Online appendix to:

Childbirth Effects of the 2004 Indian Ocean Tsunami

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1 Full representation of the main results

In the main text, we present the point estimates and the standard errors for the coefficients on the event indicators for the second, third, and fourth quarters of 2004 and the additional birth effect coefficients δ_{kt} for the same periods and in moderately and heavily affected areas. In those regressions we also control for all other year-quarters in the sample from 2003 to 2005. The coefficients for all time periods are presented graphically in Figures A1-A2.

2 Additional robustness and specification tests

2.1 Alternative assignment of control and treated cohorts

We test whether the timing effects in our main results are robust to various definition of the control group by comparing pregnancies whose gestation period overlaps with the Tsunami against pregnancies beginning in other periods. The β_t coefficient in Equations (1) and (2) in the main text compares the average birth effect for those conceived in or after the second quarter of 2004 against only those conceived in the last pre-treatment period, the first quarter of 2004. This setup effectively puts those conceived after the Tsunami into the treatment group. We now alter our control group by including those conceived after the Tsunami into the control group. In addition, we also expand the group of pregnancies that is expected to terminate before the Tsunami by including those conceived

in a broader sample of periods. In order to do so, we run the following regression.

$$y_{ict} = \phi_c + \lambda_{QOC} + \lambda_{YOC} + \gamma X_{ict} + \sum_{q=2}^{4} \beta_q \mathbb{1}[QOC = q] \times \mathbb{1}[YOC = 2004] + \epsilon_{ict} \tag{A1}$$

Here, $\mathbb{1}[QOC = q]$ indicates that individual i is conceived on the q'th quarter in year t, where q can range from 1 to 4. $\mathbb{1}[YOC = 2004]$ equals 1 for those conceived in 2004 and 0 otherwise. λ_{QOC} is a collection of dummy variables for each quarter of conception within a given year. Thus, there are four dummy variables. λ_{YOC} is a collection of year of conception dummies. Other variables are identical to the ones that are used in Equations (1) and (2) in the main text.

Our coefficient of interest is β_q, which indicates the birth effect on those conceived in quarter q in 2004 compared to periods other than the second through fourth quarters of 2004. In estimating β_q, the indicator for first quarter is excluded since those conceived on the first quarter of 2004 is not expected to be exposed to the Tsunami in utero and thus not considered part of the treatment group. Given the negative birth effects for those exposed to the Tsunami in utero at the first trimester of pregnancy, we focus our interest on β_q when $q = 4$. We expect that β_4 to be negative for the livebirth and gestation length outcomes, and positive for the miscarriage and preterm birth outcomes.

In regressing Equation (A1), we utilize the following samples. We start out with those conceived from 1999 to 2005. Then, we re-run Equation (A1) on those conceived in 2000-2005, 2001-2005, 2002-2005, and 2003-2005 respectively, the last being our main sample. As the sample narrows down, there is a risk of losing statistical power as our observation decreases. Thus, our primary interest is to check whether the coefficients for β_4 are numerically similar across different sampling periods.

We present our results for Equation (A1) in Table A1. Overall, the results are qualitatively similar to those from our main regressions and thus corroborate the findings in the main text. The birth effects on those not conceived in the fourth quarter of 2004 are statistically zero at the 5% level. For the outcomes on gestation length and preterm birth, the birth effects for those conceived in the fourth quarter of 2004 is not significant at the 5% level. On the other hand, the same for the livebirth and miscarriage outcomes are significant at a conventional level. Livebirth, in particular, decreases by around 5-6 pp across the samples, while miscarriage increases by 4-5 pp. These patterns show two things; 1) livebirth and miscarriage results are robust to different assignment of control and treatment groups. 2) The differences in birth outcomes across cohorts is the most pronounced for livebirth and miscarriage, as suggested in the placebo results.

2.2 Regression on conception patterns pre- and post-Tsunami

2.2.1 Regression on the reduced sample

One could be concerned that mothers beginning pregnancy after the Tsunami may alter their fertility decisions, which can affect the credibility of our results. We have shown in the main text that migration patterns, the type of mothers becoming pregnant, and the total number of conceptions are not different across the sample period. Here, we show that the results are robust even if we drop those conceived after the Tsunami. We show this by regressing Equations (1) and (2) in the main text on pregnancies beginning in the years 2003 and 2004 only, whose results are presented in Table A2 and Figures A3 - A4. As with our original regression, the Tsunami effect is statistically significant only for those conceived in the fourth quarter of 2004. The coefficient values and standard errors are also largely similar throughout the regressions, indicating that leaving out those conceived after the Tsunami does not alter the results.

2.3 Testing for possible selective migration in the post-Tsunami period

In the main text, we present the result from the event-study regression that mothers who went into labor after the Tsunami are not more likely to migrate away from their original residence, whether temporarily or permanently. Figure A6 shows that the same result holds even when using the DD-approach. Furthermore, we are also able to identify non-movers and those who dwell in the same housing as before the Tsunami (non-movers and temporary migrants combined) based on the questions in the survey [1]. Table A3 summarizes how all observations in our sample are categorized based on their migration and residency status. This leaves us with four possible dummy variables for the dependent variables - those with any migration experience (temporary or permanent), temporary migrants, permanent migrants, and those residing in the same house as before (non-movers and temporary migrants). Figures A5 - A6 show the coefficients for the event indicators, while Tables A4 - A5 reports the point estimates. As in the main text, we find that the coefficients on all the event indicators and the δ_{kt} estimates are statistically indifferent from zero at conventional levels. Thus, we find that the post-Tsunami cohorts do not selectively migrate or move out of their old homes, suggesting that there are insufficient signs of selective attrition for these cohorts.

[1] The two questions are phrased respectively as follows: "Think back to the time just before the tsunami hit. Since that time, have you ever moved somewhere else for a period of two weeks or more?" "Think back to just before the tsunami. At that point, were you living here, in this house?"

2.3.1 Testing for changes in type of mothers in conception post-Tsunami

We test for the changes in the type of mothers becoming pregnant after the treatment by regressing the covariates onto the dummies for conception quarter and cluster of residence. While the balance tables in Tables 2-3 of the main text addresses the selection into treatment and control group at a *group level*, it is silent when it comes to picking up differences in sample selection across *each* year-quarter. To address this, we run regressions where our dependent variables are the observable covariates X_{ict} and independent variables are the set of dummies for each quarter and cluster of residence for both event-study and DD-approach.

The results are graphically presented in Figures A7 and A8 for the event-study and the DD-approach, respectively. Point estimates reported in Table A6. The estimated coefficients for almost all event indicators for those exposed to Tsunami in utero are statistically insignificant at the 5% level. The same holds for the estimates for those conceived after the Tsunami. These results suggest that there are no noticeable changes in the type of mothers becoming pregnant before and after the event. Therefore, changes in the type of pregnant mothers are unlikely to drive our main findings.

2.3.2 Pre- and post-Tsunami conceptions

In the main text, we show that the log of total conception per quarter $\times$ cluster does not change across the sample period. The main text introduced a event-study specification where this regression equation is used:

$$c_{ict} = \alpha + \phi_c + \sum_t \theta_t \mathbb{1}[t \leq 2003Q4] + \sum_t \beta_t \mathbb{1}[t \geq 2004Q2] + \epsilon_{ict} \tag{A2}$$

where c_{ict} is the outcome variable. For our exercise, this is either raw or log of total conception. Other variables retain the same meaning from the main text.

We also show that the same results hold even if we use a DD-approach. For this exercise, we regress the following equation:

$$c_{ict} = \alpha + \phi_c + \sum_t \theta_t \mathbb{1}[t \leq 2003Q4] + \sum_t \beta_t \mathbb{1}[t \geq 2004Q2] + \sum_{k=2}^{3} \sum_t \delta_{kt} \mathbb{1}[\text{damage}_c = k] \times \mathbb{1}[t \geq 2004Q2] + \epsilon_{ict} \tag{A3}$$

Equation (A3) tests for the structural changes in total conception in a DD-approach. We use the

same outcome, control variables, and sample periods used in Section 6.2 of the main text. Here, the difference is that we allow for cluster-level differences in fertility trends using the $\mathbb{1}[\text{damage}_c = k]$ variable.

The results from the above regression is reported in Table A7 and in Figure A10 and A11. We find that both the year-quarter dummies and the differences across clusters are also indistinguishable from zero at a 5% level. The findings here are qualitatively similar to the event-study results reported in Figure 8 in the main text.

2.4 Using alternative measures of the extent of damage for cross-cluster variation

In this section, we use alternative definitions of treatment assignment at a cross-sectional level. The cross-sectional variation of treatment in Section 5.2 of the main text categorizes different clusters into the same group if the extent of damage is considered identical. As such, the current measure does not capture the variation that can exist across different clusters within the same extent of damage. The following exercise captures these variations and complements the DD-approach results on Section 5.2 of the main text.

To do this, we utilize the respondents' report on whether their houses were damaged by the Tsunami. In the survey, respondents could answer that their houses were either unaffected, damaged, or destroyed by the Tsunami. We aggregate those that reported that their houses were either damaged or destroyed into a single category. Table A8 shows, more houses are destroyed on average as damage extent becomes greater. As such, they can serve as a proxy for the indicators for the extent of damage used in earlier DD-approaches.

We then derive a new variable that indicates the intensity of the Tsunami damage for each cluster. We refer to this treatment intensity variable as 'house damage rate' and define it as

$$\text{House damage rate in cluster } c = \frac{\text{Total damaged houses in cluster } c}{\text{Total houses in cluster } c} \tag{A4}$$

In the DD-approach regression, this variable replaces $\mathbb{1}[\text{damage}_c = k]$. It can take any values from zero to one, making it a continuous variation of treatment intensity. The clusters with higher house damage rate are subject to more serious damages from the Tsunami. We hypothesize that those in clusters with higher house damaged rate are more susceptible to additional harmful birth effects of the Tsunami.

The results are in Figure A12, with estimates reported in Table A9. As with the main results, the harmful birth effects of the Tsunami are concentrated on those conceived in the fourth quarter of 2004. The regression results show no statistically significant treatment effect differences across cross-sections at the 5% level, suggesting that the heterogeneities across geographic areas had limited impact on birth outcomes [2].

We can also change the treatment unit to a household and leverage the cross-sectional variation of damages experienced by each household as another possible alternative identification strategy. We use the dummy variable taking 1 if a house was damaged by the Tsunami to assign treatments. We replace $\mathbb{1}[\text{damage}_c = k]$ variable in Equation (2) in the main text with $\mathbb{1}[\text{House damaged}]$. This is an indicator variable which takes 1 if individual i's house was damaged due to the Tsunami. Similar to the hypotheses on the treatment difference across clusters, we expect that those whose houses were damaged are more vulnerable to negative birth effects. Such damage would induce members of the household to be displaced or constrained in terms of financial resources, leaving them less prepared to address negative birth effects[3].

As in Figure A13 and Table A9, the results are not qualitatively different from the DD-approach results in the main text. As this is also the case when we exploit the continuous intensity of treatment as in Section 6.3 of the main text, the findings here corroborate the results found in the main text.

2.5 Addressing potential problems from coarse measurement of the conception duration

In this section, we address the possible measurement error in our treatment effect that arises from not being able to use the finer units of time to determine treatment assignment. Ideally, we would be using the exact conception duration defined in terms of disaggregated time units such as weeks to determine whether the conception duration overlaps with the Tsunami for each pregnancy. Unfortunately, only 4.86% of our respondents (105 respondents) have responded their conception duration in terms of weeks. The rest are recorded in terms of months. We use two methods to address this issue. First, we regress on the subsample of our observations whose pregnancies are recorded in months. Second, we adopt bounding exercise from Lee (2009) to obtain intervals for the

[2] In Section 1.3 of the online appendix, we introduce another approach where we use an individual level indicator for the house being damaged due to the Tsunami to determine cross-sectional treatment at an individual level, not at the cluster-level. Results are qualitatively identical.

[3] There are four possible answers to the question asking whether their house was damaged by the tsunami: Unaffected, damaged, destroyed, and don't know. There are four respondents who replied by saying that they "don't know" whether their houses were damaged by the Tsunami. In this specification, we remove these observations.

treatment effects.

We first discuss the results from regressing on the narrower sample whose conception durations are tracked in the unit of months. First, we verify using a balance test that those who recoded their conception duration in weeks and months are statistically identical in terms of the covariates included in the regression. We use the event-study regression to derive the results for this exercise. The balance test results and the estimation results are presented in Tables A10 and A11. The balance test confirms that the t-test of difference between the two groups of observations are mostly not significant at conventional levels. The point estimates are also not drastically different from our main results and retains the outcome that those exposed to the Tsunami in the first trimester of the pregnancy (conceived in the fourth quarter of 2004) are the worst effected cohort [4].

We also implement a bounding exercise adopted from Lee (2009) to identify whether the lower and upper bounds of the treatment effects are consistent with our findings from the main specifications. The idea is that we trim the proportion of observations within the group of pregnancies recorded in months that are likely to be coarsely measured compared to their counterparts whose pregnancy durations are in weeks[5]. In order to obtain such bounds, we refer to the procedure in another study that adopts this exercise (Isen et al. 2017). To implement this, we obtain the residuals from the main specifications and drop the top 4.86% of observations to obtain the lower bounds of the treatment effects. Similarly, we remove the bottom 4.86% of observations to obtain the upper bounds. We choose this particular cutoff as there are 4.86% of the pregnancies recorded in weeks. However, we get similar results with other choices of cutoffs[6]. The results of the bounding exercise on all of the event indicators are presented in Figure A14 and the coefficients for those conceived in the fourth quarter of 2004 are numerically displayed in Table A12. The estimates for the lower and upper bounds are mostly within the confidence interval for the original estimates, suggesting that our estimates are less likely to deviate from the true effects.

