The Impact of Paid Leave:

Evidence from Temporary Disability Insurance in Rhode Island*

Zakary Campbell† Ian Chin† Eric Chyn‡ Justine Hastings§

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Abstract

This paper provides new evidence on the effects of paid maternity leave on both mothers and their children by exploiting income thresholds that affect program eligibility for Temporary Disability Insurance in the state of Rhode Island. We use comprehensive administrative data and a regression discontinuity design to estimate impacts on a wide range of outcomes for very low-income mothers and their children. Outcomes include measures of labor market activity, social safety net participation, health outcomes for mothers and infants, as well as test scores for infants once they reach third grade. We find no significant impacts of paid leave on a mother's labor market activity or measures of maternal or child health and well-being among women near the threshold of qualification. However we do find positive and significant impacts on future disability insurance use in some specifications. We extend our analysis to higher-income mothers using regularized regression and machine learning techniques to optimally control for an unprecedented number of observable characteristics from administrative data sources. We find positive and significant impacts of TDI benefits claiming on earnings and employment, Medicaid enrollment, and future TDI benefits claiming. We find some evidence that TDI benefits claiming lowers subsequent Temporary Assistance for Needy Families (TANF) enrollment. We caution that, unlike the regression discontinuity estimates, these results may be subject to selection bias on unobservable characteristics, and demonstrate that machine-learning-based estimates are closer to zero than OLS estimates. We do not find significant impacts on measures of child health and development.

Keywords: social insurance, disability insurance, maternity leave, female labor supply, motherhood wage penalty, childhood development

JEL: H4, J08, J13, J16, J78

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†Brown University and RIIPL
‡University of Virginia and RIIPL
§Brown University, NBER, and RIIPL. Corresponding author: justine_hastings@brown.edu.

1 Introduction

To support working-women and their children, U.S. policymakers are considering legislation to create paid maternity leave programs. Proponents argue paid leave supports mothers "who cannot set aside sufficient funds for saving" (Mathur et al. 2017) by helping them "...achieve the goals of parent and child bonding, family care, children and family health, workforce stability, and economic security" (Washington State 2013).[1] While the 1993 Family Medical Leave Act (FMLA) requires that employers provide 12 weeks of unpaid leave,[2] there is no national paid leave policy, and only 12 percent of workers have access to paid leave through their private sector employer (DOL 2015).

Women in five states (California, Hawaii, New Jersey, New York, and Rhode Island) can currently access paid leave through Temporary Disability Insurance (TDI) programs. These programs cover pregnancy and postpartum recovery as temporary injuries allowing new mothers access to funds from the Unemployment Insurance (UI) system. Mothers who have worked enough to qualify for UI can withdraw up to 30 weeks of paid leave for pregnancy or recovery from pregnancy. Full allotment of TDI benefits can only be received when a mother is not working,[3] and a mother with paid maternity leave can claim TDI benefits in addition to receiving any maternity leave benefits provided by her employer. Several more states have proposed mandating paid maternity leave through UI funded systems (A Better Balance 2016).[4]

This paper uses administrative data from Rhode Island to provide new evidence on how mothers use maternity leave and whether paid leave improves outcomes of mothers and their children.[5] The records include over two decades of anonymized data on TDI claims, births and administrative and survey measures of maternal and child health outcomes. We examine the impact of paid leave provided through TDI on mother's workforce participation and earnings post-birth, as well as on future participation in social programs such as Temporary Disability Insurance, Supplemental Security Income (SSI), Temporary Assistance for Needy Families (TANF), Supplemental Nutrition Assistance Program (SNAP), and Medicaid. Further, we test for effects on measures of child health and development. These include measures of health at birth such as birth weight, on-time

[1] See also Boushey et al. 2013.

[2] FMLA eligibility only applies to individuals who work in firms with 50 or more employees.

[3] Recipients can work part time while receiving TDI benefits as long as they earn less than their weekly benefit rates. Benefits of part-time working recipients adjust downward so that the combined compensation from part-time work and benefits totals up to the weekly TDI benefit rate in the absence of part-time work.

[4] As of 2014, new mothers and fathers in Rhode Island can claim up to four weeks of TDI benefits–potentially in addition to benefits claimed for disability due to pregnancy–for bonding with a newborn child through a new program called Temporary Caregiver Insurance (TCI).

[5] The data are housed in a secure facility at the Rhode Island Innovative Policy Lab (RIIPL) at Brown University. Personally identifiable information has been removed from the data and replaced with anonymous identifiers that make it possible for approved researchers to analyze records associated with the same individual while preserving anonymity.

immunization, and standardized test scores.

We begin our analysis of the administrative data by documenting several descriptive facts about paid maternity leave provided through the TDI system. First, we find that mothers who qualify for TDI with earnings just above the eligibility threshold are 35% less likely to claim TDI benefits than mothers who qualify for TDI and live in households with moderately higher earnings. Mothers claim benefits both before and after birth; overall, 59% of mothers claim benefits after birth. Across the income distribution, mothers who claim TDI take 10-11 weeks of paid leave.

We study the causal impacts of paid leave using a regression-discontinuity (RD) approach based on a discrete cutoff in program eligibility for TDI. Workers with a medically-verified temporary injury (which includes pregnancy) qualify for TDI if their earnings (and thus contributions to the UI system) exceed a minimum amount in the year before claim filing. The earnings threshold is low, at approximately $10,000,[6] allowing us to measure causal impacts on very low-income mothers, those who are least likely to save to cover basic needs during time off of work and also less likely to have employer-provided paid maternity leave from full time employment.[7]

We present RD results for two samples. First, we use the claims data to create a sample of claim filers, and compare those whose claims were accepted versus rejected as a function of threshold crossing. Among new mothers who file TDI claims, crossing the earnings eligibility threshold increases the probability of receiving paid leave by 81.7 percentage points, increases the weeks of TDI leave taken by 7.3 weeks, and the total amount of TDI benefits received by $842. Second, we use a sample of all births in Rhode Island. Among all new mothers, regardless of claim filing, threshold crossing increases the probability of receiving paid leave by 20.1 percentage points from 2.6%, the weeks of TDI leave taken by 1.76 weeks, and the total amount of TDI benefits received by $211. Both RD samples are valid: baseline characteristics do not change significantly across the threshold and the density of earnings is smooth across the threshold.

We do not find a significant impact of TDI-based paid leave on labor market activity. Measures of labor market outcomes include employment, earnings, earnings conditional on employment, and whether the mother returned to work at the employer she primarily worked at prior to giving birth. We measure these outcomes at three time intervals: in the fourth quarter after birth, in quarters 4 through 7 after birth (the year following one year after birth), and in quarters 4 through 11 after birth (the two years following one year after birth). We find no significant impact of TDI benefits

[6]The earnings threshold for a given claimant depends on the composition of her wages in the prior year. While $10,000 is an approximate threshold for many claimants, the threshold can be as low as $4,000.

[7]The RIIPL database contains information on father's earnings at birth as well as qualification for means-tested social programs, allowing us to focus on low-earning mothers in low-earning households.

receipt on any of these measures of a mother's labor force outcomes.

We next measure impacts of paid leave benefits receipt on subsequent use of social safety net programs such as further use of TDI for pregnancy or non-pregnancy-related injury, enrollment in Permanent Disability Insurance or Supplemental Security Income programs, Supplemental Nutrition Assistance (SNAP), Medicaid, and Temporary Assistance for Needy Families (TANF). The only significant impact we detect is a positive effect on Supplemental Security Income (SSI) enrollment.

Finally, we measure impacts on child health at birth and early life outcomes. Approximately 25% of TDI-using mothers apply for benefits at least 2 weeks before birth. Among these mothers who claim benefits before birth, we examine the impact of TDI qualification on birth outcomes. Our main outcomes of interest include gestational weeks, birth weight, APGAR score (measure of physical condition at birth), and the number of days the infant spent in the NICU. We measure the impact of TDI receipt on measures of investments in child care, child development, and family planning by examining the impact of TDI benefits on whether the mother accepted invitations for a home visiting program offered in Rhode Island to very low income mothers,[8] mother's fertility within the next three years, whether the child received on-time immunizations by age 2, whether the child developed the need for special education once at school age, and standardized test scores once the child reached third grade. We find marginally significant (10% level) and positive impacts on NICU Days and whether the child needed an Individualized Education Plan once of schooling age.

The regression discontinuity approach measures causal impacts free of bias from selection into TDI receipt. That said, it only allows us to infer causal impacts for mothers with earnings near the eligibility threshold - very low-earning mothers. The TDI program is available to all mothers, and it may be the case that mothers (and their newborns) with incomes above the TDI qualification threshold experience significant benefits from paid leave. While we do not have exogenous variation in TDI benefits away from the qualification threshold, we can control for an unprecedented range of observable characteristics available in the anonymized and secure administrative database. We estimate the impact of TDI benefits on outcomes for mothers in households earning below $20,000 and between $20,000 and $40,000 in the base year. We select controls using Double LASSO, a machine learning technique for dimension reduction and choosing optimal control variables developed in Belloni et al. (2012) and Belloni et al. (2014). We allow the Double LASSO algorithm to select optimal controls from over 10,000 controls which include race and ethnicity, age, marital status,

[8]The First Connections home visiting program connects contacts and offers home visiting ot low-income, at risk mothers. It provides them with information and assistance on childcare and rearing as well as state-provided resources for mothers in need. It is offered right after birth.

wages, social assistance program use, and employment history, as well as interactions between these covariates and higher-order polynomials.

In the Double LASSO analysis, we find positive and significant impact of TDI paid leave on the probability that a mother returns to work after birth. The impacts decrease with household income, and range from 3.3 to 9.9 percentage points. We also find significant impacts on earnings in the fourth quarter, year, and two years following birth for mothers in households earning less than $20,000 per year of between $383 and $1,432. We do not find sustained positive and significant impacts on earnings for mothers with household earnings between $20,000 and $40,000 per year. We find positive and significant impacts on returning to the same employer only for mothers earning $20,000 or less per year. We show that Double LASSO lowers point estimates on all earnings outcomes toward zero relative to traditional OLS regression estimates (which control for researcher-selected covariates), suggesting that selection on unobservable characteristics works to overstate impacts of TDI benefits on mother's labor force participation.

Double LASSO estimates also indicate lower enrollment in TANF, consistent with the estimated effects on earnings. However, they also indicate higher enrollment in Medicaid, and higher future use of TDI over the next two years after giving birth. We find no significant impacts on investments in child outcomes, though we do find some evidence of lower fertility in the three years following birth among households earning less than $20,000 per year.

Overall, these findings contribute to the literature on the effects of paid leave for mothers. For mother's outcomes, previous studies in the U.S. explore the introduction of paid leave in California (CA-PFL) using state-level differences-in-difference approaches. Rossin-Slater et al. (2013) use the March Current Population Survey and compare mothers in California who had a child born after the CA-PFL introduction to those with children born before the CA-PFL introduction. They find that mothers with young children (born after CA-PFL introduction) experienced 10 to 17 percent higher weekly reported work hours. Baum and Ruhm (2016) use data from the National Longitudinal Survey of Youth to compare California mothers before and after the CA-PFL to corresponding mothers in other states. They find that the introduction of CA-PFL-covered mothers has an18-percentage point increase in the probability of reporting working one year after childbirth. In contrast to these findings, we find no statistically significant impacts and our RD-estimate allows us to rule out effect sizes larger than 13 percentage points on a mother's employment probability in the year after birth. More generally, our RD-estimates on labor market effects are more consistent with studies of parental leave in Europe and Canada (Baker and Milligan, 2008; Dustmann and Schonberg, 2012; Carneiro et al., 2015; Dahl et al., 2016). For example, Carneiro et al. (2015) use

administrative data to examine Norway's introduction of paid maternity leave in 1977 finding that there were small and not significant effects on a mother's employment two or five years after birth.

Our findings also contribute to a related-literature on the effects of maternity leave on child outcomes. Rossin (2011) studies unpaid leave through the Family Medical Leave Act (FMLA) finding that the introduction of FMLA increased average birth weight by six grams and reduced infant mortality by ten percent for the subsample of married women with a college education. Most closely related to our paper, Stearns (2015) studies the introduction of paid leave in the five U.S. states that provide coverage through the TDI system. She finds that the introduction of TDI coverage of maternity leave in 1978 raised average birth weight by about 5 grams and reduced rates of low-weight births. However, administrative records on leave taking were not available for her study, which implies the results include all mothers regardless of whether leave was taken or when leave was taken relative to birth. Our point estimates for birth outcomes are not significant, but are not in strong contrast to these findings due to a lack of precision. We show that only a minority of women take TDI pre-birth and in time to impact health outcomes at birth. In terms of childhood outcomes, the fact that we find no impact on child test scores is consistent with Dahl et al. (2016) and Baker and Milligan (2010) which study children affected by maternity leave expansions in Norway and Canada, respectively.

2 Background

While the U.S. is the only developed nation without a national policy to guarantee paid leave, pregnant women in California, Hawaii, New Jersey, New York and Rhode Island can access paid leave through state TDI programs. These TDI programs are payroll-tax funded and provide short-term, partial wage replacement to workers who have non-work-related health conditions (including pregnancy).

In Rhode Island, the wage replacement rate for TDI is approximately 60 percent, and workers can receive weekly TDI benefits for up to 30 weeks. Table 1 illustrates the average weekly benefits from TDI and shows that low-income workers earning $10,000 annually would be entitled to receive nearly $3,500 if they take the full 30 weeks of paid-leave allowed under the TDI program.[9] Across all the states that currently offer TDI, the benefit levels are generally similar.[10]

Eligibility for TDI in Rhode Island is based on having sufficiently high earnings in a "base

[9]The weekly TDI rate is set at 4.62 percent of the highest total quarterly wages earned during the quarters considered for the base period, with weekly benefits capped at $817. Thus, the replacement rate provided through TDI is about 60 percent for individuals under the cap.

[10]See Figure 1 in Fass (2009) for a summary of the benefit levels across the different states.

period" which is defined as the first four of the five most recent calendar quarters preceding a TDI claim; if an individual does not qualify through his or her base period earnings, he or she may qualify through the "alternate base period," which is the most recent four completed calendar quarters. Specifically, individuals are eligible for TDI if their base period earnings are at least 1,200 times the Rhode Island minimum wage. For example, based on the 2016 minimum wage of $9.60, an individual would qualify for TDI if their baseline (base or alternate base) period earnings exceeded $11,520. Alternatively, individuals are eligible for TDI if they satisfy all of the following conditions: (1) their total baseline period earnings are at least 400 times the minimum wage ($3,840 based on the 2016 minimum wage); (2) their earnings are at least 200 times the minimum wage in one quarter of the base period ($1,920 based on the 2016 minimum wage); and (3) their total baseline period earnings are at least 1.5 times the highest quarterly earnings captured during their baseline period. While the large majority of monetarily eligible cases (85 percent) qualify using the first qualification rule (earnings at least 1,200 times the RI minimum wage), we use both types of earnings-based eligibility criteria to construct the running variable for our analysis, as near the qualification threshold, most mothers qualify under the second method rather than the first.[11]

Women who are qualified based on earnings must obtain certification from a medical practitioner verifying their pregnancy. Unlike long-term disability programs, there is no waiting period for TDI benefits. If a pregnant woman receives paid leave through TDI, they must not work and are ineligible for unemployment benefits. Notably, TDI does not provide any employment protection to workers although mothers may also simultaneously take job-protected leave under the Family Medical Leave Act, and taking TDI does not diminish paid maternity leave if available through an employer.

3 Data

The data for our analysis come from the RIIPL relational database. RIIPL is a collaboration between Brown University and the Office of the Governor of Rhode Island to establish a database environment that can support research and evidenced-based policy improvements using comprehensive data and state-of-the-art empirical methodologies. RIIPL's RI-360 database houses administrative data from the major Rhode Island government agencies in a highly secure environment. Personally identifiable information has been removed from the data and replaced with anonymous identifiers that make it possible for researchers with approved access to join and analyze records associated

[11] Appendix Section A provides further details on the construction of the running variable for our analysis.

with the same individual while preserving anonymity.

