Breastfeeding and the return to work after childbirth of new mothers: evidence from a baby formula scare*

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June 23, 2021

Abstract

We use a baby formula "food scare" in Israel in 2003 as a plausible natural experiment to study the causal relationship between breastfeeding and mothers' return to work after childbirth. Analysis of administrative data covering the universe of births in the country shows that first-time mothers' average months worked in the first six months after childbirth fell by about 4 percent. This effect is driven by mothers from above-median income households. The likelihood of consuming baby formula of households with new mothers decreased by about 15 percent, supporting the view that the delay in the return to work after childbirth is driven by an increase in breastfeeding. The results indicate that despite developments in technology and policy changes in recent decades, mothers still trade-off work for the benefits of breastfeeding to their children.

Keywords: motherhood, labor supply, breastfeeding
JEL Classifications: I18 J13, J22, D1

*We are extremely grateful to Doron Sayag for his generous help and guidance with the CBS data. We thank seminar participants at SMU for helpful comments. Izik Daniel provided excellent research assistance. Financial support from the Maurice Falk Institute for Economic Research in Israel and the National Insurance Institute of Israel is gratefully acknowledged.

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1 Introduction

Breastfeeding has been a crucial source of nourishment for infants throughout human history. During the twentieth century, there was a worldwide shift to baby formula, and commercially produced substitutes became readily available. However, in the past few decades, as evidence that breastfeeding is associated with health benefits and improved development for children and benefits to nursing women accumulate, breastfeeding is widely viewed as superior to baby formula.[1] Notably, unlike other child-rearing tasks that bear a gender tag by tradition or social norms, breastfeeding is a mothers' biological function.

Despite the recognized benefits of breastfeeding, breastfeeding rates in high-income countries are lower than the recommended level.[2] It is often argued that women's work environment in both policy and structure is not sufficiently supportive of breastfeeding.[3] In the absence of adequate workplace conditions, breastfeeding may be at odds with women's return to work after childbirth, potentially entailing opportunity costs on mothers in the labor market.[4]

Several recent studies established the positive association between extended parental leave benefits and breastfeeding. Notably, Baker and Milligan (2008) showed that maternity leaves expansion in Canada led to extended breastfeeding duration. Huang and Yang (2015) found that implementing a paid maternity leave in California led to more breastfeeding, and Kottwitz et al. (2016) showed that parental leave benefits in Germany were associated with extended breastfeeding duration.

However, current evidence on the "flip side" of this issue, namely, whether new mothers who wish to breastfeed must delay their return to work after childbirth, is scant.[5] In a world in which the work environment is fully supportive of breastfeeding, a positive shock to breastfeeding is not expected to affect the timing of the return to work of new mothers. On the other extreme, if a significant positive relationship between breastfeeding and the timing of return to work after childbirth exists, this would indicate that workplace support

[1] See, e.g., Victora et al. (2016), Fitzsimons and Vera-Hernández (2014), Rothstein (2013), Wehby (2014), Haines and Kintner (2008), Belfield and Kelly (2012), Kramer et al. (2001) Morrow et al. (1999) and Bhandari et al. (2003).

[2] E.g., the breastfeeding policy statement of the American Academy of Pediatrics (2012) recommends breastfeeding for at least a year (Eidelman, 2012). See also Bagci Bosi et al. (2016).

[3] Such barriers to breastfeeding at the workplace include lack of nearby child care, rigid time schedules that do not allow for work from home or even nursing breaks, lack of a location providing privacy for breast-pumping, and no facilities for refrigeration of pumped breastmilk (see Johnston and Esposito (2007) and AAP (1982)).

[4] Bar-El et al. (2020) introduce a model that explores this tradeoff.

[5] Several recent randomized controlled trials were conducted on breastfeeding promotion policies. These studies typically find that breastfeeding promotions increase breastfeeding. However, they do not examine the return to work consequences of these interventions (Kramer et al., 2001; Morrow et al., 1999; Bhandari et al., 2003).

of breastfeeding is only partial.

Here, we leverage a large product safety hazard realization in Israel's baby formula market in 2003 (the "Remedia Event") to study this question. Our premise is that the Remedia Event created a "food scare," a sudden heightened level of concern about the safety of a particular product that can stimulate rapid and significant reductions in demand (Schlenker and Villas-Boas, 2009). Concretely, this means that following the Remedia Event, some new mothers chose breastfeeding over baby formula, increasing the overall tendency to breastfeed, while others switched to different baby-food brand. We use the positive shock to breastfeeding to assess the causal relationship between breastfeeding and the return to work decision of new mothers.[6]

In 2003, Remedia, an Israeli company that distributed imported baby formula, began offering a new soy-based formula, manufactured by the German company Humana. In October 2003, several infants were hospitalized with symptoms of apathy and convulsions. The common cause of their illnesses, to be identified only a month later, in November 2003, was consuming the new formula. It was later discovered that the new formula contained an insufficient quantity of vitamin B1, an essential vitamin for newborns, causing the death of four infants and various long-term motor, neurological and cognitive damages to more than sixty others.[7]

We study the response of new mothers to the Remedia Event in two parts. In the first part, we use administrative data from the National Insurance Institute of Israel, Israel's Social security ("NII"), covering the universe of births in Israel in 2001-2004 for households where both spouses are employees. Using these data, we examine whether mothers extended their maternity leaves because of the Remedia Event. We first implement a DD strategy using experienced mothers—women with at least one more child—as a counterfactual for first-time mothers—women who gave birth to their first child. As experienced mothers were arguably affected by the Remedia Event to a lesser extent, we use this DD framework to assess whether the Remedia Event affected the return to work of first-time mothers relative to experienced mothers. The month-by-month analysis shows that for births that occurred in the 18 months before the Remedia Event, May 2002 to October 2003, the monthly DD coefficients are all small and statistically insignificant. By contrast, first-time mothers that gave birth in the months just after the Remedia Event show a large and statistically significant delay in their return to work after childbirth relative to experienced mothers.

[6] Of course, some women do not breastfeed ("never takers"), and others would breastfeed regardless of the Event ("always takers). We return to this point when we interpret the results.

[7] 2,000-4,000 infants were exposed to the impaired formula to some extent (based on Remedia's market share of 37%, and about 4-7 months the impaired formula was in the market). As solid foods are typically introduced to infants around the age of six months, roughly 1,000-2,000 infants were exclusively fed by the impaired formula. About 3-6% of them were inflicted (more than 60 infants). Over the years, more victims with less severe symptoms, including ADHD and limb pain, were diagnosed, and one more victim died.

We then study first-time mothers separately from experienced mothers. To draw causal inference, we compare the return to work decisions of mothers that gave birth in the periods just after and just before the Remedia Event: November 03 - April 04 versus May 03 - October 03 and in the respective periods in the prior year, November 02 - April 03 versus May 02 - October 02. We find that starting from the third month after childbirth, around which the mandatory maternity leave period ends along with the end of the eligibility period for maternity allowance, the Remedia Event decreased the likelihood to return to work among first-time mothers. This effect gradually declines, and it disappears a year after childbirth when exclusive breastfeeding rates approach zero. Overall, the Remedia Event decreased the average of months worked within six and twelve months of childbirth by about 4 percent (0.08 months), and 2.2 percent (0.15 months), respectively. These results show that first-time mothers responded to the Remedia Event by delaying their return to work after childbirth.

Next, we split the sample by household income to women from households with above- and below-median income. We find that the response is concentrated among mothers from above-median income households. Within six and twelve months of childbirth, mothers from households with above-median income work on average 7.6 percent (0.16 months) and 3.5 percent (0.25 months) less than they would have had the Remedia Event not occurred, respectively. The effect for mothers from households with below-median income is smaller and statistically insignificant.

Finally, we complement these results by an alternative approach that examines the decision to return to work in the twelve months after giving birth, exploiting "within mother variation" in exposure to the Remedia Event. This analysis also shows significant delays in the return-to-work of first-time mothers that occur in the first months after delivery.

Labor market policy changes around the time of the Remedia Event may potentially pose a threat to our identification strategy. Notably, the two policy changes in that period, a reduction in welfare benefits and child allowance, targeted low-income households and families with more than two children, respectively. However, the response to the Remedia Event was concentrated among first-time mothers from above-median income households, a group that was least affected by these policy changes. Moreover, the goal of these policies was to strengthen the incentives to work, potentially discouraging mothers from extending their maternity leaves, hence, if anything, biasing our results downwards.

As we noted above, our premise is that the Remedia Event created a "food scare" that swayed new mothers to choose breastfeeding over baby formula. In the second part of the analysis, we explore this issue. Ideally, we would examine whether the Remedia Event caused an increase in the tendency to breastfeed. However, data on breastfeeding in the

relevant period is unavailable to us.[8] Nonetheless, keeping in mind that in the first six months of life, either breast milk or baby formula are the only foods recommended for the baby, we use data from the Israeli Household Expenditure Survey ("IHES") in 2000-2007 to examine the likelihood of consuming baby formula by households with new mothers. We take a DD approach, analyzing the consumption of baby formula, the "treatment" product, around the Remedia Event, relative to the consumption of various other products, which serve as "comparison" products. We find that the Remedia Event caused a decrease of about 15% in the likelihood of households with new mothers to consume baby formula. Because our sample is comprised of households with new mothers, we interpret these results as supporting the view that the Remedia Event caused an increase in breastfeeding.

Contribution and policy implications. This study contributes to the evidence on the relationship between gender roles in childcare, specifically infant feeding, and new mothers' employment decisions, such as the timing of return to work after childbirth. Relying on the decline over time of baby formula prices around the middle of the twentieth century, Albanesi and Olivetti (2016) show that the diffusion of baby formula played a role in the remarkable increase in mothers' labor force participation between 1920 and 1960 by reducing their exclusivity in infant feeding. More generally, Albanesi and Olivetti (2016)'s study belongs to a strand of the literature suggesting a positive causal link between the declining child-bearing and child-rearing cost and the enormous rise in women's labor force participation in the course of the twentieth century through, e.g., the invention and diffusion of the birth control pill, the infant formula and labor-saving household technologies, and advances in medical knowledge and obstetric practices, all alleviating the difficulties of reconciling work and motherhood (see Greenwood et al. (2005) and Bailey (2006)).

By generating a positive shock to breastfeeding via a baby formula "food scare," the Remedia Event provides an opportunity to examine if women who wish to breastfeed must delay their return to work. Indeed, the results show that the answer is positive. An increase in breastfeeding led to a delay in the return to work of new first-time mothers. Thus, despite the improvements in technology and policy changes in recent decades, new mothers must trade off their return to work after childbirth for the benefits of breastfeeding for their children.

This channel of mothers' labor supply decisions has important policy implications, especially since employers are unlikely to internalize the full benefits of breastfeeding. For example, implementing policies that equalize fathers' rights for parental leave may fail to encourage mothers to return to work in the short run after childbirth if not ac-

[8] We are aware of one exception - two surveys of the Israeli Ministry of Health, in 1999 and 2009. They provide some suggestive evidence for an increase in breastfeeding between 1999 and 2009. However, there is no available data for the years 2000-2008.

companied by policies that facilitate reconciling breastfeeding and work. Breastfeeding promotion policies may also be more effective if combined with policies that alleviate the breastfeeding-work tradeoff.

Furthermore, our results show that the delay in the return to work originated from higher-income households. While we cannot trace the exact underlying cause for this heterogeneity, the results suggest that women from lower-income households are more constrained in their ability to delay their return to work and extend their breastfeeding period. Alleviating the breastfeeding-work tradeoff may therefore prove particularly useful for low-income households.

The remainder of the paper is structured as follows. Section 2 provides some background about the circumstances surrounding the Remedia Event and the baby formula market. In section 3, we present the evidence on the impact of the Remedia Event on mothers' return to work after childbirth. In section 4, we analyze the effect of the Remedia Event on the likelihood of households with new mothers to consume baby formula. Section 5 concludes.

