Supplemental Security Income and Child Outcomes:
Evidence from Birth Weight Eligibility Cutoffs [1,2,3]

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Abstract:
Low birth weight infants born to mothers with low educational attainment have a double hurdle to overcome in the production of human capital. We examine whether income transfers in the form of Supplemental Security Income (SSI) payments can help close the gap in outcomes due to this initial health and environmental disadvantage. We exploit a discontinuity in SSI eligibility at 1200 grams and use a regression discontinuity approach to produce causal estimates of the effects of SSI eligibility. We find that eligibility increases disability benefit participation, improves child outcomes, and shifts maternal labor supply from full to part time.

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I. Introduction

Individuals born to mothers of lower socio-economic status (SES) experience worse outcomes than children born to mothers with greater resources. These differences across SES are immediate, persist as children age, and have been widening over time (Currie, 2011; Kalil, Ryan, and Corey, 2012; Aizer and Currie, 2014; Autor et al., 2016; Economic Report of the President, 2016, ch. 4). Low birth weight alone is also associated with diminished economic and health outcomes, though greater family resources mitigate the severity of low birth weight's negative impact (Behrman and Rosenzweig, 2004; Black, Devereux, and Salvanes, 2007; Oreopolous et al., 2008; Aizer and Currie, 2014). Low birth weight infants born into low-SES families face a particularly steep uphill climb to achieve outcome equality. Fortunately, prior research has shown that both public and private investment can improve outcomes by alleviating credit constraints, improving access to health or education services, and reducing stress (Almond and Currie, 2011; Aizer, 2014; Akee et al., 2015; Currie and Rossin-Slater, 2015; Jones, Milligan, and Stabile, 2015; Aizer et al., 2016; Almond, Currie and Duque, 2017). In this paper we study a particularly vulnerable population—infants born at very low birth weights, below 1200 grams, to mothers with a high school degree or less. We explore whether public investment in these infants in the form of Supplemental Security Income (SSI) mitigates the detrimental impact of being born at a double disadvantage.

The SSI program provides means-tested income support to individuals with disabilities and the elderly in the United States. For children on SSI, cash payments make up 45% of family income (Bailey and Hemmeter, 2015), and SSI reduces poverty among those families (Duggan and Kearney, 2007). Although only 4% of children under 200% of the federal poverty line receive SSI (Wittenburg et al., 2015), the public resources allocated to SSI are nontrivial; eleven states have more child SSI recipients than child Temporary Assistance to Needy Families (TANF) cash benefit recipients, and expenditures on child SSI currently exceed federal and state expenditures on child TANF cash benefits (Tambornino, Crouse, and Winston, 2015; Wittenburg et al., 2015). However, despite these expenditures on the program, little is known about the relationship between SSI payments and infant or early childhood outcomes.

To fill this research gap, we exploit discontinuous changes in SSI eligibility to analyze the relationship between SSI and child outcomes. According to Social Security Administration

(SSA) rules, children qualify for SSI based on extremely low birth weight if they either weigh less than 1200 grams at birth, or fall below cutoffs based on birth weight for gestational age (Social Security Administration, 2015). To estimate causal effects, we use a regression discontinuity (RD) approach to compare outcomes for infants born just under the SSI eligibility cutoffs to those outcomes for infants born just above the cutoffs. We use the Early Childhood Longitudinal Birth Study (ECLS-B) to show that the likelihood of SSI receipt increases discontinuously at the 1200-gram cutoff. Next, we estimate the relationship between SSI eligibility and several important outcomes including measures of health insurance coverage, child development, parenting behaviors, parental labor supply, and infant mortality using data from the ECLS-B, the Healthcare Cost and Utilization Project State Inpatient Database (HCUP-SID), and the National Center for Health Statistics (NCHS) Birth Cohort Linked Birth-Infant Death Data file (BC-L). We find that SSI eligibility significantly improves parenting behaviors and child motor skill development. We also show that SSI eligibility reduces maternal labor supply on the intensive margin, a result consistent with reallocation of parental time towards child investments. Last, our results suggest that SSI eligibility for low birth weight infants increases Medicaid enrollment as a secondary payer, but does not affect infant mortality rates.

Our findings contribute to the growing body of evidence linking public investments in children to improved outcomes, and suggest that providing SSI to these doubly disadvantaged families improves parenting behaviors and children’s development. These gains are most marked for children of the least educated parents -- parents who likely have the fewest private resources to tap into when caring for a child in a fragile health state. The development of human capital in the presence of self-productivity and dynamic complementarities suggests that investments made at certain points in time, like these investments in vulnerable infants, could be particularly cost-effective (Cunha and Heckman, 2007). Our results provide evidence that targeted public programs such as SSI may be one way to narrow the growing divide between children of high- and low-educated parents (Kalil, Ryan, and Corey, 2012).

II. Background and Institutional Context

A. Income Transfers and Child Outcomes

Income transfers can improve child outcomes through two key channels (Mayer, 1997; Yeung, Linver, and Brooks-Gunn, 2002; Milligan and Stabile, 2011). First, income transfers alleviate credit constraints and enable families to invest more optimally – the "resource" channel. Second, income transfers can reduce stress, which can in turn improve outcomes – the "family process" channel.

In prior work, authors have shown that income transfers can effectively improve outcomes through these channels. For example, Aizer et al. (2016) examine the Mother's Pension Program and find that a pension award reduces the likelihood of being under weight, increases life expectancy, and increases education and adult earnings. Hoynes, Miller, and Simon (2015) show that the Earned Income Tax Credit improves infant health at birth. Others have shown that the distribution of casino revenues to tribal members improves education and decreases crime (Akee et al., 2010) and improves children's emotional and behavioral health and body mass index (Akee et al., 2013; Akee et al., 2015). The Canadian Child Benefit has been shown to improve educational attainment as well as children's mental and physical health, and the additional income works through both the resource and family process channels (Milligan and Stabile, 2011; Jones, Milligan, and Stabile, 2015). Across these studies, the evidence suggests income transfers are effective, particularly for credit-constrained families. Our work builds upon and expands the findings of this literature by looking at an important public program, and we are the first to estimate the effects of SSI (an income transfer) during infancy on early childhood outcomes.

B. Supplemental Security Income for Children

The Supplemental Security Income program was enacted in 1972 to provide means-tested income support to individuals with disabilities and the elderly in the United States. Since its inception, SSI has included payments to children with disabilities ages 0-17. In practice, SSI benefits for children include a bundle of supports: an income transfer, Medicaid eligibility in most states, and referral to other services, such as physical or speech therapy. Although relatively few children received benefits in the early years of the program, since 1990 SSI for children has become an increasingly important part of the safety net (Ben-Shalom, Moffitt, and Scholz, 2012;

Aizer, Gordon, and Kearney, 2013; National Academies, 2015; Duggan, Kearney, and Rennane, 2016). However, only a handful of studies have focused on the program's effects on child and family outcomes.

Through the resource channel, an SSI award could relax the budget constraint faced by low-income parents of children with disabilities. Duggan and Kearney (2007) show that families with child SSI recipients are significantly less likely to be poor. SSI could enable parents to purchase goods or services for their disabled child otherwise foregone in absence of the transfer (DeCesaro and Hemmeter, 2009), but no causal evidence exists on this mechanism.[1] Through the family process channel, the additional resources associated with SSI receipt could alleviate stress.

SSI could also affect parental labor supply. The income associated with receipt could allow a parent to reduce time in the labor market in exchange for time spent with the child rather than trying to meet full time work obligations and the needs of a child with disabilities. In addition, parental income counts against a child's SSI payments, which creates parental work disincentives (Deshpande, 2016a; Guldi and Schmidt, 2018). Deshpande (2016a) finds that parents increase their labor earnings in response to removal of a child from SSI by reallocating their labor market time on the intensive margin.[2,3] While this work suggests that SSI affects parental labor market and economic outcomes, it is not yet known whether SSI for low birth weight infants affects child development or other family outcomes during early childhood.

C. Child SSI Eligibility for Low Birth Weight Infants

The typical procedure to determine eligibility for child SSI is twofold. First, SSA determines a child's financial eligibility. Next, Disability Determination Services (DDS) assesses the child's impairment and determines disability according to SSA rules (Wixon and Strand,

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[1] SSA's regulations require a parent (as the representative payee) to spend the child SSI payments exclusively on the child (20 CFR 416.640), (https://www.ssa.gov/pubs/EN-05-10076.pdf), although parents may reallocate family resources, including time or monetary resources, when the child receives SSI.

[2] Kubik (1999) also offers evidence of changes in parental labor supply when a child receives SSI, but Duggan and Kearney (2007) find no such effects.

[3] In related work, researchers have shown that receiving SSI as a child influences labor supply outcomes later in adulthood. Deshpande (2016b) finds that removal of a child from SSI at age 18 significantly reduces own future income and increases income volatility, and Levere (2017) shows that increased exposure to SSI benefits during childhood reduces the recipient's labor earnings through age 30.

2013). In 1991, SSA defined low birth weight to be a condition “functionally equivalent” to meeting a listing, and infants below certain birth weight cutoffs would be classified as disabled. In 1993, low birth weight became a presumptive disability category, becoming its own listing with the same criteria.

