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Perception, investments, and newborn's outcomes: the perception of a newborn's health and its influence on parental investment and health outcomes: Evidence from ELFE cohort

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JEL Codes: I15, J13

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Perception, investments, and newborn's outcomes:
the perception of a newborn's health and its
influence on parental investment and health
outcomes: Evidence from ELFE cohort*

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July 15, 2023

Abstract

I study whether the parental perception of a newborn's health affects their investments in the child and their health outcomes later in childhood. I use the medical cutoff of low birth weight (<2.5kg.), a historically standard cutoff used to identify infants at high mortality risk. While the economic literature has already studied the implications similar cutoffs (<1.5kg.) have on children's development, most of it has focused on medical treatments as the primary mechanism. In this paper, I investigate whether parents also respond to this label by adapting their investment decisions. To answer this question, I use the French Longitudinal Study of Children (*Étude Longitudinale Française depuis l'Enfance- ELFE*). Using a regression discontinuity design approach, I find an improvement in nutritional outcomes for those that, on top of being low birth weight, are premature. I do not find strong evidence of direct medical intervention at birth based only on the cutoff. Conversely, I encounter that parents respond to children being labeled low birth weight. This is particularly so when looking at parental investments in pre-term children. While doctors might have an indirect role- through advice and recommendations to parents- ignoring parental responses at birth could lead to an under/overestimation of the returns of early-life interventions by the medical community.

Keywords: Early Childhood Development, Health at birth, Parental Investment

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1 Introduction

In this paper, I study whether the perception of parents concerning the health of a newborn affects a child's health outcomes through a change in parental investments. With the French ELFE survey data, I adopt a regression discontinuity design approach, using a specific health outcome: weight and the medical cutoff of low birth weight (<2,500 gr.). In the absence of any medical label, we would expect children around the cutoff to have similar health outcomes after birth. However, being just below/above the cutoff might have different implications for their future development. In the first place, being labeled as "poor health children" (<2,500 gr.) might be linked to special treatments by doctors at birth. Secondly, having a specific label might affect parental beliefs about their children's health, leading parents to make certain investment choices based on these perceptions. These special treatments-from doctors and parents- might affect health outcomes after birth. Whether there are differential responses and hence an impact on infants' health is an empirical question. One possible scenario is that once parents are aware of the threshold, they make independent choices in terms of investments relative to this fictitious labeling. Another scenario is that parents might incorporate this medical categorization of a "non-normal weight" in their choice and either compensate or reinforce this categorization depending on which side of the threshold their child was born.

Historically, the 2,500gr (or 5.5 pounds) threshold has been the standard cut-off used to identify low birth weight infants at high mortality risk. Hughes et al. (2017) presents a historical review of the origins of this cutoff and scientific progress achieved up to date. The authors state that the threshold was, in its beginnings, the main measure to categorize premature children and, from the mid-30s, has been used as the established benchmark to be used across scientific studies. However, extensive research on fetal growth curves as well as increasing access to early ultrasound measurement of gestational age, has put into question the use of the 2,500gr cutoff as the appropriate measure without taking into consideration other factors (Hughes et al. 2017). While the World Health Organization continues to use low birth weight for comparative health statistics, it acknowledges the limitations for clinical care (UNICEF 2004).

For the purpose of this study, this arbitrary classification would only be useful if it changes the perception of doctors and/or parents on how healthy a child is based on their weight. Given that doctors and parents are the main "human capital investors" at birth, there are two questions to be explored. First, to what extent doctors and health workers continue to use this measure in their practices, and whether it translates to special treatments based on the low birth-weight classification. Second, if this category is well known to parents, and to what extent they respond to their child being classified as low birth weight (LBW).

There has been some progress in the economic field in understanding how the birth-weight threshold determines early medical interventions. Most of these studies have mainly focused on the 1,500gr cutoff, which has been used to classify very low birth weight (VLBW) children. Evidence shows there is a discontinuity in medical treatment and that these early health interventions have a consequence on the development of children, both in the short and in the long run. Using data from the United States, Almond et al. (2010) study health outcomes and medical treatment provision among children close to the very low birth weight threshold at 1,500gr. They find that newborns just below the cutoff have lower one-year mortality rates than those just above it. They also encounter a discontinuity in hospital costs and the frequencies of specific medical inputs when comparing infants near the cutoff. Looking at the same threshold, Bharadwaj et al. (2013) explore the impact of special care on mortality and long-term academic performance at school in Chile and Norway. They find that children who receive extra medical care at birth based on being below the cutoff have lower mortality rates and higher test scores and grades

in school. The authors acknowledge that parents might invest differently in their children depending on whether they are considered at-risk newborns. However, no direct measures of parental investments are explored during the first months of life. Breining et al. (2015) arrives at a similar conclusion for Denmark, as they find that children just below 1,500gr have a higher probability of receiving early medical treatment and hence are more likely to survive after their first year. They also find a lower probability of hospital admission between the ages of 6-10, and better math score tests in the 9th grade. In this paper, they mainly focus on non-premature children, given that premature children receive special treatment no matter their birth weight.

In the mentioned literature, health improvements in the short run of VLBW children are directly attributed to a differential in medical treatment. Articles such as Bharadwaj et al. (2013) have included parents' responses, but mostly as input for long-term impacts of early life events. However, parents also make investments in the very short term which might also explain part of the short-term results. A large amount of literature in economics documents that parental investments are a function of children's early life endowments. Some studies have provided empirical evidence of reinforcement of endowment differences among their children (for example: Rosenzweig & Schultz (1982), Behrman et al. (1994), Aizer & Cunha (2012), Frijters et al. (2013), Rosenzweig & Wolpin (1984) and Datar et al. (2010)). Other studies had come to a different conclusion, finding that parents tend to compensate for differences in their children's endowment (for example: Griliches (1979), Behrman et al. (1982) and Pitt et al. (1990)) A third group of papers have found that parents do not base their parental investments on endowment differences (for example: Currie & Almond (2011) and Lynch & Brooks (2013)). An interesting article suggests that averages might be hiding heterogeneity across different groups. Restrepo (2016) studies how parental investment responds to a low birth weight outcome and whether parents tend to invest more or less in worse-endowed children. With data on children born to female respondents in the 1979 cohort of the National Survey of Longitudinal Youth, the author uses a within-family estimation approach to identify the effect of low birth weight outcome on time and material investments made by parents (measured by the Home Observation for Measurement of the Environment assessment). The author finds that mothers who are high school dropouts invest less in low birth-weight children relative to the rest of their siblings. Higher-educated mothers tend to compensate low birth weight children by investing relatively more.

Both pieces of literature focus on medical and parental responses without considering that they might simultaneously play a role in the development of children. This is particularly true in developed countries, where children might benefit from better health infrastructure and care at birth as a result of a health shock. This extra care might be available independently of the socioeconomic characteristics of the family.

Concerning parental investments, the main challenge is the endogeneity linked to health at birth and parental choices, particularly investments during pregnancy, which has consequences on the child's endowment at birth.¹ One paper that looks at medical and parental investments is Royer (2009), which studies the effect of birth weight (as a continuous variable) on adult outcomes, controlling for commonly omitted outcomes such as family background and genetics. As a side analysis, the author takes into consideration the possible role medical and parental early investments might have on long-term outcomes such as educational attainment and later pregnancy complications. The author uses the Early Childhood Longitudinal Study from the United States, which follows a nationally-representative sample of infants born in 2001, and takes advantage of the over-sampled twins included in the study. No within-twin-pair relationship is found between birth weight and outcomes such as hospital days and neonatal intensive care unit use, nor on parental investments such

¹Evidence on the Fetal origin hypothesis, associate with David J. Barker (Barker (1992)) can be found on Almond & Currie (2011)

as breastfeeding. While this paper tries to find a way to overcome endogeneity, the author is taking birth weight as a continuous variable, which might not be capturing perception per se but actual health problems of children.

In this paper, I extend the use of birth weight cutoff to explore not only medical treatments but also parental investments. I first investigate whether the medical labeling of low birth weight translates into differential child development. Outcomes include the change in weight at the hospital exit and weight and height for age when around two months and one year old. If a gap is found, this could be the result of a differential response by doctors and/or parents that leads them to invest differently depending on which side of the cutoff the child was born. Medical investments are measured by the likelihood of the child being transferred to special units and the likelihood of staying extra days at the maternity unit. Parental perception is measured by the health status of the child reported by the mother at two months and one year old. Parental investments include nutritional investments (exclusive breastfeeding at birth, duration of exclusive breastfeeding, and age of food diversification) and time investments (interactions with the child at two months and one year old). Choosing this arbitrary medical classification of “low endowment” allows me to control for confounding variables such as in-utero investments. I use the standard threshold at 2,500gr, focusing on newborns with a lower risk of having serious health problems when compared to those in previously cited papers (<1,500gr).

I focus on a developed country, where health supply is likely to be assured to the whole population and where access is free across socioeconomic groups. From a medical perspective, doctors have access to advanced technology, raising the question of the relevance of the 2.5kg threshold as a benchmark for a risky birth. When it comes to parents, they might be aware of the different thresholds used to assess newborns’ health. This is the result of free access to health supply and information and recommendations provided by health workers and other sources. However, this might also translate to parents being less concerned about the sole fact of having a low birth-weight child, as they acknowledge how other factors also play a role. Trust in the health system could potentially be higher too. For all these reasons, a developed country with free access to health supply seems to be the most suitable choice for this study.

Using administrative data has the advantage of accessing a larger sample, but it usually lacks micro data typically available in household surveys. This is particularly important as these types of surveys provide relevant information, such as parental perception of their children’s health and self-reported early investments. Taking all of this into consideration, I study the French context by taking advantage of the French Longitudinal Study of Children (ELFE, *Étude Longitudinale Française depuis l’Enfance*). Elfe (Charles et al. 2020) is France’s first nationwide scientific study of children, tracking infants from birth to adulthood. More than 18,000 children born in metropolitan France in 2011 have been included in the study, which is representative of all children (excluding very preterm infants) born in metropolitan France in that year to mothers who were at least 18 years old. It includes repeated questionnaires with the parents, information from the maternity records, and other data sources at different moments in time.

As mentioned before, one important assumption is that choosing the medical classification of “low endowment” at 2.5 kg allows me to control for confounding variables such as in-utero investments. However, risks of manipulation—which are explored later in the paper— or anticipation of the exact weight of the child would risk the credibility of the identification strategy. For this reason, I aim to differentiate those cases where doctors and parents might have known in advance the risk of being LBW. In other words, I spot those cases that can be considered as “unexpectedly” LBW.² For the purpose of a clearer interpretation of results, I focus on this

²I create an index equal to 1 if there were no threats of low birth weight, prematurity, nor whether

restricted sample (no anticipation of risk) in the rest of the analysis. However, the main outcomes will also be estimated on the whole sample for the sake of comparison.

Given the definition of low birth weight as weight at birth less than 2,500gr, I split the analysis into two groups, children born on term and premature newborns. Following Bharadwaj et al. (2013), I consider this cutoff to separate my main results on LBW as a prudent approach. The reason behind this is that I might expect doctors and parents to react differently if, on top of being LBW, newborns are premature. This is because pre-term birth can be considered a threshold in itself, as children are considered premature when they are born before their 37th gestational week. In other words, children could receive special treatment just because they are premature, regardless of their weight.

Indeed, results on children’s nutritional development indicate a differential response to the cutoff depending on whether they are preterm or not. When looking at anthropometric outcomes, I find that non-premature babies perform similarly regardless of the label. This is not the case for premature children, as those just below the cutoff tend to over-perform those above the cutoff when measured at around two months and one year old, both on weight and height. The following step is to understand if this is the result of medical treatment, parental behavior adjustments, or both.

When looking at medical treatment, I do not find strong and persistent evidence of a differential response by doctors at the maternity unit to the label, neither for premature nor for non-premature children. On the contrary, I observe that parents have differential behavior as a result of the label. And this is persistent to different specifications. On average, parents of non-premature children born just below the cutoff (versus just above) have a relatively better perception of their child’s health at two months, but there does not seem to be a discontinuity in parental investments at the cutoff. Regarding premature children, even if perception does not seem to differ based on labels, parents do respond to their child being LBW. Mothers seem to interact more with their children after two months of birth while this vanishes over time. In general terms, I find a similar pattern when looking at the whole sample and those who can be considered “unexpectedly” labeled.

I explore other secondary outcomes that can provide further insights into how health workers and parents might respond to the cutoff. Unlike the previous outcomes, these are less standard measures of medical interventions and parental perception or investments. Furthermore, interpretation is not as straightforward as previous outcomes. Nevertheless, they provide further information on other interventions the child might have received depending on the side of their birth cutoff. While I find that non-preterm children are equally likely to receive the visit of a midwife or PMI (French Mother and Child Protective Services) after leaving the maternity unit, mothers are more likely to state they took their children to the doctor because they were concerned about the health of the child. On the other hand, there seems to be a discontinuity in the visits of midwives or PMI at the cutoff for preterm children. But mothers do not seem to be more likely to take their children to the doctor because they are worried. It is important to note that visits of midwives/PMI cannot only be considered a direct response of doctors to the cutoff, as it might also result from parental demand for extra support. Interestingly, I find that being labeled as LBW leads to parents receiving more information on how to raise their children from outside health workers, regardless of their gestational age. This could be a proxy of trust in the medical community by the mother, but also of other family members and friends being worried about the child’s health.

Taken all together, the results found are consistent with the idea that doctors

the delivery was through planned C-section. This is a proxy measure of the unexpectedness of the LBW label.

have access to more sophisticated tools than just weight to assess children’s health. This is supported by the lack of explicit protocols from French health authorities to follow special procedures only based on this variable. On the other hand, parents might be more susceptible to this labeling, leading to investment differences when comparing children around the 2,500gr threshold. Additionally, parents may continue to adapt their choices as their perception is updated with the child’s health. In this way, the vanishment in time of investments by parents of premature children could be explained by the relatively better performance on anthropometric measures. Lack of evidence on direct medical treatment does not mean that health workers do not intervene at all, as parental responses might be the result of their recommendations or information provided by them. In other words, doctors’ impact could be indirect through parents rather than direct through medical treatment.

This paper includes further robustness checks. First, I explore alternative bandwidths. Second, I performed a donut RD approach, where I excluded those observations very close to the cutoff. Splitting the sample in two (non-preterm and preterm) raises concern about the endogeneity of premature births and low birth weight. This is addressed later in this paper. Additionally, I explore whether there are heterogeneous effects by gender and birth order. Further, I follow Restrepo (2016) and look at all outcomes by the mother’s level of education.

Finally, while the paper’s main question involves the LBW label, I also consider an alternative medical classification: prematurity. I estimate the primary outcomes using as a cutoff the 37 weeks of gestational age.

This paper makes several contributions. First, it adds to the economic literature on returns to early-life medical interventions by taking into consideration the additional responses of parents to a perceived health shock at birth. Secondly, I contribute to the extended literature on parental investments based on the child’s endowments at birth, by looking at the perception of the child’s health using an arbitrary classification of “low endowment” to understand how parents respond to this. I take advantage of ELFE, a rich survey dataset that allows me to explore in detail alternative outcomes from medical records, self-reported answers from parents, and anthropometric measures registered during medical visits.

The main limitation of this paper is the potentially low statistical power of the estimates as a result of the small sample size. Using survey data provides relevant information on parental perception of children’s health status and parental time and material investments. On the downside, a smaller sample size leads to large confidence intervals and hence low statistical power. This is important to take into consideration when interpreting the results below. A second limitation is the potential manipulation found on the running variable. To address this concern, I explore alternative specifications by testing alternative bandwidth, and excluding mass points around the cutoff (± 7 gr.). Additionally, I focus on a restricted sample (no threats of LBW, prematurity nor planned C-section), which aims at accounting for potential anticipated behaviors of both doctors and parents.

In Section 2 I introduce relevant definitions and describe the French context. In Section 3, I detail the data used, while in Section 4 I explain the identification strategy followed in this paper. In section 4.1 I perform a manipulation test, while section 4.2 addresses the issue of multiple inference adjustments. Section 5 presents descriptive statistics of the primary outcomes, secondary outcomes, control variables, and those used to restrict the sample to unexpected LBW labels. Section 6 presents the main results, while 6.5 exhibits the secondary outcomes under study. In section 7 I perform alternative robustness checks. In section 8 I discuss the findings and investigate whether heterogeneity exists across gender, birth order, and the mother’s level of education. Section 9 examines the potential endogeneity between prematurity and LBW. Section 10 re-estimates the main results using prematurity as the forcing

variable. Finally, in section 11 I interpret and discuss the finding and finalize with the conclusion of this paper and the open questions to be still answered.

2 Low birth weight and the French context

Low birth weight (LBW) is defined by the World Health Organization as weight at birth less than 2,500g (5.5 lb). This threshold is based on epidemiological evidence that shows that children weighing less than 2,500g are approximately 20 times more likely to die than heavier babies (UNICEF 2004). Low birth weight can be due to preterm birth or restricted fetal (intrauterine) growth and may be subdivided into very low birth weight (less than 1,500gr) and extremely low birth weight (less than 1,000gr).

Birth weight has been used for long as an indicator to identify newborns at high mortality risk. In the mid-30s, the need for a common benchmark to compare results across studies led the American Academy of Pediatrics (AAP) to agree on 2,500gr as a standard cutoff to define low birth weight for future research. It was not until the late 60s that the scientific community started to use more sophisticated techniques to describe birth weight and determine at-risk births. The reason being that a universal birth weight cutoff was thought not to be appropriate anymore, given the relevance of other confounding characteristics when looking at the relationship between birth weight and adverse birth outcomes (Gruenwald 1964). In other words, the causal pathway of birth weight, independent of preterm and poor fetal growth became less convincing with time. The access to new technologies such as ultrasound measurement of gestational age and the scientific progress in understanding fetal growth provided doctors and health workers with finer measures to assess newborns at risk than just relying on weight.³

Another relevant concept usually linked to low birth weight is prematurity given that, as mentioned, LBW can be due to preterm. Preterm newborns are those whose birth occurs before the term of pregnancy, which corresponds to 41 weeks. An infant is considered to be preterm when born prior to 37 weeks of pregnancy (GA for Gestational Age). There are three levels of prematurity: (1) moderate pre-term: births between 32 and 36 weeks of pregnancy inclusive (2) very pre-term: births between 28 and 32 weeks GA (3) extremely pre-term: for births prior to 28 weeks GA. According to the National Institute of Health and Medical Research (INSERM), while around 50% of premature births are spontaneous, the other half correspond to induced birth (often cesarean section) due to a risk of death of the fetus or the mother during the pregnancy. The changes in health status depend on each infant, and there are no accurate markers to determine whether an infant will develop complications and long-term sequelae.⁴

In the present study, I consider the low birth weight threshold defined as 2,500gr among children born after 32 weeks of pregnancy given that ELFE excludes from their sample births before the 33th weeks of pregnancy. In other words, when analyzing pre-term children, I focus on moderate pre-term newborns.

2.1 Protocol in France

In metropolitan France, maternity units are divided according to the level of neonatal care provision: type I: obstetrics unit; type II: obstetrics and neonatology units with or without neonatal intensive care; and type III: obstetrics, neonatology, and neonatal intensive care units. For those maternities with relatively less neonatal care provision, such as type I and II maternity hospitals, there are agreements established

³A detailed description of the 2,500gr origins can be found in Hughes et al. (2017).

⁴Information extracted from <https://www.inserm.fr/>

for the transfer of the newborn to a neonatology unit or neonatal resuscitation sector.⁵

Below, I introduce the French protocol and recommendations regarding when to transfer a child to special units, how long to keep the child at the maternity hospital, and what the maternity leave rights are for mothers before/after giving birth.

2.1.1 Transfer to special units

For a normal, healthy, full-term newborn, regardless of the type of delivery, the midwife provides immediate care according to the established protocol. They perform the first examination of the newborn to ensure that there is no vital emergency and to identify any abnormality or malformation that would justify the intervention of a pediatrician. If no pathology is found, the child is transferred to the postnatal area.⁶

There are no specific recommendations for transferring when children are below 2,500gr if no pathology is found. Indications are mainly focused on premature newborns. According to INSERM⁷, the management of the infant born before 37 weeks of pregnancy depends on the degree of prematurity. Extremely preterm and very preterm infants are treated in neonatal resuscitation units where they receive the necessary care adapted to their risks and undergo intensified monitoring. They are referred to intensive care, then to a neonatal department once their health status is stable. Preterm infants are placed in incubators to keep them at the correct temperature and can leave the incubator once they have reached 2 kg.

2.1.2 Stay at the maternity unit

The standard length of stay at the hospital is between 72 hours to 96 hours after a vaginal delivery and from 96 hours to 120 hours after a cesarean delivery. An early discharge is defined as any discharge from the maternity hospital within the first 72 hours after a vaginal delivery and during the first 96 hours after a cesarean delivery.⁸

There are certain criteria for discharge after a standard length of stay both for the mother and the child. For the child, the requirements are: on-term newborn ≥ 37 GA singleton and eutrophic, normal clinical examination performed 48 hours after birth and before discharge, axillary temperature between 36 and 37C or core temperature between 36.5 and 37.5C, established feeding, urination and elimination of stool, transit established, weight loss < 8 % of birth weight, absence of jaundice requiring phototherapy, no clinical or paraclinical evidence of infection, neonatal screening performed at the maternity hospital and planned postpartum follow-up after discharge.

From this information, I can suspect doctors do not rely exclusively on the 2,500gr cutoff but on a variety of other finer measures when deciding to apply specific treatments. Therefore, I would expect to find no evidence of a differential treatment at the threshold.

2.1.3 Maternity leave

The *Assurance Maladie* (French social security) uses the expected date of birth to calculate the dates for the start of the maternity leave. In the event of illness due to pregnancy or childbirth, certified by a medical certificate, the mother can start their leave two weeks before the expected delivery date and extend it to 4 weeks

⁵ *Qualité et sécurité des soins dans le secteur de naissance*. Haute Autorité de Santé. Available at: www.has-sante.fr

⁶ *Qualité et sécurité des soins dans le secteur de naissance*. Haute Autorité de Santé. Available at: www.has-sante.fr

⁷ Parcours de soin du prématuré. Available at <https://www.inserm.fr/>

⁸ *Sortie de maternité après accouchement : conditions et organisation du retour à domicile des mères et de leurs nouveau-nés*. Haute Autorité de Santé. Available at: www.has-sante.fr

after childbirth. The total duration remains the same for mothers who gave birth to premature children. The leave can be extended if the child was born more than 6 weeks before the due date and that his hospitalization is compulsory.⁹

The differential treatment mothers received by the French social security when giving birth to a pre-term child reinforces the pertinence of splitting the sample based on the child’s gestational age.

2.1.4 *Carnet de santé* and resources for parents

A first step to the implicit theory of change of this study is whether parents are aware of the 2,500gr threshold and what the message received by them about the implications of a newborn being labeled as LBW is.

There are different sources of information parents might receive during pregnancy, delivery, and the first days of life. The first primary source is doctors, midwives, and health workers in general, who transmit information verbally or through different materials. The second source could be relatives, friends, groups of parents, or other institutions/organizations that might assist parents with parenting recommendations. Parents might also rely on information from books, radio, tv programs, or websites. Fortunately, ELFE includes a question for mothers where they are asked who or how they were informed of the care (health, bed, food) to be given to the child. I explain this outcome in more detail in the data section.

Ideally, it would be interesting to do an exhaustive analysis of all these sources of information and how salient 2,500grs are as a label of good health. Given the obvious data constraints, I focus on two sources that parents might rely on when learning about their child’s health: the child’s health booklet (*carnet de santé*) and the public health insurance website.

The *carnet de santé* or health booklet is a document that contains the medical information necessary to monitor the health of the child until the age of 18. It is delivered free of charge at the time of the birth declaration. The health booklet must be presented at each consultation, hospitalization, vaccination and examination, and allows health professionals to have all the information related to the child’s health. It covers the following topics: long-term illnesses, allergies, family history, perinatal period, medical surveillance, growth charts, medical checks, hospitalizations, vaccinations, infectious diseases, etc. Most importantly, it includes advice to parents, especially on nutrition, well-being, and safety of the child.¹⁰

The *carnet de santé* or health booklet¹¹ contains comprehensive information gathered at birth, which includes information on delivery and health tests at birth -such as weight and height- as well as other clinical information. Although it does not explicitly mention the 2,500 gram cutoff, it indirectly alludes to it through the growth curves it presents. These curves, tailored for boys and girls, are intended for children born weighing over 2,500 grams, as indicated by a footnote. This information might be a reflection of what is considered the development of a “normal child”, giving the idea that the path would have differed otherwise.

Parents might also refer to the French social security website to learn about health recommendations for newborns. On the website, information can be found on the follow-up of the child after delivery. In this section, parents can find out what to expect after delivery regarding medical checks. It is mentioned that one of the first steps is to weigh and measure the height of the newborn. It is worth noting that it states the following: “The baby is weighed. The weight of a child born on term

⁹<https://travail-emploi.gouv.fr>

¹⁰<https://www.service-public.fr>

¹¹Health booklet effective April 1, 2018. Available at: <https://sante.gouv.fr>. While the current booklet was effective from 2018 (after the birth of the ELFE cohort), the structure remained similar.

is between 2,6 and 4 kg.”¹² This range is clear evidence of the benchmark parents might have when assessing the health status of a newborn.