2 Background

The baby formula market in Israel has been quite concentrated in the past few decades. Until 1999, Materna, a baby formula company that manufactures in Israel, had a market share of more than 50% of the baby formula market in the country. Consequently, Materna was declared a monopoly, and the government implemented price control in the baby formula market. In that period, there were two other main players in the baby formula market, Similac, a subsidiary of the international brand Promedico, and Remedia, an Israeli company partly owned by Heinz, that distributed imported baby formula. By 1999, the market shares of the two smaller companies increased at the expense of Materna's market share. As a result, the price control was gradually removed until it was dropped completely at the beginning of 2001. In 2003, before the Remedia Event, Materna held 37% of the market, Remedia held 37%, and Similac held 26%.[9] The Remedia Event received considerable media coverage and public attention.[10] Indeed, in December 2003, a month after the Remedia Event unraveled, Remedia's share in the baby formula market

[9]Information on annual market shares comes from the 2004 rating report summary of Maabarot, Materna's mother company, a public company.

[10]It resulted in civil and criminal proceedings of involved parties. Remedia's chief technology officer was convicted of wrongful death and was sentenced to 15 months in prison, and Israeli Health Ministry officials were sentenced to public service in the criminal process. In the civil process, the company and the victims' families reached a financial settlement. In Germany, Humana officials were fired, and the German authorities fined the company.

fell drastically from 37% to 5-7% and effectively declined to zero by the end of 2005.

We obtained data from Israel's antitrust authority on monthly units sold of Remedia's two competitors, Materna and Similac, in 2003-2007.[11] We combined these data with the annual market shares of these companies to infer the quantities that were sold in the baby formula market around the Remedia Event.[12] Figure 1 summarizes this exercise. The figure shows the quarterly number of units (in thousands) of baby formula sold by the two companies. The vertical red line, located between the third and fourth quarter of 2003, indicates the timing of the Remedia Event. The horizontal dashed blue line approximates the average number of units (in thousands) sold in the entire baby formula market in the first three quarters of 2003 (the average quarterly number of units sold by Materna and Similac divided by their market share in 2003, 63%). The horizontal red dashed line represents the average number of units sold in the market in the first three quarters of each year in the period 2004-2006.[13] The figure shows that the quantities sold by the two companies rose immediately after the Remedia Event by roughly 50%, along with a drop in Remedia's sales to nearly nothing. However, the figure illustrates that in the periods after the Remedia Event, the total number of units sold in the baby formula market, the sum of units sold by the two remaining companies, decreased by about 8% relative to the period before the Remedia Event, from roughly 2,900 to 2,700 units.

Notably, the Remedia Event originated from the Remedia soy-based formula. The usage and sales of soy-based infant formula vary worldwide, and its consumption in Israel is relatively high (Program et al., 2010). The soy-based formula represents roughly 15% of the baby formula market in ages 0-1, and it is typically used for babies with allergies or vegan nutrition. The negative demand shock caused by the Remedia Event was perhaps most substantial among mothers who are soy-based formula consumers. Unfortunately, we are unable to examine this issue directly.

3 The impact of the Remedia Event on maternity leaves

In this section, we address the main question in this paper. We examine whether, by increasing breastfeeding, the Remedia Event caused a delay in mothers' return to work after childbirth. Namely, did mothers extend their maternity leaves as a result of the

[11] The antitrust authority collected these data as part of an examination of Materna's merger with Osem—a large public company in the Israeli food sector—in 2008.

[12] Information on annual market shares comes from the 2004 rating report summary of Maabarot, Materna's mother company, a public company.

[13] We exclude the fourth quarter of each year to create a correspondence with the pre-Remedia Event period average and to account for the apparent seasonality in the number of units sold in each quarter.

Remedia Event?

When studying the behavior of new mothers, the literature often makes a distinction between first-time and experienced mothers (see, e.g., Gameiro et al. (2009)). There are two main reasons to think that this distinction is important in our case as well and that the labor supply response of first-time mothers to the Remedia Event was stronger than that of experienced mothers. First, relative to experienced mothers, first-time mothers experience more stress and anxiety after childbirth (see Hung et al. (2011)). That might have induced a larger increase in their tendency to breastfeed in response to the Remedia Event. Second, relative to experienced mothers, who may have already transitioned into child-friendly jobs, first-time mothers are more likely to have jobs that make it harder to combine work with breastfeeding.[14]

Therefore, we begin our analysis by implementing a DD framework with first-time mothers as the treatment group and experienced mothers as the comparison group. We then proceed by performing a detailed assessment of the response of first-time mothers separately. Our approach relies on a comparison between mothers that gave birth in the periods around the Remedia Event to the corresponding periods of the prior year.[15] Using this approach, we also examine how the effect of the Remedia Event varies by household income. We complement this evaluation by an alternative specification that compares the work decision of mothers in each of the twelve months after delivery, before and after the Remedia Event, allowing the treatment to vary "within mother."

3.1 Maternity leave policy in Israel

Several elements in Israel's labor laws and social safety-net shaped the maternity leave policy in Israel in the relevant period. Until May 2007, according to the Israeli Woman's Labor Law, an employee was entitled to a maternity leave of 12 weeks.[16] An employer was not allowed to prevent an employee from taking maternity leave or fire her during the maternity leave or 45 days after that. Additionally, an employee was allowed to return to work no less than 12 weeks after childbirth. Therefore, at the time, a rule of a mandatory 12 weeks maternity leave after childbirth applied.[17]

The mandatory maternity leave in Israel is accompanied by maternity allowance—a

[14]Lalive et al. (2013) make a similar point and note that first-time mothers' pre-birth labor market history tends to be more informative regarding their earnings capacity than that of experienced mothers.

[15]In section A.1 of the appendix, we report the corresponding estimates for experienced mothers.

[16]In May 2007, this period was extended to 14 weeks, and in 2010, it was extended to 26 weeks as a default. However, a woman may shorten this period to no less than 14 weeks.

[17]Since 2007, a couple can share maternity leave. Husbands can take the last six weeks of maternity leave if the wife provides written consent and returns to work while her husband is on leave.

payment by NII that substitutes the employee's labor income during maternity leave. In the relevant period for this study, the maternity allowance amount was calculated based on the average daily wage in the three months before the maternity leave, for 12 weeks (84 days). Eligibility for the maximal allowance required employment in 10 out of the 14 or 15 out of the 22 months before delivery.[18] Therefore, women with a qualifying work history typically had a twelve-week paid mandatory maternity leave. Additionally, women with at least 24 months of work history with the same employer could delay the return to work for another month for every four months of employment history up to a year.

3.2 Data

Our analysis draws on administrative data from the NII. The NII collects these data from various sources (including the Tax Authority and the Ministry of Interior Affairs) for internal use. The data contain information about the country's universe of employees, including months of employment in every tax year, annual income, and employers' industry and size. These data also contain demographic information such as country of origin, nationality, gender, date of birth, and marital status. Importantly for this study, the birth date of each child is also available, making it possible to link data about every childbirth in the relevant period with information about the mother's and father's employment history. Using these data, we observe the mother's months of employment around the birth for every childbirth in the relevant period. As we focus on the first months after childbirth, the period when the tradeoff between breastfeeding and employment potentially arises, we censor the employment data at 12 months after childbirth.[19]

We create the final sample for the empirical analysis as follows. We start from the universe of all women who gave birth in the period May 2002 - April 2004 and were employed during the twelve months before giving birth, amounting to about 98,300 births. Since we are interested in the entire household's employment history and income, we restrict the initial sample to households with two employed spouses to observe their work history and income.[20] We observe both spouses' employment history for 76,194 households out of the initial sample. Of these households, we, unfortunately, do not observe maternity leaves of 20,673 women. By and large, this data limitation arises because these are teachers

[18]Partial maternity allowance for six weeks existed for women who accrued six months of work in the 14 months before delivery. Additionally, all women were eligible for a birth grant that depended on the child's birth parity.

[19]Exclusive breastfeeding is uncommon after age six months (Li et al. (2002)). According to the Israeli ministry of health, exclusive breastfeeding rates in Israel are around 15% at the age of six months and approach zero at eight months (Keinan-Boker et al. (2014)).

[20]We do not have data on husbands that are not employees. Thus we are unable to distinguish between self-employed and those who do not work. Households with single mothers would also make an interesting group to examine. However, as they comprise a small fraction of the households in our sample, we exclude them from the analysis.

for whom maternity leaves are not accurately reported in the data.[21] After we drop these women from the data, we are left with a final sample of 55,521 mothers from households with two employed spouses, of which there are 19,918 (35,603) births in the first-time (experienced) mothers group.

3.3 First-time mothers vs. experienced mothers

As we noted above, there are good reasons to think that the return-to-work response of first-time mothers to the Remedia Event was stronger than that of experienced mothers. Therefore, in this section, we implement a month-by-month DD strategy using experienced mothers as counterfactuals for first-time mothers. While we use experienced mothers as the comparison group, we do not argue that they were not exposed to the Remedia Event. We merely postulate that as experienced mothers should have been less affected by the Remedia Event, we can use this DD framework to assess the effect of the Remedia Event on first-time mothers relative to experienced mothers.[22] We run a regression of the form

$$(1) \qquad y_{it} = \alpha + \beta \cdot FT + \sum_{\tau=2}^{18}(\gamma_{-\tau} + \delta_{-\tau} \cdot FT) \cdot M_{-\tau} + \sum_{\tau=0}^{5}(\gamma_{\tau} + \delta_{\tau} \cdot FT) \cdot M_{\tau} + \epsilon_{it}$$

where y_{it} is months worked within six months of the birth by a mother i that gave birth on month t of the sample period, May 2002 - April 2004. FT is the indicator for belonging to the treatment group, first-time mothers. M_{τ} is a vector of indicators for each of the 24 months in the sample period, enumerated by τ, relative to November 2003, the time of the Remedia Event. Hence, M_0 is an indicator for November 2003, the first month after the Remedia Event. M_{-1} is the indicator for October 2003, which is the omitted unit of this analysis.

Figure 2 uses the final sample of 55,521 mothers from households with two employed spouses we described above. It depicts the δ_{τ} coefficients of this regression, which capture the effect of the Remedia Event on the months worked within six months of delivery of first-time mothers relative to experienced mothers. As the figure shows, in the 18 months prior to the Remedia Event, the coefficients of months worked within six months are never significantly different from zero, with an absolute magnitude of at most 0.08. In November 2003, there is an apparent and statistically significant drop of about 0.18 months in the number of months worked. With a mean of 2 months, this is roughly a 10% drop in the number of months worked by first-time mothers that gave birth close after the Remedia

[21] This group's maternity leave is coded as months of work as they continue to receive their income from their employer, typically the ministry of education, and not by the NII.

[22] The analysis of maternity leaves of experienced mothers—mothers of at least one more child—reported in Section A.1 of the Appendix shows no statistically significant change in their maternity leaves following the Remedia Event.

Event. This drop appears to be temporary, however. In January 2004 and later, the difference between the two groups is again not significantly different from zero.

The figure highlights the sharp drop in the return to work after childbirth of first-time mothers that gave birth in November 2003. It reveals that relative to experienced mothers, the effect of the Remedia Event on maternity leaves was significant yet temporary. By January 2004, the gap between maternity leaves of first-time and experienced mothers closed.

3.4 The impact of the Remedia Event on maternity leaves of first-time mothers

To better understand the anatomy of the response to the Remedia Event, in this section, we perform a detailed analysis of the return to work of first-time mothers around the Remedia Event.