The medical community defines low birth weight as weight less than 2500 grams or 5.5 pounds, and very low birth weight as less than 1500 grams or 3.25 pounds (Maternal and Child Health Bureau, 2013).[4] Infants born below 2500 grams are at greater risk of diminished short- and long-run health (e.g. Hack et al., 1995; IOM, 2006) and worse economic outcomes (e.g. Oreopoulos et al., 2008; Aarnoudse-Moens et al., 2009). Furthermore, the risk increases non-linearly the lower the birth weight and/or the earlier the gestation (Alexander et al., 2003; Behrman and Rosenzweig, 2004; Black, Devereaux, and Salvanes, 2007; Durrance and Guldi, 2015).[5] This finding suggests that interventions targeting the most vulnerable infants at birth may have the largest effects. The fraction of all live births in the United States that are low birth weight or very low birth weight has risen over the past thirty years, suggesting a growing number of individuals may experience worse health at birth and beyond.[6]

SSA evaluates low birth weight from birth to age one using one of two rules defining this condition.[7,8] The first, 100.04A, defines low birth weight as weighing less than 1200 grams regardless of gestational age. The second, 100.04B, considers gestational age together with birth weight and infants light for their gestational age qualify as low birth weight.[9] Due to data limitations, discussed in detail below, our analysis will focus solely on the 1200 gram threshold. SSA low birth weight criteria are more restrictive than the medical community's definitions for

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[4] The medical community defines extremely low birth weight as less than 1000 grams, but we are unaware of other standard birth weight thresholds below 1500 grams in use by the medical community.
[5] The cost of treating low birth weight infants can be large; in 2001, while only 8% of all hospitalized infants had a preterm or low birth weight diagnosis, these infants accounted for 47% of the hospitalization costs (Russell et al., 2007).
[6] The rise in multiple births and increases in obstetric interventions (e.g. C-section births) have contributed to the rise in low and very low birth weight babies (Maternal and Child Health Bureau, 2013). Rates of low birth weight births rose until about 2005, and have fallen since then (see Buckles and Guldi, 2017 for a discussion and possible explanations).
[7] In this paper, when discussing SSI birth weight eligibility we will use “low birth weight” to indicate that an infant falls below SSA’s low birth weight cutoffs.
[8] SSA’s specific medical criteria for benefits are known as the Medical Listings (or just the Listings) and are found in the Blue Book: https://www.ssa.gov/disability/professionals/bluebook.
[9] Appendix Table 1 provides the birth weight for gestational age cutoffs.

low (<2500 grams) and very low (<1500 grams) birth weight.[10] SSA uses these low birth weight rules to target infants at risk of longer term disability. The preamble to the original low birth weight regulation (SSA, 1991) states, "[o]ur case experience has shown that infants who demonstrate the kinds of functional deficits that will be required to establish disability [as low birth weight]… are likely to continue to demonstrate that they are disabled when they are older." The fraction of low birth weight child SSI awards has been roughly 10 percent of all child SSI awards in most recent years. Parental income is not deemed to the child while the child is in a medical institution, but is deemed once the child goes home. Additionally, while the child is in the medical institution the youth is only eligible for a reduced SSI payment of $30.

Infants may stop receiving payments for reasons apart from failing the means-test due to deeming. SSA is required to conduct low birth weight child Continuing Disability Reviews (CDRs) within 1 year of birth, or later if the impairment is not expected to improve within 12 months. In FY 2009 SSA ceased eligibility in 47% of low birth weight child CDR cases (Hemmeter and Bailey, 2015). According to our calculations using SSA administrative data (available upon request), among children awarded SSI for low birth weight in 2001, 65.8% were in current pay status at their first birthday, and only 22.9% still received benefits by their fifth birthday. As a result, despite long spells for many SSI recipients, the SSI cash transfers to the majority of low birth weight infants can be thought of as relatively short-term.

We study a population particularly suited to benefit from income transfers. First, a given health intervention can be expected to have a higher marginal benefit if initial health is worse. The initial infant health among our study population is well below average. The 1200-gram threshold we study falls below the first percentile of the birth weight distribution of live births in 2001 (NCHS, 2001). Second, prior work shows that the positive benefits of income transfers exhibit the largest effects for individuals from low-SES families.[11] Since SSI payments are

[10] Birth weight is the first weight recorded after birth. Gestational age is the infant's age based on the date of conception. Birth weight and gestational age as observed by SSA come from the original or certified copy of a birth certificate (the same information as reported by the ECLS-B and the BC-L data) or from a medical record signed by a physician (similar to data reported by the HCUP-SID). In either case birth weight can be reported in ounces or grams. The Childhood Disability Interview checklist prompts parents to bring the child's birth certificate with them when applying for SSI.

[11] Above, we discuss several studies that specifically show this treatment effect heterogeneity for income transfers. In addition, a number of studies examine other programs and show stronger effects for low-SES groups. For example, the WIC program (Hoynes, Page, Stevens, 2011); the Food Stamp program (Hoynes, Schanzenbach, and

means-tested, families with lower income and fewer outside resources are more likely to continue receiving SSI benefits or to receive higher benefits. As such, we expect the largest effects of these transfers to be concentrated among lower-SES families.

Individuals who receive SSI are typically eligible for Medicaid.[12] Although the Medicaid coverage associated with SSI receipt could directly affect outcomes, the lower-SES families we focus on would likely qualify for Medicaid coverage without SSI receipt. As a result, SSI is unlikely to change primary insurance coverage in our analysis sample of low-SES families. Still, SSI infants with other sources for primary health insurance may become newly eligible to enroll in Medicaid as a secondary payer. SSA referrals of SSI child awardees to the appropriate state agencies for relevant services under Title V of the Social Security Act (such as physical or speech therapy) could also directly affect outcomes.

III. Data

In this paper, we use a regression discontinuity approach to compare SSI receipt and outcomes of children just under the 1200-gram eligibility cutoff to those just above the cutoff. SSA's other birth weight eligibility cutoffs are specific to gestational age. As such, to examine the effects we need data sets that include birth weight, gestational age, the outcomes of interest, and that have sufficient mass around the birth weight thresholds. Few data sets meet this bar. Due in part to these data limitations, which we discus below, our analysis uses only the 1200-gram cutoff. Additionally, as discussed in the Background Section, many public investments benefit the lowest SES groups the most. To focus on these families, we restrict our analysis sample to infants born to mothers with a high school degree or less, or who live in low-income zip codes (depending on the data set). We also restrict the sample to those infants who were born below 32 weeks gestation (for reasons outlined in the Methods Section). In this section, we describe the three data sets used and their relative strengths and weaknesses.

A. Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)

Almond, 2016); childcare (Herbst, forthcoming); and early childhood education (Kearney and Levine, 2015) all benefit individuals from low-SES households more than individuals from high-SES households.

[12] While most SSI recipients receive publicly-provided insurance through the Medicaid program, the way in which the two programs are linked varies by state. Additionally, each state determines the generosity of services covered by its program. See Rupp and Riley (2016) for additional details regarding the links between SSI and Medicaid.

The Early Childhood Longitudinal Study, Birth Cohort (ECLS-B) is a nationally representative longitudinal data set collected by the National Center for Education Statistics (NCES). The ECLS-B oversamples children with lower birth weights. Figure 1 shows the birth weight distribution of infants born to mothers with a high school degree or less, and makes clear the extent to which the ECLS-B oversamples infants at the lower end of the birth weight distribution. Births to mothers less than age 15, or children who died or were adopted before the 9-month assessment are not included in the base sample.[13] The ECLS-B follows children from birth through kindergarten with data collection occurring at approximately 9 months of age, 2 years of age (2003), 4 years of age (at pre-school, fall 2005), and at kindergarten entry.[14] The 9-month data collection also includes variables from infants' birth certificates. A sample of 10,700 children born in 2001 participated in the first wave of the ECLS-B.[15]

We begin by examining SSI receipt. Importantly, our measure of SSI receipt is from the 2-year wave and asks "Since the last interview, has anyone in the household received SSI/SSDI?" This variable proxies for child SSI receipt, but with measurement error, since it includes receipt from family members other than the focal infant, includes Social Security Disability Insurance (SSDI) as well as SSI, and is from an interview a full year after low birth weight SSI recipients must go through a CDR to reestablish eligibility after one year. However imperfect, it is the best measure of child SSI receipt available in survey data that have sufficient mass around the 1200-gram birth weight and also contain measures of gestation.

In our ECLS-B results, we examine several different child and family outcomes from the 9-month wave. First, we examine measures of health insurance coverage (any, private, public Medicaid or the Children's Health Insurance Program (CHIP)), and whether the infant was ever without insurance at the 9-month wave. We then examine child outcomes using the Bayley Short Form Research edition measures of children's cognitive development as well as the development

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[13] This leads to selection of healthier infants on average into the ECLS-B. In Appendix Table 8 we study infant death using 2001 BC-L data and do not find evidence that infant mortality changes at the 1200-gram SSI eligibility threshold, so it does not appear that this selection into the ECLS-B sample is related to SSI receipt.

[14] In the fall of 2006, NCES collected data on all children, 75% of whom had entered kindergarten or higher grades. In the fall of 2007, NCES collected data on the remaining 25% of the children who had not started kindergarten by the previous year, as well as any children repeating kindergarten in the 2007-2008 year.

[15] All ECLS-B reported sample sizes have been rounded to the nearest 50 per NCES restrictions regarding disclosure of restricted use data. However, the analyses and statistics presented in the tables and text are generated using all observations in each subsample.

of their fine and gross motor skills. We include both the Bayley Mental and Motor scale, and use standardized t-scores (with a mean of 50 and a standard deviation of 10) that adjust for prematurity. Next we examine parental inputs using the Nursing Child Assessment Teaching Scale (NCATS) which assesses parent-child interactions. We include both the parent and child scores. The parent score measures the parent's sensitivity to the child's cues, responsiveness to the child's distress, and fostering of cognitive and socio-emotional growth. The child score measures clarity of the child's cues and the child's responsiveness to the parent. We then look at whether the infant received any of the following services: physical therapy, vision services, hearing services, social work services, psychological services, home visits, and parent support or training. Last, we examine parental outcomes including maternal and paternal labor supply (whether the parent works, works part time, works full time, and hours worked per week) and maternal mental health as measured by the Center for Epidemiological Studies Depression Scale (CESD).

Finally, we use later waves of the ECLS-B to determine whether any effects persist over time. The variables for SSI receipt, health insurance, and maternal labor supply are consistent across all ECLS-B waves: Wave 2 (2-year), Wave 3 (preschool), and Waves 4 and 5 (kindergarten 2006 and 2007). The Bayley Short Form is conducted in Waves 1 and 2. The NCATS is only asked in the 9-month wave, so in Wave 2 we examine parenting behaviors with the Two Bags Test, a semi-structured activity completed by the parent and child. The Two Bags Test measures similar behaviors as the NCATS (parent's sensitivity, parent's stimulation of child's cognitive development, etc.) but the two scales are not directly comparable.

Summary statistics for our ECLS-B sample, Panel A of Appendix Table 2, reveal just how disadvantaged our sample is; 31% of our sample report receiving disability benefits at some point between the 9 month and 2-year wave interviews. Our sample also has near universal health insurance coverage (98%), which is achieved primarily via public coverage (77%). Although the Medicaid that accompanies SSI receipt could be an important benefit of the program, as we discuss above, it is unlikely to play much of a role in our sample as a primary insurer.