[4]Since there are only 105 observations whose pregnancies are recorded in weeks, the same regression on this subsample is under-powered.

[5]The original idea presented in Lee (2009) is to identify the excess number of individuals induced to be selected into treatment and to trim the outcome distribution in both ends by this number.

[6]We have also used the cutoff of 3%, 5%, and 10%. The results are not drastically different from each other.

3 Variables on mechanisms behind the main results

To analyze mechanisms driving the birth effects, we use migration histories, information pertaining to household finances, usage of outpatient health care service, and self-reported symptoms of mental and physical distress. Employment status and income, expenditures on health-related items (including prenatal care), receipt of transfers and household assets are contained in the dataset. It also includes information on whether the respondents used any outpatient care at all and if so, at which type of facilities - ranging from public/private hospitals to local village care centers. In addition, each respondent is asked to report whether she experiences various symptoms in a yes-or-no format. The symptoms queried include fear of death, feeling disturbed when reminded of the tsunami, anxiety about future, and fear of water. Summary statistics are provided in Table A13. Point estimates for the results on mitigated treatment effects after the Tsunami are in Table A14. Tables A15 and A16 address the question on whether maternal health and socioeconomic indicators affect our treatment outcomes. We find no statistically significant evidence suggesting that maternal health and socioeconomic factors drive the results.

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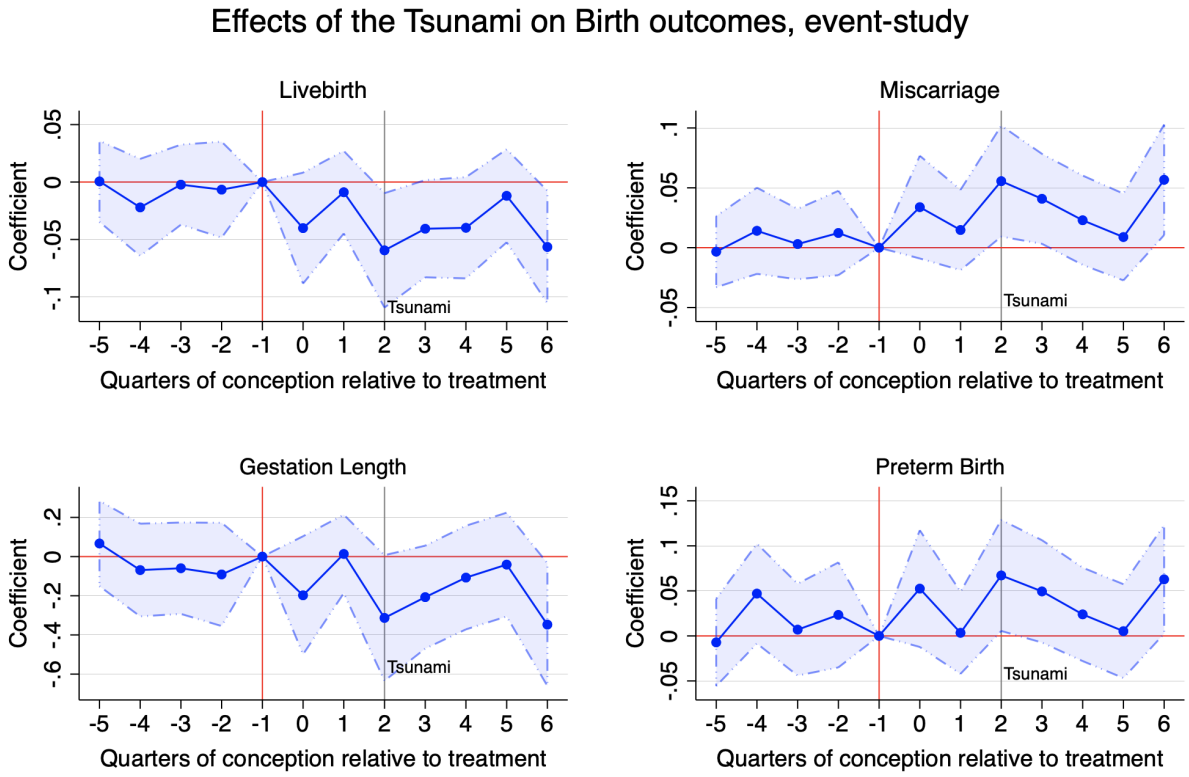
4 Figures and Tables

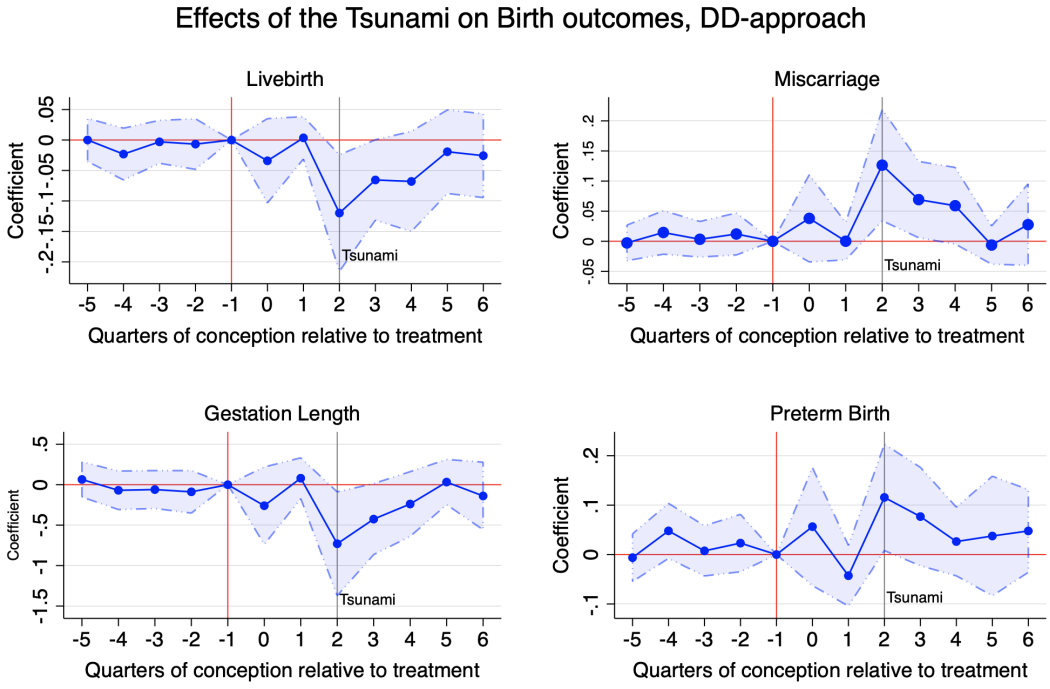
4.1 Figures

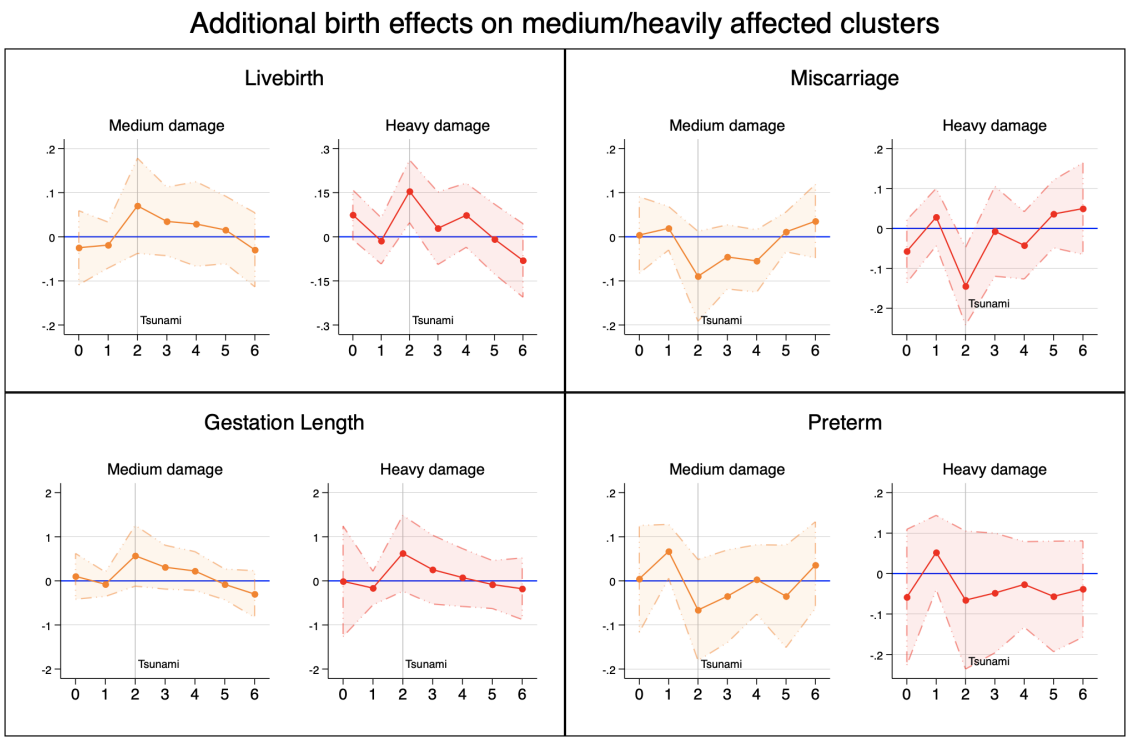
Figure A1: Birth effects of the Tsunami, event-study



Note: Period 0 indicates those conceived in 2004Q2 and in the 3rd trimester of pregnancy at the point of the Tsunami, 95% confidence interval is included, where the circle markers indicate point estimates. Regression includes controls for mother's age at birth (level and squared), years of schooling (mother and father), birth order indicators, and cluster fixed effects. Standard errors are clustered at cluster-level. Observations: 2,159, Clusters: 108

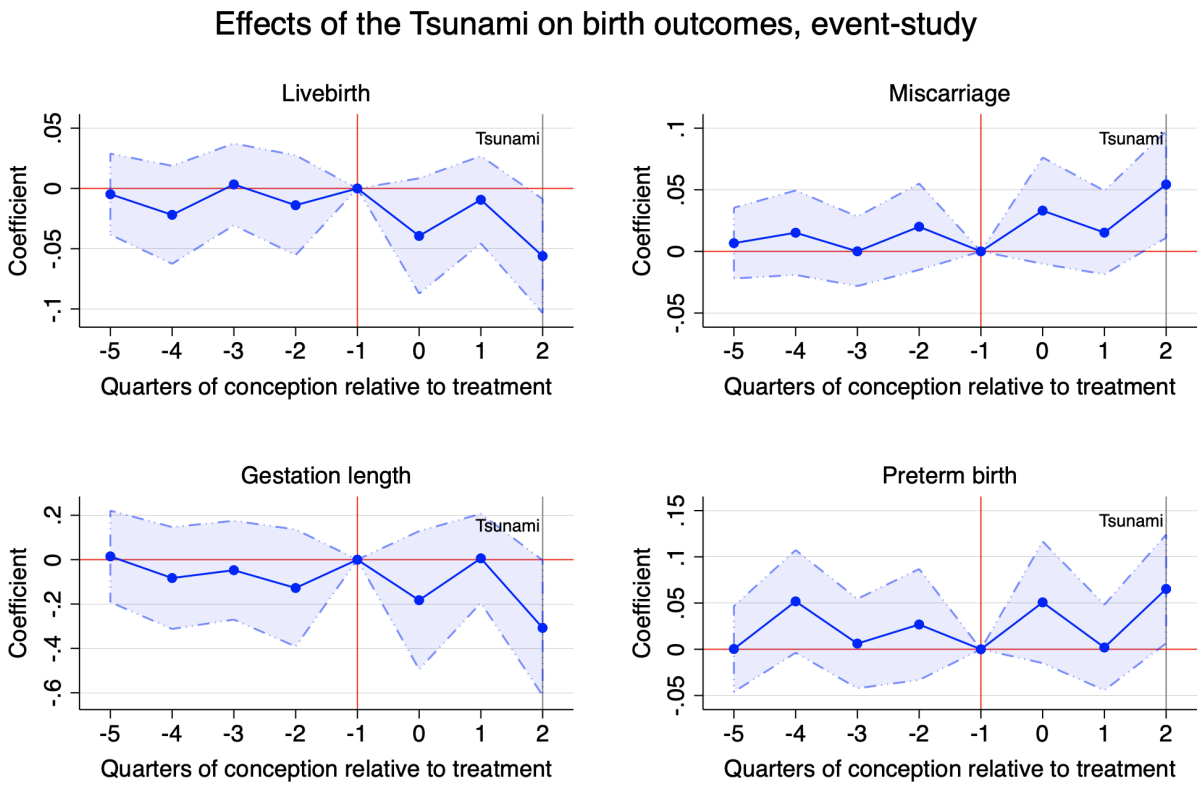
Figure A2: Birth effects of the Tsunami, DD-approach