3.4.1 Empirical strategy

We define births between November and April of the subsequent year as belonging to the treatment group and births between May and October as belonging to the comparison group. We analyze a model of the form:

$$y_{it} = \alpha + \beta_1 \cdot Treat + \beta_2 \cdot Post + \beta_3 \cdot Post \cdot Treat + \epsilon_{it} \tag{2}$$

where y_{it} is an outcome that describes maternity leaves, such as an indicator for the return to work within n months after birth for a mother from household i that gave birth in month t. $Treat$ is an indicator variable that takes the value one if the birth belongs to the treatment group, i.e., it took place on November 03 - April 04 or November 02 - April 03 and zero otherwise. $Post$ is an indicator that takes the value one if a birth took place on May 03 - April 04, the post period. The coefficient of interest is β_3, which captures the effect of the Remedia Event on the return to work pattern of mothers relative to the pattern in the respective periods in the prior year. Formally, it captures the effect of being in the treatment group versus the comparison group in the post period, accounting for the difference in maternity leaves between the treatment and the comparison group in the prior year. Our identification strategy is based on the assumption that absent the Remedia Event, the difference between the treatment and comparison groups would be similar to that in the prior year. We report the results of this analysis in Section 3.4.3.

To clarify our strategy, consider, for example, a woman who gave birth in October 2003, before the Remedia Event, and decided to use baby formula exclusively. When the Remedia Event occurred, it was tough for this woman to change her mind because after not breastfeeding for some time, resuming breastfeeding is very difficult. Therefore, we build on the fact that a decision to rely entirely on baby formula close after giving birth is (almost) irreversible. Recalling that irrespective of the Remedia Event, some mothers chose to breastfeed ("always takers"), while others decided not to breastfeed ("never takers"), our approach captures the "reduced form" effect of the Remedia Event on mothers' return to work via breastfeeding initiation.

This approach draws on well-defined treatment and comparison groups of mothers based on the timing of giving birth relative to the Remedia Event. However, it potentially misses the response of women from the comparison group that gave birth in the periods before the Remedia Event but were still affected by it. Consider a woman that gave birth in June 2003 and decided to breastfeed. Her return-to-work decision was unaffected by the Remedia Event in July-October 2003. On the other hand, in November 2003 and later, in response to the Remedia Event, this woman could have decided to continue breastfeeding and delay her return to work. We, therefore, complement our strategy by an alternative approach that examines the decision to return to work in the twelve months after giving birth, defining November 2003 and later as the treatment period. We analyze a model of the form:

$$
\begin{aligned}
(3) \qquad y_{itj} &= \alpha + \beta_t \cdot date - of - birth_t \\
&\quad + \sum_{j=2}^{12} \gamma_j \cdot month - after - birth_j \\
&\quad + \sum_{j=2}^{12} \delta_j \cdot Treat \cdot month - after - birth_j + \epsilon_{itj}
\end{aligned}
$$

where y_{itj} is a dummy variable that takes the value one if mother i that gave birth at month t returned to work in the j^{th} month after giving birth and zero if she is still on maternity leave. β_t is a vector of dummy variables for each of the months of birth in our sample. $Treat$ is a dummy variable for periods that occurred after the Remedia Event, namely, it takes the value one on November 2003 or later. δ_j, the parameters of interest, capture the effect of the Remedia Event on the probability to work 2-12 months after giving birth. Accounting for the date of delivery, this analysis relies on "within mother" variation in treatment.

Hence, this approach complements the previous one by estimating another aspect of the impact of the Remedia Event. The effect on mothers that were exposed to the Remedia Event in a part of the first year of their infant's life. We report the results of this exercise in Section 3.4.4.

3.4.2 Descriptive statistics

Table 1 provides some descriptive statistics of the first-time mothers sample. The table compares mothers that gave birth in the six-month periods around the Remedia Event (the post period): November 03 - April 04 (the treatment group) versus May 03 - October 03 (the comparison group) and in the respective periods in the prior year (the pre period), namely, November 02 - April 03 versus May 02 - October 02.

Columns (1)-(2) of the table summarize the characteristics of the Comparison and Treatment groups in the post period (around the Remedia Event), and column (3) reports the difference between them. Columns (4)-(6) summarize the characteristics of the Comparison and Treatment groups in the prior year (the pre period) and the difference between them, and column (7) reports the differences-in-differences between the means of the four groups. Overall, the sample characteristics appear to be well aligned across the different groups. As the table indicates, there are no statistically significant differences in the nominal monthly income across groups.[23] Notably, the real monthly income (denominated to 2000 terms) of the husbands in the treatment group is larger by about 500 NIS. This difference arises primarily because we calculate the groups' incomes using earnings from different tax years due to the coarseness of tax data.

3.4.3 Analysis of births around the Remedia Event

Turning to the graphical analysis of the results, Figure 3 displays Kaplan-Meyer survival curves for months on maternity leave. We censored the functions at twelve months because we focus on breastfeeding, which is typically relevant in the first months after childbirth. Panel (a) of the figure shows the survival curves in the post period (around the Remedia Event): the red line depicts the November 03 - April 04 group (treatment), and the blue line shows the survival curve for the May 03 - October 03 group (comparison). By construction, both groups begin with a likelihood of being on maternity leave of 1. Namely, all the women in the sample are on maternity leave in the first month after childbirth.[24]

By the third month after childbirth, around which many women finish the eligibility period for maternity allowance and the mandatory maternity leave period ends, roughly half of the women return to work.[25] At that point, a discernible gap between the treatment

[23] We use the individual's annual income in the tax year before the year of childbirth because the income earned in the same tax year as the birth may include earnings generated after the birth and, therefore, would be less informative for earning capacity.

[24] As we noted above, this is, in fact, mandatory that these women do not work just after childbirth.

[25] We observe some return to work already in month 2 for two main reasons: (i) our data reports calendar months of work while maternity leave is counted in exact weeks (ii) some women started maternity leave before the delivery and, therefore, their twelve-week count ended before month 3.

and comparison groups opens, and the treatment group appears less likely to return to work. The gap persists for another few months, yet it narrows around the sixth month after childbirth, and it closes around the ninth month after childbirth. The difference between the two survival curves is statistically significant, with a p-value of 0.06 based on the log-rank test for equality of the two survival curves. Panel (b) of Figure 3 shows the survival curves for months in maternity leave of the treatment and comparison groups in the prior year (the pre period). As the figure shows, the two lines appear to coincide. Indeed, one cannot reject the null hypothesis that the two functions are equal with a p-value of 0.9.

Table 2 reports the DD regression estimates that map to the graphical illustration of Figure 3. Each line in the table represents a separate linear probability regression with the likelihood to return to work within 2-12 months as the outcome variables akin to Equation (2) above. Consistent with the visual impression, except for month 2, the estimates in column (1) are all negative. In month 3, the treatment group in the post Remedia Event period is 2.9 percent (s.e. 0.0142) less likely to return to work, this gap closes gradually, and by month nine, this gap is small and statistically insignificant (0.0098 percent (s.e. 0.0084)). As shown in column (2), the inclusion of household characteristics in the regressions does not affect the results, indicating that differences in household characteristics are not driving these results.[26]

Notably, the pattern of our estimates is compatible with the dynamics of substitutability between breastfeeding and work after childbirth. Starting in the third month after childbirth, after the mandatory maternity leave period ends, mothers face the choice to delay their return to work. Between the third and sixth months after childbirth, it is recommended to exclusively breastfeed because babies are still not ready for solid foods (Eidelman, 2012). Therefore it is a challenging period for mothers to reconcile breastfeeding and work. Indeed, in this period, we observe the largest effect. In the seventh month after childbirth, solid foods are typically supplemented to infants, gradually alleviating the substitution between breastfeeding and work (After the infant adapts to solid foods, the mother can breastfeed in the mornings and evenings). In this period, the gap between the treatment and control groups gradually closes. The correspondence between our estimates and the dynamics of substitution between breastfeeding and work supports the view that the delay in the return to work by the treatment group emanates from an augmented tendency to breastfeed.

Our analysis focuses on breastfeeding, which is relevant in the short run after childbirth.[27] We are interested in the return to work of women who go on maternity leave and

[26]The household characteristics we include are: indicators for child gender, Jewish mother, Jewish father, mother Native Israeli, father Native Israeli, mother and father age and age squared, mother and father real monthly income, and real monthly income squared.

[27]Note that twelve months after childbirth, exclusive breastfeeding is negligible.

go back to work afterward, as opposed to women who stop working altogether following childbirth. We, therefore, analyze a sub-sample where we add the additional data restriction that women return to work within two years of childbirth, losing 712 observations.[28] We repeat the empirical analysis and report the results from this "intensive margin" sample in columns (3) and (4) of Table 2. The results are qualitatively similar, yet, as one might expect, they are more pronounced. As shown in column (3), in month 3, mothers who gave birth after the Remedia Event are 3.3 percent (s.e. 0.0144) less likely to return to work, and by month 11, this gap becomes small and insignificant, 0.85 percent (s.e. 0.0060). Here too, household characteristics do not affect the results, as the results in column (4) show.

To quantify the cumulative effect of the delay in return to work, we analyze the effect of the Remedia Event on the average months worked within six and twelve months after childbirth, again using the model in equation (2). The results are shown in Table 3. Panel (A) of the table reports the six-month period results. As column (1) shows, following the Remedia Event, average months worked fell by 0.079 months (s.e. 0.036). Given that the baseline level of months worked within six months after childbirth is 2, the estimate implies a decrease of 4 percent in average months worked.[29] The results are not sensitive to the inclusion of household-level characteristics, as column (2) indicates. The "intensive margin" sample results, reported in columns (3), are larger, with a decrease of 0.094 months (s.e. 0.035) in average months worked. With a baseline level of 2.09, this decrease reflects a 4.4 percent decrease.

Heterogeneity. It is often argued that high income individuals are less financially constrained when they make their labor supply decisions. Additionally, high income is commonly associated with better-informed individuals. Therefore, we explore the relationship between household income and the effect of the Remedia Event with the conjecture that the response of mothers from high-income households to the Remedia Event was more pronounced.

Figure 4 shows the Kaplan-Meyer survival curves for months in maternity leave for the above-median income households. Panel (a) shows the survival functions of the treatment and comparison groups around the Remedia Event. The figure illustrates that in the third month after childbirth, there is a divergence between the red line, the treatment group, and the blue line, the comparison group. The gap between the two groups closes by the ninth month after birth. The p-value of the log-rank test is 0.01, indicating that one can reject the hypothesis that the two survival functions are equal. Panel (b) displays the survival curves of the treatment and comparison groups in the prior year. The two

[28] I.e., we right truncate the data after two years.

[29] We calculated the baseline using the counterfactual value of months worked for this group based on the estimates of the regression coefficients (we add up the "constant," "post," and "treat" coefficients).

survival functions overlap, and the log-rank test for equality between them cannot be rejected (p-value=0.69). Thus, in the above-median income households, there is a stark difference between maternity leaves in the treatment and comparison groups in the post-period around Remedia Event with no evidence for such a difference in the pre-period, the prior year. Figure 5 depicts the same survival curves for the below-median income households. In panel (a), around the Remedia Event, there appears to be a divergence between the treatment and comparison groups' survival curves around the third month after childbirth. However, it seems smaller than the gap in the above-median income households group. Indeed, the equality between the two functions cannot be rejected with a p-value of 0.62. The survival curves in panel (b) overlap, and the result of the log-rank test (p-value 0.81) confirm this impression. Thus, the overall takeaway from this graphical illustration is that the impact of the Remedia Event on maternity leaves arises primarily among women from above-median income households.

Table 4 provides the corresponding monthly estimates. Column (1) shows the above-median household income group results, without and with household characteristics controls. The estimates corroborate the visual impression from Figure 4. A statistically significant gap of 4.9 percent (s.e. 0.021) opens in month three, and it closes gradually in subsequent months. The result is unaffected by household characteristics controls (columns (2)). Column (3) displays the estimates for the below-median income household group. While the estimates are negative, they are smaller than those in column (1), and not statistically significant. Here too, household characteristics have no effect on the estimates (column (4)). Overall, unsurprisingly the results reported in the table are consistent with the visual impression of Figures (4) and (5), demonstrating that the effect of the Remedia Event is concentrated among women from high-income households.