3.1 Sample Construction

We use data on 246,981 births which were recorded in Rhode Island from 1994Q1 to 2017Q1.[12] In 97,210 births, the mother filed a TDI claim according to TDI administrative claims records.[13] To measure outcomes before and after birth, we examine unemployment insurance and earnings data, social assistance program enrollment, and child schooling outcomes.[14] We add additional outcomes from immunization records, state-run home visiting programs, and survey responses from the Center for Disease Control's Pregnancy Risk Assessment Monitoring Survey (PRAMS). Overall, we are able to examine a wide-range of outcomes in de-identified and anonymized records for mothers and their children.

4 Statistics on TDI Use

We begin by examining qualification and take up of TDI paid leave among mothers. Figure 1 shows the relationship between qualification for TDI and household income. Specifically, we plot the fraction of mothers qualified (circle plot) in $500 bins of household income. As expected given the eligibility rules, many mothers from low-income households are not qualified. (Note qualification as a function of base period earnings varies for mothers earning less than $10,000 due to the different qualification methods described in Section 2). Figure 1 also shows the fraction of qualified women who file for TDI (diamond plot) by bins of household income. There is a notable increase in filings as household income increases. Specifically, mothers who qualify for TDI and live in households earning less than $10,000 per year are 35% less likely to file for TDI relative to qualified mothers from households earning between $10,000 and $30,000 per year.

Figure 2 plots the average number of weeks (diamond plot) and average total benefits received (circle plot) for bins of household income.[15] The number of TDI benefit weeks claimed are relatively constant across income levels at around 10-11 weeks. As expected, the benefit amount increases for higher income households because these claimants have higher earnings.

Finally, we also explore the timing of TDI claims relative to birth for mothers from households

[12] We exclude most mothers who gave birth in 2004Q3-2005Q3 due to a lack of UI data needed to construct their running variable. 2004Q2 UI data are missing from historic administrative records.

[13] We match a TDI claim to a birth if the claim is coded in the administrative data as pregnancy-related and falls within 280 days before through 6 weeks after the infant's birth date.

[14] Unemployment Insurance data includes virtually all employees in RI, including agricultural and domestic workers.

[15] All statistics are computed using only the sample of individuals who claim TDI.

with different levels of income. Figure 3 shows box and whisker plots for filing dates relative to birth (delivery date) by $10,000 bins of household income. The plot for each household income group shows that the median (white line) relative filing date is always positive; most mothers take paid leave shortly after birth regardless of income. Similarly, the top and bottom of each box plot shows that the 75th and 25th percentile filing dates are very similar across the household income distribution. Overall, mothers with higher or lower household earnings have similar use of TDI as far as weeks of TDI benefits claimed and timing of claims relative to delivery date.

5 Empirical Model

To identify the causal effect of paid leave, we rely on the fact that program eligibility varies sharply based on previous earnings histories. Workers in Rhode island are eligible for TDI if their baseline period earnings exceed certain threshold qualification rules. The qualification rules in Section 2 reduce into two main ways to earn enough to qualify for benefits. The first is to earn consistently enough over four prior quarters to reach the main qualification method. The second is to earn a large enough amount in one quarter given low, but sufficiently high contributions in surrounding quarters. This second method is the method that the majority of low-income filers qualify by. It contains three sub-qualification requirements, yielding three ways to cross the threshold to qualification.[16]

We use the qualification rules to create four sub-samples of individuals who are near the threshold of TDI qualification – one subsample for each qualification method. Each subsample is based on the difference between an individual's base period earnings and the cutoff for eligibility for TDI under each qualification method. We use the maximum value of the difference under each qualification measure to assign individuals to mutually exclusive samples (one qualification margin for the first method of qualifying, and three margins for the second type of qualification which is composed of three requirements). We stack these samples to measure the impact of qualifying for TDI, and include method-of-qualification fixed-effects in all of our estimation equations.

With this measure of eligibility, we estimate the impact of paid leave using the following 2SLS equations:

$$TDI_i = \alpha_0 + \alpha_1 1(q_i \geq 0) + \alpha_{2,m}\, f(q_i) + \alpha_{3,m}\, f(q_i) \times 1(q_i \geq 0) + \nu_i \tag{1}$$

$$y_i = \beta_0 + \beta_1 TDI_i + \beta_{2,m}\, f(q_i) + \beta_{3,m}\, f(q_i) \times 1(q_i \geq 0) + \Gamma X_i + \epsilon_i \tag{2}$$

[16]Recall that there are two different qualification rules which allow individuals to qualify for TDI. Over 95 percent of all TDI cases in our RD sample qualify based on qualification method 2 as detailed in Appendix A.

where q_i is the running variable defined as the difference between base period earnings for individual "i" and the earnings-based qualification methods describe above. An individual who is is exactly qualified to receive paid leave through TDI will have $q_i = 0$. We allow for quadratics in q_i, and allow the coefficients on all running variable terms to vary with qualification method, m. The variable TDI_i is an indicator for program take-up. In the second stage, we study the impact of TDI_i on outcome y_i by exploiting the variation in take-up generated from crossing the eligibility threshold. Baseline control variables $\mathbf{X_i}$ improve precision of the estimates. We select $\mathbf{X_i}$ using a machine learning algorithm called Double LASSO (Belloni et al. 2012, 2014). This regularized regression dimension-reduction approach selects optimal controls to avoid over-fitting while increasing estimate precision. Estimates of $\beta_1$represent the causal impact of TDI only if potential outcomes evolve smoothly around the earnings-based cutoff for TDI eligibility. (In the Appendix, we provide evidence to support the identifying assumptions necessary for this regression discontinuity approach, namely that the density of base period earnings around the threshold is smooth and that threshold crossing does not cause significant differences in baseline characteristics).

Table 2 presents summary statistics comparing characteristics of all families with a birth in Rhode Island during our sample period, all families claiming TDI benefits regardless of income, and our two RD samples (All Births in the RD window, and All Claimants in the RD window, where a Claimant is anyone who filed a TDI claim whether it was rejected or accepted). The RD samples are slightly more likely to be minority, younger on average at the time of birth, more likely to be a teenage mother, less likely to be married at the time of birth, have lower income for mother, and are substantially more likely to be enrolled in means-tested social assistance programs such as SNAP, TANF, and Medicaid. They are also more likely to be employed in retail trades or in the food or accommodation services industries prior to giving birth.

6 Results

For all outcomes, we plot means in bins of $100 to visually illustrate the impact of threshold crossing on outcomes of interest in Figures 4 through 11. Each figure shows observations for mothers who are within -$1,000 and $1,000 of the TDI eligibility cutoff. We use this same window to estimate Equations (1) and (2) and provide estimates of the impact TDI benefits has on outcomes of interest in Tables 3 through 8.

6.1 Evidence on Identifying Assumptions

Our analysis relies on the assumption that all other factors other than the receipt of TDI vary continuously with an individual's earning qualification score and are not determined by threshold crossing. Table A.1 in the Appendix shows results of our test of the validity of this assumption where we regress various pre-determined characteristics on the independent variables from Equation (1). Columns (1) and (2) report the coefficient from the indicator for crossing the eligibility threshold using the sample of TDI claimants and all births, respectively. The results show there is no detectable discontinuity at the threshold in most demographic characteristics or measures of self-sufficiency. While the difference in the likelihood of being African-American is significant at the 5% level in the TDI claimant sample, a joint test of baseline characteristics fails to reject the hypothesis that the estimates are jointly zero (p-value=0.476).

We also examine the smoothness of the density of TDI cases around the eligibility cutoff. Appendix Figure A.1 show histograms of the qualification measure for each of our samples. There is no discontinuity at the eligibility threshold of the qualification measure which suggests that there is no manipulation of the running variable q_i (Lee and Lemieux, 2010).

6.2 The Effect of TDI Eligibility on Paid Leave Take-Up

Figure 4 shows that earnings-based eligibility cutoffs have a large impact on TDI take-up in the claimant sample and all birth samples. The regression estimates in Appendix Table A.2 show a 82 percentage point increase in the probability of TDI receipt among claimants. For TDI claimants, threshold crossing also increases the number of weeks spent on TDI by 7.3 and benefits by $842. Earnings in the quarter following a TDI claim increase by $26, but this estimate is not statistically significant. The fact that threshold crossing has no significant negative impact on earnings in the quarter after claim suggest that TDI qualification may not cause a meaningful increase in time taken off from work, or that any increase in time off of work is offset by much higher earnings once work resumes.

6.3 The Effects of TDI on Mothers and Children

We begin our analysis by examining plots of mean outcomes of interest as a function of distance to the TDI qualification threshold. Figures 5 through 11 provide a visual test of the impacts of paid leave on measures of mother's economic outcomes and child health and development outcomes. Figures 5 and 6 show threshold crossing plots and mothers' labor market outcomes for the sample of

claimants and the sample using all births, respectively. Labor market outcomes of interest include whether mother worked at all, whether she returned to work at her primary pre-birth employer, her mean earnings, and her mean earnings conditional on employment. We examine these outcomes at two time periods: quarters 4-7 and quarters 4-11 after birth (one year and two years beginning the year after birth, respectively). Visually, there does not appear to be any significant causal impact of threshold crossing on mother's labor market outcomes using either sample.

Table 3 presents 2SLS estimates for the impact of TDI on these measures of mother's labor market outcomes. We also include regression estimates of the impact of TDI on labor outcomes in Quarter 4 only. Consistent with the visual analysis, we do not find significant impacts on labor market outcomes. We note, however, that the point estimates are imprecise, and do not rule out potentially large positive or negative impacts on labor market outcomes. That said, we are able to rule out effect sizes presented in the prior studies which use cross-state difference-in-differences approaches and employ survey responses to measure labor market outcomes. For example, Baum and Ruhm (2016) find that the CA-PFL (California Paid Family Leave) program significantly increased mothers' employment probability in the year after birth by 18 percentage points.

Figures 7 and 8 plot future social insurance participation as a function of distance to the threshold for the sample of claimants and the sample using all births, respectively. Specifically, we examine use of SNAP, TANF, Medicaid, SSI, RSDI, and TDI. Visually, there appears to be a small impact of threshold crossing for disability insurance take-up, and the estimates in Table 4 confirm this. We see positive and significant impacts of TDI threshold crossing on mother's enrollment in SSI in quarters four through seven after birth.

Figure 9 plots measures of infant health outcomes at birth for the claimant sample. We focus on birth weight, Neonatal Intensive Care Unit (NICU) days, APGAR score, and gestational length. We focus on the claimant sample because we can condition on the claim filing date, allowing us to measure impacts on health at birth for only those mothers who filed claims for TDI at least two weeks before giving birth. Mothers who claim TDI after giving birth by definition would not be able to experience TDI benefits for their infant's development and health at birth. Visually, there appears to be a noisy, but potentially significant impact of TDI threshold crossing on NICU days. Table 5 provides point estimates. We find positive but marginally significant impacts of TDI benefits on NICU days.

We next measure the impacts of TDI on childhood development. We first examine whether mothers accepted an offer for a First Connections Home Visiting program visit. First Connections targets mothers who are on Medicaid and exhibit other risk factors during the couple of weeks

after birth. First Connections assists new mothers by connecting them with government programs, services, and funds they are eligible for, as well as providing basic information and support on child care. We also measure whether or not the child had recommended immunizations by age two, and whether a mother had another birth in Rhode Island within three years. We find no evidence of impacts of threshold crossing on any of these outcomes in Figures 9 through 11 (see also the regression results in Table 5).

Finally, using data on education, we measure the impacts of TDI on childhood development outcomes. We focus on two outcomes in particular: whether the child was enrolled in an Individualized Education Plan (IEP) for special needs, and the standardized test scores the child obtained beginning in third grade. We use the average of the student-level standardized test score (scaled score converted to a z-score by grade level and year) across Math and English language exams. The bottom panels in Figures 10 and 11 visualize these results. Our regression estimates in Table 5 confirm what we see in the figures; we find positive but marginally significant impacts of TDI on IEP enrollment in the claimant sample, and no significant impact on standardized test scores.

6.4 Robustness Checks

Tables 6 through 8 present results for the subsample of mothers who were enrolled in a major means-tested social assistance program (SNAP, TANF, Medicaid) at any point in the four years prior to giving birth. Approximately 15 percent of Rhode Island residents work out of state. Thus, some families with low annual wage earnings in the Rhode Island UI system wage records may be high-earning families whose primary earnings are out-of-state. Furthermore, a family may be low-wage-earning but have substantial earnings from non-wage income. Therefore, we classify a mother as low income if she has qualified for means-tested social assistance programs in the recent past. These systems require income information from all sources and verify income using national earnings systems exchanges.

We find that approximately 70 percent of the original RD sample of mothers are included in the social assistance subsample. The 30 percent who are not in the social assistance subsample may have significant out-of-state or non-wage family income, or may in fact be low income but simply not enrolled in these programs. Overall, results are similar between the social assistance and full RD samples. Comparing Tables 3 and 6, we see that sample means for each outcome are very similar. Point estimates on the effects on earnings and employment are generally lower, and often negative in the social assistance subsample. We do find negative and statistically significant as well

as economically significant point estimates for earnings conditional on employment in Q4-Q11 in the Claimants subsample (column 1), with similar-in-magnitude but statistically insignificant impact estimates in the All Mothers sample (column 3). We present threshold-crossing plots in Appendix Figures A.3 through A.5. We see a clear discontinuity at the threshold for these longer-run earnings outcomes in the Claimants sample.

7 Extensions

7.1 Estimating Impacts Away from the Threshold Using Machine Learning

Our RD estimates deliver causal impacts of TDI benefits for mothers near the threshold of TDI qualification. These mothers are very low-income, and therefore important as key beneficiaries for an insurance program meant to provide paid time away from work for those who may face significant barriers to savings. However, TDI also provides benefits to many women away from this threshold. These women and children may experience larger benefits from the program.

While we do not have random or quasi-random assignment of TDI benefits to women who have higher earnings (away from the eligibility threshold), we do have an unprecedented range of measures from administrative records to use as control variables. We use a machine learning algorithm, Double LASSO, to select optimal controls for each outcome variable (Belloni et al. 2012 and 2014). Specifically, we create a superset of potential controls including data on race, ethnicity, age, marital status, wages, social assistance program use, employment history including functions of earnings and sector of employment, and time variables. We create interactions and higher-order terms for all of these variables, totaling to over 10,000 potential control variables. Double LASSO applies a penalty function to reduce the dimension of possible controls and focus on the best predictors of outcomes and TDI use. We use these optimal predictors as controls to remove the potential selection bias that is associated with these control variables, TDI benefits receipt and the outcome of interest. We present OLS estimates using these Double-LASSO-selected controls in Columns (2) and (4) of Tables 9 through 11. For comparison, Columns (1) and (3) show OLS estimates with a traditional set of controls chosen based on researcher intuition. We present results for the sample of mothers in households with earnings less than $20,000 in the base year in Columns (1) and (2), and for the sample of households earning $20,000 to $40,000 in Columns (3) and (4).

Table 9 suggests that mothers in these households with higher earnings who file for TDI are sig-

nificantly more likely to be employed after birth, controlling for Double LASSO selected observable characteristics. Point estimates range from about 3 percentage points to 10 percentage points. Effects on employment are smaller for women from households with higher income ($20,000-$40,000). Earnings in Q4 are significantly higher for TDI recipients in both samples, but are significantly higher in Q4-Q11 only for mothers in households with income below $20,000. Looking at earnings conditional on employment, we find that among the $20,000-$40,000 income mothers, earnings are not higher, and potentially lower for TDI beneficiaries. Similarly, these mothers appear to be significantly less likely to return to their former employer, in contrast with mothers in households earning less than $20,000, who are significantly more likely to return to their former employer if they claim TDI benefits.

For almost all outcomes, and in both samples, we note that the Double LASSO estimates are closer to zero than the traditional OLS estimates. This indicates that bias from endogenous selection on observable characteristics into TDI benefits use is positive, increasing estimates of the impact of TDI benefits on earnings when these variables are not controlled for. This is particularly true for outcomes such as earnings in Q4-Q11, and indicators for whether a mother returns to her previous (base period) employer (a measure of employer attachment). For these outcomes, traditional OLS yields positive, significant and very large point estimates, while Double LASSO estimates fall toward zero and are negative and marginally significant for the sample with household income from $20,000-$40,000.

Table 10 presents Double LASSO results for a mother's enrollment in social assistance programs post birth. We find no significant impact of TDI on SNAP enrollment. We find negative and significant impacts on TANF enrollment only for the sample with household income under $20,000. We find positive and significant impacts on Medicaid enrollment and future TDI enrollment. We find some evidence of negative impacts on permanent disability program enrollment. Table 11 presents Double LASSO results for measures of parental investment and child development outcomes.[17] Almost none of these estimates are statistically significant, and the magnitude of the point estimates suggests there is little impact of TDI receipt for children living in households with earnings below $20,000 or households with earnings from $20,000-$40,000.