B. The Healthcare Cost and Utilization Project State Inpatient Databases (HCUP-SID)

The HCUP-SID is a data set of inpatient discharge abstracts from participating states sponsored by the Agency for Healthcare Research and Quality. The data are drawn from 97% of all U.S. hospital discharges and contain one record per hospital admission ending in discharge or death. Each state-year HCUP-SID database contains a slightly different set of variables. We use the HCUP-SID databases from the University of Michigan Institute for Healthcare Policy and Innovation that report birth weight, year of birth, median household income at the zip code level and unique person identifiers. This yields data from Arkansas (2006-2013), Arizona (2006-2007), North Carolina (2006-2010), New Mexico (2012), and Vermont (2012).[16] Our sample includes all children with gestational age of 32 weeks or less, born in their state of residence, and for whom we observe their birth hospitalization.[17]

As we previously describe in the Background Section, SSI enrollment may affect an infant's source of health insurance (Duggan, Kearney and Rennane 2016). Although our low SES sample may be less affected, we use the HCUP-SID databases to investigate this possibility. First we use the HCUP-SID to look at changes in primary and secondary expected payer of the birth hospitalizations distinguishing between Medicaid, private health insurance, self-pay and other federal or local programs.

As discussed above, we expect the effects of the SSI program to be strongest for individuals with the fewest resources. However, our HCUP-SID database does not include individual level variables that could proxy for household resources like mother's education in the ECLS-B. Instead, we restrict our sample to infants who reside in low-income zip codes. The HCUP-SID reports quartile classifications of the estimated median household income for patients' residence zip code. Specifically, we restrict the sample to infants either homeless at birth or who reside at birth in zip codes in the lowest quartile of the national zip code median household income distribution. For example, in 2014 all infants who reside at birth in zip codes with median household incomes below $39,999 or below approximately 200% of the 2014

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[16] The SID data partners are the Arkansas Department of Public Health, the Arizona Department of Health Services, the New Mexico Department of Public Health, the North Carolina Department of Health and Human Services, and the Vermont Association of Hospitals and Health Systems.

[17] We have chosen to present results only for infants with person identifiers, to be able to link the records of infants who transfer from one hospital to another at birth. Results are similar if we include birth records that cannot be traced. Results available upon request.

federal poverty guideline for a family of three would be included.[18] Our final analysis sample includes 3,600 infants. Appendix Table 2, Panel B presents summary statistics for the HCUP-SID analysis sample.

C. Birth Cohort Linked Birth - Infant Death Data Files (BC-L)

We also use the National Center for Health Statistics (NCHS) Birth Cohort Linked Birth-Infant Death Data file (BC-L), containing information from birth certificates and death certificates for infants who died within one year including: birth weight, gestational age, age in days at death, mother's education at birth and other mother and child characteristics. We limit our sample to infants born in 2001, at 32 weeks gestation or less, and to a mother who has a high school degree or less to match the ECLS-B sample.

We use the BC-L data set to assess the validity of the regression discontinuity design by testing whether characteristics observed at birth jump discontinuously at the 1200-gram threshold for SSI program eligibility. These characteristics include the mother's level of education, mother's race, mother's age at birth, marital status, whether the mother drank or smoked during pregnancy or had a pregnancy risk factor, whether the delivery was by cesarean section or induced, the child's Apgar score and whether the child was male or a singleton birth. Appendix Table 2, Panel C presents summary statistics for 60,319 live births in this sample.

IV. Methods

We use a regression discontinuity approach to estimate the impact of SSI eligibility for low birth weight infants on disability benefit receipt and outcomes for infants by comparing those born just under the 1200-gram cutoff for SSI eligibility to those born just above the cutoff. We do not use the SSA's other birth weight for gestational age cutoffs for several reasons. First, in the ECLS-B, we do not have a sufficient number of infants to separately identify effects at each gestational age-specific birth weight threshold. In addition, we choose not to re-center the running variable within gestational age around each birth weight threshold to run pooled

[18] However, incomes can vary widely even within a zip code. Furthermore, family size and structure are important determinants of SSI eligibility, so families with different structures but the same income may vary dramatically in their eligibility.

regressions, since this could potentially produce biased estimates by picking up the effects of the medical intervention aimed at infants just below the medical 1500-gram cutoff rather than effects of SSI (e.g. Almond et al., 2010). Finally, exploring multiple thresholds in a regression discontinuity model sometimes obscures key differences in effects at different thresholds (Cattaneo et al., 2016). Therefore, we restrict our sample to infants born at 32 weeks gestation or less for whom only the 1200-gram birth weight eligibility threshold applies.[19]

Although infants with birth weight below 1200 grams are categorically eligible for SSI, not everyone enrolls in the program. Furthermore, individuals in our analysis sample above the 1200-gram cutoff may be eligible for SSI depending on other qualifying medical conditions. Therefore, conceptually we would like to implement a fuzzy regression discontinuity design, as the probability of SSI enrollment increases at the 1200-gram cutoff, but not necessarily from 0 to 1. However, as described in our Data Section, our measure of infant SSI enrollment is quite noisy. As a result, we have not scaled up our estimates of the effect of SSI eligibility on infant outcomes by the first stage, so our estimates should be interpreted as intention-to-treat effects (e.g. Ludwig and Miller, 2007).

We present results from both a parametric model and a local linear regression model. The parametric model uses a bandwidth choice of 200 grams and bootstrapped standard errors. Therefore, these results are estimated using the same sample for each outcome within each data set. We chose a 200-gram bandwidth to avoid any bias caused from having the bandwidth cross the 1500-gram threshold for medical intervention. The local linear regression model is weighted using a triangular kernel, and run within the data-driven optimal bandwidth chosen by the Calonico et al. (2016) procedure (CCFT procedure). Using the CCFT procedure, we present bias-corrected estimates with robust standard errors. Both of these specifications allow the regression slope to differ on either side of the 1200-gram cutoff.

A key assumption of the RD design is that the running variable (in our case birth weight) evolves smoothly across the threshold. By extension, we assume that potential outcomes also change smoothly at the cutoff. We believe the SSA birth weight eligibility rule provides a

[19] We omit infants born at 32 weeks gestation with birth weights between 1200 and 1250 grams. The SSI eligibility cutoff for infants born at 32 weeks is birth weight of 1250 grams or less, so these infants would be incorrectly classified as ineligible in our current set-up. In total, this eliminates very few observations (rounds to zero) from our ECLS-B sample. If we include these observations, our results are similar, likely because they represent a relatively small portion of the mass above the 1200-gram cutoff.

setting in which the RD design is likely valid. To the extent possible, we test for and fail to find strong empirical evidence of violations of this assumption.

First, we examine birth weight. If medical professionals report birth weight strategically to take advantage of the SSA cutoffs, this would call into question the validity of our design.[20] We investigate this possibility visually by examining histograms of birth weights in the BC-L data around the 1200-gram threshold, presented in Figure 2. Panel A is the birth weight distribution of infants born to mothers with a high school degree or less. Panel B is the histogram for our analysis sample (births with gestational age less than or equal to 32 weeks and maternal education of high school or less), and zooms in on the smaller range of birth weights from 500 grams to 2000 grams. These histograms show no obvious evidence of manipulation of birth weights just below the threshold.[21]

However, apparent in our histograms is the substantial heaping of births at round numbers of ounces, and, to a lesser degree at 100 gram intervals. Most of the mass in reported birth weights is at ounce heaps (63% in our ECLS-B analysis sample, and 66% in the BC-L analysis sample). Our identification strategy might be compromised if those infants at the heaps were systematically different than those not at the heaps (Barreca et al., 2011; Barreca et al., 2016). Barreca et al. (2016) hypothesize that observed non-random heaping of birth weights may be due in part to lack of precision in hospital scales. The digital scale was first patented in 1980. Barreca et al. (2016) show that the fraction of births at 100 gram or ounce heaps declined dramatically from1983 to 2002, presumably due in part to improved precision of measured birth weight as hospitals increasingly used digital scales to weigh newborns. Since 2001 is the earliest year used in our analysis, non-random heaping due to inferior scale technology is less concerning for our analysis. To further explore the possibility that our data exhibits non-random heaping, in Figure 3 we present scatter plot graphs showing infant and maternal characteristics at different heaped and non-heaped birth weights for the ECLS-B, and the results suggest that there are no

[20] Individuals also have the incentive to manipulate gestational age and/or report a later gestational age since the SSA thresholds for infants born at later gestational ages are even higher than 1200 grams. Even so, there should be no programmatic reason for the gestational ages of infants to change discontinuously at 1200 grams. Nonetheless we test for indications of gestational age manipulation in Appendix Table 3 and find none.

[21] The ECLS-B and HCUP-SID show similar patterns – no evidence of strategic manipulation of birthweights, and similar patterns of heaping. We are unable to present the detailed ECLS-B histogram due to NCES confidentiality restrictions. HCUP-SID histogram available from authors upon request.

systematic differences.[22] However, as a robustness check, we run the regressions only on the heaped data, and results are similar to those from our main sample. Taken together, these exercises suggest that while our data certainly exhibit heaping, we do not see evidence indicating that the heaping is non-random.

We use the Cattaneo, Janson and Ma (2017) approach to manipulation testing and test for a discontinuity in the density of birth weights at the 1200-gram threshold. With both the ECLS-B and the BC-L data (p-values of 0.1650 and 0.8312 respectively) we fail to reject the null hypothesis of no manipulation which provides empirical evidence in favor of the validity of the regression discontinuity design.

We also test for discontinuous changes in infants' baseline characteristics around the cutoff to further probe the assumption that birth weight is locally as good as randomly assigned. Table 1 uses the ECLS-B to examine whether predetermined characteristics exhibit a discontinuity at the 1200-gram cutoff.[23]Between the data sets explored, we are able to examine race, child's gender, child's plurality, Apgar score, mother's marital status, and mother's pregnancy risk factors. For most variables, we find no evidence of such a discontinuity, suggesting that infants born just below the cutoff serve as a good comparison group for infants born just above the cutoff.[24,25]

Importantly, the 1200-gram SSA low birth weight cutoff is not the same as the 1500-gram very low birth weight cutoff, which can involve significant medical interventions (Almond et al., 2010). All of the infants on either side of our 1200-gram discontinuity within the 150-gram and 200-gram chosen bandwidths are eligible for those medical interventions. As far as we are aware only one other program, Children's Medicaid in New York State, uses the 1200-gram

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[22] A corresponding scatter plot using the BC-L is shown in Appendix Figure 1. Additionally, in Appendix Table 4 we show how summary statistics vary for each of the data sets we use when we look at heaped versus non-heaped data. Overall, the characteristics of the sample are remarkably similar across four groupings: full analysis sample; sub-sample where birth weight is not at ounce heaps; sub-sample where birth weight is not at 100-gram heaps; and sub-sample where birth weight is not at either of these heaps.
[23] Appendix Table 5 does the same for the HCUP-SID and the BC-L.
[24] As suggested by Lee and Lemieux (2010) we combine the eleven BC-L tests with a Seemingly Unrelated Regression testing the hypothesis that the discontinuity gap across all questions are jointly equal to zero. The chi-squared test statistic is 10.50 (p-value 0.4857) within a 200-gram bandwidth and 17.76 (p-value 0.0873) within a 150-gram bandwidth, indicating that the discontinuity gaps are not jointly statistically significant.
[25] Exceptions include mother's marital status in the ECLS-B (infants just under the cutoff are more likely to have unmarried mothers), child gender in the BC-L data (infants just under the cutoff are less likely to be male), and state of residence in the HCUP-SID data (infants just under the cutoff are more likely to be from AZ). As a robustness check, we run RD regressions with covariates.

threshold for eligibility. Until April 2012, among Medicaid enrollees infants with birth weight 1200 grams or less were enrolled in fee-for-service plans for the first 6 months of life while infants with higher birth weights were enrolled in a mandatory managed care program (Lee, 2016). For this reason we have excluded the New York database from our HCUP-SID analysis and have checked the robustness of our ECLS-B and BC-L results to the exclusion of New York.

