The Effects of California's Paid Family Leave Law on Maternal Psychological Health

Ann P. Bartel
Elizabeth L. Doran
Christopher J. Ruhm
Jane Waldfogel

Preliminary and Incomplete

Working Draft: 5 March 2018

Abstract

This paper exploits a natural experiment to provide evidence on the impact of a paid family leave law on postpartum maternal psychological health. In 2004, California became the first state in the United States to enact paid family leave; no paid leave legislation exists federally. Using a difference-in-difference design, we examine the effects of California's paid family leave (CA-PFL) on maternal psychological health, focusing on women with children under the age of 2 (i.e. those who gave birth in the previous two years). Our estimates indicate that mothers in California experienced at least a 29 percent reduction in mean mental distress symptoms after the enactment of paid leave, and they were 7.5 percentage points less likely to experience mild forms of mental distress as measured by a cut-off. These results are robust to a variety of specifications. The estimated effects are most pronounced for Black, single, and low-income mothers, populations who traditionally have had less access to paid family leave.

I. Introduction

Though the majority of American children are now raised by working parents (Blau & Winkler, 2017), the United States is the only developed country that does not guarantee a period of paid and job-protected leave for new parents. In 2004, California became the first state to enact a paid family leave program (CA-PFL), providing up to six weeks of paid leave to new parents. In conjunction with the state's temporary disability insurance program, which also provides approximately six weeks of paid leave, new mothers can take around 12 weeks of paid time off work to care for and bond with infants. As CA-PFL is paid at a wage replacement rate of up to 55 percent of usual pay, and can be combined with coverage under the Family and Medical Leave Act (FMLA) for qualified employees to provide job protection, the program gives mothers more freedom to focus on caring for and adjusting to life with their infants, rather than immediately returning to work. This policy may therefore contribute to improvements in maternal postpartum psychological health by decreasing the stress associated with simultaneously navigating the birth of a child and responsibilities in the workplace.

The labor market effects of California's program have been extensively researched (Appelbaum & Milkman, 2011; Baum & Ruhm, 2016; Bedard & Rossin-Slater, 2016; Das & Polachek, 2015; Rossin-Slater, Ruhm, & Waldfogel, 2013), but its impacts on health have been less studied. We begin to address this gap by using restricted data from the 2000 to 2012 National Health Interview Survey to analyze the effects of CA-PFL on maternal psychological health. Much of the previous research on the relationship between leave-taking and maternal psychological health is observational, comparing women who took longer leaves to those taking shorter leaves (Chatterji & Markowitz, 2005, 2012; Whitehouse, Romaniuk, Lucas, & Nicholson, 2012). The endogeneity of leave-taking and postpartum psychological health may

bias these studies. Our analysis, in contrast, leverages the natural experiment that was introduced when California enacted its PFL program in July 2004. Our primary research question is whether California's PFL program has effects on the psychological health of new mothers, which has not yet been examined.. Our basic identification strategy estimates difference-in-difference (DD) models, where changes in the outcomes in California before and after enactment of the PFL program are compared to corresponding changes over time in the rest of the United States. We focus on women mothers with children under the age of 2 years (i.e. those who gave birth within the past two years) and study both average effects of the law, and heterogeneous effects by maternal, household, and child demographic characteristics. We use the six-item Kessler Psychological Distress Scale (K6), a rigorously validated measure of mental distress, to measure maternal psychological health (e.g., Cairney et al., 2007; Kessler et al., 2003, 2010; Prochaska et al.,2012). We examine both symptoms of mental distress as well as the share of mothers with symptoms above specific cut-offs indicating elevated distress.

Our preferred estimates indicate that California's PFL program decreased maternal postpartum mental distress symptoms by about 0.70 points on the K6 scale (which ranges from zero to 24 points), a 29 percent decrease from the pre-PFL California mean of 2.4 points. We also examine the effect of CA-PFL on two cutoffs on the K6 representing mild to moderate mental distress, using a cutoff of 3 points to indicate mild mental distress and a cutoff of 5 points to represent indicate mental distress (Cairney et al., 2007; Prochaska et al., 2012).[1] When using 3

[1] The cutoff of 13 points has been extensively validated to indicate serious mental illness (e.g., Kessler et al., 2013). In addition, lower cutoffs have been suggested as indicative of milder forms of mental distress. Using the 2007 California Health Interview Survey, Prochaska et al. (2012) validate 5 points as the optimal cutoff for moderate mental distress amongst adults. Cairney et al. (2007) suggest lower thresholds may be useful in indicating milder forms of distress, as lower cutoffs have higher rates of sensitivity (true positives), but lower rates of specificity (true negatives).

points as the cutoff, CA-PFL reduces the probability of experiencing mild mental distress by 7.5 percentage points. We detect no effect of CA-PFL on the probability of experiencing moderate mental distress when using a cutoff of 5 points, likely indicating that effects of CA-PFL are most pronounced for mothers experiencing milder forms of mental distress. These findings are robust to specifications using a varying number of years of data, as well as to alternative sets of individual-level control variables or other state-level controls.

We also uncover substantial heterogeneity in effects. The strongest estimated effects of CA-PFL are observed for mothers who are Black, single, and low-income. These results suggest that CA-PFL has the greatest impact on mothers who generally have not had access to paid leave prior to the legislation's enactment (although we also find strong effects for some more advantaged women, e.g. , those born in the U.S., and with some college education). Mothers with infants (under age 1) or multiple children also see greater effects of the CA-PFL legislation than those with toddlers (age 1) or with only one child, indicating the CA-PFL's impacts may be largest for mothers with the most intensive care requirements at home. Taken together, our findings suggest that CA-PFL results in substantial improves in maternal postpartum psychological health, particularly impacting mothers who previously lacked access to paid leave or who experience more stress at home.

II. Background

California's paid family leave program

The United States is the only developed country that does not guarantee a period of paid and job-protected leave for new parents, relying instead on voluntary employer policies. As a

result, coverage is both limited and highly unequal: availability is strongly skewed by family income, with low-income parents much less likely to be covered (Rossin-Slater, 2017). Since the passage of the FMLA in 1993, US workers in firms of 50 or more employees have been eligible to take up to 12 weeks of unpaid, job-protected leave for qualifying reasons, including the birth of a child. Approximately 60% of US employees, and about half of new parents, work in firms covered by the law and meet the FMLA's eligibility guidelines (Klerman, Daley, & Pozniak, 2012). But low-income families are much less likely than their more advantaged peers to be able to take unpaid leave. Some employers provide paid leave voluntarily, but high-income workers are most likely to be covered by such policies (Bedard & Rossin-Slater, 2016).

The situation in the US is starting to change. Four states now have paid family leave (PFL) programs that provide a period of paid leave to new parents (through expansions of state temporary disability programs that in five states provide paid leave to women who have given birth). California was the first state to do so, with the law enacted on July 1, 2004, followed by Rhode Island, New Jersey, and New York. An additional state—Washington—as well as the District of Columbia have enacted PFL programs that will take effect by or prior to 2020, and some cities, most notably San Francisco, are also implementing expansions of paid family leave policies that extend beyond those established at the state level. Because California is a large state and the first to implement PFL, its program has been most extensively researched. However, while we know a fair amount about the program's labor market effects (Bartel, Rossin-Slater, Ruhm, Stearns, & Waldfogel, 2015; Baum & Ruhm, 2016; Rossin-Slater, Ruhm, & Waldfogel, 2013), research on its impact on maternal health has been much less studied (Bartel, Baum, Rossin-Slater, Ruhm, & Waldfogel, 2014).