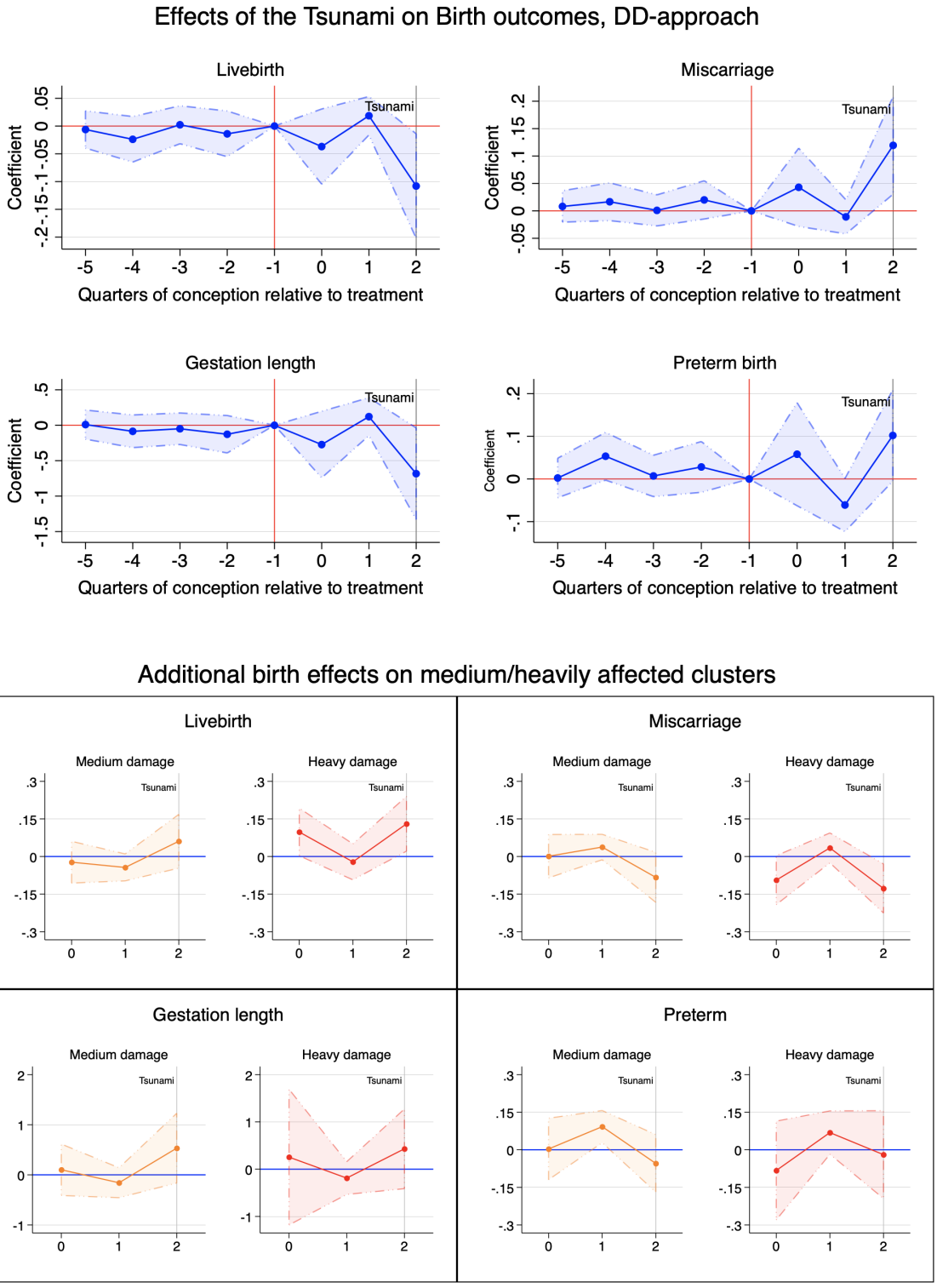
Note: Period 0 indicates those conceived in 2004Q2 and in the 3rd trimester of pregnancy at the point of the Tsunami, 95% confidence interval is included, where the blue, orange, and red circle markers indicate point estimates for β_t, δ_{2t}, and δ_{3t}, respectively. Regression includes controls for mother's age at birth (level and squared), years of schooling (mother and father), birth order indicators, cluster fixed effects as well. Standard errors are clustered at cluster-level. Observations: 2,159, Clusters: 108

Figure A3: Birth effects of the Tsunami for the reduced sample, event-study



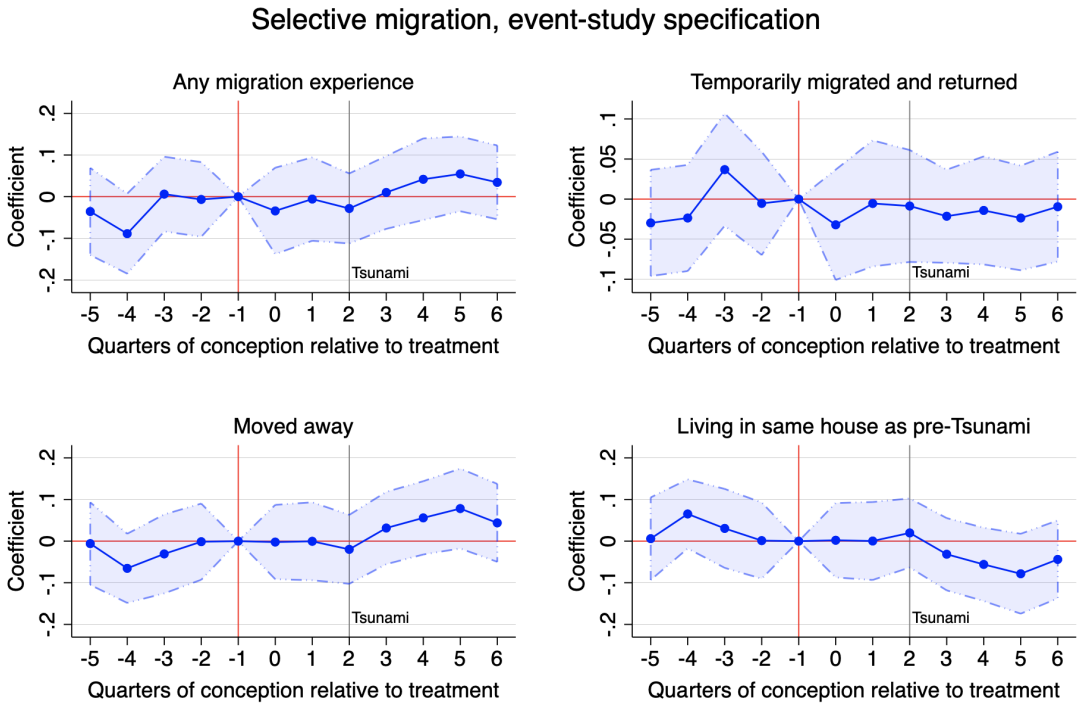
Note: Period 0 indicates those conceived on 2004Q2 and in the third trimester of pregnancy at the point of the Tsunami. 95% confidence interval is included, where the circle marker indicates point estimates. Regression includes controls for mother's age at birth (level and squared), years of schooling (mother and father), birth order indicators, and cluster fixed effects. Standard errors are clustered at cluster-level. Observations: 1,355, Clusters: 108

Figure A4: Birth effects of the Tsunami for the reduced sample, DD-approach



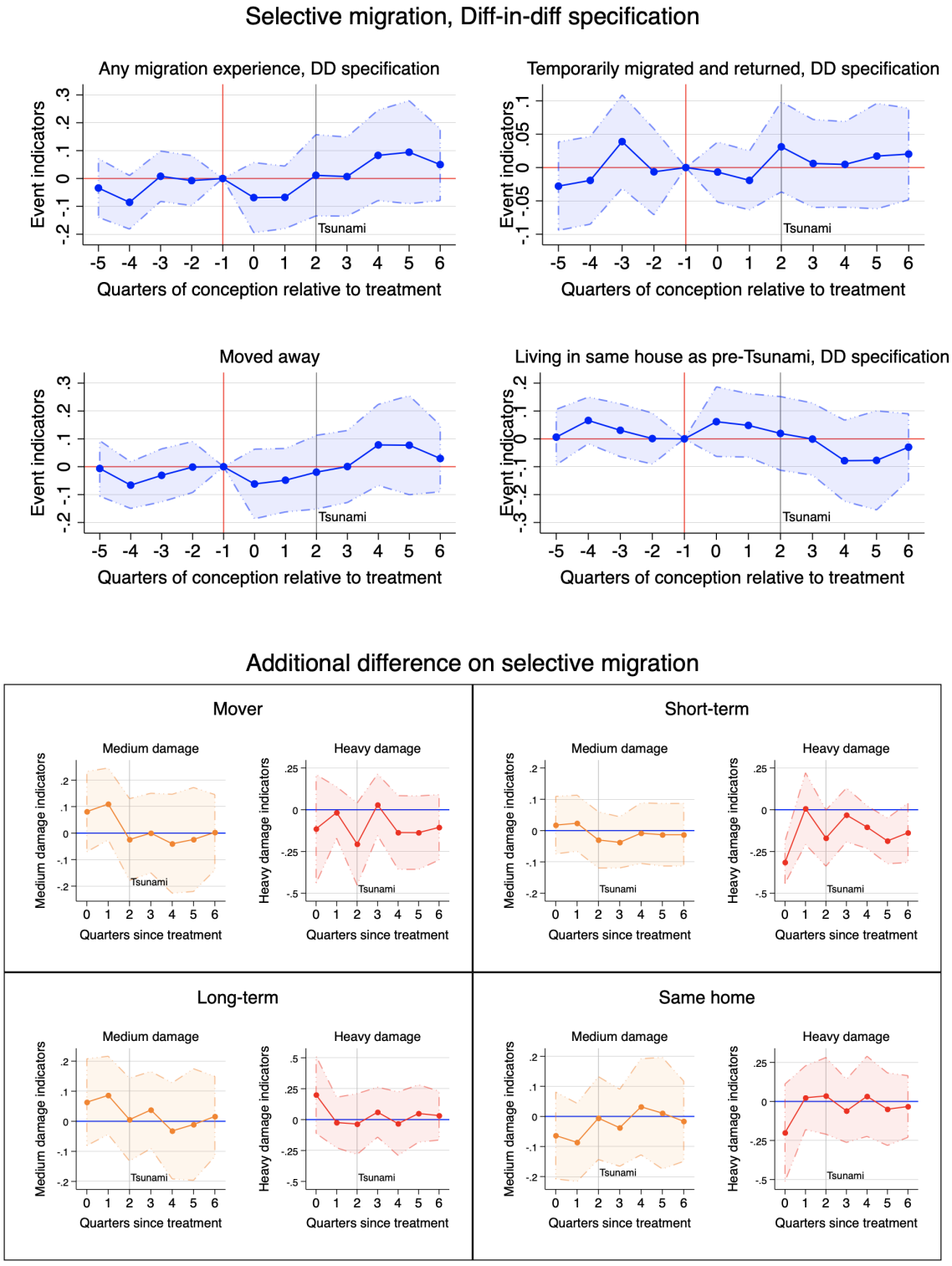
Note: Period 0 indicates those conceived in 2004Q2 and in the 3rd trimester of pregnancy at the point of the Tsunami, 95% confidence interval is included, where the blue, orange, and red circle markers indicate point estimates for β_t, δ_{2t}, and δ_{3t}, respectively. Regression includes controls for mother's age at birth (level and squared), years of schooling (mother and father), birth order indicators, and cluster fixed effects as well. Standard errors are clustered at cluster-level. Observations: 1,355, Clusters: 108

Figure A5: Testing for selective migration patterns, event-study



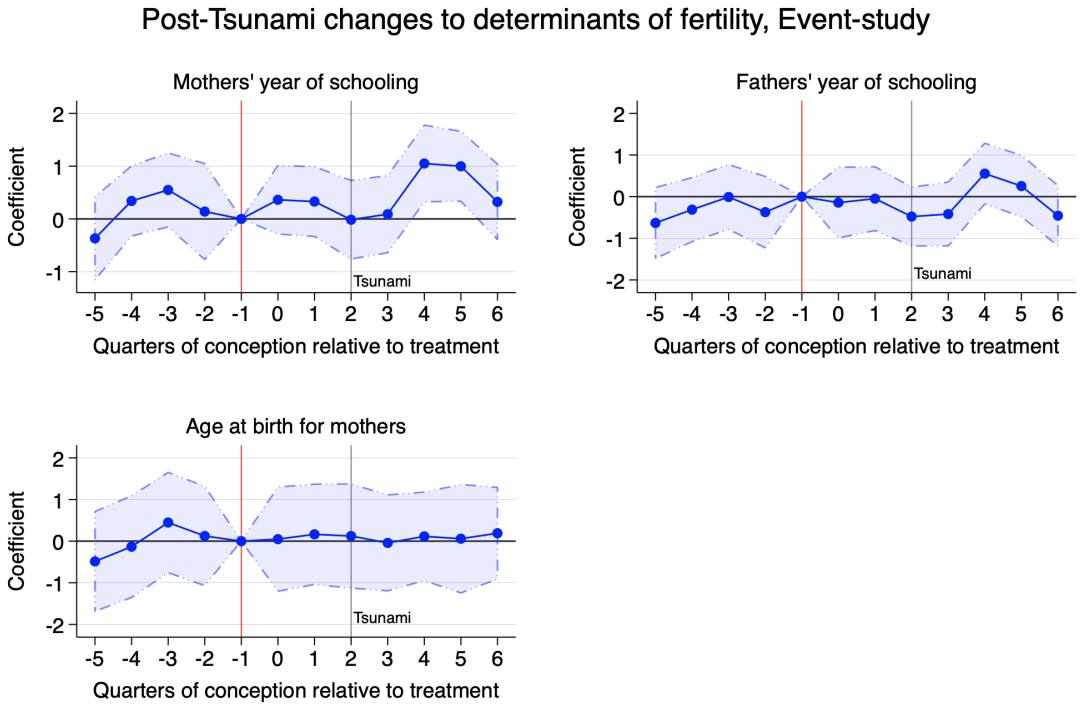
Note: Period 0 indicates those conceived on 2004Q2 and in the third trimester of pregnancy at the point of the Tsunami. 95% confidence interval is included, where the circle marker indicates point estimates. Regression includes controls for cluster fixed effects and others used in the main specifications. Standard errors are clustered at cluster-level. Observations: 2,159, Clusters: 108