3 Data

This study requires health outcomes at birth and anthropometric measures during the first days of life, information on medical care at the maternity unit as well as data on parental responses after birth. The data used comes from the French Longitudinal Study of Children (*Étude Longitudinale Française depuis l’Enfance*, ELFE)¹³, a nationwide scientific study that tracks children from birth to adulthood. The study includes more than 18,000 children born in 2011 at 349 maternity units across metropolitan France. The survey includes health, demographic, and socioeconomic data concerning infants and both parents. For this study, I use three periods; at birth (face-to-face interviews and medical records), when the child was two months old, and when the child was one year old (phone interviews). Furthermore, online and paper questionnaires about the infant’s diet were carried out from two to ten months.

For the 2 months and at 1 year old survey, two interviews were conducted, one to the mother and another to the father. In both surveys, the mother is contacted first and the type of questions asked to her depends on the child’s living arrangements: (1) the mother lives with the child, so all questions are asked, (2) child lives exclusively with the father, in which case a few questions about the child are asked, (3) if the child does not live neither with the mother or the father, questions are similar to case 2, but also includes questions on the child’s placement in care. Fathers are all surveyed unless there is no contact information available, the mother refuses, or the father is unwilling to participate. Again, three cases are possible, (1) the child lives with the father only, so questions are similar to cases where the mother lives with the child, (2) the father does not live with the child, so main questions on the child are asked to the mother, (3) the mother and father live with the child, so questions to the father on the child are mainly on his relationship with them and specifically those that need to be answered by both parents. From the total sample, 94.76% of children live with both parents, and 5.05% with the mother but not the father.¹⁴ From the original sample, 86.8% of mothers answered the 2 months questionnaire, and 81% answered the 1 year old questionnaire. At 2 months, participation of the father cohabiting with the mother was around 84% while for those not living with the mother/child it was 21.4% (mostly because no contact information was available). At 1 year old, participation of fathers was around 64%.¹⁵

Maternity units were selected by means of stratified random sampling in order to under-sample units with a low expected number of births. Five strata levels are specified in the dataset. The initial survey was done over 4 to 8 days in 4 waves along the year.¹⁶ The following cases were excluded from the study: births before the 33rd week of pregnancy, multiple births with more than two children, births from underaged parents or from families non-residing in France or expecting to move abroad in the next three years.

I will analyze births with gestational ages 37 weeks or above and below 37 weeks separately, as pre-term births might receive additional medical intervention irrespective of their weight status.¹⁷ Additionally, the probability of a pre-term birth might

¹²<https://www.ameli.fr>

¹³Charles et al. (2020)

¹⁴Other alternatives are: with the mother and the father on an alternating basis, with another person, or is still in the hospital.

¹⁵Further information on participation rates can be found: Report 2 months survey and Report 1 year survey.

¹⁶1-4 April, June 27-28 and July 1-4, September 27-29 and October 1-4, November 28-30 and December 1-5.

¹⁷Breining et al. (2015) conduct separate analyses for births with gestational ages above and below 32 weeks because the latter is always covered by the medical guidelines for receiving additional

be anticipated, and consequently low birth weight, given the high correlation between these two episodes. Responses might differ when the medical label is unexpected, as might be the case among non-premature children. Lastly, there are reasons to believe that the delivery date can be somehow manipulated by doctors as it can be, to some extent, planned. Section 4.1 includes manipulation testing for both sub-sample, and section 9 addresses endogeneity concerns between LBW and prematurity.

Among the outcomes to analyze, I classify them as primary and secondary outcomes. I consider the main outcomes those that measure (1) anthropometric measures, (2) medical treatment at the maternity unit, (3) self-reported perception of the health of the child, (3) nutrition investments, and (4) time investments. These outcomes fall into more straightforward measures of the development of children and common measures of medical treatments at the maternity unit as well as parental investments in early childhood. As secondary outcomes, I include (1) another type of medical treatment outside the maternity unit (and later in time), (2) a proxy for the concern of the mother for the health of the child, and (3) a proxy of trust in medical recommendations. Given that the variables are simple proxies and potentially very noisy, I take a conservative take on them and consider these outcomes as secondary.

Main outcomes

I start by analyzing whether children’s nutritional performance differs based on the side of the cutoff they were born. I look at weight change from birth to the time of exit from the maternity unit, weight-for-age, and height-for-age at approximately two months and one year old. Weight and height for age are constructed variables provided in the dataset, which follow the standards and references of WHO. To avoid missing values as much as possible, I consider either the information from the mother’s questionnaire and if missing, from the father’s. At two months, I compute variable weight/height using the value for the first medical visit reported by the mother and, if missing, the one from the second visit (both from the two months survey). If either is missing, I use the information provided on the father’s questionnaire (two months survey). From the 1-year-old survey, I use the value coming from the 9th months medical visits reported from the mother’s questionnaire and, if missing, the one reported from the father’s. The age at the 9 month visit varies by child, and it is not necessarily at exactly 9 months old. For simplicity reasons and given that the measure comes from the 1 year survey, I call it weight/height at 1 year old, while it might be the measure when the child is slightly younger. During the 2 months survey, information on weight/height comes from the health booklet, but in case the medical visit is not indicated, the information given by the mother is collected. During the 1-year-old survey, the mother is asked to get the information from the health booklet.

I continue by looking at whether children receive different treatment from doctors and parents depending on which side of the cutoff children end up.

For medical responses, I look at two variables: being transferred to special units and spending extra days in the maternity unit. Information on whether the newborn was transferred to special units (neonatology, resuscitation, surgery, etc.) comes from the maternity unit survey or two months survey.¹⁸ Extended stay also comes from medical file data and two months questionnaire if missing. It is constructed as a dummy variable equal to 1 if the child spent additional days in the maternity unit with respect to the recommendation (which is based on the type of delivery). Days in the maternity are calculated as the number of days between the child’s date of

medical interventions, irrespective of their VLBW classification (see Section 2). While they focus on riskier children, it might also apply to the classification currently analyzed.

¹⁸This variable is collected in both surveys. I consider the dummy variable to be equal to 1 if the child is reported to be transferred either at the maternity unit questionnaire or at the two months survey done to the mother.

birth and the maternity unit exit date.

Parental responses include the following primary outcomes: the mother's perception of the child's health, nutritional investments, and stimulation investments. For parental perceptions, I use a question to the mother on how she describes her child's health at two months and one year old (in good health, mostly in good health, mostly in poor health, and in poor health). A dummy variable is created, which equals one if the mother states that the child is reported to be in good health and 0 otherwise. Nutritional investment includes whether the child was exclusively breastfed at the maternity (only maternal milk), duration of exclusive breastfeeding, and at which age food diversification started¹⁹. The type of milk consumed by the child at birth is a constructed variable from the questionnaire at the maternity unit while the duration of exclusive breastfeeding and age of nutritional diversification are constructed variables from monthly surveys on nutrition. It is important to note that nutritional decisions might not be completely up to parents, as they might have to follow pediatric recommendations. In other words, if any differential behavior is found, it cannot be interpreted only as a parental response but as a possible compliance to medical instructions or a mix of them. Finally, for stimulation investments, information comes from the number of activities done with the child by the mother at two months and one year old. Given that other outcomes come mostly from the mothers' questionnaires, I consider the primary outcome to be stimulation investments by the mother. However, I also explore as an ancillary exercise the activities performed by the father at two months and one year old. Activities at two months include: singing, talking, and skin contact. Activities at one year old include: playing little games, reading, drawing, watching television, spending time, singing, and playing games with the body. It is considered that the mother or father did an activity with the child if they answered they do it from time to time.

Secondary outcomes

I also look at other secondary outcomes that might indicate medical treatment outside hospitals. While doctors might not follow a specific protocol at the maternity units, the health system might provide additional follow-ups which could potentially be targeted to children considered more vulnerable. The first is whether the mother has received any visits from a pediatric nurse from a mother-and-child protection organization (PMI) since she left the maternity unit. The maternal and child protection service (*Protection Maternelle et Infantile, PMI*) is a departmental service placed under the authority of the president of the departmental council and responsible for ensuring the health protection of mothers and children. The PMI service organizes consultations and medico-social prevention and monitoring activities for pregnant women, parents, and children under six years of age, as well as family planning and family education activities.²⁰ The second outcome is whether she has received a visit from a midwife at her house after leaving the maternity unit.

Regarding parental outcomes, I also include secondary outcomes aiming at understanding the level of concern parents might have as a result of the label. First, I look at whether the mother-at month two- states to have taken the child for the first visit due to being worried. It is important to note that medical visits are well scheduled, and there is less space for parents to decide when to take their child to the doctor.²¹ However, parents might take their children outside of the planned visits for other reasons, such as concern for the health of the child. I include a dummy variable equal to 1 if the mother states that the first visit was because she was concerned about the child's health and 0 if there is an alternative reason or if not been taken for the first time yet. This variable comes from the questionnaire at two months. Also from 2-month survey, I measure whether the mother states she has received external

¹⁹Defined as the age at which they introduced at least one good of the food group

²⁰<https://drees.solidarites-sante.gouv.fr/protection-maternelle-et-infantile>

²¹See schedule :<https://www.ameli.fr>

information on child caring apart from health workers. In other words, from the mother, partner, mother-in-law, family and friends, staff from nurseries, tv, radio or websites, and other sources.²² We could expect that the LBW label might lead mothers to search for more information from other sources besides the one given by health specialists. Furthermore, this could measure a lack of confidence in medical care, as parents might be more prone to search for alternative sources. Alternatively, this could measure the higher involvement of other family members or friends in child-rearing due to the label.

Other relevant variables

Medical records collected at the maternity unit provide relevant information on the degree of the unexpectedness of either the low weight of the child or the gestational age at birth. First, it is recorded whether there was a threat of prematurity delivery (repeated and painful uterine contractions and/or cervical modifications). Second, it tracks whether there was any suspected fetal weight anomaly during pregnancy. Finally, the records include the type of delivery and when it was by C-section if it was planned. These variables will be used to create a subsample for which the label is most likely a surprise. More details on the approach are discussed later in the paper.

Control variables

All specifications are presented with and without extra controls. Basic controls include strata level and wave fixed effects. Additional controls include whether the delivery was through C-section, and if the child was administered corticosteroids for fetal maturation during the prenatal period. Both variables could be a measure of doctors anticipating any birth risk before delivery. Furthermore, whether it was a twin pregnancy, as this could entail doctors and parents foreseeing a higher probability of having a low-birth-weight newborn. Similarly, I take into consideration whether the child was a firstborn, as parents might be more inexperienced and hence more sensitive to labels. Also, whether the mother had already given birth to a pre-term child. A second group of variables includes relevant characteristics of the mother and the households. Among these variables, whether the mother has a higher education, the age group of the mother, and the quintile of the household revenues at month 2. Finally, I control for risky behaviors of the mother, such as smoking (dummy variable equal to 1 if the mother states to have consumed tobacco during pregnancy or answers don't know) and drinking alcohol (dummy variable equal to 1 if mother states to have drunk, even small amounts). These controls are particularly relevant for the French context and inspired by the work done by Panico et al. (2015). Using ELFE survey data, they show that the lower the mother's educational level, the greater the risk that she will have a low birth weight baby. They try to explain the difference by educational level by including controls such as household income, birth order, mother's age, and parents' height, as well as smoking and alcohol consumption during pregnancy.

4 Identification Strategy

The identification strategy relies on the low birth weight classification at 2,500 grams. Being just below or just above the threshold can be considered as close as random. For this reason, we expect newborns around the cutoff to be similar in both observable and unobservable characteristics. However, extra care from doctors and parents

²²The mother is asked who or how she was informed of the care (health, bed, food) to be given to her child, being the options: doctor/pediatric nurse/midwife, the mother, the father/partner, the paternal grandmother of the child, another family member/friend, a group of parents, staff from the creche/childminder/nursery school assistant, neighbors, book/press, a tv program/radio/website, personal experience, other, or no information received.

might be allocated based on whether an infant is considered of low birth weight or not.

Being labeled as a low birth weight child might imply special treatment by doctors and parents. If these special treatments are linked to variations in health and human capital investments, I expect a differential development across infants just below versus just above the threshold after birth. If that is the case, the 2,500gr classification provides a clear instrument of medical and parental investments and their consequences in future development.

Following the approach by Lee & Lemieux (2010), I estimate the following equation for different variables Y_i :

$$Y_i = f(BW_i - c) + \alpha 1[BW_i < c] + X_i\beta + \epsilon_i \quad (1)$$

where Y_i is the outcome variable of interest, c is the medical label, in this case “low birth-weight” set at 2,500gr and BW_i represents the weight of the child. X_i is a vector of covariates, and ϵ_i is the error term.

I estimate this equation using local polynomial inference method of order 1 to fit two separate regression functions below and above the 2,500gr threshold. I chose a bandwidth of 300gr to the left and to the right and excluded observations at 2,500gr (26 observations). The bandwidth choice was based on an approximate middle point of alternative optimal bandwidths for the whole sample. Another alternative is to select bandwidth optimally through the different selection procedures available in the literature. The downside of proceeding this way is the potential variability in sample size for each of the variables chosen, as the number of observations is endogenous to the choice of bandwidth. Following the common practice, section 7 provides the results of the point estimators using two alternative approaches: mean squared error (MSE) or coverage error rate (CER) optimal bandwidth choices to assess the robustness of the results. In all regressions, I compute the robust confidence intervals developed by Calonico et al. (2014), which provides bias-corrected RD estimates with robust variance estimator. I use *rdrobust* software, with default options, imposing a 300gr bandwidth on both sides.²³ In section 7, I also explore the sensitivity of the results to a wide range of windows and polynomials on either side of 2,500 grams.

To credibly argue that any gap found is attributed to the LBW label, I have to rule out the possibility that weight is manipulated at birth. I perform a manipulation test in section 4.1.

A second concern is whether doctors can predict with exactitude which side of the cutoff the child might be born. If that is the case, I could find no difference at the threshold, mainly due to anticipating behaviors by doctors and parents. Motivated by this concern, I perform the main exercises, but this time on a subsample where the label can be considered a surprise. I do so by creating an index equal to one if there were no threats of being low birthweight, being pre-term, or delivery was not a planned C-section.²⁴ While just a proxy for the “unexpectedness” of the label, this measure aims at capturing information that doctors might have on the child’s health status *a priori*. This is closely linked to in-utero investments that could have happened before birth.

I present the main results with the whole sample and the restricted sample to compare if the treatment responses differ. Robustness checks and heterogeneity analysis will be done solely on the restricted sample, those with no threat of low birth weight, prematurity, nor planned C-section. The rationale is that those in the subsample are less likely to have received any anticipated treatment, supporting the idea that children just above the cutoff are a good counterfactual of those just below it. Also, the interpretation is more precise, as parents learn about the exact weight of

²³The *rdrobust* software is available at <https://sites.google.com/site/rdpackages/rdrobust>.

²⁴Descriptive statistics on these variables are presented in section 5.2.

the child at delivery, making it a “surprise” that they are labeled LBW (for those below the cutoff). For those above the cutoff, this also means that they did not have any particular expectations on the category their child was going to fall, so they did not act in advance (which could be the case if there were concerns about the health of the child beforehand).

All regressions are controlled by maternity strata level and wave fixed effects. Additionally, regressions are controlled by family’s characteristics (mother with higher education, their age group and quantile of revenues of the household), whether the mother had already a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). Additionally, regressions are clustered at the maternity unit level. Tables B.5 and B.6 present descriptive statistics for each control variable by gestational weeks, taking a bandwidth of 300gr to the left and to the right to compare whether their means are statistically different. Given the number of missing information, I imputed the average of the maternity unit if missing when included in the regressions. Tables B.13 and B.14 do the same with the restricted sample.

It is important to note that in each regression, a positive estimate represents a positive jump for those below the cutoff with respect to those above the cutoff, while a negative estimate represents a negative jump. For instance, a positive estimate in weight-for-age at 2 months implies that those below the cutoff are better off than those above the cutoff.

Throughout this paper, I split the sample between those born before and those born at 37 weeks or after. This could be considered an endogenous cut. I address this concern in section 9.

For all graphical analysis, I look at the restricted sample and use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

For the whole sample, a total of 2,152 observations are part of the 2,200-2,800gr range. Once restricted to the observations with non-missing gestational age, I end up with a total of 2,135 children, with 553 (26%) of them below the 2.5kg cutoff. A total of 1,690 are children born in term (347 below the cutoff), and 445 are premature children (206 below the cutoff).

For the sub-sample, a total of 1,405 observations are part of the 2,200-2,800gr range. Once restricted to the observations with non-missing gestational age, I end up with a total of 1397 children, with 273 (20%) of them below the 2.5kg cutoff. A total of 1,157 are children born in term (173 below the cutoff), and 240 are premature children (100 below the cutoff).

4.1 Manipulation test

I start by testing the validity of the regression discontinuity design by performing a manipulation test.

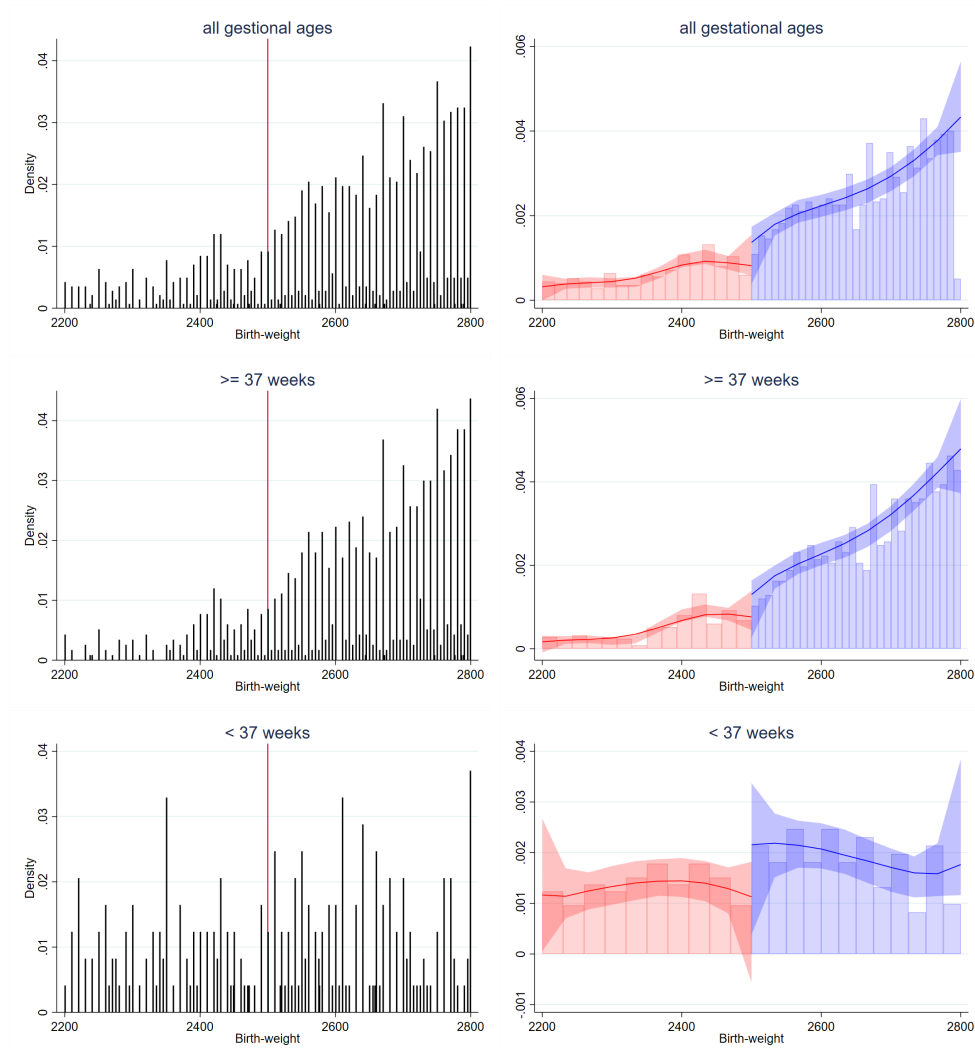
The validity of the RD approach relies on the fact that the assignment variable is not anticipated nor manipulated. The threat of manipulation would imply that any discontinuity at the cutoff cannot be attributed only to being labeled as low-birth weight, as other confounding variables might explain this jump. The concern of manipulation could be ruled out if I could find support that the exact birth weight can be neither predicted with exactitude nor controlled by doctors or nurses. However, there are reasons to believe this could be the case.

One potential scenario is that doctors might misreport birth weight if they have incentives. For instance, doctors could be more prone to manipulate weight among premature children if they think they can benefit from a certain treatment, as long as it is allocated only to children below the 2,500gr threshold. In this case, doctors could be rounding up when children are born just below the threshold as they might seem healthy enough not to go through any particular treatment.

In this line, doctors could have additional information on the child's health before the delivery. For instance, they could predict close enough the weight of the child and act accordingly. This is tightly linked to the level of the unexpectedness of the LBW label (and indirectly of the prematurity label) mentioned before. Anticipating any risk of manipulation, I could address this potential concern by taking advantage of the subsample-previously described- of those with no threat of LBW, prematurity nor planned C-section. This adds to the arguments of having the subsample as the preferred group for most of the analysis.

In the figures below, I examine the frequency of birth by birth weight within a 300-gram window around the threshold for the restricted sample, using default options of command *rddensity* by Cattaneo et al. (2020). The upper panel of figure 1 represents all gestational ages together, the middle panel for those born at 37 weeks or after, and the one below for pre-term children. On the left, I present all the histograms, while on the right I plot the distributions with the corresponding local polynomial estimates for each side of the threshold and 95% confidence intervals/bands around the cutoff (using optimal bandwidth).

Figure 1: Frequency of birth by gram and manipulation testing plot: restricted sample



Notes: The analysis is done on the restricted sample, those children whose weight is between 2200 and 2800 grams. Histogram estimate of the running variable birth-weight (gr) computed with default values; and local polynomial density estimate (solid blue and red) and robust bias-corrected confidence intervals (shaded blue and red) computed using package described in Cattaneo et al. (2018).

Additionally, I conduct a manipulation test using the command *rdensity* by Cattaneo et al. (2020), with bandwidth computed using default procedures²⁵ and a 300-gram bandwidth. While the last choice is somewhat arbitrary, I do so given that this is the bandwidth I originally planned to use in the main specifications to preserve a similar sample across outcomes.²⁶ Table A.1 summarizes results for different alternatives of the manipulation test. For the whole sample, the first three rows of panel A show results with a 300-gram bandwidth while the second three rows show results when using an optimal bandwidth. I replicate these results for the restricted sample in panel B.

Looking at the 300 gr bandwidth, I cannot rule out a systematic manipulation of the forcing variable for non-premature children in both the whole and the restricted sample. For premature children, concerns are reduced when looking at the restricted sample. It is also the case when looking at the optimal bandwidth choice, for both

²⁵It selects the median of the following methods: (1) Mean Square Error (MSE) of each density estimator separately (2) MSE of difference of two density estimators (3) MSE of sum of two density estimators.

²⁶It will not be the exact same sample as some observations are missing for certain outcomes.

pre-term and non-pre-term children. For the restricted sample, there is no evidence of systematic manipulation when using an optimal bandwidth for both pre-term (p-value=0.16) and for non-pre-term children (p-value=0.92).

Regardless of the bandwidth choice, I find support for the idea of using the restricted sample as the preferred group of study. Once again, this addresses the concern of any anticipation by doctors on the side of the cutoff. Regarding bandwidth choice, the main concern is for non-premature children. For this group, there is a trade-off between using the same bandwidth for all outcomes- hence the same group of children- and being able to rule out a systematic manipulation of the forcing variable- which could be achieved using optimal bandwidth. While maintaining the 300-gram bandwidth for the main specifications, I re-calculate these regressions using alternative optimal bandwidth as robustness checks. The rationale for this choice is that the interpretation of the results could be limited if observations under analysis change for each outcome (given the variation in bandwidth). I complement the analysis by adopting a donut RD approach as part of additional robustness checks (see section 7). This way, I systematically remove observations that are 7 grams to either side of 2,500 grams (following Bharadwaj et al. (2013) approach) and re-estimate the results.

4.2 Multiple Inference Adjustments

In this paper, I test a total of 14 hypotheses. This means that the likelihood of one or more false rejections is $1-0.95^{14} = 51\%$ (using a critical value of 0.05). To reduce the probability of type I error occurrence, I adjust for the fact that I am testing multiple hypotheses.

There are two alternatives I could pursue. The first one is reducing the number of tests by creating relevant indexes that gather outcomes into one variable. The downside is that it limits the scope of the analysis as I am interested in looking at the particular investments made by parents and not investments as a whole. The second alternative is to maintain the number of tests and adjust the p-values of individual tests. The approach I follow is to compute sharpened False Discovery Rate (FDR) q-values. Following Anderson (2008), I choose FDR over the alternative of controlling by familywise error rate (FWER)²⁷ given that the former is better suited to exploratory analysis as it allows a small number of type I errors in exchange for relatively greater power. I follow the STATA code provided by (McKenzie 2021).

Tables with the primary regressions will include both unadjusted p-value as well as the sharpened q-values. It is important to note that this method does not account for any correlations among the p-values, which in this study seems appropriate.

5 Descriptive statistics

Tables B.1 and B.2 present descriptive statistics of the outcomes under study for children born at or after 37 weeks of pregnancy and before 37 weeks, respectively. In both tables, the first five columns show relevant statistics for children born with 2,200gr to less than 2,500gr, while the following 5 for those born from 2,500gr to 2,800gr. The last two columns provide the differences in mean for both groups and the p-value for the t-test for equality of means. Regardless of their gestational age, I find that children considered LBW present worse anthropometric measures but gain more weight when leaving the maternity unit than those that are not LBW. All differences are statistically significant except height for age at 1 year old for premature children. Additionally, the probability of being transferred and time spent in maternity are higher for low birth-weight children. These results are consistent with the

²⁷While FDR is the proportion of rejections that are “false discoveries” (type I errors), FWER is the probability of making any type I error.

idea that children with a lower birth weight are, on average, more likely to receive special treatments from doctors and present worse anthropometric outcomes than children with a higher weight at birth. Similarly, parental investments in nutrition seem to be correlated to weight classification, especially for non-premature children. Further, I find that mothers of pre-term children who are LBW perform more activities with their children at two months.