We present results for the social assistance subsample in the Appendix. We find very similar results.

Finally, we add additional data to explore possible mechanisms for why we do not see larger

[17] Note, we estimate birth outcomes only for mothers who file for TDI at least 2 weeks before giving birth; therefore, we also do not estimate birth outcomes for the sample defined by their household income.

impacts on measures of bonding and care for newborns, and measures of childhood development as measures by key education indicators once children are of school age. We use survey responses from the Center for Disease Control's Pregnancy Risk Assessment Monitoring Survey (PRAMS). This survey is administered to approximately one in ten mothers in Rhode Island, ideally between four and six months after birth. The survey asks questions about mother's investments in child development through activities such as reading to her child, and collects measures of mother's mental well being such as experiencing stress from finances and post partum depression. We present traditional OLS and Double LASSO results in Appendix Table A.8. We do not include discontinuity estimates for PRAMS outcomes because sample sizes fall considerably. The limited sample size is due to low response rates among low-income mothers, the fact that PRAMS was only collected since 2002 in Rhode Island, and not all questions are asked in all years. We present results for all mothers earning below $40,000. We find no significant impact of TDI benefits on measures of infant health and development investment such as breastfeeding, reading to the infant, or making sure that the infant sleeps in the correct position. These results suggest that mothers may not use TDI to take more time off to be with their newborn. We also find no significant impact on whether a mother says she is depressed, although we do find a significant impact on whether mother says she is stressed about bills. The impact is large and significant, suggesting those who take TDI benefits experience more stress about bills during the 4-6 months after birth than those who do not take TDI benefits.

8 Conclusion

Paid leave programs aim to improve outcomes for mothers and their children. While only five states in the U.S. currently provide paid leave through their TDI systems, there is widespread interest in increasing access to this program as evidenced by recent state legislation and White House proposals (New York Times, 2015).

This paper provides new evidence on the impact of paid maternity leave using novel administrative data from Rhode Island. Unlike previous studies, we are able to examine a wide-range of outcomes measuring economic self-sufficiency, health, and children's well-being. To obtain causal estimates, we rely on earnings-based eligibility thresholds and compare outcomes for individuals who fall just above and below the cutoff for receiving paid leave provided through TDI. Our analysis shows expecting and new mothers crossing the TDI eligibility threshold receive $842 in TDI benefits and about 7.3 weeks of TDI paid-leave. We do not find significant impacts of TDI benefits

on labor market activity or participation in social assistance programs, but do find some evidence of marginally significant increase in disability program participation. We find no significant effects of TDI benefits on measures of birth outcomes, mother's investment in childhood development, or measures of childhood development, with the exception of a marginally significant and positive impact on the probability that a child needs an Individualized Education Plan for special needs once of school age and days spent in Neonatal Intensive Care Unit. These findings are similar to estimates in Dahl et al. (2016) who find no impact of maternity leave reforms in Norway on child outcomes.

Based on these findings, coupling resources for pregnancy recovery and childhood bonding with programs aimed at early-life education or health interventions may help increase the impact of TDI funds to achieve the goal of better outcomes for low-income mothers and their children (Almond and Currie, 2011; Brown et. al, 2015). Carefully evaluating policies can help guide policy innovations to improve maternal and newborn health and well-being.

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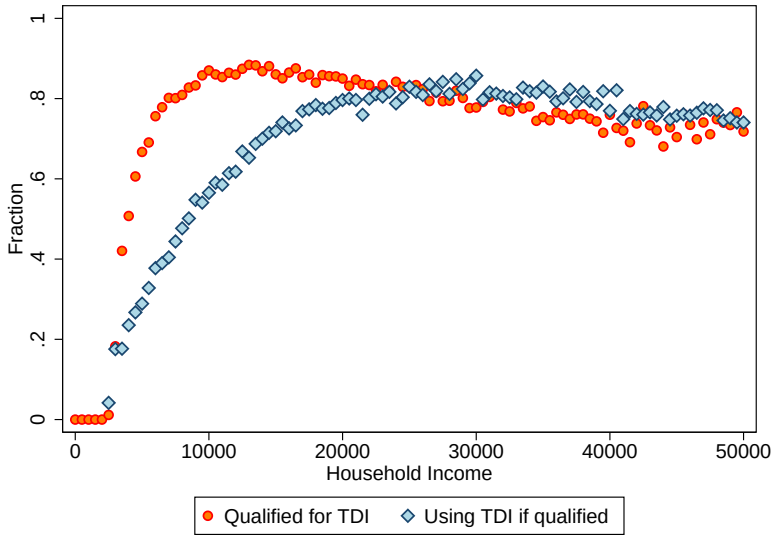
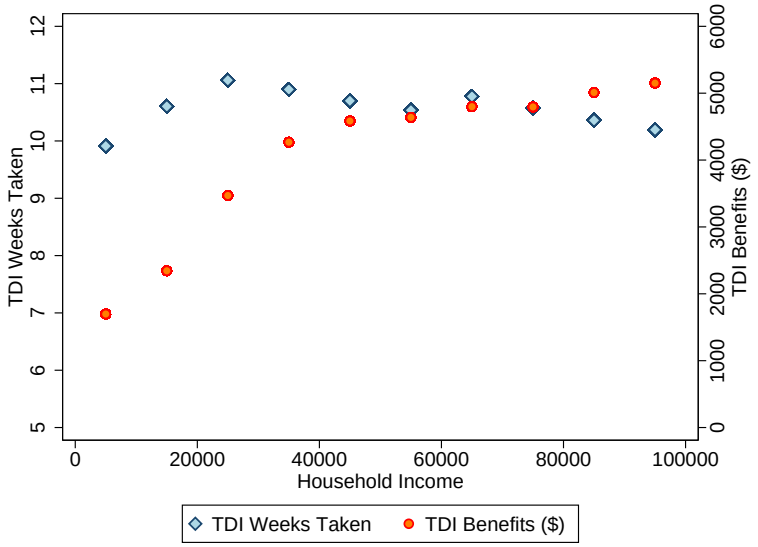
Figure 1: Qualification and Use of TDI Rates



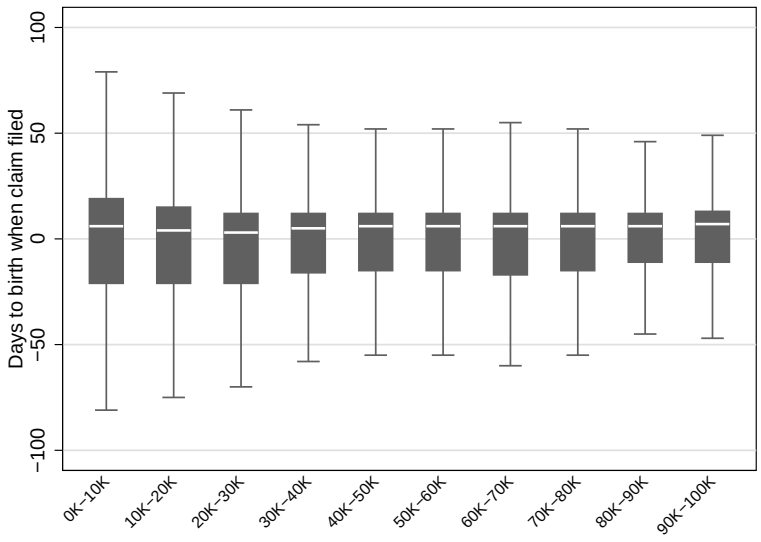
Notes: Figure includes mothers who gave birth in Rhode Island from 1994Q1-2017Q1. The plot for the fraction using TDI (diamonds) provides statistics for the sample of mothers who were income-eligible for TDI during their pregnancy. Scatter plots show household income bin groups of $500. Household income is defined as a mother's baseline wages, in addition to her husband's corresponding wages if married. Household incomes over $50,000 are excluded. Data from Rhode Island Department of Labor and Training.

Figure 2: TDI Weeks and Benefits ($) by Income Group



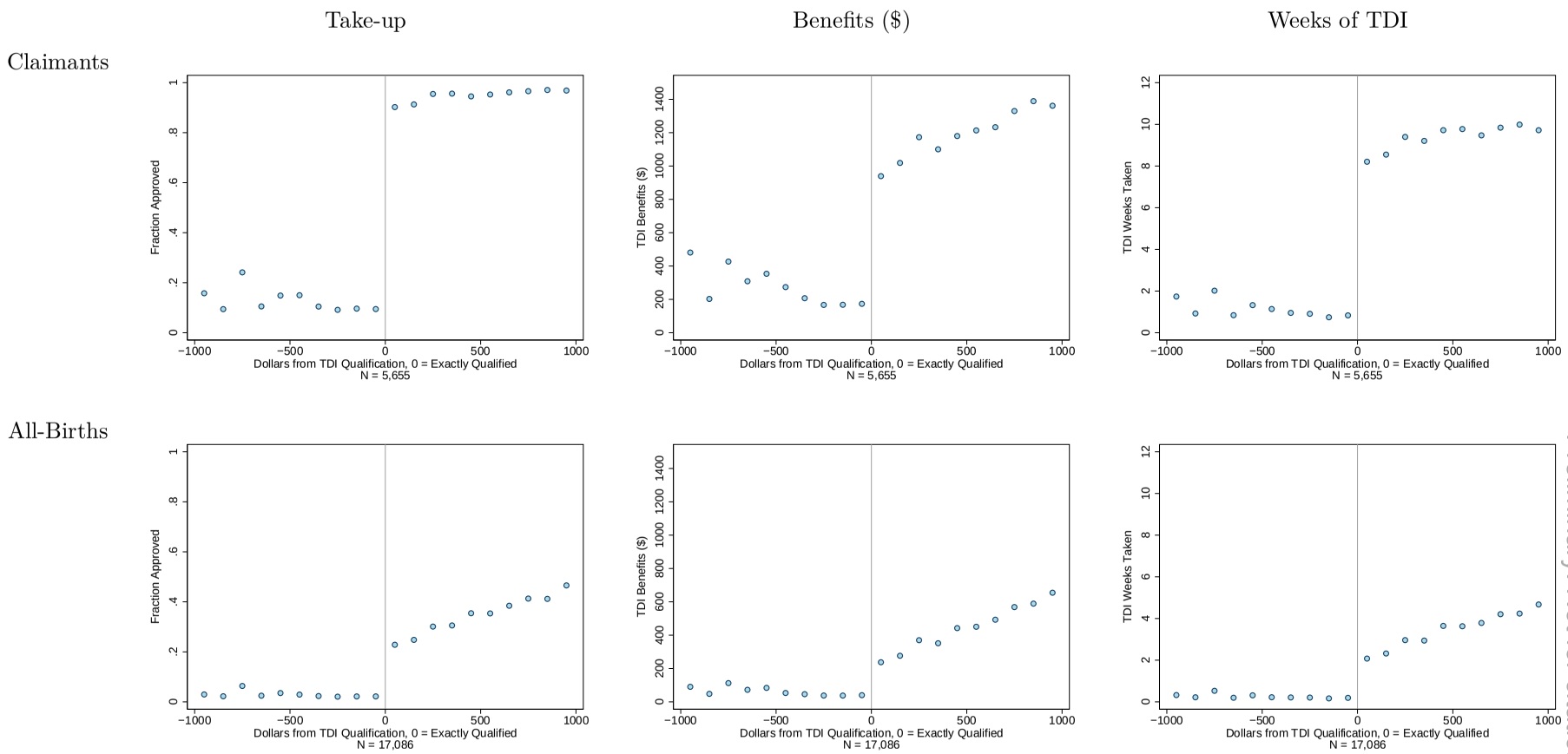
Notes: Figure includes mothers who gave birth in Rhode Island from 1994Q1-2017Q1 and received pregnancy-related TDI benefits. Mothers are grouped into household income bins of $10,000. Household income is defined as a mother's baseline wages, in addition to her husband's corresponding wages if married. Household incomes over $100,000 are excluded. Points represent means for TDI weeks taken (diamonds) and TDI benefits (circles). Data from Rhode Island Department of Labor and Training.

Figure 3: Days until Birth When Claims Filed by Income Group



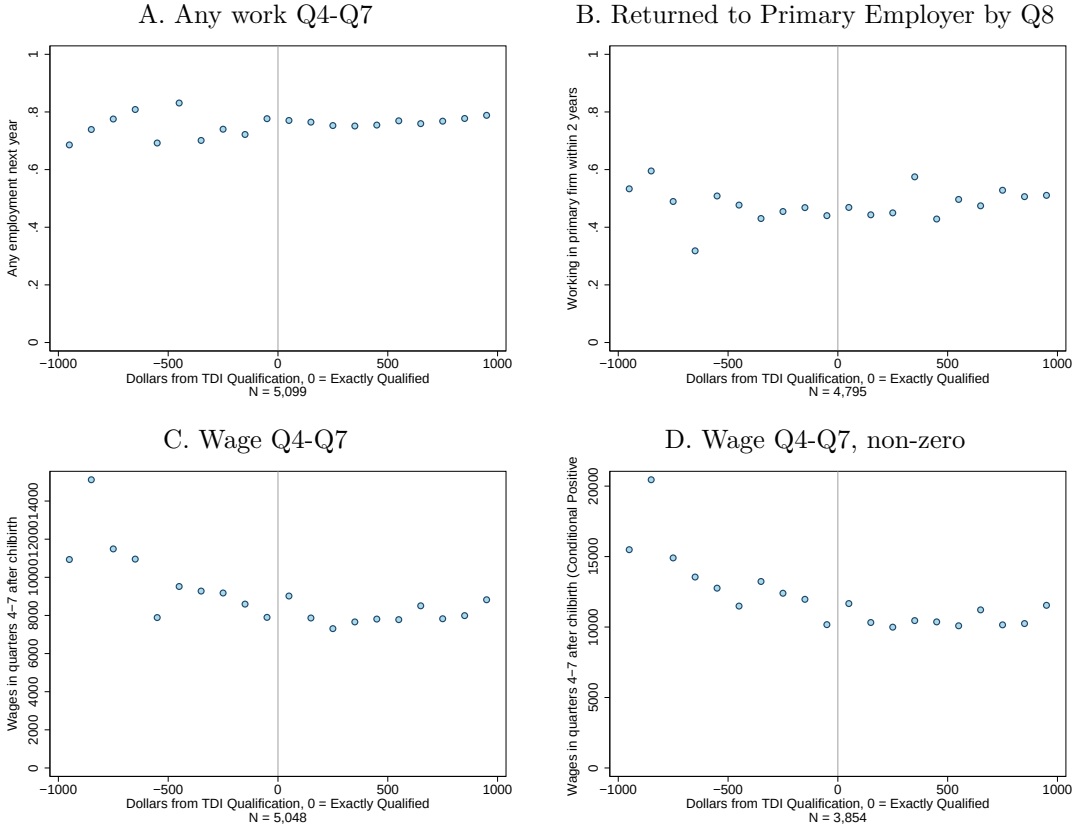
Notes: Figure includes mothers who gave birth in Rhode Island from 1994Q1-2017Q1 and filed claims for pregnancy-related TDI benefits. Mothers are grouped into household income bins of $10,000. Household income is defined as a mother's baseline wages, in addition to her husband's corresponding wages if married. Household incomes over $100,000 are excluded. The center of each box plot shows the median while the top and bottom show the 75th and 25th percentiles, respectively. The top whisker displays the sum of the 75th percentile and 1.5 times the interquartile range. The bottom whisker displays the difference between the 25th percentile and 1.5 times the interquartile range. Data from Rhode Island Department of Labor and Training.