Figure A6: Testing for selective migration patterns, difference-in-differences



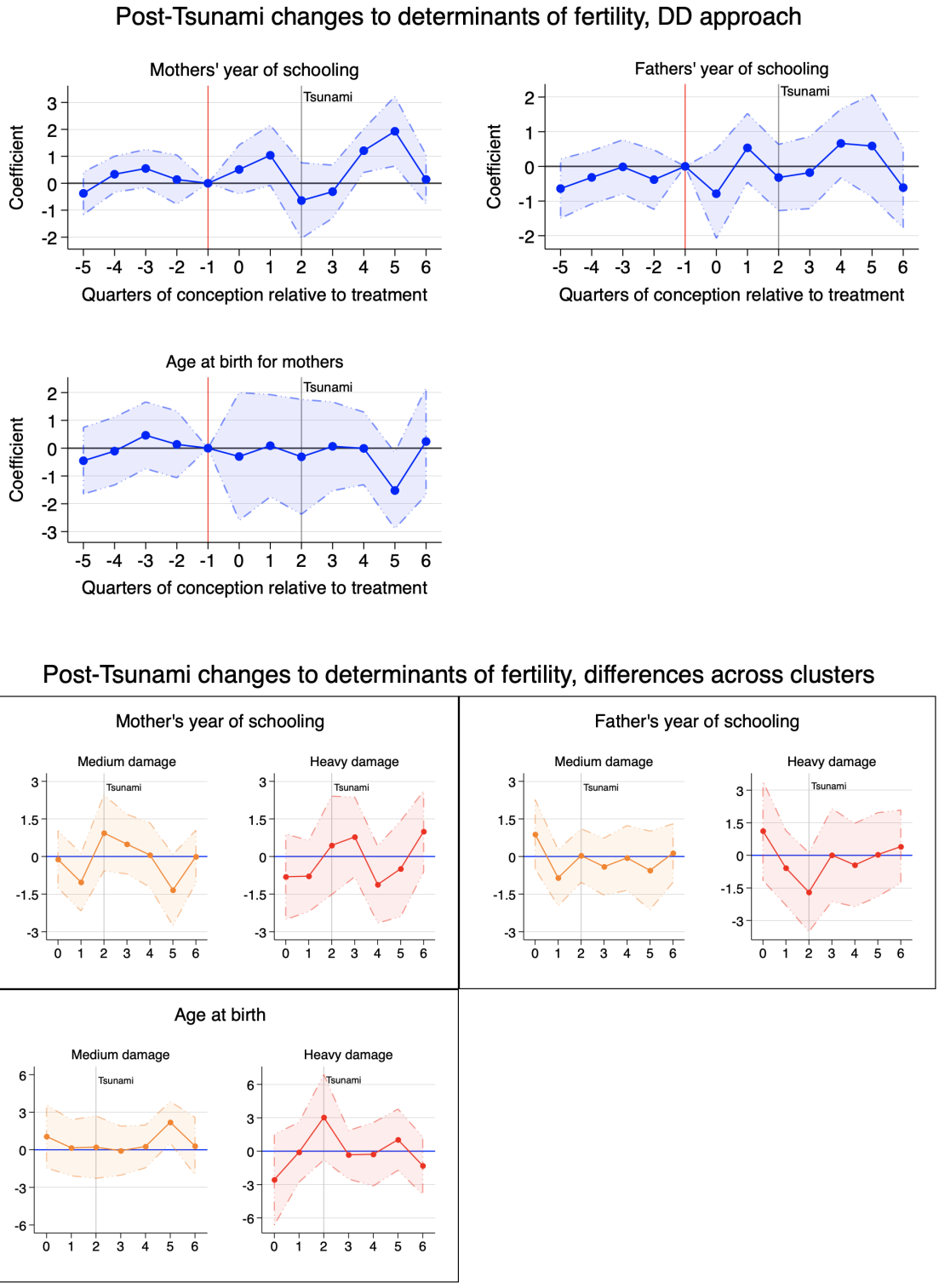
Note: Period 0 indicates those conceived on 2004Q2 and in the third trimester of pregnancy at the point of the Tsunami. 95% confidence interval is included, where the circle marker indicates point estimates. Regression includes controls for cluster fixed effects and others used in the main specifications. Standard errors are clustered at cluster-level. Observations: 2,159, Clusters: 108

Figure A7: Testing for selection into fertility based on types, event-study



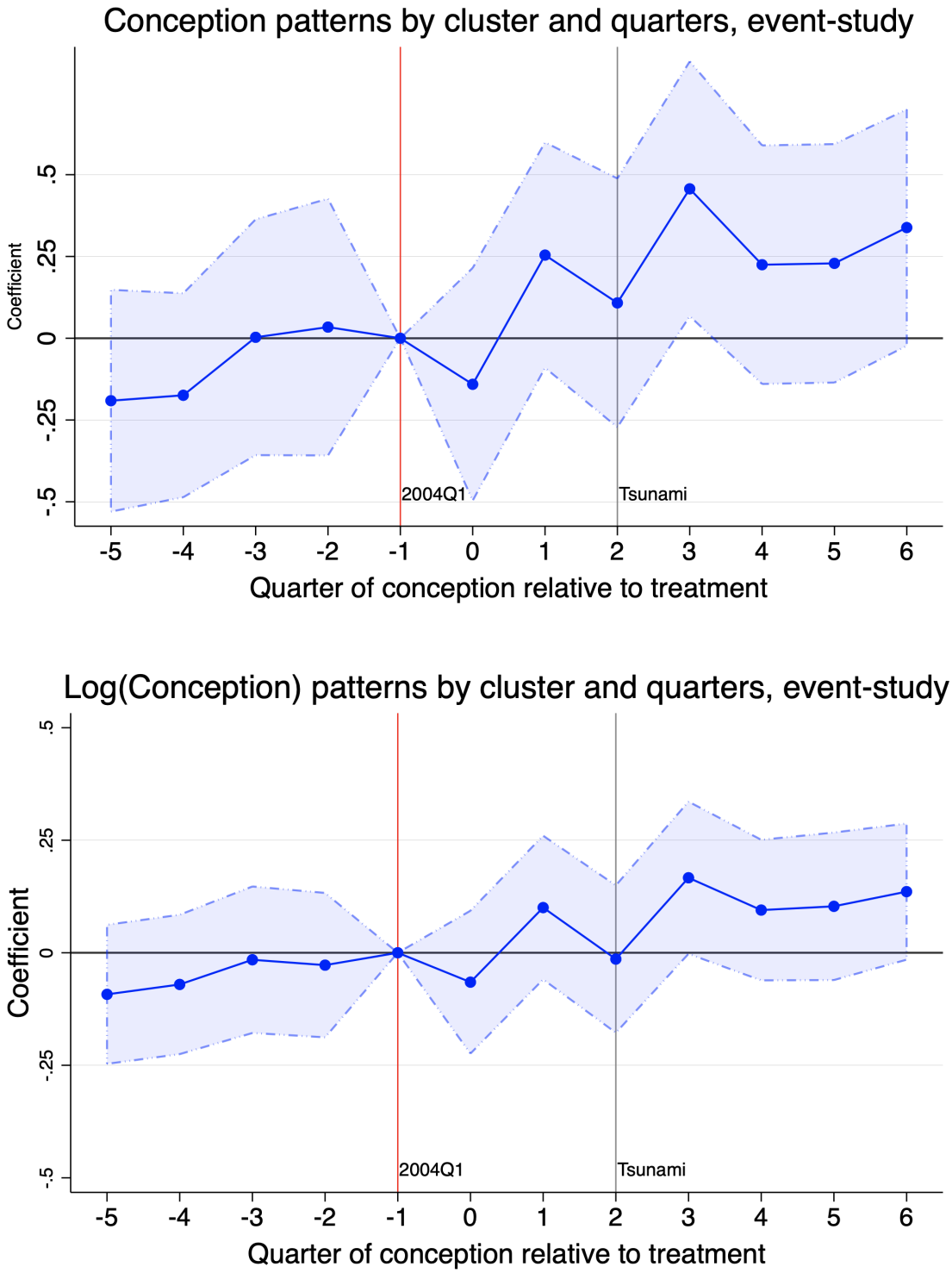
Note: Period 0 indicates those conceived on 2004Q2 and in the third trimester of pregnancy at the point of the Tsunami. 95% confidence interval is included, where the circle marker indicates point estimates. Regression includes controls for cluster fixed effects and others used in the main specifications. Standard errors are clustered at cluster-level. Observations: 2,159, Clusters: 108

Figure A8: Testing for selection into fertility based on types, DD-approach



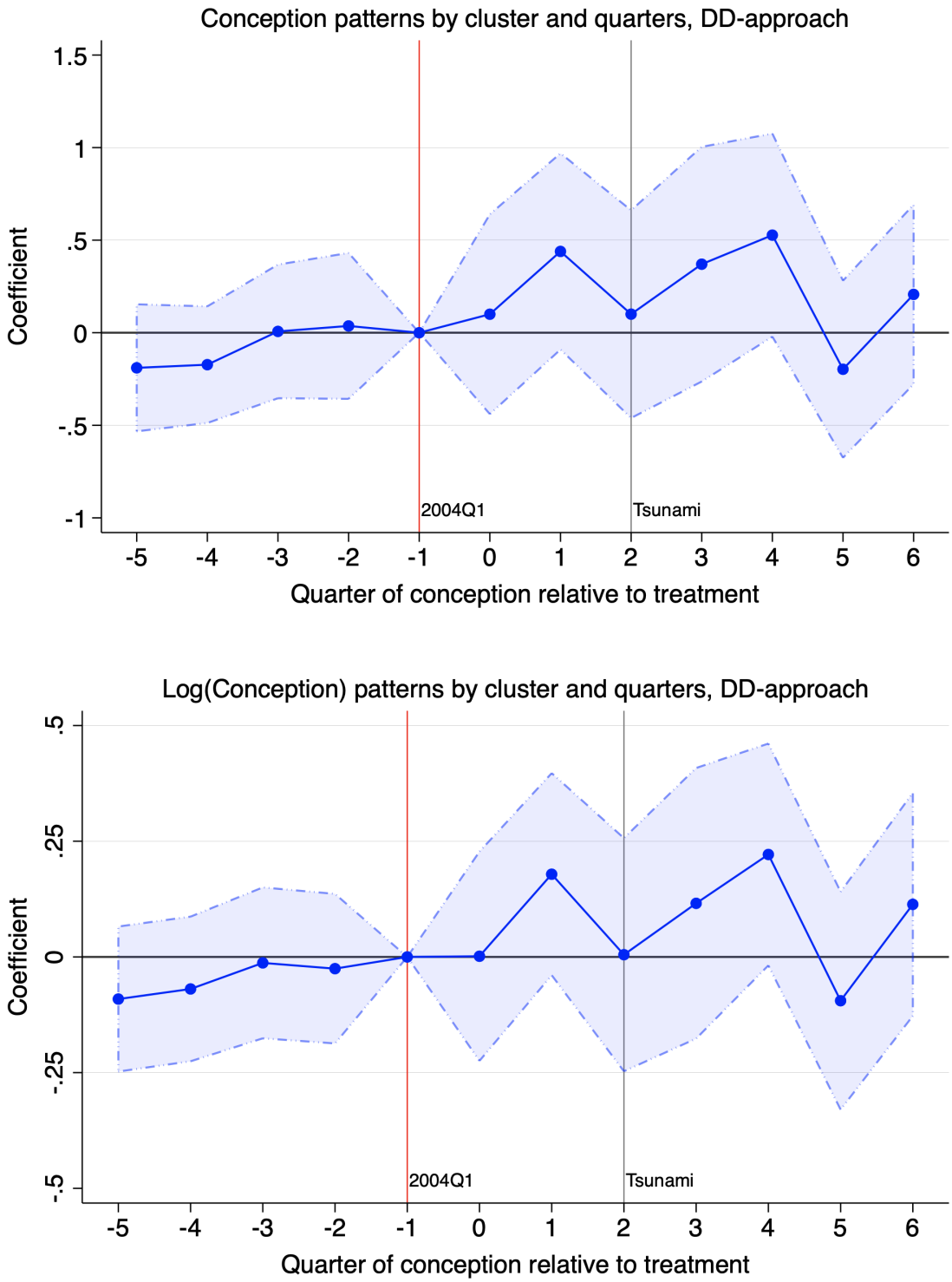
Note: Numbers in the x-axis indicate quarters of conception relative to the start the treatment, which is 2004Q2. There are 108 clusters and 2,159 observations for all regressions. Point estimates and 95% confidence interval are presented. The regression also controls for cluster fixed effects, as well as time dummies. Standard errors clustered at cluster-level.