California's PFL provides up to six weeks of leave for bonding with a newborn or newly-adopted child or for caring for a sick family member, compensating workers up to 55 percent of their usual pay up to a maximum benefit (in 2018, the maximum weekly benefit level is $1,216). The PFL program benefits can be combined with the California's State Disability Insurance (SDI) program, which also provides parents up to six weeks of leave following the birth of a child (Bedard & Rossin-Slater, 2016). Mothers who use the full benefit allowed by both SDI and PFL, therefore, may take up to 12 weeks of paid leave postpartum. The vast majority—between 87 and 88 percent—of claims made under California's PFL program are for bonding with a newborn child (Bartel et al., 2014).

The take-up rate of PFL in California has been steadily increasing since the program's introduction. In the first five years of the programs, the number of PFL claims per 100 births rose from 24 in 2004 to 30 in 2009 (Zigler, Muenchow, & Ruhm, 2012). A lack of awareness may contribute to this utilization rate: Appelbaum and Milkman (2011) found that over half of eligible employees were unaware of the program.

There is evidence that California's PFL program has increased the duration of leave taken by mothers. Rossin-Slater, Ruhm, and Waldfogel (2013) find, using March Current Population Survey data from 1999 to 2010, that the percentage of mothers on maternity leave the week before the survey rose from 5.4 percent before PFL enactment to 11.8 percent after. Further, they estimate that the passage of PFL legislation increased the leave duration of the average mother by a statistically significant 3.2 weeks. Increases in leave-taking were largest for disadvantaged mothers, particularly those who are Black, Hispanic, high school educated, and unmarried. Baum and Ruhm (2016), using data from the 1997 National Longitudinal Survey of Youth, find effects of a slightly larger magnitude: on average, maternal leave-taking after

childbirth increased by nearly four weeks since PFL enactment. Though there is limited evidence on the impact of California PFL on paternal leave-taking, Bartel et al (2018) show that the program increases fathers' leave in the year after childbirth by 46 percent.

Maternal postpartum psychological health

An estimated 13 to 19 percent of new mothers develop postpartum depression, including both major and minor clinical depression (O'Hara & McCabe, 2013). A number of maternal demographic factors, including age, poverty status, marital status, and education level, all have been identified as associated with risk of postpartum depression (e.g., Rich-Edwards, 2006; Segre, O'Hara, Arndt, & Stuart, 2007; Wang, Wu, Anderson, & Florence, 2011). Both clinical depression and depressive symptoms postpartum are risk factors for adverse physical, cognitive, emotional, and behavioral development in young children (e.g., Beck, 1998; Gray, Indurkhya, & McCormick, 2004; O'Hara & McCabe, 2013; Petterson & Albers, 2001).

In addition to therapeutic and pharmacological treatments for postpartum depression, longer periods of parental leave may have positive effects both on maternal depression and infant health (Ruhm, 2000). In general, positive associations are shown between length of leave and postpartum maternal psychological health (Borrell et al., 2014; Staehelin, Bertea, & Stutz, 2007). Evidence indicates mothers may see long term returns to leave on psychological health, extending far past the one-year postpartum period. Longitudinal data from Australia shows that, two to three years after childbirth, mothers in two-parent families who took longer leaves (of at least 13 weeks) experienced less psychological distress than mothers who took shorter leaves (Whitehouse et al., 2012). Though this evidence is observational, recent evidence suggests causal long-term impacts of leave on maternal psychological health. Using a difference-in-difference

approach with a sample of mothers over age 50, a cross-national European panel survey compares later-life depression scores women eligible for maternity leave to those who were not, in countries with and without comprehensive maternity leave. Results indicate that longer maternity leaves for the first childbirth reduce depressive symptoms in older women (Avendano, Berkman, Brugiavini, & Pasini, 2015).

There is mixed evidence on the length of leave necessary for positive effects. CA-PFL provides six weeks of paid leave, which can be combined with the six paid weeks provided by SDI, for a total of 12 weeks. Most prior studies examined leaves of at least 12 weeks, which is equivalent to the amount of unpaid leave provided by the FMLA. Positive, though not causal, associations between leave and maternal depression have been shown at 12 weeks (Chatterji & Markowitz, 2005, 2012; Hyde, Klein, Essex, & Clark, 1995), at 13 weeks (Whitehouse et al., 2012), and at 15 weeks (McGovern et al., 1997). Chatterji and Markowitz (2005) find that an increase in leave time from six weeks to between eight to twelve weeks is associated with an 11 to 15 percent decrease in depressive symptoms for new mothers. Evidence from this study also suggests that longer leaves are associated with a decreased probability of clinical depression. However, results from this study are unlikely to be causal, as analysis does not account for endogeneity between leave-taking and maternal psychological health. In subsequent work, the authors use two-stage least squares methods to account for potential reverse causality and more closely approximately causality (Chatterji & Markowitz, 2012). They find that, on average, the number of depressive symptoms decreases by six to seven percent for every additional week of leave—but short leaves (i.e., less than 12 weeks of total leave or less than eight weeks of paid leave) may increase depressive symptoms, possibly due to "role overload" mothers may feel when returning to work soon after childbirth (Chatterji & Markowitz, 2012).

III. Data and Measures

We use restricted data from the 2000 to 2012 National Health Interview Survey (NHIS) to estimate the effects of PFL on maternal postpartum psychological health. The NHIS is a cross-sectional survey conducted annually by the National Center for Health Statistics at the Centers for Disease Control and Prevention. When weighted, it is representative of the civilian non-institutionalized population in the US on both the national and, with restricted-use variables, state levels. A multistage area probability design is used to draw household samples from every state and the District of Columbia. In addition to a core set of demographic and health items repeated each year, rotating modules on other health topics are changed and/or repeated.[2]

Our primary dependent variable is obtained from the Kessler Psychological Distress Scale. The six-item scale, known as the K6, is a short, non-specific measure of psychological distress that was developed for the NHIS to measure severity of psychological distress (Kessler et al., 2002). This widely used scale reflects responses to six questions indicating components of psychological distress occurring within the last 30 days. The questions focus on depression and anxiety and take the form: "How often in the last 30 days did you feel …": "so sad that nothing could cheer you up"; "nervous"; "restless or fidgety"; "hopeless"; "that everything was an effort"'; "worthless", with scores for each question ranging from zero for responses of "none of the time", to 4 for responses of "all of the time. Answers to each item are summed, for a possible range of zero points, or no psychological distress symptoms, to 24 points, or all six psychological distress symptoms all of the time. Amongst populations in the United States, the cut-point of 13 points is most often recommended to indicate as the threshold for serious mental illness (SMI)

[2] Further information on the NHIS is available at https://www.cdc.gov/nchs/nhis/index.htm

(Kessler et al., 2003). The scale is both a valid and precise measure of SMI in the general population of the United States, as well as in numerous other countries including Japan, Australia, India, Turkey, the Netherlands, and Morocco (Fassaert et al., 2009; T.A. Furukawa, Kessler, Slade, & Andrews, 2003; Toshi A. Furukawa et al., 2008; Kessler et al., 2002, 2010; Patel et al., 2008).