Figure 4: Threshold Crossing on TDI Benefits



Notes: Panels include mothers who gave birth in Rhode Island from 1994Q1-2017Q1 and have baseline wages within $1,000 of the eligibility threshold of TDI. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Labor and Training. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

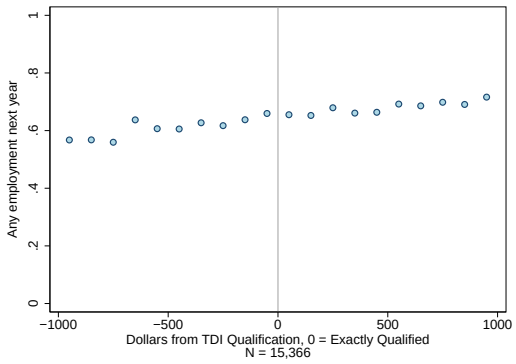
Figure 5: Impact of Threshold Crossing on Labor Force Outcomes (Claimants)



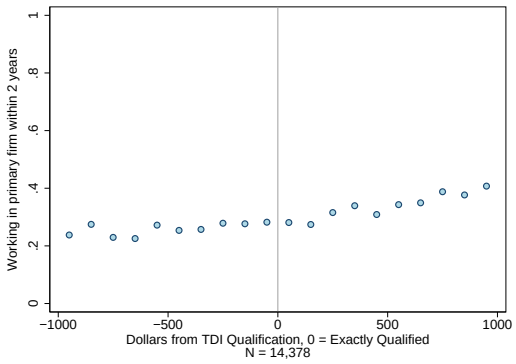
Notes: Panels include mothers who gave birth in Rhode Island from 1994Q1-2017Q1, have baseline wages within $1,000 of the eligibility threshold of TDI, and filed claims for pregnancy-related TDI benefits. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Labor and Training. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

Figure 6: Impact of Threshold Crossing on Labor Force Outcomes (All Births)

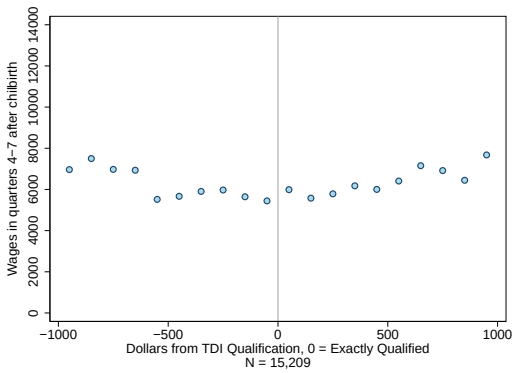
A. Any work Q4-Q7



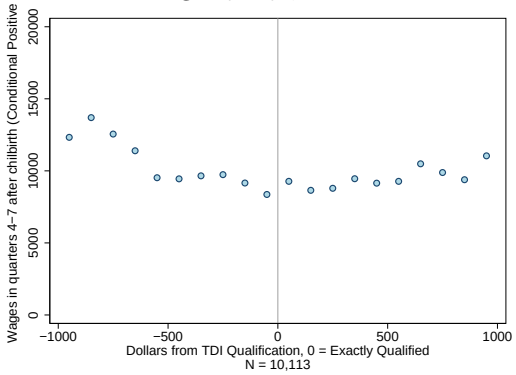
B. Returned to Primary Employer by Q8



C. Wage Q4-Q7

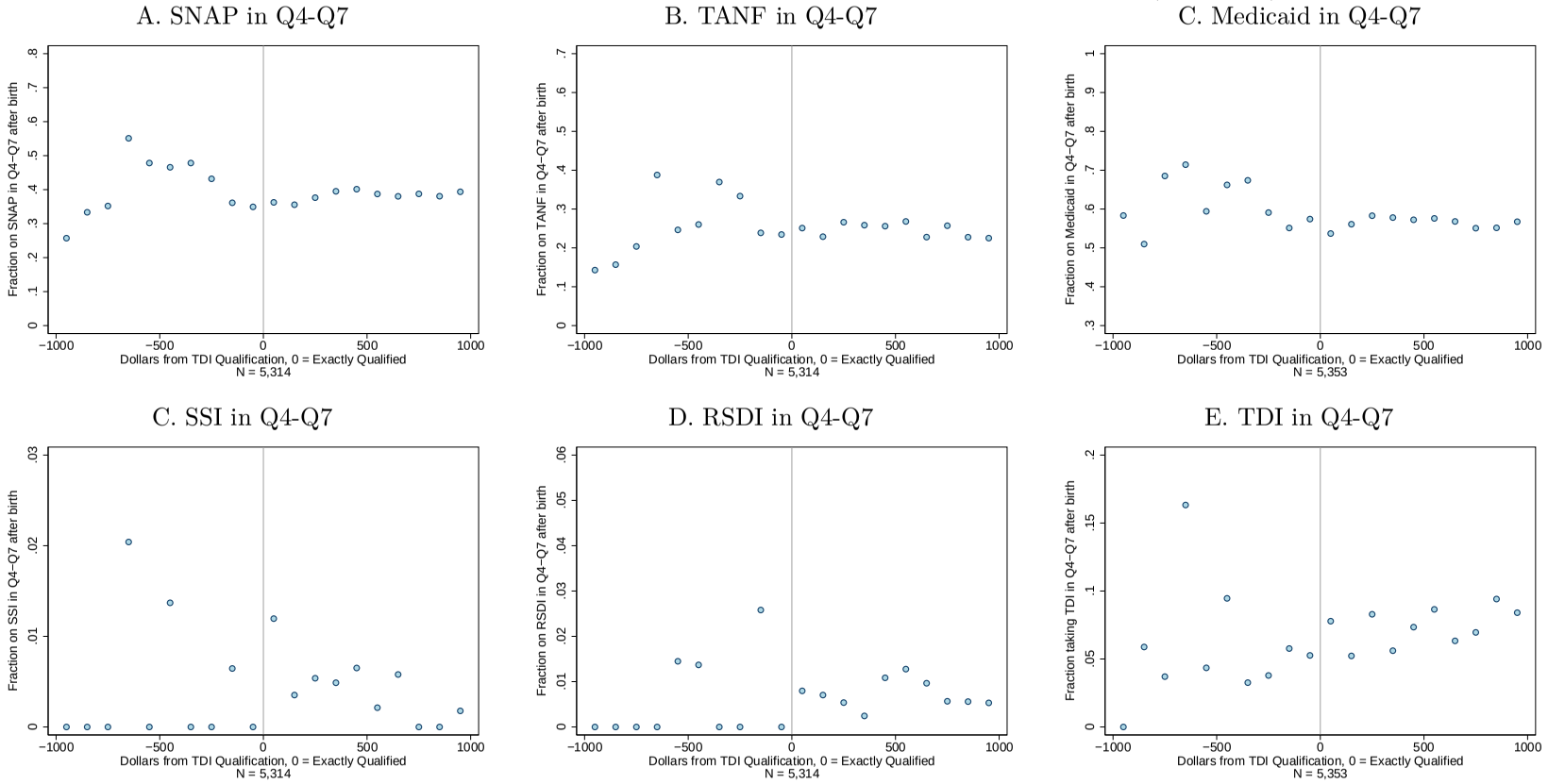


D. Wage Q4-Q7, non-zero



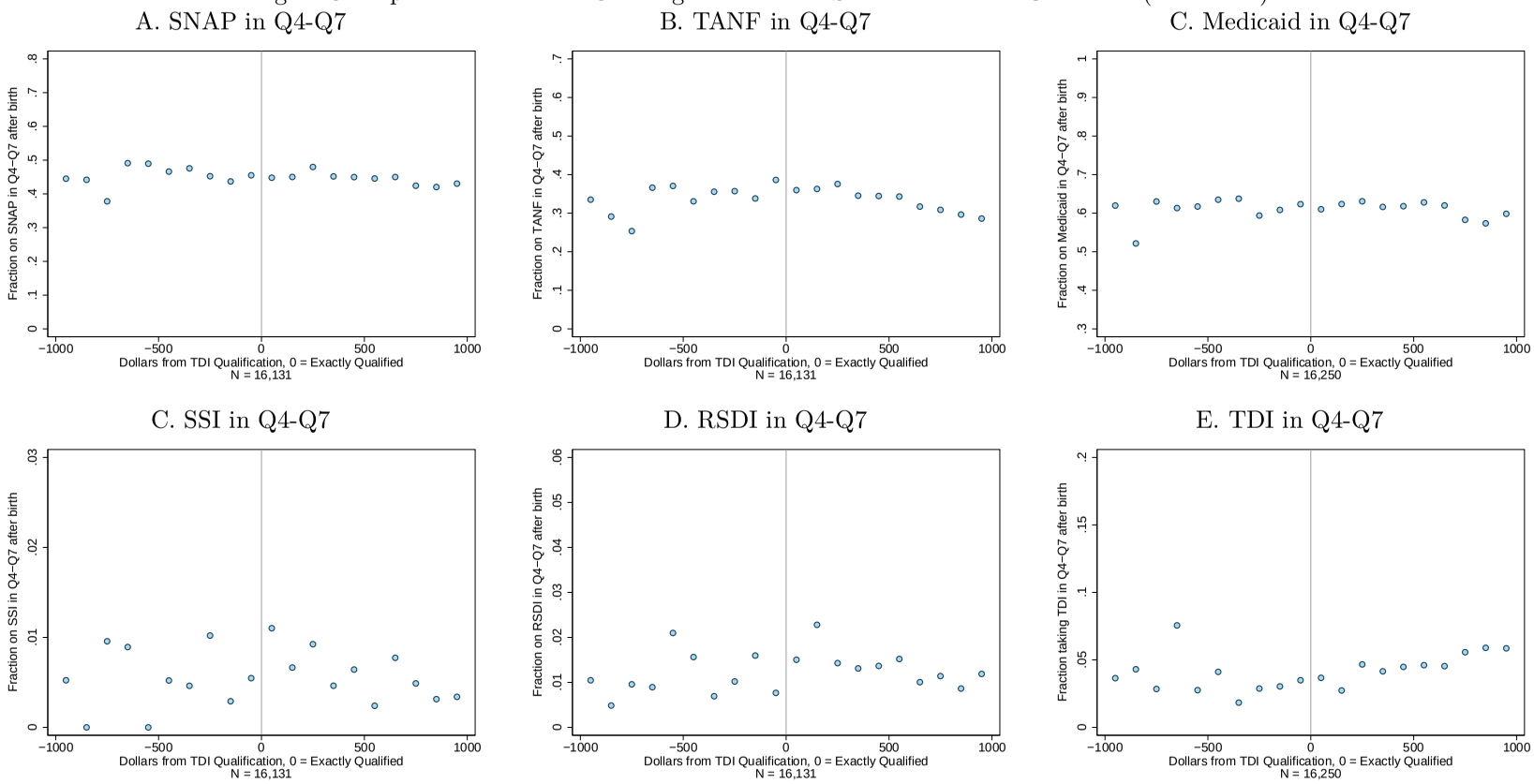
Notes: Panels include mothers who gave birth in Rhode Island from 1994Q1-2017Q1 and have baseline wages within $1,000 of the eligibility threshold of TDI. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Labor and Training. A value of greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

Figure 7: Impact of Threshold Crossing on Mother's Social Assistance Outcomes (Claimants)



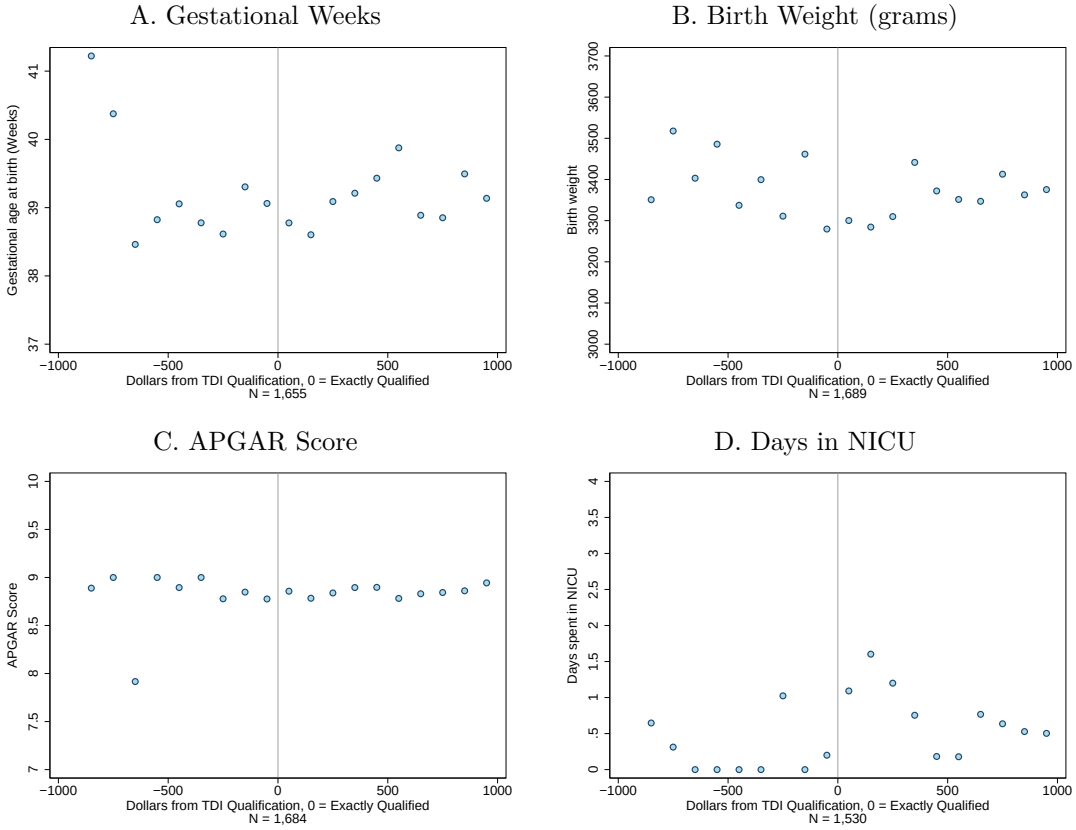
Notes: Panels include mothers who gave birth in Rhode Island from 1994Q1-2017Q1, have baseline wages within $1,000 of the eligibility threshold of TDI, and filed claims for pregnancy-related TDI benefits. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Human Services and Department of Labor and Training. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

Figure 8: Impact of Threshold Crossing on Mother's Social Assistance Outcomes (All Births)



Notes: Panels include mothers who gave birth in Rhode Island from 1994Q1-2017Q1 and have baseline wages within $1,000 of the eligibility threshold of TDI. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Human Services and Department of Labor and Training. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

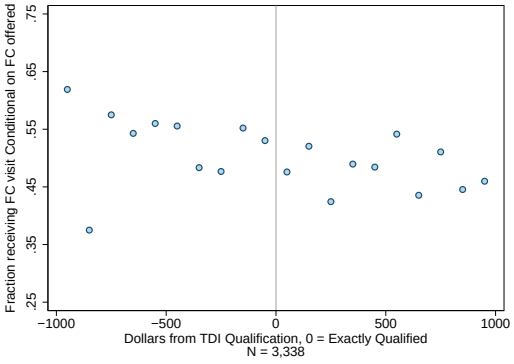
Figure 9: Impact of Threshold Crossing on Health at Birth (Claimants)



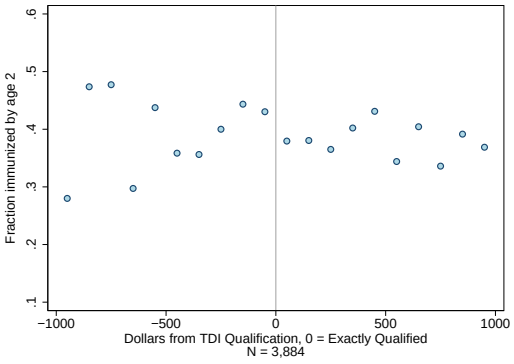
Notes: Panels include mothers who gave birth in Rhode Island from 1994Q1-2017Q1, have baseline wages within $1,000 of the eligibility threshold of TDI, and filed claims for pregnancy-related TDI benefits at least 2 weeks before giving birth. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Health. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

Figure 10: Impact of Threshold Crossing on Child Health & Development (Claimants)