V. Results

A. SSI Eligibility and SSI Enrollment, ECLS-B

We first establish that a discontinuity exists in receipt of disability benefits at the 1200-gram cutoff. Figure 4 Panel A illustrates this graphically, and Table 2 presents estimated RD coefficients and robust standard errors. The first row presents results from the linear polynomial with 200-gram bandwidth model and the second row presents estimates from the local linear regression model with optimal bandwidth choice.

Column 1 of Table 2 shows that infants born just under the 1200-gram cutoff are significantly more likely to be in families that reported SSI or SSDI receipt in the 2-year ECLS-B wave. Estimates from the linear polynomial model with a 200-gram bandwidth imply that low birth weight SSI eligibility increases the likelihood of family disability benefit receipt by 25 percentage points, significant at the 5-percent level. The point estimates are similar regardless of specification, ranging from 23 to 32 percentage points. These effects are large in magnitude, given that the baseline rate of disability receipt in our sample is 31%.[26] Furthermore, the first stage might be underestimated as the CDR and discontinuation of payments would have occurred for most infants before the 2-year wave interview.

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[26] We also estimated the effect of SSI eligibility on participation in other social safety net programs (TANF, Food Stamps, and WIC) and found no significant cross-program effects. Results are in the Appendix Table 6.

B. Health Insurance Coverage, ECLS-B and HCUP-SID

Columns 2-5 of Table 2 Panel A present results for any health insurance coverage, private health insurance coverage, public health insurance coverage (Medicaid plus CHIP), and the probability that the child was ever without insurance coverage. We find no effects of SSI eligibility on overall health insurance coverage or coverage by type. The lack of effects on health insurance coverage may be specific to our sample – with 98% of our sample reporting health insurance coverage, there may be no room for any measurable effect. These results are also consistent with Duggan and Kearney (2007), who find no effects of SSI for children on health insurance coverage.

In Panel B of Table 2 we examine the relationship between the primary and secondary expected payer of the birth around the SSI eligibility threshold using the HCUP-SID data. Although the ECLS-B results show that SSI eligibility has no discernible effect on Medicaid coverage overall, the tight link between Medicaid eligibility and SSI might lead to an increase in Medicaid as the secondary payer for SSI eligible infants who have another source of primary health insurance. This analysis is limited for two reasons. First, not all hospitals in the HCUP-SID report secondary payer information.[27] Second, some hospitals record the expected payer at hospital admission (before birth weight and gestation are known) and others report the payer from the hospital claims, so measurement error may be an issue. Nevertheless, we find suggestive evidence that the SSI program increases the likelihood that Medicaid is the secondary payer of the birth (Column 5). Results from the local linear model suggests an increase in the likelihood of having Medicaid as a secondary payer by 37 percentage points (on a baseline likelihood of 61%) significant at the 10 percent level. However, as in the ECLS-B, we do not find a statistically significant nor large point estimate of SSI for Medicaid as the primary payer (Column 1).

C. Early Child Development and Parenting Behaviors, ECLS-B

Table 3 examines the effects of SSI eligibility on the Bayley Mental and Motor tests, as well as on the NCATS parent and child scores, all at the 9-month wave. We find positive and

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[27] In Appendix Table 7 we show that there is no evidence of missing expected payer information systematically differing across the threshold.

significant effects of SSI eligibility on T-Scores for the Bayley Motor test. These results suggest an increase of between 4 and 8 points – roughly half of a standard deviation increase. We also find significant positive effect on parent-child relationships as measured by the NCATS parent test, with coefficients across the specifications suggesting an increase of 3-4 points, or about a standard deviation increase. We also test for effects on cognitive development, measured using the Bayley Mental test, but these results were inconclusive.

SSI eligibility for low birth weight infants appears to have positive effects on both child motor skill development and parenting behaviors at 9 months. One possible explanation for these findings, (as discussed in the Background Section), is that SSI alters the time allocation of parents. We examine the intention-to-treat effects of SSI receipt on parental labor supply in Table 4. In Panel A, we examine maternal labor supply. Although we find no significant effects of SSI receipt on the extensive margin of maternal labor supply (Column 1), we do find that mothers of infants just under the 1200-gram cutoff are less likely to work full time (Column 2) and significantly more likely to work part time (Column 3). Results from the linear polynomial model with 200-gram bandwidth suggest a decrease in full time work of 21 percentage points (on a baseline likelihood of 23%), and an increase in part time work of 19 percentage points (on a baseline probability of 19%). Last, we examine the number of hours worked (Column 4), and find a significant decrease of between 12 and 20 paid hours per week, depending on the specification.[28] These results suggest that SSI eligibility could affect family outcomes by freeing up some time for mothers of these particularly vulnerable infants. In 2001, 20 fewer hours worked at the federal minimum wage of $5.15 would have translated into approximately $446 in lost earnings. The average SSI benefit for child beneficiaries in that same year was $476 (SSA, 2002). These results accord with Desphande (2016a) who finds that parents increase their earnings to fully offset their child's loss of SSI. We offer symmetric evidence that parents reduce their work time when their child receives SSI.[29]

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[28] Actual hours worked are reported by respondents, and the variables for part-time and full-time work are created by NCES from the numerical hours variable.

[29] In Column 1 of Appendix Table 9, we examine the CESD as a measure of maternal mental health. We find no significant effects of SSI eligibility on measured maternal health, and the point estimates are small relative to the average CESD score of 5. In Column 2, we see if SSI eligibility affects whether the child received any services for their special needs. The coefficients of interest are imprecisely estimated, but suggestive of a 10-15 percentage point increase in the likelihood of receiving any services among infants with special needs.

In Table 4, Panel B, we examine paternal labor supply. Unlike the large changes shown by mothers, we are unable to draw conclusions regarding fathers' labor supply. That we find stronger effects for women and not men is not surprising since both single mothers, as well as partnered women who are more likely to be secondary earners, typically have higher labor supply elasticities than men (Guldi and Schmidt, forthcoming).

E. Heterogeneity of Effects

We next examine whether our results are heterogeneous by prior exposure to the welfare system. The ECLS-B asks whether the respondent was a child in a family that received Aid to Families with Dependent Children (AFDC) or TANF. In Table 5, we break results out by this indicator. In the interest of space, we show results only for the 200-gram bandwidth linear specification. For most of our variables of interest (SSI receipt, child development and parenting behaviors, and maternal labor supply), the point estimates are much larger for children of mothers who received AFDC/TANF as a child. One way to interpret these results is that mothers with previous exposure to the welfare system might benefit more from or have more knowledge about SSI, or feel less stigma about benefit receipt. Another possibility is that this measure picks up otherwise unobservable differences in disadvantage that cause the effects to be larger.

E. Do Effects Persist over Time?

As noted above, most low birth weight SSI recipients receive cash transfers for a relatively short period of time. As such, we might not expect the effects seen at 9-months in the ECLS-B to persist. We use later waves of the ECLS-B where possible to test this hypothesis and report the estimates in figures. All figures show results from the 200-gram bandwidth linear regressions. Panel B of Figure 4 shows the effect on family disability benefit receipt. Our first stage effect is largest in Wave 2 (2-years), which is the first time we can measure SSI receipt with our data.

Figure 5 shows the Bayley Mental (Panel A) and Motor (Panel B) tests as measures of child development, which NCES collected at the 9-month and 2-year waves. These graphs and the corresponding regressions show no discernable effects on either test in the second wave. As described above, the ECLS-B measures parenting behaviors differently in Wave 2, so instead of the NCATS, we look at the Two Bags Test measures of parental supportiveness. We find no significant effects of SSI eligibility on parenting behaviors at 2-years.

Figure 6 examines effects on maternal labor supply over time. We see no significant effects of whether the mother works in any wave of the sample (Panel A). The decrease in full time work is largely limited to the 9-month wave, with closer to a zero point estimate in subsequent waves (Panel B). However, our results suggest an increase in part-time work at 2-years and preschool relative to mothers of infants with weight just above the cutoff. These later effects are approximately half the magnitude of the original 9-month effects (Panel C). The effects on hours worked echo this pattern (Panel D). Overall, these results suggest that SSI transfers received by low birth weight infants, the majority who receive benefits for less than one year, result only in short-term effects for this population.

F. Robustness Checks

Our key results are robust to a wide range of specification checks. Table 6 contains estimates for alternative specifications using the ECLS-B: a linear polynomial model with 150-gram bandwidth, and for a quadratic polynomial model for both a 150-gram and a 200-gram bandwidth. Our results are also robust to including a wide range of control variables, including the child's gender and race, mother's marital status, pregnancy risk factors, whether the infant is a twin or a higher order multiple. Additionally, in the ECLS-B we control for whether a smoker lives in the home, whether a drug user lives in the home, and whether English is the primary language spoken at home. Next, in Table 7 we check the robustness of our baseline results (column 1) to alternative samples and show that they are also robust to limiting the sample to infants with birth weight at ounce heaps (column 2), as well as to omitting New York (column 3).[30] Table 7 also shows falsification tests at placebo thresholds and for higher-SES samples and we find no effects for most outcomes at placebo cutoffs (1100 grams or 1300 grams, columns 4 and 5) and no evidence of effects for more educated mothers (column 6).[31]

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[30] Appendix Tables 10 and 11 contain the corresponding robustness checks for the HCUP-SID and BC-L. The HCUP-SID results show that we find no evidence of effects for infants who live in wealthier zip codes.
[31] One exception is that mother's full time work appears to be significantly higher for those infants just under 1100 grams.