Figure A9: Timing differences in total conceptions before and after treatment, event-study



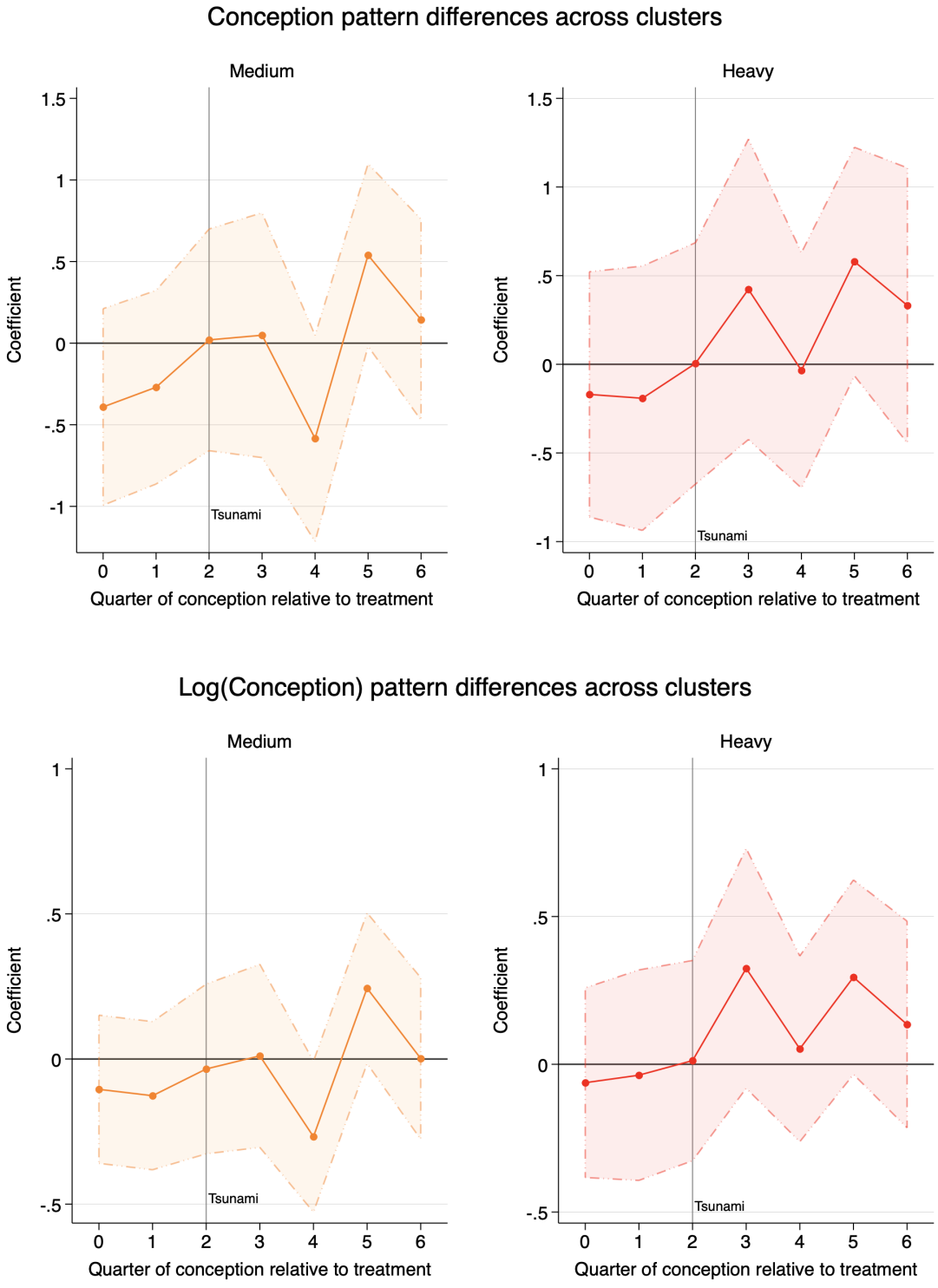
Note: Numbers in the x-axis indicate quarters of conception relative to the start of the treatment, which is 2004Q2. There are 108 clusters and 1,002 observations for all regressions. Point estimates and 95% confidence intervals are presented. The regression also controls for cluster fixed effects. Standard errors are clustered at cluster-level.

Figure A10: Timing differences in total conceptions before and after treatment, DD-approach



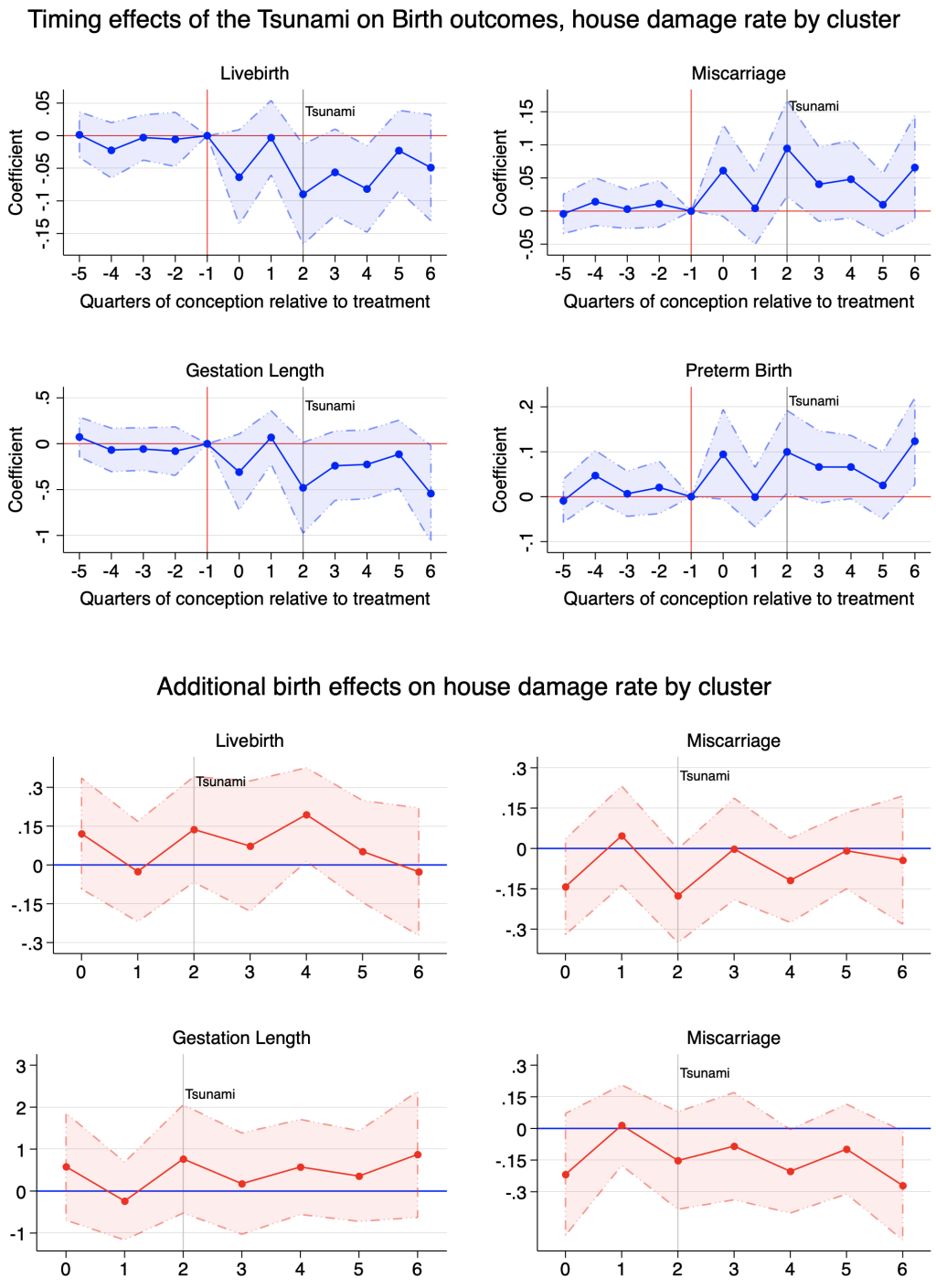
Note: Numbers in the x-axis indicate quarters of conception relative to the start of the treatment, which is 2004Q2. There are 108 clusters and 1,002 observations for all regressions. Point estimates and 95% confidence intervals are presented. The regression also controls for cluster fixed effects, as well as interaction between damage level and treated period time dummies. Standard errors are clustered at cluster-level.

Figure A11: Cluster-level differences total conceptions before and after treatment, DD-approach



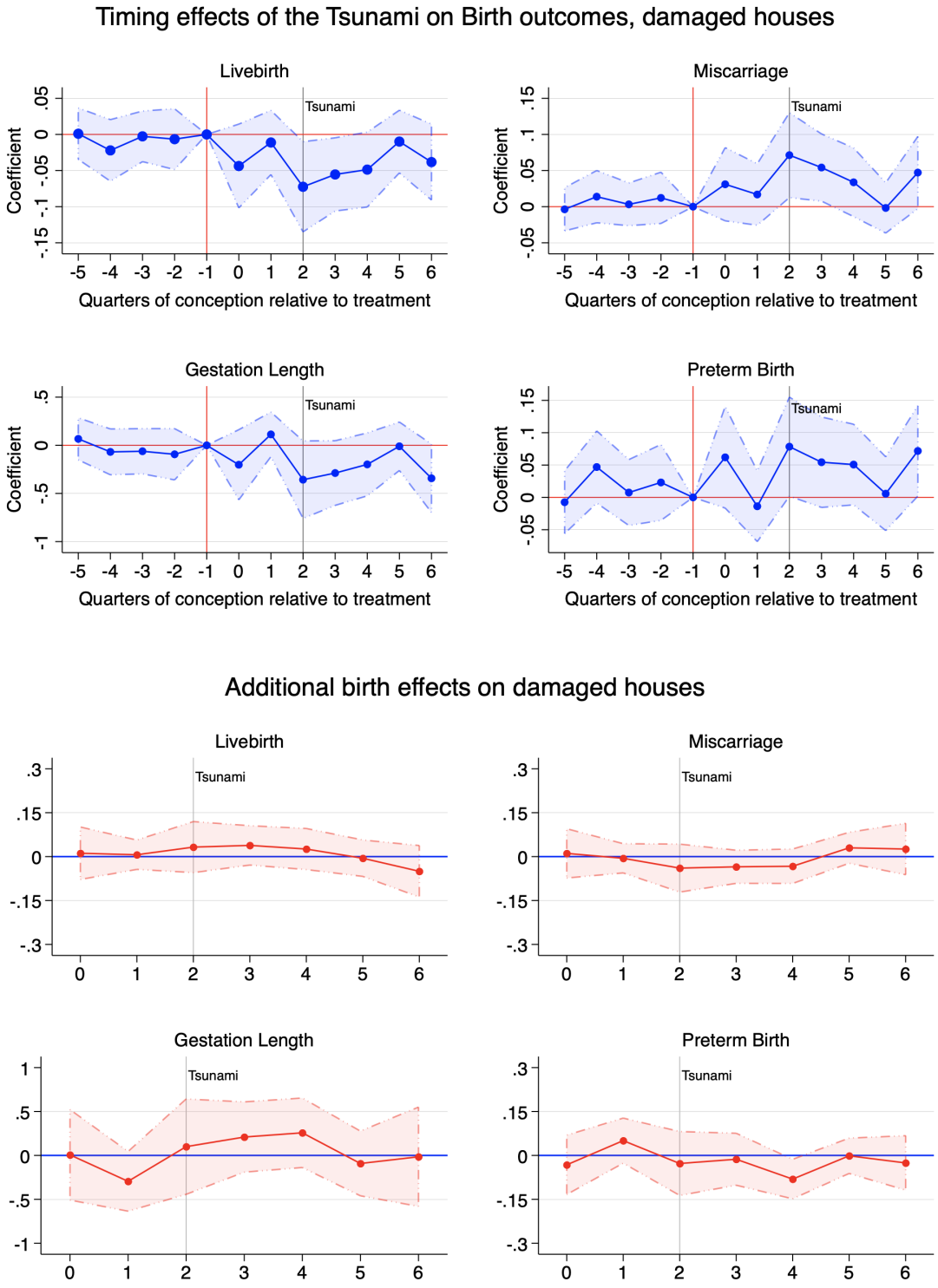
Note: Numbers in the x-axis indicate quarters of conception relative to the start of the treatment, which is 2004Q2. There are 108 clusters and 1,002 observations for all regressions. Point estimates and 95% confidence intervals are presented. The regression also controls for cluster fixed effects, as well as time dummies. Standard errors are clustered at cluster-level.