A. First-Connections Home Visit

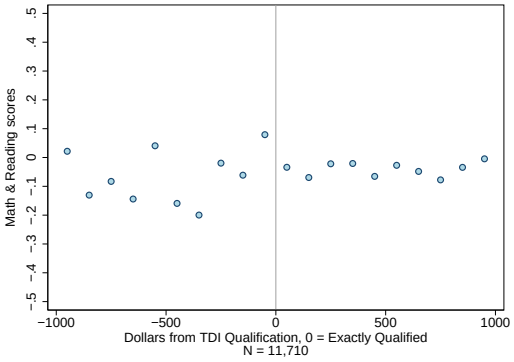


B. Immunization at Age 2



C. IEP

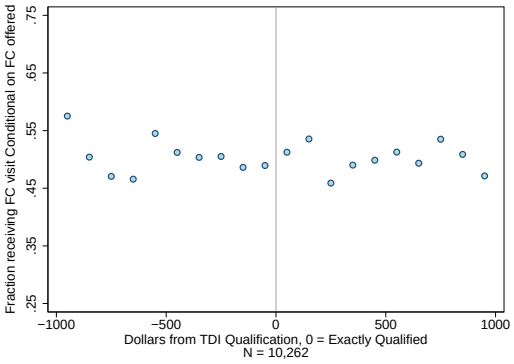
D. Test Scores



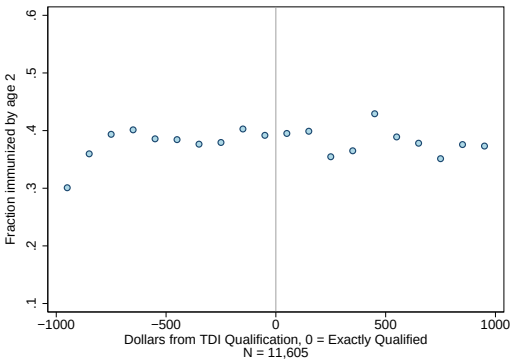
Notes: Panels include mothers who gave birth in Rhode Island from 1994Q1-2017Q1, have baseline wages within $1,000 of the eligibility threshold of TDI, and filed claims for pregnancy-related TDI benefits. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Education and Department of Health. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

Figure 11: Impact of Threshold Crossing on Child Health & Development (All Births)

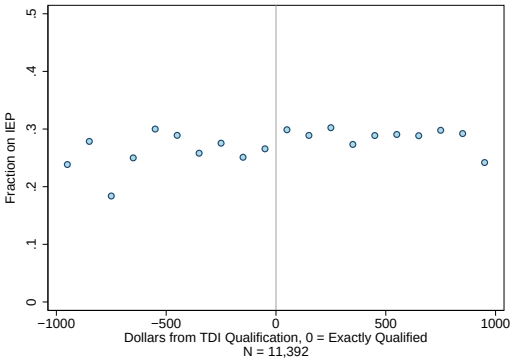
A. First-Connections Home Visit



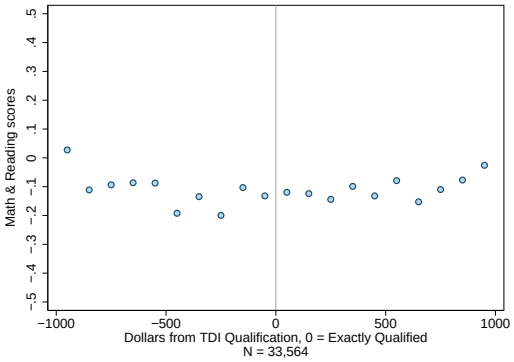
B. Immunization at Age 2



C. IEP



D. Test Scores



Notes: Panels include mothers who gave birth in Rhode Island from 1994Q1-2017Q1 and have baseline wages within $1,000 of the eligibility threshold of TDI. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Education and Department of Health. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

Table 1: Examples of TDI Compensation by Base Period Income Level

Annual Earnings	Weekly Benefit Rate	Benefits over 10 Weeks
$10,000	$116	$1,160
$20,000	$231	$2,310
$30,000	$347	$3,470
$60,000	$693	$6,930
$100,000	$817	$8,170

Note: The benefit rate is calculated assuming wages are evenly distributed among the four quarters of the base period used for calculating benefits, i.e. each quarter of the base period has wages equal to 1/4 of the Annual Earnings. Under this assumption, a person who earned $2,500 in each quarter of her base period-equivalent to $10,000 annually-would be entitled to a weekly benefit rate of $115.50 (=4.62% x $2,500), rounded to the next highest exact dollar amount, $116. The maximum weekly benefit rate is set at 85% of the average weekly wage paid to individuals covered by Unemployment Insurance in the preceding calendar year.

Table 2: Descriptive Statistics on TDI Sample

	(1) All Births	(2) TDI Pregnancy Claimants	(3) RD Sample All Births	(4) RD Sample TDI Claimants
White(=1)	0.811	0.858	0.814	0.838
	[225,732]	[89,670]	[15,886]	[5,296]
Black(=1)	0.099	0.086	0.121	0.112
	[225,732]	[89,670]	[15,886]	[5,296]
Hispanic(=1)	0.164	0.108	0.161	0.127
	[217,434]	[86,412]	[15,252]	[5,104]
Other(=1)	0.107	0.073	0.095	0.082
	[225,732]	[89,670]	[15,886]	[5,296]
Mother Age	28.4	29.23	25.41	25.75
	[246,979]	[97,209]	[17,085]	[5,655]
Teenaged Mother(=1)	0.086	0.033	0.192	0.167
	[246,981]	[97,210]	[17,086]	[5,655]
Married(=1)	0.605	0.677	0.431	0.467
	[246,551]	[97,088]	[17,059]	[5,650]
Mother Baseline Wage	17,793.2	33,210.27	5,758.98	6,384.71
	[246,981]	[97,210]	[17,086]	[5,655]
SNAP use in prior year(=1)	188,778.2	272,227.15	15,886.79	17,310.14
	[246,941]	[97,170]	[17,083]	[5,652]
TANF use in prior year(=1)	0.232	0.138	0.409	0.344
	[246,981]	[97,210]	[17,086]	[5,655]
SSI use in prior year(=1)	0.154	0.052	0.297	0.185
	[246,981]	[97,210]	[17,086]	[5,655]
Medicaid use in prior year(=1)	0.007	0.000	0.003	0.001
	[246,981]	[97,210]	[17,086]	[5,655]
Occupations:				
Retail Trade(=1)	0.386	0.278	0.629	0.589
	[246,981]	[97,210]	[17,086]	[5,655]
Admin. Support(=1)	0.034	0.072	0.065	0.132
	[246,981]	[97,210]	[17,086]	[5,655]
Food or Accommodation (=1)	0.014	0.027	0.020	0.032
	[246,981]	[97,210]	[17,086]	[5,655]
Manufacturing(=1)	0.032	0.064	0.080	0.148
	[246,981]	[97,210]	[17,086]	[5,655]

Note: Means are presented with sample size in brackets. Observations are at the mother-birth level, so a mother can appear multiple times. Baseline wages are the 4-quarter wages that go toward calculating TDI eligibility. Prior year program variables are indicators for being on the program in any of the 4 quarters prior to birth. Occupations are the industries of the employer in which the mother earned the majority of her baseline wages.

Table 3: Estimated Impact of Threshold Crossing on Mother Labor Outcomes

	(1) 2SLS RD (Claimants)	(2) Mean	(3) 2SLS RD (All Births)	(4) Mean
Any employment in Q4	0.0206	0.626	0.0388	0.499
	(0.0566)		(0.117)	
	[5,429]		[16,433]	
Any employment in Q4-Q7	-0.000700	0.763	0.00113	0.666
	(0.0509)		(0.111)	
	[5,099]		[15,366]	
Any employment in Q8-Q11	-0.0710	0.739	-0.114	0.662
	(0.0542)		(0.118)	
	[4,883]		[14,718]	
Wages in Q4	284.0	1934	138.1	1404
	(280.3)		(505.3)	
	[5,367]		[16,270]	
Wages in Q4-Q7	1,036	8279	1,614	6312
	(1,089)		(2,032)	
	[5,048]		[15,209]	
Avg. Wages in Q4-Q11	-273.7	8839	-340.1	6963
	(1,171)		(2,191)	
	[4,584]		[13,677]	
Wages in Q4, non-zero	471.7	3109	579.3	2863
	(340.6)		(569.2)	
	[3,356]		[8,094]	
Wages in Q4-Q7, non-zero	914.9	10934	2,968	9618
	(1,246)		(2,156)	
	[3,854]		[10,113]	
Avg. Wages in Q4-Q11, non-zero	-287.8	10674	1,229	9282
	(1,259)		(2,321)	
	[3,796]		[10,336]	
Returned to Primary Emloyer by Q4	-0.0323	0.469	-0.00620	0.3
	(0.0519)		(0.0945)	
	[5,234]		[15,799]	
Returned to Primary Employer by Q8	-0.00481	0.487	-0.00375	0.322
	(0.0541)		(0.101)	
	[4,795]		[14,378]	
Returned to Primary Employer by Q11	-0.0167	0.494	-0.0134	0.332
	(0.0577)		(0.107)	
	[4,319]		[12,835]	

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets) in Columns (1) and (3). Quarters of outcomes are relative to the quarter of birth. Regressions utilize an RD around qualification for TDI for mothers with base-period wages that fell within $1,000 of the eligiblity threshold. The first column is estimated using mothers who claimed TDI during their pregnancy period; the third column does not condition on filing for TDI. The second and fourth columns are the sample means of the outcome variable for the claimants and all-births samples, respectively. Primary employer defined as the firm in which the mother earned the majority of her baseline wages.

Table 4: Estimated Impact of Threshold Crossing on Mother Social Assistance Outcomes

	(1) 2SLS RD (Claimants)	(2) Mean	(3) 2SLS RD (All Births)	(4) Mean
SNAP Use in Q4-Q7	0.0112	0.387	0.0645	0.447
	(0.0442)		(0.0887)	
	[5,314]		[16,131]	
TANF Use in Q4-Q7	0.0133	0.249	-0.0497	0.337
	(0.0432)		(0.0902)	
	[5,314]		[16,131]	
Medicaid Use in Q4-Q7	-0.0135	0.571	0.0273	0.611
	(0.0420)		(0.0812)	
	[5,353]		[16,250]	
SSI Use in Q4-Q7	0.0156*	0.00358	0.0339*	0.0057
	(0.00709)		(0.0149)	
	[5,314]		[16,131]	
RSDI Use in Q4-Q7	-0.00458	0.00715	0.0307	0.0128
	(0.00855)		(0.0225)	
	[5,314]		[16,131]	
TDI Use in Q4-Q7	0.0524+	0.0717	-0.00650	0.0434
	(0.0305)		(0.0493)	
	[5,353]		[16,250]	
SNAP Use in Q4-Q11	0.0317	0.435	0.0580	0.493
	(0.0454)		(0.0905)	
	[5,162]		[15,707]	
TANF Use in Q4-Q11	0.00446	0.292	-0.0714	0.381
	(0.0456)		(0.0922)	
	[5,162]		[15,707]	
Medicaid Use in Q4-Q11	0.0216	0.617	0.0644	0.651
	(0.0415)		(0.0794)	
	[5,162]		[15,707]	
SSI Use in Q4-Q11	0.0151+	0.00468	0.0452*	0.00777
	(0.00822)		(0.0193)	
	[5,127]		[15,581]	
RSDI Use in Q4-Q11	-0.0162+	0.00878	0.00619	0.0157
	(0.00984)		(0.0256)	
	[5,127]		[15,581]	
TDI Use in Q8-Q11	0.0409	0.0897	0.0750	0.0614
	(0.0339)		(0.0584)	
	[5,162]		[15,707]	

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets) in Columns (1) and (3). Quarters of outcomes are relative to the quarter of birth. Regressions utilize an RD around qualification for TDI for mothers with base-period wages that fell within $1,000 of the eligiblity threshold. The first column is estimated using mothers who claimed TDI during their pregnancy period; the third column does not condition on filing for TDI. The second and fourth columns are the sample means of the outcome variable for the claimants and all-births samples, respectively.

Table 5: Estimated Impact of Threshold Crossing on Child Outcomes

	(1) 2SLS RD (Claimants)	(2) Mean	(3) 2SLS RD (All Births)	(4) Mean
Birth Outcomes				
Gestational Weeks	-0.885	39.19		
	(0.896)			
	[1,655]			
Birth Weight (grams)	70.02	3365		
	(142.9)			
	[1,689]			
APGAR Score	0.183	8.85		
	(0.199)			
	[1,684]			
Days in NICU	2.061+	0.6		
	(1.142)			
	[1,530]			
Development Outcomes				
First Connections	-0.0615	0.486	0.0172	0.501
Visit(=1)	(0.0734)		(0.146)	
	[3,338]		[10,262]	
Recommended Age 2	0.0279	0.385	-0.0312	0.381
Immunization(=1)	(0.0572)		(0.109)	
	[3,884]		[11,605]	
Ever on IEP(=1)	0.115+	0.275	0.205	0.281
	(0.0649)		(0.132)	
	[3,844]		[11,392]	
Test Scores	-0.185	-0.0396	-0.244	-0.111
	(0.139)		(0.287)	
	[11,710]		[33,564]	
Next birth within 3	0.0226	0.179	-0.0496	0.199
years(=1)	(0.0456)		(0.0978)	
	[5,162]		[15,707]	

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets) in Columns (1) and (3). Quarters of outcomes are relative to the quarter of birth. Regressions utilize an RD around qualification for TDI for mothers with base-period wages that fell within $1,000 of the eligiblity threshold. The first column is estimated using mothers who claimed TDI during their pregnancy period; the third column does not condition on filing for TDI. The second and fourth columns are the sample means of the outcome variable for the claimants and all-births samples, respectively. Birth outcomes are estimated only for mothers who claim TDI at least 2 weeks prior to giving birth. Test scores is measured as number of standard deviations away from the mean math and reading scores of the grade cohort. IEP status and test scores are measured at all points that a child appears in the RI education system data.

Table 6: Estimated Impact of Threshold Crossing on Mother Labor Outcomes (Social Assistance Sample)

	(1) 2SLS RD (Claimants)	(2) Mean	(3) 2SLS RD (All Births)	(4) Mean
Any employment in Q4	-0.0245	0.628	0.0171	0.506
	(0.0697)		(0.156)	
	[3,631]		[11,494]	
Any employment in Q4-Q7	-0.0705	0.78	0.0130	0.691
	(0.0620)		(0.144)	
	[3,397]		[10,704]	
Any employment in Q8-Q11	-0.0465	0.757	-0.0929	0.692
	(0.0657)		(0.149)	
	[3,259]		[10,255]	
Wages in Q4	-382.4	1925	-884.3	1380
	(321.1)		(641.1)	
	[3,587]		[11,381]	
Wages in Q4-Q7	-1,940	8279	-1,563	6222
	(1,223)		(2,407)	
	[3,362]		[10,593]	
Avg. Wages in Q4-Q11	-2,889*	8902	-3,790	6892
	(1,330)		(2,518)	
	[3,046]		[9,487]	
Wages in Q4, non-zero	-387.9	3069	-842.3	2764
	(381.8)		(674.8)	
	[2,254]		[5,737]	
Wages in Q4-Q7, non-zero	-1,899	10604	-971.1	9053
	(1,325)		(2,455)	
	[2,625]		[7,310]	
Avg. Wages in Q4-Q11, non-zero	-3,017*	10453	-3,017	8742
	(1,386)		(2,554)	
	[2,594]		[7,502]	
Returned to Primary Emloyer by Q4	-0.0732	0.431	-0.0921	0.258
	(0.0628)		(0.122)	
	[3,501]		[11,048]	
Returned to Primary Employer by Q8	-0.0510	0.453	-0.112	0.281
	(0.0648)		(0.128)	
	[3,190]		[9,994]	
Returned to Primary Employer by Q11	-0.0407	0.46	-0.0765	0.291
	(0.0686)		(0.130)	
	[2,864]		[8,895]	

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets) in Columns (1) and (3). Quarters of outcomes are relative to the quarter of birth. Regressions utilize an RD around qualification for TDI for mothers with base-period wages that fell within $1,000 of the eligiblity threshold. The first column is estimated using mothers who claimed TDI during their pregnancy period; the third column does not condition on filing for TDI. The second and fourth columns are the sample means of the outcome variable for the claimants and all-births samples, respectively. Primary employer defined as the firm in which the mother earned the majority of her baseline wages. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table 7: Estimated Impact of Threshold Crossing on Mother Social Assistance Outcomes (Social Assistance Sample)