Table 5 provides estimates of the overall magnitude of the effect of the Remedia Event by household income. Column (1) shows that in the above-median income households, the effect of the Remedia Event on work within six months of birth was of 0.16 months (s.e. 0.053) decrease, reflecting a 7.6 percent decline (again, this result is not affected by household characteristics as shown in column (2)). The overall effect on work within six months on the below-median income households, reported in column (3), is small and statistically insignificant. Panel (b) of the table reports the estimates for work within twelve months of childbirth. The results are smaller, as expected. The effect on the above-median group is a decrease of 0.25 (s.e. 0.122) months, 3.5 percent. The estimates for the below-median group remain statistically insignificant.

3.4.4 Analysis of work decision around the Remedia Event

Here, we present the estimation results of the model in equation (3), which takes an alternative identification approach that draws on "within mother variation" in exposure to the Remedia Event as we described above. Figure 6 shows the estimates of the δ_j coefficients in that equation. These estimates capture the effect of the Remedia Event on the probability of working 2-12 months after delivery in our sample of first-time mothers.[30] The figure shows that treated mothers are 0.6 percentage points less likely to return to work in the second month after giving birth. This difference increases to 1.2 percentage points in the third month, decreases to 0.7 percentage points in the fourth month, and closes completely in the fifth month and onward. This effect is consistent with a breastfeeding response to the Remedia Event food scare.

These results complement those reported in the previous section because they capture the response of mothers that were exposed to the Remedia Event during the first year of their infant's life. In contrast, the previous section's results capture the effect on mothers that gave birth after the Remedia Event. Reassuringly, they depict a similar picture. The delay in return-to-work occurs in the first months after birth when breastfeeding is exclusive.

Summary. To recap, the results in this section show that relative to experienced mothers, there was a sharp increase in the length of maternity leaves of first-time mothers immediately after the Remedia event. This gap gradually closed in the months following the Remedia Event. First-time mothers, particularly those from above-median income households, extended their maternity leaves in response to the Remedia Event. The delay in return to work was concentrated in the first months after giving birth.

4 The impact of the Remedia Event on the likelihood to consume baby formula

As we noted above, our premise is that following the Remedia Event "food scare," some new mothers chose breastfeeding over baby formula, increasing the overall tendency to breastfeed. Ideally, we would like to evaluate the effect of the Remedia Event on breastfeeding directly. However, in practice, data on breastfeeding in Israel in the relevant period is unavailable to us. Keeping in mind that in the first six months of life, either breast milk or baby formula are the only foods recommended for the baby, we study the

[30] Note that to do this, we transform the data to a "long shape," treating each month after giving birth as an observation.

likelihood of consuming baby formula of households with new mothers as a proxy for breastfeeding.

4.1 Data

We use repeated cross-section data from the IHES in the period 2000-2007 to study the impact of the Remedia Event on the consumption of baby formula. Our sample includes 2,866 households with new mothers, defined as women between ages 18-45 who are the head of the household or the spouse of the household's head and are at most one year after childbirth (i.e., their infants are in the ages 0-1).[31]

As part of the IHES, households collect receipts from their purchases for two weeks. Based on the receipts, households fill a diary that records the amount they spent on each product they bought in that period; for example, how much a household spent on baby formula or milk during the two-week sampling period. Thus, these data contain a detailed record of the household-level expenditures in those two weeks at the single product level.

Table 6 provides the descriptive statistics of the sample. The average number of children in the pre and post Remedia Event period is similar, about 2.8. Average mothers' and fathers' years of schooling are a little higher in the post Remedia Event period. Household real income is similar in both periods, a little over 11,000 NIS (in real 2000 terms). The share of Ultra-orthodox Jewish households is 2 percentage points higher, and the share of non-Jewish households is 3 percentage points higher in the post period. While the sample seem well balanced across the pre and post Remedia Event periods, we account for differences that may arise due to compositional changes in the sample by controlling for these household characteristics in the regression analysis below.

4.2 The likelihood to consume baby formula

To examine the effect of the Remedia Event on the likelihood of consuming baby formula, we take a DD approach. We analyze the change in the likelihood of consuming baby formula after the Remedia Event relative to other products. The identification assumption underlying our empirical approach is that, absent the Remedia Event, baby formula consumption would follow the same trend as that of the various products in the comparison groups in the period 2000-2007. In the basic specification, we estimate a linear probability

[31] A data limitation we face is that the age of infants is measured in whole years. Our notion of "exclusive" substitution between breastfeeding and baby formula is valid only in the first months of the baby's life.

model of the form:

$$y_{ijt} = \alpha + \beta_1 \cdot Post + \beta_2 \cdot Treat + \beta_3 \cdot Post \cdot Treat + \epsilon_{ijt} \quad (4)$$

where y_{ijt} is an indicator for purchasing a positive amount of a product i by household j in year t.[32] $Treat$ is a dummy variable that equals one if the product i is baby formula and zero otherwise. $Post$ is defined as the period 2004-2007.[33] The estimates of β_3, the main coefficient of interest, capture the change in the likelihood of households with new mothers to consume baby formula relative to their likelihood to consume other products. Additional specifications include year fixed effects, product fixed effects, and household characteristics.[34]

We analyze three sets of regressions, each with a different comparison group of products: dairy, basic, and bread & cereal.[35] Table 7 reports the results of this analysis. Column (1) reports the results of the DD analysis with the dairy products comparison group, showing an 11 percentage points decrease in the likelihood to consume baby formula. The results are robust to the inclusion of year and product fixed effects (column (2)) as well as household characteristics (column (3)). In columns (4)-(6), we repeat the analysis using the basic products comparison group, and the results are similar, showing a 10 percentage point decrease in the likelihood to consume baby formula. With the bread and cereal comparison group, the effect is also a 10 percentage point decline in the likelihood to buy baby formula, as columns (7)-(9) of the table show. Given that baby formula was consumed by about 70% of the households in the sample in the pre period, these results indicate a decline of about 15% in the likelihood of consuming baby formula.

Next, we explore how this effect varies by household income. We split the sample in two – above- and below-household median income – and repeat the DD analysis for each group.[36] Panels B and C of Table 7 display the results. The effect in both groups is statistically significant, but the point estimates in the above-median group are larger, suggesting that more high-income households responded to the Remedia Event. These results are consistent with our previous results that the effect of the Remedia Event on

[32]To be precise, the indicator equals one if a household spent more the 3NIS on a product in the two-week period of the survey.

[33]Note that this definition is due to the coarseness of the IHES data, which is measured in whole years. The Remedia Event took place in November 2003, and consumption of households that were surveyed at the end of 2003 may have been impacted too.

[34]The household characteristics we include are: household real income (in terms of the year 2000 NIS), mother's and father's years of schooling; and indicators for two specific populations who may have different characteristics from the rest of the Israeli population: non-Jews and Ultra-Orthodox Jews, that we define as Jews who attended religious post-secondary school: Kolel, Yeshiva, or Rabbis school.

[35]The product composition of each group is as follows. Dairy: sweet cream, hard cheese, processed cheese, soft white cheese, and salty cheese; Basic products: white flour and other flour, eggs, milk, sugar, yogurt; bread & cereal: standard bread, various cereals, rice, cookies and biscuits, cornflakes, and crispies.

[36]Since this is a repeated cross-section, we do the split by median income in each survey year. The descriptive statistics of the two groups are provided in Appendix Table A.1

the return to work decision was more pronounced among high-income households.

5 Conclusion

In this study, we analyze the consequences of the Remedia Event, a realization of a product safety hazard in the baby formula market in Israel in 2003. We find that following the Remedia Event, relative to experienced mothers, first-time mothers' exhibit an apparent delay in their return to work in births close after the Remedia Event. Further examination of the response of first-time mothers shows that within six months of childbirth, they worked on average 4 percent less than they would have had the Remedia Event not occurred. Moreover, consistent with the notion that an increase in breastfeeding drove the response to the Remedia Event, we find that the likelihood of consuming baby formula by households with new mothers decreased by about 15%.

By generating a positive shock to breastfeeding via a "food scare," the Remedia Event provides an opportunity to assess the substitution between breastfeeding and the return to work after childbirth of new mothers. Indeed, the results show that despite technological improvements and policy changes throughout the 20^{th} century that helped reconcile breastfeeding and work, an unexpected increase in breastfeeding led to a rise in the length of maternity leaves. Thus, we cautiously conclude that the biological comparative advantage of new mothers in infant feeding continues to play a role in their return to work decisions after childbirth, at least as long as the relative benefits of breastfeeding remain unquestionable. While many traditional gender roles are a product of norms and culture and are not justified scientifically, breastfeeding arguably yields biological gains and may introduce more challenges to policy-makers who wish to increase the labor force participation of first-time mothers and enhance gender equality.

One limitation of this study is that we are unable to obtain data on breastfeeding, and thus our inference on breastfeeding is indirect through consumption of baby formula. Availability of data on breastfeeding coupled with a suitable setting could further improve the knowledge on this issue.