Since we are interested in both serious and more moderate levels of psychological distress, we use the scaled scores in several ways. We conduct estimates with the dependent variable as continuous values of the scores (or, more precisely, integer values between zero points and 24 points), and with the dependent variable as a dichotomous variable indicating whether the score is greater than or equal to cutoffs of 3 points and 5 points. Though 13 points is the threshold for SMI, lower cutoffs may be used to assess more mild to moderate forms of psychological distress (Cairney et al., 2007; Prochaska et al., 2012). As a sensitivity check, we also examine each of the six items included in the K6 separately. Analysis with the individual items uses each item as a continuous variable ranging, in integer values, from zero points to 4 points.

Each of our models include an extensive set of maternal and child demographic control variables. Maternal control variables include race/ethnicity, education, age at child's birth, marital status, and country of birth. Child control variables include age in years, parity, and gender. We do not include income in our models because it is endogenous to leave-taking. However, we do include proxies for potential income, such as maternal education and marital status.

IV. Empirical Strategy

We compare mothers with children under the age of 24 months in California to mothers with children under the age of 24 months in the rest of the United States. Though postpartum psychological health is generally examined in the first year after birth, evidence indicates that leave-taking may impact mothers past the one-year period (Whitehouse et al., 2012). We therefore extend our main sample to include mothers of children less than two years old; stratified models examine mothers of 0-11 month old children and 12-23 month old children separately. We also estimate models for sub-samples stratified by maternal race, maternal education, maternal marital status, maternal place of birth, household income, and child parity. Our basic identification strategy is a differences-in-differences (DD) model, where changes in the outcomes in California before and after enactment of CA-PFL are compared to analogous changes over time in control states.

The basic DD model takes the form:

$$Y_{ijt} = \square + \square\square CA\times POST)_{ijt} + \square_1 \boldsymbol{X}_{ijt} + \square_2 \boldsymbol{T}_t + \square_3 \boldsymbol{S}_j + \square_4 \boldsymbol{L}_j + \varepsilon_{ijt}, \qquad (1)$$

where Y is the dependent variable for mother i living in state j in year t. CA is a dichotomous indicator taking the value of one for California mothers and zero for control state mothers living outside of California, POST is a binary variable equal to one (zero) for births on or after (before) the July 1, 2004 enactment of CA-PFL, X is a vector of maternal and child demographic covariates, T and S are vectors of child birth year and state dummy variables, L is a vector of state linear time trends, ε is an error term, and $\hat{\gamma}$ is the primary DD estimate of interest. A traditional DD model also includes CA and POST main effects—in addition to the interactions between the two variables—but without year, state, and county dummy variables. The POST and CA main effects are absorbed by T and S, and therefore are excluded from equation (1). While we do estimate these standard models, the DD specification in equation (1) is our preferred

model because it accounts for a fuller set of effects that are both time-invariant and location-specific, and for characteristics that vary uniformly over time across locations. For example, the effects of national recessions will be captured by the state linear trend dummy variables, to the extent that they similarly affect regions within each state.

A necessary condition for the DD procedures to generate causal estimates is that changes over time in the outcomes (but not their levels) would have been similar between California and the control states in the absence of the program effects. One requirement for this is likely to be that there were similar trends in the outcomes in California versus the U.S. prior to the enactment of CA-PFL. Accordingly, we investigate whether pre-trends in the outcome variables (i.e., before July 1, 2004) for California are similar to pre-trends observed in the control states in the rest of the U.S.

We estimate pre-trends with the following model, using observations from before CA-PFL enactment on July 1, 2004, for California and the rest of the U.S.:

$$Y_{ijt} = \square_{\square} + \square_{\square}\boldsymbol{X}_{ijt} + \square_{\square}TR_{ijt} + \square_{\square}NONCA_{ijt} + \square_{\square}TR\times NONCA_{ijt} + \varepsilon_{ijt}. \qquad (2)$$

In equation (2), TR is a linear time trend for the period ending on July 1, 2004 and $NONCA_{ijt}$ is a dichotomous variable equal to zero for California and one for the rest of the U.S. The coefficient on the interaction term, $TR\times NONCA_{ijt}$, denotes pre-trend differences in outcomes between California and the rest of the U.S. Our analysis of pre-trends indicates no significant differences between California and control states in the 1998 to 2004 period, presented in Appendix Table A1. However, point estimates indicate that maternal postpartum psychological health may have been worsening faster for mothers in control states as compared to in California, which may lead to an overestimation of the impact of CA-PFL on psychological health. While we cannot reject the null hypothesis of no difference in pre-law trends between California and the rest of the country, we adjust all our results for pre-trends to assess how sensitive they are.

We estimate ordinary least squares (OLS) regression models for the continuous overall K6 score. For ease of interpretation, we estimate linear probability models for the binary dependent variables indicating the probability of a K6 score over 3 points and over 5 points; primary results are similar when we estimate a probit model instead. All regressions are weighted using person-level weights and with standard errors clustered at the state level.

Throughout our investigation, we are interested in both average effects of CA-PFL, as well as heterogeneous effects of the program across groups of mothers. Our primary strategy for examining heterogeneity in the effects involves estimating models for subsamples stratified by maternal education, marital status, maternal country of birth, household income, child parity, and race/ethnicity. Thus, for example, we will consider as "advantaged" groups, children of mothers who are married, college-educated, or non-Hispanic white, as compared to "disadvantaged" groups of children born to mothers who are unmarried at birth, black or Hispanic, or non-college educated.

V. Results

Table 1 presents descriptive statistics for the full sample of mothers with children under the age of 2 years, comparing the pre-law and post-law means for the treatment group (mothers in California) and the control group (mothers in the rest of the U.S.). All statistics, excluding frequencies, are weighted by NHIS person-level weights.

The first row shows pre-law and post-law means for the continuous K6 score for the treatment and control groups. Notably, while pre-law means are similar between mothers in California (2.409) and mothers in other states (2.551), post-law means decline substantially for California mothers (2.118) and marginally increase for control group mothers (2.555). The

second and third rows present the percent of mothers with a K6 score over 3 points and over 5 points, respectively. Similar patterns are seen as with the continuous K6 score. While 23.9 percent of mothers in California and 26.5 percent of mothers in the rest of the U.S. had K6 scores above 3 points prior to the CA-PFL enactment, the percentage of California mothers over this cut-point decreased slightly to 21.6 percent after law enactment, while non-California mothers essentially stayed unchanged at 26.7 percent. The next six rows present the individual items on the K6 scale, which measure different dimensions of psychological health. The two items with the biggest declines amongst mothers in California mothers—sadness (K1) and hopelessness (K4)—are particularly relevant for our analyses, as these items seem to be most directly impacted by postpartum depression. The means of all items decreased for the treatment group between the pre-law and the post-law periods; in the control group, the items either increased or decreased marginally. Both before and after the enactment of CA-PFL, mothers in California, as compared to the rest of the U.S., are disproportionately Hispanic, have fewer years of educational attainment, and are more likely to be born outside the U.S. Child demographics—age, parity, and gender—are comparable between California and the rest of the U.S. both before and after the enactment of the law.

Our primary DD results are shown in Table 2. Base specifications shown in columns (1), (3), and (5) include only the CA*POST interaction and dummy variables for CA and POST; no other covariates are included. Our preferred specifications, shown in columns (2), (4), (6), include individual covariates, child birth year and state fixed effects, and state linear trends.

