-0.00103
					(0.0102)
Constant	0.276***	0.278***	1	1	0.261***
	(0.0178)	(0.0176)	(0)	(0)	(0.0202)
Observations	370,671	370,671	301,110	345,880	306,426
R-squared	0.585	0.585			0.590
	Panel I: Dependent variable = full time last year, if employed				
workplace last year × mom of 1 year old	0.109***	0.0632*	0.0299	0.0421***	0.0523***
	(0.0401)	(0.0346)	(0.0212)	(0.0152)	(0.0187)
workplace last year × mom of 1 year old × # childcare occ	-8.010*				
	(4.102)				
workplace last year × mom of 1 year old × # childcare ind		-1.954			
		(3.383)			
workplace last year × mom of 1 year old × firm size ¿99			0.0220		
			(0.0183)		

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Table 19 – Continued

	(1)	(2)	(3)	(4)	(5)
workplace last year × mom of 1 year old × more than 1 employer				0.00462	
				(0.0227)	
workplace last year × mom of 1 year old × central city					-0.0287
					(0.0229)
Constant	0.480***	0.483***	0.516***	0.506***	0.486***
	(0.0231)	(0.0226)	(0.0282)	(0.0214)	(0.0236)
Observations	345,880	345,880	301,110	345,880	285,414
R-squared	0.145	0.145	0.163	0.146	0.144
	Panel J: Dependent variable = log real hourly wage last year				
workplace last year × mom of 1 year old	0.0858**	0.0895**	0.0737**	0.0460***	0.0393***
	(0.0334)	(0.0348)	(0.0314)	(0.0153)	(0.0131)
workplace last year × mom of 1 year old × # childcare occ	-4.923				
	(3.287)				
workplace last year × mom of 1 year old × # childcare ind		-4.234			
		(2.721)			
workplace last year × mom of 1 year old × firm size ¿99			-0.0450		
			(0.0344)		
workplace last year × mom of 1 year old × more than 1 employer				0.0239	
				(0.0568)	
workplace last year × mom of 1 year old × central city					-0.00908
					(0.0203)
Constant	0.506***	0.493***	0.545***	0.624***	0.547***
	(0.0437)	(0.0427)	(0.0441)	(0.0434)	(0.0436)
Observations	321,120	321,120	277,582	321,120	264,748
R-squared	0.336	0.336	0.352	0.342	0.341

Notes: Robust standard errors in parentheses. *** p¡0.01, ** p¡0.05, * p¡0.1

** p<0.01, ** p<0.05, * p<0.1.

C Additional Tables

Table C.1: Years of Other State Laws on Breastfeeding

State Name	Any Place	Jury	Indecency
ALABAMA	2006		
ALASKA	1998		
ARIZONA	2006		2005
ARKANSAS	2007		2007
CALIFORNIA	1997	2000	
COLORADO	2004		
CONNECTICUT	1997	2012*	
DELAWARE	1997		
DISTRICT OF COLUMBIA	2007		2007
FLORIDA	1993		1993
GEORGIA	1999		
HAWAII	2000		
IDAHO		2002	
ILLINOIS	2004	2006	1995
INDIANA	2003		
IOWA	2002	1994	
KANSAS	2006	2006	
KENTUCKY	2006	2007	
LOUISIANA	2001		
MAINE	2001		
MARYLAND	2003		
MASSACHUSETTS	2008		2008
MICHIGAN		2012*	1994
MINNESOTA	1998	1998	1998
MISSISSIPPI	2006	2006	2006
MISSOURI	1999	2014*	1999
MONTANA	1999	2009	1999
NEBRASKA	2011*	2003	
NEVADA	1995		1995
NEW HAMPSHIRE			1999
NEW JERSEY	1997		
NEW MEXICO	1999		
NEW YORK	1994		2002
NORTH CAROLINA	1993		1993
NORTH DAKOTA	2009		2009
OHIO	2005		
OKLAHOMA	2004	2004	2004
OREGON	1999	1999	
PENNSYLVANIA	2007		2007
RHODE ISLAND	2008		1998

