The Effect of Paid Family Leave and its Job-Protection variant on Mother's Leave-Taking, and Short-term Labor Market Outcomes

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Abstract

This paper analyses the effect of California's, New Jersey's, Rhode Island's, and New York's paid family leave (PFL) programs on mothers' leave-taking, and short-term labor market outcomes following childbirth. This analysis uses March Current Population Survey data from 1999-2020 and a difference-in-difference approach to evaluate leave-taking, as well as a difference-in-difference-in-difference approach to evaluate the short-term labor market outcomes. I obtain evidence that PFL increases Part-time workers' leave-taking by 3 percent, while Job-Protected PFL leads to a 17.2 percent increase in mothers being employed and at work the year of childbirth. I also provide evidence of PFL increasing part-time workers'usual weekly hours worked by 6 hours, following childbirth.

1 Introduction

Nowadays most mothers with young children in advanced industrialized countries participate in the labor force. In particular, the United States reported that 57.4 percent of all mothers with children less than one year old were working in 2019 [1]. Nevertheless, with mothers still doing a larger share of child care than men, this presents a challenge for working mothers who need to balance competing job and family responsibilities [2] . Due to the large amount of rest and care needed to prepare and recover from childbirth, maternity and family leave policies have been designed to address these challenges. Yet, out of all industrialized countries, the United States is the only one without a national paid family leave (PFL) program. Thus far, only six states (California, New Jersey, Rhode Island, New York, Washington, Massachusetts) and Washington D.C. have implemented PFL laws, while three other states (Connecticut, Oregon, Colorado) have passed PFL laws, and are waiting to be enacted in the following years [3].

In this paper I study how California's, New Jersey's, Rhode Island's and New York's PFL programs affected mothers' leave-taking after childbirth, and how the effects differ by population subgroups. I also study how a variant of PFL, that offers job protection, present in Rhode Island and New York, affects leave-taking in comparison to non-job protected PFL in California and New Jersey. In particular, I am interested in understanding whether this group of states with PFL reduced the disparities in leave-taking, as prior research showed positive and significant results from California's PFL program on leave-taking (Rossin-Slater, Ruhm, & Waldfogel, 2013). Finally, I study the effect of PFL (and job-protected PFL) on mother's short-term labor market outcomes - employment, work status, work hours, and wage income.

I use the March Current Population Survey (CPS) Supplement data from 1999 to 2020, to analyse the effects mentioned above, as well as two different study designs. I implement a difference-in-difference (DD) model to analyse the effect of PFL on a 12-year period, and a difference-in-difference-in-difference (DDD) model to analyse the effect of Job-Protected PFL on a 6-year period.

[1] According to the Bureau of Labor Statistics, in 2020 the labor force participation of American mothers with children under the age one was 55.6 percent. The drop in percentage likely occurred due to COVID-19. See: https://www.bls.gov/news.release/famee.t06.htm.

[2] For a 2013 report on gender differences in child care, see: https://www.pewresearch.org/social-trends/2013/03/14/modern-parenthood-roles-of-moms-and-dads-converge-as-they-balance-work-and-family/

[3] For more information about current state Paid Family Leave laws, see: https://www.kff.org/womens-health-policy/fact-sheet/paid-family-leave-and-sick-days-in-the-u-s/

The difference in periods, leads to two different comparison samples: mothers with children 5 to 17 years old for the 12-year period, and mothers with children 2 to 17 years old for the 6-year period.

In my results I find that PFL leads to a generally positive, yet not significant effect on leave-taking. Nevertheless, positive and significant leave-taking is measured in part-time workers. The results also show a large reduction in the likelihood of part-time workers being employed and at work the year of childbirth, and on the likelihood of full-time workers leaving the labor force the year of childbirth. Job-Protected PFL presents ambiguous effects overall, suggesting large differences between states with paid maternity leave programs.

2 Background and Literature

Paid family leave is a program offered nationally by all except one OECD country: the United States. Among other things, the program allows parents to have a paid leave from work to bond with a newborn following their birth or adoption (Earle, Mokomane, & Heymann, 2011). The length and benefits of the program vary greatly among the nations that have implemented it, with the International Labour Organization (ILO) of the United Nations setting the standard length to 14 weeks (since 2000) (Rossin-Slater, 2017), with Europe having 14 to 20 weeks of paid leave (C. J. Ruhm, 2011) and Canada currently having up to 35 weeks of paid leave.

In general, paid family leave was designed to allow parents to take paid time off work to bond with their newborn. This paid time off, is intended to alleviate the financial concerns that parents would have under an otherwise unpaid leave. Now, given that mothers have historically taken the role of caretaker, childbirth can cause great setbacks for women in the labor market and for children's health and development needs (C. Ruhm & Waldfogel, 2012) (Huang & Yang, 2015). Thus, programs such as paid family leave are mainly intended to support women and their children, as family and work responsibilities arise and conflict with one another.

Unlike all other industrialized countries, the United States' only national family leave program Family and Medical Leave Act (FMLA) is unpaid. Passed in 1993, FMLA intends to make it easier for parents to take time off work to bond with their newborn, among other things. However, FMLA is only available to approximately half of all American workers, as eligibility requirements include

being employed at a firm with at least 50 employees within 75 miles of the work site, as well as having worked for said firm for at least 1250 hours the year prior to the leave (C. J. Ruhm, 1997). Another parental leave program similar to FMLA is the Temporary Disability Insurance (TDI) program offered in California, Hawaii, New Jersey, Rhode Island and New York. TDI was passed under the Pregnancy and Discrimination Act, enacted in 1978. This prenatal program offers around 8-10 weeks of paid leave during pregnancy, although it can be used to recover from childbirth, with eligible mothers receiving 50 to 75 percent of earnings back up to a ceiling. Eligibility for this program depends on having worked the year prior to starting TDI (so that payroll deductions have been made by the time leave starts). Most female workers are eligible to TDI, unlike for FMLA.

Paid Family Leave (PFL) is a program that offers partially paid leave to working parents to bond with a newborn, although it can be used during pregnancy as well as for other situations. Currently, paid family leave laws have been passed in nine states and Washington D.C., these states include California's Paid Family Leave (since July, 2004), New Jersey's Family Leave Insurance (since July, 2009), Rhode Island's Temporary Caregiver Insurance (since January, 2014), and New York's Paid Family Leave (since January, 2018), all of which will be called PFL from now on. In most states with PFL, TDI is also available and due to its is similar eligibility criteria, mothers are automatically eligible for PFL when TDI is up. In most states with both programs the two policies have similar setbacks and benefits for weekly wage replacement, length of leave, financing of the program, and lack of job protection. These similarities between TDI and PFL, make it possible for an easy transition from pregnancy period (using TDI) into bonding after childbirth (using PFL). The only key difference between TDI and PFL is that only women are eligible for TDI, while both men and women are eligible for PFL.

In 2004, California's PFL (CA-PFL from now on) was the first state paid family leave program in the nation. As such, many states that have implemented PFL since, have mimicked California's program guidelines. This includes CA-PFL's no job-protection clause, which does not guarantee job protection to mothers using PFL unless they are also enrolled in FMLA. As explained above, FMLA has very strict eligiblity requirements, meaning that most mothers using PFL in states without the job-protection clause are more at risk of losing their jobs. However, Rhode Island's PFL program (RI-PFL from now on) and New York's PFL program (NY-PFL from now on) do include a job-

protection clause under their PFL program unlike the case of CA-PFL, New Jersey's PFL (NJ-PFL from now on) and more. Aside from the job-protection clause, states with PFL have a few key program differences with one another. For instance, from 2004-2010 CA-PFL offered up to 6 weeks of leave with 55 percent weekly wage replacement, from 2009-2015 NJ-PFL offered up to 6 weeks of leave with 66 percent weekly wage replacement, from 2014-2019 RI-PFL offered up to 4 weeks of leave with a weekly wage replacement equal to 4.62 percent of the quarter earnings from the base period, and from 2018-2020 NY-PFL offered up to 10 weeks of leave with 55 percent weekly wage replacement.