	(1) 2SLS RD (Claimants)	(2) Mean	(3) 2SLS RD (All Births)	(4) Mean
SNAP Use in Q4-Q7	0.00818	0.54	0.0308	0.608
	(0.0374)		(0.0829)	
	[3,548]		[11,265]	
TANF Use in Q4-Q7	0.00560	0.34	0.0825	0.454
	(0.0368)		(0.0855)	
	[3,548]		[11,265]	
Medicaid Use in Q4-Q7	0.000753	0.766	0.0231	0.805
	(0.0350)		(0.0748)	
	[3,578]		[11,358]	
SSI Use in Q4-Q7	0.00519	0.00536	0.0282*	0.00808
	(0.00368)		(0.0138)	
	[3,548]		[11,265]	
RSDI Use in Q4-Q7	0.00650	0.00874	0.0243	0.0172
	(0.00527)		(0.0187)	
	[3,548]		[11,265]	
TDI Use in Q4-Q7	0.0285	0.0769	-0.0421	0.0482
	(0.0388)		(0.0705)	
	[3,578]		[11,358]	
SNAP Use in Q4-Q11	0.0478	0.603	0.0526	0.662
	(0.0409)		(0.0887)	
	[3,435]		[10,960]	
TANF Use in Q4-Q11	0.0218	0.396	0.0488	0.509
	(0.0400)		(0.0903)	
	[3,435]		[10,960]	
Medicaid Use in Q4-Q11	0.0522	0.818	0.0129	0.85
	(0.0335)		(0.0713)	
	[3,435]		[10,960]	
SSI Use in Q4-Q11	0.00152	0.00705	0.0441**	0.011
	(0.00432)		(0.0154)	
	[3,406]		[10,861]	
RSDI Use in Q4-Q11	-0.0104	0.0109	-0.0176	0.0212
	(0.00680)		(0.0202)	
	[3,406]		[10,861]	
TDI Use in Q8-Q11	0.00663	0.0946	0.0660	0.0666
	(0.0425)		(0.0806)	
	[3,435]		[10,960]	

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets) in Columns (1) and (3). Regressions utilize an RD around qualification for TDI for mothers with base-period wages that fell within $1,000 of the eligiblity threshold. The first column is estimated using mothers who claimed TDI during their pregnancy period; the third column does not condition on filing for TDI. The second and fourth columns are the sample means of the outcome variable for the claimants and all-births samples, respectively. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table 8: Estimated Impact of Threshold Crossing on Child Outcomes (Social Assistance Sample)

	(1) 2SLS RD (Claimants)	(2) Mean	(3) 2SLS RD (All Births)	(4) Mean
Birth Outcomes				
Gestational Weeks	-1.388	39.24		
	(1.103)			
	[1,210]			
Birth Weight (grams)	84.76	3340		
	(164.4)			
	[1,231]			
APGAR Score	0.0431	8.86		
	(0.221)			
	[1,230]			
Days in NICU	2.670+	0.671		
	(1.364)			
	[1,109]			
Development Outcomes				
First Connections	-0.118	0.494	-0.124	0.513
Visit(=1)	(0.0825)		(0.179)	
	[2,704]		[8,523]	
Recommended Age 2	0.0470	0.4	0.0125	0.387
Immunization(=1)	(0.0711)		(0.146)	
	[2,765]		[8,500]	
Ever on IEP(=1)	0.103	0.281	0.313	0.297
	(0.0805)		(0.195)	
	[2,480]		[7,981]	
Test Scores	-0.102	-0.187	-0.297	-0.273
	(0.172)		(0.500)	
	[6,844]		[22,198]	
Next birth within 3	0.00797	0.176	-0.0898	0.203
years(=1)	(0.0558)		(0.130)	
	[3,435]		[10,960]	

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets) in Columns (1) and (3). Quarters of outcomes are relative to the quarter of birth. Regressions utilize an RD around qualification for TDI for mothers with base-period wages that fell within $1,000 of the eligiblity threshold. The first column is estimated using mothers who claimed TDI during their pregnancy period; the third column does not condition on filing for TDI. The second and fourth columns are the sample means of the outcome variable for the claimants and all-births samples, respectively. Birth outcomes are estimated only for mothers who claim TDI at least 2 weeks prior to giving birth. Test scores is measured as number of standard deviations away from the mean math and reading scores of the grade cohort. IEP status and test scores are measured at all points that a child appears in the RI education system data. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table 9: Estimated Impact of TDI on Mother Labor Outcomes

	(1) OLS <20K	(2) Double LASSO <20K	(3) OLS 20K-40K	(4) Double LASSO 20K-40K
Any employment in Q4	0.169***	0.0994***	0.132***	0.0666***
	(0.00827)	(0.00888)	(0.0112)	(0.0118)
	[16,044]	[16,044]	[11,206]	[11,206]
Any employment in Q4-Q7	0.128***	0.0892***	0.0953***	0.0503***
	(0.00753)	(0.00812)	(0.0104)	(0.0110)
	[14,982]	[14,982]	[10,362]	[10,362]
Any employment in Q8-Q11	0.103***	0.0838***	0.0754***	0.0332**
	(0.00790)	(0.00859)	(0.0114)	(0.0121)
	[14,179]	[14,179]	[9,865]	[9,865]
Wages in Q4	761.4***	383.5***	765.7***	292.0**
	(42.69)	(45.74)	(98.67)	(102.5)
	[15,891]	[15,891]	[11,058]	[11,058]
Wages in Q4-Q7	2,691***	1,432***	2,002***	612.3
	(170.3)	(183.4)	(383.9)	(398.9)
	[14,791]	[14,791]	[10,208]	[10,208]
Avg. Wages in Q4-Q11	2,551***	1,320***	1,284**	-14.95
	(177.5)	(192.6)	(402.3)	(419.4)
	[13,215]	[13,215]	[9,171]	[9,171]
Wages in Q4, non-zero	285.4***	144.8**	-70.05	-123.5
	(53.49)	(55.80)	(98.65)	(100.0)
	[9,722]	[9,722]	[8,217]	[8,217]
Wages in Q4-Q7, non-zero	1,472***	597.3**	-25.61	-363.5
	(191.9)	(204.1)	(383.8)	(393.7)
	[11,229]	[11,229]	[8,370]	[8,370]
Avg. Wages in Q4-Q11, non-zero	1,668***	741.1***	-223.9	-694.3+
	(192.4)	(206.1)	(405.3)	(419.3)
	[10,994]	[10,994]	[7,870]	[7,870]
Returned to Primary Emloyer by Q4	0.239***	0.0287***	0.186***	0.000722
	(0.00825)	(0.00751)	(0.0117)	(0.0106)
	[15,443]	[15,443]	[10,793]	[10,793]
Returned to Primary Employer by Q8	0.231***	0.0215**	0.164***	-0.00967
	(0.00877)	(0.00808)	(0.0124)	(0.0113)
	[14,039]	[14,039]	[9,702]	[9,702]
Returned to Primary Employer by Q11	0.226***	0.0238**	0.149***	-0.0202+
	(0.00936)	(0.00866)	(0.0132)	(0.0120)
	[12,442]	[12,442]	[8,633]	[8,633]

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets). Quarters of outcomes are relative to the quarter of birth. The first and second pair of columns are OLS regressions among mothers who are income-eligible for TDI with, respectively, household incomes of less than $20,000 and between $20,000-$40,000. The first and third columns use intuitive control variables including race and ethnicity, sex, age group, baseline wages, father's baseline wages, marital status, and social assistance usage. The second and fourth columns use controls selected from the "Double LASSO" procedure. Household income is defined as mother's base-period wages, plus father's corresponding wages if married at time of birth. Primary employer defined as the firm in which the mother earned the majority of her baseline wages. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table 10: Estimated Impact of TDI on Mother Social Assistance Outcomes

	(1) OLS <20K	(2) Double LASSO <20K	(3) OLS 20K-40K	(4) Double LASSO 20K-40K
SNAP Use in Q4-Q7	-0.0228**	0.00223	-0.00490	0.00652
	(0.00765)	(0.00817)	(0.00899)	(0.00967)
	[15,588]	[15,588]	[10,774]	[10,774]
TANF Use in Q4-Q7	-0.0746***	-0.0327***	-0.0189**	-0.00262
	(0.00733)	(0.00773)	(0.00619)	(0.00661)
	[15,588]	[15,588]	[10,774]	[10,774]
Medicaid Use in Q4-Q7	0.0218**	0.0298***	0.0131	0.0314**
	(0.00713)	(0.00726)	(0.0103)	(0.0106)
	[15,759]	[15,759]	[10,909]	[10,909]
SSI Use in Q4-Q7	-0.000502	3.93e-05	-0.00155*	-0.00157+
	(0.000879)	(0.000945)	(0.000776)	(0.000842)
	[15,588]	[15,588]	[10,774]	[10,774]
RSDI Use in Q4-Q7	-0.00318*	-0.00448**	-0.00102	-0.000482
	(0.00144)	(0.00155)	(0.00119)	(0.00133)
	[15,588]	[15,588]	[10,774]	[10,774]
TDI Use in Q4-Q7	0.0533***	0.0487***	0.0773***	0.0696***
	(0.00447)	(0.00490)	(0.00863)	(0.00933)
	[15,759]	[15,759]	[10,909]	[10,909]
SNAP Use in Q4-Q11	-0.0170*	0.00845	-0.000147	0.0115
	(0.00786)	(0.00839)	(0.0101)	(0.0109)
	[15,037]	[15,037]	[10,364]	[10,364]
TANF Use in Q4-Q11	-0.0771***	-0.0382***	-0.0216**	-0.00143
	(0.00774)	(0.00817)	(0.00765)	(0.00824)
	[15,037]	[15,037]	[10,364]	[10,364]
Medicaid Use in Q4-Q11	0.0277***	0.0338***	0.0250*	0.0430***
	(0.00691)	(0.00720)	(0.0111)	(0.0116)
	[15,037]	[15,037]	[10,364]	[10,364]
SSI Use in Q4-Q11	-0.000942	2.61e-05	-0.00128	-0.000727
	(0.00120)	(0.00131)	(0.00106)	(0.00115)
	[14,875]	[14,875]	[10,228]	[10,228]
RSDI Use in Q4-Q11	-0.00478**	-0.00559**	0.000337	0.00119
	(0.00171)	(0.00185)	(0.00154)	(0.00171)
	[14,875]	[14,875]	[10,228]	[10,228]
TDI Use in Q8-Q11	0.0513***	0.0550***	0.0926***	0.0806***
	(0.00527)	(0.00577)	(0.00999)	(0.0108)
	[15,037]	[15,037]	[10,364]	[10,364]

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets). Quarters of outcomes are relative to the quarter of birth. The first and second pair of columns are OLS regressions among mothers who are income-eligible for TDI with, respectively, household incomes of less than $20,000 and between $20,000-$40,000. The first and third columns use intuitive control variables including race and ethnicity, sex, age group, baseline wages, father's baseline wages, marital status, and social assistance usage. The second and fourth columns use controls selected from the "Double LASSO" procedure. Household income is defined as mother's base-period wages, plus father's corresponding wages if married at time of birth. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table 11: Estimated Impact of TDI on Child Outcomes

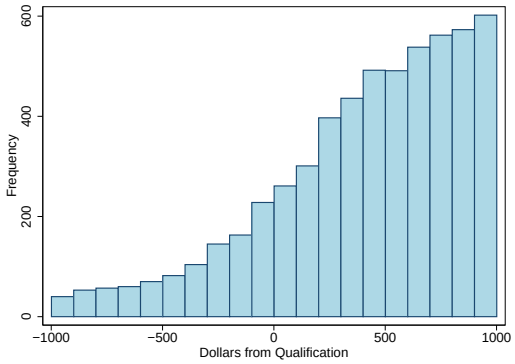
	(1) OLS <20K	(2) Double LASSO <20K	(3) OLS 20K-40K	(4) Double LASSO 20K-40K
Development Outcomes				
First Connections	-0.0122	-0.00972	-0.00972	-0.0124
Visit(=1)	(0.0101)	(0.0110)	(0.0172)	(0.0186)
	[11,976]	[11,976]	[6,822]	[6,822]
Recommended Age 2	0.00335	0.00789	0.0189	0.0365*
Immunization(=1)	(0.0101)	(0.00969)	(0.0155)	(0.0145)
	[11,736]	[11,736]	[8,033]	[8,033]
Ever on IEP(=1)	-0.0112	-0.0104	-0.0126	-0.0268
	(0.00960)	(0.0104)	(0.0150)	(0.0163)
	[10,299]	[10,299]	[6,847]	[6,847]
Test Scores	0.00815	0.0120	-0.00354	0.0310
	(0.0223)	(0.0244)	(0.0370)	(0.0405)
	[27,614]	[27,614]	[17,953]	[17,953]
Next birth within 3	-0.0312***	-0.0242**	-0.00941	-0.00131
years(=1)	(0.00747)	(0.00814)	(0.0118)	(0.0127)
	[15,037]	[15,037]	[10,364]	[10,364]

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets). Quarters of outcomes are relative to the quarter of birth. The first and second pair of columns are OLS regressions among mothers who are income-eligible for TDI with, respectively, household incomes of less than $20,000 and between $20,000-$40,000. The first and third columns uses intuitive control variables including race and ethnicity, sex, age group, baseline wages, father's baseline wages, marital status, and social assistance usage. The second and fourth columns use controls selected from the "Double LASSO" procedure. Household income is defined as mother's base-period wages, plus father's corresponding wages if married at time of birth. Test scores is measured as number of standard deviations away from the mean math and reading scores of the grade cohort. IEP status and test scores are measured at all points that a child appears in the RI education system data. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