The DD coefficients in columns (1), (3), and (5) suggest that CA-PFL causes a 0.424 point reduction on the K6 scale, and a 3.43 to 5.67 percentage point reduction in mothers experiencing mild to moderate mental distress, as measured by K6 cut-points of 5 points and 3

points. All of these results are highly statistically significant. However, part of this effect may be due to potential differential pre-trends.[3] We therefore adjust for the likelihood of differential pre-trends, by subtracting the sum of the yearly pre-trends from the effect coefficient; in other words, we multiply the pre-trend by five to represent the five years from 2000 to 2004, and subtract this value from the main effect coefficient. This exercise suggests that effects may be closer to a 0.05 point reduction on the K6 scale, and a 1.57 to 1.67 percentage point reduction in mothers experiencing mild to moderate mental distress. When we adjust for a fuller set of controls in column (2), the effect of CA-PFL on maternal K6 score increases in magnitude to a reduction of 0.696 points (or 0.226, when adjusted for pre-trends), though we lose some precision in our estimate.[4] As the pre-law mean K6 score for mothers in California was 2.4 points, this represents a 29 percent decrease (9 percent decrease, when adjusted for pre-trends) in mean pre-CA-PFL symptoms of mental distress. The inclusion of individual covariates, birth year fixed effects, and state linear trends decreases the point estimate (to 2.3 percentage points) and increases the standard error when estimating the probability of a K6 score over 5 points; this result is not statistically different from zero. When examining the probability of a K6 score over 3 points, however, we find that our preferred specification leads to a larger effect, reducing the probability of moderate mental distress by 7.51 percentage points for mothers in California, or 3.51 percentage points when adjusted for pre-trends. Taken together, these results suggest that CA-PFL is associated with significant reductions in maternal postpartum depressive symptoms, particularly for mothers experiencing milder levels of mental illness.[5]

[3] Shown in Appendix Table A1.
[4] Appendix Table A2 presents the same models as in columns (2), (4), and (6), showing estimates on individual covariates.
[5] Appendix Table A3 presents similar models as in Table 2, but examines each item on the K6 scale separately.

Our remaining analyses, presented in Table 3, indicate substantial heterogeneity in the effect of CA-PFL on mothers' psychological health outcomes. Panel A, which shows results stratified by maternal race/ethnicity, indicates that effects are concentrated on White and especially Black (versus Hispanic or other race) mothers. Panel B presents estimates examining heterogeneous treatment effects by maternal education. Notably, CA-PFL has no statistically significant effect on mothers with a high school degree or less. Reductions in psychological distress symptoms are seen only for mothers who have some college attainment but lack a college degree. For this population, estimates are large. For mothers with a college degree, however, estimates surprisingly indicate that CA-PFL results in worse psychological health. Panel C presents effects stratified by maternal marital status. Effects are concentrated on mothers living alone, who are likely to be single mothers. In the final stratification by maternal characteristics, shown in Panel D, we present effects by place of birth. Fully all effects of CA-PFL are for American-born mothers; the law does not impact foreign-born mothers.

While we do not include household income as a covariate in our models, we do examine heterogeneous effects by household income in Panel E. We stratify these results by households with incomes less than or equal to $35,000 per year, greater than $35,000 per year, and those with missing income data. The latter group constitutes about half of our sample. In the first three columns, these results indicate that poor mothers—those with incomes below $35,000—realize nearly all of the effects of CA-PFL. While these results suggest that more affluent mothers may benefit from the law in a reduction in the probability of experiencing moderate mental distress, they also suggest that mothers who did not provide income data may experience worse psychological health due to CA-PFL.

The last two panels in Table 3 stratify results based on child characteristics. First, Panel F presents results by child age. These estimates indicate that mothers with children under the age of one year see a substantial mental distress, and while estimates for mothers with 1-year-old children are less precise, they suggest that these mothers may experience some reduction in mental distress. Finally, Panel G presents results by child parity, indicating that mothers with only one child do not see any impacts of CA-PFL, while estimates for mothers with two or more children show a substantial reduction in both the degree of psychological distress and the likelihood of experiencing mild to moderate distress.

VI. Robustness Checks

Our primary results presented in Section V use 6 years of data on either side of the CA-PFL enactment, for children born from 1998 to 2010. We test the robustness of these estimates to alterations in the choice of years used. Keeping an even number of years on either side of the law enactment, we examine main effects on our three outcome variables with decreasing numbers of years in our models. Table 4 presents these results. Columns (1) through (3) present results using 5 years of data on either side of the law enactment, columns (4) through (6) use 4 years of data on either side of the law, and so forth. Focusing on periods closer to the enactment of the CA-PFL law reduces the influence of potential confounding factors, although possibly at the cost of less precision in the estimates.

Our results are robust to these varying specifications, and in general increase in size when using narrower sample windows. This result likely partially occurs because some of these specifications exclude the 2008 recession. However, the same patterns are not observed when

examining the probability of a K6 score over 3 or 5 points, so these results must be interpreted with caution.

VII. Discussion

Using a DD approach, our analysis suggests that CA-PFL improves maternal postpartum psychological health. The magnitude of our estimated reductions in psychological distress are notable: with a mean K6 score of 2.4 prior to CA-PFL, law enactment is associated with at least a 0.70 point average decrease, or a 29 percent decrease in overall distress for the average mother in California. Further, estimates indicate that CA-PFL led to a decrease in mothers' probability of experiencing moderate psychological distress. When using a cutoff of 3 points on the K6 scale, CA-PFL reduces the probability of experiencing mild psychological distress by 7.5 percentage points. We find no effect of CA-PFL on the probability of experiencing moderate psychological distress when using a cutoff of 5 points on the K6 scale and these results were somewhat sensitive to the exact choice of analysis periods. Further, in light of potential differential pre-trends between California and other states, these effects may be smaller. When we account for possible differences in pre-trends, the effect of CA-PFL on K6 score is reduced to 0.23 points, or a 9 percent decrease in the pre-law mean. When using the cutoff of 3 points, the likelihood of experiencing mild psychological distress decreases by 3.51 percentage points.

The largest psychological health benefits from CA-PFL were observed for mothers who were Black, single, born in the U.S., and those with some college education and with household incomes under $35,000 per year. These results are mostly consistent with previous literature, indicating the greatest impacts of paid leave programs on more disadvantaged mothers who

lacked access to paid leave prior to the legislation's enactment (Rossin-Slater et al., 2013; Stearns, 2015). While effects for Hispanic and foreign-born mothers were substantially smaller than for Black and White mothers, this may reflect low rates of take-up, as Hispanic and foreign-born mothers are particularly unlikely to be aware of CA-PFL (Appelbaum & Milkman, 2011). Our estimates also show that positive effects are concentrated on single mothers, as compared to married and cohabiting mothers, which is consistent with previous literature showing that unmarried mothers are more likely to be positively impacted by paid leave in California (Rossin-Slater et al., 2013; Stearns, 2015) and that married mothers tend to experience less post-birth mental distress (Whitehouse et al., 2012). Mothers with children under the age of 1 year and with two or more children also realize the benefits of the law more fully than mothers with older children and mothers with only one child, indicating a positive effect for mothers with more intense caregiving responsibilities at home. Finally, while the effects for mothers of 1-year-olds are less pronounced than for mothers of children under the age of 1, it is notable that our estimates suggest they continue to see positive effects after the one-year postpartum period. This is a particularly interesting finding given that 30 to 50 percent of mothers with postpartum depression experience mental distress after the postpartum period, though often the severity of symptoms decreases over time (Vliegen, Casalin, & Luyten, 2014).