The literature on maternity leave shows that both in North America and in Europe, paid family leave, even if with partial wage replacement, leads to higher leave-taking among mothers. The United States' FMLA led to a significant positive increase in leave-taking for only college-educated or married mothers, although in general no effects on employment were detected (Waldfogel, 1999) (Han, Ruhm, & Waldfogel, 2009).The literature on unpaid family leave, supported the theory that maternity leave without wage replacement would constraint low-income mothers further, and lead to them foregoing leave-taking. Evidence from California's PFL program further supports this theory, as California found an overall doubling of leave-taking, with less advantaged mothers having an even larger increase in leave-taking; as well as a medium term increase in usual weekly work hours of 10 to 17 percent for employed mothers, with a similar rise in wage income (Rossin-Slater et al., 2013). Similarly, Canada's paid family leave program offers two types of leave, with the standard leave being most similar to California's. Canada's PFL offers 55 percent weekly wage replacement for up to 35 weeks as well as job-protection. Evidence from Canada shows that extensions in job-protected maternity leave led to an increase in leave-taking, and continuity with mother's prebirth employer (Baker & Milligan, 2008). In particular, Canada's literature shows that there was a shift from mothers who would have left the workforce, but instead returned to the workforce; and a shift from mothers who would have taken part-time jobs postbirth, but instead are taking longer leaves and finally returning to their prebirth employer (Baker & Milligan, 2008). Evidence from European countries suggests that extensions of the paid leave period led to a delay in the return to the labor market postbirth, and an increase of 4 months to the job-protected maternity leave led to a reduction of one month of maternal employment in the 6 years postbirth, while a 16 month increase

of maternity leave and a 4 month increase in job protection led to a reduction of three months of maternal employment in the 6 years postbirth (Schönberg & Ludsteck, 2014).

3 Data

I use 1999-2020 data from from the March Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC), accessed through the Integrated Public Use Microdata Series (IPUMS) database (Flood, King, Rodgers, Ruggles, & Warren, 2020). The CPS ASEC is a dataset with a nationally-representative sample, and it contains information on general leave-taking as well as labor market outcomes. Information on maternity and paternity leave are asked to each individual who is employed, but is reported to be absent from work during the reference week (the week prior to the survey). Given that to be eligible for PFL, mothers need to have been employed the year prior to taking the leave, I further limit the sample to mothers reporting usual working hours the year prior to their first appearance in the survey.

The limitations of this database include lack of information on children's birth month and employment status during pregnancy, which prevents the analysis from studying the exact timing of the maternity leave. These restrictions make the precision of whether the mother is using maternity leave during pregnancy or after childbirth harder to achieve. Nevertheless, this limitation is addressed by restricting the treatment group to mothers who have children less than one year old. Meanwhile, the control group is composed of mothers with older children. Thus, I will be comparing the experiences of women with children younger than one year old to that of women with older children. The sample was further reduced to civilian women of ages 15 to 64.

Furthermore, to obtain short-term labor market outcomes from mothers, I use IPUMS' CPS person identification "CPSIDP", which uniquely identifies surveyed individuals, thus allowing for a match between the year when the individual first appeared on the survey (from now on first survey year) and the year an individual made their second appearance on the survey (from now on second survey year) (Rivera Drew, Flood, & Warren, 2014). This sample was further limited to mothers who appeared twice in the survey, after which the same limitations as the general sample were implemented.

To maintain a uniformity between the age of children in the control group, I constructed two different analysis samples that maintained the same age group for the control group across all states included. Thus, I constructed four slightly different samples:

3.1 12-year Period Sample

In this sample I limit the CPS ASEC data to mothers in California, New Jersey, and Rhode Island for years 1999-2010, 2004-2015, and 2008-2019, respectively. I further restricted the sample to mothers who reported working hours the year prior to the survey. This sample only included mothers with children less than one year old, and mothers with children five to seventeen years old. This allowed for mothers with children less than one year old to be in the treatment group, and mothers with children five to seventeen years old to be in the control group.

Using this sample I analyze leave-taking and labor market outcomes using multiple dependent variables. First, I measure the effect of leave-taking using maternity leave the week prior to the CPS ASEC survey. Then, to ensure that the effect of maternity leave is not being under-reported, as some mothers may have taken maternity leave but labeled it as something else, I also analyze the effect of leave-taking on mothers who reported having a job but being on any family-related leave ("family leave" from now on), as well as any leave ("any leave" from now on). Thus I report the effect of leave-taking on "family leave" and "any leave" the week prior to the CPS ASEC survey. Similarly, I compare the effect of PFL on leave-taking, to its effect on employment status (reported the week prior to the CPS ASEC survey). Next, I repeat the leave-taking analysis, but separating the effect by work status (part time versus full time) reported the year prior to the CPS ASEC survey. Heterogeneity in leave-taking from this sample can be found in Appendix table 21.

The demographic covariates that we control for are the standard demographic variables such as mother's age(less than 20, 20-29, 30-39, 40-49, 50-59, 60 plus), race/ethnicity(non-Hispanic white, black, Hispanic, other race/ethnicity), marital status(never married, married with spouse absent in household, married with spouse present in household, divorced, widowed), education(less than high school, high school graduate, some college/associate degree, college graduate and more) and whether or not the mother was born in the U.S.

Finally, I also study the effect of leave-taking on short-term labor market outcomes of mothers.

Table 1: Descriptive Statistics for 12-year period sample

	TREATMENT GROUP				**CONTROL GROUP**			
	Pre		**Post**		**Pre**		**Post**	
	Mean	**SE**	**Mean**	**SE**	**Mean**	**SE**	**Mean**	**SE**
Sample: Women Who Worked Any Usual Hours Last Year Only								
Labor Force Status Last Week								
On Maternity Leave	**0.074**	0.262	**0.110**	0.313	**0.001**	0.038	**0.001**	0.031
On Any Leave	**0.107**	0.309	**0.143**	0.350	**0.025**	0.156	**0.023**	0.151
Employed, at work	**0.608**	0.488	**0.621**	0.485	**0.874**	0.331	**0.888**	0.314
Unemployed	**0.051**	0.221	**0.041**	0.200	**0.041**	0.199	**0.039**	0.195
Out of Labor Force	**0.233**	0.422	**0.190**	0.393	**0.058**	0.234	**0.046**	0.211
Work Status Last Year								
Full Time	**0.685**	0.464	**0.727**	0.445	**0.737**	0.439	**0.738**	0.439
Part Time	**0.314**	0.464	**0.272**	0.445	**0.262**	0.439	**0.261**	0.439
Mother's Demographics								
Age: <20	**0.031**	0.173	**0.023**	0.151	**0.000**	0.010	**0.000**	0.014
Age: 20-29	**0.420**	0.493	**0.398**	0.489	**0.060**	0.237	**0.049**	0.216
Age: 30-39	**0.479**	0.499	**0.519**	0.499	**0.332**	0.471	**0.301**	0.459
Age: 40-49	**0.069**	0.254	**0.057**	0.232	**0.493**	0.499	**0.495**	0.500
Age: 50-59	**0.000**	0.000	**0.001**	0.031	**0.110**	0.313	**0.147**	0.355
Age: 60+	**0.000**	0.000	**0.000**	0.000	**0.002**	0.053	**0.004**	0.070
Race/ethnicity: Non-Hispanic White	**0.478**	0.499	**0.407**	0.491	**0.499**	0.500	**0.441**	0.496
Race/ethnicity: Black	**0.073**	0.260	**0.070**	0.255	**0.077**	0.268	**0.072**	0.259
Race/ethnicity:Hispanic	**0.360**	0.480	**0.408**	0.491	**0.322**	0.467	**0.375**	0.484
Race/ethnicity: Other Race	**0.448**	0.497	**0.521**	0.499	**0.422**	0.493	**0.486**	0.499
Marital status: Never Married	**0.200**	0.400	**0.202**	0.402	**0.103**	0.304	**0.111**	0.315
Marital status: Married (spouse absent)	**0.011**	0.105	**0.015**	0.123	**0.015**	0.125	**0.016**	0.127
Marital status: Married (spouse present)	**0.744**	0.436	**0.733**	0.442	**0.685**	0.464	**0.690**	0.462
Marital status: Separated	**0.020**	0.142	**0.023**	0.151	**0.047**	0.212	**0.046**	0.210
Marital status: Divorced	**0.023**	0.151	**0.024**	0.154	**0.114**	0.338	**0.121**	0.326
Marital status: Widowed	**0.000**	0.000	**0.001**	0.031	**0.016**	0.126	**0.013**	0.115
Birth place: US	**0.680**	0.466	**0.688**	0.463	**0.629**	0.482	**0.589**	0.491
Education: less than HS	**0.131**	0.338	**0.132**	0.339	**0.160**	0.366	**0.159**	0.366
Education: HS Degree	**0.236**	0.425	**0.189**	0.392	**0.251**	0.434	**0.224**	0.417
Education: Associate Degree	**0.091**	0.287	**0.098**	0.297	**0.106**	0.307	**0.108**	0.311
Education: Less than Bachelor	**0.216**	0.411	**0.186**	0.390	**0.190**	0.392	**0.175**	0.380
Education: Bachelor Degree +	**0.324**	0.468	**0.392**	0.488	**0.291**	0.454	**0.331**	0.470
Mother's Geographic Location								
California	**0.640**	0.479	**0.803**	0.397	**0.628**	0.483	**0.749**	0.433
New Jersey	**0.205**	0.404	**0.133**	0.340	**0.221**	0.415	**0.172**	0.378
Rhode Island	**0.153**	0.360	**0.063**	0.243	**0.149**	0.356	**0.078**	0.268
Sample Size	1064		1027		9904		10131	

The outcomes I measure are the income wage the year of the second CPS ASEC survey, usual hours worked the year of the second CPS ASEC survey, the work status the year of the mother's second CPS ASEC survey, and the change in work status from the year before the CPS ASEC survey to the second CPS ASEC survey.