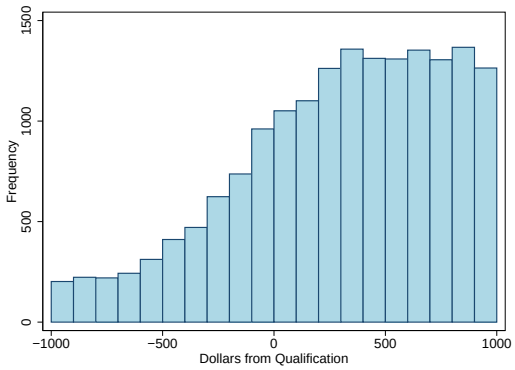
9 Appendix: Tables and Figures

Figure A.1: Density Plot of Qualification Score Around Eligibility Threshold

Claimants

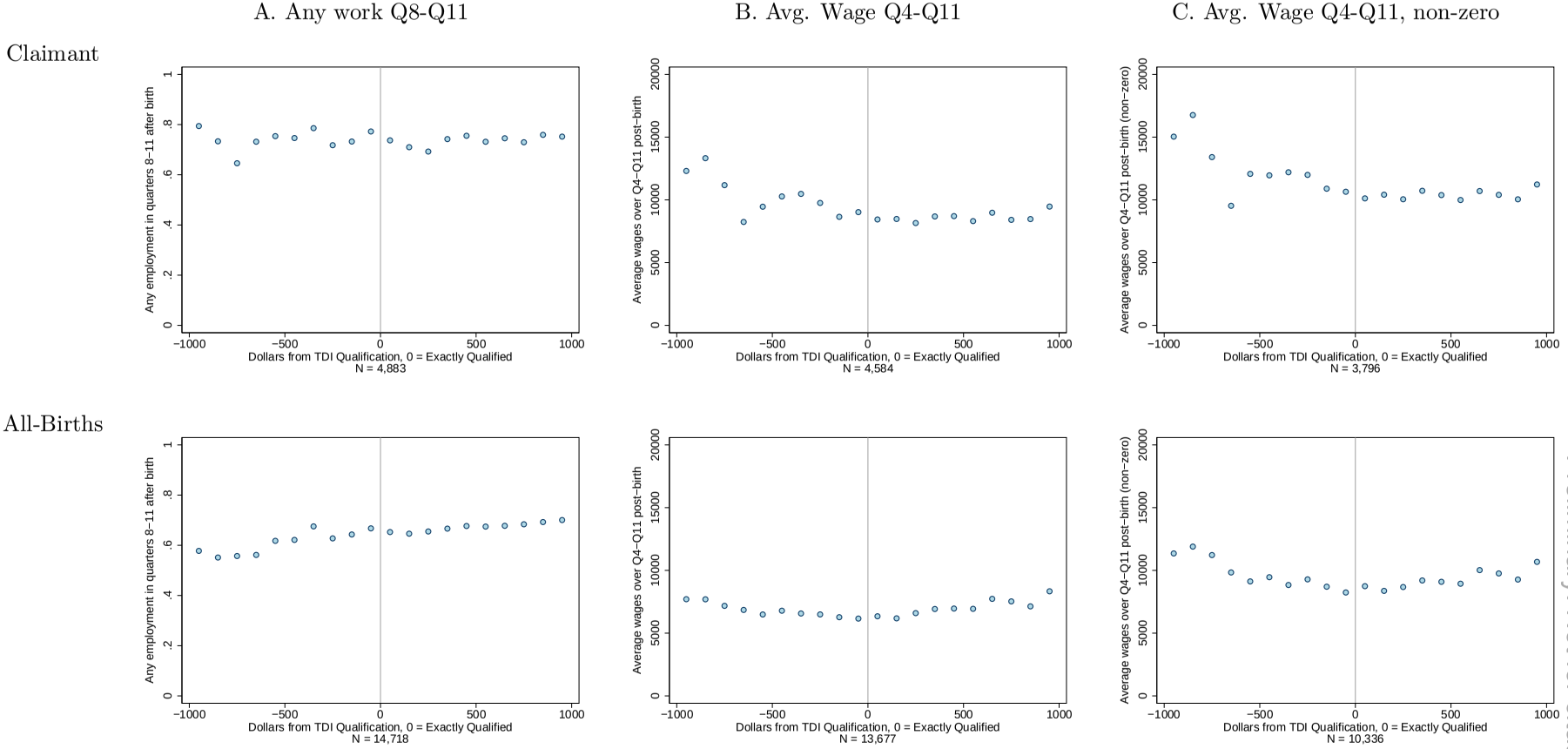


All Births



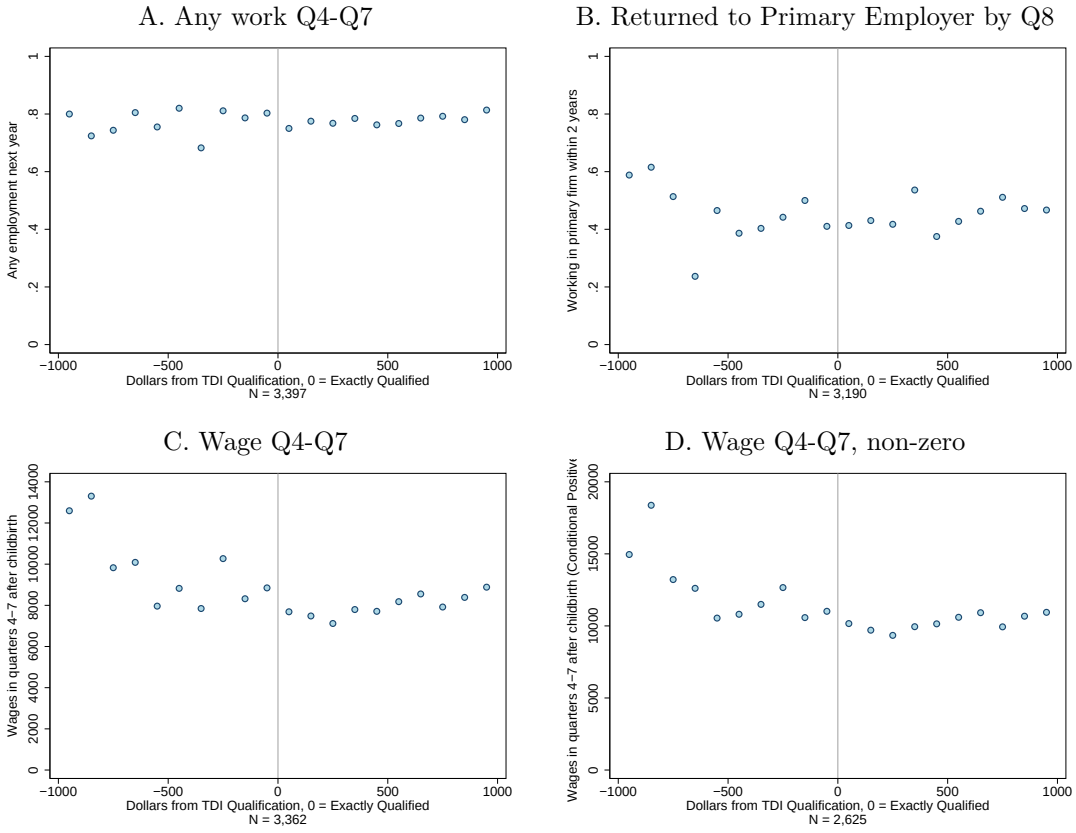
Note: Top panel includes all mothers who gave birth in Rhode Island from 1994Q1-2017Q1 and claimed TDI during her pregnancy-period. Bottom panel does not condition on claiming TDI. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient base-period earnings to qualify for TDI.

Figure A.2: Additional Impacts of Threshold Crossing on Mother's Labor Outcomes



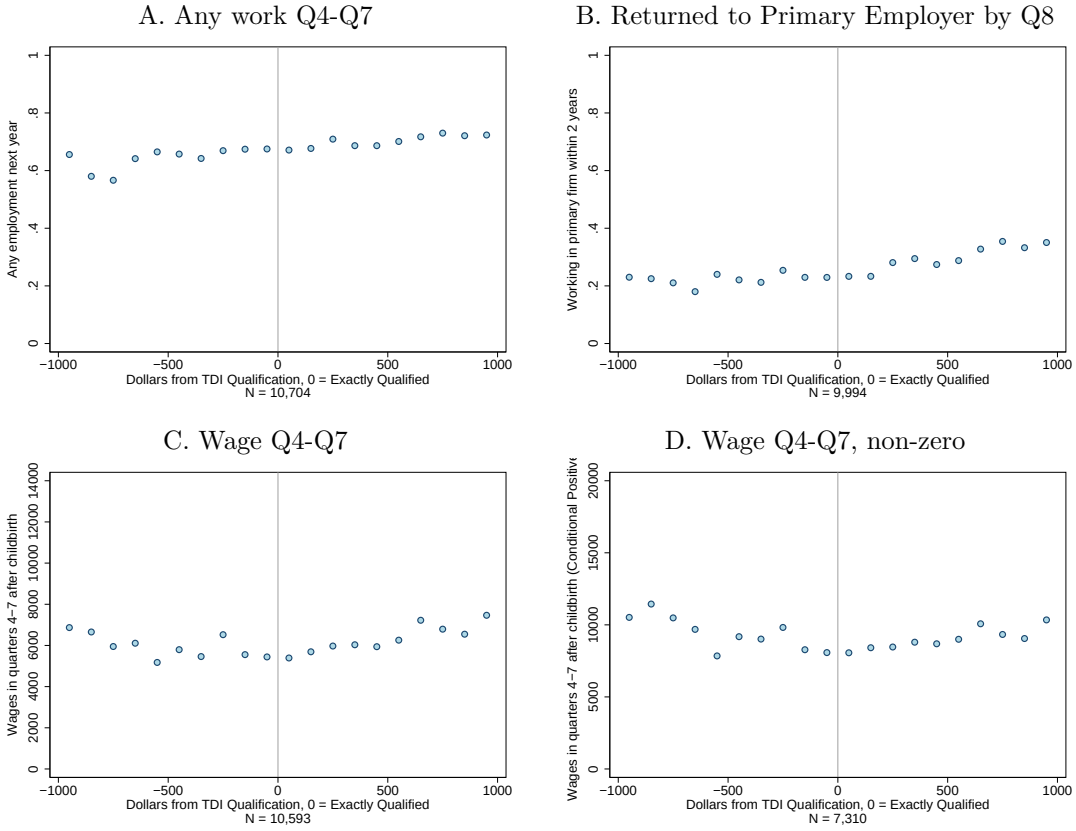
Notes: Panels include all mothers who gave birth in Rhode Island from 1994Q1-2017Q1, and have baseline wages within $1,000 of the eligibility threshold of TDI, and filed claims for pregnancy-related TDI benefits. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Labor and Training. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI.

Figure A.3: Impact of Threshold Crossing on Labor Force Outcomes (Claimants - Social Assistance Sample)



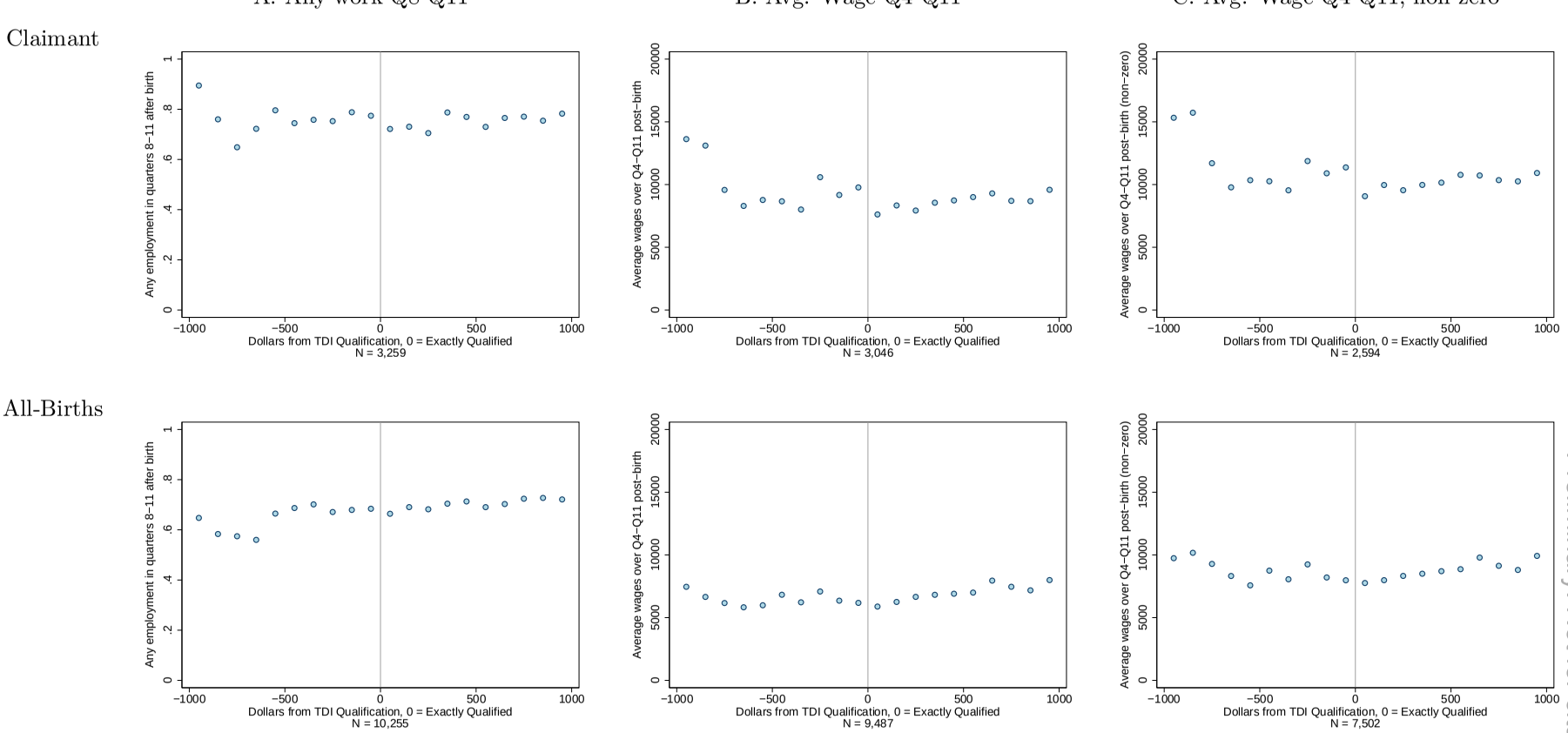
Notes: Panels include all mothers who gave birth in Rhode Island from 1994Q1-2017Q1, have baseline wages within $1,000 of the eligibility threshold of TDI, and filed claims for pregnancy-related TDI benefits. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Labor and Training. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Figure A.4: Impact of Threshold Crossing on Labor Force Outcomes (All Births - Social Assistance Sample)



Notes: Panels include all mothers who gave birth in Rhode Island from 1994Q1-2017Q1, and have baseline wages within $1,000 of the eligibility threshold of TDI. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Labor and Training. A value greater or equal to 0 dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Figure A.5: Additional Impacts of Threshold Crossing on Mother Labor Outcomes (Social Assistance Sample)



Notes: Panels include all mothers who gave birth in Rhode Island from 1994Q1-2017Q1, have baseline wages within $1,000 of the eligibility threshold of TDI, and filed claims for pregnancy-related TDI benefits. Mothers are grouped into eligibility income bins of $100. Data on measures are from Rhode Island Department of Labor and Training. A value greater or equal to 0 of dollars from qualification corresponds to the mother having sufficient baseline earnings to qualify for TDI. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table A.1: Balance Test of Baseline Characteristics

	(1) RD - Claimants	(2) RD - All Births
White(=1)	-0.048	-0.017
	(0.035)	(0.020)
Black/African-American(=1)	0.054*	0.014
	(0.028)	(0.016)
Hispanic(=1)	0.011	-0.006
	(0.032)	(0.018)
Other Race(=1)	0.018	0.008
	(0.026)	(0.014)
Mother Age at Birth	-0.038	0.168
	(0.542)	(0.291)
Teenaged Birth(=1)	0.041	-0.005
	(0.032)	(0.019)
Number of Previous Births	-0.088	-0.038
	(0.099)	(0.055)
Married at Birth(=1)	-0.047	-0.016
	(0.047)	(0.024)
Base-period Wages	66.846	3.185
	(123.720)	(57.976)
TANF Use in Year Prior to Birth(=1)	0.042	-0.008
	(0.037)	(0.023)
SNAP Use in Year Prior to Birth(=1)	0.072	-0.021
	(0.044)	(0.024)
Medicaid Use in Year Prior to Birth(=1)	0.018	0.004
	(0.046)	(0.023)
Joint Test p-value	0.476	0.941

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate and standard error (in parentheses). Estimation utilizes an RD around qualification for TDI for Rhode Island mothers who gave birth in 1994Q1-2017Q1 and had baseline wages that fell within $1,000 of the eligiblity threshold.

Table A.2: Estimated Impact of Threshold Crossing on TDI

	(1) RD (Claimants)	(2) RD (All Births)
TDI Use	0.818***	0.201***
	(0.0222)	(0.0202)
	[5,655]	[17,086]
TDI Benefits ($)	841.7***	211.0***
	(74.07)	(33.59)
	[5,655]	[17,086]
TDI Weeks	7.283***	1.756***
	(0.439)	(0.230)
	[5,655]	[17,086]
Wage in quarter after claim	26.30	48.71
	(148.5)	(73.34)
	[5,541]	[16,707]

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets) in Columns (1) and (2). Regressions utilize an RD around qualification for TDI for mothers with base-period wages that fell within $1,000 of the eligiblity threshold. The first column is estimated using mothers who claimed TDI during their pregnancy period; the second does not condition on filing for TDI.

Table A.3: Additional Estimated Impacts of Threshold Crossing

	(1) 2SLS RD (Claimants)	(2) Mean	(3) 2SLS RD (All Births)	(4) Mean
Pre-Post Birth Earnings Ratio	-0.122	1.243	0.0601	0.850
	(0.205)		(0.345)	
	[5,222]		[15,856]	
Breastfeeding at Discharge	-0.224	0.607		
	(0.172)			
	[662]			
C-Section	0.183	0.262		
	(0.112)			
	[1,665]			

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets) in Columns (1) and (3). Quarters of outcomes are relative to the quarter of birth. Regressions utilize an RD around qualification for TDI for mothers with base-period wages that fell within $1,000 of the eligiblity threshold. The first column is estimated using mothers who claimed TDI during their pregnancy period; the third column does not condition on filing for TDI. The second and fourth columns are the sample means of the outcome variable for the claimants and all-births samples, respectively. Birth outcomes are estimated only for mothers who claim TDI at least 2 weeks prior to giving birth. Earnings ratio is defined as the total wages earned in the four quarters after birth divided by the total wages earned in the four quarters before birth.