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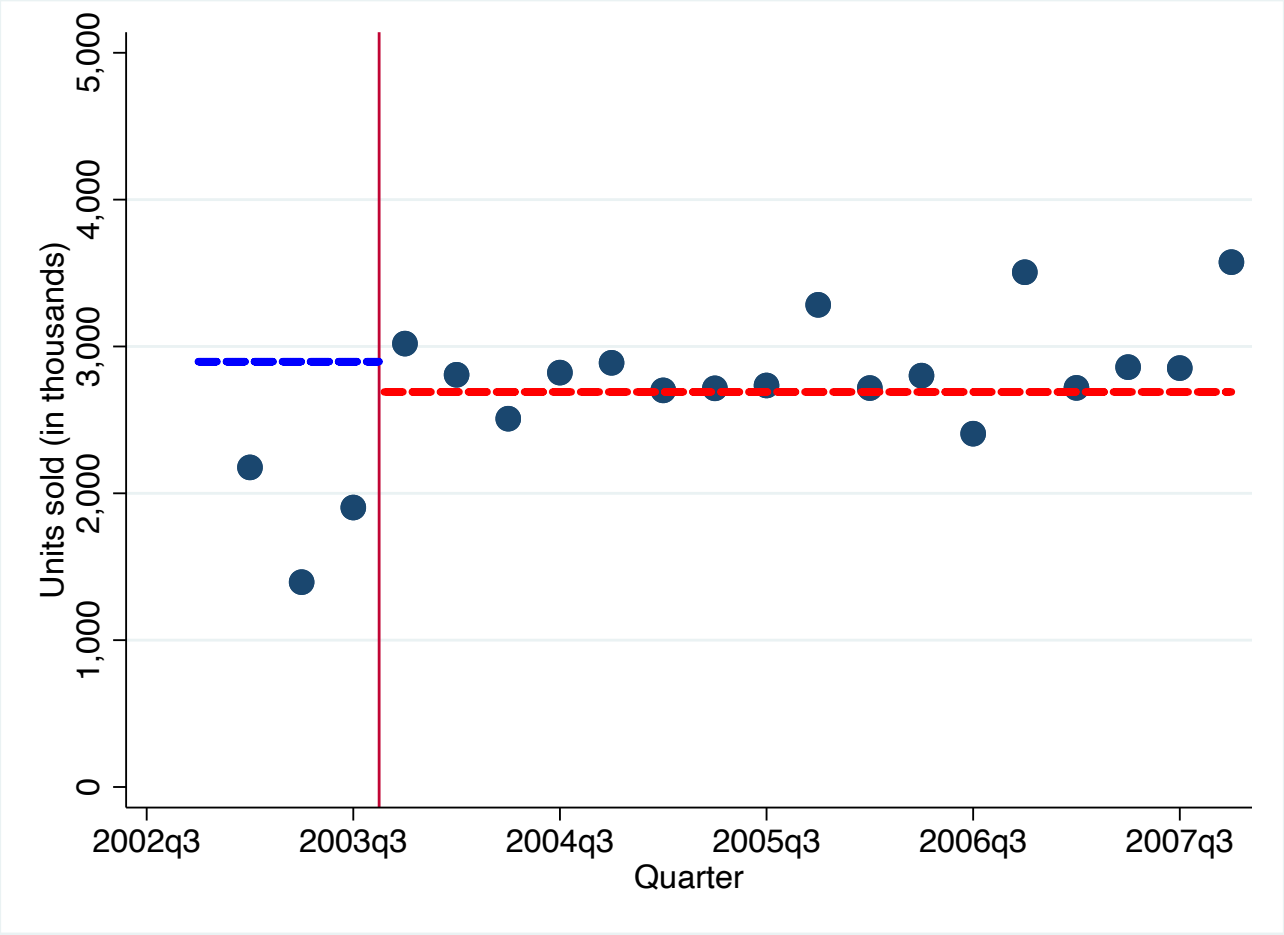
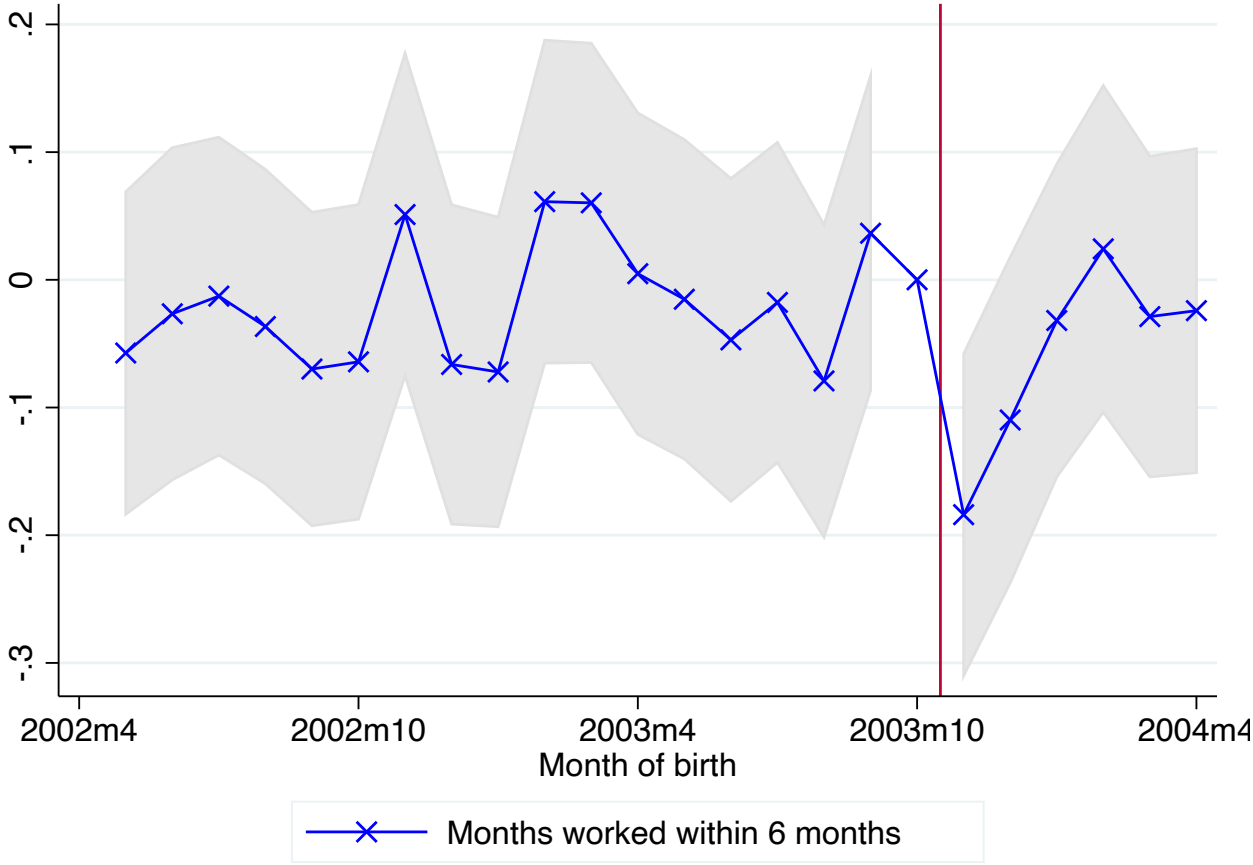
Figure 1: Units sold by Remedia's competitors around the Remedia Event



Note: This figure plots the quarterly total of baby formula units sold by Remedia's competitors, Materna and Similac. The vertical red line deontes the Remedia Event. The horizontal blue dashed line approximates total sales in the market in quarters 1-3 of 2003: the quarterly average number of units sold divided by the market share of Materna and Similac – 63%. The red dashed line represents average quarterly sales in the market in the first three quarters of each of the years following the Remedia Event - 2004-2006.

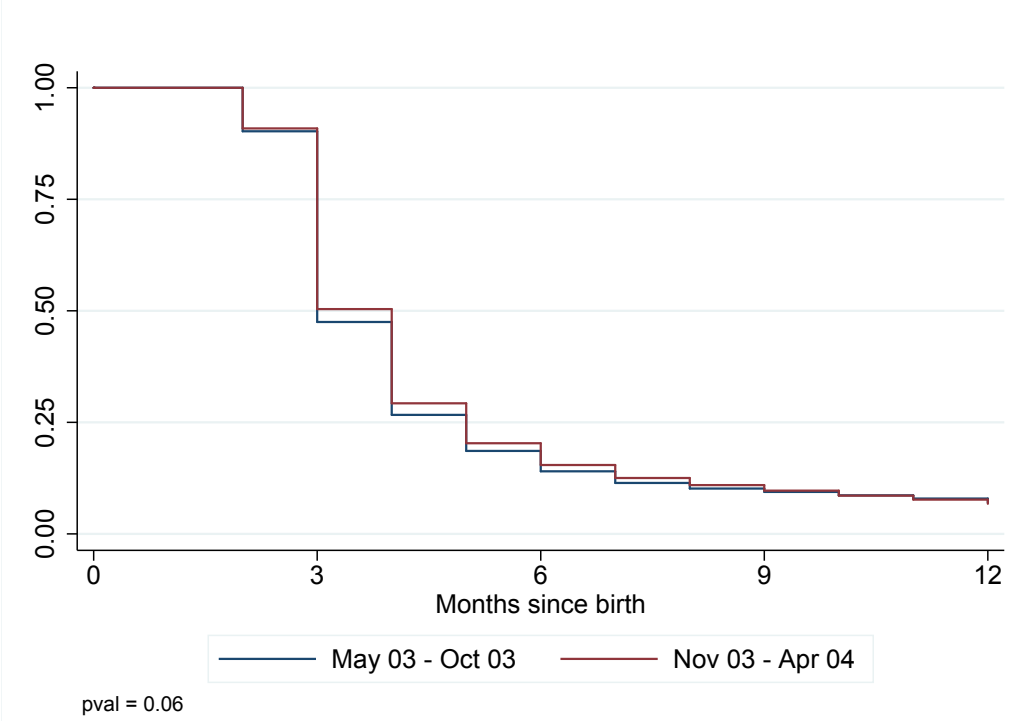
Figure 2: Months worked within six months of childbirth First-time vs. Experienced mothers



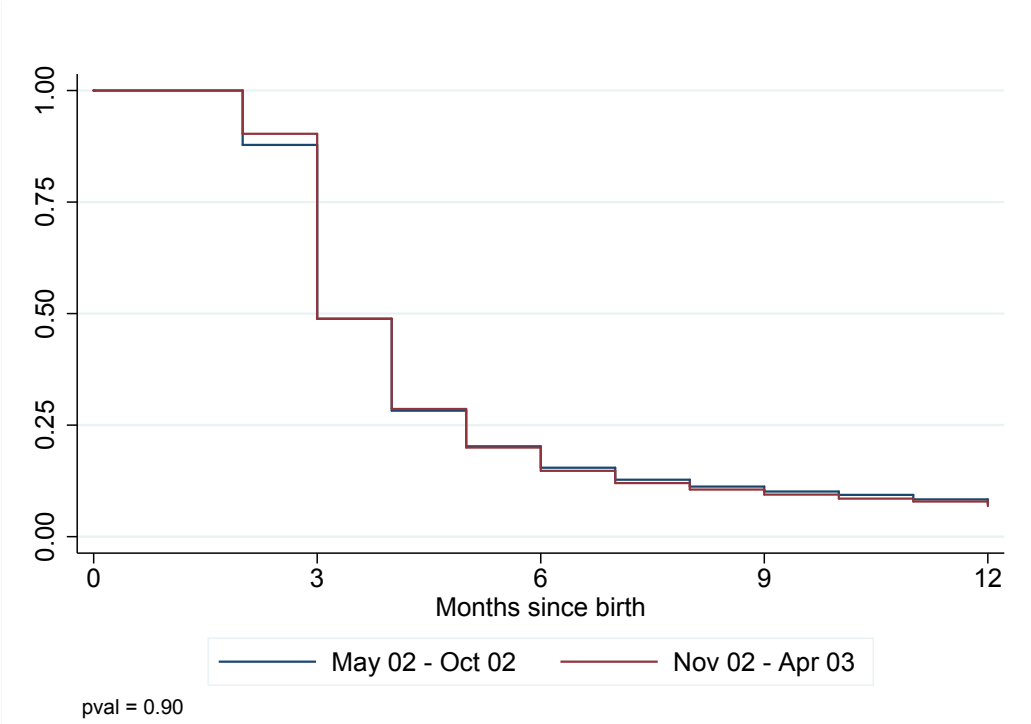
Note: This figure depicts the coefficients of a regression akin to equation 1, with mean months worked in the first six months after childbirth as the outcome. The grey shaded areas show the 90% confidence intervals. The vertical red line located just before November 2003 marks the timing of the Remedia Event.