VI. Discussion and Conclusion

Low birth weight infants born to mothers with low educational attainment have a double hurdle to overcome in the production of human capital. In this paper we examine whether public transfers, in the form of SSI income payments and its related benefits, can help improve child health and development perhaps helping to close the gap between high- and low-SES children's outcomes due to differences in initial health and environmental disadvantage.

Using a regression discontinuity approach, we find that SSI eligibility for low birth weight infants increases receipt of family disability benefits, but has no effect on overall health insurance coverage (perhaps unsurprising given the near universal coverage in our sample). We provide suggestive evidence that SSI eligibility increases the use of Medicaid as a secondary payer, but does not reduce infant mortality. In addition, SSI eligibility significantly improves infant development of early motor skills and parenting behaviors, and reduces maternal labor supply on the intensive margin.

Many of our key results are found using the ECLS-B. As such, the usual caveats of studies on a single cohort, in this case individuals born in 2001, apply. We also caution that while these results are credible for the target group, very low birth weight infants in families with few resources, we would not necessarily expect to find similar effects for individuals of higher birth weight and in our robustness checks show generally smaller effects for individuals born into families with greater resources.

Our results are important for several reasons. First, we provide credible estimates of a positive effect of SSI on child health outcomes as measured by the Bayley Motor test. Causal estimates are an important contribution since the government spends a large number of public dollars on SSI each year yet the impacts of this expenditure are not well understood. Second, we provide further evidence that post-birth investment made early in childhood can have meaningful effects on child health, and that the effects appear to be concentrated among the segment of the population with the fewest resources. Last, our results indicate that low birth weight SSI does not appear to lead to permanent reduction in maternal labor force participation. Rather, the SSI payments (relatively short-term for many of the infants) support children (and their families) during early childhood, with no persistent labor supply effects in later waves.

The effects we estimate are contemporaneous with benefit receipt and do not persist, at least over the time window as measured by the ECLS-B. This fade out is not completely surprising given the size and the duration of the benefits. A family with a recipient that received the average SSI child benefit of $476 in 2001 for one year would have received approximately $5700 in additional income. This is a relatively small public investment over a short period. Any long run effects are likely to be difficult to measure. However, from a social welfare perspective, there may be value in increasing the choice set of parents, who may reduce labor supply to care for or spend time with a vulnerable infant, even if the long term effects of these choices are not yet known. Given that the ECLS-B does not permit us to look beyond a certain window, future work could use administrative data to examine longer-term academic and employment effects of low birth weight SSI receipt.

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Figure 1: Histogram of Birth Weight, ECLS-B

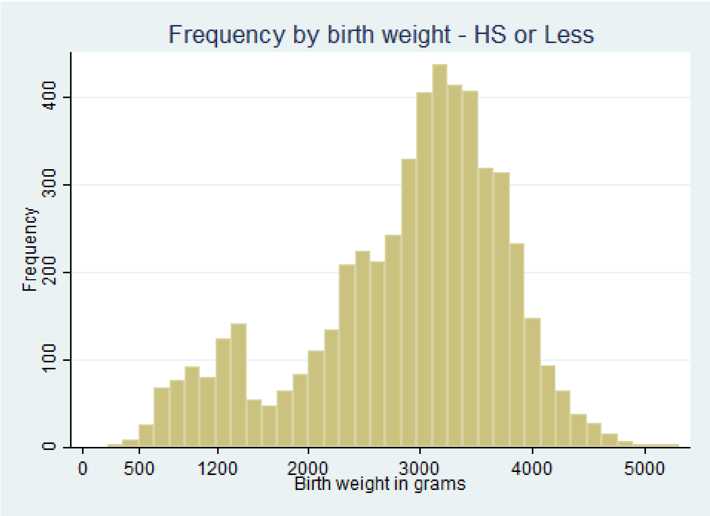
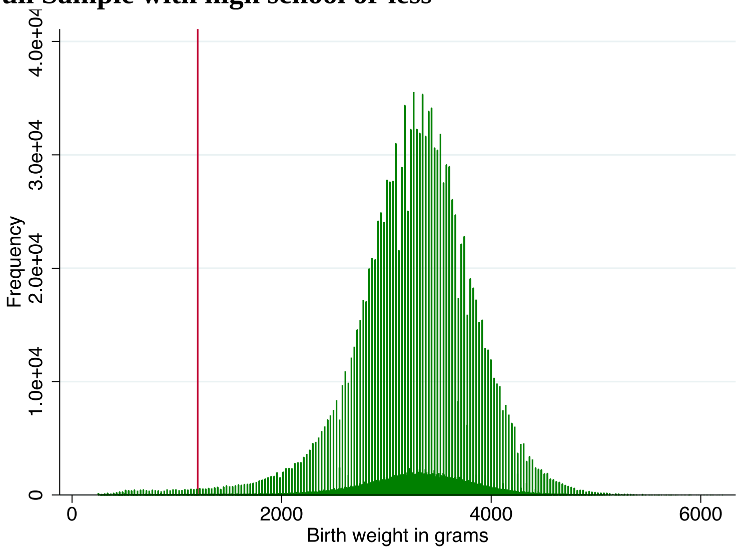
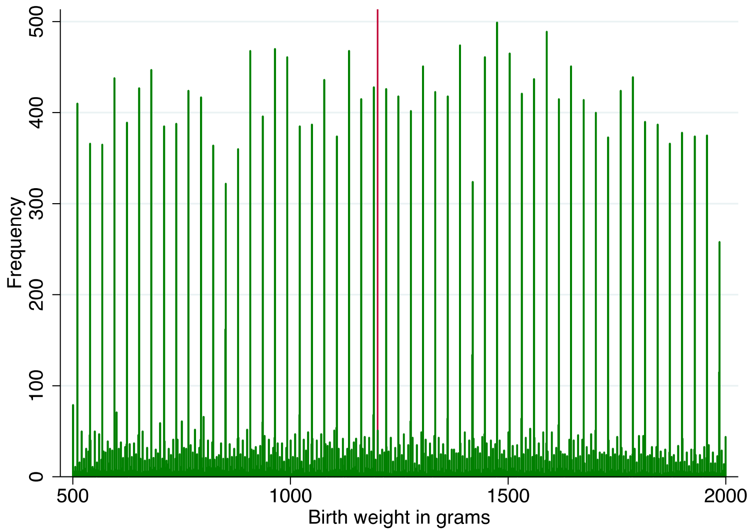


Figure 2: Histogram of Birth Weight, BC-L

Panel A:
Full Sample with high school or less



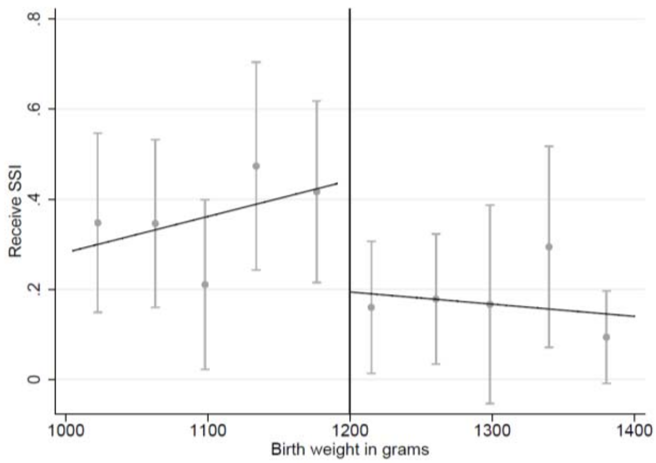
Panel B:
Sample with high school or less, between 500 & 2000 grams



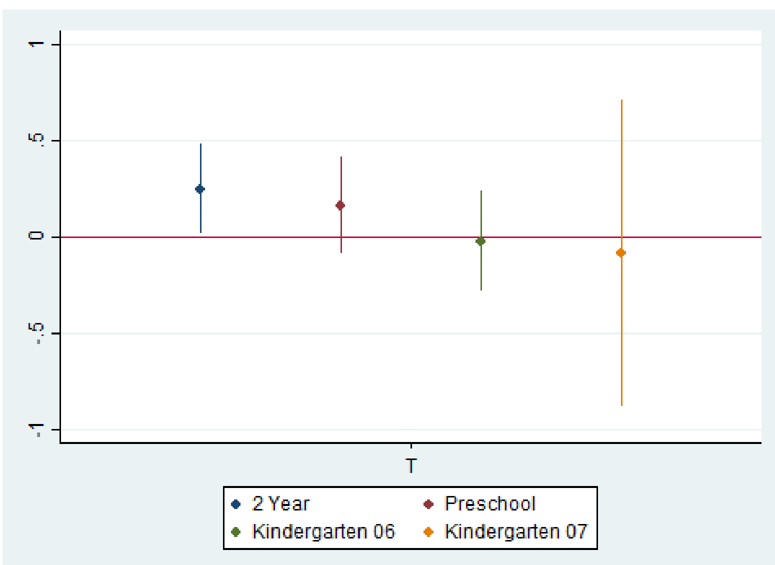
Notes: Frequency of observations by birth weight, Birth Cohort Linked Birth-Infant Death Data file (BC-L)Panel A includes all births to mothers with a high school degree or less, while Panel B includes births to mothers with a high school degree or less and gestation less than or equal to 32 weeks, where birth weight is between 500 and 2000 grams.