Figure A12: Birth effects of the Tsunami using damage rates across clusters



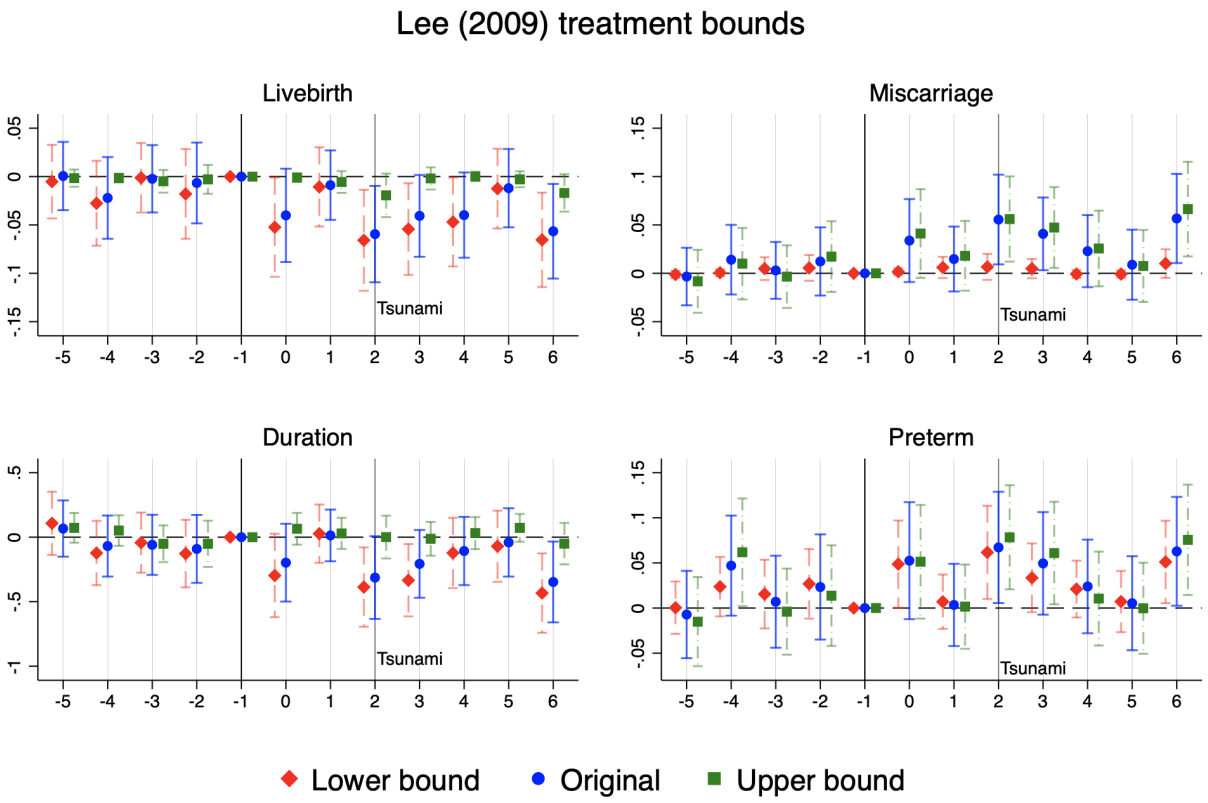
Note: Period 0 indicates those conceived on 2004Q2 and in the third trimester of pregnancy at the point of the Tsunami. 95% confidence interval is included, where the blue and red markers indicate point estimates for the time effect and the differential effect by the treatment intensity. Regressions include the same controls used in Section 5.2. Standard errors are clustered at cluster-level. Observations: 2,159, Clusters: 108

Figure A13: Birth effects of the Tsunami using indicator for damaged houses



Note: Period 0 indicates those conceived on 2004Q2 and in the third trimester of pregnancy at the point of the Tsunami. 95% confidence interval is included, where the blue and red markers indicate point estimates for the time effect and the differential effect on those whose house was damaged by the Tsunami. Regressions include the same controls used in Section 5.2 in the main text. Standard errors are clustered at cluster-level. Observations: 2,155, Clusters: 108

Figure A14: Lee (2009) bounds for treatment estimates



Note: The regression used in this exercise is adopted from the event-study regression (Equation (1)) in the main text. X-axis refers to quarters of conception relative to treatment, where period 0 indicates those conceived on 2004Q2 and in the third trimester of pregnancy at the point of the Tsunami. Y-axis indicates the point estimates for the event indicators and 95% confidence intervals. Red diamond, blue circle, and green square markers each indicates point estimates for the lower bound, original, and upper bound estimates for each outcomes. Regressions include the same controls used in the main text. Standard errors are clustered at cluster-level. Observation and cluster numbers can be found in Table A8.

Table A1: Alternate treatment effect estimates

Panel A. ***Livebirth Results***					
Conception	(1)	(2)	(3)	(4)	(5)
2004q2	-0.0376	-0.0366	-0.0388	-0.0366	-0.0353
	(0.0243)	(0.0242)	(0.0250)	(0.0268)	(0.0291)
2004q3	-0.0181	-0.0180	-0.0228	-0.0218	-0.0316
	(0.0182)	(0.0186)	(0.0195)	(0.0215)	(0.0237)
2004q4	-0.0603**	-0.0567**	-0.0643**	-0.0579**	-0.0538*
	(0.0267)	(0.0271)	(0.0278)	(0.0288)	(0.0305)
Panel B. ***Miscarriage Results***					
Conception	(1)	(2)	(3)	(4)	(5)
2004q2	0.0312	0.0292	0.0310	0.0318	0.0348
	(0.0228)	(0.0229)	(0.0237)	(0.0250)	(0.0269)
2004q3	0.0130	0.0127	0.0143	0.0147	0.0258
	(0.0182)	(0.0182)	(0.0190)	(0.0207)	(0.0226)
2004q4	0.0488*	0.0473*	0.0504**	0.0445*	0.0381
	(0.0248)	(0.0250)	(0.0253)	(0.0264)	(0.0286)
Panel C. ***Gestation Length Results***					
Conception	(1)	(2)	(3)	(4)	
2004q2	-0.191	-0.182	-0.207	-0.211	-0.239
	(0.0144)	(0.145)	(0.150)	(0.161)	(0.169)
2004q3	-0.0257	-0.00826	-0.0407	-0.0478	-0.103
	(0.106)	(0.109)	(0.114)	(0.127)	(0.133)
2004q4	-0.288*	-0.265	-0.307*	-0.253	-0.225
	(0.163)	(0.165)	(0.170)	(0.177)	(0.190)
Panel D. ***Preterm Birth Results***					
Conception	(1)	(2)	(3)	(4)	
2004q2	0.0366	0.0346	0.0395	0.0406	0.0399
	(0.0348)	(0.0356)	(0.0371)	(0.0395)	(0.0408)
2004q3	-0.0110	-0.0107	-0.00439	0.000155	0.0140
	(0.0257)	(0.0266)	(0.0269)	(0.0283)	(0.0302)
2004q4	0.0344	0.0328	0.0426	0.0384	0.0420
	(0.0317)	(0.0323)	(0.0329)	(0.0336)	(0.0361)
Sample period	99-05	00-05	01-05	02-05	03-05
Obs.	4661	4047	3416	2811	2159
No. of Clusters	108	108	108	108	108

* $p < .10$, ** $p < .05$, *** $p < .01$

Year-quarters in the first column indicate the period of conception. Coefficients for the quarter dummies for second through fourth quarter interacted with indicator for those conceived on 2004 are reported. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, indicators for birth order, and cluster fixed effects. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A2: Birth effects of the Tsunami by timing of exposure, 03-04 cohort

	Event-study				DD-approach			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Conception period	Livebirth	Miscarriage	Duration	Preterm birth	Livebirth	Miscarriage	Duration	Preterm birth
2003q1	-0.00477	0.00672	0.0148	0.000296	-0.00616	0.00809	0.00933	0.00235
	(0.0170)	(0.0145)	(0.104)	(0.0234)	(0.0169)	(0.0145)	(0.104)	(0.0234)
2003q2	-0.0219	0.0152	-0.0828	0.0518*	-0.0239	0.0167	-0.0855	0.0533*
	(0.0205)	(0.0173)	(0.116)	(0.0280)	(0.0207)	(0.0174)	(0.116)	(0.0282)
2003q3	0.00338	0.0000765	-0.0474	0.00614	0.00234	0.000889	-0.0496	0.00715
	(0.0171)	(0.0142)	(0.112)	(0.0244)	(0.0172)	(0.0143)	(0.112)	(0.0244)
2003q4	-0.0139	0.0201	-0.128	0.0268	-0.0140	0.0200	-0.127	0.0282
	(0.0209)	(0.0177)	(0.133)	(0.0303)	(0.0208)	(0.0176)	(0.133)	(0.0300)
2004q1	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
2004q2	-0.0394	0.0331	-0.183	0.0508	-0.0370	0.0430	-0.273	0.0580
	(0.0241)	(0.0218)	(0.157)	(0.0332)	(0.0341)	(0.0360)	(0.237)	(0.0609)
2004q3	-0.00939	0.0153	0.00607	0.00193	0.0186	-0.0109	0.121	-0.0610*
	(0.0183)	(0.0171)	(0.101)	(0.0233)	(0.0175)	(0.0157)	(0.135)	(0.0314)
2004q4	-0.0561**	0.0543**	-0.307**	0.0653**	-0.108**	0.120***	-0.683**	0.102*
	(0.0239)	(0.0218)	(0.154)	(0.0297)	(0.0475)	(0.0449)	(0.325)	(0.0540)
Obs.	1355	1355	1355	1355	1355	1355	1355	1355
No. of Clusters	108	108	108	108	108	108	108	108
Damage × Post	No	No	No	No	Yes	Yes	Yes	Yes

* $p < .10$, ** $p < .05$, *** $p < .01$

Year-quarters in the first column indicate the period of conception. Coefficients for the year-quarter dummies are reported in the tables, with those for 2004Q1 normalized to 0. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, indicators for birth order, cluster fixed effects. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A3: Migration experience and residence

	Different home	Same home
No move	0	1320
Moved	542	297

Note: The vertical axis categorizes the observations into those with experience of migration that are two weeks or longer and those without such experience. The horizontal axis categorizes observations into those residing in the same home before the Tsunami and those living in different residence.
Movers: All those who moved, thus 542+297 = 839
Short-term migrants: Those who have moved but currently in the same home, thus 297
Long-term migrants: Those who have moved and currently in different home, thus 542
Same home residents: Those currently in the same home regardless of migration, thus 1329+297 = 1626

Table A4: Selective migration, event-study specification

Conception period	(1) Mover	(2) Temporary	(3) Long-run	(4) Same home
2003q1	-0.0357	-0.0297	-0.00594	0.00594
	(0.0528)	(0.0334)	(0.0500)	(0.0500)
2003q2	-0.0889*	-0.0236	-0.0653	0.0653
	(0.0485)	(0.0334)	(0.0419)	(0.0419)
2003q3	0.00619	0.0368	-0.0306	0.0306
	(0.0453)	(0.0354)	(0.0478)	(0.0478)
2003q4	-0.00668	-0.00537	-0.00131	0.00131
	(0.0452)	(0.0325)	(0.0462)	(0.0462)
2004q1	0	0	0	0
	(.)	(.)	(.)	(.)
2004q2	-0.0342	-0.0321	-0.00216	0.00216
	(0.0524)	(0.0347)	(0.0451)	(0.0451)
2004q3	-0.00576	-0.00541	-0.000354	0.000354
	(0.0505)	(0.0397)	(0.0472)	(0.0472)
2004q4	-0.0283	-0.00862	-0.0197	0.0197
	(0.0424)	(0.0352)	(0.0418)	(0.0418)
2005q1	0.0101	-0.0214	0.0315	-0.0315
	(0.0441)	(0.0293)	(0.0438)	(0.0438)
2005q2	0.0418	-0.0141	0.0559	-0.0559
	(0.0495)	(0.0340)	(0.0444)	(0.0444)
2005q3	0.0547	-0.0236	0.0783	-0.0783
	(0.0453)	(0.0329)	(0.0484)	(0.0484)
2005q4	0.0344	-0.00948	0.0439	-0.0439
	(0.0447)	(0.0345)	(0.0472)	(0.0472)
Obs.	2159	2159	2159	2159
No. of Clusters	108	108	108	108

* $p < .10$, ** $p < .05$, *** $p < .01$

Year-quarters in the first column indicate the period of conception. Coefficients for the year-quarter dummies are reported in the tables, with those for 2004Q1 normalized to 0. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, indicators for birth order, cluster fixed effects. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A5: Selective migration (2004Q2-2004Q4), diff-in-diff specification specification

Conception period	(1) Mover	(2) Temporary	(3) Long-run	(4) Same home
2004q2	-0.0686	-0.00681	-0.0618	0.0618
	(0.0635)	(0.0227)	(0.0630)	(0.0630)
2004q2 × 1.Medium	0.0811	0.0176	0.0635	-0.0635
	(0.0763)	(0.0463)	(0.0728)	(0.0728)
2004q2 × 2.Heavy	-0.114	-0.315***	0.200	-0.200
	(0.164)	(0.0640)	(0.157)	(0.157)
2004q3	-0.0676	-0.0192	-0.0483	0.0483
	(0.0566)	(0.0223)	(0.0574)	(0.0574)
2004q3 × 1.Medium	0.110	0.0236	0.0862	-0.0862
	(0.0684)	(0.0452)	(0.0655)	(0.0655)
2004q3 × 2.Heavy	-0.0169	0.00666	-0.0236	0.0236
	(0.0779)	(0.108)	(0.103)	(0.103)
2004q4	0.0115	0.0311	-0.0195	0.0195
	(0.0735)	(0.0341)	(0.0668)	(0.0668)
2004q4 × 1.Medium	-0.0241	-0.0298	0.00562	-0.00562
	(0.0778)	(0.0452)	(0.0695)	(0.0695)
2004q4 × 2.Heavy	-0.206	-0.170**	-0.0356	0.0356
	(0.124)	(0.0849)	(0.124)	(0.124)
Obs.	2159	2159	2159	2159
No. of Clusters	108	108	108	108

* $p < .10$, ** $p < .05$, *** $p < .01$

The coefficients for the conception period dummy for the second-fourth quarters of 2004 and those interacted with two levels of damage indicators are reported in this table. All other periods are included but have been omitted in the table for presentation purposes. The time periods in the first column indicates the period of conception. Standard errors are in the parentheses and are clustered at the cluster-level. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, and indicator for birth order. The regressions include fixed effects for cluster zones as well as interaction between degrees of damage and treated period year quarters.