3.2 6-year Period Sample

In this sample I limit the CPS ASEC data to mothers in California, New Jersey, Rhode Island and New York for years 2002-2007, 2007-2012, and 2011-2016, respectively. I further restricted the sample to mothers who reported working hours the year prior to the survey. This sample only included mothers with children less than one year old, and mothers with children two to seventeen years old. This allowed for mothers with children less than one year old to be in the treatment group, and mothers with children two to seventeen years old to be in the control group.

Using this sample I analyze the effect of job-protected leave-taking and labor market outcomes using multiple dependent variables. First, I measure the effect of job-protected leave-taking using maternity leave the week prior to the CPS ASEC survey. Then, to ensure that the effect of maternity leave is not being under-reported, as some mothers may have taken maternity leave but labeled it as something else, I also analyze the effect of leave-taking on mothers who reported having a job but being on any leave ("any leave" from now on). Thus I report the effect of leave-taking on "any leave" the week prior to the CPS ASEC survey. Similarly, I compare the effect of PFL on job-protected leave-taking to the changes in employment status (employed versus not employed) reported the week prior to the CPS ASEC survey. Next, I repeat the leave-taking analysis, but separating the effect by work status (part time versus full time) reported the year prior to the CPS ASEC survey. Heterogeneity in leave-taking from this sample can be found in Appendix table 22.

The demographic covariates that we control for are the standard demographic variables such as mother's age(less than 20, 20-29, 30-39, 40-49, 50-59, 60 plus), race/ethnicity(non-Hispanic white, black, Hispanic, other race/ethnicity), marital status(never married, married with spouse absent in household, married with spouse present in household, divorced, widowed), education(less than high school, high school graduate, some college/associate degree, college graduate and more) and whether or not the mother was born in the U.S.

Table 2: Descriptive Statistics for linked 12-year period sample

	TREATMENT GROUP				**COMPARISON GROUP**			
	Pre		**Post**		**Pre**		**Post**	
	Mean	**SE**	**Mean**	**SE**	**Mean**	**SE**	**Mean**	**SE**
Sample: Women Who Worked Any Usual Hours Last Year Only								
Labor Force Status Last Week								
On Maternity Leave	**0.073**	0.261	**0.097**	0.297	**0.001**	0.030	**0.001**	0.038
Unemployed	**0.065**	0.247	**0.034**	0.181	**0.036**	0.186	**0.037**	0.189
Out of Labor Force	**0.231**	0.422	**0.177**	0.382	**0.049**	0.217	**0.052**	0.221
Work Status Last Year								
Full Time	**0.715**	0.452	**0.713**	0.453	**0.736**	0.441	**0.741**	0.438
Part Time	**0.285**	0.452	**0.287**	0.453	**0.264**	0.441	**0.259**	0.438
Mother's Demographics								
Age: 20	**0.037**	0.188	**0.021**	0.144	**0.000**	0.000	**0.000**	0.000
Age: 20-29	**0.390**	0.489	**0.384**	0.487	**0.046**	0.210	**0.038**	0.192
Age: 30-39	**0.508**	0.501	**0.536**	0.500	**0.313**	0.464	**0.279**	0.449
Age: 40-49	**0.065**	0.247	**0.059**	0.236	**0.518**	0.500	**0.512**	0.500
Age: 50-59	**0.000**	0.000	**0.000**	0.000	**0.120**	0.325	**0.165**	0.371
Age: 60+	**0.000**	0.000	**0.000**	0.000	**0.003**	0.056	**0.006**	0.079
Race/ethnicity: Non-Hispanic White	**0.508**	0.501	**0.493**	0.501	**0.553**	0.497	**0.484**	0.500
Race/ethnicity: Black	**0.073**	0.261	**0.063**	0.244	**0.070**	0.256	**0.076**	0.265
Race/ethnicity:Hispanic	**0.297**	0.458	**0.333**	0.472	**0.251**	0.434	**0.329**	0.470
Race/ethnicity: Other Race	**0.419**	0.494	**0.443**	0.498	**0.377**	0.485	**0.440**	0.496
Marital status: Never Married	**0.167**	0.373	**0.152**	0.360	**0.080**	0.271	**0.094**	0.292
Marital status: Married (spouse absent)	**0.004**	0.064	**0.013**	0.112	**0.010**	0.101	**0.012**	0.111
Marital status: Married (spouse present)	**0.789**	0.409	**0.793**	0.406	**0.729**	0.445	**0.737**	0.448
Marital status: Separated	**0.024**	0.155	**0.030**	0.170	**0.039**	0.195	**0.045**	0.208
Marital status: Divorced	**0.016**	0.127	**0.008**	0.092	**0.127**	0.333	**0.112**	0.316
Marital status: Widowed	**0.000**	0.000	**0.004**	0.065	**0.014**	0.119	**0.013**	0.115
Birth place: US	**0.679**	0.468	**0.717**	0.451	**0.667**	0.472	**0.613**	0.487
Education: less than HS	**0.130**	0.337	**0.105**	0.308	**0.126**	0.331	**0.131**	0.338
Education: HS Degree	**0.220**	0.415	**0.156**	0.364	**0.252**	0.434	**0.226**	0.418
Education: Associate Degree	**0.098**	0.297	**0.093**	0.291	**0.114**	0.318	**0.103**	0.304
Education: Less than Bachelor	**0.199**	0.400	**0.190**	0.393	**0.185**	0.388	**0.178**	0.383
Education: Bachelor Degree +	**0.354**	0.479	**0.456**	0.499	**0.323**	0.468	**0.362**	0.481
Mother's Geographic Location								
California	**0.630**	0.484	**0.785**	0.412	**0.627**	0.484	**0.749**	0.434
New Jersey	**0.211**	0.409	**0.156**	0.364	**0.223**	0.417	**0.178**	0.383
Rhode Island	**0.159**	0.366	**0.059**	0.236	**0.150**	0.357	**0.073**	0.259
Sample Size	246		237		2247		2094	

Finally, I also study the effect of leave-taking on short-term labor market outcomes of mothers. The outcomes I measure are the income wage the year of the second CPS ASEC survey, usual hours worked the year of the second CPS ASEC survey, the work status the year of the second CPS ASEC survey, and the change in work status from the year before the first CPS ASEC survey to the second CPS ASEC survey.

4 Empirical Specification

I am interested in identifying the causal effect of paid leave-taking on mother's leave-taking and short-term labor market outcomes. The literature suggests that an individual's future labor market outcomes will depend on their current employment status, educational attainment, age, gender, family structure and migrant status (Van der Merwe et al., n.d.) (Gray, Heath, Hunter, et al., 2002) (Prowse, 2012). In particular, an increase in educational attainment has been linked to better labor market outcomes; while being a woman, migrant, or being married (or related) to a low-income family has been associated with worse labor market outcomes (Allmendinger, 1989) (Altonji & Dunn, 1991). An increase in age has also been linked to worse labor market outcomes.

Similar to subsequent labor-market outcomes, leave-taking has been positively associated with relatively more advantaged mothers. The literature has shown that married mothers and college-educated mothers are more likely to take leaves with relatively few benefits (e.g.:FMLA), in comparison to unmarried mothers with lower educational attainment (Waldfogel, 1999).

In all models, unless it is noted otherwise, I am referring to the mother's work status during the pregnancy year. In later sections, when I examine the heterogeneous effect of PFL conditional on the mother's work status, I choose the mother's work status from the earliest reference, as that work status will better reflect the mother's historical (thus more accurate) work status. Furthermore, in all models I use a linar probability (LP) model approach over other approaches such as logit and probit, for easier interpretation (Ai & Norton, 2003) [4].

Thus, in the following models, I control for all factors mentioned above that are available in the CPS ASEC data:

[4](Rossin-Slater et al., 2013)'s paper studying the effect of PFL on California also used a linear probability model for all their models.