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Table C.1 – Continued

State Name	Any Place	Jury	Indecency
SOUTH CAROLINA	2005		2005
SOUTH DAKOTA		2012	2002
TENNESSEE	2006		2006
TEXAS	1995		
UTAH	1995		1995
VERMONT	2002		
VIRGINIA	2002	2005	1994
WASHINGTON	2009		2001
WEST VIRGINIA	2014*		
WISCONSIN	2009		1995
WYOMING	2007		2007

Notes: * denotes years later than 2010, and these states are considered without the law in this paper's data sample. Column (1) is the "Any place" law, which summarizes the state laws that allow women to breastfeed in any public and private place. Column (2) is the "Jury" exemption law, which exempts nursing women from the jury duties. Column (3) is the "Indecency" exemption law, which allows breastfeeding in public to be exempted from being considered public indecency.

Table C.2: Alternative control group: females without children

	(1) All	(2) Single	(3) Married	(4) Married
	Dependent variable = in labor force			
Law X mom of infant child (control=females without children)	0.00255**	0.00126	0.00156	0.000747
	(0.00110)	(0.00186)	(0.00106)	(0.000986)
Spouse characteristics				Y
Observations	911,349	430,754	480,595	404,169
R-squared	0.892	0.875	0.919	0.918
	Dependent variable = employed, if in labor force			
Law X mom of infant child (control=females without children)	-0.00257	-0.00473	-0.00176	-0.00302
	(0.00376)	(0.00456)	(0.00323)	(0.00349)
Spouse characteristics				Y
Observations	774,636	329,606	445,030	379,064
R-squared	0.103	0.128	0.053	0.051
	Dependent variable = at work, if employed			
Law X mom of infant child (control=females without children)	-0.00129	-0.00208	-0.00166	-0.00239
	(0.00232)	(0.00326)	(0.00201)	(0.00259)
Spouse characteristics				Y
Observations	722,282	298,203	424,079	363,246
R-squared	0.007	0.011	0.005	0.006
	Dependent variable = log hours work, if worked			
Law X mom of infant child (control=females without children)	0.00546	-0.00615	0.0147**	0.0205**
	(0.00358)	(0.00473)	(0.00661)	(0.00838)
Spouse characteristics				Y
Observations	701,774	289,025	412,749	353,807
R-squared	0.180	0.218	0.058	0.059
	Dependent variable = part time (less than 35h)			

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Table C.2 – Continued

	(1) All	(2) Single	(3) Married	(4) Married
Law X mom of infant child (control=females without children)	3.71e-05	0.00947	-0.0126***	-0.0173***
	(0.00518)	(0.00604)	(0.00419)	(0.00493)
Spouse characteristics				Y
Observations	701,774	289,025	412,749	353,807
R-squared	0.181	0.229	0.049	0.048
	Dependent variable = hourly paid, if worked			
Law X mom of infant child (control=females without children)	0.00229	0.00587	-0.00173	-0.00152
	(0.00278)	(0.00381)	(0.00458)	(0.00335)
Spouse characteristics				Y
Observations	701,774	289,025	412,749	353,807
R-squared	0.035	0.028	0.035	0.038
	Dependent variable = hourly wage if paid hourly			
Law X mom of infant child (control=females without children)	0.0465***	0.0330***	0.0534***	0.0730***
	(0.0121)	(0.0115)	(0.0138)	(0.0201)
Spouse characteristics				Y
Observations	83,207	41,577	41,630	34,211
R-squared	0.446	0.403	0.365	0.367
	Dependent variable = employed last year (unconditional)			
Law last year X mom of 1-yr-old (control=females without children)	0.00825*	0.0293**	-0.00421	-0.00424
	(0.00458)	(0.0143)	(0.00489)	(0.00508)
Spouse characteristics				Y
Observations	313,060	180,725	132,335	102,864
R-squared	0.531	0.481	0.614	0.625
	Dependent variable = full time last year, if employed			
Law last year X mom of 1-yr-old (control=females without children)	0.0422***	0.00710	0.0377**	0.0320**
	(0.0146)	(0.0211)	(0.0146)	(0.0156)
Spouse characteristics				Y
Observations	246,271	141,718	104,553	81,248

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Table C.2 – Continued

	(1) All	(2) Single	(3) Married	(4) Married
R-squared	0.245	0.293	0.129	0.137
	Dependent variable = hourly wage last year			
Law last year X mom of 1-yr-old (control=females without children)	-0.00101	-0.0357*	0.00611	0.0131
	(0.0119)	(0.0202)	(0.0144)	(0.0121)
Spouse characteristics				Y
Observations	237,764	138,263	99,501	77,124
R-squared	0.332	0.304	0.318	0.329

Notes: Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.