Figure 3: The likelihood of being on maternity leave after childbirth

(a) Around the Remedia Event



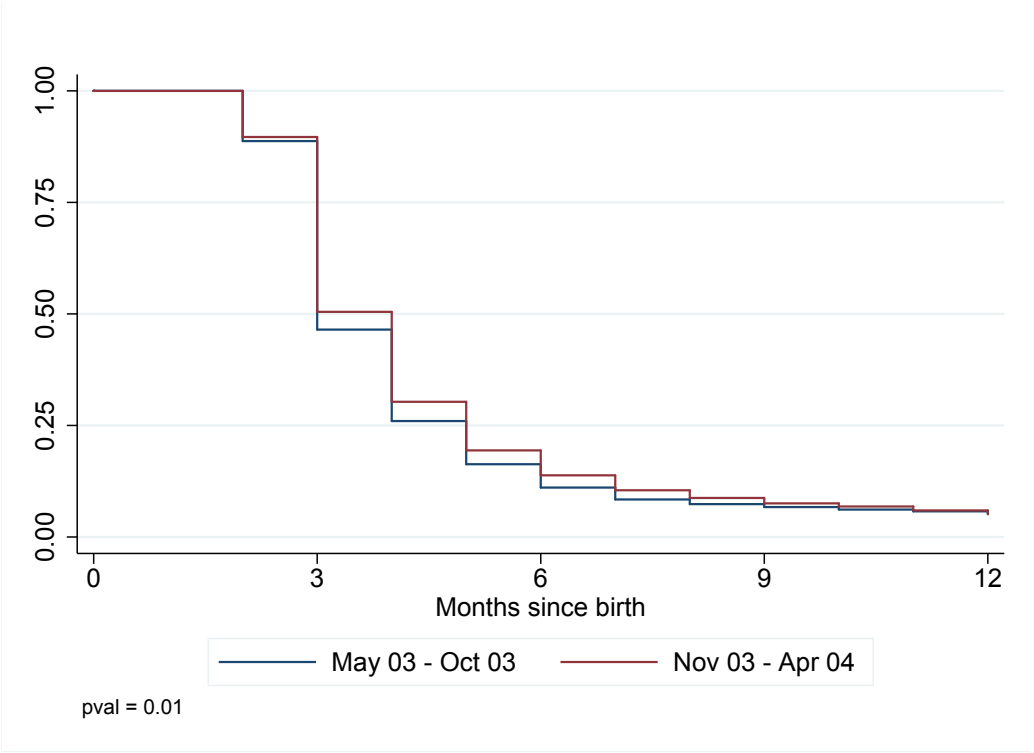
(b) Prior year



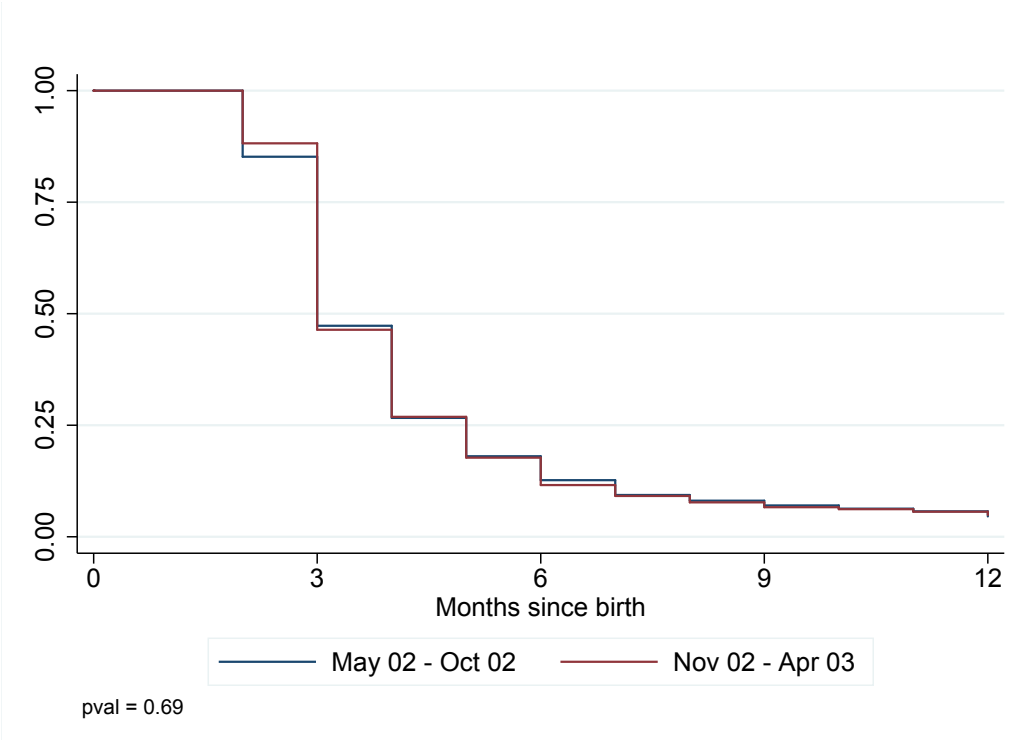
Note: Panels (a) and (b) of the figure depict the likelihood of being on maternity leave in the first twelve months after childbirth in the periods around the Remedia Event and the prior year, respectively.

Figure 4: The likelihood of being on maternity leave after childbirth, above-median household income

(a) Around Remedia



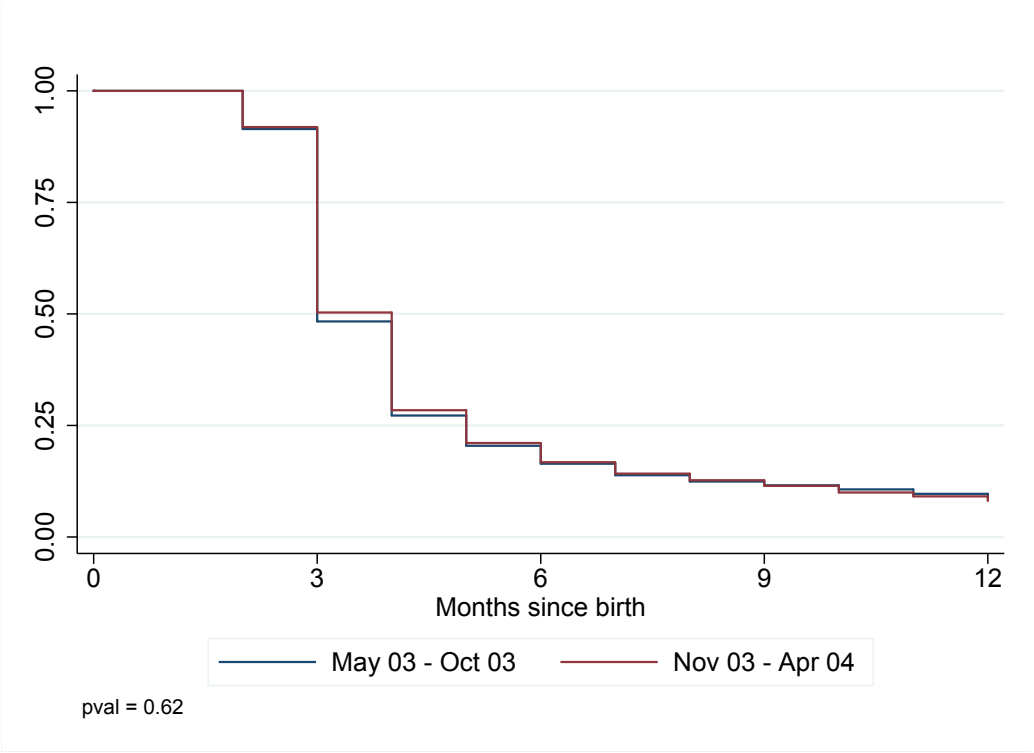
(b) Prior year



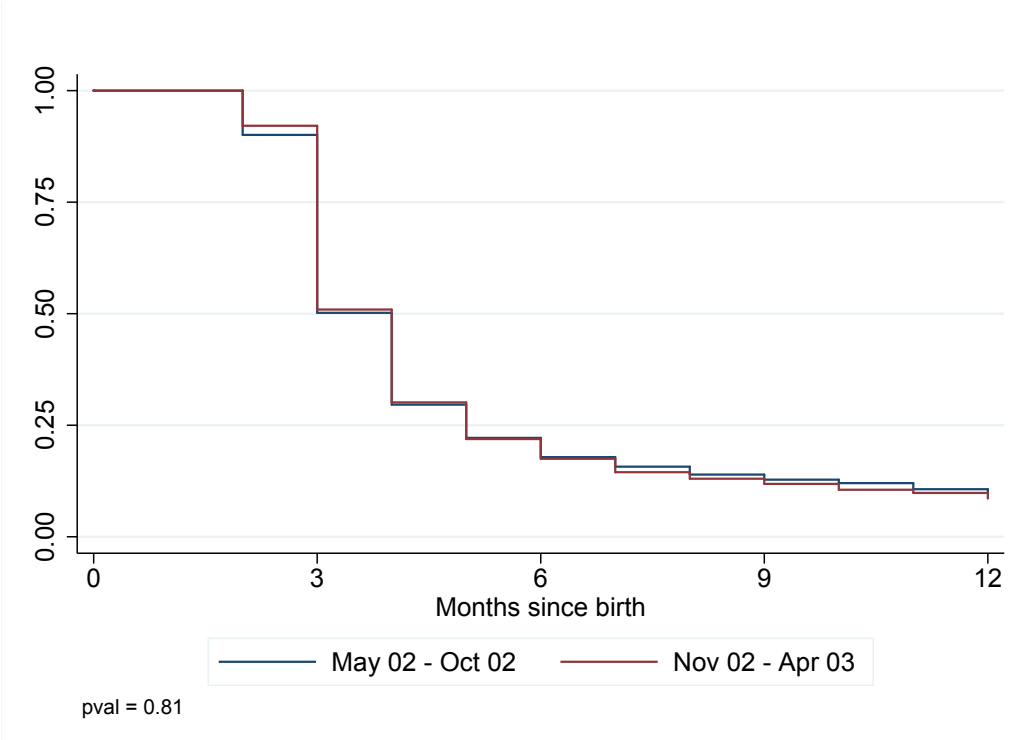
Note: Panels (a) and (b) of the figure depict, for women from to above-median income households, the likelihood of being on maternity leave in the first twelve months after childbirth in the periods around the Remedia Event and the prior year, respectively.

Figure 5: The likelihood of being on maternity leave after childbirth, below-median household income

(a) Around Remedia

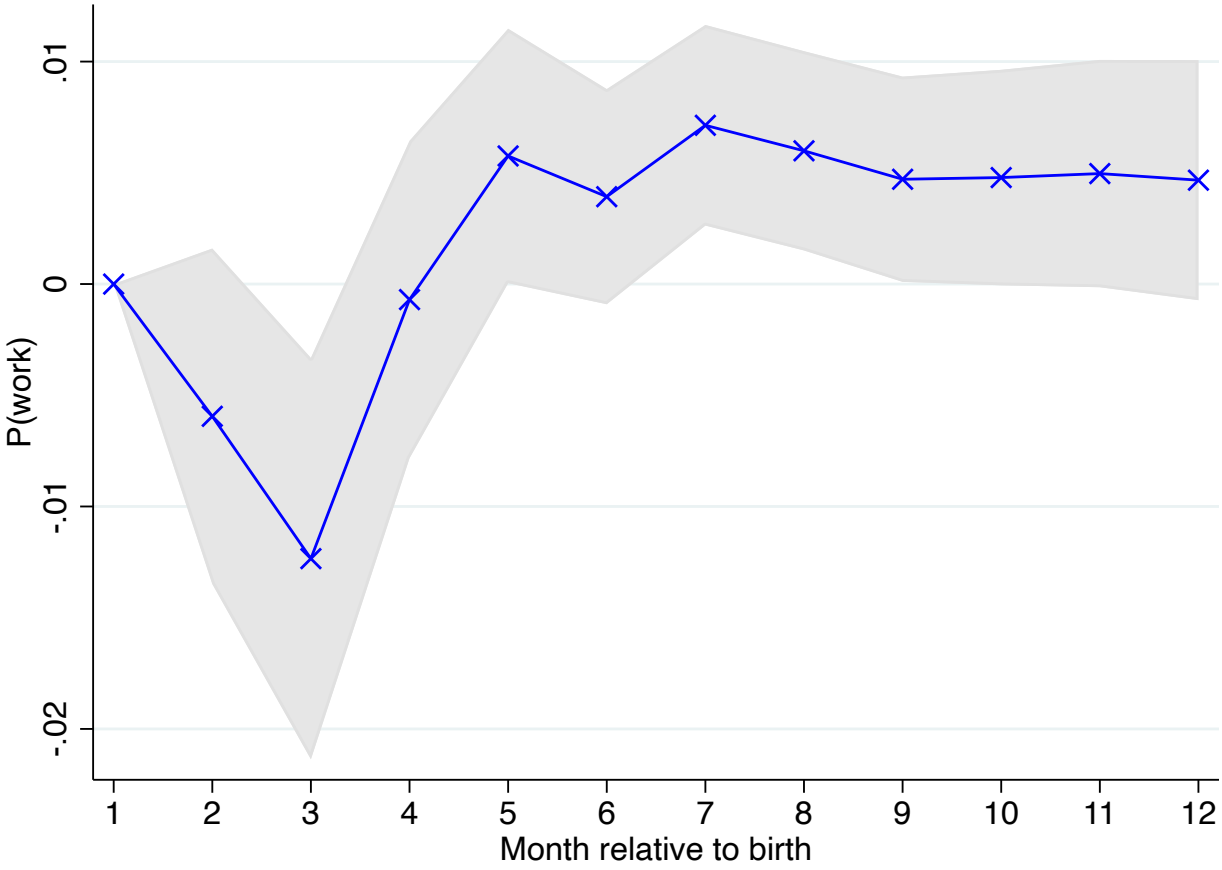


(b) Prior year



Note: Panels (a) and (b) of the figure depict, for women from below-median income households, the likelihood of being on maternity leave in the first twelve months after childbirth in the periods around the Remedia Event and the prior year, respectively.