Reductions in maternal postpartum mental distress may have far-reaching implications both for mothers and for children in California. Mothers experiencing depression tend to have less positive interactions with their children, including a lower incidence of breastfeeding, reduced rates of playtime with children, withdrawn and more negative affect, and less verbal communication directed toward infants (Field, 2010). Since all of these contribute to child physical, cognitive, and socio-emotional development, a reduction in postpartum mental distress

for traditionally disadvantaged populations may reduce disparities in child outcomes. Moreover, postpartum depression is often followed by recurrent depression throughout a mother's lifetime, which can negatively affect the outcomes of both mothers and their children (Miller, 2002; Komodromou, 2018).

References

Appelbaum, E., & Milkman, R. (2011). *Leaves That Pay: Employer and Worker Experiences with Paid Family Leave in California*. *Center for Economic and Policy Research*. Retrieved from http://cepr.net/documents/publications/paid-family-leave-1-2011.pdf

Avendano, M., Berkman, L. F., Brugiavini, A., & Pasini, G. (2015). The long-run effect of maternity leave benefits on psychological health: Evidence from European countries. *Social Science and Medicine*, *132*, 45–53. https://doi.org/10.1016/j.socscimed.2015.02.037

Bartel, A., Baum, C., Rossin-Slater, M., Ruhm, C. J., & Waldfogel, J. (2014). *California's Paid Family Leave Law: Lessons from the First Decade*. Washington DC. https://doi.org/10.1017/CBO9781107415324.004

Bartel, A. P., Rossin-Slater, M., Ruhm, C. J., Stearns, J., & Waldfogel, J. (2018). Paid Family Leave, Fathers' Leave-Taking, and Leave-Sharing in Dual-Earner Households. *Journal of Policy Analysis and Management*, *37*(1), 10–37. https://doi.org/10.1002/pam.22030

Bartel, A., Rossin-Slater, M., Ruhm, C. J., Stearns, J., & Waldfogel, J. (2015). Paid Family Leave, Fathers' Leave-Taking, and Sharing in Dual-Earner Households. *NBER WORKING PAPER SERIES*, *November*. Retrieved from http://digitalcommons.ilr.cornell.edu/key_workplace

Baum, C. L., & Ruhm, C. J. (2016). The Effects of Paid Family Leave in California on Labor Market Outcomes. *Journal of Policy Analysis and Management*, *35*(2), 333–356. https://doi.org/10.1002/pam.21894

Beck, C. T. (1998). The effects of postpartum depression on child development: a meta-analysis. *Archives of Psychiatric Nursing*, *12*(1), 12–20. https://doi.org/10.1016/S0883-9417(98)80004-6

Bedard, K., & Rossin-Slater, M. (2016). *The Economic and Social Impacts of Paid Family Leave in California : Report for the California Employment Development*. *California Employment Development Department*. Retrieved from http://www.edd.ca.gov/Disability/pdf/PFL_Economic_and_Social_Impact_Study.pdf

Blau, F. D., & Winkler, A. E. (2017). *Women, Work, and Family* (No. w23644). Retrieved from http://www.nber.org/papers/w23644

Borrell, C., Palència, L., Muntaner, C., Urquía, M., Malmusi, D., & O'Campo, P. (2014). Influence of macrosocial policies on women's health and gender inequalities in health. *Epidemiologic Reviews*, *36*(1), 31–48. https://doi.org/10.1093/epirev/mxt002

Cairney, J., Veldhuizen, S., Wade, T. J., Kurdyak, P., & Streiner, D. L. (2007). Evaluation of 2 measures of psychological distress as screeners for depression in the general population. *Canadian Journal of Psychiatry*, *52*(2), 111–120. https://doi.org/10.1177/070674370705200209

Chatterji, P., & Markowitz, S. (2005). Does the length of maternity leave affect maternal health? *Southern Economic Journal*, *72*(1), 16. https://doi.org/10.1017/CBO9781107415324.004

Chatterji, P., & Markowitz, S. (2012). Family Leave After Childbirth and the Psychological health of New Mothers. *The Journal of Psychological health Policy and Economics J Ment Health Policy Econ*, *15*(2), 61–76. Retrieved from http://www.icmpe.org/test1/docs/15-061_text.pdf

Dagher, R. K., McGovern, P. M., & Dowd, B. E. (2014). Maternity Leave Duration and Postpartum Mental and Physical Health: Implications for Leave Policies. *Journal of Health*

Politics, Policy & Law, *39*(2), 369–416. https://doi.org/10.1215/03616878-2416247
Das, T., & Polachek, S. W. (2015). Unanticipated Effects of California's Paid Family Leave Program. *Contemporary Economic Policy*, *33*(4), 619–635. https://doi.org/10.1111/coep.12102
Fassaert, T., De Wit, M. A. S., Tuinebreijer, W. C., Wouters, H., Verhoeff, A. P., Beekman, A. T. F., & Dekker, J. (2009). Psychometric properties of an interviewer-administered version of the Kessler Psychological Distress scale (K10) among Dutch, Moroccan and Turkish respondents. *International Journal of Methods in Psychiatric Research*, *18*(3), 159–168. https://doi.org/10.1002/mpr.288
Field, T. (2010). Postpartum depression effects on early interactions, parenting, and safety practices: A review. *Infant Behavior and Development*. https://doi.org/10.1016/j.infbeh.2009.10.005
Furukawa, T. A., Kawakami, N., Saitoh, M., Ono, Y., Nakane, Y., Nakamura, Y., … Kikkawa, T. (2008). The performance of the Japanese version of the K6 and K10 in the World Psychological health Survey Japan. *International Journal of Methods in Psychiatric Research*, *17*(3), 152–158. https://doi.org/10.1002/mpr.257
Furukawa, T. A., Kessler, R. C., Slade, T., & Andrews, G. (2003). The performance of the K6 and K10 screening scales for psychological distress in the Australian National Survey of Psychological health and Well-Being. *Psychological Medicine*, *33*(2), 357–362. https://doi.org/10.1017/S0033291702006700
Gray, R. F., Indurkhya, A., & McCormick, M. C. (2004). Prevalence, Stability, and Predictors of Clinically Significant Behavior Problems in Low Birth Weight Children at 3, 5, and 8 Years of Age. *PEDIATRICS*, *114*(3), 736–743. https://doi.org/10.1542/peds.2003-1150-L
Hyde, J. S., Klein, M. H., Essex, M. 1, & Clark, R. (1995). Maternity Leave and Women's Psychological health. *Psychology of Women Quurterly*, *19*, 257–285. Retrieved from http://journals.sagepub.com.ezproxy.cul.columbia.edu/doi/pdf/10.1111/j.1471-6402.1995.tb00291.x
Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., … Zaslavsky, A. M. (2002). Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychological Medicine*, *32*, 959–976. https://doi.org/10.1017\S0033291702006074
Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E., … Zaslavsky, A. M. (2003). Screening for Serious Mental Illness in the General Population. *Archives of General Psychiatry*. https://doi.org/10.1001/archpsyc.60.2.184
Kessler, R. C., Greif Green, J., Gruber, M. J., Sampson, N. A., Bromet, E., Cuitan, M., … Zaslavsky, A. M. (2010). Screening for Serious Mental Illness in the General Population with the K6 screening scale: Results from the WHO World Psychological health (WMH) Survey Initiative. *Int J Methods Psychiatr Res. Int J Methods Psychiatr Res*, *19*(1), 4–22. https://doi.org/10.1002/mpr.310
Klerman, J. A., Daley, K., & Pozniak, A. (2012). *Family and Medical Leave in 2012: Technical Report*. Washington, DC. Retrieved from https://www.dol.gov/asp/evaluation/fmla/FMLA-2012-Technical-Report.pdf
McGovern, P., Dowd, B., Gjerdingen, D., Moscovice, I., Kochevar, L., & Lohman, W. (1997). Time off work and the postpartum health of employed women. *Medical Care*, *35*(5), 507–521. https://doi.org/10.1097/00005650-199705000-00007
Miller, L. J. (2002). Postpartum Depression. *JAMA*, *287*(6), 762.