Figure 3: Selected Characteristics at Ounce and 100-gram Multiples, Analysis sample with high school or less, <= 32 weeks gestation (ECLS-B)

Figure 4: Effects of SSI Eligibility on SSI/SSDI receipt
Panel A: 2-year Wave

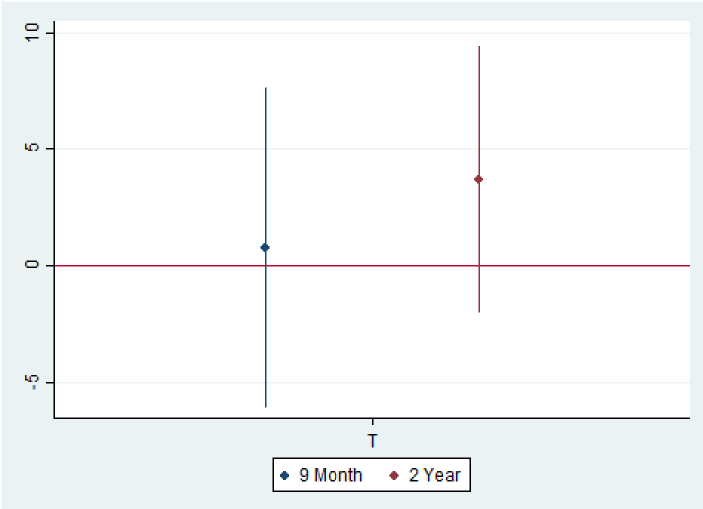


Panel B: Over Time

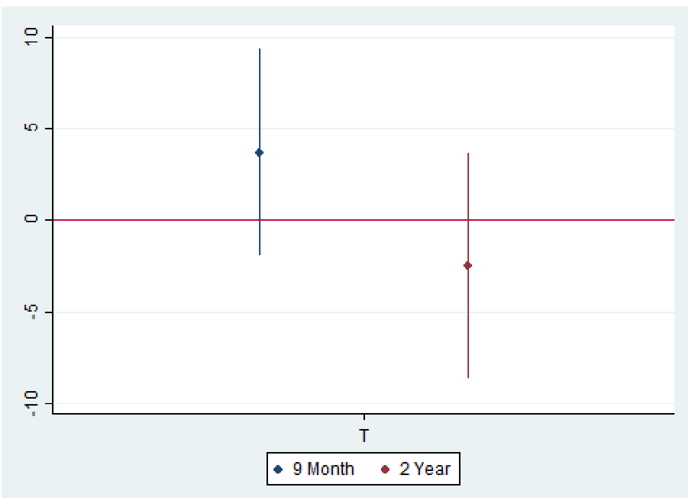


Notes: Data source is ECLS-B. Sample is limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. Panel A presents the probability of SSI/SSDI receipt (by a family member at the 2-year wave) by birthweight with evenly spaced bins, fit to a first order polynomial on either side of the threshold. In Panel B, each point represents a regression coefficient from a linear parametric specification with a 200g bandwidth where the outcome is SSI/SSDI receipt from a different wave. SSI/SSDI receipt is not asked in the 9-month wave.

Figure 5: Effects of SSI Eligibility on Child Development over time, ECLS-B
Panel A: Bayley Mental



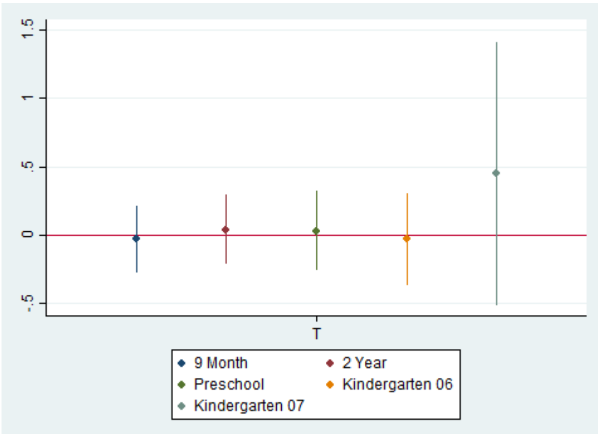
Panel B: Bayley Motor



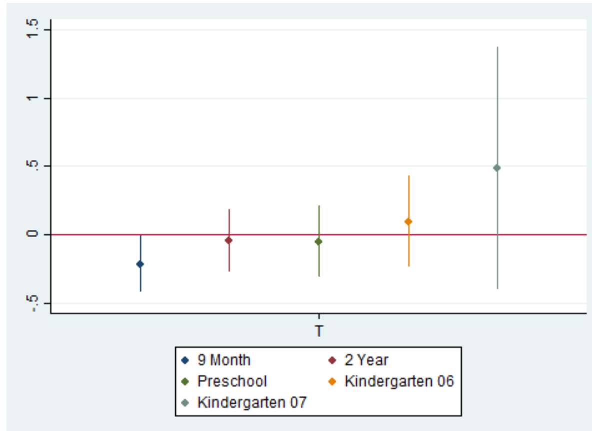
Notes: See notes to Figure 3. In Panel A, each point represents a regression coefficient from a linear parametric specification with a 200g bandwidth where the outcome is the Bayley mental score from a different wave. In Panel B, each point represents a regression coefficient from a linear parametric specification with a 200g bandwidth where the outcome is the Bayley motor score from a different wave. The Bayley measures are not available past the 2-year wave.

Figure 6: Effects of SSI Eligibility on maternal labor supply over time, ECLS-B

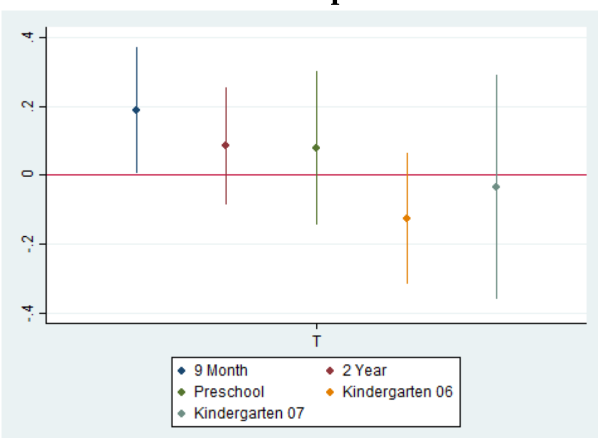
Panel A: Mother works



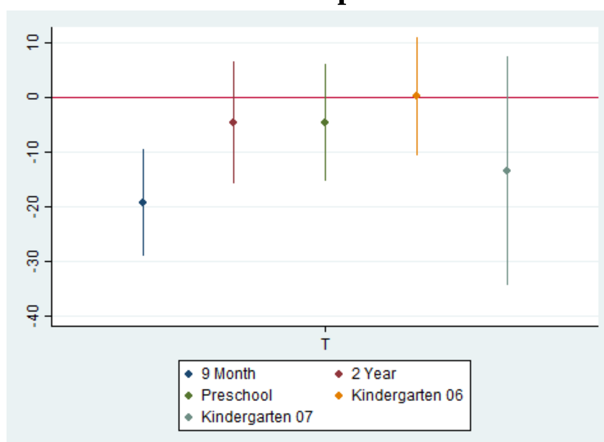
Panel B: Mother works full time



Panel C: Mother works part time



Panel D: Hours worked per week



Notes: See notes to Figure 3. For each panel, the point represents a regression coefficient from a linear parametric specification with a 200g bandwidth where the outcome is a maternal labor outcome from a different wave. Sample in Panels A-C is as defined in Figure 3. Sample in Panel D is restricted to those who worked a positive number of hours.

Table 1: Pretreatment Characteristics at the 1200-gram Cutoff, ECLS-B

	(1)	(2)	(3)	(4)
	Male	Nonwhite	Mom Unmarried	Apgar score
Flexible Linear Parametric Model - within 200g window				
	-0.036	0.063	0.237*	0.027
	(0.131)	(0.122)	(0.124)	(0.248)
Observations	250	250	250	200
Nonparametric - local linear within CCFT window				
	-0.021	0.145	0.249*	-0.069
	(0.150)	(0.149)	(0.147)	(0.299)
Observations	650	650	650	550
Eff obs left	200	150	150	150
Eff obs right	150	150	150	150
BW Local Poly	278.9	224.7	263.1	343.7

Notes: Data from the ECLS-B. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.

Table 2: First Stage and Insurance Coverage

Panel A: ECLS-B

	(1)	(2)	(3)	(4)	(5)
	SSI/SSDI	Health Insurance			
	Received SSI/SSDI since last interview	Any health insurance coverage	Private health insurance	Public health insurance	No coverage at any time
Flexible Linear Parametric Model - within 200g window					
	0.248**	0.005	0.012	-0.044	-0.096
	(0.118)	(0.048)	(0.112)	(0.113)	(0.060)
Observations	250	250	250	250	250
Nonparametric - local linear within CCT window					
	0.319**	-0.023	-0.118	-0.038	-0.096
	(0.160)	(0.085)	(0.150)	(0.115)	(0.061)
Observations	600	650	650	650	650
Eff obs left	100	100	100	200	150
Eff obs right	100	100	100	200	150
BW Local Poly	192.5	178.2	182.6	361.7	233.9

Panel B: Primary and Secondary Expected Payer of Birth, HCUP-SID

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Payer 1: Medicaid	Payer 1: Private insurance	Payer 1: Self-pay	Payer 1: Other	Payer 2: Medicaid	Payer 2: Private insurance	Payer 2: Self-pay	Payer 2: Other
Flexible Linear Parametric Model - within 200g window								
	0.0261	-0.0143	-0.0093	-0.0026	0.2283	0.0213	-0.1902	-0.0593
	(0.0688)	(0.0613)	(0.0301)	(0.0232)	(0.1874)	(0.1106)	(0.1560)	(0.0886)
Observations	683	683	683	683	105	105	105	105
Nonparametric - local linear within CCFT window								
	0.0952	-0.0476	-0.0073	-0.0112	0.3676*	-0.0208	-0.1487	-0.0702
	(0.0910)	(0.0701)	(0.0351)	(0.0314)	(0.2053)	(0.1389)	(0.1474)	(0.0904)
Observations	2584	2584	2584	2584	368	368	368	368
Eff obs left	309	454	417	363	54	55	87	76
Eff obs right	323	422	394	371	59	61	103	92
BW Local Poly	185	250	237	216	216	234	376	331

Notes: Data source is ECLS-B 9-month wave, except SSI receipt which is measured at 2-years. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.
All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric

regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Notes: All variables from the HCUP-SID AR 2006-2013, AZ 2006-2007, NC 2006-2010, NM 2012, VT 2012 databases. Sample limited to infants with a person identifier, living in the bottom quartile of the zip code income distribution and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. Not all HCUP-SID hospitals report primary or secondary payer. See Appendix Table 7 testing whether the likelihood an infant's primary or secondary payer information is missing varies around the 1200-gram threshold. *** p<0.01, ** p<0.05, * p<0.1.