Figure 6: The effect of the Remedia Event on the likelihood to work



Note: This figure depicts the δ_j coefficients of a regression akin to equation 3. The grey shaded areas show the 90% confidence intervals. standard errors are clustered at the HH level.

Table 1: Descriptive statistics, first-time mothers sample

	Post period: around Remedia			Pre period: prior year			DD
	Comp	Treat	Diff	Comp	Treat	Diff	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Share baby male	0.50	0.50	-0.00	0.47	0.49	0.02	-0.02
	(0.50)	(0.50)	(0.01)	(0.50)	(0.50)	(0.01)	(0.01)
Wife's age at childbirth	27.88	28.14	0.26	27.82	27.90	0.08	0.18
	(3.55)	(3.48)	(0.07)	(3.60)	(3.50)	(0.07)	(0.10)
Share wife Jewish	0.94	0.95	0.01	0.92	0.92	-0.00	0.01
	(0.24)	(0.22)	(0.00)	(0.27)	(0.27)	(0.01)	(0.01)
Share wife native	0.83	0.82	-0.00	0.83	0.82	-0.00	-0.00
	(0.38)	(0.38)	(0.01)	(0.38)	(0.38)	(0.01)	(0.01)
Wife's monthly income - nominal	6,567.22	6,364.50	-202.72	6,549.99	6,385.46	-164.53	-38.20
	(4,074.23)	(3,967.99)	(81.56)	(4,392.01)	(4,232.47)	(85.47)	(118.12)
Wife's monthly income - real	6,256.32	5,930.20	-326.13	6,478.72	5,978.90	-499.83	173.70
	(3,878.72)	(3,696.78)	(76.86)	(4,344.22)	(3,962.99)	(82.38)	(112.65)
Husband's age at childbirth	30.48	30.62	0.14	30.43	30.47	0.04	0.10
	(4.15)	(4.01)	(0.08)	(4.26)	(4.11)	(0.08)	(0.12)
Share husband Jewish	0.94	0.95	0.01	0.92	0.92	-0.00	0.01
	(0.24)	(0.22)	(0.00)	(0.27)	(0.27)	(0.01)	(0.01)
Share husband native	0.83	0.83	0.00	0.83	0.84	0.00	0.00
	(0.37)	(0.37)	(0.01)	(0.37)	(0.37)	(0.01)	(0.01)
Husbands's monthly income - nominal	9,328.01	9,203.50	-124.51	9,566.24	9,222.69	-343.55	219.04
	(6,897.48)	(6,679.34)	(137.70)	(11,848.95)	(6,893.72)	(191.81)	(236.55)
Husband's monthly income - real	8,890.59	8,576.06	-314.54	9,462.15	8,635.48	-826.68	512.14
	(6,577.16)	(6,223.31)	(129.88)	(11,720.03)	(6,454.79)	(187.19)	(228.28)
Observations	4,961	4,773	9,734	5,060	5,124	10,184	19,918

Note: This table provides the descriptive statistics of the first-time mothers sample.

Table 2: The impact of the Remedia Event on new mothers' return to work, DD Estimates per month

	Full sample		Intensive margin	
	(1)	(2)	(3)	(4)
Likelihood to return within:				
2 months	0.0185*	0.0177*	0.0186*	0.0178*
	(0.0086)	(0.0085)	(0.0089)	(0.0088)
3 months	-0.0290*	-0.0285*	-0.0333*	-0.0324*
	(0.0142)	(0.0140)	(0.0144)	(0.0143)
4 months	-0.0221	-0.0216	-0.0275*	-0.0264*
	(0.0128)	(0.0126)	(0.0126)	(0.0124)
5 months	-0.0201	-0.0204	-0.0259*	-0.0255*
	(0.0113)	(0.0111)	(0.0108)	(0.0106)
6 months	-0.0211*	-0.0222*	-0.0273**	-0.0277**
	(0.0101)	(0.0099)	(0.0093)	(0.0092)
7 months	-0.0187*	-0.0202*	-0.0250**	-0.0258**
	(0.0093)	(0.0091)	(0.0082)	(0.0081)
8 months	-0.0143	-0.0159	-0.0206**	-0.0214**
	(0.0088)	(0.0086)	(0.0076)	(0.0075)
9 months	-0.0098	-0.0113	-0.0160*	-0.0167*
	(0.0084)	(0.0082)	(0.0070)	(0.0070)
10 months	-0.0076	-0.0091	-0.0138*	-0.0145*
	(0.0080)	(0.0079)	(0.0065)	(0.0065)
11 months	-0.0024	-0.0038	-0.0085	-0.0090
	(0.0077)	(0.0075)	(0.0060)	(0.0060)
12 months	-0.0026	-0.0040	-0.0087	-0.0092
	(0.0072)	(0.0071)	(0.0053)	(0.0053)
HH Characteristics	No	Yes	No	Yes
Observations	19,918	19,918	19,206	19,206

Note: This table summarizes the DD estimates of the monthly likelihood to return to work as per Equation (2). Standard errors are calculated using Huber-White heteroscedasticity correction. One or two asterisks indicate significance at 5% or 1%, respectively.

Table 3: The impact of the Remedia Event on new mothers' return to work , DD Estimates

	Full Sample		Intensive margin	
	(1)	(2)	(3)	(4)
A. Months worked within six months of birth:				
Post X treat	-0.0787*	-0.0785*	-0.0942**	-0.0924**
	(0.0357)	(0.0347)	(0.0353)	(0.0345)
B. Months worked within twelve months of birth:				
Post X treat	-0.1458	-0.1564	-0.1940*	-0.1993*
	(0.0878)	(0.0849)	(0.0832)	(0.0810)
HH Characteristics	No	Yes	No	Yes
Observations	19,918	19,918	19,206	19,206

Note: This table summarizes the DD estimates of the average months worked as per Equation (2). Standard errors are calculated using Huber-White heteroscedasticity correction. One or two asterisks indicate significance at 5% or 1%, respectively.

Table 4: The impact of the Remedia Event on mothers' return to work , DD Estimates per month by household income

	Above median		Below median	
	(1)	(2)	(3)	(4)
Likelihood to return within:				
2 months	0.0209	0.0207	0.0161	0.0152
	(0.0136)	(0.0136)	(0.0108)	(0.0108)
3 months	-0.0487*	-0.0471*	-0.0127	-0.0155
	(0.0210)	(0.0206)	(0.0192)	(0.0190)
4 months	-0.0408*	-0.0400*	-0.0068	-0.0086
	(0.0187)	(0.0183)	(0.0174)	(0.0171)
5 months	-0.0342*	-0.0338*	-0.0088	-0.0116
	(0.0161)	(0.0157)	(0.0158)	(0.0155)
6 months	-0.0385**	-0.0382**	-0.0071	-0.0112
	(0.0138)	(0.0135)	(0.0145)	(0.0142)
7 months	-0.0227	-0.0224	-0.0160	-0.0204
	(0.0122)	(0.0120)	(0.0136)	(0.0133)
8 months	-0.0176	-0.0174	-0.0122	-0.0161
	(0.0114)	(0.0112)	(0.0129)	(0.0127)
9 months	-0.0123	-0.0120	-0.0083	-0.0119
	(0.0107)	(0.0105)	(0.0125)	(0.0122)
10 months	-0.0081	-0.0077	-0.0080	-0.0117
	(0.0103)	(0.0101)	(0.0119)	(0.0117)
11 months	-0.0029	-0.0025	-0.0026	-0.0060
	(0.0098)	(0.0096)	(0.0114)	(0.0113)
12 months	0.0031	0.0034	-0.0079	-0.0115
	(0.0091)	(0.0090)	(0.0108)	(0.0107)
HH Characteristics	No	Yes	No	Yes
Observations	9,085	9,085	10,833	10,833

Note: This table summarizes the DD estimates of the monthly likelihood to return to work as per Equation (2). Standard errors are calculated using Huber-White heteroscedasticity correction. One or two asterisks indicate significance at 5% or 1%, respectively.

Table 5: The impact of the Remedia Event on mothers' return to work , DD Estimates by income

	Above median		Below median	
	(1)	(2)	(3)	(4)
A. Months worked within six months of birth:				
Post X treat	-0.1583**	-0.1556**	-0.0140	-0.0238
	(0.0526)	(0.0507)	(0.0484)	(0.0474)
B. Months worked within twelve months of birth:				
Post X treat	-0.2505*	-0.2462*	-0.0646	-0.1145
	(0.1215)	(0.1165)	(0.1246)	(0.1212)
HH Characteristics	No	Yes	No	Yes
Observations	9,085	9,085	10,833	10,833

Note: This table summarizes the DD estimates of the average months worked as per Eq. (2), by household income. Standard errors are calculated using Huber-White heteroscedasticity correction. One or two asterisks indicate significance at 5% or 1%, respectively.

Table 6: Descripitive statistics, households with new mothers and infants aged 0-1 (IHES data)

	Pre Remedia (1)	Post Remedia (2)	Diff (3)
Children under 18	2.86	2.82	0.04
			(0.07)
Mother's years of schooling	13.27	13.55	-0.29
			(0.12)
Father's years of schooling	11.87	12.16	-0.29
			(0.25)
Household real income (2000 NIS)	11,340.82	11,171.39	169.43
			(341.71)
Share Ultra Orthodox Jews	0.14	0.16	-0.02
			(0.01)
Share Non-Jewish	0.20	0.23	-0.03
			(0.02)
Observations	1,431	1,435	

Note: This table provides descriptive statistics of the households in the IHES data pre- and post-Remedia period.

Table 7: The impact of the Remedia event on the likelihood to consume baby food, DD Estimates

	Dairy products			Basic products			Bread and cereal		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
A. All households (mean baby food (pre-period): 0.70)									
Remedia eventXBaby food	-0.107**	-0.107**	-0.107**	-0.098**	-0.098**	-0.098**	-0.102**	-0.102**	-0.102**
	(0.0186)	(0.0186)	(0.0186)	(0.0190)	(0.0190)	(0.0190)	(0.0193)	(0.0193)	(0.0193)
Observations	17,196	17,196	17,196	20,062	20,062	20,062	17,196	17,196	17,196
B. Below Median (mean baby food (pre-period): 0.65)									
Remedia eventXBaby food	-0.080**	-0.080**	-0.080**	-0.085**	-0.085**	-0.085**	-0.092**	-0.092**	-0.092**
	(0.0268)	(0.0269)	(0.0269)	(0.0278)	(0.0278)	(0.0278)	(0.0281)	(0.0281)	(0.0281)
Observations	8,610	8,610	8,610	10,045	10,045	10,045	8,610	8,610	8,610
C. Above Median (mean baby food (pre-period): 0.76)									
Remedia eventXBaby food	-0.134**	-0.134**	-0.134**	-0.111**	-0.111**	-0.111**	-0.112**	-0.112**	-0.112**
	(0.0258)	(0.0258)	(0.0258)	(0.0258)	(0.0259)	(0.0259)	(0.0265)	(0.0265)	(0.0265)
Observations	8,586	8,586	8,586	10,017	10,017	10,017	8,586	8,586	8,586
Year FEs	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Product FEs	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
HH Characteristics	No	No	Yes	No	No	Yes	No	No	Yes

Note: This table summarizes the DD estimates of Equation (4). The product categories are (1) Dairy products; (2) Basic products; (3) Bread & cereal. Standard errors are clustered at the household level. One or two asterisks indicate significance at 5% or 1%, respectively

A Appendix

A.1 The impact of the Remedia Event on maternity leaves of experienced mothers

Here we report the results from the analysis of the effect of the Remedia Event on maternity leaves of experienced mothers. Table A.2 provides the descriptive statistics for this group. Figure A.1 and Table A.3 show the monthly return to work results. Table A.4 shows the results for average months worked within 6 and 12 months of childbirth. Overall, the estimates indicate that the Remedia Event did not create a statistically significant effect on maternity leaves of experienced mothers.