This exercise is a simple comparison of means where endogeneity cannot be ruled out. However, these results provide some arguments for the idea of parental responses to labeling and the implications on nutritional development.

Tables B.3 and B.4 present secondary outcomes that are explored. It includes other types of medical treatments outside the maternity unit, such as visits from PMI (Mother and Infant Protection) professionals or midwives. I find that LBW children are more likely to receive these treatments regardless of their gestational age. It also includes other parental outcomes such as going to the doctor due to concern for the child's health, receiving information outside of health workers, and the interaction of the father with the child (two months and one year old). No statistically significant differences are found across groups.

Tables B.5 and B.6 present descriptive statistics for the following variables: mother with higher education and age of the mother, income quintile of the household, dummy variable indicating the mother already had a pre-term delivery, type of delivery was C-section, delivery of twins, being the first child in the family, administration of corticosteroids before birth, maternal consumption of tobacco and alcohol, and age that child left maternity. These are the variables I use as controls in the regressions in section 6. The last two columns present the difference in means between LBW and non-LBW children for non-premature (table B.5) and premature (table B.6) children. I observe that maternal and household characteristics are not statistically different, as well as the mother having experienced pre-term deliveries before and the child being firstborn. However, LBW children are more likely to have a twin, and to have been administered corticosteroids before being born, and their mothers are more likely to have gone through a C-section when having their newborn. These results hold regardless of their gestational age. Among non-preterm children, mothers are more likely to have smoked tobacco during pregnancy.

I replicate all tables restricting the sample to those with no expected risks of prematurity, low birth weight, or planned C-section (tables B.9 to B.14). In general terms, signs of the differences are similar to the whole sample.

5.1 Missing values

One concern is the number of missing observations for certain outcomes and whether this is correlated to being LBW. Table C.1 shows the proportion of missing observations for LBW children (first two columns) and non-LBW newborns (second two columns). Only the restricted sample is included. The last two columns present the differences in mean and p-values of t-test for equality of means.

As the table shows, missing values for children's outcomes can go up to around 30% of the sample. I find that variable changes in weight at exit has a higher percentage of missing values among LBW children (32%) than non-LBW children (19%), and this difference is statistically significant. The opposite is true for variable weight for age at 2 months, which is less likely to be missing for LBW children (28%) than for non-LBW newborns (33%). Regarding medical treatment, the variable extended stay shows a higher percentage of missing values among LBW children (14%) versus non-LBW children (5%). Parental perception at two months is equally likely to be missing for LBW and non-LBW children (14% and 13%, respectively) as well as the variable measured at 1 year old (27% and 25%, respectively). For nutritional out-

comes, variable exclusive breastfeeding at the maternity unit has missing values only for LBW children, but for only 0.01% of cases. On the other hand, age diversification has a relatively high number of missing values, around 40%, for both groups. Outcomes on stimulation are equally likely to have missing values across groups, with a percentage of 15/13% for variable interaction at 2 months and 27/26% at 1 year old.

The systematic differences in the number of missing data between LBW and non-LBW for certain variables raises concern of attrition bias, which I will keep in mind when analysing the results.

5.2 Unexpectedness of LBW label

I look at relevant variables that could provide information on the level of the unexpectedness of having a LBW newborn. This is a key piece of the identification strategy, as it is based on the fact that weight cannot be fully predicted with exactitude. If that was not the case, we could expect doctors and parents to anticipate their response to the label and act in advance. Tables B.7 and B.8 show evidence that those below the cutoff are more likely to have doctors suspected of low birthweight before delivery, and this is the case for pre-term and no pre-term children. On the other hand, no evidence is shown in terms of planned C-sections and the threat of prematurity.

Unlike the methodology used in this paper, where we look at those just below and just above the cutoff, this is a simple comparison of means where none of the endogeneity issues are taken into consideration. Nevertheless, these results highlight the importance of taking into account that some doctors and parents might be aware of the label before birth. As previously explained, I create an index of unexpectedness which is equal to 1 if there was no threat of LBW, prematurity, nor planned C-section, and 0 otherwise. Even if I found a statistical difference only for threats of low birth weight, I take all variables to construct the index as a conservative approach. When constructing the subsample, I include those with a positive dummy.

6 Results

I present the results graphically (see appendix D) and the corresponding regression analysis. For all graphical analysis, I look at the restricted sample and use a window of 2,200-2,800 grams, where lines are a linear fit using triangular weights on each side, and no covariates are included. Each regression table presents in the upper panel results for the whole sample with no controls except for strata and wave fixed effects. In the middle and lower panels, regressions include extra controls. Unlike the first two, the lower panel restricts the sample to those considered to be unexpectedly labeled as LBW. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

A positive estimate represents a positive jump for those below the threshold (<2,500gr) with respect to those above the cutoff.

6.1 Anthropometric outcomes

As a first step, I will look at whether there is any difference in future nutritional development between children born just below and just above the cutoff. I first measure how much is the weight gain/loss (as a percentage of birth weight) when leaving the maternity unit versus the birth weight. For this outcome, I also include days at the maternity unit as an additional control. Later, I explore if there exists any discontinuity in weight and height at two months and one year old.

6.1.1 Weight at exit

Babies are expected to lose between 7% and 10% of their birth weight during the first days of life. For a child who weighed 2,500gr at birth, we would expect a loss of around 175-250gr. Figure D.1 presents the average change in weight (as a percentage of birth weight) for different birth weight levels for children born at 37 gestational weeks or after (left panel) and before that period (right panel). It seems that, on average, premature children on the left-hand side of the cutoff lose less weight than those on the right-hand side.

Nevertheless, I do not find support for a differential development in table 1. This is consistent when looking at all gestational ages together (column 1), children born at 37 gestational weeks or after (column 2), and before that period (column 3). This is also true when looking at the whole sample versus the restricted one.

Table 1: Change in weight at exit

VARIABLES	(1) All gestational ages	(2) Gestational age \geq 37 weeks	(3) Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.0205 (0.0130)	0.0179 (0.0147)	0.0303 (0.0316)
<i>p-value</i>	0.114	0.224	0.338
<i>sharpened q-values</i>	0.399	1	0.428
Observations left	376	265	107
Observations right	1188	1022	157
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.0203 (0.0131)	0.0176 (0.0146)	0.0251 (0.0295)
<i>p-value</i>	0.120	0.227	0.396
<i>sharpened q-values</i>	0.539	1	0.577
Observations left	373	265	106
Observations right	1182	1022	156
Mean outcome $>$ 2500	-0.0186	-0.0176	-0.0248
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	0.0131 (0.0123)	0.00659 (0.0141)	0.0375 (0.0276)
<i>p-value</i>	0.283	0.640	0.174
<i>sharpened q-values</i>	1	1	0.355
Observations left	184	126	56
Observations right	862	762	98
Mean outcome $>$ 2500	-0.0182	-0.0172	-0.0257

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome measures weight gain/loss (as a percentage of birth weight) when leaving the maternity unit versus the birth weight. A positive estimate represents a positive jump between those below the threshold ($<$ 2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls, wave fixed effects and days spent at the maternity unit. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

6.1.2 Weight and height at two months old and one year old

It is important to recall that weight and height at two months come from the 2-month-survey and corresponds to the weight/height from the first medical visit or, if missing, the second visit. Weight and height at 1 year come from the survey done at 1 year old and correspond to the weight/height from the 9-month medical visit.

Graphically, it seems that there is a discontinuity in weight and height for age for those premature children just above the threshold when children are two months and one year old (see figures D.2 and D.3). Column 3 of tables 2 and 3 confirms this

with and without controls and when restricting the sample to an unexpected LBW label. For those unexpected LBW, the jump at two months is $\approx 0.77\text{sd}$ and $\approx 0.8\text{sd}$ for weight and height, respectively. These differences are statistically significant both for weight and height. In the case of weight, significance is maintained once adjusting for multiple hypothesis testing in the restricted sample. After approximately one year of birth, children close to the left-hand side of the 2,500gr cutoff continue to show better anthropometric measures than those on the right side. For those unexpected LBW, the jump is $\approx 0.83\text{sd}$ and $\approx 0.94\text{sd}$ for weight and height, respectively. These results provide strong support for the idea of over-performance when the child leaves the maternity unit for premature children.

When analyzing non-premature children, I do not find clear evidence of a discontinuity in anthropometric measures around the 2,500gr threshold.

So far, I focus on the relative development of children below versus above the cutoff. One follow-up question is whether there is an improvement in absolute terms. When I focus on preterm children (column 3), I see that those above the cutoff (birth weight above 2.5kg) show an improvement in their anthropometric measures from 2 months to 1 year old (see mean outcome > 2500). Looking at the restricted sample, the mean for those above the cutoff goes from -1.568sd at 2 months to -0.220sd at 1 year old for weight and -1.682sd to -0.426sd for height. In other words, those labeled LBW seem to perform even better than those above the cutoff. Non-preterm children just above the cutoff (birth weight above 2.5kg) show a similar pattern, as their anthropometric measures also improved from 2 months to 1 year old. Given that I found no difference for those just below the cutoff, these children seem to show a similar improvement in time.

Table 2: Weight-for-age 2 months

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age \geq 37 weeks	Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.102 (0.114)	-0.0400 (0.117)	0.497* (0.272)
<i>p-value</i>	0.372	0.732	0.0676
<i>sharpened q-values</i>	0.468	1	0.157
Observations left	369	232	135
Observations right	1003	848	151
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.104 (0.106)	-0.0188 (0.112)	0.463* (0.252)
<i>p-value</i>	0.326	0.866	0.0666
<i>sharpened q-values</i>	0.539	1	0.125
Observations left	368	232	134
Observations right	996	848	146
Mean outcome $>$ 2500	-1.370	-1.332	-1.577
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	0.0777 (0.128)	-0.0827 (0.128)	0.765** (0.334)
<i>p-value</i>	0.544	0.519	0.0222
<i>sharpened q-values</i>	1	1	0.0980
Observations left	196	120	74
Observations right	709	625	84
Mean outcome $>$ 2500	-1.343	-1.310	-1.568

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome measures weight-for-age at approximately two months, following references and standards of WHO. It comes from the first medical visit or, if missing, the second visit. A positive estimate represents a positive jump between those below the threshold ($< 2,500\text{gr}$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table 3: Height-for-age 2 months

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age \geq 37 weeks	Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.166 (0.166)	-0.0296 (0.177)	0.825** (0.398)
<i>p-value</i>	0.315	0.867	0.0380
<i>sharpened q-values</i>	0.468	1	0.117
Observations left	419	256	161
Observations right	1136	957	172
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.110 (0.162)	-0.0406 (0.176)	0.720* (0.368)
<i>p-value</i>	0.498	0.817	0.0503
<i>sharpened q-values</i>	0.662	1	0.112
Observations left	417	256	159
Observations right	1126	957	165
Mean outcome $>$ 2500	-1.447	-1.382	-1.793
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	-0.0962 (0.195)	-0.242 (0.201)	0.793* (0.452)
<i>p-value</i>	0.622	0.227	0.0794
<i>sharpened q-values</i>	1	1	0.238
Observations left	217	130	85
Observations right	799	699	98
Mean outcome $>$ 2500	-1.360	-1.308	-1.682

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome measures height-for-age at approximately two months, following references and standards of WHO. It comes from the first medical visit or, if missing, the second visit. A positive estimate represents a positive jump between those below the threshold ($< 2,500\text{gr}$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table 4: Weight-for-age 1 year old

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age \geq 37 weeks	Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.333* (0.179)	0.295 (0.216)	0.496* (0.292)
<i>p-value</i>	0.0628	0.171	0.0888
<i>sharpened q-values</i>	0.296	1	0.243
Observations left	364	224	137
Observations right	1019	862	152
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.335* (0.180)	0.293 (0.216)	0.337 (0.296)
<i>p-value</i>	0.0628	0.175	0.254
<i>sharpened q-values</i>	0.389	0.967	0.615
Observations left	362	224	136
Observations right	1009	862	145
Mean outcome $>$ 2500	-0.404	-0.442	-0.179
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	0.306 (0.236)	0.164 (0.277)	0.829*** (0.290)
<i>p-value</i>	0.195	0.555	0.00430
<i>sharpened q-values</i>	1	1	0.0290
Observations left	188	111	75
Observations right	714	628	85
Mean outcome $>$ 2500	-0.396	-0.423	-0.220

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome measures weight-for-age during the 9-month medical visit (from 1-year-old survey), following references and standards of WHO. A positive estimate represents a positive jump between those below the threshold ($<$ 2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table 5: Height-for-age 1 year old

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age ≥ 37 weeks	Gestational age < 37 weeks
<i>No extra controls</i>			
Birth-weight $< 2,500gr$	0.290 (0.220)	0.185 (0.267)	0.797** (0.376)
<i>p-value</i>	0.187	0.489	0.0342
<i>sharpened q-values</i>	0.301	1	0.198
Observations left	359	224	132
Observations right	994	839	149
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	0.346 (0.217)	0.193 (0.263)	0.776** (0.374)
<i>p-value</i>	0.111	0.463	0.0382
<i>sharpened q-values</i>	0.389	1	0.178
Observations left	357	224	131
Observations right	983	839	142
Mean outcome >2500	-0.508	-0.529	-0.381
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	0.180 (0.303)	0.0183 (0.345)	0.942* (0.516)
<i>p-value</i>	0.552	0.958	0.0677
<i>sharpened q-values</i>	1	1	0.212
Observations left	187	111	74
Observations right	695	611	83
Mean outcome >2500	-0.487	-0.495	-0.426

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome measures weight-for-age during the 9-month medical visit (from 1-year-old survey), following references and standards of WHO. A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Finally, it is important to note that, for variable change in weight at exit and weight for age at 2 months, the proportion of missing values between LBW and non-LBW children differs (and this difference is statistically significant). For the first variable, missing values are proportionally higher among LBW children than those non-LBW. On the contrary, for variable weight-for-age at two months, the proportion of missing values was higher for non-LBW children. This raises concerns of potential attrition bias, as those with missing information might have characteristics (both observable and unobservable) that make them different to those analyzed. For this reason, I remain cautious, especially for variable weight at 2 months. Regarding weight at 1 year old and height at 2 months and 1 year old, attrition is less of a concern.

6.2 Treatment

The second step is to explore whether being just below the cutoff leads doctors and parents to make specific choices regarding special treatment for newborns.

6.3 Medical treatment

6.3.1 Transferred

Figure D.4 in appendix D shows the relationship between birth weight and the probability of being transferred to special units. Based on the regressions below, I conclude that doctors do not act particularly differently in terms of transferring the child to special units based on the weight label when close to the cutoff.

The third panel in table 6 shows that, on average, only 6.5% of children close but above the threshold are transferred to special care, 3.7% for non-premature children, and 2.6% for premature children.

For children born on term, I do not find any statistically significant difference among those just below and just above the cutoff. However, it is important to note the change in sign of the estimate for the restricted sample (versus the whole sample). If any, they could be less likely to be transferred to special units when just below the cutoff. While not statistically significant, the magnitude of the coefficient is worth examining further.

Regarding pre-term children, I do not find strong evidence of a differential in medical treatment for those labeled low birth weight. This is consistent with/without extra controls and when looking at the whole and restricted samples.

Table 6: Transfers around 2,500 grams

VARIABLES	(1) All gestational ages	(2) Gestational age ≥ 37 weeks	(3) Gestational age < 37 weeks
<i>No extra controls</i>			
Birth-weight $< 2,500gr$	-0.0794 (0.0663)	0.0300 (0.0560)	-0.216 (0.175)
<i>p-value</i>	0.231	0.592	0.216
<i>sharpened q-values</i>	0.406	1	0.350
Observations left	542	337	200
Observations right	1511	1275	225
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	-0.0177 (0.0606)	0.0341 (0.0552)	-0.101 (0.152)
<i>p-value</i>	0.771	0.537	0.506
<i>sharpened q-values</i>	0.915	1	0.681
Observations left	535	337	196
Observations right	1495	1275	216
Mean outcome >2500	0.0873	0.0417	0.347
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	-0.0592 (0.0641)	-0.0602 (0.0494)	0.0272 (0.171)
<i>p-value</i>	0.356	0.223	0.873
<i>sharpened q-values</i>	1	1	1
Observations left	268	168	98
Observations right	1060	933	125
Mean outcome >2500	0.0647	0.0366	0.264

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Outcome transferred is a dummy variable equal to 1 if it was registered/stated that the child was transferred to special units in the medical records at birth or during the mother's two months questionnaire (and 0 otherwise). A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

6.3.2 Extended stay at maternity units

Another relevant variable is how many days the child spends at the maternity unit, which can indicate the intensity of the medical treatment. I record whether they stayed more than what is written in the protocol (see section 2.1.2). According to figure D.5, there does not seem to be evidence of a longer/shorter period at the maternity level for non-premature newborns. This does not seem to be the case for premature children, where there could be a shorter stay at the maternity unit when labeled LBW.

Table 7 shows no statistically significant differences for none of the gestational age groups, neither when looking at the whole sample nor the restricted one. In other words, I rule out the potential difference seen in the graph for pre-term children.

The lack of specific recommendations regarding LBW and the non-statistically significant difference across the cutoff between LBW kids and non-LBW kids leads to the conclusion that the label does not make a difference in the likelihood of being transferred nor in the likelihood of staying more days at the maternity unit. This is also the case when the label was unexpected for doctors. Based on the measure of unexpectedness, conclusions hold when restricting the sample to those cases where there was no LBW or prematurity threat nor a planned C-section.

This conclusion is reinforced by the lack of an established medical protocol solely based on weight. Therefore, I infer that children seem equally likely to be transferred and to have extended stays at the maternity unit when born around the cutoff.

This is particularly the case among pre-term children. While premature children seemed to perform better when just below the cutoff, special treatments at the maternity unit do not seem to explain these differences. This is still valid when the label is considered to be “unexpected” for doctors (restricted sample). These results align with the idea that doctors take advantage of more sophisticated tools to assess the child’s health risk at birth and, based on that, proceed with the appropriate treatment.

For non-premature children, conclusions are less clear. Those whose label can be considered “unexpected” might have been less likely to be transferred (while not statistically significant). I will explore the robustness of these results further in the sections below.

Lastly, it is important to remember that the disproportion of missing values between LBW and non-LBW children is mainly a concern for variable extended stay but not so much for variable transferred.

Table 7: Extended stay at the maternity unit

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age \geq 37 weeks	Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.00507 (0.0945)	0.0813 (0.106)	-0.0781 (0.173)
<i>p-value</i>	0.957	0.441	0.652
<i>sharpened q-values</i>	0.708	1	0.674
Observations left	466	306	156
Observations right	1412	1209	193
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.0821 (0.0752)	0.114 (0.0769)	0.0235 (0.136)
<i>p-value</i>	0.275	0.139	0.863
<i>sharpened q-values</i>	0.539	1	0.974
Observations left	463	306	155
Observations right	1405	1209	192
Mean outcome $>$ 2500	0.342	0.291	0.652
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	0.0751 (0.0986)	0.0715 (0.101)	0.153 (0.163)
<i>p-value</i>	0.446	0.477	0.347
<i>sharpened q-values</i>	1	1	0.640
Observations left	233	151	80
Observations right	1011	894	115
Mean outcome $>$ 2500	0.313	0.271	0.624

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Variable extended stay coming from medical records and equals 1 if the child stayed in the maternity unit longer than recommended (4 days for vaginal delivery and 5 for C-section), or 0 otherwise. A positive estimate represents a positive jump between those below the threshold ($<$ 2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

6.4 Parental treatment

6.4.1 Perception child's health

Being born just below or just above the cutoff could have a different effect on how the mother perceives her child's health at two months. In the survey, mothers are asked to classify how healthy their babies are. Figure D.6 presents what percentage of mothers believe their child is in good health (versus those that say mostly in good health, mostly in poor health, or in poor health) by the child's weight at 2 months and one year old.

Column 2 of table 8 shows that, on average, 88% of mothers with a non-preterm child on the right-hand side of the cutoff believe their child is in good health. This percentage is higher for mothers with LBW children, as they believe they are relatively healthier- by around 0.16 percentage points and 0.25 percentage points when restricting the sample. This difference is statistically significant at the 5% and 1% levels, respectively. The result is robust once adjusting for multiple hypothesis testing for those that the label was somehow unexpected. On the contrary, column 3 shows that mothers of premature children have a similar perception of their babies' health when they are classified as LBW.

After one year from their birth, I do not find any signs of differential perception neither for the mothers of pre-term or of non-premature children.

I find evidence of a differential perception depending on whether children were just below and just above the cutoff, as it is the case among mothers of non-preterm children in the shorter run (after two months of birth). The point estimate becomes larger when the label is not anticipated. Having a better perception of their child after birth could lead to dissimilar investment choices by parents. In the following subsection, I will explore whether there is such a gap and if I can see it as a reinforcing or compensating behavior.

Table 8: Perception of child's health two months: in good health

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age \geq 37 weeks	Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.124** (0.0612)	0.172*** (0.0635)	-0.0271 (0.141)
<i>p-value</i>	0.0419	0.00667	0.848
<i>sharpened q-values</i>	0.399	0.103	0.674
Observations left	470	294	174
Observations right	1323	1114	202
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.109* (0.0609)	0.158** (0.0633)	-0.0501 (0.135)
<i>p-value</i>	0.0737	0.0127	0.710
<i>sharpened q-values</i>	0.539	0.216	0.900
Observations left	468	294	172
Observations right	1312	1114	194
Mean outcome $>$ 2500	0.877	0.877	0.880
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	0.216*** (0.0709)	0.253*** (0.0788)	0.0609 (0.138)
<i>p-value</i>	0.00236	0.00129	0.660
<i>sharpened q-values</i>	0.0350	0.0190	0.923
Observations left	232	143	87
Observations right	924	812	110
Mean outcome $>$ 2500	0.877	0.877	0.872

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome on perception comes from the following question (2 months survey): "According to you, [ELFE child] is currently: (1) In good health (2) Mostly in good health (3) Mostly in poor health (4) In poor health". Dummy variable is equal to 1 if the mother chooses 1 and 0 otherwise. A positive estimate represents a positive jump between those below the threshold ($<$ 2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table 9: Perception of child's health 1 yr old : in good health

VARIABLES	(1) All gestational ages	(2) Gestational age \geq 37 weeks	(3) Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.0981 (0.0805)	0.0718 (0.0949)	0.188 (0.156)
<i>p-value</i>	0.223	0.449	0.230
<i>sharpened q-values</i>	0.406	1	0.350
Observations left	401	248	150
Observations right	1141	961	173
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.0830 (0.0786)	0.0642 (0.0940)	0.134 (0.149)
<i>p-value</i>	0.291	0.495	0.367
<i>sharpened q-values</i>	0.539	1	0.577
Observations left	399	248	149
Observations right	1128	961	165
Mean outcome $>$ 2500	0.807	0.807	0.797
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	0.0496 (0.105)	0.0417 (0.118)	0.0211 (0.219)
<i>p-value</i>	0.636	0.723	0.923
<i>sharpened q-values</i>	1	1	1
Observations left	199	119	78
Observations right	795	700	94
Mean outcome $>$ 2500	0.810	0.810	0.804

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome on perception comes from the following question (1 year old survey): "According to you, [ELFE child] is currently: (1) In good health (2) Mostly in good health (3) Mostly in poor health (4) In poor health". Dummy variable is equal to 1 if the mother chooses 1 and 0 otherwise. A positive estimate represents a positive jump between those below the threshold ($<$ 2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Before moving forward, it is important to note that the proportion of missing values for the perception measures is not statistically different across groups (LBW versus non-LBW).

6.4.2 Nutritional investments

According to French health authorities, exclusive breastfeeding for the first six months ensures the optimum development of the infant and should be encouraged.²⁸

Figure D.7 presents the relationship between the probability of having breastfed the child at the maternity unit and birth weight. Exclusive breastfeeding at birth is equal to 1 if only breast milk was given to the child and 0 if it was only formula or a mix of formula and breast milk. Figure D.8 shows the relationship between the duration in months of exclusive breastfeeding (upper panel) and birth weight. The lower panel presents the age in months at which parents introduced at least one food item to the child's diet and its relationship with weight.

Regarding non-premature children, the second column of table 10 shows that the likelihood of exclusively breastfeeding their child at birth does not differ around the threshold for children born on term. While the duration of exclusive breastfeeding seems to be shorter for those just below the threshold, as seen in table 11, none of the coefficients in column 2 is statistically significant. Neither can be found a clear difference in terms of the age of food diversification.

Among premature children, I do not find any statistically significant difference in nutritional investments at birth or as children grow older.

Regarding attrition, I find a proportionally higher (and statistically different) proportion of missing values for variable exclusive breastfeeding, but the absolute number is relatively low (0.01%). For other nutrition investment variables, this is less of a concern.