Table A.4: Estimated Impact of TDI on Mother Labor Outcomes (Social Assistance Sample)

	(1) OLS <20K	(2) Double LASSO <20K	(3) OLS 20K-40K	(4) Double LASSO 20K-40K
Any employment in Q4	0.167***	0.0804***	0.161***	0.0855***
	(0.00964)	(0.0103)	(0.0192)	(0.0199)
	[11,848]	[11,848]	[3,652]	[3,652]
Any employment in Q4-Q7	0.121***	0.0662***	0.128***	0.0675***
	(0.00860)	(0.00932)	(0.0172)	(0.0181)
	[11,103]	[11,103]	[3,395]	[3,395]
Any employment in Q8-Q11	0.0869***	0.0545***	0.0952***	0.0424*
	(0.00896)	(0.00987)	(0.0185)	(0.0197)
	[10,625]	[10,625]	[3,245]	[3,245]
Wages in Q4	746.0***	270.7***	826.6***	337.2*
	(45.47)	(48.48)	(144.5)	(146.3)
	[11,757]	[11,757]	[3,611]	[3,611]
Wages in Q4-Q7	2,754***	1,041***	2,803***	1,097+
	(178.8)	(189.1)	(565.4)	(566.9)
	[10,983]	[10,983]	[3,351]	[3,351]
Avg. Wages in Q4-Q11	2,524***	975.4***	2,265***	459.7
	(188.0)	(200.5)	(586.5)	(585.5)
	[9,903]	[9,903]	[3,003]	[3,003]
Wages in Q4, non-zero	377.8***	181.9**	119.1	2.117
	(56.36)	(59.27)	(150.1)	(148.5)
	[7,219]	[7,219]	[2,657]	[2,657]
Wages in Q4-Q7, non-zero	1,850***	729.8***	734.8	-181.3
	(199.5)	(206.3)	(594.0)	(575.6)
	[8,492]	[8,492]	[2,782]	[2,782]
Avg. Wages in Q4-Q11, non-zero	1,968***	729.5***	1,063+	-194.7
	(199.3)	(207.4)	(610.1)	(594.4)
	[8,442]	[8,442]	[2,636]	[2,636]
Returned to Primary Emloyer by Q4	0.249***	0.0194*	0.227***	-0.0270
	(0.00945)	(0.00867)	(0.0217)	(0.0187)
	[11,382]	[11,382]	[3,482]	[3,482]
Returned to Primary Employer by Q8	0.244***	0.0149	0.205***	-0.0363+
	(0.0100)	(0.00933)	(0.0229)	(0.0198)
	[10,395]	[10,395]	[3,146]	[3,146]
Returned to Primary Employer by Q11	0.239***	0.0136	0.204***	-0.0485*
	(0.0107)	(0.00999)	(0.0245)	(0.0214)
	[9,300]	[9,300]	[2,791]	[2,791]

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets). Quarters of outcomes are relative to the quarter of birth. The first and second pair of columns are OLS regressions among mothers who are income-eligible for TDI with, respectively, household incomes of less than $20,000 and between $20,000-$40,000. The first and third columns uses intuitive control variables including race and ethnicity, sex, age group, baseline wages, father's baseline wages, marital status, and social assistance usage. The second and fourth columns use controls selected from the "Double LASSO" procedure. Household income is defined as mother's base-period wages, plus father's corresponding wages if married at time of birth. Primary employer defined as the firm in which the mother earned the majority of her baseline wages. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table A.5: Estimated Impact of TDI on Mother Social Assistance Outcomes (Social Assistance Sample)

	(1) OLS <20K	(2) Double LASSO <20K	(3) OLS 20K-40K	(4) Double LASSO 20K-40K
SNAP Use in Q4-Q7	-0.0372***	-0.00250	-0.00373	-0.00164
	(0.00926)	(0.00617)	(0.0204)	(0.0126)
	[11,591]	[11,591]	[3,541]	[3,541]
TANF Use in Q4-Q7	-0.101***	0.00285	-0.0339*	-0.000235
	(0.00907)	(0.00580)	(0.0149)	(0.00942)
	[11,591]	[11,591]	[3,541]	[3,541]
Medicaid Use in Q4-Q7	0.00651	0.00107	0.00447	-0.0111
	(0.00785)	(0.00550)	(0.0206)	(0.0128)
	[11,698]	[11,698]	[3,581]	[3,581]
SSI Use in Q4-Q7	-0.00111	0.000871	-0.00476*	-0.00413+
	(0.00115)	(0.000686)	(0.00231)	(0.00250)
	[11,591]	[11,591]	[3,541]	[3,541]
RSDI Use in Q4-Q7	-0.00488**	-0.000828	-0.00214	-0.00102
	(0.00183)	(0.00107)	(0.00306)	(0.00163)
	[11,591]	[11,591]	[3,541]	[3,541]
TDI Use in Q4-Q7	0.0504***	0.0452***	0.0654***	0.0589***
	(0.00513)	(0.00566)	(0.0144)	(0.0157)
	[11,698]	[11,698]	[3,581]	[3,581]
SNAP Use in Q4-Q11	-0.0279**	0.00717	0.0110	0.00733
	(0.00929)	(0.00621)	(0.0215)	(0.0144)
	[11,253]	[11,253]	[3,428]	[3,428]
TANF Use in Q4-Q11	-0.102***	0.00116	-0.0389*	-0.00430
	(0.00941)	(0.00615)	(0.0171)	(0.0117)
	[11,253]	[11,253]	[3,428]	[3,428]
Medicaid Use in Q4-Q11	0.0109	0.000774	0.0240	0.00211
	(0.00717)	(0.00524)	(0.0201)	(0.0130)
	[11,253]	[11,253]	[3,428]	[3,428]
SSI Use in Q4-Q11	-0.00186	0.00189*	-0.00480+	0.000792
	(0.00154)	(0.000960)	(0.00291)	(0.00176)
	[11,138]	[11,138]	[3,376]	[3,376]
RSDI Use in Q4-Q11	-0.00726***	-0.000720	-0.00261	-0.00143
	(0.00214)	(0.00129)	(0.00382)	(0.00202)
	[11,138]	[11,138]	[3,376]	[3,376]
TDI Use in Q8-Q11	0.0472***	0.0482***	0.0675***	0.0691***
	(0.00615)	(0.00682)	(0.0166)	(0.0180)
	[11,253]	[11,253]	[3,428]	[3,428]

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets). Quarters of outcomes are relative to the quarter of birth. The first and second pair of columns are OLS regressions among mothers who are income-eligible for TDI with, respectively, household incomes of less than $20,000 and between $20,000-$40,000. The first and third columns use intuitive control variables including race and ethnicity, sex, age group, baseline wages, father's baseline wages, marital status, and social assistance usage. The second and fourth columns use controls selected from the "Double LASSO" procedure. Household income is defined as mother's base-period wages, plus father's corresponding wages if married at time of birth. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table A.6: Estimated Impact of TDI on Child Outcomes (Social Assistance Sample)

	(1) OLS <20K	(2) Double LASSO <20K	(3) OLS 20K-40K	(4) Double LASSO 20K-40K
Development Outcomes				
First Connections	-0.00865	0.00537	-0.0209	-0.0331
Visit(=1)	(0.0112)	(0.0124)	(0.0247)	(0.0270)
	[9,594]	[9,594]	[3,041]	[3,041]
Recommended Age 2	0.00358	-0.000350	0.0192	0.0412+
Immunization(=1)	(0.0115)	(0.0112)	(0.0249)	(0.0248)
	[9,061]	[9,061]	[2,975]	[2,975]
Ever on IEP(=1)	-0.0109	-0.00360	-0.0223	-0.0330
	(0.0111)	(0.0122)	(0.0254)	(0.0269)
	[7,770]	[7,770]	[2,198]	[2,198]
Test Scores	0.0273	0.0170	0.0245	0.0683
	(0.0261)	(0.0294)	(0.0628)	(0.0715)
	[19,391]	[19,391]	[4,448]	[4,448]
Next birth within 3	-0.0327***	-0.0293**	-0.00831	-0.00285
years(=1)	(0.00853)	(0.00940)	(0.0189)	(0.0201)
	[11,253]	[11,253]	[3,428]	[3,428]

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets). Quarters of outcomes are relative to the quarter of birth. The first and second pair of columns are OLS regressions among mothers who are income-eligible for TDI with, respectively, household incomes of less than $20,000 and between $20,000-$40,000. The first and third columns use intuitive control variables including race and ethnicity, sex, age group, baseline wages, father's baseline wages, marital status, and social assistance usage. The second and fourth columns use controls selected from the "Double LASSO" procedure. Household income is defined as mother's base-period wages, plus father's corresponding wages if married at time of birth. Test scores is measured as number of standard deviations away from the mean math and reading scores of the grade cohort. IEP status and test scores are measured at all points that a child appears in the RI education system data. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

Table A.7: Estimated Impact of TDI on PRAMS outcomes

	(1) OLS <40K	(2) Double LASSO <40K	(3) Means
Stressed about bills	0.0158	0.0722*	0.277
	(0.0266)	(0.0288)	
	[1,641]	[1,641]	
Postpartum Depression	0.00527	0.0167	0.0971
	(0.0288)	(0.0302)	
	[690]	[690]	
Ever Breastfed	-0.0156	-0.0248	0.791
	(0.0274)	(0.0296)	
	[1,275]	[1,275]	
Breastfeeding Currently	-0.0535	-0.0582	0.346
	(0.0349)	(0.0369)	
	[1,004]	[1,004]	
Reading to infant	0.0362	0.0511	0.798
	(0.0367)	(0.0393)	
	[719]	[719]	
Baby sleeping in correct position	0.0152	0.0235	0.697
	(0.0275)	(0.0300)	
	[1,569]	[1,569]	

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets). Quarters of outcomes are relative to the quarter of birth. The first and second columns are OLS regressions among mothers who are income-eligible for TDI with, respectively, household incomes of less than $40,000. The first column uses intuitive control variables including race and ethnicity, sex, age group, baseline wages, father's baseline wages, marital status, and social assistance usage. The second column uses controls selected from the "Double LASSO" procedure. Household income is defined as mother's base-period wages, plus father's corresponding wages if married at time of birth.

Table A.8: Estimated Impact of TDI on PRAMS outcomes (Social Assistance Sample)

	(1) OLS <40K	(2) Double LASSO <40K	(3) Means
Stressed about bills	0.0221	0.100**	0.303
	(0.0333)	(0.0370)	
	[1,015]	[1,015]	
Postpartum Depression	-0.000483	0.0148	0.100
	(0.0363)	(0.0398)	
	[420]	[420]	
Ever Breastfed	-0.0273	-0.0260	0.775
	(0.0339)	(0.0383)	
	[801]	[801]	
Breastfeeding Currently	-0.00505	0.00563	0.281
	(0.0406)	(0.0448)	
	[619]	[619]	
Reading to infant	0.0497	0.0455	0.762
	(0.0478)	(0.0514)	
	[445]	[445]	
Baby sleeping in correct position	0.0474	0.0653+	0.636
	(0.0349)	(0.0395)	
	[978]	[978]	

Note: Significance reported as *** p<0.001; ** p<0.01; * p<0.05; + p<0.10. The rows display outcomes that we analyze. For each outcome, we show the point estimate, standard error (in parentheses), and sample size (in brackets). Quarters of outcomes are relative to the quarter of birth. The first and second columns are OLS regressions among mothers who are income-eligible for TDI with, respectively, household incomes of less than $40,000. The first column uses intuitive control variables including race and ethnicity, sex, age group, baseline wages, father's baseline wages, marital status, and social assistance usage. The second column uses controls selected from the "Double LASSO" procedure. Household income is defined as mother's base-period wages, plus father's corresponding wages if married at time of birth. Social Assistance sample defined as mother using any of SNAP, TANF, Medicaid, SSI, RSDI at any point in the 4 years prior to birth.

10 Appendix: Institutional Details and Construction of the Running Variable

1. Definition of Base Period:

The standard definition for the base period for a TDI claim is defined as the first four of the most recent five completed calendar quarters relative to the beginning date of a person's benefit year.[18] An individual may also qualify through the alternate base period, the most recent four completed calendar quarters.

2. Monetary Qualification Rules:

An individual can monetarily qualify for TDI in two ways. An individual qualifies outright if, in the base period, the individual made 1200 times the minimum wage at the time of the benefit year beginning date (call this **Method 1**).[19] Alternatively, an individual can qualify if each of the following criteria are true in the base period (call this **Method 2**):

1. Total earnings are at least 400 times the minimum wage (Method 2, Criterion 1);
2. Earnings in at least one calendar quarter are at least 200 times the minimum wage (Method 2, Criterion 2)
3. Total earnings are at least 1.5 times the value of an individual's highest quarterly earnings (Method 2, Criterion 3).

3. Qualification Measure Calculation:

The rules listed above generate four criteria that determine whether an individual qualifies for TDI through Method 1 or Method 2.

As detailed below, we measure eligibility by converting base period earnings into a measure of qualification for each of the four criteria.

Formally, we begin by calculating the following for each claim's base period:

[18] The benefit year is a 52 week period starting with the week that contains the date of a TDI claim that is filed by an individual who does not already have an active benefit year. A benefit year remains in effect for all subsequent claims that occur within the established benefit year.

[19] Recall that the "standard" base period is defined as the first four of the five most recent calendar quarters preceding a TDI claim. Alternatively, an individual may also qualify based on earnings during the "alternate base period" which is defined as the most recent four completed calendar quarters.

$Y_{pi} = Total\, Wages$

$HQ_{pi} = Highest\, Quarterly\, Wages$

Where p indicates whether the measure comes from the standard base period ($p = B$) or the alternate base period ($p = A$). We also define the minimum wage at time t (the benefit year beginning date):

$MW_t = Minimum\, Wage$

Next, we calculate the distance from qualification through Method 1 as:

$$M1Q_{pit} = Y_{pi} - (1200 * MW_t) \tag{3}$$

As described previously, individual i qualifies through Method 1 if Equation (1) is greater than or equal to zero.

For Method 2, we first calculate the following statistics to measure qualification:

$$CQ_{1,pit} = Y_{pi} - (400 * MW_t) \tag{4}$$

$$CQ_{2,pit} = HQ_{pi} - (200 * MW_t) \tag{5}$$

$$CQ_{1,pit} = (Y_{pi} - HQ_{pi}) - (0.5 * HQ_{pi}) \tag{6}$$

where $CQ_{c,pit}$ is the fraction of qualification by Criterion c of Method 2 in base period type p.

To qualify through Method 2, an individual must have base period earnings such that Equations A2, A3 and A4 are greater than or equal to zero. In other words, the determining criterion for qualification under Method 2 is the minimum of the three identities that we calculate:

$$M2Q_{pit} = \min_{c \in [1,3]} CQ_{c,pit}$$

These calculations give us:

$$M1Q_{Bit} = Fraction\, of\, Qualification,\ Base\, Period\, under\, Method\, 1$$

$$M2Q_{Bit} = Fraction\, of\, Qualification,\ Base\, Period,\ Method\, 2$$

$$M1Q_{Ait} = Fraction\, of\, Qualification,\ Alt.\, Base\, Period,\ Method\, 1$$

$$M2Q_{Ait} = Fraction\, of\, Qualification\, in\, the\, Alt.\, Base\, Period,\ Method\, 2$$

The determining factor of eligibility among these measure is simply the maximum, so the qualification measure for person i at time t is given by:

$$q_{it} = max(\{M1Q_{Bit}, M2Q_{Bit}, M1Q_{Ait}, M2Q_{Ait}\})$$

Based on Equations A1-A5, there are the following four distinct qualification groups of TDI claimants:

1. Individuals whose qualification score is determined by Method 1 ($q_{it} = M1Q_{pit}$)

2. Individuals who meet the requirements of Criteria 2 and 3 of Method 2 and whose qualification score is determined by Criterion 1 of Method 2 ($qit = CQ_{1,pit}$; $CQ_{2,pit} \geq 0$; $CQ_{3,pit} \geq 0$)

3. Individuals who meet the requirements of Criteria 1 and 3 of Method 2 and whose qualification score is determined by Criterion 2 of Method 2 ($qit = CQ_{2,pit}$; $CQ_{1,pit} \geq 0$; $CQ_{3,pit} \geq 0$)

4. Individuals who meet the requirements of Criteria 1 and 2 of Method 2 and whose qualification score is determined by Criterion 3 of Method 2 ($qit = CQ_{3,pit}$; $CQ_{1,pit} \geq 0$; $CQ_{2,pit} \geq 0$)

In our analysis sample, we restrict attention to all individuals whose base period wages place them in one of these four groups. This implies that we exclude individuals with sufficiently low earnings (such that their qualification score is not determined by Method 1) who fail two or more of the criteria for Method 2. This group comprises of 5,254 and 609 births in our all-births and claimants-only samples, respectively.

For our regression model, our analysis "stacks" these four groups of TDI claimants and includes fixed effects for the qualification group associated with the claim.