Table 3: Child Development, Parenting Behaviors at 9-month wave, ECLS-B

	(1)	(2)	(3)	(4)
	Bayley Mental T-Score	Bayley Motor T-Score	Nursing Child Assessment Teaching Scale – Parent Score	Nursing Child Assessment Teaching Scale – Child Score
Flexible Linear Parametric Model - within 200g window				
	0.768	3.688	3.313**	0.762
	(3.595)	(2.835)	(1.547)	(0.817)
Observations	250	250	200	200
Nonparametric - local linear within CCT window				
	2.042	6.998**	3.294	0.863
	(4.362)	(3.247)	(2.282)	(0.992)
Observations	650	600	500	500
Eff obs left	100	100	100	100
Eff obs right	100	100	100	100
BW Local Poly	199.2	167.9	180.1	222.3

Notes: Data source is ECLS-B 9-month wave. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.
All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Maternal and Paternal Labor Supply, 9-month wave, ECLS-B

	(1) Mother Employed	(2) Mother Works Full Time	(3) Mother Works Part Time	(4) Mother's Hours paid work/ week
Flexible Linear Parametric Model - within 200g window				
	-0.028	-0.214**	0.187**	-19.925***
	(0.125)	(0.104)	(0.090)	(5.365)
Observations	250	250	250	100
Nonparametric - local linear within CCT window				
	-0.039	-0.234*	0.145	-18.310***
	(0.162)	(0.132)	(0.089)	(6.113)
Observations	650	650	650	200
Eff obs left	150	100	200	50
Eff obs right	150	100	200	50
BW Local Poly	215	199.7	346.2	191.3

	(1) Father Employed	(2) Father Works Full Time	(3) Father Works Part Time	(4) Father's Hours paid work/ week
Flexible Linear Parametric Model - within 200g window				
	-0.169	-0.233	0.064	-2.940
	(0.122)	(0.142)	(0.100)	(5.642)
Observations	150	150	150	100
Nonparametric - local linear within CCT window				
	-0.161	-0.348**	0.223	-3.556
	(0.144)	(0.168)	(0.140)	(6.411)
Observations	400	400	400	300
Eff obs left	100	50	50	100
Eff obs right	50	50	50	100
BW Local Poly	203.1	192.4	160.7	288.4

Notes: Data source is ECLS-B 9-month wave. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.
All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Heterogeneity of Effects by Maternal Childhood AFDC Receipt

	(1)	(2)
	Did not receive AFDC	Received AFDC
SSI receipt	0.210	0.474*
	(0.143)	(0.252)
Bayley Mental	0.659	1.588
	(4.544)	(5.782)
Bayley Motor	3.992	6.321
	(3.438)	(6.022)
NCATS parent	2.263	6.062*
	(1.835)	(3.169)
NCATS child	0.571	0.520
	(1.020)	(1.668)
Mother works	-0.077	0.085
	(0.146)	(0.268)
Mother full time	-0.205*	-0.193
	(0.118)	(0.240)
Mother part time	0.127	0.278*
	(0.103)	(0.163)
Observations	200	50

Notes: Data source is ECLS-B 9-month wave. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.

All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Robustness to Alternate Specifications, ECLS-B

	(1) 200g linear	(2) 200g quadratic	(3) 150g linear	(4) 150g quadratic	(5) CCFT	(6) 200g linear with covariates	(7) CCFT with covariates
SSI	0.248**	0.322*	0.296**	0.230	0.318**	0.256**	0.280*
	(0.117)	(0.172)	(0.137)	(0.193)	(0.160)	(0.127)	(0.157)
Bayley Motor	3.688	8.402**	5.589*	6.806*	6.998**	3.092	4.724
	(2.834)	(3.852)	(3.126)	(3.834)	(3.247)	(3.142)	(3.125)
NCATS Parent	3.313**	3.404	3.270*	3.942	3.294	3.003*	3.763*
	(1.527)	(2.458)	(1.819)	(2.957)	(2.282)	(1.751)	(2.030)
Mom works	-0.028	-0.050	-0.150	0.220	-0.039	-0.111	-0.105
	(0.122)	(0.184)	(0.150)	(0.208)	(0.162)	(0.145)	(0.164)
Mom works FT	-0.214**	-0.199	-0.276**	-0.069	-0.234*	-0.283**	-0.254*
	(0.104)	(0.145)	(0.121)	(0.166)	(0.132)	(0.128)	(0.146)
Mom works PT	0.187**	0.149	0.126	0.289*	0.145	0.172*	0.183
	(0.088)	(0.136)	(0.106)	(0.155)	(0.089)	(0.096)	(0.118)
Mother's hours paid work	-19.925***	-12.199*	-16.828***	-16.684**	-18.310***	-16.087***	-19.303**
	(5.365)	(7.351)	(5.645)	(8.429)	(6.113)	(5.470)	(7.627)

Notes: Data source is ECLS-B 9-month wave. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.
All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Robustness to Alternative Samples and Falsification Tests, ECLS-B

	(1) Baseline	(2) Only Ounce Heaps	(3) Without NY	(4) 1100g	(5) 1300g	(6) Mothers with College
SSI - 200g	0.248**	0.301**	0.231*	-0.141	-0.124	0.023
	(0.117)	(0.137)	(0.120)	(0.127)	(0.109)	(0.087)
SSI - CCFT	0.318**	0.425**	0.300**	0.059	-0.247*	-0.155
	(0.160)	(0.178)	(0.142)	(0.173)	(0.141)	(0.115)
Bayley Motor - 200g	3.688	5.476	2.697	1.258	-3.943	-1.339
	(2.834)	(3.745)	(3.113)	(2.842)	(3.067)	(3.317)
Bayley Motor - CCFT	7.003**	8.014**	6.332*	0.931	-4.973	0.231
	(3.245)	(3.966)	(3.479)	(4.066)	(3.187)	(4.578)
NCATS parent - 200g	3.313**	2.921	3.233**	-1.245	-1.652	-2.063
	(1.527)	(1.934)	(1.591)	(1.438)	(1.336)	(1.534)
NCATS parent - CCFT	3.294	2.343	2.650	-1.477	-2.494	-1.711
	(2.282)	(2.582)	(2.324)	(1.751)	(1.637)	(2.382)
Mom works - 200g	-0.028	-0.077	-0.007	0.257**	0.100	-0.131
	(0.122)	(0.153)	(0.132)	(0.120)	(0.128)	(0.158)
Mom works - CCFT	-0.039	-0.076	-0.024	0.336**	0.039	-0.210
	(0.162)	(0.153)	(0.170)	(0.148)	(0.143)	(0.227)
Mom works FT - 200g	-0.214**	-0.235*	-0.219**	0.291***	0.115	-0.052
	(0.104)	(0.125)	(0.105)	(0.110)	(0.117)	(0.157)
Mom works FT - CCFT	-0.234*	-0.193	-0.241*	0.306**	0.091	-0.040
	(0.132)	(0.154)	(0.140)	(0.152)	(0.139)	(0.218)

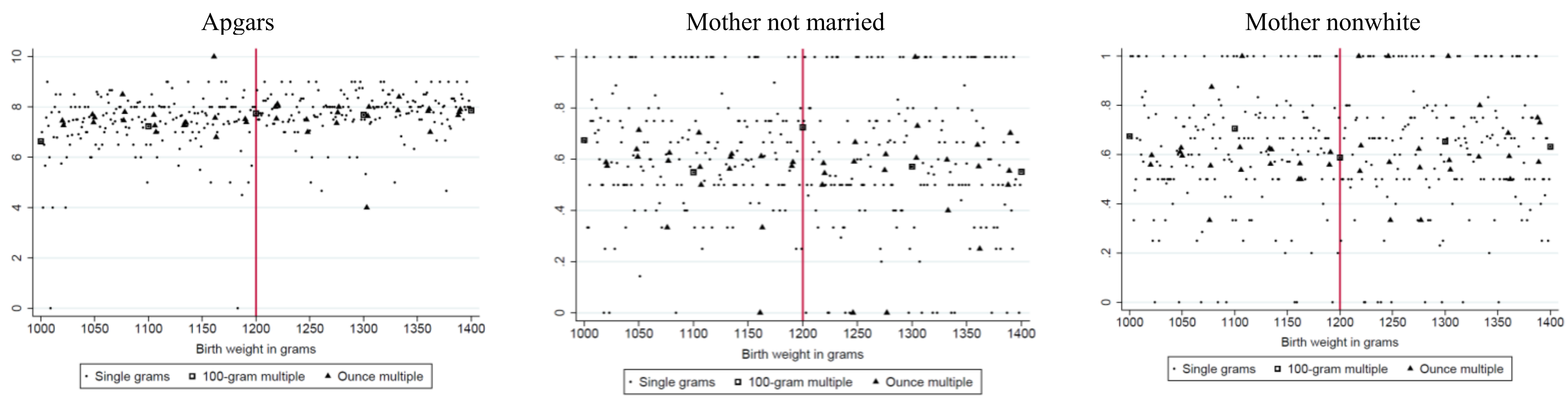
Mom works PT - 200g	0.187**	0.159	0.212**	-0.034	-0.014	-0.079
	(0.088)	(0.121)	(0.097)	(0.086)	(0.069)	(0.118)
Mom works PT - CCFT	0.145	0.162	0.203*	0.023	-0.058	-0.219
	(0.089)	(0.146)	(0.112)	(0.101)	(0.077)	(0.150)
Mother's hours paid work – 200g	-19.411***	-19.815***	-20.381***	11.245**	6.100	2.279
	(5.098)	(6.403)	(5.194)	(5.681)	(4.205)	(5.386)
Mother's hours paid work – CCFT	-19.292***	-19.303**	-18.904***	7.722	7.751*	2.580
	(5.453)	(7.627)	(5.768)	(7.881)	(4.598)	(6.264)

Notes: Data source is ECLS-B 9-month wave. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.