²⁸*Breastfeeding: initiation and continuation during the first 6 months of life.* (May 2002) Haute Autorité de Santé. Available at: www.has-sante.fr

Table 10: Exclusive breastfeeding at birth

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age \geq 37 weeks	Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.00351 (0.0837)	0.0469 (0.0935)	-0.189 (0.178)
<i>p-value</i>	0.967	0.616	0.288
<i>sharpened q-values</i>	0.708	1	0.405
Observations left	538	336	197
Observations right	1509	1273	225
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.0173 (0.0835)	0.0564 (0.0921)	-0.140 (0.171)
<i>p-value</i>	0.836	0.540	0.411
<i>sharpened q-values</i>	0.915	1	0.577
Observations left	531	336	193
Observations right	1493	1273	216
Mean outcome $>$ 2500	0.542	0.549	0.506
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	0.0468 (0.108)	0.0545 (0.129)	-0.0986 (0.221)
<i>p-value</i>	0.664	0.672	0.655
<i>sharpened q-values</i>	1	1	0.923
Observations left	265	167	96
Observations right	1059	932	125
Mean outcome $>$ 2500	0.548	0.553	0.514

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome is a constructed variable equal to 1 if the mother exclusively breastfed the child at the maternity unit and 0 otherwise. A positive estimate represents a positive jump between those below the threshold ($<$ 2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table 11: Duration of exclusive breastfeeding

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age ≥ 37 weeks	Gestational age < 37 weeks
<i>No extra controls</i>			
Birth-weight $< 2,500gr$	-0.517*	-0.508	-0.328
	(0.297)	(0.316)	(0.793)
<i>p-value</i>	0.0814	0.108	0.679
<i>sharpened q-values</i>	0.399	0.927	0.674
Observations left	536	335	197
Observations right	1504	1268	225
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	-0.423	-0.404	-0.334
	(0.294)	(0.311)	(0.763)
<i>p-value</i>	0.150	0.194	0.662
<i>sharpened q-values</i>	0.539	1	0.900
Observations left	530	335	193
Observations right	1488	1268	216
Mean outcome >2500	1.239	1.223	1.357
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	-0.0864	-0.112	0.139
	(0.339)	(0.394)	(0.918)
<i>p-value</i>	0.799	0.776	0.880
<i>sharpened q-values</i>	1	1	1
Observations left	265	166	97
Observations right	1056	929	125
Mean outcome >2500	1.206	1.167	1.506

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome is a constructed variable equal to the duration in months of exclusive breastfeeding. A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table 12: Age food diversification (OMS definition)

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age ≥ 37 weeks	Gestational age < 37 weeks
<i>No extra controls</i>			
Birth-weight $< 2,500gr$	-0.0601 (0.258)	-0.0427 (0.302)	0.0335 (0.447)
<i>p-value</i>	0.815	0.888	0.940
<i>sharpened q-values</i>	0.689	1	0.675
Observations left	295	191	103
Observations right	888	758	128
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	0.0585 (0.234)	0.0915 (0.277)	-0.0767 (0.381)
<i>p-value</i>	0.803	0.741	0.840
<i>sharpened q-values</i>	0.915	1	0.974
Observations left	295	191	103
Observations right	883	758	124
Mean outcome >2500	5.176	5.193	5.072
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	-0.160 (0.291)	-0.246 (0.348)	0.408 (0.379)
<i>p-value</i>	0.583	0.479	0.283
<i>sharpened q-values</i>	1	1	0.571
Observations left	155	95	59
Observations right	639	563	75
Mean outcome >2500	5.149	5.166	5.047

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome is a constructed variable equal to the age at which the child was introduced to at least one food group in their diet. A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

6.4.3 Time investments

An important input in the development of children is how much time parents spend with their child (Attanasio et al. 2020), especially in activities that stimulate the development of skills. I measure time investments by looking at the proportion of activities mothers reported to have done with their child from time to time. These activities include singing, talking, and skin contact at two months old. Activities include playing little games, reading, drawing, watching television, spending time together, singing, and playing games with the body when one year old. I create an index equal to the proportion of activities in which the mother participated from time to time as a total of activities (3 for two months and 7 for one year old).

Figure D.9 presents the relationship between the proportion of activities the mother participated in with the child and birth weight. Tables 13 and 14 present the corresponding regressions when two months and one year old. Mothers of non-premature children born just below the cutoff do not seem to practice more activities than mothers of non-LBW kids when two months. This is also the case when children are around one year old.

Regarding pre-term children, mothers seem to practice more activities at two months. Column 3 of table 13 presents a positive and statistically significant coefficient, which is robust to multiple hypothesis testing. The gap in maternal involvement seems to vanish over time and even becomes negative among this group of children. This coefficient is statistically different than zero for the whole sample but not for the restricted sample.

Finally, attrition is less of a concern for both variables, as I do not find any statistically significant difference in the proportion of missing values between LBW versus non-LBW children.

Table 13: Mothers: Interactions with children at 2 months

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age \geq 37 weeks	Gestational age $<$ 37 weeks
<i>No extra controls</i>			
Birth-weight $<$ 2,500gr	0.0583*	0.0358	0.152***
	(0.0329)	(0.0391)	(0.0564)
<i>p-value</i>	0.0760	0.360	0.00710
<i>sharpened q-values</i>	0.399	1	0.0530
Observations left	467	291	174
Observations right	1317	1110	200
<i>With extra controls</i>			
Birth-weight $<$ 2,500gr	0.0569*	0.0410	0.128**
	(0.0335)	(0.0390)	(0.0553)
<i>p-value</i>	0.0893	0.292	0.0209
<i>sharpened q-values</i>	0.539	1	0.0800
Observations left	465	291	172
Observations right	1306	1110	192
Mean outcome $>$ 2500	0.852	0.852	0.852
<i>Restricted Sample</i>			
Birth-weight $<$ 2,500gr	0.0443	0.0104	0.207***
	(0.0454)	(0.0537)	(0.0649)
<i>p-value</i>	0.330	0.846	0.00142
<i>sharpened q-values</i>	1	1	0.0120
Observations left	230	141	87
Observations right	920	810	108
Mean outcome $>$ 2500	0.844	0.843	0.854

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome represents the average number of activities done by the mother with the child at two months old (singing, talking, and skin contact from time to time). A positive estimate represents a positive jump between those below the threshold ($<$ 2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table 14: Mothers: Interactions with children at 1 year old

VARIABLES	(1) All gestational ages	(2) Gestational age ≥ 37 weeks	(3) Gestational age < 37 weeks
<i>No extra controls</i>			
Birth-weight $< 2,500gr$	-0.0454** (0.0205)	-0.0377 (0.0237)	-0.0751 (0.0494)
<i>p-value</i>	0.0267	0.111	0.128
<i>sharpened q-values</i>	0.399	0.927	0.239
Observations left	398	247	148
Observations right	1132	954	171
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	-0.0433* (0.0222)	-0.0316 (0.0257)	-0.101** (0.0436)
<i>p-value</i>	0.0512	0.218	0.0204
<i>sharpened q-values</i>	0.539	1	0.0800
Observations left	396	247	147
Observations right	1119	954	163
Mean outcome >2500	0.782	0.780	0.793
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	-0.00224 (0.0268)	0.00574 (0.0302)	-0.0422 (0.0548)
<i>p-value</i>	0.933	0.849	0.442
<i>sharpened q-values</i>	1	1	0.686
Observations left	199	120	77
Observations right	786	693	92
Mean outcome >2500	0.781	0.780	0.792

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome represents the average number of activities done by the mother with the child at one year old (playing little games, reading, drawing, watching television, spending time, singing, and playing games with the body.). A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions in the upper panel include strata controls and wave fixed effects. Regressions in the middle and lower panels include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first two panels present results for the whole sample, the one at the bottom presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

6.5 Secondary outcomes

Below, I present the analysis of the secondary outcomes. Regressions include the whole sample with extra control variables (upper panel) as well as the restricted sample (lower panel). Again, results are presented for all gestational ages (column 1), those not considered preterm (column 2) and premature children (column 3).

6.5.1 Health workers' treatment

Health workers might provide other types of treatments outside the maternity unit or during medical visits.

Tables E.1 and E.2 shows whether those labeled as LBW are more or less likely to have received the visit of PMI personnel or midwives. I find that non-preterm children are equally likely to receive any of these visits regardless of the side of the cutoff they are at. This is not the case for preterm children. When looking at the whole sample, I find that children below the threshold are more likely to receive a visit from a midwife after leaving the maternity unit. However, when looking at the restricted sample, they are less likely to receive the visit of a PMI. These results are consistent with the idea that those with no precedent of potential health risks are different from those that were already considered at risk before birth and, therefore, the type of treatment they receive.

6.5.2 Other parental treatment

When it comes to parents with a non pre-term child, those with a child labeled as LBW are more likely to go for a medical visit due to being concerned. I do not find any differences for pre-term children. Results can be found in table E.3.

Concerning information provided by sources other than health workers (table E.4), I find a positive coefficient across the different specifications. Having a LBW child might lead mothers to search for more information from other sources besides the one given by health specialists. These results could also be a sign of less trust in medical recommendations, making mothers more likely to get information from elsewhere. Alternatively, other family members of the child might show more concern for their health status and therefore intervene more in the child-rearing of the newborn.

Previously, I found that mothers of premature children tend to interact more with them when 2 months old. The follow-up question is whether fathers also act differently when their children are classified as LBW. When looking at regressions in tables E.5 and E.6, I conclude that fathers of premature children do not seem to invest more/less time with children when labeled LBW. The same conclusion applies to non premature children, as column 2 shows.

Regarding missing values, I do not find a statistically significant difference in the proportion of missing observations between LBW and non-LBW for any of the secondary outcomes.

7 Robustness checks

7.1 Alternative bandwidth and donut RDD

In this section, I examine the robustness of the previous estimates to several checks. I restrict the sample to those whose children are unexpectedly labeled as LBW. By doing so, I focus on those cases where I expect no anticipated behaviors to take place, given that there were no threats of low birth weight, prematurity, or planned C-section.

So far, the choice of the bandwidth used for the regressions has been fixed to 300gr. The objective is to analyze the same sub-sample regardless of how optimal the bandwidth choice is. However, manipulation could not be completely ruled out when the bandwidth was set manually. Manipulation seem to be less of a problem when bandwidths were selected optimally.²⁹As a robustness check, appendix F presents the sensitivity of the estimates to the choice of bandwidth and degree of polynomial in the running variable. For each regression, I alter the bandwidth selection procedure using: one common Mean Square Error (MSE)-optimal bandwidth selector (columns 1 and 2); two different MSE-optimal bandwidth selectors, below and above the cutoff (columns 3 and 4); one common Coverage Error Rate (CER)-optimal bandwidth selector (column 5 and 6); and two different CER-optimal bandwidth selectors, below and above the cutoff (column 6 and 7). The first column of each option uses a local linear regression and the second column local quadratic regression to construct the point estimator. Appendix F.1 shows the sensitivity of the estimates to various bandwidths and degree of polynomial for pre-term children, while appendix F.2 for non-premature children.

One concern about using birth-weight as a running variable is the potential rounding leading to heaps at certain intervals. Following Bharadwaj et al. (2013) proce-

²⁹As a reminder, it selected the median of the following methods: (1) Mean Square Error (MSE) of each density estimator separately (2) MSE of difference of two density estimators (3) MSE of sum of two density estimators.

dure, I adopt a donut RDD approach by excluding points that are 7 grams to either side of 2,500 grams. Tables G.1 to G.4 present all the results for non-premature children (upper panel) and premature newborns (lower panel). All regressions include controls.

I first start by looking at pre-term children. Regarding nutritional outcomes, robustness checks of tables F.2 to F.5 confirm that children below the cutoff perform much better in terms of weight and height for age when they are approximately two months and one year old. Estimates are stable with different window sizes and polynomials, except for height for age at around 1 year old, where significance is lost for some specifications. Conclusions on the positive jump hold when excluding observations $\pm 7\text{gr}$ around the cutoff (lower panel of table G.1) for weight and height at around 2 months and 1 year old. Conclusions in terms of a null difference in medical treatments are reinforced when observing tables F.6, F.7, and lower panels of tables G.2. Estimates of the higher level of interaction of the mother at two months and then the statistically null difference at one year old are robust to the different checks (see tables F.13, F.14). This is also the case when performing the donut RDD approach (tables G.4). The maternal perception of the child’s health at two months old and one-year-old does not seem to vary when the child is just below or above the cutoff (see tables F.8, F.9, and G.3). Tables F.10 to F.12, as well as tables G.4 show no differences in nutritional investments. The only exception is the age of food diversification, which becomes statistically significant for certain optimally chosen bandwidths and degrees of polynomials.

Now I turn to children born on term. Robustness checks of tables F.15 to F.19 confirm the fact that the development of newborns is similar across the cutoff for all alternative bandwidths. Similar results are found when performing the donut RDD approach (upper panel of table G.1). Regarding medical treatment, table F.20 shows that, when unexpected, those below the cutoff are less likely to be transferred to special units. However, when performing the donut RDD approach (table G.2, column 1) I do not find support for the idea of differential treatment. Regarding the likelihood of extended stay, the two alternative methodologies show no evidence of doctors responding differently depending on the side of the threshold the child was born (table F.21, column 2 in tables G.2). The fact that mothers seem to be more optimistic about the health of the newborn labeled LBW at two months is consistent across the different choices of bandwidth and degree of polynomials (tables F.22), and when excluding those $\pm 7\text{gr}$ around the cutoff (table G.3). As in the main results, the differential in perception occurs only at two months of birth but vanishes in time. When it comes to parental investments, the statistically null difference in nutritional investment seems to be robust across bandwidths choices (tables F.24 to F.26), and when performing the donut RDD approach (table G.4). Regarding estimates on the interaction of parents with children, I find consistency in the null statistical difference in the number of activities performed by the mother when the child is two months and one year old (tables F.27-F.28, and G.4).

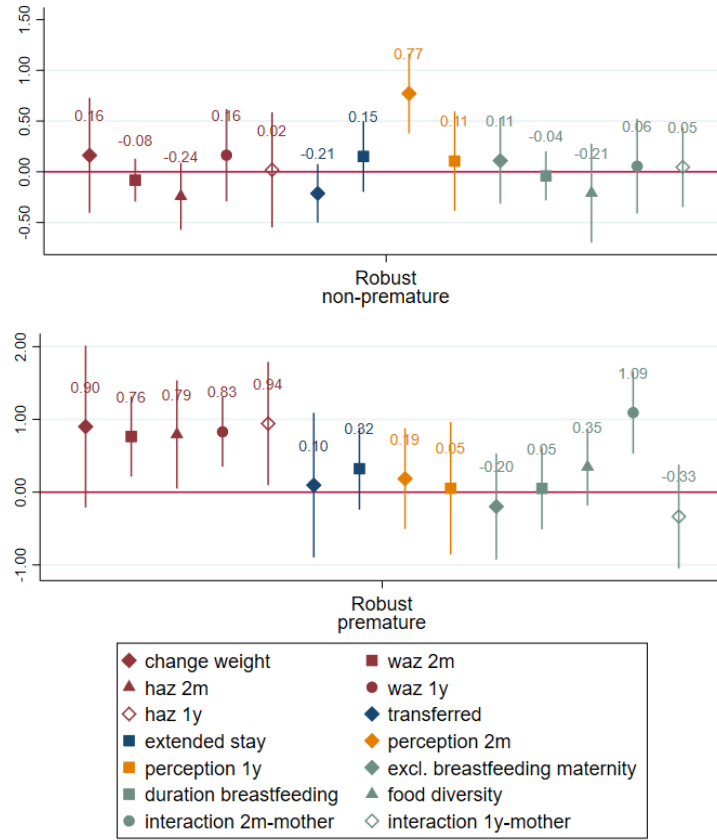
8 Discussion and heterogeneous analysis

Figure 2 summarize the outcomes previously analyzed for non-premature and premature children. To make the comparison visually easier, I look at the standardized outcomes. Weight-for-age and height-for-age are included as reported by ELFE given that they are already standardized following WHO child growth standards. Other outcomes are standardized, using the mean and standard deviation of those children in the sample above the cutoff. The sample is restricted to cases where LBW, and prematurity were not expected, and neither a planned C-section took place.

Taken all together with the findings from the robustness check section, I conclude that doctors and parents respond differently to those below and above the cutoff

depending on their gestational age.

Figure 2: Summary of outcomes (in sd): restricted sample



Notes: These figures report the estimates of interest obtained from the estimation of equation (1). The figures include 90% confidence intervals. The upper panel shows results for non-premature children while the lower panel shows results for pre-term children. Outcomes are all standardized. Weight-for-age and height-for-age are included as reported by ELFE (standardized following WHO child growth standards). Other outcomes are standardized using the mean and standard deviation of those children in the sample above the cutoff. The sample is restricted to cases where LBW, and prematurity were not expected, and neither a planned C-section took place. All controls are included.

Premature children do relatively better when below the cutoff, but no differences are found in medical treatment nor on nutritional investments from parents. This is not the case for time investments, as mothers of children below the cutoff perform more activities at two months than those of children just above. The improvement in nutritional outcomes cannot be directly attributed to the higher number of activities the mother performs with the child per se. A plausible explanation is that these activities are a proxy for other health or nutritional investments that I do not fully capture with the measures used. For instance, more frequent interactions with the infant could be linked to mothers being more aware of the health and well-being of the child, which could be linked to other practices I am not being able to measure with the presented variables. At two months, activities include singing, talking and skin contact. Skin contact can be closely linked to breastfeeding practices that the variables on nutritional investments might not be picking up.

Among children born on term, I find that doctors do not seem to perform special treatments; if any, some specifications show a negative probability of being transferred to special units. Apart from mothers being relatively more optimistic about the health of their children, not further differences are seen in parental investment. This could explain the similar anthropometric development between those just below and just above.

Hereafter, I explore whether there exists any heterogeneity in the results found by gender and birth order. Girls represent 57% and 59% of the whole and restricted sample, respectively. Firstborns represent 53% and 55% of the whole and restricted sample, respectively. Following Restrepo (2016), I also perform heterogeneity analysis across the maternal level of education to take into consideration the differential responses mothers might have depending on their educational background. I divide all mothers into two groups: mothers with a high school diploma or below and mothers with an education level above high school.

Being labeled as LBW might be different depending on whether the child is a boy or a girl. From a medical perspective, boys are known to be biologically more vulnerable than girls from as early as the point of conception (Kraemer (2000) and Eriksson et al. (2010)). Doctors might signal the label of LBW for girls as being less risky than for boys. Parents, on the other hand, might have other beliefs, perceptions, and preferences that vary with the gender of the child. This could lead to a differential approach to the label depending on whether the newborn is a girl or a boy.

The consequences of being labeled as a LBW could also differ based on birth order. From a medical perspective, doctors could treat differently mothers who are having a child for the first time. Birth order is closely linked to the mother's age, and potentially to the intrinsic risks of her pregnancy. Having a firstborn is also correlated to the level of knowledge of the mother and her experience in terms of child-rearing. I could suspect that first-time mothers are more sensitive to the label and react more to having a low birth weight child. The birth order is also implicitly linked to having other siblings at home. This could have implications regarding time constraints when caring for the newborn.

Figures H.1 and H.2 in the appendix show the same outcomes split by gender for premature and non-preterm children, respectively. Figures H.3 and H.4 present those outcomes for firstborn and non-firstborn children, for those premature and born on term, respectively. Figures H.5 and H.6 show outcomes for lower versus higher educated mothers, for those preterm and non-preterm children.

From the analysis by gender and birth order, figures show there seem to be heterogeneous responses. It is important to be cautious when analyzing these results, as power is reduced even more when splitting the sample into two groups.

Among premature children, the over-performance in weight and height, together with higher time investments at two months, is consistent across gender. In general terms, a similar pattern is found when looking at firstborns versus non-firstborn, with estimates more precise for the former children. Additionally, I find that, unlike the second group, firstborns leave the maternity unit with a higher gain in weight. Surprisingly, I find a heterogeneous behavior of doctors depending on the gender when it comes to transferring the child to special units or expanding their stay at the hospital. Girls seem to be more likely to receive special treatment from health workers. This is not the case for boys. No heterogeneity in medical treatment is found by birth order. An open question is why boys still perform better even with no special treatment from doctors. One possible explanation is that mothers of boys might overcompensate the lack of treatment by doctors by making specific investments not captured by the measures in this paper. If spending more time with their children is linked to a proxy of other health/nutrition investments, the relatively higher coefficient found for interaction at two months for boys versus girls could be a potential answer. When looking at heterogeneities across maternal education, I find that estimates for higher-educated mothers go more in line with the conclusions found for the general sample.

Among children born on term, it seems that boys leave the maternity unit with

a higher gain in weight. However, no big differences are seen when around 2 months and 1 year old. While mothers seem to be more optimistic at two months regardless of gender when labeled LBW, they interact more when one year old only when the newborn is a boy. When looking at birth order, there is not a clear pattern in terms of differential response in weight/height by firstborns versus non-firstborns, except for change in weight. The lower probability of being transferred is mainly present among firstborns. Additionally, I find that food diversification is introduced at a later stage for those below the cutoff that happen to be non-firstborn. Turning now to the heterogeneities across maternal education, I find some suggestive evidence of a positive jump in anthropometric outcomes of children from lower-educated mothers, which could explain by the are more optimistic about the health of the child when they are 1 year old. In terms of how doctors react to the label depending on the level of education of the mother, not much difference is found.

Having in mind the potential noisiness of these outcomes, I stay cautious when drawing conclusions. The general takeaway is that doctors and parents may act differently depending on the gender and first order of the child. Following Restrepo (2016) idea, I also find mixed results when looking at how mothers respond depending on their level of education.

9 Gestational age and the “premature” label

One concern previously raised is that splitting children born in term and before the 37-week cutoff could be an endogenous cut. As stated by Bharadwaj et al. (2013), gestational age could be a choice variable driven by doctor or hospital characteristics/quality. The decision on the date of labor can also depend on the health issues of the mother.³⁰

In this section, I examine the relationship between low birthweight and prematurity. Specifically, whether I find a discontinuity in the probability of being pre-term when looking at children just below and just above the 2,5kg cutoff.

Table I.1 in appendix I estimates that jump. As column 1 shows the estimate is negative and statistically significant. However, the magnitudes goes closer to zero and becomes non statistically significant when including extra controls and when restricting the sample.

Even if significance is lost in column 2 and 3, the negative coefficient in column 1 is somehow puzzling, as I could think of this outcome somehow against intuition. However, there might be possible explanations behind this. One possible reason is that those who are preterm are also more likely to have a C-section delivery. There is some evidence that C-section has a positive health impact on the newborn. Using administrative Danish data, Jensen & Wüst (2015) find that caesarean section decreases the newborn’s probability of having a low APGAR score and decreases the number of family doctor visits, while no significant effects are found for severe neonatal morbidity or hospitalizations. In other words, C-section could have consequences on the health outcomes at birth. All of these can explain why, after including the extra controls and restricting the sample to those unexpectedly labeled, the coefficient falls and becomes not statistically significant anymore.

10 Prematurity as a forcing variable

While this paper studies the 2,5kg as the cutoff of interest, an alternative forcing variable could be the 37-week-threshold. Being labeled as preterm could entail doc-

³⁰A premature birth may be decided because of a risk of death of the fetus or the mother during the pregnancy. Available at: <https://www.inserm.fr/dossier/prematurite/>

tors and parents behaving differently towards the child.

As stated before, there are reasons to believe this threshold is less random than weight, given that doctors can somehow manipulate the delivery date if they consider it pertinent. Having said that, I consider it worth exploring this stratifier, addressing manipulation concerns by performing a “donut” RD approach. In other words, excluding those births that happened ± 1 day around the 37 weeks cutoff. I set the bandwidth to be ± 2 weeks. Aiming at further reducing potential manipulation of the date of birth, I restrict the sample to those cases that had no threat of low birth weight, prematurity, nor had a planned C-section. I perform a manipulation test, looking at the distribution of gestational age, with a ± 2 weeks bandwidth, using the restricted sample, before excluding observations around the ± 1 day range. Figure J.1 shows the manipulation test plot. As shown in table J.1 I do not find evidence of systematic manipulation of the forcing variable.

Table J.2 in appendix J shows results for anthropometric outcomes. I do not find evidence of a difference in nutritional development based on the side of the cutoff children are born. Doctors do not seem to provide special treatments when children are labeled pre-term. There seems to be a jump at the cutoff in terms of the maternal perception of the child’s health at one year old. When their children were born just before the 37-week cutoff, mothers seemed to be less optimistic about their health status. Apart from that, no other differences are found concerning parental investments.

11 Conclusion

In this paper, I examine whether the perception of parents regarding the health of a newborn impacts a child’s health outcomes through a shift in parental investments. I adopt a regression discontinuity design approach, using a specific health outcome: weight and the medical cutoff of low birth weight ($<2,500$ gr.). In the absence of any medical label, we would expect children around the cutoff to have similar health outcomes after birth. However, being just below/above the cutoff might have different implications for their future development. While the economic literature has mostly focused on medical responses to being labeled as low birth weight, I explore the potential role parental investments might have on the development of newborns.

I study the case of France, a developed country where health supply is likely to be assured to the whole population and where parents might receive information and recommendations from health workers on the newborn’s health and nutrition. I take advantage of the French Longitudinal Study of Children (ELFE, *Étude Longitudinale Française depuis l’Enfance*), a rich study that tracks more than 18,000 infants from birth to adulthood who were born in metropolitan France in 2011.

This paper adds to the literature on returns to early-life medical interventions by extending the use of birth weight cutoff to explore both medical and parental investments. Furthermore, it contributes to the growing literature on parental investments based on the endowments at birth by looking at the perception of parents on their child’s health. I do so by using an arbitrary classification of “low endowment” to understand how they respond to this.

First, I investigate whether the medical labeling of low birth weight translates into a differential development of the child. Then, I explore the existence of differential responses by doctors and/or parents that lead them to invest differently depending on which side of the cutoff the child was born. I split the sample in two, those considered born on term (≥ 37 weeks) and those born pre-term (< 37 weeks).