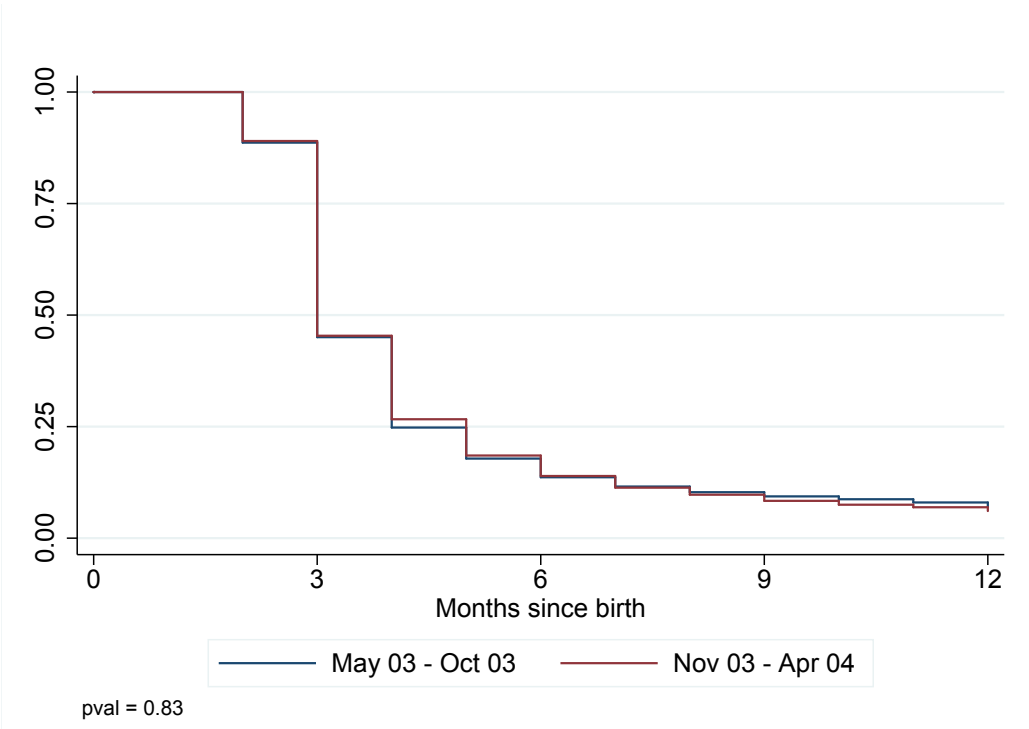
Table A.1: Descripitive statistics, households with new mothers and infants aged 0-1 (IHES data), by HH income

	Pre Remedia (1)	Post Remedia (2)	Diff (3)
Below Median			
Children under 18	3.00	3.00	0.00
			(0.10)
Mother's years of schooling	12.23	12.36	-0.14
			(0.17)
Father's years of schooling	11.54	11.75	-0.21
			(0.36)
Household real income (2000 NIS)	5,386.44	4,834.07	552.37
			(106.16)
Share Ultra Orthodox Jews	0.23	0.25	-0.02
			(0.02)
Share Non-Jewish	0.31	0.35	-0.04
			(0.02)
Observations	716	719	
Above Median			
Children under 18	2.72	2.65	0.07
			(0.09)
Mother's years of schooling	14.31	14.75	-0.44
			(0.16)
Father's years of schooling	12.20	12.57	-0.37
			(0.34)
Household real income (2000 NIS)	17,303.53	17,535.27	-231.74
			(494.76)
Share Ultra Orthodox Jews	0.04	0.06	-0.02
			(0.01)
Share Non-Jewish	0.09	0.11	-0.03
			(0.02)
Observations	715	716	

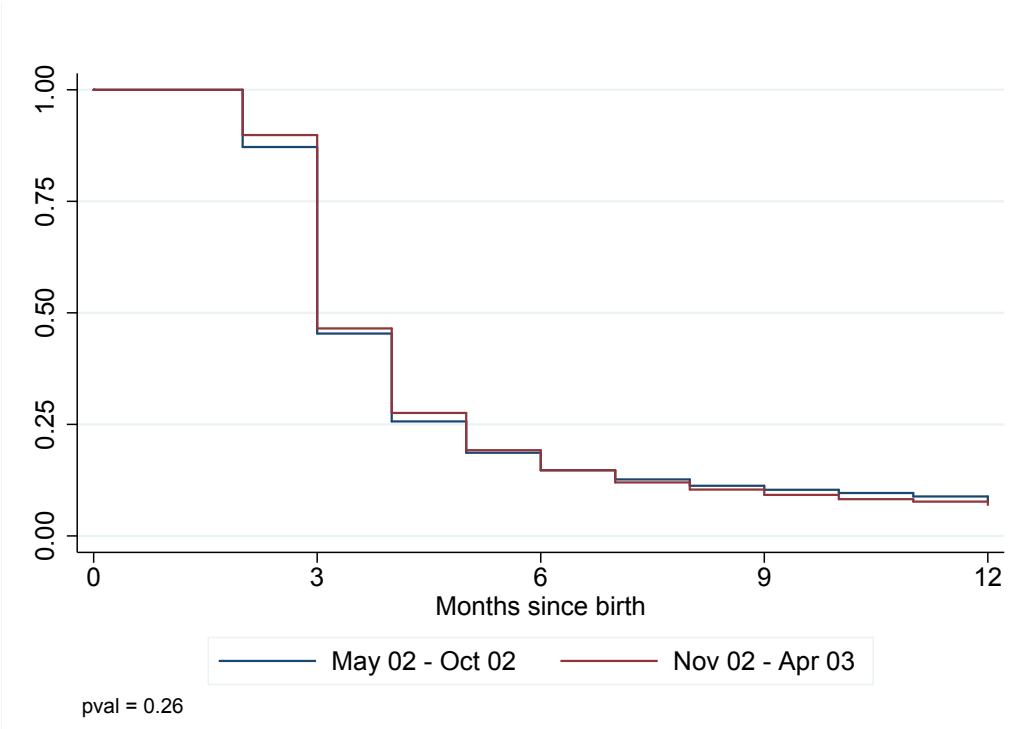
Note: This table provides descriptive statistics of the households in the IHES data pre- and post-Remedia period.

Figure A.1: The likelihood of being on maternity leave after childbirth, experienced new mothers

(a) Around Remedia



(b) Prior year



Note: Panels (a) and (b) of this figure depict the likelihood of experienced new mothers to be on maternity leave in the first twelve months after childbirth of around the Remedia Event and the prior year, respectively.

Table A.2: Descriptive statistics, experienced new mothers sample

	Around Remedia			Prior year			DD
	Pre	Post	Diff	Pre	Post	Diff	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Share male	0.48	0.50	0.01	0.48	0.49	0.00	0.01
	(0.50)	(0.50)	(0.01)	(0.50)	(0.50)	(0.01)	(0.01)
Wife's age at childbirth	31.75	31.83	0.07	31.73	31.83	0.10	-0.02
	(4.35)	(4.29)	(0.06)	(4.24)	(4.28)	(0.06)	(0.09)
Share wife Jewish	0.92	0.92	0.00	0.92	0.92	-0.00	0.00
	(0.27)	(0.27)	(0.00)	(0.26)	(0.26)	(0.00)	(0.01)
Share wife native	0.80	0.79	-0.00	0.79	0.80	0.01	-0.01
	(0.40)	(0.41)	(0.01)	(0.41)	(0.40)	(0.01)	(0.01)
Wife's monthly income - nominal	6,509.10	6,373.53	-135.57	6,596.07	6,425.47	-170.60	35.03
	(4,840.05)	(4,476.84)	(69.96)	(5,526.55)	(4,573.87)	(75.88)	(103.36)
Wife's monthly income - real	6,203.56	5,940.06	-263.50	6,524.30	6,016.36	-507.94	244.44
	(4,606.59)	(4,171.77)	(65.95)	(5,466.42)	(4,282.65)	(73.41)	(98.88)
Husband's age at childbirth	34.68	34.81	0.13	34.61	34.71	0.10	0.03
	(5.02)	(5.04)	(0.08)	(4.89)	(4.98)	(0.07)	(0.11)
Share husband Jewish	0.92	0.92	0.00	0.92	0.92	0.00	0.00
	(0.27)	(0.27)	(0.00)	(0.27)	(0.26)	(0.00)	(0.01)
Share husband native	0.78	0.79	0.00	0.79	0.79	0.00	0.00
	(0.41)	(0.41)	(0.01)	(0.41)	(0.41)	(0.01)	(0.01)
Husbands's monthly income - nominal	10,993.84	10,862.86	-130.97	11,166.06	10,790.48	-375.58	244.61
	(9,265.91)	(12,371.33)	(163.67)	(10,024.67)	(8,600.43)	(139.75)	(215.87)
Husband's monthly income - real	10,481.52	10,124.17	-357.35	11,044.57	10,103.44	-941.13	583.78
	(8,815.11)	(11,515.27)	(153.58)	(9,915.60)	(8,052.83)	(135.08)	(205.22)
Observations	8,992	8,789	17,781	8,747	9,075	17,822	35,603

Note: This table provides the descriptive statistics of the experienced new mothers sample.

Table A.3: The impact of the Remedia Event on experienced new mothers' return to work, DD estimates per month

	Full sample		Intensive margin	
	(1)	(2)	(3)	(4)
Likelihood to return within:				
2 months	0.0233**	0.0226**	0.0242**	0.0234**
	(0.0067)	(0.0067)	(0.0070)	(0.0069)
3 months	0.0083	0.0069	0.0085	0.0072
	(0.0106)	(0.0104)	(0.0107)	(0.0106)
4 months	0.0004	-0.0005	0.0004	-0.0002
	(0.0093)	(0.0092)	(0.0091)	(0.0090)
5 months	-0.0011	-0.0022	-0.0013	-0.0019
	(0.0082)	(0.0081)	(0.0078)	(0.0077)
6 months	-0.0027	-0.0040	-0.0030	-0.0039
	(0.0074)	(0.0073)	(0.0068)	(0.0067)
7 months	-0.0042	-0.0055	-0.0045	-0.0054
	(0.0069)	(0.0068)	(0.0060)	(0.0060)
8 months	-0.0029	-0.0042	-0.0032	-0.0040
	(0.0065)	(0.0064)	(0.0055)	(0.0055)
9 months	-0.0015	-0.0027	-0.0018	-0.0025
	(0.0062)	(0.0061)	(0.0051)	(0.0050)
10 months	-0.0016	-0.0029	-0.0019	-0.0027
	(0.0059)	(0.0058)	(0.0047)	(0.0047)
11 months	-0.0008	-0.0020	-0.0011	-0.0018
	(0.0057)	(0.0056)	(0.0044)	(0.0044)
12 months	0.0024	0.0012	0.0022	0.0016
	(0.0054)	(0.0053)	(0.0039)	(0.0039)
HH Characteristics	No	Yes	No	Yes
Observations	19,918	19,918	34,296	34,296

Note: This table summarizes the DD estimates of the monthly likelihood to return to work as per Equation (2). Standard errors are calculated using Huber-White heteroscedasticity correction. One or two asterisks indicate significance at 5% or 1%, respectively.

Table A.4: The impact of the Remedia Event on experienced new mothers' return to work, DD Estimates

	Full Sample		Intensive margin	
	(1)	(2)	(3)	(4)
A. Months worked within six months of birth:				
Post X treat	0.0119	0.0074	0.0122	0.0078
	(0.0267)	(0.0261)	(0.0263)	(0.0257)
B. Months worked within twelve months of birth:				
Post X treat	-0.0199	-0.0371	-0.0222	-0.0387
	(0.0653)	(0.0636)	(0.0612)	(0.0599)
HH Characteristics	No	Yes	No	Yes
Observations	35,603	35,603	34,296	34,296

Note: This table summarizes the DD estimates of the average months worked as per Equation (2). Standard errors are calculated using Huber-White heteroscedasticity correction. One or two asterisks indicate significance at 5% or 1%, respectively.