Table C.3: Robustness: effects estimated without recession years

	(1) All	(2) Single	(3) Married	(4) Married + sp cov
	Dependent variable = in labor force			
workplace X mom of infant	0.0137***	0.0155**	0.0156***	0.0134***
	(0.00282)	(0.00675)	(0.00241)	(0.00257)
Observations	541,783	204,132	337,651	293,769
R-squared	0.885	0.866	0.905	0.905
	Dependent variable = employed, if in labor force			
workplace X mom of infant	-0.0142**	-0.0282	-0.00831	-0.00511
	(0.00581)	(0.0187)	(0.00678)	(0.00739)
Observations	469,476	159,403	310,073	271,555
R-squared	0.094	0.111	0.051	0.049
	Dependent variable = at work, if employed			
workplace X mom of infant	0.00742	0.0106	0.00470	0.00197
	(0.0108)	(0.0256)	(0.00860)	(0.00751)
Observations	438,440	142,368	296,072	260,673
R-squared	0.024	0.013	0.034	0.038
	Dependent variable = part time, if worked			
workplace X mom of infant	-0.0268	0.0454	-0.0393***	-0.0393***
	(0.0175)	(0.0316)	(0.0138)	(0.0129)
Observations	424,440	137,943	286,497	252,304
R-squared	0.143	0.192	0.068	0.074
	Dependent variable = log hours worked last week			
workplace X mom of infant	0.0237	-0.0566	0.0362**	0.0456***
	(0.0181)	(0.0358)	(0.0158)	(0.0164)
Observations	424,440	137,943	286,497	252,304
R-squared	0.142	0.181	0.079	0.086
	Dependent variable = hourly paid last week			
workplace X mom of infant	-0.0216***	-0.0296	-0.0206*	-0.0210*
	(0.00701)	(0.0202)	(0.0103)	(0.0114)

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Table C.3 – Continued

	(1) All	(2) Single	(3) Married	(4) Married + sp cov
Observations	424,440	137,943	286,497	252,304
R-squared	0.035	0.028	0.036	0.039
	Dependent variable =log hourly wage if paid hourly last week			
workplace X mom of infant	0.0350	0.0747	0.0298	0.0348
	(0.0396)	(0.0542)	(0.0427)	(0.0461)
Observations	51,287	20,907	30,380	25,929
R-squared	0.431	0.388	0.342	0.351
	(1)	(3)	(4)	(5)
	Dependent variable = employed last year			
workplace last year X mom of 1 yr old	-0.00981*	0.0182	-0.0186**	-0.0235***
	(0.00562)	(0.0130)	(0.00708)	(0.00618)
Observations	580,321	218,948	361,373	314,401
R-squared	0.506	0.450	0.573	0.583
	Dependent variable = full time last year			
workplace last year X mom of 1 yr old	0.0360	0.0176	0.0365*	0.0366*
	(0.0219)	(0.0253)	(0.0195)	(0.0207)
Observations	516,022	180,304	335,718	294,064
R-squared	0.223	0.225	0.135	0.152
	Dependent variable = hourly wage last year			
workplace last year X mom of 1 yr old	0.0239**	-0.0327	0.0388**	0.0471***
	(0.0119)	(0.0255)	(0.0150)	(0.0139)
Observations	483,509	172,190	311,319	272,602
R-squared	0.361	0.260	0.318	0.336

Notes: For the flow outcomes, the years are between 1990-2006. For the stock outcomes, the years are between 1990-2007. Standard errors in parentheses and are clustered at state level. *** p<0.01, ** p<0.05, * p<0.1.