For premature children, there seems to be a persistent gap in development measured by weight and height at two months and one year old. These positive differences

in nutritional development could be explained by special treatments by doctors, parents, or both.

Children born on term, behave differently from those pre-term. I find that those below the cutoff leave the maternity unit with a similar change in weight from those not labeled as LBW. Additionally, children show -on average- a similar development whether they were just at the right or just at the left side of the threshold.

I do not find strong evidence of differential treatment by doctors for those just below versus those just above the cutoff. While some specifications show a discontinuity in the likelihood of being transferred, I do not find a persistent pattern when performing robustness checks. This lack of consistency might be explained by doctors having other factors in mind when deciding the type of intervention for a newborn. In the case of premature children, I could think that being born before the expected date is sufficient to receive special treatments regardless of their weight. It could also be the case that their responses are discretionary based on other health measures. The lack of a clear French protocol to follow when newborns are below 2,500gr seems to explain doctors' null general response to the LBW label. In particular, doctors might follow the respective recommendations from their own establishment and could tend to make decisions on a case-by-case basis. This is very much plausible given the relatively low mortality risk of having a weight just below versus just above the 2.5 kg cutoff alone.

Parents' response seems not to follow this rationale. I find systematically a jump in activities done with the child at 2 months old for premature children and in perception for non-pre-term children.

Mothers of premature children do not seem to react any differently to the label in terms of their perception of the child's health. Nevertheless, they perform more activities with the child when two months old if they are just below the 2.5kg threshold. While having more interactions with the child should not have a direct effect on nutritional outcomes per se, these variables might be a proxy for other investments I am not able to measure. For instance, more interactions with the child might be linked to mothers being more aware of their child's health and nutritional needs. This way, time investments might be capturing other nutrition investments which are not picked up by the variables I use (where I do not find any effect).

Regarding mothers of children born in term, I do not find a differential level of involvement, but they seem to be more optimistic at two months about their child's health when labeled LBW.

From the results found, I highlight three main takeaways of this study. The first one is that parental behavior matters when evaluating the short-term impact of medical treatment in the first days of a newborn's life. Indeed, I find evidence that the perception of the health of the child and time investments by the mother can be sensitive to whether the child is labeled as LBW or not. Ignoring these investments might lead to an under/overestimation of returns to medical interventions in the early days of a newborn.

The second finding is the differences in parental responses when, on top of the LBW labeled, they are also considered premature. I find that the outcomes that are most affected by the label differ when the child is pre-term or not. For instance, I encounter a difference in perception when below the cutoff only among non-preterm children. In contrast, a differential in time investments for those below the cutoff is mostly observed among pre-term children.

The third lesson is that, unlike the 1,500gr cutoff, the 2,500gr seems less binding when looking at medical responses to the cutoff. Unlike parents, doctors might use finer measures to assess in a more precise way the health status of a newborn. This

might be especially true for France, where the inequality to access medical technology might be less salient than in developing countries. Indeed, I do not find consistent and robust evidence of doctors making specific choices solely based on the LBW cutoff. First of all, doctors might anticipate certain risks of prematurity or low birth weight, which could lead them to perform pre-natal treatments such as administering corticosteroids or arranging a C-section in advance. Furthermore, the fact that I find certain heterogeneities across gender and birth order might imply that doctors have other information that goes beyond weight.

It is important to note that I cannot reject the possibility of the systematic manipulation of birth weight registered at the maternity level. A plausible explanation is that doctors provide special treatments to some children and not others by registering them as LBW. In other words, results might also be explained by factors other than only the arbitrary threshold of 2,500gr at birth. Alternatively, doctors might anticipate the child's weight before they are born. I try to address this issue by creating a proxy of "unexpectedness" of the label and focusing on this specific sample for most of the analysis. While this approach seems to reduce concerns (especially when using optimal bandwidths), other variables might be key to detecting this dimension better.

The main limitation of this paper is the relatively small sample size. Sample size can be determined when choosing the bandwidth for the estimations. When doing so, I face a trade-off as wider bandwidth translates into more precise estimators but potentially more biased. Using administrative data could reduce this issue as more data might be available. However, information at the household level is hardly available in these types of datasets. Lack of power does not allow me to make more assertive statements about the results found. Further efforts should be made to collect data at a bigger scale on medical interventions, parental perception, and investments made by parents. Better perception measures would provide a more accurate way to capture whether medical classifications are relevant for parents. Having information on siblings and intra-household resources allocation could also add to understanding the dynamics behind. All of this would allow us to measure the theory of change more accurately between parental perception, investment, and health outcomes.

While there is much more to investigate on the subject, this paper raises the importance of reckoning parental investments when exploring the returns for early-life medical interventions. Disregarding parental responses at birth could lead to an under/overestimation of the returns of early life health care investments.

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A Manipulation testing plot

Table A.1: Manipulation test

	Number of obs (l)	Number of obs (r)	Eff. Number of obs (l)	Eff. Number of obs (r)	bias corrected t-statistic	p-value
PANEL A						
Whole sample						
<i>300 gram bandwidth</i>						
all	559.00	1,619.00	559.00	1,619.00	2.40	0.02
non premature	347.00	1,362.00	347.00	1,362.00	1.79	0.07
premature	206.00	246.00	206.00	246.00	1.83	0.07
<i>Optimal bandwidth</i>						
all	559.00	1,619.00	241.00	444.00	0.25	0.80
non premature	347.00	1,362.00	183.00	377.00	-0.25	0.80
premature	206.00	246.00	77.00	120.00	2.39	0.02
PANEL B						
Restricted sample						
<i>300 gram bandwidth</i>						
all	276.00	1,142.00	276.00	1,142.00	2.11	0.03
non premature	173.00	994.00	173.00	994.00	1.95	0.05
premature	100.00	143.00	100.00	143.00	1.19	0.23
<i>Optimal bandwidth</i>						
all	276.00	1,142.00	143.00	287.00	-0.12	0.90
non premature	173.00	994.00	121.00	285.00	0.11	0.92
premature	100.00	143.00	56.00	86.00	1.42	0.16

Notes: The table shows the main estimates of the manipulation testing procedures using the local polynomial density estimators proposed in Cattaneo et al. (2020). Panel A includes estimates for the whole sample when (a) a 300 gram bandwidth is chosen, and (b) an optimal bandwidth is chosen. while Panel B includes estimates for the restricted sample (those with no threat of low birth weight, prematurity, nor a planned C-section) when (a) a 300 gram bandwidth is chosen, and (b) an optimal bandwidth is chosen. Optimal bandwidth is the default option of package described in Cattaneo et al. (2018). Estimates are as follows: (1) number of observations (left), (2) number of observations (right), (3) effective number of observations (left), (4) effective number of observations (right), (5) bias corrected t-statistic, and (6) p-value for bias-corrected density test.

B Descriptive Statistics

B.1 Whole sample

Table B.1: Primary outcomes: gestational age $\geq 37weeks$ - (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
<i>Child's outcomes</i>												
change weight at exit	273.00	17.80	142.91	-190.00	980.00	1,080.00	-47.32	109.62	-460.00	880.00	65.90	0.00
change weight at exit (%)	273.00	0.01	0.06	-0.08	0.41	1,080.00	-0.02	0.04	-0.16	0.32	0.03	0.00
weight for age 2m	239.00	-1.92	0.63	-3.81	0.34	893.00	-1.33	0.60	-3.91	1.98	-0.59	0.00
height for age 2m	262.00	-2.00	0.81	-4.70	1.58	1,007.00	-1.38	0.88	-4.66	4.06	-0.63	0.00
weight for age 1y	230.00	-0.73	0.93	-3.37	2.41	911.00	-0.44	0.90	-3.48	2.95	-0.29	0.00
height for age 1y	230.00	-0.80	1.08	-3.71	4.91	890.00	-0.53	1.01	-3.53	4.28	-0.28	0.00
<i>Medical treatment</i>												
transferred	347.00	0.16	0.37	0.00	1.00	1,343.00	0.04	0.20	0.00	1.00	0.12	0.00
age left maternity	314.00	5.33	2.86	1.00	33.00	1,275.00	4.52	2.19	0.00	35.00	0.83	0.00
extended stay	314.00	0.49	0.50	0.00	1.00	1,275.00	0.29	0.45	0.00	1.00	0.20	0.00
<i>Parental perception</i>												
health 2m: in good health	302.00	0.87	0.34	0.00	1.00	1,173.00	0.88	0.33	0.00	1.00	-0.01	0.79
health 1y: in good health	254.00	0.79	0.41	0.00	1.00	1,010.00	0.81	0.39	0.00	1.00	-0.02	0.47
<i>Parental investments</i>												
exclusive bf maternity	346.00	0.43	0.50	0.00	1.00	1,341.00	0.55	0.50	0.00	1.00	-0.12	0.00
excl. bf. duration	345.00	0.96	2.42	0.00	30.00	1,335.00	1.22	2.54	0.00	30.00	-0.27	0.06
age diversification	198.00	5.02	1.24	3.00	8.00	799.00	5.19	1.17	3.00	8.00	-0.17	0.08
interaction mother 2m	299.00	0.83	0.21	0.33	1.00	1,168.00	0.85	0.19	0.33	1.00	-0.02	0.17
interaction mother 1y	253.00	0.77	0.12	0.43	1.00	1,003.00	0.78	0.13	0.14	1.00	-0.01	0.34

This table presents relevant descriptive statistics for non-premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Description of each variable can be found in section 3.

Table B.2: Primary outcomes: gestational age < 37weeks- (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
<i>Child's outcomes</i>												
change weight at exit	110.00	3.37	186.84	-325.00	975.00	171.00	-66.24	109.74	-285.00	650.00	68.54	0.00
change weight at exit (%)	110.00	0.00	0.08	-0.13	0.41	171.00	-0.02	0.04	-0.11	0.25	0.03	0.00
weight for age 2m	137.00	-2.16	0.62	-3.48	-0.37	162.00	-1.58	0.67	-3.61	0.48	-0.59	0.00
height for age 2m	164.00	-2.41	0.92	-5.54	1.06	183.00	-1.79	0.86	-4.20	0.76	-0.62	0.00
weight for age 1y	140.00	-0.41	0.90	-2.57	2.20	161.00	-0.18	0.87	-2.71	1.88	-0.22	0.05
height for age 1y	135.00	-0.49	0.94	-3.04	2.00	158.00	-0.38	0.94	-3.06	1.99	-0.11	0.31
<i>Medical treatment</i>												
transferred	206.00	0.58	0.49	0.00	1.00	239.00	0.35	0.48	0.00	1.00	0.24	0.00
age left maternity	161.00	8.40	5.30	1.00	38.00	207.00	6.86	5.34	1.00	51.00	1.52	0.01
extended stay	161.00	0.78	0.42	0.00	1.00	207.00	0.65	0.48	0.00	1.00	0.12	0.01
<i>Parental perception</i>												
health 2m; in good health	180.00	0.87	0.34	0.00	1.00	216.00	0.88	0.33	0.00	1.00	-0.01	0.72
health 1y: in good health	155.00	0.77	0.42	0.00	1.00	182.00	0.80	0.40	0.00	1.00	-0.03	0.58
<i>Parental investments</i>												
exclusive bf maternity	203.00	0.40	0.49	0.00	1.00	239.00	0.51	0.50	0.00	1.00	-0.10	0.06
excl. bf. duration	203.00	0.99	2.20	0.00	13.00	239.00	1.36	3.42	0.00	30.00	-0.35	0.12
age diversification	109.00	5.29	1.01	3.00	7.00	139.00	5.07	1.17	3.00	7.00	0.23	0.14
interaction mother 2m	180.00	0.88	0.18	0.33	1.00	214.00	0.85	0.19	0.33	1.00	0.03	0.09
interaction mother 1y	153.00	0.77	0.13	0.29	1.00	180.00	0.79	0.13	0.29	1.00	-0.02	0.16

This table presents relevant descriptive statistics for premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Description of each variable can be found in section 3.

Table B.3: Secondary outcomes: gestational age $\geq 37weeks$ - (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
pmi	302.00	0.32	0.47	0.00	1.00	1,173.00	0.27	0.45	0.00	1.00	0.05	0.12
visit of midwife	302.00	0.35	0.48	0.00	1.00	1,173.00	0.30	0.46	0.00	1.00	0.06	0.07
medical visit concern	302.00	0.27	0.44	0.00	1.00	1,173.00	0.23	0.42	0.00	1.00	0.04	0.19
information besides doctors	299.00	0.77	0.42	0.00	1.00	1,168.00	0.79	0.41	0.00	1.00	-0.02	0.50
interaction father 2m	215.00	0.84	0.22	0.33	1.00	914.00	0.84	0.21	0.00	1.00	-0.00	0.89
interaction father 1y	188.00	0.73	0.14	0.29	1.00	815.00	0.73	0.16	0.00	1.00	0.01	0.54

This table presents relevant descriptive statistics for non-premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Variables: (1) visit of a PMI professional since they left the maternity unit (2 months survey), (2) visit of a midwife since they left maternity (2 months survey), (3) reason for medical visit was because mother was concerned, (4) mother received information besides doctors/nurses, (5) interaction of the father with the child at 2 months old, (6) interaction of the father with the child at 1 year old.

Table B.4: Secondary outcomes: gestational age < 37weeks- (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N.	Mean	SD	min	max	N.	Mean	SD	min	max	low birthweight	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
pmi	180.00	0.44	0.50	0.00	1.00	216.00	0.37	0.48	0.00	1.00	0.07	0.14
visit of midwife	180.00	0.31	0.46	0.00	1.00	216.00	0.22	0.41	0.00	1.00	0.09	0.04
medical visit concern	180.00	0.20	0.40	0.00	1.00	216.00	0.26	0.44	0.00	1.00	-0.06	0.14
information besides doctors	180.00	0.75	0.43	0.00	1.00	214.00	0.75	0.43	0.00	1.00	-0.00	0.93
interaction father 2m	142.00	0.84	0.23	0.00	1.00	169.00	0.86	0.18	0.33	1.00	-0.02	0.47
interaction father 1y	114.00	0.71	0.16	0.14	1.00	147.00	0.73	0.13	0.43	1.00	-0.02	0.32

This table presents relevant descriptive statistics for premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Variables: (1) visit of a PMI professional since they left the maternity unit (2 months survey), (2) visit of a midwife since they left maternity (2 months survey), (3) reason for medical visit was because mother was concerned, (4) mother received information besides doctors/nurses, (5) interaction of the father with the child at 2 months old, (6) interaction of the father with the child at 1 year old.

Table B.5: Summary control variables: gestational age $\geq 37weeks$ - (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
mother higher education	347.00	0.51	0.48	0.00	1.00	1,343.00	0.55	0.47	0.00	1.00	-0.04	0.13
mother age	347.00	30.61	5.19	18.00	44.00	1,341.00	30.68	5.22	18.00	46.00	-0.13	0.70
income(quintile)	292.00	1.85	1.44	0.00	4.00	1,147.00	1.99	1.45	0.00	4.00	-0.15	0.15
already preterm delivery	128.00	0.10	0.30	0.00	1.00	560.00	0.09	0.29	0.00	1.00	0.01	0.74
caesarean	347.00	0.27	0.45	0.00	1.00	1,343.00	0.20	0.40	0.00	1.00	0.07	0.01
twins	347.00	0.18	0.39	0.00	1.00	1,343.00	0.08	0.27	0.00	1.00	0.10	0.00
first born	341.00	0.56	0.50	0.00	1.00	1,332.00	0.54	0.50	0.00	1.00	0.03	0.37
administration corticosteroids	330.00	0.10	0.30	0.00	1.00	1,288.00	0.07	0.25	0.00	1.00	0.03	0.10
consumption tobacco	339.00	0.37	0.48	0.00	1.00	1,330.00	0.29	0.45	0.00	1.00	0.07	0.01
consumption alcohol	338.00	0.25	0.43	0.00	1.00	1,331.00	0.21	0.41	0.00	1.00	0.04	0.15
left maternity	314.00	5.33	2.86	1.00	33.00	1,275.00	4.52	2.19	0.00	35.00	0.83	0.00

This table presents relevant descriptive statistics for non-premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Variables (1) dummy variable equal to 1 if the mother has a higher level of education and 0 otherwise, (2) mother's age, (3) household income (quintile), from 2 months survey, (4) dummy variable equal to 1 if the mother had already a preterm delivery and 0 otherwise, (5) C-section delivery, (6) delivery of twins, (7) prenatal administration of corticosteroids, (8) mother consumed tobacco during pregnancy, (9) mother consumed alcohol during pregnancy, (10) age in days at which the child left the maternity unit.

Table B.6: Summary control variables: gestational age < 37weeks- (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
mother higher education	205.00	0.51	0.49	0.00	1.00	239.00	0.55	0.49	0.00	1.00	-0.04	0.37
mother age	206.00	30.33	5.18	19.00	45.00	239.00	30.89	5.39	19.00	48.00	-0.57	0.26
income(quintile)	175.00	1.73	1.36	0.00	4.00	209.00	1.92	1.40	0.00	4.00	-0.19	0.21
already preterm delivery	90.00	0.20	0.40	0.00	1.00	105.00	0.18	0.39	0.00	1.00	0.01	0.83
caesarean	206.00	0.38	0.49	0.00	1.00	239.00	0.26	0.44	0.00	1.00	0.12	0.01
twins	206.00	0.28	0.45	0.00	1.00	239.00	0.16	0.37	0.00	1.00	0.12	0.01
first born	202.00	0.52	0.50	0.00	1.00	238.00	0.47	0.50	0.00	1.00	0.05	0.31
administration corticosteroids	197.00	0.37	0.48	0.00	1.00	227.00	0.26	0.44	0.00	1.00	0.11	0.02
consumption tobacco	203.00	0.28	0.45	0.00	1.00	238.00	0.21	0.41	0.00	1.00	0.06	0.12
consumption alcohol	202.00	0.19	0.39	0.00	1.00	239.00	0.24	0.43	0.00	1.00	-0.06	0.17
left maternity	161.00	8.40	5.30	1.00	38.00	207.00	6.86	5.34	1.00	51.00	1.52	0.01

This table presents relevant descriptive statistics for premature children whose birth weight was below 2,500gr (column 1-5) and more than 2,500gr (column 6-10). Column 11 presents the difference in means of column 2 and 7. Variables (1) dummy variable equal to 1 if the mother has a higher level of education and 0 otherwise, (2) mother's age, (3) household income (quintile), from 2 months survey, (4) dummy variable equal to 1 if the mother had already a preterm delivery and 0 otherwise, (5) C-section delivery, (6) delivery of twins, (7) prenatal administration of corticosteroids, (8) mother consumed tobacco during pregnancy, (9) mother consumed alcohol during pregnancy, (10) age in days at which the child left the maternity unit.

Table B.7: Summary table: gestational age $\geq 37weeks$ - (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N.	Mean	SD	min	max	N.	Mean	SD	min	max	low birthweight	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
threat pre-term	342.00	0.13	0.34	0.00	1.00	1,330.00	0.11	0.32	0.00	1.00	0.02	0.27
threat low birthweight	347.00	0.35	0.48	0.00	1.00	1,343.00	0.09	0.29	0.00	1.00	0.26	0.00
planned caesarean	347.00	0.10	0.30	0.00	1.00	1,343.00	0.08	0.27	0.00	1.00	0.02	0.22
no expected label	343.00	0.50	0.50	0.00	1.00	1,332.00	0.74	0.44	0.00	1.00	-0.24	0.00

This table presents relevant descriptive statistics for non-premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Variables: (1) threat of prematurity delivery (repeated and painful uterine contractions and/or cervical modifications), (2) suspected fetal weight anomaly during pregnancy, (3) dummy variable equal to 1 if delivery was a planned C-section and 0 otherwise, (4) dummy variable equal to 1 if there was no threat of prematurity, no suspected fetal weight anomaly nor was the delivery a planned C-section.

Table B.8: Summary table: gestational age < 37weeks- (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N.	Mean	SD	min	max	N.	Mean	SD	min	max	low birthweight	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
threat pre-term	202.00	0.39	0.49	0.00	1.00	236.00	0.35	0.48	0.00	1.00	0.04	0.48
threat low birthweight	206.00	0.10	0.30	0.00	1.00	239.00	0.03	0.17	0.00	1.00	0.07	0.01
planned caesarean	206.00	0.08	0.27	0.00	1.00	239.00	0.05	0.23	0.00	1.00	0.02	0.37
no expected label	204.00	0.49	0.50	0.00	1.00	237.00	0.59	0.49	0.00	1.00	-0.10	0.06

This table presents relevant descriptive statistics for premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Variables: (1) threat of prematurity delivery (repeated and painful uterine contractions and/or cervical modifications), (2) suspected fetal weight anomaly during pregnancy, (3) dummy variable equal to 1 if delivery was a planned C-section and 0 otherwise, (4) dummy variable equal to 1 if there was no threat of prematurity, no suspected fetal weight anomaly nor was the delivery a planned C-section.

B.2 Sub-sample

Table B.9: Primary outcomes: gestational age $\geq 37weeks$ - (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
<i>Child's outcomes</i>												
change weight at exit	129.00	22.38	158.71	-190.00	930.00	807.00	-46.34	107.41	-460.00	840.00	69.16	0.00
change weight at exit (%)	129.00	0.01	0.07	-0.08	0.41	807.00	-0.02	0.04	-0.16	0.30	0.03	0.00
weight for age 2m	123.00	-1.87	0.61	-3.81	-0.03	656.00	-1.31	0.60	-2.98	0.65	-0.56	0.00
height for age 2m	133.00	-1.91	0.75	-3.57	0.64	734.00	-1.31	0.86	-4.18	2.67	-0.61	0.00
weight for age 1y	113.00	-0.64	0.91	-2.66	1.44	661.00	-0.42	0.91	-3.48	2.95	-0.23	0.01
height for age 1y	113.00	-0.79	1.06	-3.71	1.93	646.00	-0.49	1.03	-3.53	4.28	-0.30	0.00
<i>Medical treatment</i>												
transferred	173.00	0.13	0.33	0.00	1.00	984.00	0.04	0.19	0.00	1.00	0.09	0.00
age left maternity	154.00	4.99	1.61	2.00	11.00	944.00	4.36	1.94	0.00	33.00	0.63	0.00
extended stay	154.00	0.50	0.50	0.00	1.00	944.00	0.27	0.44	0.00	1.00	0.23	0.00
<i>Parental perception</i>												
health 2m: in good health	146.00	0.86	0.35	0.00	1.00	854.00	0.88	0.33	0.00	1.00	-0.02	0.56
health 1y: in good health	121.00	0.74	0.44	0.00	1.00	733.00	0.81	0.39	0.00	1.00	-0.07	0.12
<i>Parental investments</i>												
exclusive bf maternity	172.00	0.50	0.50	0.00	1.00	983.00	0.55	0.50	0.00	1.00	-0.06	0.19
excl. bf. duration	171.00	1.03	1.94	0.00	15.00	980.00	1.17	2.24	0.00	30.00	-0.15	0.34
age diversification	98.00	4.94	1.27	3.00	7.00	592.00	5.17	1.18	3.00	8.00	-0.23	0.09
interaction mother 2m	144.00	0.82	0.22	0.33	1.00	851.00	0.84	0.19	0.33	1.00	-0.02	0.25
interaction mother 1y	122.00	0.76	0.11	0.57	1.00	726.00	0.78	0.13	0.43	1.00	-0.02	0.07

This table presents relevant descriptive statistics for non-premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Description of each variable can be found in section 3.

Table B.10: Primary outcomes: gestational age $\geq 37weeks$ - (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
<i>Child's outcomes</i>												
change weight at exit	56.00	-4.54	176.97	-225.00	975.00	108.00	-68.43	112.36	-285.00	650.00	69.34	0.00
change weight at exit (%)	56.00	-0.00	0.07	-0.09	0.40	108.00	-0.03	0.04	-0.11	0.25	0.03	0.01
weight for age 2m	74.00	-2.07	0.62	-3.19	-0.37	95.00	-1.57	0.66	-3.61	0.08	-0.50	0.00
height for age 2m	85.00	-2.34	0.77	-3.91	0.32	111.00	-1.68	0.80	-3.82	0.76	-0.65	0.00
weight for age 1y	76.00	-0.28	0.82	-2.20	2.20	98.00	-0.22	0.86	-2.71	1.88	-0.06	0.65
height for age 1y	75.00	-0.39	0.87	-2.23	2.00	96.00	-0.43	0.94	-3.06	1.55	0.02	0.90
<i>Medical treatment</i>												
transferred	100.00	0.57	0.50	0.00	1.00	140.00	0.26	0.44	0.00	1.00	0.32	0.00
age left maternity	81.00	8.12	5.67	1.00	38.00	125.00	6.13	3.95	1.00	33.00	1.82	0.02
extended stay	81.00	0.78	0.42	0.00	1.00	125.00	0.62	0.49	0.00	1.00	0.16	0.01
<i>Parental perception</i>												
health 2m: in good health	88.00	0.86	0.35	0.00	1.00	125.00	0.87	0.34	0.00	1.00	-0.02	0.76
health 1y: in good health	79.00	0.78	0.41	0.00	1.00	107.00	0.80	0.40	0.00	1.00	-0.02	0.73
<i>Parental investments</i>												
exclusive bf maternity	98.00	0.43	0.50	0.00	1.00	140.00	0.51	0.50	0.00	1.00	-0.09	0.23
excl. bf. duration	99.00	0.87	1.76	0.00	11.46	140.00	1.51	3.40	0.00	30.00	-0.58	0.09
age diversification	60.00	5.28	0.92	3.00	7.00	85.00	5.05	1.21	3.00	7.00	0.26	0.15
interaction mother 2m	88.00	0.89	0.17	0.33	1.00	123.00	0.85	0.19	0.33	1.00	0.04	0.14
interaction mother 1y	78.00	0.78	0.14	0.29	1.00	105.00	0.79	0.13	0.29	1.00	-0.01	0.65

This table presents relevant descriptive statistics for non-premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Description of each variable can be found in section 3.