https://doi.org/10.1001/jama.287.6.762
O'Hara, M. W., & McCabe, J. E. (2013). Postpartum Depression: Current Status and Future Directions. *Annual Review of Clinical Psychology*, *9*(1), 379–407. https://doi.org/10.1146/annurev-clinpsy-050212-185612
Patel, V., Araya, R., Chowdhary, N., King, M., Kirkwood, B., Nayak, S., … Weiss, H. A. (2008). Detecting common mental disorders in primary care in India: a comparison of five screening questionnaires. *Psychological Medicine*, *38*(2), 221–228. https://doi.org/10.1017/S0033291707002334
Petterson, S. M., & Albers, A. B. (2001). Effects of poverty and maternal depression on early child development. *Child Development*, *72*(6), 1794–1813. https://doi.org/10.1111/1467-8624.00379
Prochaska, J. J., Sung, H. Y., Max, W., Shi, Y., & Ong, M. (2012). Validity study of the K6 scale as a measure of moderate mental distress based on psychological health treatment need and utilization. *International Journal of Methods in Psychiatric Research*, *21*(2), 88–97. https://doi.org/10.1002/mpr.1349
Rich-Edwards, J. W. (2006). Sociodemographic predictors of antenatal and postpartum depressive symptoms among women in a medical group practice. *Journal of Epidemiology & Community Health*, *60*(3), 221–227. https://doi.org/10.1136/jech.2005.039370
Rossin-Slater, M. (2017). *Maternity and Family Leave Policy* (Vol. 1). https://doi.org/10.1093/oxfordhb/9780190628963.013.23
Rossin-Slater, M., Ruhm, C. J., & Waldfogel, J. (2013). The Effects of California's Paid Family Leave Program on Mothers Leave-Taking and Subsequent Labor Market Outcomes. *Journal of Policy Analysis and Management*, *32*(2), 224–245. https://doi.org/10.1002/pam
Ruhm, C. J. (2000). Parental Leave and Child Health. *Journal of Health Economics*, *19*(6), 931–960. Retrieved from www.elsevier.nlrlocatereconbase
Segre, L. S., O'Hara, M. W., Arndt, S., & Stuart, S. (2007). The prevalence of postpartum depression. *Social Psychiatry and Psychiatric Epidemiology*, *42*(4), 316–321. https://doi.org/10.1007/s00127-007-0168-1
Staehelin, K., Bertea, P. C., & Stutz, E. Z. (2007). Length of maternity leave and health of mother and child - A review. *International Journal of Public Health*, *52*(4), 202–209. https://doi.org/10.1007/s00038-007-5122-1
Stearns, J. (2015). The effects of paid maternity leave: Evidence from Temporary Disability Insurance. *Journal of Health Economics*, *43*, 85–102. https://doi.org/10.1016/j.jhealeco.2015.04.005
Vliegen, N., Casalin, S., & Luyten, P. (2014). The course of postpartum depression: a review of longitudinal studies. *Harvard Review of Psychiatry*. https://doi.org/10.1097/HRP.0000000000000013
Wang, L., Wu, T., Anderson, J. L., & Florence, J. E. (2011). Prevalence and Risk Factors of Maternal Depression During the First Three Years of Child Rearing. *Journal of Women's Health*, *20*(5), 711–718. https://doi.org/10.1089/jwh.2010.2232
Whitehouse, G., Romaniuk, H., Lucas, N., & Nicholson, J. (2012). Leave Duration After Childbirth: Impacts on Maternal Psychological health, Parenting, and Couple Relationships in Australian Two-Parent Families. *Journal of Family Issues*, *34*(10), 1356–1378. https://doi.org/10.1177/0192513X12459014
Zigler, E., Muenchow, S., & Ruhm, C. J. (2012). Time off with baby: Who gets it and who doesn't. *Zero to Three, July*, 50–54. Retrieved from https://eric.ed.gov/?id=EJ1002685

Table 1: Descriptive statistics

	California				Not California			
	Pre-Law		Post-Law		Pre-Law		Post-Law	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Outcome Variables								
K6 Score	2.409	0.008	2.118	0.085	2.551	0.003	2.555	0.017
K6 Score > 3	0.239	0.009	0.216	0.009	0.265	0.001	0.267	0.002
K6 Score > 5	0.146	0.002	0.133	0.011	0.161	0.004	0.165	0.000
K1 Item (sad)	0.468	0.033	0.366	0.005	0.445	0.013	0.415	0.004
K2 Item (nervous)	0.527	0.041	0.507	0.023	0.593	0.001	0.609	0.006
K3 Item (restless)	0.472	0.017	0.447	0.014	0.571	0.006	0.585	0.006
K4 Item (hopeless)	0.256	0.024	0.209	0.026	0.233	0.004	0.231	0.005
K5 Item (effort)	0.489	0.035	0.458	0.021	0.543	0.004	0.551	0.010
K6 Item (worthless)	0.196	0.010	0.131	0.004	0.166	0.003	0.165	0.002
Mother's demographics								
Race/ethnicity								
White, non-Hispanic	0.317	0.004	0.306	0.012	0.635	0.010	0.582	0.005
Black, non-Hispanic	0.060	0.001	0.068	0.016	0.179	0.004	0.185	0.002
Hispanic	0.524	0.022	0.508	0.028	0.150	0.005	0.185	0.004
Other, non-Hispanic	0.098	0.017	0.118	0.000	0.036	0.001	0.047	0.004
Maternal education								
Less than high school	0.322	0.005	0.248	0.008	0.167	0.006	0.151	0.006
High school	0.050	0.005	0.040	0.009	0.021	0.001	0.020	0.000
Some college	0.329	0.053	0.389	0.004	0.477	0.009	0.468	0.001
College or higher	0.300	0.043	0.323	0.013	0.335	0.001	0.361	0.005
Mother's age at child's birth								
Less than 20 years	0.036	0.008	0.034	0.005	0.042	0.002	0.046	0.005
20 - 29 years	0.423	0.018	0.387	0.018	0.499	0.004	0.481	0.007
30 -39 years	0.398	0.001	0.419	0.010	0.360	0.006	0.361	0.003
40+ years	0.142	0.012	0.161	0.012	0.100	0.000	0.112	0.001
Mother's marital status								
Married, living with spouse	0.667	0.005	0.619	0.030	0.633	0.008	0.573	0.000
Cohabiting	0.088	0.004	0.104	0.010	0.074	0.004	0.094	0.001
Living alone	0.245	0.001	0.277	0.020	0.293	0.004	0.333	0.002
Mother's birth place								
Foreign	0.468	0.027	0.437	0.022	0.153	0.003	0.185	0.003
U.S.	0.532	0.027	0.562	0.022	0.846	0.003	0.815	0.003
Financial Hardship								
Total family income	56164	1941	65779	3200	50816	1447	56107	702