4.1 General PFL models

To estimate the causal effect of PFL, I compare the differences between mothers of children less than one year old (in California, New Jersey, Rhode Island and New York) and mothers of older children (in California, New Jersey, Rhode Island and New York), before and after the policy took effect in each state. I compare the outcomes of children less than one to older children because mothers of older children were unlikely to be affected by the policy. To study this causal relationship, I apply two models using a slightly different difference-in-difference (DD) design [5]. The first linear model is:

$$Y_{it} = \beta_0 + \beta_1 \cdot (POST_t \cdot TREAT_i) + \Gamma' X_{it} + \alpha_t + \omega_i + \varepsilon_{it} \quad (1)$$

In regression (1), that shows the estimated outcome of interest Y_{it} (e.g.: leave-taking) for individual i in year t, the key coefficient estimating the effect of PFL on the treatment group is $\hat{\beta}_1$. Here, $TREAT_i$ is a dummy variable set to 1 for mothers in California, New Jersey, and Rhode Island, with children less than one year old at the first survey date, and zero otherwise. Similarly, $POST_t$ is a dummy variable set to 1 for all years after the first survey date, and zero otherwise. Meanwhile, X_{it} is the vector of individual characteristics, α_t is the vector of year fixed effects, ω_i is the vector of state fixed effects, and ε_{it} is the vector with the specific error term for each individual. The standard errors are robust and clustered at the state level.

For a DD model to work, the identification assumption needs to be met. Among the limitations of model (1), is the inability to directly test the identification assumption, which led to the creation of the comparison group. Through robustness checks using the comparison group, I tested this assumption. The comparison group was mothers with children of age five to seventeen (in the same states as the treatment group). The key assumption here is that the mothers in the comparison group would have similar employment trends to the mothers in the treatment group if not for the absence of PFL.

[5] (Rossin-Slater et al., 2013)'s paper on the effect of PFL in California, also uses a difference-in-difference design to evaluate the policy.

Now, the estimates described above could potentially be biased if the demographics of new mothers change due to PFL. This would be the case if PFL in California, New Jersey or Rhode Island led to increased migration from women in other states in an effort to use the benefits of PFL. Nevertheless, although not impossible, PFL seems to be an unlikely reason for mothers to move across states due to the small benefits. I also estimated the effect of PFL on employment the year prior to the first survey, to understand the effect of PFL on pregnant women's employment status. Furthermore, I conducted heterogeneity tests, to understand if PFL has different results on mothers with different demographics (i.e.: work status the year before the leave, education, marital status, race/ethnicity, and age).

4.2 Job-Protected PFL models

The second linear model is a difference-in-difference-in-difference model (DDD), where I compare changes in the outcomes for eligible mothers with children less than one year old, surveyed before and after the implementation of Job-Protected PFL, to changes in the outcomes for mothers in the comparison group who were not affected by the policy. The model takes the following form:

$$\begin{aligned} Y_{it} = \beta_0 \, + \, & \beta_1 \cdot (POST_t \cdot TREAT_i) + \\ & \beta_2 \cdot (POST_t \cdot JOBPROTECTION_i) + \\ & \beta_3 \cdot (TREAT_t \cdot JOBPROTECTION_i) + \\ & \beta_4 \cdot (POST_t \cdot TREAT_i \cdot JOBPROTECTION_i) + \\ & \Gamma^{'} X_{it} \, + \, \alpha_i \, + \, \omega_i \, + \, \varepsilon_{it} \end{aligned} \tag{2}$$

In model (2), that shows the estimated outcome of interest Y_{it} (e.g.: leave-taking) for individual i in year t, the key coefficient estimating the effect of Job-Protected PFL on the treatment group is $\hat{\beta}_4$. Here, $TREAT_i$ is a dummy variable set to 1 for mothers in California, New Jersey, Rhode Island and New York, with children less than one year old at the first survey date, and zero otherwise. Similarly, $POST_t$ is a dummy variable set to 1 for all years after the first survey date, and zero otherwise. Meanwhile, X_{it} is the vector of individual characteristics, α_t is the vector of year fixed

effects, ω_i is the vector of state fixed effects, and ε_{it} is the vector with the specific error term for each individual. The standard errors are robust and clustered at the state level.

For a DDD model to work, the identification assumption needs to be met. Among the limitations of model (2), is the inability to directly test the identification assumption, which led to the creation of comparison groups. Through robustness checks using the comparison group, I tested this assumption. In this case, the comparison group was mothers with children of age two to seventeen (in the same states as the treatment group). The key assumption here is that the mothers in the comparison group would have similar employment trends to the mothers in the treatment group if not for the absence of Job-Protected PFL.

Now, the estimates described above could potentially be biased if the demographics of new mothers change due to Job-Protected PFL. This would be the case if Job-Protected PFL in Rhode Island and New York, led to increased migration from women in other states (including California and New Jersey) in an effort to use the benefits of Job-Protected PFL. Nevertheless, although not impossible, Job-Protection PFL seems to be an unlikely reason for mothers to move across states due to the small benefits, and particularly less likely for mothers in California and New Jersey. I also estimated the effect of Job-Protected PFL on employment the year prior to the first survey, to understand the effect of Job-Protected PFL on pregnant women's employment status. Furthermore, I conducted heterogeneity tests, to understand if Job-Protected PFL has different results on mothers with different demographics (i.e.: work status the year before the leave, education, marital status, race/ethnicity, and age).

5 Results

In this section I will analyse the results obtained from the DD model used to evaluate the effect of PFL, and the results obtained from the DDD model used to evaluate the effect of Job-Protected PFL. From now on, last year will be "pregnancy year", first survey year will be "childbirth year", and the second survey year will be "post childbirth year". All models controls for demographic variables as mentioned in the Empirical section.

5.1 General PFL

All tables in this section present regression results using California, New Jersey and Rhode Island mothers with children less than one year old as the treatment group, and mothers with children 5 to 17 years old as the comparison group.

5.1.1 Effect on Leave-Taking

In table 3, columns (1) and (2) present results for the likelihood of maternity leave-taking, while columns (3) and (4) present results for the likelihood of any leave-taking. In particular, columns (1) and (3) show the likelihood of leave-taking using the baseline model, while columns (2) and (4) show the likelihood of leave-taking using the baseline model plus state and year fixed effects.

Table 3: Effect of PFL on Leave-Taking

	Maternity Leave		Any Leave	
	(1)	(2)	(3)	(4)
	Baseline	Fixed Effects	Baseline	Fixed Effects
$POST_t \cdot TREAT_i$	0.0402	0.0401	0.0361	0.0360
	(0.0281)	(0.0282)	(0.0298)	(0.0302)
N	22126	22126	22126	22126
adj. R^2	0.082	0.082	0.035	0.036

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 3 we can see that in all cases there is a positive effect on leave-taking from mothers in the treatment group, yet these results are insignificant. These results support the positive effect seen in previous literature, yet they do not support the significance previously reported (Rossin-Slater et al., 2013). Perhaps this difference in results is due to expanding the sample size to New Jersey and Rhode Island, or to using state Fixed Effects instead of the Daniel and Lang (DL) methodology to account for serial correlation[6].

[6]Rossin et al. 2013 reported a two-stage difference-in-difference design using the DL method during the second stage. They used a California only sample, so state Fixed Effects were not possible.

5.1.2 Effect on Leave-Taking by Work Status

In table 4, columns (1) and (2) present results for the likelihood of maternity leave-taking, while columns (3) and (4) present results for the likelihood of any leave-taking. In particular, columns (1) and (3) show the likelihood of leave-taking for mothers who worked part-time the year prior to the survey, while columns (2) and (4) show the likelihood of leave-taking for mothers who worked full-time the year prior to the survey. All models use state and year fixed effects.

Table 4: Effect of PFL on Leave-taking by Work Status

	Maternity Leave		Any Leave	
	(1)	(2)	(3)	(4)
	Part Time	Full Time	Part Time	Full Time
$POST_t \cdot TREAT_i$	0.0302*	0.0418	0.0236	0.0409
	(0.00969)	(0.0355)	(0.0110)	(0.0379)
N	5867	16259	5867	16259
adj. R^2	0.062	0.090	0.029	0.041

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 4 we can see that there is a positive and statistically significant effect in the likelihood of maternity leave-taking from mothers in the treatment group who worked part-time the year prior to giving birth, following PFL implementation. In particular, PFL increases the likelihood of maternity leave-taking by 3 percent. The results for part-time mothers highlight the heterogeneity of the effect of PFL between part-time workers and full-time workers, supported in Appendix table 21. This heterogeneous effect, while previously undocumented, is supported by the literature on PFL's positive and large effect on less-advantaged groups (Rossin-Slater et al., 2013).