Table B.11: Secondary outcomes: gestational age $\geq 37weeks$ - (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
pmi	146.00	0.30	0.46	0.00	1.00	854.00	0.26	0.44	0.00	1.00	0.04	0.34
visit of midwife	146.00	0.38	0.49	0.00	1.00	854.00	0.28	0.45	0.00	1.00	0.10	0.01
medical visit concern	146.00	0.25	0.43	0.00	1.00	854.00	0.24	0.42	0.00	1.00	0.01	0.75
information besides doctors	144.00	0.74	0.44	0.00	1.00	851.00	0.79	0.41	0.00	1.00	-0.05	0.20
interaction father 2m	112.00	0.85	0.20	0.33	1.00	666.00	0.84	0.21	0.00	1.00	0.01	0.54
interaction father 1y	93.00	0.74	0.15	0.29	1.00	598.00	0.73	0.16	0.00	1.00	0.01	0.50

This table presents relevant descriptive statistics for non-premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Variables: (1) visit of a PMI professional since they left the maternity unit (2 months survey), (2) visit of a midwife since they left maternity (2 months survey), (3) reason for medical visit was because mother was concerned, (4) mother received information besides doctors/nurses, (5) interaction of the father with the child at 2 months old, (6) interaction of the father with the child at 1 year old.

Table B.12: Secondary outcomes: gestational age < 37weeks- (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N.	Mean	SD	min	max	N.	Mean	SD	min	max	low birthweight	p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
pmi	88.00	0.43	0.50	0.00	1.00	125.00	0.36	0.48	0.00	1.00	0.07	0.26
visit of midwife	88.00	0.30	0.46	0.00	1.00	125.00	0.25	0.43	0.00	1.00	0.05	0.42
medical visit concern	88.00	0.17	0.38	0.00	1.00	125.00	0.27	0.45	0.00	1.00	-0.09	0.14
information besides doctors	88.00	0.76	0.43	0.00	1.00	123.00	0.76	0.43	0.00	1.00	0.01	0.93
interaction father 2m	77.00	0.84	0.25	0.00	1.00	100.00	0.85	0.19	0.33	1.00	-0.02	0.54
interaction father 1y	61.00	0.72	0.15	0.43	1.00	86.00	0.75	0.13	0.43	1.00	-0.02	0.35

This table presents relevant descriptive statistics for premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Column 12 presents the p-value of the t-test of equality of means. Variables: (1) visit of a PMI professional since they left the maternity unit (2 months survey), (2) visit of a midwife since they left maternity (2 months survey), (3) reason for medical visit was because mother was concerned, (4) mother received information besides doctors/nurses, (5) interaction of the father with the child at 2 months old, (6) interaction of the father with the child at 1 year old.

Table B.13: Summary control variables: gestational age $\geq 37weeks$ - (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
mother higher education	173.00	0.55	0.47	0.00	1.00	984.00	0.56	0.47	0.00	1.00	-0.01	0.82
mother age	173.00	31.02	5.25	18.00	44.00	983.00	30.82	5.30	18.00	45.00	0.16	0.73
income(quintile)	140.00	1.89	1.50	0.00	4.00	840.00	2.07	1.42	0.00	4.00	-0.19	0.19
already preterm delivery	62.00	0.05	0.22	0.00	1.00	407.00	0.06	0.24	0.00	1.00	-0.02	0.61
caesarean	173.00	0.16	0.37	0.00	1.00	984.00	0.13	0.34	0.00	1.00	0.03	0.37
twins	173.00	0.17	0.38	0.00	1.00	984.00	0.05	0.23	0.00	1.00	0.12	0.00
first born	171.00	0.57	0.50	0.00	1.00	976.00	0.55	0.50	0.00	1.00	0.02	0.66
administration corticosteroids	165.00	0.01	0.08	0.00	1.00	945.00	0.01	0.08	0.00	1.00	-0.00	0.93
consumption tobacco	168.00	0.35	0.48	0.00	1.00	976.00	0.28	0.45	0.00	1.00	0.06	0.16
consumption alcohol	169.00	0.22	0.42	0.00	1.00	976.00	0.22	0.42	0.00	1.00	0.00	0.93
left maternity	154.00	4.99	1.61	2.00	11.00	944.00	4.36	1.94	0.00	33.00	0.63	0.00

This table presents relevant descriptive statistics for non-premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Variables (1) dummy variable equal to 1 if the mother has a higher level of education and 0 otherwise, (2) mother's age, (3) household income (quintile), from 2 months survey, (4) dummy variable equal to 1 if the mother had already a preterm delivery and 0 otherwise, (5) C-section delivery, (6) delivery of twins, (7) prenatal administration of corticosteroids, (8) mother consumed tobacco during pregnancy, (9) mother consumed alcohol during pregnancy, (10) age in days at which the child left the maternity unit.

Table B.14: Summary control variables: gestational age < 37weeks- (h=300)

	Birth-weight < 2,500gr					Birth-weight > 2,500gr					Difference (2) - (7)	
	N. (1)	Mean (2)	SD (3)	min (4)	max (5)	N. (6)	Mean (7)	SD (8)	min (9)	max (10)	low birthweight (11)	p-value (12)
mother higher education	100.00	0.55	0.49	0.00	1.00	140.00	0.58	0.49	0.00	1.00	-0.03	0.65
mother age	100.00	30.33	5.15	19.00	45.00	140.00	31.64	5.65	19.00	48.00	-1.15	0.11
income(quintile)	83.00	1.88	1.30	0.00	4.00	122.00	2.03	1.43	0.00	4.00	-0.18	0.40
already preterm delivery	37.00	0.16	0.37	0.00	1.00	54.00	0.09	0.29	0.00	1.00	0.08	0.28
caesarean	100.00	0.35	0.48	0.00	1.00	140.00	0.24	0.43	0.00	1.00	0.11	0.10
twins	100.00	0.25	0.44	0.00	1.00	140.00	0.18	0.38	0.00	1.00	0.07	0.29
first born	98.00	0.60	0.49	0.00	1.00	139.00	0.47	0.50	0.00	1.00	0.12	0.07
administration corticosteroids	95.00	0.13	0.33	0.00	1.00	136.00	0.09	0.28	0.00	1.00	0.04	0.32
consumption tobacco	98.00	0.29	0.45	0.00	1.00	139.00	0.22	0.41	0.00	1.00	0.06	0.34
consumption alcohol	97.00	0.14	0.35	0.00	1.00	140.00	0.28	0.45	0.00	1.00	-0.13	0.01
left maternity	81.00	8.12	5.67	1.00	38.00	125.00	6.13	3.95	1.00	33.00	1.82	0.02

This table presents relevant descriptive statistics for premature children whose birth weight was below 2,500gr (columns 1-5) and more than 2,500gr (columns 6-10). Column 11 presents the difference in means of columns 2 and 7. Variables (1) dummy variable equal to 1 if the mother has a higher level of education and 0 otherwise, (2) mother's age, (3) household income (quintile), from 2 months survey, (4) dummy variable equal to 1 if the mother had already a preterm delivery and 0 otherwise, (5) C-section delivery, (6) delivery of twins, (7) prenatal administration of corticosteroids, (8) mother consumed tobacco during pregnancy, (9) mother consumed alcohol during pregnancy, (10) age in days at which the child left the maternity unit.

C Missing values

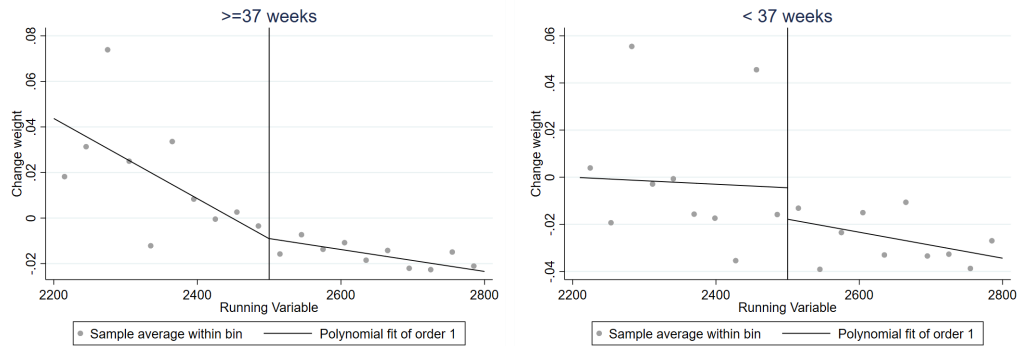
Table C.1: Missing values and low birth-weight: restricted sample

	<2500 grams		>2500 grams		Difference (2)-(4)	
	N.	Mean	N.	Mean	low birthweight	p-value
<i>Children's outcomes</i>						
change weight at exit (%)	276.00	0.32	1,129.00	0.19	0.14	0.00
weight for age 2m	276.00	0.28	1,129.00	0.33	-0.05	0.08
height for age 2m	276.00	0.20	1,129.00	0.25	-0.05	0.11
weight for age 1y	276.00	0.31	1,129.00	0.33	-0.02	0.59
height for age 1y	276.00	0.31	1,129.00	0.34	-0.03	0.38
<i>Medical treatment</i>						
transferred	276.00	0.00	1,129.00	0.00	0.00	
extended stay	276.00	0.14	1,129.00	0.05	0.09	0.00
<i>Parental perception</i>						
health 2m: in good health	276.00	0.14	1,129.00	0.13	0.01	0.52
health 1y: in good health	276.00	0.27	1,129.00	0.25	0.02	0.59
<i>Parental investments</i>						
exclusive bf maternity	276.00	0.01	1,129.00	0.00	0.01	0.01
excl. bf. duration	276.00	0.01	1,129.00	0.00	0.01	0.12
age diversification	276.00	0.42	1,129.00	0.40	0.02	0.46
interaction mother 2m	276.00	0.15	1,129.00	0.13	0.02	0.45
interaction mother 1y	276.00	0.27	1,129.00	0.26	0.01	0.79
<i>Secondary outcomes</i>						
pmi	276.00	0.14	1,129.00	0.13	0.01	0.52
visit of midwife	276.00	0.14	1,129.00	0.13	0.01	0.52
medical visit concern	276.00	0.14	1,129.00	0.13	0.01	0.52
information besides doctors	276.00	0.15	1,129.00	0.13	0.02	0.45
interaction father 2m	276.00	0.31	1,129.00	0.32	-0.01	0.69
interaction father 1y	276.00	0.44	1,129.00	0.39	0.05	0.17

This table presents the percentage of missing values per variable for LBW and non-LBW children. The analysis is done on the restricted sample. Column 1 and 2 presents information for LBW children while column 3 and 4 presents information for non-LBW children. Column 5 presents the difference in mean and column 6 corresponds to the p-values for the t-test for equality of means.

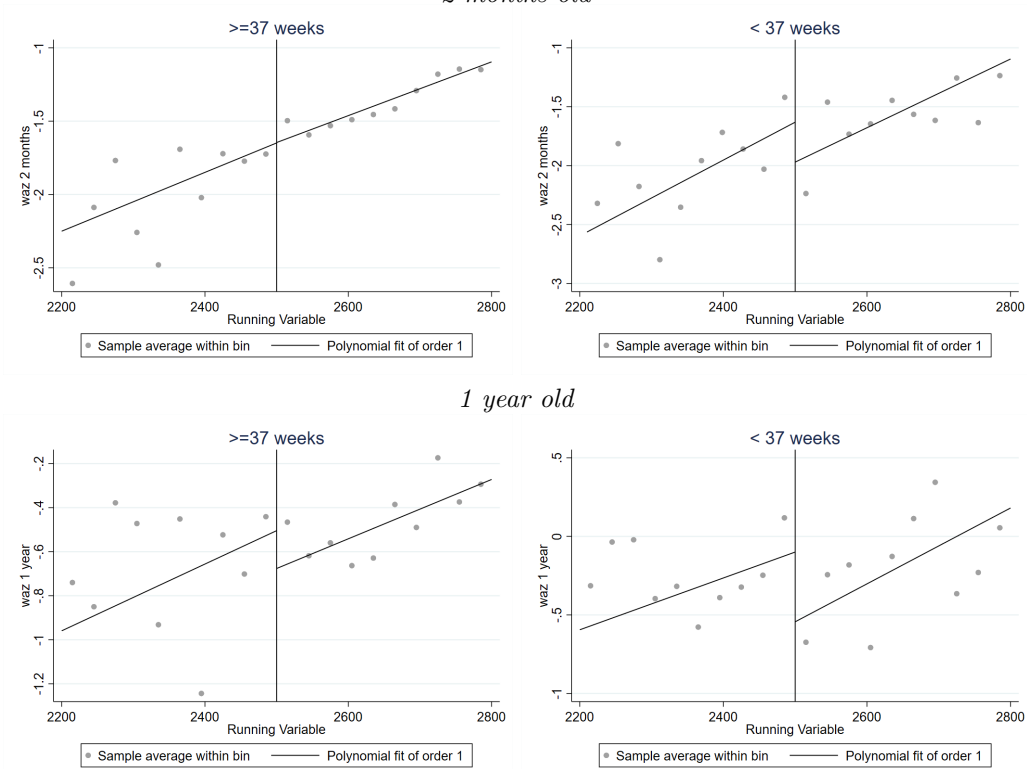
D Main results: graphical representation

Figure D.1: Change in weight at maternity exit



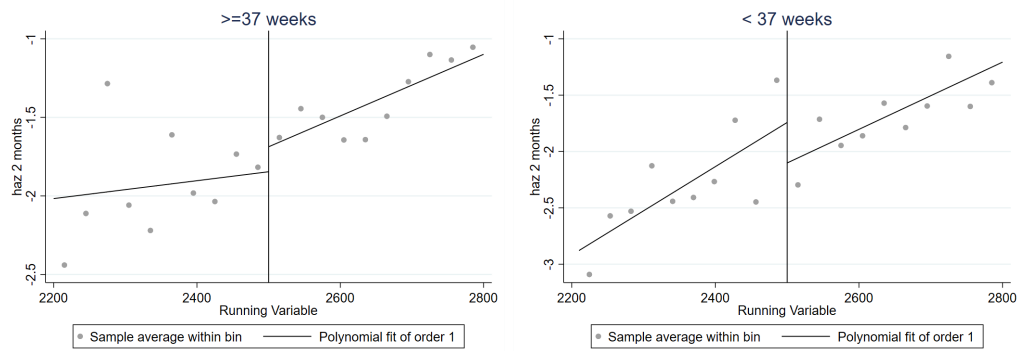
Notes: These figures show the relationship between change in weight as a percentage of birth weight at maternity exit and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

Figure D.2: Weight-for-age
2 months old

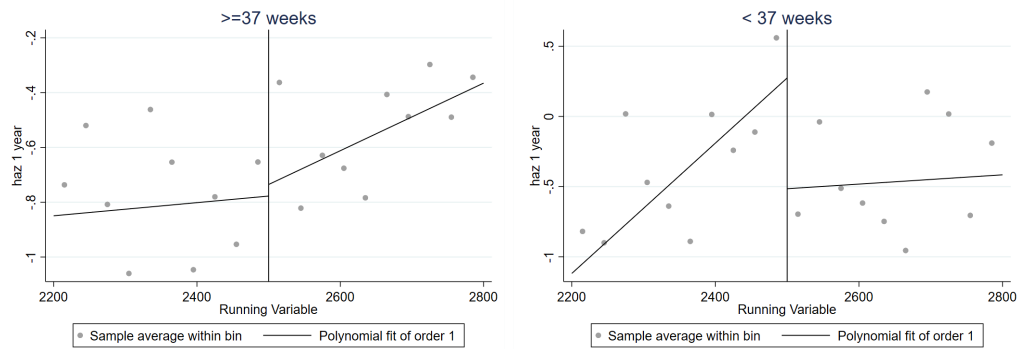


Notes: These figures show the relationship between weight-for-age at 2 months (upper panel) and weight-for-age at 1 year old (lower panel) and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

Figure D.3: Height-for-age
2 months old

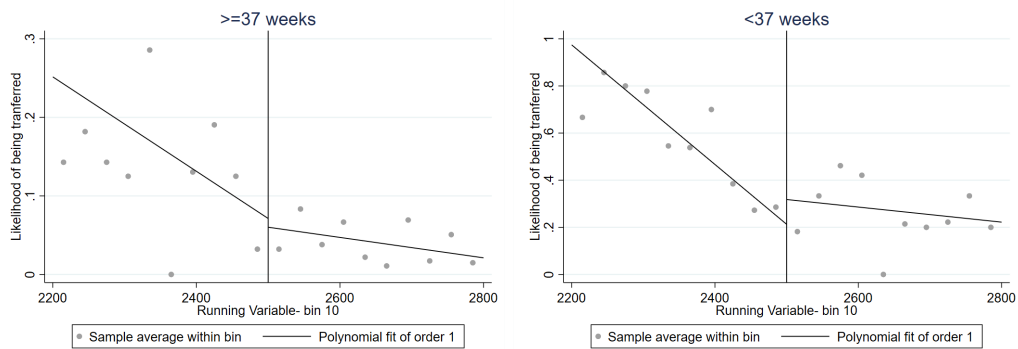


1 year old



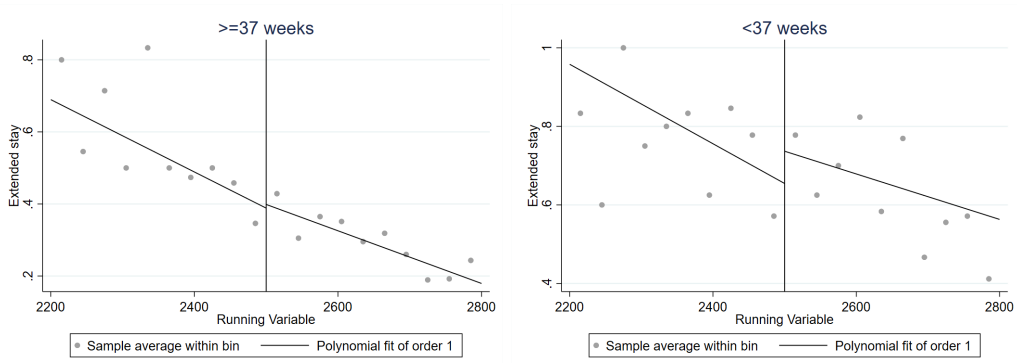
Notes: These figures show the relationship between height-for-age at 2 months (upper panel) and height-for-age at 1 year old (lower panel) and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

Figure D.4: Likelihood of being transferred



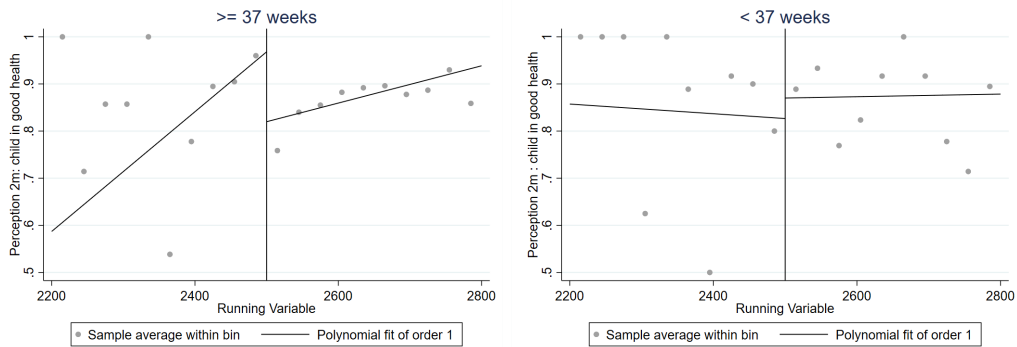
Notes: These figures show the relationship between the likelihood of being transferred to special units and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

Figure D.5: Extended stay at the maternity unit

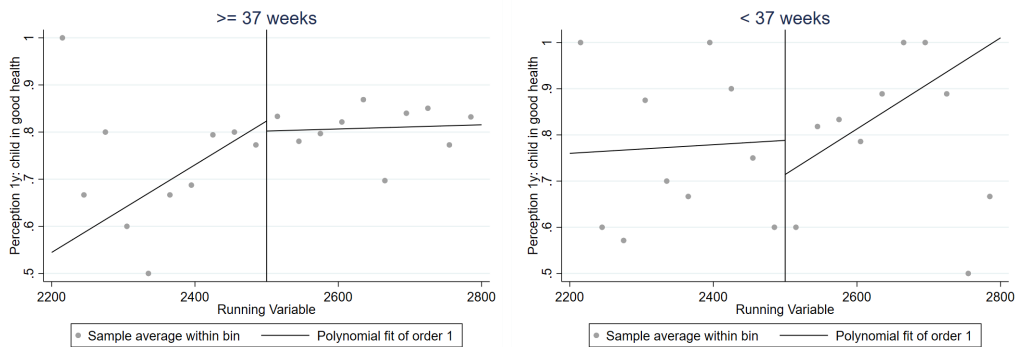


Notes: These figures show the relationship between the likelihood of having an extended stay at the maternity unit and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

Figure D.6: Perception of child's health 2 months and 1 year old: in good health
2 months old

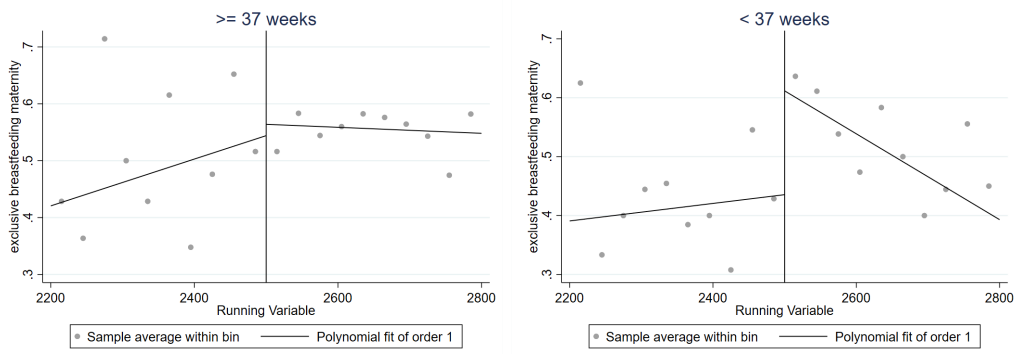


1 year old



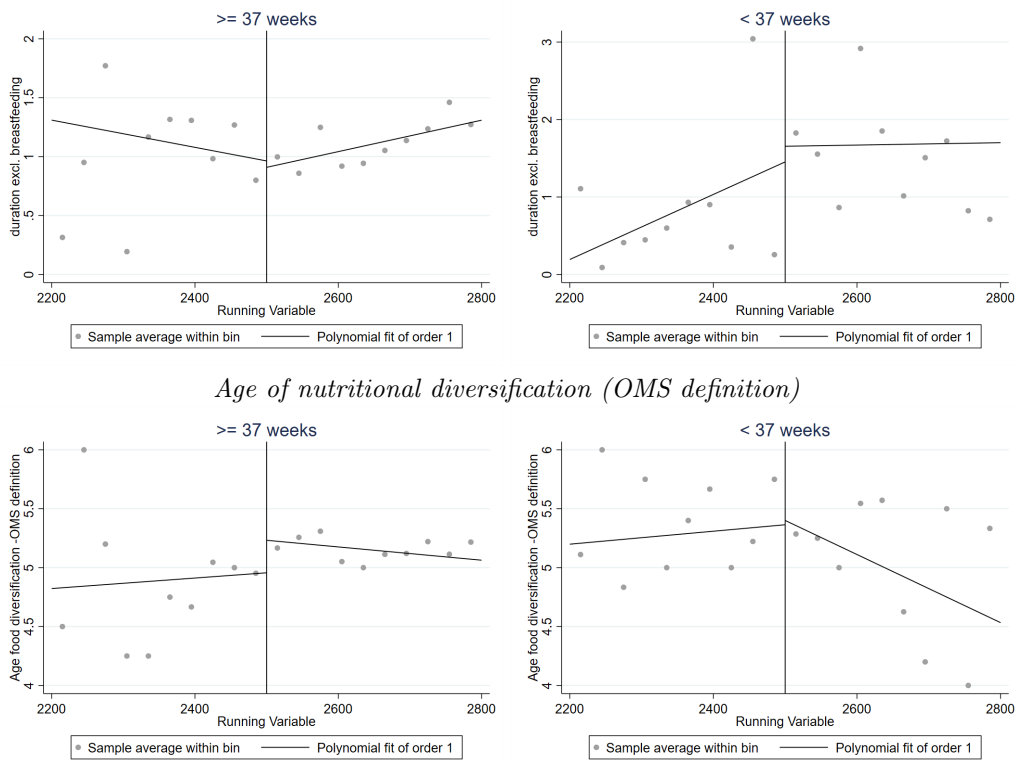
Notes: These figures show the relationship between whether the mother states that the child is in good health at 2 months old (upper panel) and 1 year old (lower panel) and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

Figure D.7: Exclusive breastfeeding at birth



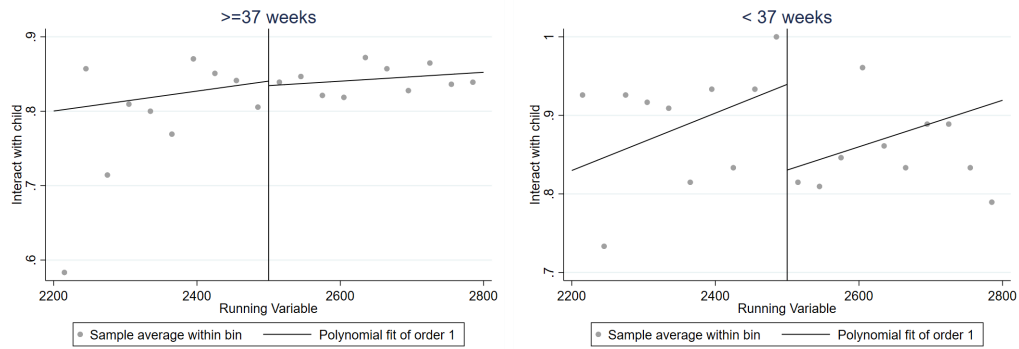
Notes: These figures show the relationship between whether the mother exclusively breastfed the child and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

Figure D.8: Duration of exclusive breastfeeding and food diversification
Duration of exclusive breastfeeding

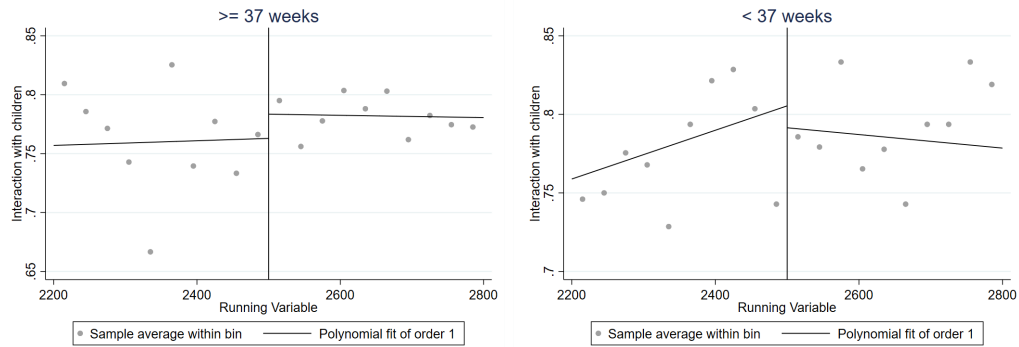


Notes: These figures show the relationship between the duration of exclusive breastfeeding (upper panel) and the age at which the child was introduced to at least one food group (lower panel) and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

Figure D.9: Mothers: Interaction with children
2 months old



1 year old



Notes: These figures show the relationship between the proportion of activities done by the mother with the child at 2 months old (upper panel) and 1 year old (lower panel) and birth weight. The analysis is done on the restricted sample. The figure on the left shows the mentioned relationship for children ≥ 37 gestational age. The figure on the right shows the mentioned relationship for children < 37 gestational age. I use a window of 2,200-2,800 grams. The lines are a linear fit using triangular weights on each side, with no covariates. The dots represent the sample averages within each of the bins on either side of the cutoff.