Table A6: Selection into fertility based on types

	Event-study			DD-approach		
	(1)	(2)	(3)	(4)	(5)	(6)
Conception period	Mother's schooling	Father's schooling	Age at birth	Mother's schooling	Father's schooling	Age at birth
2004q2	0.363	-0.144	0.0487	0.513	-0.789	-0.300
	(0.328)	(0.428)	(0.631)	(0.459)	(0.649)	(1.160)
2004q3	0.329	-0.0480	0.164	1.039*	0.533	0.0886
	(0.333)	(0.386)	(0.607)	(0.563)	(0.500)	(0.927)
2004q4	-0.0151	-0.479	0.124	-0.641	-0.321	-0.310
	(0.375)	(0.356)	(0.631)	(0.707)	(0.482)	(1.041)
2005q1	0.0908	-0.418	-0.0414	-0.311	-0.180	0.0655
	(0.369)	(0.387)	(0.581)	(0.497)	(0.524)	(0.805)
2005q2	1.051***	0.555	0.115	1.210***	0.662	-0.00698
	(0.366)	(0.368)	(0.536)	(0.408)	(0.500)	(0.659)
2005q3	0.998***	0.254	0.0588	1.929***	0.588	-1.522**
	(0.334)	(0.372)	(0.657)	(0.651)	(0.745)	(0.692)
2005q4	0.324	-0.456	0.191	0.143	-0.612	0.239
	(0.361)	(0.367)	(0.555)	(0.455)	(0.587)	(0.970)
Obs.	2159	2159	2159	2159	2159	2159
No. of Clusters	108	108	108	108	108	108
Damage × treated period	No	No	No	Yes	Yes	Yes

* $p < .10$, ** $p < .05$, *** $p < .01$

Year-quarters in the first column indicate the period of conception. Coefficients for the year-quarter dummies since the beginning of the treatment in the second quarter of 2004 are reported in the tables. There are cluster fixed effects as well as year-quarter dummies for pre-treatment periods. Regressions in (4) through (6) also controls for the interaction between damage indicators and treated period year-quarter dummies. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A7: Total conceptions in cluster X year-quarter blocks

	Event-study		DD-approach	
	(1)	(2)	(3)	(4)
Conception period	Total Conception	log (Total Conception)	Total Conception	log (Total Conception)
2004q2	-0.141	-0.0653	0.100	0.00154
	(0.179)	(0.0800)	(0.272)	(0.114)
2004q3	0.254	0.100	0.439	0.179
	(0.174)	(0.0805)	(0.267)	(0.110)
2004q4	0.108	-0.0140	0.100	0.00484
	(0.192)	(0.0826)	(0.283)	(0.127)
2005q1	0.457**	0.167*	0.370	0.116
	(0.196)	(0.0853)	(0.320)	(0.147)
2005q2	0.225	0.0948	0.527*	0.221*
	(0.184)	(0.0788)	(0.277)	(0.121)
2005q3	0.229	0.103	-0.197	-0.0946
	(0.184)	(0.0827)	(0.241)	(0.119)
2005q4	0.338*	0.136*	0.207	0.114
	(0.182)	(0.0763)	(0.245)	(0.122)
Obs.	1002	1002	1002	1002
No. of Clusters	108	108	108	108
Damage × treated period	No	No	Yes	Yes

* $p < .10$, ** $p < .05$, *** $p < .01$

Year-quarters in the first column indicate the period of conception. Coefficients for the year-quarter dummies since the beginning of the treatment in the second quarter of 2004 are reported in the tables. There are cluster fixed effects as well as year-quarter dummies for pre-treatment periods. Regressions in (3) and (4) also controls for the interaction between damage indicators and treated period year-quarter dummies. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A8: Summary statistics, characteristics of clusters with different extent of damage

Category	Light	Medium	Heavy
Total number of clusters	31	53	24
Total respondents	583	1,269	307
Respondents whose house were damaged	80	463	208
Total households	396	870	219
Number of households damaged	42	220	127
House damage rate	0.1009	0.2131	0.4677

There are total of 2,159 respondents and 108 clusters in the sample, with 4 respondents not specifying whether their house was damaged or not. House damage rate is defined as the the proportion of the number of damaged households that are damaged within a given cluster and is used to characterize the treatment intensity on each cluster.

Table A9: Timing effects of the Tsunami on birth outcomes, alternate treatment assignment

	𝟙[House damaged]				House damage rate			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Conception period	Livebirth	Miscarriage	Duration	Preterm birth	Livebirth	Miscarriage	Duration	Preterm birth
2003q1	0.000975	-0.00362	0.0670	-0.00741	0.00142	-0.00413	0.0728	-0.00910
	(0.0179)	(0.0151)	(0.110)	(0.0245)	(0.0176)	(0.0150)	(0.109)	(0.0242)
2003q2	-0.0221	0.0139	-0.0684	0.0470*	-0.0224	0.0142	-0.0683	0.0469*
	(0.0215)	(0.0183)	(0.120)	(0.0281)	(0.0214)	(0.0182)	(0.120)	(0.0281)
2003q3	-0.00262	0.00320	-0.0621	0.00748	-0.00279	0.00301	-0.0578	0.00651
	(0.0177)	(0.0149)	(0.118)	(0.0257)	(0.0175)	(0.0147)	(0.117)	(0.0254)
2003q4	-0.00653	0.0122	-0.0935	0.0231	-0.00564	0.0110	-0.0812	0.0205
	(0.0212)	(0.0179)	(0.134)	(0.0296)	(0.0210)	(0.0177)	(0.133)	(0.0294)
2004q1	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
2004q2	-0.0437	0.0310	-0.202	0.0620	-0.0637*	0.0612*	-0.309	0.0943*
	(0.0293)	(0.0256)	(0.184)	(0.0396)	(0.0367)	(0.0348)	(0.209)	(0.0503)
2004q3	-0.0111	0.0169	0.113	-0.0138	-0.00315	0.00419	0.0682	-0.000883
	(0.0224)	(0.0215)	(0.117)	(0.0275)	(0.0288)	(0.0273)	(0.147)	(0.0334)
2004q4	-0.0724**	0.0713**	-0.357*	0.0784**	-0.0898**	0.0946**	-0.480*	0.0997**
	(0.0315)	(0.0296)	(0.203)	(0.0386)	(0.0386)	(0.0365)	(0.249)	(0.0465)
2005q1	-0.0554**	0.0542**	-0.288*	0.0544	-0.0562*	0.0405	-0.240	0.0661
	(0.0256)	(0.0235)	(0.169)	(0.0353)	(0.0335)	(0.0283)	(0.191)	(0.0405)
2005q2	-0.0487*	0.0338	-0.198	0.0508	-0.0817**	0.0481	-0.226	0.0660*
	(0.0262)	(0.0240)	(0.165)	(0.0315)	(0.0335)	(0.0296)	(0.189)	(0.0355)
2005q3	-0.00987	-0.00173	-0.0101	0.00570	-0.0229	0.00964	-0.115	0.0252
	(0.0219)	(0.0176)	(0.127)	(0.0288)	(0.0311)	(0.0238)	(0.187)	(0.0378)
2005q4	-0.0382	0.0472*	-0.343*	0.0718**	-0.0489	0.0658	-0.544**	0.123**
	(0.0265)	(0.0252)	(0.179)	(0.0352)	(0.0410)	(0.0398)	(0.264)	(0.0487)
Obs.	2155	2155	2155	2155	2159	2159	2159	2159
No. of Clusters	108	108	108	108	108	108	108	108
𝟙[House damaged] × Post	Yes	Yes	Yes	Yes	No	No	No	No
House damage rate × Post	No	No	No	No	Yes	Yes	Yes	Yes

* $p < .10$, ** $p < .05$, *** $p < .01$

Year-quarters in the first column indicate the period of conception. Coefficients for the year-quarter dummies are reported in the tables, with those for 2004Q1 normalized to 0. Columns (1)-(4) report estimates from regressions where the indicator of individual houses being damaged to the Tsunami is used to differentiated cross-scetional treatment assignment. Columns (5) - (8) report the results of the regression where the proportion of houses damaged per cluster is used to differentiate treatment intensity at a cross-sectional level. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, indicators for birth order, cluster fixed effects. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A10: Balance table: Pre vs Post Tsunami

	(1) Weeks		(2) Months		T-test Difference
Variable	N/[Clusters]	Mean/SE	N/[Clusters]	Mean/SE	(1)-(2)
Literate	105	0.981	2054	0.916	0.065
	[45]	(0.013)	[107]	(0.014)	
Literate, husband	105	0.981	2054	0.951	0.030
	[45]	(0.013)	[107]	(0.008)	
Enrollment	105	0.990	2054	0.956	0.034
	[45]	(0.010)	[107]	(0.011)	
Enrollment, husband	105	1.000	2054	0.988	0.012*
	[45]	(0.000)	[107]	(0.004)	
Yrs of schooling	105	10.095	2054	8.333	1.763
	[45]	(0.475)	[107]	(0.259)	
Yrs of schooling, husband	105	10.048	2054	8.699	1.348
	[45]	(0.514)	[107]	(0.192)	
Rural	105	0.533	2054	0.737	-0.204
	[45]	(0.090)	[107]	(0.046)	
Age at birth	105	27.638	2054	27.602	0.036
	[45]	(0.536)	[107]	(0.150)	
House damaged	105	0.248	2050	0.354	-0.106
	[45]	(0.052)	[107]	(0.032)	

Notes: The value displayed for t-tests are the differences in the means across the groups. Standard errors are clustered at variable cluster. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table A11: Birth effects of the Tsunami by timing of exposure, months sample

Conception period	(1) Livebirth	(2) Miscarriage	(3) Duration	(4) Preterm birth
2003q1	0.00158	-0.00217	0.0383	-0.00836
	(0.0182)	(0.0156)	(0.106)	(0.0229)
2003q2	-0.0243	0.0156	-0.110	0.0516*
	(0.0221)	(0.0189)	(0.118)	(0.0281)
2003q3	-0.000395	-0.0000380	-0.0432	0.00114
	(0.0172)	(0.0141)	(0.104)	(0.0249)
2003q4	-0.00699	0.00867	-0.0495	0.0155
	(0.0209)	(0.0179)	(0.115)	(0.0280)
2004q1	0	0	0	0
	(.)	(.)	(.)	(.)
2004q2	-0.0436*	0.0368	-0.261*	0.0594*
	(0.0252)	(0.0225)	(0.154)	(0.0329)
2004q3	-0.00801	0.0133	-0.0193	0.00400
	(0.0184)	(0.0171)	(0.0933)	(0.0207)
2004q4	-0.0588**	0.0531**	-0.283*	0.0631**
	(0.0256)	(0.0237)	(0.155)	(0.0301)
2005q1	-0.0420*	0.0387**	-0.208	0.0417
	(0.0215)	(0.0192)	(0.128)	(0.0277)
2005q2	-0.0461**	0.0268	-0.135	0.0292
	(0.0228)	(0.0193)	(0.130)	(0.0265)
2005q3	-0.0110	0.0105	-0.0859	0.00711
	(0.0219)	(0.0198)	(0.138)	(0.0261)
2005q4	-0.0511**	0.0492**	-0.314**	0.0554*
	(0.0252)	(0.0233)	(0.154)	(0.0311)
Obs.	2054	2054	2054	2054
No. of Clusters	107	107	107	107

* $p < .10$, ** $p < .05$, *** $p < .01$

The results presented in this table reproduces the event-study regression on the sample of respondents who recorded their conception duration in months, not weeks. Year-quarters in the first column indicate the period of conception. Coefficients for the year-quarter dummies are reported in the tables, with those for 2004Q1 normalized to 0. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, indicators for birth order, cluster fixed effects. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A12: Lee (2009) bounds for the 2004Q4 conception cohort

	(1) Original	(2) Lower bound	(3) Upper bound
Livebirth	-0.0595**	-0.0659**	-0.0194*
	(.0251)	(.0263)	(.0113)
	[-0.1093,-0.0097]		
Obs.	2159	2065	2062
No. of Clusters	108	108	108
Miscarriage	0.0556**	0.00663	0.0561**
	(.0234)	(.0068)	(.0222)
	[0.0092,0.1019]		
Obs.	2159	2061	2062
No. of Clusters	108	108	108
Duration	-0.313*	-0.387**	0.000578
	(.1617)	(.1550)	(.0837)
	[-0.6339,0.0073]		
Obs.	2159	2062	2068
No. of Clusters	108	108	108
Preterm	0.0672**	0.0616**	0.0784***
	(.0311)	(.0261)	(.0291)
	[0.0055,0.1288]		
Obs.	2159	2065	2063
No. of Clusters	108	108	108

* $p < .10$, ** $p < .05$, *** $p < .01$

The estimation equations are based on Equation (1) in the main text. First column indicates the dependent variables. Original column reproduces the event-study outcomes in the main text. The regression in the lower bound column drops top 4.86 percent of individuals based on the distribution of residuals of main regressions for each outcome. The regression in the upper bound column drops bottom 4.86 percent of individuals on the same distribution. Coefficients indicate the point estimates for those conceived on 2004Q4. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, indicators for birth order, cluster fixed effects. Standard errors are in the parentheses and are clustered at the cluster zone level. Square brackets on the first column are the 95 percent confidence intervals for the original point estimates.