5.1.3 Effect on Employment Status

In table 5, columns present the likelihood of (1) any leave-taking, (2) being employed and at work, (3) being unemployed, and (4) being out of the labor force. All models refer to the leave and or employment status the year of the first survey, and use state and year fixed effects.

From table 5 we can see that as expected, PFL has a positive effect on the likelihood of any leave-taking for mothers in the treatment group. Similarly, PFL has a negative effect on the likelihood of

Table 5: Employment Status Difference in Differences Model

	(1) Any Leave	(2) Employed, at work	(3) Unemployed	(4) Out of Labor Force
$POST_t \cdot TREAT_i$	0.0360	-0.00547	-0.00297	-0.0301***
	(0.0302)	(0.0387)	(0.00751)	(0.00108)
N	22126	22126	22126	22126
adj. R^2	0.036	0.074	0.018	0.056

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

mothers being employed and at work, unemployed, and out of the labor force. Nevertheless, only the effect of PFL on the likelihood of being out of the labor force is statistically significant. In particular, PFL decreases the likelihood of mothers in the treatment group being out of the labor force by 3 percent. These results suggest that while PFL in general does not provide significant support to help mothers out of unemployment, it does lead to a large reduction of mothers being out of the labor force.

5.1.4 Effect on Employment Status by Work Status

Part Time In table 6, columns present the likelihood that a mother who worked part-time the year prior to the first survey will (1) take any leave, (2) be employed and at work, (3) be unemployed, and (4) be out of labor force, the year of the first survey. All models use state and year fixed effects.

Table 6: Effect of PFL on Employment Status for Part-time working mothers

	(1) Any Leave	(2) Employed, at work	(3) Unemployed	(4) Out of Labor Force
$POST_t \cdot TREAT_i$	0.0236	-0.0417***	0.00525	0.0139
	(0.0110)	(0.00315)	(0.00340)	(0.0107)
N	5867	5867	5867	5867
adj. R^2	0.029	0.067	0.015	0.052

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 6 we can see that as expected, PFL has a positive effect on the likelihood of any leave-taking for mothers who were working part-time the year of their pregnancy. The table also shows that PFL leads to a statistically significant decrease of 4.17 percent in the likelihood that

mothers who were working part time the year of their pregnancy, will be employed and at work the year their child is born. Nevertheless, the table also shows that PFL has a positive (although insignificant) effect on the likelihood of these mothers becoming unemployed and or being out of the labor force the year their child is born. These results further support our previous results, showing that the labor market outcomes of part-time working mothers are particularly vulnerable to the effect of childbirth.

Full Time In table 6, columns present the likelihood that a mother who worked full-time the year prior to the survey will (1) take any leave, (2) be employed and at work, (3) be unemployed, and (4) be out of labor force. All models refer to the leave and or employment status the year of the survey, and use state and year fixed effects.

Table 7: Effect of PFL on Employment Status on Full-time working mothers

	(1)	(2)	(3)	(4)
	Any Leave	Employed, at work	Unemployed	Out of Labor Force
$POST_t \cdot TREAT_i$	0.0409	0.00246	-0.00608	-0.0410***
	(0.0379)	(0.0536)	(0.0118)	(0.00355)
N	16259	16259	16259	16259
adj. R^2	0.041	0.083	0.019	0.064

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 7 we can see that as expected, PFL has a positive effect on the likelihood of any leave-taking for mothers who were full-time workers during pregnancy, and a negative effect on the likelihood of being employed and at work, and on being unemployed, the year of childbirth. In particular, the results show that PFL leads to a statistically significant decrease of 4.1 percent on the likelihood that mothers who were working full-time during pregnancy will be out of the labor force the year of childbirth. These results further show the heterogeneous effect that PFL has on full-time and part-time working mothers.

5.1.5 Effect of PFL on Short-Term Labor Market Outcomes

Effect on next year's Income Wage In table 8, columns present the effect of PFL on (1) any mothers' income wage, (2) part-time working mothers' income wage, and (3) full-time working

mothers' income wage, the year after childbirth. All models include state and year fixed effects.

Table 8: Effect of PFL on Income Wage next year

	(1) Baseline	(2) Part Time	(3) Full Time
$POST_t \cdot TREAT_i$	2293.8	-1836.3***	3079.4
	(3233.2)	(68.65)	(4261.0)
N	4814	1271	3543
adj. R^2	0.328	0.151	0.353

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 8 we can see that as expected, PFL has in general a positive (although insignificant) effect on the subsequent income wage of mothers in the treatment group, and the same is true for the subgroup of full-time working mothers. Nevertheless, we see a statistically significant decrease of 1836 dollars in the subsequent salary of part-time working mothers in the treatment group. These results might be due to part-time working mothers having a hard time dealing with child care and work, thus choosing child care over work. This hypothesis is supported by the results found in table 6, as mothers who were part-time workers during pregnancy were less likely to be employed and at work the year of childbirth. Nevertheless, in comparison to other part-time workers in the control group, the availability of PFL led part-time working mothers to take a leave [7], thus resulting in a slight decrease in yearly income.

Effect on next year's Usual Weekly Working Hours In table 9, columns present the effect of PFL on (1) any mothers' usual weekly working hours, (2) part-time working mothers' usual weekly working hours, and (3) full-time working mothers' usual weekly working hours, the year after giving birth. All models include state and year fixed effects.

From table 9 we can see that as expected, PFL has in general a positive (although insignificant) effect on the subsequent usual weekly working hours of mothers in the treatment group, and the same is true for mothers who were full-time workers during their pregnancy. In particular, we see a statistically significant increase of 6.6 in the usual weekly hours worked for mothers who were working part-time during their pregnancy. This increase in hours worked might occur as a response

[7] As supported by table 4.

Table 9: Effect of PFL on Usual Weekly Working Hours next year

	(1) Baseline	(2) Part Time	(3) Full Time
$POST_t \cdot TREAT_i$	2.458	6.610*	0.950
	(0.853)	(2.026)	(0.479)
N	3880	931	2949
adj. R^2	0.399	0.248	0.138

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

to lower earnings received the year after childbirth reported in table 9.

Effect on the change in Work Status (from first survey year to next year) In table 10, columns (1), (3) and (5) show the likelihood of mothers changing their work status from full-time workers (the year of the first survey) to part-time workers, being unemployed, being out of the labor force, respectively. Columns (2), (4) and (6) show the likelihood of mothers changing their work status from part-time workers (the year of the first survey) to full-time workers, being unemployed, being out of the labor force, respectively. All changes in work status refer to changes in the subsequent year after the first survey.

From table 10 we can see that as expected, PFL has a negative effect (although insignificant) on the likelihood of mothers who worked full-time the year of childbirth becoming part-time workers the year after childbirth. The same results are reported on the likelihood of mothers who were full-time workers the year of childbirth becoming unemployed. Similarly, PFL has a negative effect (although insignificant) on part-time working mothers (in the group) being out of the labor force. In particular, PFL also leads to a significant 3 percent increase in the likelihood of mothers who were part-time workers the year of childbirth becoming full-time workers the year after childbirth. These results support the results from table 9, as part-time workers were linked to reporting an increase of usual weekly hours worked. Nevertheless, the table also shows that PFL leads to a significant 2.13 increase in the likelihood of part-time working mothers (in the treatment group) becoming unemployed. These results support the vulnerability hypothesis on the ambiguous results presented for part-time workers in general (regardless of whether they were part-time workers the year of pregnancy, or the year of childbirth). The table also showed that PFL has a positive (yet

Table 10: Effect of PFL on Change in Work Status (current year to next year)

	Full time	Part time
	(1)	(2)
	Part time	Full time
$POST_t \cdot TREAT_i$	-0.0131	0.0300**
	(0.0231)	(0.00501)
N	4824	4824
adj. R^2	0.012	0.023
	(3)	(4)
	Unemployed	Unemployed
$POST_t \cdot TREAT_i$	-0.0000426	0.0213***
	(0.00502)	(0.000691)
N	4824	4824
adj. R^2	0.012	0.004
	(5)	(6)
	Out of labor force	Out of labor force
$POST_t \cdot TREAT_i$	0.00552	-0.0297
	(0.0183)	(0.0104)
N	0.012	0.036

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

insignificant) effect on full-time working mothers (in the treatment group) being out of labor force.