E Secondary outcomes

Table E.1: PMI visits

VARIABLES	(1) All gestational ages	(2) Gestational age ≥ 37 weeks	(3) Gestational age < 37 weeks
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	-0.0439 (0.0793)	-0.0286 (0.0900)	-0.146 (0.154)
Observations left	468	294	172
Observations right	1312	1114	194
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	-0.116 (0.106)	-0.0691 (0.119)	-0.459*** (0.157)
Observations left	232	143	87
Observations right	924	812	110
Mean outcome > 2500	0.272	0.260	0.360

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome equals 1 if the mother states she has received a visit from a PMI (maternal and child protection service) member (and 0 otherwise). Regressions include strata controls, wave fixed effects as well as: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first panel presents results for the whole sample, the one at the bottom presents the estimates for the restricted sample. All outcome means are unconditional.

Table E.2: Midwife visits

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age ≥ 37 weeks	Gestational age < 37 weeks
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	0.0704 (0.0964)	-0.0380 (0.108)	0.353** (0.166)
Observations left	468	294	172
Observations right	1312	1114	194
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	0.000565 (0.112)	-0.00422 (0.125)	-0.0140 (0.219)
Observations left	232	143	87
Observations right	924	812	110
Mean outcome >2500	0.272	0.275	0.248

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome equals 1 if the mother states she has received a visit from a midwife at her house after leaving the maternity unit (and 0 otherwise). Regressions include strata controls, wave fixed effects as well as: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first panel presents results for the whole sample, the one at the bottom presents the estimates for the restricted sample. All outcome means are unconditional.

Table E.3: Reason for medical visit: concern

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age ≥ 37 weeks	Gestational age < 37 weeks
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	0.135 (0.0827)	0.182* (0.0975)	-0.00763 (0.127)
Observations left	468	294	172
Observations right	1312	1114	194
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	0.122 (0.107)	0.168 (0.127)	-0.102 (0.167)
Observations left	232	143	87
Observations right	924	812	110
Mean outcome >2500	0.239	0.235	0.272

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome equals 1 if the mother states that the first visit was because she was concerned about the child's health and 0 if there is an alternative reason or if not been taken for the first time yet. Regressions include strata controls, wave fixed effects as well as: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first panel presents results for the whole sample, the one at the bottom presents the estimates for the restricted sample. All outcome means are unconditional.

Table E.4: Received information outside health workers

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age ≥ 37 weeks	Gestational age < 37 weeks
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	0.114* (0.0655)	0.138* (0.0785)	0.121 (0.120)
Observations left	465	291	172
Observations right	1306	1110	192
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	0.108 (0.0914)	0.0434 (0.108)	0.453*** (0.163)
Observations left	230	141	87
Observations right	920	810	108
Mean outcome >2500	0.787	0.791	0.756

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The mother is asked who or how she was informed of the care (health, bed, food) to be given to her child. The outcome equals 1 if the mother states to have received information at least from one of the following options: the mother, the father/partner, the paternal grandmother of the child, another family member/friend, a group of parents, staff from the creche/childminder/nursery school assistant, neighbors, book/press, a tv program/radio/website, other. Otherwise, the dummy variable is equal to 0. Regressions include strata controls, wave fixed effects as well as: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first panel presents results for the whole sample, the one at the bottom presents the estimates for the restricted sample. All outcome means are unconditional.

Table E.5: Fathers: Interactions with children at 2 months

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age ≥ 37 weeks	Gestational age < 37 weeks
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	0.0731* (0.0430)	0.0811 (0.0541)	0.0491 (0.0747)
Observations left	350	208	140
Observations right	1019	867	151
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	0.0789 (0.0575)	0.0720 (0.0686)	0.0392 (0.105)
Observations left	188	109	77
Observations right	722	635	87
Mean outcome >2500	0.840	0.838	0.853

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome represents the average number of activities done by the father with the child at 2 months old (singing, talking and skin contact from time to time). Regressions include strata controls, wave fixed effects as well as: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first panel presents results for the whole sample, the one at the bottom presents the estimates for the restricted sample. All outcome means are unconditional.

Table E.6: Interactions with children at 1 year old

VARIABLES	(1)	(2)	(3)
	All gestational ages	Gestational age ≥ 37 weeks	Gestational age < 37 weeks
<i>With extra controls</i>			
Birth-weight $< 2,500gr$	-0.0178 (0.0307)	-0.0106 (0.0376)	-0.0282 (0.0544)
Observations left	296	183	112
Observations right	903	770	132
<i>Restricted Sample</i>			
Birth-weight $< 2,500gr$	0.0176 (0.0399)	0.0129 (0.0487)	0.0403 (0.0601)
Observations left	153	91	61
Observations right	643	568	75
Mean outcome >2500	0.728	0.725	0.746

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcome represents the average number of activities done by the father with the child at 1 year old (playing little games, reading, drawing, watching television, spending time, singing, and playing games with the body.). Regressions include strata controls, wave fixed effects as well as: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). While the first panel presents results for the whole sample, the one at the bottom presents the estimates for the restricted sample. All outcome means are unconditional.

F Robustness checks: Alternative bandwidth

F.1 Gestational age < 37 weeks

F.1.1 Nutritional outcomes

Table F.1: Change in weight at exit: restricted sample

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	common MSE	common MSE	different MSE	different MSE	common CER	common CER	different CER	different CER
Birth-weight $< 2,500gr$	0.0779*** (0.0292)	0.0481 (0.0298)	0.0678*** (0.0246)	0.0521* (0.0271)	0.124*** (0.0282)	0.0539* (0.0279)	0.0832*** (0.0229)	0.0506** (0.0232)
Mean outcome >2500	-0.0239	-0.0252	-0.0266	-0.0307	-0.0197	-0.0236	-0.0257	-0.0273
Observations left	30	53	27	48	24	43	21	41
Observations right	52	96	135	177	41	77	109	141
Bandwidth left	148.6	277.1	129.9	249.9	114.1	205	99.82	184.9
Bandwidth right	148.6	277.1	406.1	588.8	114.1	205	312	435.6
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.2: Weight-for-age 2 months: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.724** (0.317)	0.893** (0.432)	0.747** (0.292)	0.624 (0.422)	0.659** (0.324)	0.717 (0.441)	0.689** (0.317)	0.621 (0.415)
Mean outcome >2500	-1.663	-1.624	-1.495	-1.488	-1.701	-1.651	-1.596	-1.578
Observations left	52	64	48	57	39	48	32	46
Observations right	65	75	102	111	48	59	81	84
Bandwidth left	206.9	256	183.9	231.7	158.5	188.9	140.9	171
Bandwidth right	206.9	256	361.3	403.1	158.5	188.9	276.9	297.4
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.3: Height-for-age 2 months: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.833** (0.347)	0.824 (0.549)	0.837** (0.348)	0.924* (0.559)	0.906** (0.371)	0.931 (0.611)	0.900** (0.371)	0.914 (0.630)
Mean outcome >2500	-1.743	-1.696	-1.735	-1.618	-1.842	-1.771	-1.819	-1.682
Observations left	68	85	68	82	54	63	56	61
Observations right	85	96	90	128	66	80	74	106
Bandwidth left	235.2	292.8	239.5	280.4	179.7	215.4	183	206.3
Bandwidth right	235.2	292.8	264.3	415.7	179.7	215.4	202	305.8
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.4: Weight-for-age 1 year old: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.592** (0.296)	0.757** (0.363)	0.874*** (0.300)	0.957*** (0.357)	0.544* (0.302)	0.756* (0.387)	0.842*** (0.299)	0.917** (0.357)
Mean outcome >2500	-0.371	-0.245	-0.225	-0.178	-0.463	-0.355	-0.273	-0.220
Observations left	43	58	30	52	30	44	23	32
Observations right	56	70	93	112	41	57	73	92
Bandwidth left	160.7	226.2	128.2	202.7	123.1	166.8	98.20	149.5
Bandwidth right	160.7	226.2	316.4	417.3	123.1	166.8	242.4	307.8
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.5: Height-for-age 1 year old: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.874* (0.480)	0.991 (0.670)	0.901* (0.479)	1.040 (0.638)	0.501 (0.493)	0.690 (0.692)	0.725 (0.498)	0.644 (0.662)
Mean outcome >2500	-0.530	-0.453	-0.369	-0.346	-0.508	-0.538	-0.466	-0.417
Observations left	48	63	42	63	37	47	29	47
Observations right	61	74	94	112	51	60	77	91
Bandwidth left	197.3	254.8	160	250.9	151.2	188	122.6	185
Bandwidth right	197.3	254.8	345.1	431.7	151.2	188	264.4	318.4
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

F.1.2 Medical treatment

Table F.6: Likelihood of being transferred: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.00551 (0.143)	0.0421 (0.193)	-0.0655 (0.138)	-0.0282 (0.172)	0.0195 (0.147)	0.135 (0.196)	-0.0188 (0.145)	0.0622 (0.185)
Mean outcome >2500	0.264	0.261	0.259	0.254	0.287	0.269	0.261	0.261
Observations left	78	103	70	95	63	76	56	70
Observations right	106	136	167	193	84	104	136	150
Bandwidth left	230.5	310.4	206.5	288.3	174.5	225.8	156.3	209.8
Bandwidth right	230.5	310.4	414.8	494.6	174.5	225.8	314	359.8
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.7: Extended stay at the maternity unit: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0958 (0.127)	0.169 (0.188)	0.118 (0.135)	0.0722 (0.176)	0.145 (0.134)	0.140 (0.190)	0.128 (0.136)	0.0835 (0.175)
Mean outcome >2500	0.603	0.649	0.600	0.604	0.654	0.663	0.649	0.649
Observations left	87	78	75	75	73	63	63	62
Observations right	130	113	149	153	103	94	113	113
Bandwidth left	338.8	289.7	277.8	273.6	257.9	212	211.4	200.3
Bandwidth right	338.8	289.7	371.2	387.6	257.9	212	282.5	283.7
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

F.1.3 Parental perception and investments

Table F.8: Perception of child's health 2 months: in good health: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0486 (0.129)	0.104 (0.170)	0.0384 (0.136)	0.114 (0.178)	0.0448 (0.142)	0.0747 (0.176)	0.0613 (0.147)	0.162 (0.169)
Mean outcome >2500	0.878	0.865	0.877	0.862	0.847	0.886	0.868	0.868
Observations left	57	79	55	74	40	61	40	57
Observations right	78	105	131	145	56	84	101	108
Bandwidth left	182.2	274.2	171.8	249.4	138.5	200.5	130.6	182.4
Bandwidth right	182.2	274.2	351.2	403.4	138.5	200.5	267	294.9
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.9: Perception of child's health 1 yr old: in good health: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0488 (0.189)	-0.00815 (0.251)	0.0365 (0.189)	-0.0567 (0.242)	0.0262 (0.192)	-0.118 (0.251)	0.0219 (0.192)	-0.152 (0.243)
Mean outcome >2500	0.849	0.806	0.841	0.805	0.829	0.852	0.831	0.814
Observations left	65	78	65	69	50	58	51	51
Observations right	82	92	84	116	66	77	67	91
Bandwidth left	241.8	292.9	249.9	267.1	184.7	215.4	190.9	196.4
Bandwidth right	241.8	292.9	250	379	184.7	215.4	191.1	278.7
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.10: Exclusive breastfeeding at birth: restricted sample : restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.0982 (0.188)	-0.0787 (0.253)	-0.0670 (0.176)	-0.0780 (0.232)	-0.0636 (0.196)	-0.0325 (0.280)	-0.0691 (0.188)	-0.0606 (0.258)
Mean outcome >2500	0.527	0.527	0.512	0.520	0.533	0.528	0.520	0.507
Observations left	83	96	66	89	65	73	46	69
Observations right	108	125	155	170	88	102	121	136
Bandwidth left	242.2	298.5	196.2	278	183.3	217.1	148.5	202.3
Bandwidth right	242.2	298.5	364.9	427.6	183.3	217.1	276.2	311
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.11: Duration of exclusive breastfeeding: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0703 (0.872)	0.261 (0.974)	-0.365 (0.832)	-0.729 (0.842)	0.182 (0.868)	0.257 (1.064)	-0.581 (0.811)	-0.632 (0.814)
Mean outcome >2500	1.648	1.451	1.453	1.465	1.601	1.648	1.414	1.426
Observations left	85	109	72	94	65	59	72	72
Observations right	111	146	211	204	91	111	167	161
Bandwidth left	254.8	349.4	215.2	289.8	192.9	254.2	162.9	210.8
Bandwidth right	254.8	349.4	541.2	519.1	192.9	254.2	409.7	377.6
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.12: Age food diversification (OMS definition): restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.706* (0.363)	1.167** (0.493)	0.258 (0.321)	0.705 (0.460)	0.719** (0.332)	1.150** (0.492)	0.405 (0.335)	0.580 (0.404)
Mean outcome >2500	5.333	5.093	5.076	5.056	5.286	5.333	5.093	4.986
Observations left	29	39	29	37	25	29	24	28
Observations right	42	53	65	87	35	42	53	68
Bandwidth left	146.1	198.2	131.5	171	112.5	147	101.2	126.8
Bandwidth right	146.1	198.2	255.1	358.9	112.5	147	196.4	266.2
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.13: Mothers: Interactions with children at 2 months: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.266*** (0.0613)	0.292*** (0.0698)	0.167*** (0.0509)	0.286*** (0.0681)	0.321*** (0.0666)	0.359*** (0.0759)	0.225*** (0.0542)	0.343*** (0.0721)
Mean outcome >2500	0.867	0.870	0.853	0.863	0.865	0.860	0.867	0.862
Observations left	40	76	40	76	34	57	34	57
Observations right	62	96	119	106	49	77	94	88
Bandwidth left	149.9	254.7	145.6	259.4	114	186.3	110.7	189.8
Bandwidth right	149.9	254.7	315.1	291.4	114	186.3	239.8	213.2
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.14: Mothers: Interactions with children at 1 year old: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.0377 (0.0514)	-0.0579 (0.0612)	-0.0295 (0.0539)	-0.0351 (0.0615)	-0.0569 (0.0514)	-0.0541 (0.0596)	-0.0613 (0.0526)	-0.0671 (0.0620)
Mean outcome >2500	0.782	0.792	0.787	0.787	0.788	0.783	0.782	0.793
Observations left	50	78	49	77	34	60	34	58
Observations right	66	99	85	140	53	77	66	108
Bandwidth left	183.4	308.3	178.8	291	140.2	226.8	136.7	214.1
Bandwidth right	183.4	308.3	260.9	490.7	140.2	226.8	199.5	361
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

F.2 Gestational age ≥ 37 weeks

F.2.1 Nutritional outcomes

Table F.15: Change in weight at exit: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight $< 2,500gr$	0.00701 (0.0143)	0.0142 (0.0197)	0.00845 (0.0132)	0.0130 (0.0177)	0.0124 (0.0147)	0.0205 (0.0213)	0.0104 (0.0131)	0.0126 (0.0187)
Mean outcome >2500	-0.0133	-0.0156	-0.0246	-0.0273	-0.0115	-0.0130	-0.0215	-0.0240
Observations left	99	111	99	111	90	97	90	97
Observations right	357	467	4616	7277	226	297	2539	4060
Bandwidth left	174.5	212.9	172	212.4	128.8	150.5	127	150.1
Bandwidth right	174.5	212.9	784.9	1035	128.8	150.5	579.4	731.6
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.16: Weight-for-age 2 months: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight $< 2,500gr$	-0.0478 (0.120)	-0.222 (0.167)	0.0137 (0.0994)	-0.0985 (0.132)	-0.0899 (0.130)	-0.232 (0.187)	-0.00776 (0.103)	-0.0479 (0.135)
Mean outcome >2500	-1.456	-1.431	-0.927	-0.543	-1.505	-1.509	-1.121	-0.844
Observations left	105	108	101	108	95	93	91	95
Observations right	339	362	2385	5420	231	224	1350	2959
Bandwidth left	203.4	211.6	193.9	219.7	150.2	149.7	143.2	155.4
Bandwidth right	203.4	211.6	619.5	986.1	150.2	149.7	457.6	697.6
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.17: Weight-for-age 1 year old: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0139 (0.356)	-0.489 (0.534)	0.191 (0.255)	-0.229 (0.350)	-0.0918 (0.381)	-0.648 (0.586)	0.101 (0.257)	-0.137 (0.369)
Mean outcome >2500	-0.606	-0.615	-0.120	-0.00392	-0.596	-0.591	-0.250	-0.139
Observations left	80	82	82	84	67	67	71	71
Observations right	179	194	5529	7893	128	132	3234	5123
Bandwidth left	123.4	135.6	137.8	144.2	91.30	96.10	102	102.2
Bandwidth right	123.4	135.6	973	1310	91.30	96.10	719.8	928
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.18: Height-for-age 2 months: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.231 (0.188)	-0.284 (0.251)	-0.0859 (0.161)	-0.0166 (0.205)	-0.212 (0.200)	-0.159 (0.291)	-0.0727 (0.162)	-0.0113 (0.237)
Mean outcome >2500	-1.496	-1.382	-0.819	-0.422	-1.575	-1.544	-1.037	-0.728
Observations left	114	127	109	121	104	99	104	104
Observations right	393	554	3861	7802	261	329	2209	4623
Bandwidth left	205.5	256.7	187.6	226.4	151.7	181.4	138.5	160.1
Bandwidth right	205.5	256.7	746.7	1170	151.7	181.4	551.2	827.2
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.19: Height-for-age 1 year old: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.0651 (0.421)	-0.325 (0.684)	0.124 (0.350)	0.0531 (0.536)	-0.178 (0.450)	-0.678 (0.789)	0.0953 (0.355)	-0.0252 (0.581)
Mean outcome >2500	-0.665	-0.691	-0.0979	-0.0277	-0.660	-0.660	-0.241	-0.180
Observations left	82	84	81	88	71	71	66	76
Observations right	188	209	6179	7380	145	145	3790	4632
Bandwidth left	137.8	144.8	128.7	156.6	102	102.6	95.25	111
Bandwidth right	137.8	144.8	1065	1249	102	102.6	788.3	885.6
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

F.2.2 Medical treatment

Table F.20: Likelihood of being transferred: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.0696 (0.0531)	-0.119** (0.0606)	-0.0531 (0.0423)	-0.121** (0.0488)	-0.0780 (0.0533)	-0.121** (0.0601)	-0.0870** (0.0413)	-0.155*** (0.0449)
Mean outcome >2500	0.0444	0.0447	0.0286	0.0276	0.0571	0.0448	0.0342	0.0302
Observations left	133	148	133	145	115	133	115	128
Observations right	360	559	6747	9227	245	357	3862	5204
Bandwidth left	158.3	213.2	158.9	204.4	116.5	150.2	117	144.1
Bandwidth right	158.3	213.2	875.9	1076	116.5	150.2	644.8	758.5
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.21: Extended stay at the maternity unit: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0685 (0.0863)	0.101 (0.122)	0.102 (0.0979)	0.103 (0.123)	0.0438 (0.0918)	0.0640 (0.124)	0.0945 (0.0995)	0.113 (0.139)
Mean outcome >2500	0.333	0.279	0.226	0.209	0.358	0.328	0.246	0.225
Observations left	119	145	119	144	109	123	106	123
Observations right	414	748	4748	8644	285	439	2706	4852
Bandwidth left	177.8	260.8	175.2	255.6	131	183.9	129.1	180.3
Bandwidth right	177.8	260.8	738.5	1054	131	183.9	544.2	743.2
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

F.2.3 Parental perception and investments

Table F.22: Perception of child's health 2 months: in good health: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.221*** (0.0815)	0.273*** (0.0968)	0.154*** (0.0539)	0.160*** (0.0597)	0.209** (0.0853)	0.200* (0.104)	0.124** (0.0504)	0.103* (0.0558)
Mean outcome >2500	0.859	0.878	0.878	0.876	0.862	0.866	0.884	0.879
Observations left	112	139	115	139	92	117	102	120
Observations right	290	639	3687	8760	195	367	2066	5169
Bandwidth left	147.6	254.7	164	257.7	108.8	179.8	120.9	181.9
Bandwidth right	147.6	254.7	675.7	1147	108.8	179.8	498.2	809.7
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.23: Perception of child's health 1 yr old: in good health: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0596 (0.114)	0.00657 (0.137)	0.0320 (0.103)	-0.00490 (0.119)	0.0403 (0.114)	0.0211 (0.138)	0.0140 (0.103)	-0.0279 (0.126)
Mean outcome >2500	0.790	0.813	0.815	0.812	0.814	0.802	0.807	0.808
Observations left	102	118	102	118	89	106	89	103
Observations right	334	654	4895	6774	220	384	2788	3788
Bandwidth left	186.8	283.2	184.7	280.6	138	200.4	136.5	198.5
Bandwidth right	186.8	283.2	840.8	1036	138	200.4	621.2	733.4
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.24: Exclusive breastfeeding at birth: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0646 (0.122)	0.0927 (0.156)	0.0482 (0.105)	0.0423 (0.134)	0.0829 (0.134)	0.0624 (0.183)	0.0491 (0.114)	0.0129 (0.157)
Mean outcome >2500	0.554	0.548	0.618	0.633	0.563	0.554	0.601	0.618
Observations left	140	165	144	165	129	140	132	140
Observations right	487	828	6464	10171	336	487	3658	6075
Bandwidth left	198.3	277.9	203.9	273.6	146	195.9	150.2	192.8
Bandwidth right	198.3	277.9	854.4	1164	146	195.9	629.1	820.2
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.25: Duration of exclusive breastfeeding: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.127 (0.375)	-0.0864 (0.480)	0.00224 (0.320)	0.181 (0.398)	0.00429 (0.378)	0.300 (0.509)	0.163 (0.304)	0.0763 (0.430)
Mean outcome >2500	1.011	1.122	1.428	1.414	1.009	1.011	1.371	1.352
Observations left	134	159	134	153	123	134	120	134
Observations right	426	733	2716	2823	296	426	1511	1461
Bandwidth left	179.5	250.4	174.8	243.2	132.2	176.5	128.7	171.5
Bandwidth right	179.5	250.4	536	548.8	132.2	176.5	394.7	386.8
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.26: Age food diversification (OMS definition): restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.233 (0.334)	-0.382 (0.459)	-0.111 (0.311)	-0.358 (0.409)	-0.238 (0.337)	-0.193 (0.463)	-0.161 (0.317)	-0.402 (0.420)
Mean outcome >2500	5.137	5.129	5.172	5.169	5.154	5.180	5.185	5.174
Observations left	79	84	78	84	71	74	69	74
Observations right	277	363	2551	4655	195	222	1508	2478
Bandwidth left	192.2	228.8	182.5	226.3	142.4	162.4	135.2	160.6
Bandwidth right	192.2	228.8	676.7	933.7	142.4	162.4	501.3	662.6
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.27: Mothers: Interactions with children at 2 months: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	0.0200 (0.0512)	0.00277 (0.0644)	-0.0225 (0.0484)	-0.0313 (0.0595)	0.00410 (0.0544)	-0.0178 (0.0725)	-0.0244 (0.0502)	-0.0320 (0.0654)
Mean outcome >2500	0.843	0.843	0.850	0.850	0.837	0.843	0.847	0.849
Observations left	120	140	119	140	109	120	105	120
Observations right	412	708	5659	8798	285	412	3185	5203
Bandwidth left	194.8	273.4	183.7	270.5	143.7	193	135.5	191
Bandwidth right	194.8	273.4	850.8	1153	143.7	193	627.4	814.1
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

Table F.28: Mothers: Interactions with children at 1 year old: restricted sample

VARIABLES	(1) common MSE	(2) common MSE	(3) different MSE	(4) different MSE	(5) common CER	(6) common CER	(7) different CER	(8) different CER
Birth-weight < 2,500gr	-0.00262 (0.0273)	0.00893 (0.0383)	-0.00926 (0.0231)	-0.0136 (0.0293)	-0.00493 (0.0290)	-0.00820 (0.0440)	-0.0134 (0.0238)	-0.00885 (0.0320)
Mean outcome >2500	0.783	0.781	0.784	0.784	0.789	0.788	0.782	0.784
Observations left	108	117	108	118	97	99	97	103
Observations right	409	543	5542	7671	260	309	3200	4506
Bandwidth left	215.8	250.5	216.2	266.4	159.4	177.2	159.7	188.5
Bandwidth right	215.8	250.5	913.7	1143	159.4	177.2	675.1	808.5
Order polyn.	1	2	1	2	1	2	1	2

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates using alternative bandwidth selection procedures and alternative order of the local polynomial used to construct the point estimator: (1) one common MSE (Mean Square Error), order polynomial=1, (2) one common MSE- order polynomial=2, (3) two different MSE, order polynomial=1, (4) two different MSE, order polynomial=2, (5) one common CER (Coverage Error Rate), order polynomial=1, (6) one common CER, order polynomial=2, (7) two different CER, order polynomial=1, (8) two different CER, order polynomial=2. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. All outcome means are unconditional.