<= $35,000	0.154	0.017	0.324	0.008	0.173	0.006	0.363	0.001
> $35,000	0.168	0.023	0.409	0.031	0.192	0.004	0.441	0.001
Missing	0.678	0.040	0.267	0.023	0.635	0.001	0.196	0.002
Child's Demographics								
Child age								
0 years	0.485	0.017	0.552	0.027	0.473	0.003	0.555	0.014
1 year	0.515	0.017	0.448	0.027	0.527	0.003	0.445	0.014
Parity								
Firstborn	0.298	0.003	0.289	0.003	0.370	0.006	0.358	0.004
Second-born or higher	0.702	0.003	0.711	0.003	0.630	0.006	0.642	0.004
Gender								
Male	0.485	0.017	0.494	0.130	0.494	0.010	0.491	0.005
Female	0.515	0.017	0.506	0.013	0.506	0.010	0.509	0.005
Observations	726		926		4242		5788	

Note: Data are for women with children under the age of 2 years from the 2000 to 2010 National Health Interview Surveys. All statistics are weighted by the NHIS person weights. The pre-law period refers to mothers of children born from 1998 to June 30, 2004; the post-law period refers to mothers of children born from July 1, 2004 to 2010. Stars indicate significant differences between pre-law and post-law means within groups.
** p<0.01, * p<0.05

Table 2: Estimated effects of CA-PFL on maternal psychological health

	(1)	(2)	(3)	(4)	(5)	(6)
	K6	**K6**	**K6 > 5**	**K6 > 5**	**K6 > 3**	**K6 > 3**
CA*Post	-0.424***	-0.696**	-0.0343***	-0.023	-0.0567***	-0.0751***
	(0.071)	(0.210)	(0.006)	(0.015)	(0.009)	(0.019)
Observations	11,682	11,682	11,682	11,682	11,682	11,682
R-squared	0.001	0.071	0.000	0.060	0.001	0.059
Individual Controls	NO	YES	NO	YES	NO	YES
Birth Year FE	NO	YES	NO	YES	NO	YES
State FE	NO	YES	NO	YES	NO	YES
State Linear Trends	NO	YES	NO	YES	NO	YES

Note: Cluster-robust standard errors in parentheses, clustered at the state level. Coefficient of interest for DD specification is shown. Individual controls include dummies for maternal race (White, Black, Hispanic, Other), maternal education (less than high school, high school, some college, 4-year college degree or greater), maternal age at child's birth (less than 20 years, 20-29 years, 30-39 years, 40 years or greater), maternal marital status (married and living with spouse, cohabiting, living alone), mother's place of birth (foreign, U.S.), child's age (0 years, 1 year), child parity (firstborn, second-born or higher), and child gender. K6 indicates model with the full K6 scale (0-24) as the outcome; K6 > 5 indicates model estimating the probability of a K6 score greater than 5; K6 > 3 indicates model estimating the probability of a K6 score greater than 5. *** p<0.001, ** p<0.01, * p<0.05

Table 3: Heterogeneous effects on maternal psychological health

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	K6	**K6 > 3**	**K6 > 5**	**K6**	**K6 > 3**	**K6 > 5**	**K6**	**K6 > 3**	**K6 > 5**	**K6**	**K6 > 3**	**K6 > 5**
Panel A: Race		*White*			*Black*			*Hispanic*			*Other*	
CA*Post	-1.354***	-0.155***	-0.114***	-2.155***	-0.234***	-0.216***	-0.838*	-0.059	-0.022	1.703*	0.071	0.167*
	(0.239)	(0.025)	(0.022)	(0.347)	(0.042)	(0.041)	(0.361)	(0.042)	(0.025)	(0.747)	(0.091)	(0.069)
Observations	5,805	5,805	5,805	2,334	2,334	2,334	4,076	4,076	4,076	667	667	667
R-squared	0.095	0.076	0.081	0.085	0.079	0.069	0.081	0.077	0.074	0.257	0.224	0.263
Panel B: Education		*Less than High School*			*High School*			*Some College*			*College or Higher*	
CA*Post	-0.553	-0.045	-0.006	-1.273	-0.011	-0.006	-1.845***	-0.240***	-0.117***	0.946**	0.0969***	0.0590*
	-0.430	-0.050	-0.043	-1.529	-0.212	-0.195	-0.243	-0.025	-0.024	-0.280	-0.028	-0.025
Observations	2,821	2,821	2,821	343	343	343	5,808	5,808	5,808	3,910	3,910	3,910
R-squared	0.111	0.101	0.093	0.383	0.336	0.355	0.063	0.058	0.056	0.075	0.062	0.056
Panel C: Marital Status		*Married, Living with Spouse*			*Cohabiting*			*Living Alone*				
CA*Post	-0.104	-0.013	0.009	-1.465*	-0.117	-0.095	-2.077***	-0.246***	-0.126***			
	-0.165	-0.016	-0.016	-0.697	-0.107	-0.080	-0.310	-0.034	-0.027			
Observations	7,354	7,354	7,354	1,189	1,189	1,189	4,339	4,339	4,339			
R-squared	0.055	0.047	0.041	0.128	0.163	0.144	0.061	0.051	0.057			
Panel D: Birth Place		*US-Born*			*Foreign-Born*							
CA*Post	-1.560***	-0.130***	-0.0922***	0.276	-0.019	0.035						
	-0.215	-0.020	-0.018	-0.388	-0.047	-0.033						
Observations	9,445	9,445	9,445	3,437	3,437	3,437						
R-squared	0.077	0.061	0.067	0.079	0.072	0.075						
Panel E: Income		*Less than or equal to $35,000*			*Greater than $35,000*			*Missing*				
CA*Post	-2.239***	-0.237***	-0.178***	-0.169	-0.0725*	-0.022	-0.001	0.035	0.0880*			
	-0.281	-0.031	-0.023	-0.230	-0.030	-0.019	-0.418	-0.035	-0.037			

Observations	3,759	3,759	3,759	3,674	3,674	3,674	5,449	5,449	5,449			
R-squared	0.083	0.070	0.075	0.065	0.060	0.057	0.091	0.080	0.084			
Panel F: Child Age	*Child is less than 12 months old*			*Child is 12-23 months old*								
CA*Post	-1.023***	-0.118***	-0.0967***	-0.613*	-0.0658*	0.023						
	-0.243	-0.025	-0.021	-0.260	-0.030	-0.026						
Observations	6,690	6,690	6,690	6,192	6,192	6,192						
R-squared	0.072	0.065	0.068	0.081	0.063	0.062						
Panel G: Parity	*Child is firstborn*			*Child is second-born or higher*								
CA*Post	-0.219	0.016	-0.009	-1.050***	-0.137***	-0.0581**						
	-0.282	-0.030	-0.027	-0.223	-0.022	-0.019						
Observations	4,286	4,286	4,286	8,596	8,596	8,596						
R-squared	0.079	0.068	0.071	0.074	0.065	0.063						
Individual Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Birth Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
State Linear Trend	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Note: Cluster-robust standard errors in parentheses, clustered at the state level. Coefficient of interest for DD specification is shown. Individual controls include dummies for maternal education (less than high school, high school, some college, 4-year college degree or greater), maternal age at child's birth (less than 20 years, 20-29 years, 30-39 years, 40 years or greater), maternal marital status (married and living with spouse, cohabiting, living alone), mother's place of birth (foreign, U.S.), child's age (0 years, 1 year), child parity (firstborn, second-born or higher), and child gender. K6 indicates model with the full K6 scale (0-24) as the outcome; K6 > 5 indicates model estimating the probability of a K6 score greater than 5; K6 > 3 indicates model estimating the probability of a K6 score greater than 5.
*** p<0.001, ** p<0.01, * p<0.05