Table A13: Summary statistics, Mechanism variables

Panel A. *Averages for key statistics*			
Category	Unit	Average	Std.dev
Health spending	Indonesian Rupiah	457,269	1,173,517
Prenatal care spending	Indonesian Rupiah	172,460	346,252
Prenatal care visits	Number	6.37	3.56
Birthweight	Kg	3.2	.693
All transfers	Indonesian Rupiah	1,072,472	3,820,265
Gov't transfers	Indonesian Rupiah	466,174	1,897,235
NGO transfers	Indonesian Rupiah	477,793	2,966,257
Loss in housing value	Indonesian Rupiah	2,793,957	12,902,459
Panel B. *Proportions of those belonging to each categories*			
Category	Total respondents	Respondents	Proportion(%)
Birth at own or family's house	2,055	1333	64.86
Disturbing memories	2,159	1072	49.65
Anxiety about future	2,159	549	25.43
Fear of death	2,159	1579	73.14
Fear of injury	2,159	1749	81.01
Parent death	2,159	82	3.80
Same health	2,159	1822	84.39
Worse health	2,159	237	10.98
Outpatient care	2,159	443	20.52
Wife unemployed	1,065	242	22.72
Husband unemployed	2,090	711	34.02
Brick wall	2,103	801	38.09
Wooden wall	2,103	1273	60.53
Iron roof	2,103	1532	72.85
Dirt floor	2,102	153	7.28

Panel A collects averages and standard deviations of continuous outcome variables used in mechanism tests. The units of each statistics are specified in the second column. Panel B collects the summary statistics of the binary variables used in the mechanism tests. The proportion on the last column refers to the total share of respondents who answered "yes" to each of the variables.

Table A14: Regression on household choices on care and selective birth

	(1) log(hlth spend)	(2) log(care spend)	(3) log(visits)	(4) own/family house	(5) Birthweight	(6) log(birthweight)	(7) VLBW	(8) LBW
2003q1	0.140	-0.0228	0.0303	0.0239	0.125	0.0432	-0.0104	-0.0516
	(0.153)	(0.127)	(0.0544)	(0.0474)	(0.106)	(0.0373)	(0.0240)	(0.0571)
2003q2	-0.00393	0.0802	0.0488	-0.0737	0.0740	0.0260	-0.00446	-0.0362
	(0.172)	(0.136)	(0.0655)	(0.0497)	(0.0786)	(0.0295)	(0.0209)	(0.0487)
2003q3	0.166	-0.135	0.00153	-0.0140	0.109	0.0393	-0.0235	-0.0449
	(0.143)	(0.129)	(0.0582)	(0.0533)	(0.0922)	(0.0340)	(0.0187)	(0.0558)
2003q4	0.0796	0.0224	0.0447	-0.0923*	0.117	0.0442	-0.0225	-0.0693
	(0.155)	(0.128)	(0.0554)	(0.0479)	(0.103)	(0.0377)	(0.0211)	(0.0585)
2004q1	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
2004q2	0.148	0.00284	-0.0833	-0.138**	0.224**	0.0758**	-0.0272	-0.0535
	(0.137)	(0.123)	(0.0686)	(0.0567)	(0.0991)	(0.0348)	(0.0169)	(0.0591)
2004q3	0.288*	0.163	0.0381	-0.0699	0.125	0.0520*	-0.0238	-0.121***
	(0.164)	(0.135)	(0.0531)	(0.0450)	(0.0757)	(0.0263)	(0.0157)	(0.0387)
2004q4	0.232	0.0674	-0.0603	-0.0766*	0.0825	0.0286	-0.00567	-0.0459
	(0.155)	(0.144)	(0.0715)	(0.0426)	(0.0922)	(0.0339)	(0.0205)	(0.0552)
2005q1	0.361**	0.121	-0.0263	-0.130**	0.237***	0.0752***	-0.0151	-0.0972*
	(0.139)	(0.123)	(0.0663)	(0.0497)	(0.0812)	(0.0281)	(0.0176)	(0.0522)
2005q2	0.414***	0.168	0.00556	-0.0653	0.168	0.0516	0.00276	-0.0460
	(0.152)	(0.137)	(0.0617)	(0.0475)	(0.107)	(0.0383)	(0.0245)	(0.0534)
2005q3	0.603***	0.0635	-0.0129	-0.0387	0.177**	0.0686**	-0.0304*	-0.111**
	(0.146)	(0.130)	(0.0523)	(0.0414)	(0.0732)	(0.0274)	(0.0178)	(0.0474)
2005q4	0.558***	0.00854	-0.0952	-0.131**	0.155*	0.0524*	-0.0138	-0.0480
	(0.147)	(0.115)	(0.0601)	(0.0539)	(0.0889)	(0.0311)	(0.0196)	(0.0549)
Obs.	1876	1493	1956	2055	1325	1325	1325	1325
No. of Clusters	107	108	108	108	107	107	107	107

* $p < .10$, ** $p < .05$, *** $p < .01$

Each column represents the regression results with log of household health expenditures, log of amount spent on prenatal care, log of number of visits to prenatal care centers, giving birth at own or family member's house, birthweight, log of birthweight, very low birthweight, and lowbirthweight as outcome variables. Year-quarters in the first column indicate the period of conception. Coefficients for the year-quarter dummies are reported in the tables, with those for 2004Q1 normalized to 0. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, indicators for birth order, cluster fixed effects. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A15: Regression on maternal health indicators

	(1) Fear of death	(2) Fear of injury	(3) Disturbed	(4) Anxiety	(5) Parent death	(6) same health	(7) worse health	(8) outpatient care
2003q1	-0.0364	-0.0873*	-0.0199	0.0658	-0.0116	-0.0612*	0.0284	0.0510
	(0.0557)	(0.0494)	(0.0560)	(0.0463)	(0.0183)	(0.0341)	(0.0286)	(0.0376)
2003q2	0.0512	-0.0168	-0.0912*	0.0339	-0.0164	0.0136	0.00324	0.0996**
	(0.0468)	(0.0458)	(0.0511)	(0.0423)	(0.0181)	(0.0217)	(0.0210)	(0.0429)
2003q3	0.114***	0.0573*	-0.0375	0.0809*	0.0107	-0.0623*	0.0351	0.0442
	(0.0414)	(0.0341)	(0.0527)	(0.0464)	(0.0226)	(0.0334)	(0.0266)	(0.0429)
2003q4	0.0194	-0.0421	-0.0398	0.00945	-0.0149	-0.0732**	0.0596*	0.0687*
	(0.0466)	(0.0379)	(0.0612)	(0.0565)	(0.0188)	(0.0349)	(0.0329)	(0.0404)
2004q1	0	0	0	0	0	0	0	0
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
2004q2	-0.00843	-0.0514	-0.0123	0.0754	-0.00736	-0.0811*	0.0443	0.0651
	(0.0442)	(0.0452)	(0.0620)	(0.0520)	(0.0189)	(0.0431)	(0.0332)	(0.0394)
2004q3	0.0571	-0.00380	-0.0420	0.0504	0.0166	-0.0688**	0.0772***	0.0257
	(0.0457)	(0.0483)	(0.0540)	(0.0423)	(0.0209)	(0.0299)	(0.0275)	(0.0366)
2004q4	0.0859**	0.0143	-0.0315	0.0564	-0.0248	-0.0654**	0.0631**	0.0928**
	(0.0425)	(0.0460)	(0.0508)	(0.0463)	(0.0158)	(0.0307)	(0.0263)	(0.0437)
2005q1	0.0432	-0.0126	-0.0839	0.0368	-0.0306**	-0.0508	0.0328	0.0306
	(0.0425)	(0.0402)	(0.0514)	(0.0401)	(0.0148)	(0.0317)	(0.0236)	(0.0406)
2005q2	0.0373	0.00921	-0.0757	0.0576	0.00356	-0.0609*	0.0375	0.0331
	(0.0461)	(0.0395)	(0.0468)	(0.0424)	(0.0196)	(0.0357)	(0.0288)	(0.0359)
2005q3	0.0687*	0.0739**	-0.115**	0.0810*	-0.0148	-0.121***	0.0967***	0.107***
	(0.0391)	(0.0355)	(0.0510)	(0.0455)	(0.0189)	(0.0360)	(0.0328)	(0.0370)
2005q4	0.105**	0.0208	-0.0365	-0.0372	-0.0211	-0.0656**	0.0466	0.0792*
	(0.0476)	(0.0398)	(0.0510)	(0.0382)	(0.0173)	(0.0325)	(0.0322)	(0.0411)
Obs.	2159	2159	2159	2159	2159	2159	2159	2159
No. of Clusters	108	108	108	108	108	108	108	108

* $p < .10$, ** $p < .05$, *** $p < .01$

The following outcomes are used: Fear of death, fear of injury, being disturbed, anxiety about future, death of a parent, same health condition, worse health condition, and outpatient services usage one month before. Year-quarters in the first column indicate the period of conception. Coefficients for the year-quarter dummies are reported in the tables. Coefficients for the pre-treatment year-quarters are included in the regression but omitted from the above table. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, indicators for birth order, cluster fixed effects. Standard errors are in the parentheses and are clustered at the cluster zone level.

Table A16: Socioeconomic status and effects of the Tsunami

	(1) log(house loss)	(2) Wife unemp	(3) husb. unemp	(4) Brick wall	(5) Wood wall	(6) Iron roof	(7) Dirt floor	(8) log(all aid)	(9) log(govt aid)	(10) log(ngo aid)
2004q2	-0.466	0.0556	-0.0201	0.0248	-0.0295	0.114*	0.00262	-0.212	-0.479	2.717***
	(0.358)	(0.101)	(0.0573)	(0.0746)	(0.0761)	(0.0588)	(0.0447)	(0.310)	(0.321)	(0.405)
2004q2 × 1.Medium	-0.0178	-0.102	0.0104	0.0828	-0.0966	-0.0321	0.0209	-0.192	0.128	-2.643***
	(0.518)	(0.116)	(0.0807)	(0.0848)	(0.0863)	(0.0598)	(0.0573)	(0.361)	(0.353)	(0.456)
2004q2 × 2.Heavy	0.499	-0.0895	0.161	-0.0615	0.109	0.132	0.0187	0.174	0.0980	-1.318***
	(0.495)	(0.113)	(0.129)	(0.121)	(0.130)	(0.137)	(0.0940)	(0.455)	(0.398)	(0.467)
2004q3	0.669**	-0.0521	-0.0573	-0.0181	0.0330	0.0283	0.0555	-0.181	-0.398	0.160
	(0.310)	(0.121)	(0.0520)	(0.0664)	(0.0665)	(0.0779)	(0.0535)	(0.300)	(0.247)	(0.510)
2004q3 × 1.Medium	-0.638**	0.00427	0.0735	0.104	-0.0978	0.0000734	-0.0630	-0.0701	0.0585	0.198
	(0.307)	(0.122)	(0.0652)	(0.0793)	(0.0803)	(0.0776)	(0.0591)	(0.327)	(0.288)	(0.518)
2004q3 × 2.Heavy	-0.652*	-0.00356	-0.0424	0.149	-0.143	0.0894	-0.157***	0.494	0.279	0.391
	(0.358)	(0.162)	(0.120)	(0.105)	(0.102)	(0.128)	(0.0584)	(0.435)	(0.418)	(0.558)
2004q4	0.912*	-0.0300	-0.0853*	-0.00999	0.0108	-0.0366	0.0103	-0.197	-0.256	0.563
	(0.461)	(0.106)	(0.0499)	(0.0735)	(0.0702)	(0.0699)	(0.0399)	(0.249)	(0.245)	(0.455)
2004q4 × 1.Medium	-0.595	-0.0154	0.126**	0.0382	-0.0260	0.118*	-0.0438	0.132	0.0142	-0.365
	(0.452)	(0.129)	(0.0632)	(0.0804)	(0.0779)	(0.0697)	(0.0415)	(0.289)	(0.271)	(0.394)
2004q4 × 2.Heavy	-0.624	0.0949	0.209	0.263*	-0.236	0.100	-0.0571	0.409	0.0212	-0.0657
	(0.520)	(0.257)	(0.138)	(0.153)	(0.151)	(0.118)	(0.0745)	(0.338)	(0.335)	(0.391)
Obs.	446	1065	2090	2103	2103	2103	2102	1508	1341	470
No. of Clusters	72	107	108	108	108	108	108	108	107	79

* $p < .10$, ** $p < .05$, *** $p < .01$

The first column is the regression result with loss of housing value due to the Tsunami as outcome variable. Columns (2) and (3) regress the post-Tsunami unemployment for mother and father. The outcome variable Columns (4) - (7) are housing material. The last three columns represent results from the regression with the log of all aid, log of government aid, and log of aid from NGO as outcomes. The coefficients for the conception period dummy for the second-fourth quarters of 2004 and those interacted with two levels of damage indicators are reported in this table. All other periods are included but have been omitted in the table for presentation purposes. The time periods in the first column indicates the period of conception. Standard errors are in the parentheses and are clustered at the cluster-level. There are controls for age of mother (level and squared) at birth, year of schooling of both the mother and the father, and indicator for birth order. The regressions include fixed effects for cluster zones as well as interaction between degrees of damage and treated period year quarters.