G Robustness checks: Donut RDD

Table G.1: Children's outcomes: restricted sample

VARIABLES	(1) change weight	(2) waz 2m	(3) haz 2m	(4) waz 1y	(5) haz 1y
<i>Gestational age >= 37 weeks</i>					
Birth-weight < 2,500gr	0.00346 (0.0148)	-0.0773 (0.135)	-0.278 (0.208)	0.207 (0.283)	0.121 (0.312)
<i>p-value</i>	0.816	0.566	0.181	0.464	0.699
<i>sharpened q-values</i>	1.000	1.000	1.000	1.000	1.000
Observations left	125	119	129	110	110
Observations right	760	623	697	627	610
Mean outcome >2500	-0.0172	-1.309	-1.306	-0.421	-0.493
<i>Gestational age < 37 weeks</i>					
Birth-weight < 2,500gr	0.0375 (0.0276)	0.765** (0.334)	0.793* (0.452)	0.829*** (0.290)	0.942* (0.516)
<i>p-value</i>	0.174	0.022	0.079	0.004	0.068
<i>sharpened q-values</i>	0.355	0.098	0.212	0.029	0.212
Observations left	56	74	85	75	74
Observations right	98	84	98	85	83
Mean outcome >2500	-0.0257	-1.568	-1.682	-0.220	-0.426

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates excluding pm 7 grams from the cutoff. The upper panel presents results for non-preterm children, and the lower panel for premature children. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table G.2: Medical treatment: restricted sample

VARIABLES	(1) transferred	(2) left maternity
<i>Gestational age ≥ 37 weeks</i>		
Birth-weight $< 2,500gr$	-0.0588 (0.0514)	0.0394 (0.0978)
<i>p-value</i>	0.252	0.687
<i>sharpened q-values</i>	1.000	1.000
Observations left	167	150
Observations right	931	892
Mean outcome >2500	0.0367	0.271
<i>Gestational age < 37 weeks</i>		
Birth-weight $< 2,500gr$	0.0272 (0.171)	0.153 (0.163)
<i>p-value</i>	0.873	0.347
<i>sharpened q-values</i>	1.000	0.640
Observations left	98	80
Observations right	125	115
Mean outcome >2500	0.264	0.624

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The table presents estimates excluding pm 7 grams from the cutoff. The upper panel presents results for non-preterm children, and the lower panel for premature children. A positive estimate represents a positive jump between those below the threshold ($< 2,500gr$) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table G.3: Parents' perception: restricted sample

VARIABLES	(1) perception 2m	(2) perception 1y
<i>Gestational age >= 37 weeks</i>		
Birth-weight < 2,500gr	0.237*** (0.0802)	0.0280 (0.123)
<i>p-value</i>	0.003	0.821
<i>sharpened q-values</i>	0.046	1.000
Observations left	142	118
Observations right	810	699
Mean outcome >2500	0.878	0.810
<i>Gestational age < 37 weeks</i>		
Birth-weight < 2,500gr	0.0609 (0.138)	0.0211 (0.219)
<i>p-value</i>	0.660	0.923
<i>sharpened q-values</i>	0.923	1.000
Observations left	87	78
Observations right	110	94
Mean outcome >2500	0.872	0.804

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates excluding *pm* 7 grams from the cutoff. The upper panel presents results for non-preterm children, and the lower panel for premature children. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table G.4: Parental investments: restricted sample

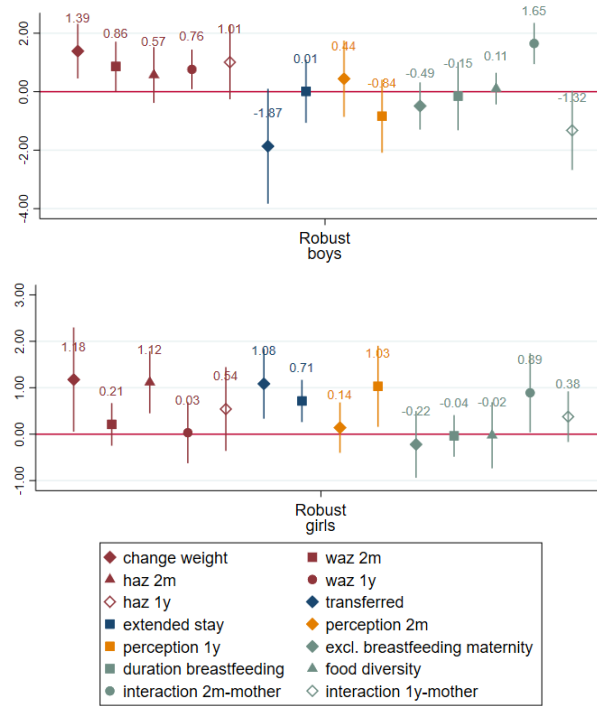
VARIABLES	(1) exclusive bfeeding	(2) duration bfeeding	(3) age food diversification	(4) mother interaction 2m	(5) mother interaction 1y
<i>Gestational age >= 37 weeks</i>					
Birth-weight < 2,500gr	0.0781 (0.131)	-0.121 (0.411)	-0.286 (0.371)	0.0303 (0.0557)	0.00250 (0.0307)
<i>p-value</i>	0.550	0.769	0.442	0.587	0.935
<i>sharpened q-values</i>	1.000	1.000	1.000	1.000	1.000
Observations left	166	165	94	140	119
Observations right	930	927	562	808	692
Mean outcome >2500	0.548	1.208	5.149	0.844	0.781
<i>Gestational age < 37 weeks</i>					
Birth-weight < 2,500gr	-0.0986 (0.221)	0.139 (0.918)	0.408 (0.379)	0.207*** (0.0649)	-0.0422 (0.0548)
<i>p-value</i>	0.655	0.880	0.283	0.001	0.442
<i>sharpened q-values</i>	0.923	1.000	0.571	0.012	0.686
Observations left	96	97	59	87	77
Observations right	125	125	75	108	92
Mean outcome >2500	0.548	1.208	5.149	0.844	0.781

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The table presents estimates excluding *pm* 7 grams from the cutoff. The upper panel presents results for non-preterm children, and the lower panel for premature children. A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). The table presents the estimates for the restricted sample. In all panels, I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

H Heterogeneity analysis

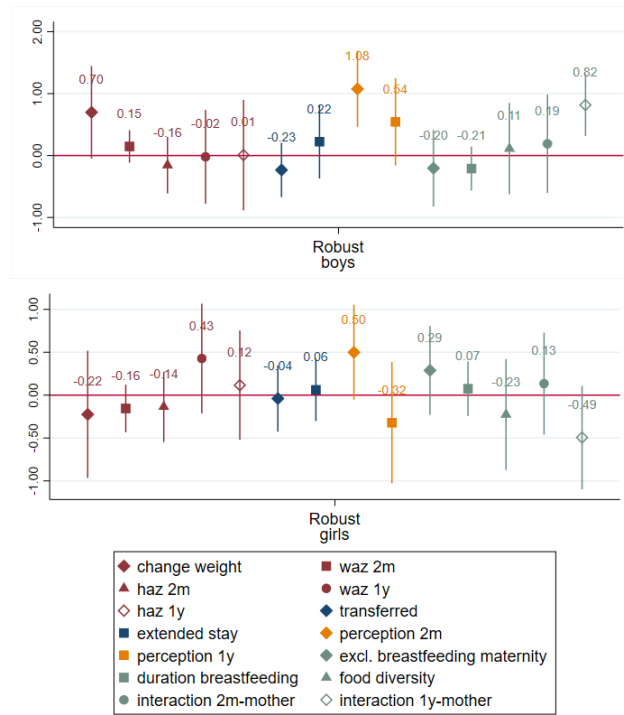
H.1 By gender

Figure H.1: Premature children: summary of outcomes (in sd): restricted sample



Notes: These figures report the estimates of interest obtained from the estimation of equation (1) for premature children. All outcomes are standardized. The figures include 90% confidence intervals. The upper panel shows results for boys children while the lower panel shows results for girls. Outcomes are all standardized. Weight-for-age and height-for-age are included as reported by ELFE (standardized following WHO child growth standards). Other outcomes are standardized using the mean and standard deviation of those children in the sample above the cutoff. The sample is restricted to cases where LBW, and prematurity were not expected, and neither a planned C-section took place. All controls are included.

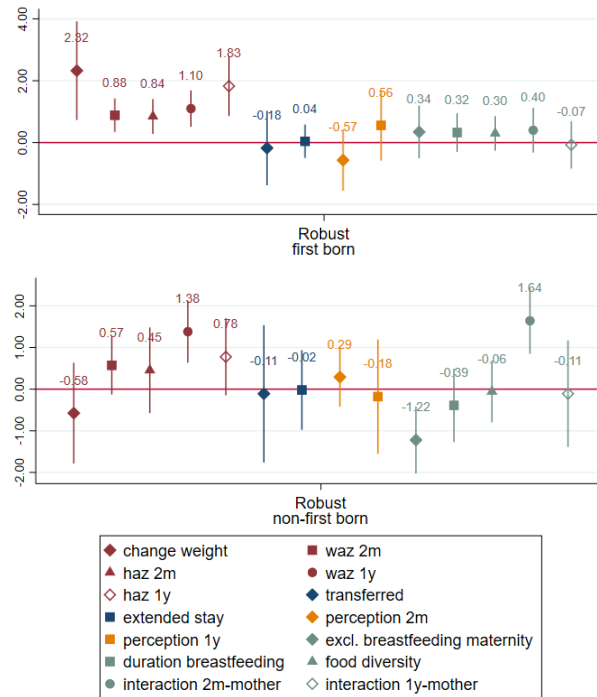
Figure H.2: Non-premature children: summary of outcomes (in sd): restricted sample



Notes: These figures report the estimates of interest obtained from the estimation of equation (1) for non-premature children. All outcomes are standardized. The figures include 90% confidence intervals. The upper panel shows results for boys children while the lower panel shows results for girls. Outcomes are all standardized. Weight-for-age and height-for-age are included as reported by ELFE (standardized following WHO child growth standards). Other outcomes are standardized using the mean and standard deviation of those children in the sample above the cutoff. The sample is restricted to cases where LBW, and prematurity were not expected, and neither a planned C-section took place. All controls are included.

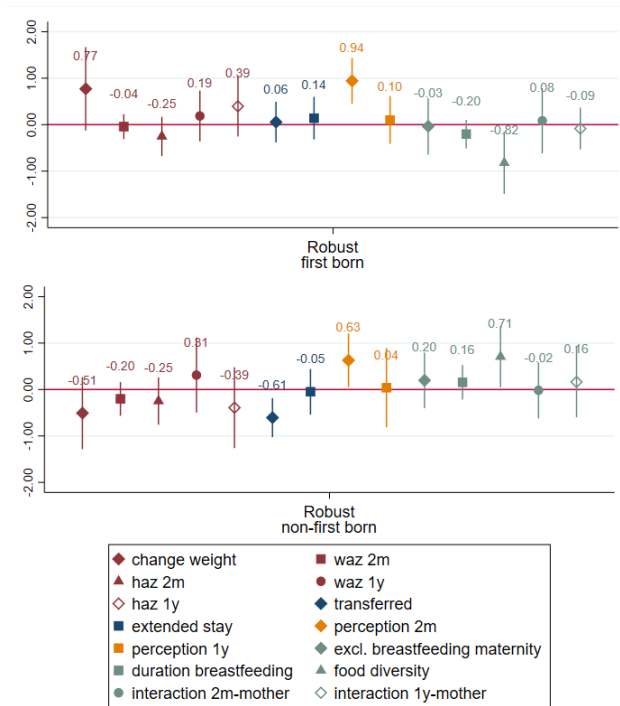
H.2 By birth order

Figure H.3: Premature children: summary of outcomes (in sd): restricted sample



Notes: These figures report the estimates of interest obtained from the estimation of equation (1) for premature children. All outcomes are standardized. The figures include 90% confidence intervals. The upper panel shows results for firstborn children while the lower panel shows results for non-firstborn children. Outcomes are all standardized. Weight-for-age and height-for-age are included as reported by ELFE (standardized following WHO child growth standards). Other outcomes are standardized using the mean and standard deviation of those children in the sample above the cutoff. The sample is restricted to cases where LBW, and prematurity were not expected, and neither a planned C-section took place. All controls are included.

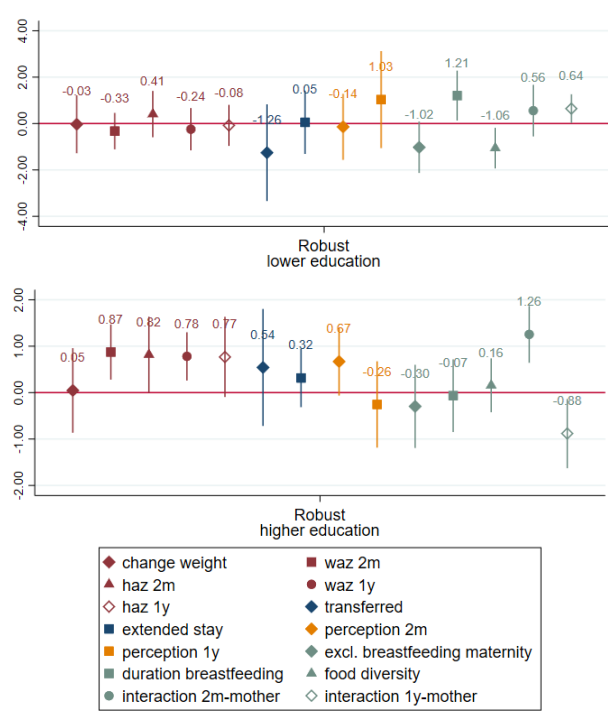
Figure H.4: Non-premature children: summary of outcomes (in sd): restricted sample



Notes: These figures report the estimates of interest obtained from the estimation of equation (1) for non-premature children. All outcomes are standardized. The figures include 90% confidence intervals. The upper panel shows results for firstborn children while the lower panel shows results for non-firstborn children. Outcomes are all standardized. Weight-for-age and height-for-age are included as reported by ELFE (standardized following WHO child growth standards). Other outcomes are standardized using the mean and standard deviation of those children in the sample above the cutoff. The sample is restricted to cases where LBW, and prematurity were not expected, and neither a planned C-section took place. All controls are included.

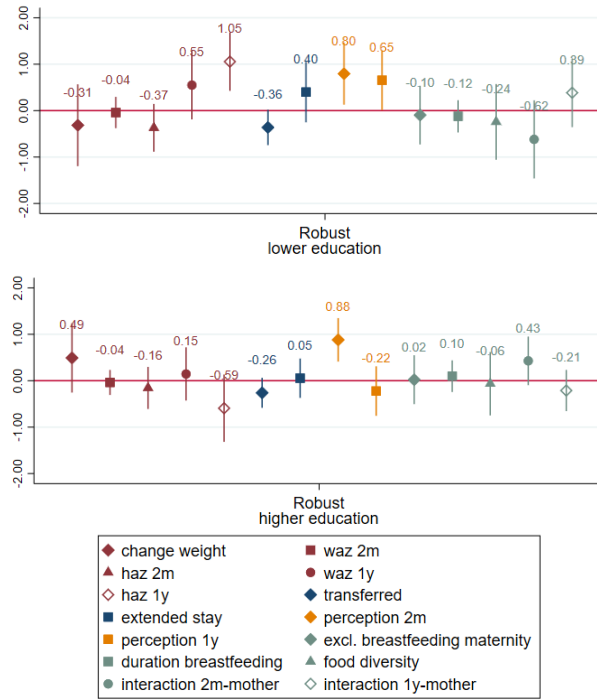
H.3 By education of the mother

Figure H.5: Premature children: summary of outcomes (in sd): restricted sample



Notes: These figures report the estimates of interest obtained from the estimation of equation (1) for premature children. All outcomes are standardized. The figures include 90% confidence intervals. The upper panel shows results for mothers with lower education while the lower panel shows results for mothers with higher education. Outcomes are all standardized. Weight-for-age and height-for-age are included as reported by ELFE (standardized following WHO child growth standards). Other outcomes are standardized using the mean and standard deviation of those children in the sample above the cutoff. The sample is restricted to cases where LBW, and prematurity were not expected, and neither a planned C-section took place. All controls are included.

Figure H.6: Non-premature children: summary of outcomes (in sd): restricted sample



Notes: These figures report the estimates of interest obtained from the estimation of equation (1) for non-premature children. All outcomes are standardized. The figures include 90% confidence intervals. The upper panel shows results for mothers with lower education while the lower panel shows results for mothers with higher education. Outcomes are all standardized. Weight-for-age and height-for-age are included as reported by ELFE (standardized following WHO child growth standards). Other outcomes are standardized using the mean and standard deviation of those children in the sample above the cutoff. The sample is restricted to cases where LBW, and prematurity were not expected, and neither a planned C-section took place. All controls are included.

I Pre-term and LBW

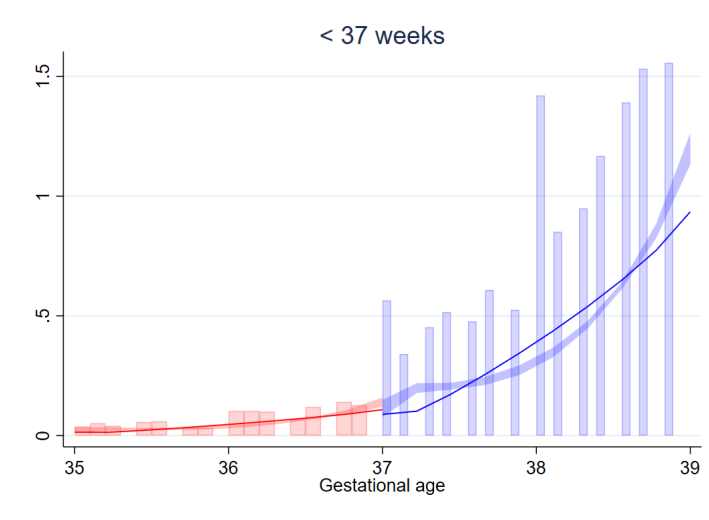
Table I.1: Preterm children

VARIABLES	(1) Likelihood pre-term	(2) Likelihood pre-term (controls)	(3) Likelihood pre-term (restricted sample)
Birth-weight < 2,500gr	-0.125* (0.0751)	-0.0461 (0.0678)	-0.0730 (0.0915)
Mean outcome >2500	0.151	0.151	0.125
Observations left	537	533	266
Observations right	1500	1491	1058

Standard errors in parentheses, clustered at the maternity unit. *** p<0.01, ** p<0.05, * p<0.1. The outcome equals 1 if it is stated that the child was transferred to special units at birth (0 otherwise). A positive estimate represents a positive jump between those below the threshold (<2,500gr) and those above the threshold, while a negative estimate represents a negative jump between those considered low birth weight and those that do not belong to this category. Regressions include strata controls and wave fixed effects. They also include additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). Estimates belong to the restricted sample. All outcome means are unconditional.

J Gestational age and the “premature” label

Figure J.1: Manipulation test plotting



Notes: The analysis is done on the restricted sample, with those children whose gestational age is between 35 and 39 weeks. Histogram estimate of the running variable gestational age computed with default values; and local polynomial density estimate (solid blue and red) and robust bias-corrected confidence intervals (shaded blue and red) computed using package described in Cattaneo et al. (2020).

Table J.1: Manipulation test

	Number of obs(l)	Number of obs(r)	Eff. Number of obs (l)	Eff. Number of obs (r)	bias corrected t-statistic	p-value
2 weeks bandwidth	396.00	3,304.00	396.00	3,304.00	0.21	0.83

Notes: The table shows the main estimates of the manipulation testing procedures using the local polynomial density estimators proposed in Cattaneo et al. (2020). Bandwidth is set at 2 weeks each side of the cutoff. Estimates are as follows: (1) number of observations (left), (2) number of observations (right), (3) effective number of observations (left), (4) effective number of observations (right), (5) bias corrected t-statistic, and (6) p-value for bias-corrected density test.

Table J.2: Anthropometric outcomes

VARIABLES	(1) change weight (%)	(2) waz 2m	(3) haz 2m	(4) waz 1y	(5) haz 1y
Gestational age <37 weeks	-7.73e-05 (0.00931)	-0.0500 (0.182)	-0.0447 (0.189)	-0.248 (0.218)	-0.260 (0.243)
<i>p-value</i>	0.993	0.783	1	0.813	1
<i>sharpened q-values</i>	1	1	0.813	1	0.254
Observations left	281	247	275	253	249
Observations right	1955	1626	1819	1634	1597
Mean outcome >37 weeks	-0.0315	-0.616	-0.746	-0.00665	-0.0864
Bandwidth left	2	2	2	2	2
Bandwidth right	2	2	2	2	2
Order polyn.	1	1	1	1	1

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcomes are (1) change in weight (% of birth weight), (2) weight-for-age at 2 months, (3) height-for-age at 2 months, (4) weight-for-age at 1 year old, and (5) height for age at 1 year old. A positive estimate represents a positive jump between those below the threshold (<37 weeks) and those above the threshold, while a negative estimate represents a negative jump between those considered premature and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family’s characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). Estimates belong to the restricted sample. I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.

Table J.3: Medical and parental investments

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	transferred	extended stay	perception 2m	perception 1y	exclusive bfeeding	duration	age diver.	interaction 2m	interaction 1y
Gestational age <37 weeks	0.0843 (0.0754)	-0.0886 (0.0864)	0.00242 (0.0776)	-0.233** (0.0934)	0.0830 (0.0992)	-0.282 (0.413)	0.389 (0.319)	0.000139 (0.0413)	0.00467 (0.0278)
<i>p-value</i>	0.303	1	0.153	1	0.264	1	0.305	1	0.975
<i>sharpened q-values</i>	1	0.153	1	0.264	1	0.305	1	0.975	1
Observations left	367	334	313	275	364	365	212	309	273
Observations right	2423	2311	2110	1832	2419	2409	1443	2097	1823
Mean outcome >37 weeks	0.0383	0.249	0.862	0.798	0.597	1.457	5.141	0.848	0.779
Bandwidth left	2	2	2	2	2	2	2	2	2
Bandwidth right	2	2	2	2	2	2	2	2	2
Order polyn.	1	1	1	1	1	1	1	1	1

Standard errors in parentheses, clustered at the maternity unit. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The outcomes are (1) being transferred to a special unit, (2) have an extended stay in the hospital, (3) maternal perception of the child's health at 2 months (good health), (4) maternal perception of the child's health at 1 year old (good health) (5) having exclusively breastfed, (6) duration of exclusive breastfeeding, (7) age of food diversification, (8) maternal interaction at 2 months, (9) maternal interaction at 1 year old. A positive estimate represents a positive jump between those below the threshold (<37 weeks) and those above the threshold, while a negative estimate represents a negative jump between those considered premature and those that do not belong to this category. Regressions include strata controls and wave fixed effects. Additional controls: family's characteristics (mother with higher education, their age groups, and quantile of revenues of household), whether the mother already had a pre-term child, type of delivery (C-section and twins), whether the child is a firstborn, whether the child was administered corticosteroids, and maternal risky behaviors (consumption of alcohol and tobacco). Estimates belong to the restricted sample. I present unadjusted p-values and sharpened q-values. All outcome means are unconditional.