Effect on the change in Work Status (from previous year to next year) In table 11, columns (1), (3) and (5) show the likelihood of mothers changing their work status from full-time workers (the year of their pregnancy) to part-time workers, being unemployed, being out of the labor force, respectively. Columns (2), (4) and (6) show the likelihood of mothers changing their work status from part-time workers (the year of their pregnancy) to full-time workers, being unemployed, being out of the labor force, respectively. All changes in work status refer to changes in the year after childbirth. All models use year and state fixed effects.

From table 11 we can see that as expected, PFL has a negative effect (although insignificant) on full-time working mothers at the time of pregnancy becoming part-time workers, and out of labor force the year after childbirth. Similarly, PFL has a negative effect (although insignificant) on part-time working mothers (in the group) being out of the labor force. In particular, PFL leads to a positive (although insignificant) effect on part-time working mothers at the time of pregnancy (in the treatment group) becoming full-time workers the year after childbirth. This effect is supported

Table 11: Effect of PFL on Change in Work Status (from last year to next year)

	Full time	Part time
	(1)	(2)
	Part time	Full time
$POST_t \cdot TREAT_i$	-0.00308	0.0191
	(0.0212)	(0.00922)
N	4824	4824
adj. R^2	0.043	0.178
	(3)	(4)
	Unemployed	Unemployed
$POST_t \cdot TREAT_i$	0.00484	0.00663*
	(0.00798)	(0.00186)
N	4824	4824
adj. R^2	0.025	0.027
	(5)	(6)
	Out of labor force	Out of labor force
$POST_t \cdot TREAT_i$	-0.0590	-0.0158
	(0.0362)	(0.0293)
N	4824	4824
adj. R^2	0.071	0.134

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

by the results presented in table 10. The table also showed that PFL leads to a significant, although small (0.6 percent) increase on full-time working mothers at the time of pregnancy (in the treatment group) becoming unemployed the year after childbirth.

5.2 Job-Protected PFL

All tables in this section present regression results using California, New Jersey, Rhode Island, and New York mothers with children 2 to 17 years old as the comparison group. The DDD coefficient will represent the difference in effect between Job-Protected PFL and non-Job-Protected PFL on the treatment group.

5.2.1 Effect on Leave-Taking

In table 12, columns (1) and (2) present results for the likelihood of maternity leave-taking, while columns (3) and (4) present results for the likelihood of any leave-taking. In particular, columns (1) and (3) show the likelihood of leave-taking using the baseline model, while columns (2) and (4)

show the likelihood of leave-taking using the baseline model plus state and year fixed effects.

Table 12: Effect of Job-Protection PFL on Leave-taking

	Maternity Leave		Any Leave	
	(1)	(2)	(3)	(4)
	Baseline	FE	Baseline	FE
$POST_t \cdot TREAT_i$	0.0286	0.0288	0.0237	0.0241
	(0.0291)	(0.0289)	(0.0297)	(0.0295)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.0335	0.0329	0.0421	0.0382
	(0.0310)	(0.0304)	(0.0310)	(0.0303)
N	17944	17944	17944	17944
adj. R^2	0.089	0.092	0.033	0.036

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 12 we can see that in all cases there is a positive effect on leave-taking from mothers in the treatment group, yet these results are insignificant. These results support the positive effect seen in previous literature, which suggests that unless the leave-period and job-protection period (equal in this case) are large, the effect on leave-taking and length of leave will be small[8] (Baker & Milligan, 2005).

5.2.2 Effect on Leave-Taking by Work Status

In table 13, columns (1) and (2) present results for the likelihood of maternity leave-taking, while columns (3) and (4) present results for the likelihood of any leave-taking. In particular, columns (1) and (3) show the likelihood of leave-taking for mothers who worked part-time the year of their pregnancy, while columns (2) and (4) show the likelihood of leave-taking for mothers who worked full-time the year of their pregnancy. All models use state and year fixed effects.

From table 13 we can see that there is a positive (yet insignificant) effect in the likelihood of maternity leave-taking from mothers who worked both part-time and full-time the year prior to giving birth, following the implementation of Job-Protected PFL. In particular, these results show that mothers in states with Job-Protected PFL are not significantly more likely to take a leave following childbirth than their non-Job-Protected PFL counterparts.

[8]Baker et. al 2005 reports positive and significant outcomes in large job-protection maternity-leave extensions in Canada, from 29 weeks to 70 weeks

Table 13: Effect of Job-Protection PFL on Leave-Taking by Work Status

	Maternity Leave		Any Leave	
	(1)	(2)	(3)	(4)
	Part time	Full time	Part time	Full time
$POST_t \cdot TREAT_i$	-0.00108	0.0378	-0.00138	0.0332
	(0.0309)	(0.0301)	(0.0325)	(0.0304)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.0627	0.0365	0.0683	0.0387
	(0.0310)	(0.0323)	(0.0374)	(0.0323)
N	4618	13326	4618	13326
adj. R^2	0.041	0.115	0.017	0.050

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

5.2.3 Effect on Employment Status

In table 14, columns present the likelihood of (1) any leave-taking, (2) being employed and at work, (3) being unemployed, and (4) being out of the labor force the year of childbirth. All models use state and year fixed effects.

Table 14: Effect of Job-Protected PFL on Employment Status

	(1)	(2)	(3)	(4)
	Any leave	Employed, at work	Unemployed	Out of labor force
$POST_t \cdot TREAT_i$	0.0241	-0.0582	0.00653	0.0197*
	(0.0295)	(0.0490)	(0.0130)	(0.00625)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.0382	0.000429	-0.00885	-0.0202*
	(0.0303)	(0.0504)	(0.0139)	(0.00656)
N	17944	17944	17944	17944
adj. R^2	0.036	0.069	0.020	0.047

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 14 we can see that as expected, Job-Protected PFL has a positive effect on the likelihood of any leave-taking, for mothers in the treatment group. Similarly, Job-Protected PFL has a negative effect on the likelihood of being unemployed. Nevertheless, the effect of Job-Protected PFL on the likelihood of being employed and at work is positive (yet statistically insignificant). In particular, Job-Protected PFL decreases the likelihood of mothers in the treatment group being out of the labor force by 2 percent. These results, support the findings from table 5, while asserting that

Job-Protected PFL mothers are even less likely than non-Job-Protected PFL mothers of being out of the labor force.

5.2.4 Effect on Employment Status by Work Status

Part Time In table 15, columns present the likelihood of (1) any leave-taking, (2) being employed and at work, (3) being unemployed, and (4) being out of the labor force, for mothers who worked part-time the year of their pregnancy. All models use state and year fixed effects.

Table 15: Effect of Job-Protected PFL on Employment Status of Part-time working mothers

	(1)	(2)	(3)	(4)
	Any leave	Employed, at work	Unemployed	Out of labor force
$POST_t \cdot TREAT_i$	-0.00138	-0.124***	0.00643	0.120***
	(0.0325)	(0.0192)	(0.0130)	(0.000988)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.0683	0.172***	-0.0318*	-0.209***
	(0.0374)	(0.0180)	(0.0123)	(0.0193)
N	4618	4618	4618	4618
adj. R^2	0.017	0.057	0.015	0.045

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 15 we can see that as expected, Job-Protected PFL has a positive (yet insignificant) effect on the likelihood of any leave-taking, for mothers who were part-time workers during pregnancy. Similarly, Job-Protected PFL has a negative effect on the likelihood of mothers who were part-time workers during pregnancy becoming unemployed the year of childbirth. Nevertheless, the effect of Job-Protected PFL increases the likelihood of part-time working mothers becoming employed and at work the year of childbirth by 17.2 percent. In particular, Job-Protected PFL leads to a significant decrease in the likelihood of mothers who work part-time during pregnancy being out of the labor force by 2 percent, and of being unemployed by 3.18 percent the year of childbirth. As seen in the table, the likelihood of being employed and at work the year of childbirth is very significant and positive for part-time working mothers in Job-Protection states, while it is very significant and negative across PFL states in general. This shows that part-time working mothers do not respond equally to their state's respective paid maternity leave policies. This aspect will be further explored in the Conclusion section.

Full Time In table 16, columns present the likelihood of (1) any leave-taking, (2) being employed and at work, (3) being unemployed, and (4) being out of the labor force, for mothers who worked full-time the year of their pregnancy. All models use state and year fixed effects.