Table 4: Estimates with varying numbers of years

	1999-2009			2000-2008			2001-2007			2002-2006		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	K6	K6 > 5	K6 > 3	K6	K6 > 5	K6 > 3	K6	K6 > 5	K6 > 3	K6	K6 > 5	K6 > 3
CA*Post	-0.720**	-0.017	-0.0616**	-0.569*	0.023	-0.020	-1.026***	-0.020	-0.051	-1.033***	-0.020	-0.0725**
	(0.233)	(0.017)	(0.021)	(0.239)	(0.019)	(0.022)	(0.223)	(0.025)	(0.028)	(0.218)	(0.02)	(0.026)
Observations	10268	10268	10268	8157	8157	8157	5859	5859	5859	3843	3843	3843
R-squared	0.075	0.066	0.064	0.076	0.068	0.065	0.084	0.077	0.077	0.086	0.081	0.087
Individual Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Birth Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
State Linear Trends	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Appendix Table A1: Estimated pre-law trends in maternal psychological health

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	K6 Score	**K6 > 5**	**K6 > 3**	**K1**	**K2**	**K3**	**K4**	**K5**	**K6**
Trend*NonCA	0.094	0.010	0.008	0.032	0.024	0.028	-0.004	0.008	0.007
	(0.097)	(0.009)	(0.011)	(0.021)	(0.022)	(0.024)	(0.018)	(0.025)	(0.016)
Trend	-0.042	-0.003	-0.002	-0.025	-0.021	-0.014	0.009	0.006	0.003
	(0.09)	(0.008)	(0.01)	(0.019)	(0.02)	(0.021)	(0.017)	(0.023)	(0.015)
Not California	-0.279	-0.022	-0.024	-0.104	-0.070	-0.072	0.037	-0.035	-0.036
	(0.411)	(0.038)	(0.045)	(0.088)	(0.097)	(0.103)	(0.073)	(0.106)	(0.066)
Constant Term	1.400**	0.044	0.194**	0.364**	0.555***	0.306*	-0.005	0.139	0.042
	(0.535)	(0.051)	(0.062)	(0.118)	(0.125)	(0.141)	(0.095)	(0.142)	(0.086)
Observations	5,728	5,728	5,728	5,728	5,728	5,728	5,728	5,728	5,728
R-squared	0.058	0.049	0.040	0.066	0.027	0.038	0.047	0.040	0.030
Individual controls	YES	YES	YES	YES	YES	YES	YES	YES	YES

Note: Cluster-robust standard errors in parentheses, clustered at the state level. Coefficient of interest for DD specification is shown. Individual controls include dummies for maternal race (White, Black, Hispanic, Other), maternal education (less than high school, high school, some college, 4-year college degree or greater), maternal age at child's birth (less than 20 years, 20-29 years, 30-39 years, 40 years or greater), maternal marital status (married and living with spouse, cohabiting, living alone), mother's place of birth (foreign, U.S.), child's age (0 years, 1 year), child parity (firstborn, second-born or higher), and child gender. K6 indicates model with the full K6 scale (0-24) as the outcome; K6 > 5 indicates model estimating the probability of a K6 score greater than 5; K6 > 3 indicates model estimating the probability of a K6 score greater than 5.
*** p<0.001, ** p<0.01, * p<0.05

Appendix Table A2: Estimated effects of CA-PFL on maternal psychological health with individual controls shown

	(1)	(2)	(3)
	K6	**K6 > 5**	**K6 > 3**
CA*Post	-0.696**	-0.023	-0.0751***
	(0.21)	(0.015)	(0.019)
Mother's demographics			
Race/ethnicity			
White, non-Hispanic	REF	REF	REF
Black, non-Hispanic	-0.496***	-0.0386***	-0.0462*
	(0.133)	(0.01)	(0.018)
Hispanic	-0.153	-0.007	-0.027
	(0.137)	(0.012)	(0.017)
Other, non-Hispanic	0.107	0.028	-0.005
	(0.16)	(0.016)	(0.019)
Maternal education			
Less than high school	REF	REF	REF
High school	-0.704*	-0.024	-0.027
	(0.267)	(0.027)	(0.037)
Some college	-0.628***	-0.0426**	-0.0366*
	(0.127)	(0.014)	(0.014)
College or higher	-1.316***	-0.118***	-0.117***
	(0.133)	(0.014)	(0.013)
Mother's age at child's birth			
Less than 20 years	REF	REF	REF
20-29 years	0.746***	0.0627***	0.048
	(0.162)	(0.015)	(0.024)
30-39 years	0.638***	0.0482**	0.033
	(0.182)	(0.017)	(0.025)
40+ years	1.224***	0.0980***	0.0779**
	(0.198)	(0.021)	(0.026)
Mother's marital status			
Married, living with spouse	REF	REF	REF
Cohabiting	0.617***	0.0563***	0.0755***
	(0.108)	(0.013)	(0.016)
Living alone	1.253***	0.107***	0.121***
	(0.099)	(0.01)	(0.012)
Mother born in U.S.	0.488***	0.0350**	0.0352*

	(0.109)	(0.01)	(0.013)
Child's demographics			
Child age in years	0.115	0.010	0.013
	(0.073)	(0.007)	(0.008)
Parity			
Firstborn	REF	REF	REF
Second-born or higher	0.253*	0.0318**	0.021
	(0.098)	(0.01)	(0.013)
Gender			
Male	-0.043	-0.005	-0.005
	(0.089)	(0.009)	(0.008)
Constant Term	2.153***	0.131***	0.241***
	(0.296)	(0.03)	(0.033)
Observations	11,682	11,682	11,682
R-squared	0.071	0.060	0.059
Individual Controls	YES	YES	YES
Birth Year FE	YES	YES	YES
State FE	YES	YES	YES
State Linear Time Trends	YES	YES	YES

Note: Cluster-robust standard errors in parentheses, clustered at the state level. K6 indicates model with the full K6 scale (0-24) as the outcome; K6 > 5 indicates model estimating the probability of a K6 score greater than 5; K6 > 3 indicates model estimating the probability of a K6 score greater than 5.
*** p<0.001, ** p<0.01, * p<0.05

Appendix Table A3: Estimated effects of CA-PFL on individual K6 item scores

	(1)	(2)	(3)	(4)	(5)	(6)
	Sad	**Nervous**	**Restless**	**Hopeless**	**Effort**	**Worthless**
CA*Post	-0.184***	0.078	-0.124*	-0.113**	-0.244***	-0.108***
	(0.038)	(0.045)	(0.050)	(0.034)	(0.058)	(0.029)
Observations	11,682	11,682	11,682	11,682	11,682	11,682
R-squared	0.067	0.046	0.054	0.052	0.059	0.036
Individual Controls	YES	YES	YES	YES	YES	YES
Birth Year FE	YES	YES	YES	YES	YES	YES
State FE	YES	YES	YES	YES	YES	YES
State Linear Trends	YES	YES	YES	YES	YES	YES

Note: Cluster-robust standard errors in parentheses, clustered at the state level. Outcomes represent the six individual items of the K6 scale, asking respondents how often in the past 30 days they felt sad; nervous; restless; hopeless; like everything is an effort; and worthless. Responses on a scale of 0=none of the time to 4=all of the time.
*** p<0.001, ** p<0.01, * p<0.05