Table 16: Effect of Job-Protected PFL on Employment Status of Full-time working mothers

	(1)	(2)	(3)	(4)
	Any leave	Employed, at work	Unemployed	Out of labor force
$POST_t \cdot TREAT_i$	0.0332	-0.0406	0.00721	-0.0106
	(0.0304)	(0.0571)	(0.0209)	(0.00518)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.0387	-0.0638	-0.00136	0.0391***
	(0.0323)	(0.0573)	(0.0211)	(0.00554)
N	13326	13326	13326	13326
adj. R^2	0.050	0.081	0.022	0.053

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 16 we can see that as expected, Job-Protected PFL has a positive (yet insignificant) effect on the likelihood of any leave-taking, for mothers who worked full-time during their pregnancy. Similarly, Job-Protected PFL has a negative effect on the likelihood of full-time working mothers being employed and at work, and on being unemployed. Nevertheless, Job-Protected PFL also leads to a significant 3.91 percent increase in the likelihood of full-time working mothers being out of the labor force. These results support the results observed in table 15, which reported very distinct outcomes for mothers in Job-Protection PFL states and non-Job-Protection PFL states. These results will be further explained in the Conclusion section.

5.2.5 Effect on Short-term Labor Market Outcomes

Effect on next year's Income Wage In table 17, columns present the effect of PFL on (1) any mothers' income wage, (2) part-time working mothers' income wage, and (3) full-time working mothers' income wage, the year after childbirth. All models presented use state and year fixed effects.

From table 17 we can see that Job-Protected PFL decreases next year's income wage significantly by 13,800 dollars for mothers in the treatment group, in comparison to mothers living in non-Job-Protected PFL states. Similarly, but to a higher magnitude, the income wage of mothers working

Table 17: Effect of Job-Protected PFL on Income Wage

	(1) Baseline	(2) Part time	(3) Full time
$POST_t \cdot TREAT_i$	5153.1	-1244.2	7213.9
	(2439.9)	(2002.1)	(3506.9)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	-13800.3*	-18107.5	-7448.7
	(4476.8)	(7731.7)	(7158.4)
N	15220	4224	10996
adj. R^2	0.297	0.147	0.309

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

part-time at the time of their pregnancy experiences a decrease of 18,107 dollars, for mothers living in Job-Protected states in comparison to mothers living in non-Job-Protected states. To a lesser extent, the income wage of mothers living in Job-Protected PFL states and working full-time at the time of pregnancy decreases by 7,448 dollars, in comparison to their counterparts living in a non-Job-Protection PFL state.

Effect on next year's Usual Weekly Working Hours In table 18, columns present the effect of Job-Protected PFL on (1) any mothers' usual weekly working hours, (2) part-time working mothers' usual weekly working hours, and (3) full-time working mothers' usual weekly working hours, the year after the first survey.

Table 18: Effect of Job-protection PFL on Usual weekly hours worked (last year to next year)

	(1) Baseline	(2) Part time	(3) Full time
$POST_t \cdot TREAT_i$	1.705***	5.148***	0.705**
	(0.133)	(0.858)	(0.140)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	-5.592***	-14.46***	0.475
	(0.246)	(1.686)	(0.400)
N	12251	3041	9210
adj. R^2	0.348	0.169	0.115

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 18 we can see that Job-Protected PFL in general leads to a significant 5.59 decrease in the subsequent usual weekly working hours of mothers in the treatment group, in comparison

to mothers in non-Job-Protection states. Similarly, but on a larger magnitude, Job-Protected PFL leads to a significant 14.46 decrease in the subsequent usual weekly working hours of mothers who were part-time workers the year of childbirth, in comparison to their counterparts living in non-Job-Protected states. As expected, Job-Protection PFL leads to an insignificant increase in the subsequent usual weekly working hours of mothers who worked full-time the year of childbirth, in comparison to full-time working mothers in non-Job-Protected states. These results further support the results from previous tables, showing the distinct difference in the effect on part-time workers in Job-Protected PFL states and non-Job-Protected PFL states.

Effect on the change in Work Status (from childbirth year, to the year after childbirth) In table 19, columns (1), (3) and (5) show the likelihood of mothers changing their work status from full-time workers (the year of childbirth) to part-time workers, being unemployed, being out of the labor force, respectively. Columns (2), (4) and (6) show the likelihood of mothers changing their work status from part-time workers (the year of childbirth) to full-time workers, being unemployed, being out of the labor force, respectively. All changes in work status refer to changes in the subsequent year after the first survey, and all models present year and state fixed effects.

From table 19 we can see that as expected, Job-Protected PFL has a negative (although insignificant) effect on full-time working mothers (in the treatment group) becoming part-time workers and unemployed. Similarly, Job-Protected PFL has a negative effect (although insignificant) on part-time working mothers (in the group) becoming full-time workers, and on being out of the labor force. In particular, Job-Protected PFL leads to a significant (although small) 0.33 decrease in the likelihood of part-time working mothers (in the treatment group) becoming unemployed. The table also showed that Job-Protected PFL leads to a 6.27 increase in the likelihood of full-time working mothers (in the treatment group) being out of labor force.

Effect on the change in Work Status (from pregnancy year, to the year after childbirth) In table 20, columns (1), (3) and (5) show the likelihood of mothers changing their work status from full-time workers (the pregnancy year) to part-time workers, being unemployed, and being out of the labor force, respectively. Columns (2), (4) and (6) show the likelihood of mothers changing their work status from part-time workers (the pregnancy year) to full-time workers, being unemployed, being

Table 19: Effect of Job-Protection PFL on Change in Work Status (current year to next year)

	Full Time	Part Time
	(1)	(2)
	Part time	Full time
$POST_t \cdot TREAT_i$	-0.0358*	0.0219
	(0.0133)	(0.0159)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	-0.0246	-0.0195
	(0.0683)	(0.0298)
N	15238	15238
adj. R^2	0.015	0.022
	(3)	(4)
	Unemployed	Unemployed
$POST_t \cdot TREAT_i$	-0.00149	0.0123***
	(0.00200)	(0.000323)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.00464	-0.00339*
	(0.0139)	(0.00128)
N	15238	15238
adj. R^2	0.009	0.008
	(5)	(6)
	Out of labor force	Out of labor force
$POST_t \cdot TREAT_i$	-0.0132	-0.0119
	(0.0146)	(0.00840)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.0627**	-0.0187
	(0.0161)	(0.00991)
N	15238	15238
adj. R^2	0.015	0.040

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

out of the labor force, respectively. All changes in work status refer to changes in the subsequent year after the first survey, and all models contain state and year fixed effects.

Table 20: Effect of Job-Protection PFL on Change in Work Status (last year to next year)

	Full Time	Part Time
	(1)	(2)
	Part time	Full time
$POST_t \cdot TREAT_i$	-0.0235	0.0178
	(0.0193)	(0.0119)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	-0.0680	-0.0301
	(0.0560)	(0.0154)
N	15238	15238
adj. R^2	0.048	0.182
	(3)	(4)
	Unemployed	Unemployed
$POST_t \cdot TREAT_i$	0.00559	0.0000342
	(0.00755)	(0.00157)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.00633	0.00449
	(0.0220)	(0.00288)
N	15238	15238
adj. R^2	0.025	0.032
	(5)	(6)
	Out of labor force	Out of labor force
$POST_t \cdot TREAT_i$	-0.0738**	0.00764
	(0.0143)	(0.0204)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.280***	-0.0766
	(0.0464)	(0.0363)
N	15238	15238
adj. R^2	0.059	0.143

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

From table 20 we can see that as expected, PFL has a negative effect (although insignificant) on full-time working mothers (in the treatment group) becoming part-time workers. Similarly, PFL has a negative (although insignificant) effect on part-time working mothers (in the group) being out of the labor force. In particular, PFL leads to a positive (yet insignificant) effect on both part-time and full-time working mothers (in the treatment group) becoming unemployed. The table also showed that PFL leads to a significant 28 percent increase in the likelihood of full-time working mothers (in the treatment group) being out of the labor force. Part-time working mothers (in the treatment

group) also presented a negative (but insignificant) effect on being out of the labor force.

6 Conclusion

The results above serve to show that there is a general and positive effect from PFL on leave-taking, supporting existing literature (Rossin-Slater et al., 2013) (Baker & Milligan, 2008) (Schönberg & Ludsteck, 2014). Nevertheless, the addition of states to the analysis sample, led to results smaller in magnitude and significance than those previously reported in the literature of paid family leave in the United States (Rossin-Slater et al., 2013). As mentioned above, the slightly different methodology implemented in the model of this paper (in comparison to paper's with similar outcomes (Rossin-Slater et al., 2013)) may have led to the difference in results.

In general, the results presented above highlight the heterogeneity in the effect of PFL on both leave-taking and short-term labor market outcomes. I found that PFL led to a 3 percent increase in the likelihood of part-time working mothers taking maternity leave. This result is supported by the literature, as PFL has been found to have particularly large effects on relatively less advantaged women (Rossin-Slater et al., 2013) (Rossin-Slater, 2017). Furthermore, PFL leads to a 3 percent decrease in the likelihood of mothers leaving the labor force. This means that PFL is particularly successful at preventing mothers who would have possibly left the labor force, from doing so. In particular, PFL reduces the likelihood of mothers who were part-time during pregnancy from being employed and at work (being employed and taking no leave) the year of childbirth by 4.17 percent. This effect on part-time mothers reflects once again PFL's biggest strengths, preventing women from leaving the workforce or from being at work right after childbirth. Similarly, PFL reported decreasing the likelihood of mothers who were full-time workers while pregnant from leaving the workforce by 4.1 percent.

The effect of PFL on short-term labor market outcomes are slightly less consistent than those seen for leave-taking. Mothers who were part-time workers during pregnancy reportedly earn on average $1836 less a year after childbirth due to PFL. Nevertheless, mothers who worked part-time during pregnancy also reported an increase of 6 hours in the weekly work hours the year after childbirth. These results suggest that because part-time workers are more likely to take PFL, their

resulting income wage the year after childbirth is likely to be lower than counterparts who did not take PFL. Yet, the reduction in income wage is approximately the amount that a mother would lose after taking PFL for 6 weeks at 55% wage replacement, meaning that the reduction in income wage may come from the 45% income that was not replaced. This explanation would support the significant increase in usual weekly working hours observed in this group. Furthermore, PFL leads to a 3 percent increase on the likelihood that mothers who were part-time workers the year of childbirth become full-time workers the year after childbirth, and a 2.13 increase on the likelihood that they become unemployed after childbirth. These different results for part-time working mothers highlights the heterogeneous effects that childbirth might pose in their work lives. PFL also increases the likelihood that mothers who were part-time workers during pregnancy become unemployed post childbirth. Nevertheless, this last effect is small. PFL also reported smaller effects on the change in work status of women, particularly between their pregnancy period and their post childbirth period. Given that a mother's work status during their pregnancy period reflects more the historical work status of said mother than their work status at the time of childbirth (due to the effect of PFL on work status), I believe these results showcase more clearly the true change in work status caused by PFL.

In terms of the effect from policy variation, the results highlighted the distinct effects on mothers from a general PFL policy and a Job-Protected PFL policy. First, mothers in Job-Protected PFL states are 2 percent less likely to leave the labor force than their counterparts in non-Job-Protected PFL states. These results support the smaller magnitude effects seen from the evaluation of PFL on California, New Jersey, and Rhode Island in comparison to previous literature. This implies that a thorough evaluation of the effect of each state-level paid maternity leave policies is needed [9]. Next, I found that mothers in Job-Protected PFL states, who were part-time workers during pregnancy, present significantly different effects from PFL than their counterparts in non-Job-Protected PFL states. Particularly, part-time working mothers in Job-Protected PFL states are 17.2 percentage more likely than non-Job-Protected PFL mothers of being employed and at work during the year of childbirth. Similarly, part-time working mothers in Job-Protected PFL states are 3.18 percent less likely than their counterparts in non-Job-Protected PFL states of becoming unemployed the year

[9]This in-depth analysis of the effect of each state's paid maternity leave policy is not currently possible due to the currently available sample size.

of childbirth, as well as being approximately 2.1 percent less likely of being out of labor force the year of childbirth. These results show that while Job-Protected PFL states do not become any more likely to increase leave-taking for part-time workers, they do a better job than non-Job-Protection PFL states at preventing mothers from leaving the labor force and becoming unemployed. Full-time working mothers are also approximately 4 percent more likely to leave the work force if they live in a Job-Protection PFL state, than if they do not. This suggests that full-time working mothers in Job-Protected PFL states are more likely to become stay-at-home mothers.

The effect of Job-Protected PFL on short-term labor market outcomes in comparison to general PFL is even more ambiguous, particularly from the side of previous literature (Schönberg & Ludsteck, 2014). For instance, mothers in Job-Protected PFL states are receiving $13800 less in income wage the year after childbirth than their counterparts in non-Job-Protected PFL states. Similarly, mothers in Job-Protected PFL states work 5.5 hours a week less than their counterparts in non-Job-Protected PFL states, an effect mostly driven by part-time workers, as they report a 14.46 hours a week decrease in hours worked than their counterparts in non-Job-Protected PFL states. Mothers who work part-time the year of childbirth and live in Job-Protected PFL states are also less likely than their counterparts in non-Job-Protected PFL states of becoming unemployed the year after childbirth, although the effects are small in magnitude. Mothers who work full-time the year of childbirth and live in Job-Protected PFL states are also 6.27 percent more likely than their counterparts in Job-Protected PFL states of leaving the labor force. Comparing these results to those of mothers who were full-time workers during their pregnancy, shows that following the historical work status hypothesis, the truly significant effect on mothers living in Job-Protected PFL states is that they are 28 percent more likely to leave the labor force than their counterparts in non-Job-Protected PFL states.

Overall, the effect of PFL on mother's leave-taking and short-term labor market outcomes is not as significant as previous research has reported it to be. As mentioned, this is likely due to key differences in the paid leave programs offered, as the benefits vary in job-protection laws, length, and wage replacement. This lack of homogeneity in the specifics of each program leads to largely ambiguous effects detected only when examining PFL as a whole. Similarly, as shown above the benefits of PFL often times do not outweigh the negative impact from leave-taking, thus not being

able to reduce the negative impacts from childbirth on a mother's labor market outcomes, as PFL intends to do. Future research should focus on the key areas that led to an increase in each state's use and subsequent labor market outcomes for mothers in less advantaged populations.

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7 Appendix

Table 21: Test for Heterogeneous Effects from PFL

	(1) Full Time	(2) Part Time	(3) Hispanic	(4) Black	(5) White Non-Hispanic	(6) Never Married	(7) Married spouse present
$POST_t \cdot TREAT_i$	0.0378	-0.0108	0.0174**	0.00232	0.00878	0.0111	0.00227*
	(0.0235)	(0.0145)	(0.00335)	(0.00669)	(0.0118)	(0.00708)	(0.000659)
N	22126	22126	22126	22126	22126	22126	22126
adj. R^2	0.406	0.398	0.025	0.016	0.049	0.022	0.011
	(8) Married spouse absent	(9) Separated	(10) Less than High School	(11) High School	(12) Associate Degree	(13) Bachelor Plus	
$POST_t \cdot TREAT_i$	0.0280	-0.000298	0.00407*	0.00421	0.00354	0.0139	
	(0.0199)	(0.000188)	(0.000986)	(0.00675)	(0.00190)	(0.0176)	
N	22126	22126	22126	22126	22126	22126	
adj. R^2	0.074	0.003	0.007	0.013	0.017	0.061	

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 22: Test for Heterogeneous Effects from Job-Protected PFL

	(1) Full Time	(2) Part Time	(3) Hispanic	(4) Black	(5) White non-Hispanic
$POST_t \cdot TREAT_i$	0.00203	-0.0394***	0.0161***	0.00560	0.00212
	(0.0176)	(0.00243)	(0.00214)	(0.00574)	(0.0143)
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	0.0245	0.0224**	-0.0258***	0.000144	0.0196
	(0.0171)	(0.00659)	(0.00197)	(0.00632)	(0.0150)
N	17944	17944	17944	17944	17944
adj. R^2	0.399	0.389	0.022	0.021	0.059
	(6) Never married	(7) Married spouse absent	(8) Married spouse present	(9) Separated	
$POST_t \cdot TREAT_i$	0.00728	0.00214*	0.0220	-0.00223*	
	(0.00761)	(0.000710)	(0.0192)	(0.000826)	
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	-0.00553	0.0102***	0.0296	0.00216*	
	(0.00908)	(0.00156)	(0.0200)	(0.000796)	
N	17944	17944	17944	17944	
adj. R^2	0.023	0.025	0.078	0.002	
	(10) Less than High School	(11) High School	(12) Associate degree	(13) Bachelor Plus	
$POST_t \cdot TREAT_i$	0.000995***	0.000995	0.00462	-0.000868	
	(0.0000523)	(0.00252)	(0.00535)	(0.0137)	
$POST_t \cdot TREAT_i \cdot JOBPROTECTION_i$	-0.000950***	-0.0250***	-0.00763	0.0957***	
	(0.0000998)	(0.00326)	(0.00554)	(0.0151)	
N	17944	17944	17944	17944	
adj. R^2	0.003	0.018	0.021	0.079	

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$