All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Online Appendix: Supplemental Security Income and Child Outcomes: Evidence from Birth Weight Eligibility Cutoffs

Appendix Figure 1: Selected Characteristics at Ounce and 100-gram Multiples, Analysis sample with high school or less, <= 32 weeks gestation (BC-L)



Appendix Table 1: SSA Birth weight Cutoffs by Gestational Age

Gestational Age (in weeks)	Birth weight (in grams)	Birth weight (in lbs. and oz.)
≥ 37-40	≤ 2000	4 lbs 6.50 oz
≥ 36	≤ 1875	4 lbs 2.14 oz
≥ 35	≤ 1700	3 lbs 11.97 oz
≥ 34	≤ 1500	3 lbs 4.91 oz
≥ 33	≤ 1325	2 lbs 14.74 oz
≥ 32	≤ 1250	2 lbs 12.09 oz
Any	< 1200	2 lbs 10.33 oz

Source: SSA Program Operations Manual System (POMS)

Appendix Table 2: Summary Statistics

Panel A: ECLS-B[a]	(1)	(2)	(3)	(4)	(5)
	Mean	SD	Min	Max	Obs.
SSI/SSDI receipt	0.311	--	0	1	600
Any health insurance coverage	0.980	--	0	1	650
Private health insurance coverage	0.281	--	0	1	650
Public health insurance coverage	0.772	--	0	1	650
Child is male	0.503	--	0	1	650
Child is nonwhite	0.651	--	0	1	650
Mother not married	0.608	--	0	1	650
Apgar score	7.667	1.517	1	10	550
Bayley mental t-score	43.167	14.262	-16.7	92.6	650
Bayley motor t-score	45.017	11.654	-9.3	80	650
Nursing child assessment teaching scale – parent	33.010	4.503	17	48	500
Nursing child assessment teaching scale – child	14.729	2.781	7	23	500
Mother works	0.356	--	0	1	650
Mother works full time	0.234	--	0	1	650
Mother works part time	0.121	--	0	1	650
Hours worked	35.549	11.809	5	96	250
CESD scale	6.411	6.134	0	36	600
Any services received	0.249	--	0	1	650
Panel B: HCUP-SID[b]	Mean	SD	Min	Max	Obs.
Child is male	0.508	--	0	1	3600
Child is singleton	0.794	--	0	1	3600
Cesarean delivery	0.599	--	0	1	3600
Child is nonwhite	0.552	--	0	1	3287
Arkansas	0.606	--	0	1	3600
Arizona	0.278	--	0	1	3600
North Carolina	0.085	--	0	1	3600
New Mexico	0.031	--	0	1	3600
Vermont	0.000	--	0	1	3600
Year	2008.304	2.085	2006	2013	3600
Discharge reason: routine	0.439	--	0	1	3599
Discharge reason: transfer to short-term hospital	0.267	--	0	1	3599
Discharge reason: transfer to other	0.033	--	0	1	3599
Discharge reason: transfer to home health care	0.154	--	0	1	3599
Discharge reason: death in hospital	0.107	--	0	1	3599
Payer 1: Medicaid	0.748	--	0	1	2584

Payer 1: private insurance	0.181	--	0	1	2584
Payer 1: self-pay	0.047	--	0	1	2584
Payer 1: other	0.024	--	0	1	2584
Payer 2: Medicaid	0.609	--	0	1	368
Payer 2: private insurance	0.141	--	0	1	368
Payer 2: self-pay	0.223	--	0	1	368
Payer 2: other	0.027	--	0	1	368
Length of stay at birth	31.040	32.411	0	354	3600
Birth costs ($2009)	37703.751	51439.982	0	917596	3593
Birth charges ($2009)	109900.010	143672.036	172	1628722	3593

Panel C: BC-L[c]	Mean	SD	Min	Max	Obs.
Infant mortality	0.134	--	0	1	60319
Post neonatal mortality	0.020	--	0	1	60319
Neonatal mortality	0.112	--	0	1	60319
Birth weight in grams	1735.522	940.047	250	5387	60319
Gestational age	28.823	3.192	20	32	60319
Child is male	0.535	--	0	1	60319
Child is singleton	0.838	--	0	1	60319
Apgars score	7.451	2.379	0	10	47392
Mom is nonwhite	0.614	--	0	1	60319
Mom's age	24.837	6.551	14	45	60319
Mom is unmarried	0.609	--	0	1	60319
Mom drank during pregnancy	0.018	--	0	1	53911
Mom smoked during pregnancy	0.206	--	0	1	54053
Any pregnancy risk	0.487	--	0	1	59678
Induction of labor	0.084	--	0	1	60024
Cesarean delivery	0.410	--	0	1	60155

Notes:

[a]All variables from the ECLS-B 9-month wave, with the exception of SSI/SSDI receipt. SSI/SSDI receipt asked in the 2-year wave ("Has anyone in the household received SSI/SSDI since the 9-month wave?") Observations rounded to the nearest 50 as per NCES confidentiality restrictions. Sample limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 grams and 1250 grams were dropped from the sample. Total number of observations is 650.

[b]All variables from the HCUP-SID AR 2006-2013, AZ 2006-2007, NC 2006-2010, NM 2012, VT 2012 databases. Sample limited to infants with a person identifier, living in the bottom quartile of the zip code income distribution and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. Total number of observations is 3600.

[c] All variables from NCHS 2001 Birth Cohort Linked Birth - Infant Death Data Files. Sample limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. Total number of observations is 60319.

Appendix Table 3: Manipulation of Gestational Age Around 1200-gram Threshold, BC-L

	(1)	(2)	(3)	(4)
	Gestational age < 32 weeks	Cesarean delivery	Induction of labor	Mother's education <= high school
Flexible Linear Parametric Model - within 200g window				
	0.0002	0.0080	-0.0095	0.0083
	(0.0159)	(0.0175)	(0.0092)	(0.0148)
Observations	12657	12629	12580	17856
Nonparametric - local linear within CCFT window				
	-0.0002	0.0046	-0.0173	0.0084
	(0.0204)	(0.0207)	(0.0109)	(0.0157)
Observations	2092906	2083944	2085278	101768
Eff obs left	5929	8060	6909	14419
Eff obs right	5682	7273	6401	14055
BW Local Poly	188	241	210	311

Notes: All variables from NCHS 2001 Birth Cohort Linked Birth - Infant Death Data Files Sample limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200g and 1250g were dropped from the sample. Regressions check for evidence of manipulation of gestational age around the 1200-gram threshold. Column 4 is limited to infants with gestational age <=32 weeks but dropping infants at 32 weeks gestation with birth weights between 1200 and 1250 grams. Column 4 checks for evidence that our sample restriction to infants whose mother has a high school degree or less does not differ substantially around the threshold. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 4: Means of Key Variables by Heping Type

Panel A: ECLS-B [a]	(1)		(2)		(3)		(4)	
	Analysis sample Mean	SE	No oz heaps Mean	SE	No 100g heaps Mean	SE	No oz or 100g heaps Mean	SE
SSI/SSDI receipt	0.311	0.463	0.297	0.458	0.315	0.465	0.307	0.463
Any health insurance coverage	0.980	0.139	0.976	0.155	0.983	0.129	0.978	0.146
Private health insurance coverage	0.281	0.450	0.289	0.454	0.277	0.448	0.277	0.448
Public health insurance coverage	0.772	0.420	0.791	0.408	0.774	0.418	0.799	0.402
Child is male	0.503	0.500	0.463	0.500	0.506	0.500	0.465	0.500
Child is nonwhite	0.651	0.477	0.703	0.458	0.652	0.477	0.713	0.453
Mother not married	0.608	0.489	0.614	0.488	0.610	0.488	0.622	0.486
Apgar score	7.667	1.517	7.718	1.495	7.650	1.524	7.668	1.516
Bayley mental t-score	43.167	14.262	43.000	13.894	43.213	14.328	43.143	14.123
Bayley motor t-score	45.017	11.654	45.008	11.300	44.994	11.735	44.987	11.468
Nursing child assessment teaching scale - parent	33.010	4.503	33.047	4.430	33.040	4.507	33.156	4.424
Nursing child assessment teaching scale - child	14.729	2.781	14.766	2.910	14.727	2.763	14.729	2.892
Mother works	0.356	0.479	0.292	0.456	0.359	0.480	0.294	0.457
Mother works full time	0.234	0.424	0.218	0.414	0.236	0.425	0.219	0.415
Mother works part time	0.121	0.326	0.074	0.262	0.123	0.328	0.075	0.263
Hours worked	35.549	11.809	35.397	9.475	35.582	11.803	35.500	9.250
CESD scale	6.411	6.134	6.407	6.291	6.475	6.118	6.538	6.249
Any service received	0.249	0.433	0.256	0.437	0.253	0.435	0.265	0.442
Observations	650		250		650		250	

Panel B: HCUP-SID [b]								
	Analysis sample Mean	SE	No oz heaps Mean	SE	No 100g heaps Mean	SE	No oz or 100g heaps Mean	SE
Child is male	0.508	0.500	0.506	0.500	0.507	0.500	0.503	0.500
Child is singleton	0.794	0.404	0.772	0.420	0.794	0.404	0.771	0.420
Cesarean delivery	0.599	0.490	0.602	0.489	0.598	0.490	0.602	0.490
Child is nonwhite	0.552	0.497	0.585	0.493	0.549	0.498	0.580	0.494
Arkansas	0.606	0.489	0.484	0.500	0.615	0.487	0.492	0.500
Arizona	0.278	0.448	0.368	0.482	0.268	0.443	0.358	0.479
North Carolina	0.085	0.279	0.111	0.315	0.085	0.279	0.114	0.317
New Mexico	0.031	0.174	0.036	0.187	0.032	0.175	0.036	0.187
Vermont	0.000	0.017	0.000	0.020	0.000	0.017	0.000	0.021
Year	2008.304	2.085	2007.936	1.949	2008.309	2.080	2007.927	1.933
Discharge reason: routine	0.439	0.496	0.481	0.500	0.434	0.496	0.477	0.500
Discharge reason: transfer to short-term hospital	0.267	0.442	0.234	0.424	0.270	0.444	0.237	0.425
Discharge reason: transfer to other	0.033	0.178	0.033	0.178	0.034	0.180	0.034	0.181
Discharge reason: transfer to home health care	0.154	0.361	0.141	0.348	0.157	0.364	0.143	0.351
Discharge reason: death in hospital	0.107	0.309	0.112	0.315	0.105	0.307	0.109	0.311
Payer 1: Medicaid	0.748	0.434	0.756	0.429	0.748	0.435	0.755	0.430
Payer 1: private insurance	0.181	0.385	0.182	0.386	0.181	0.385	0.183	0.387
Payer 1: self-pay	0.047	0.211	0.035	0.184	0.046	0.210	0.034	0.180
Payer 1: no charge	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Payer 1: other	0.024	0.154	0.026	0.161	0.025	0.156	0.027	0.164
Payer 2: Medicare	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Payer 2: Medicaid	0.609	0.489	0.668	0.472	0.611	0.488	0.673	0.470
Payer 2: private insurance	0.141	0.349	0.136	0.344	0.143	0.350	0.136	0.344
Payer 2: self-pay	0.223	0.417	0.170	0.377	0.217	0.413	0.164	0.371
Payer 2: other	0.027	0.163	0.026	0.158	0.029	0.167	0.027	0.163
Length of stay at birth	31.040	32.411	31.731	30.417	30.901	32.260	31.580	30.153
Birth costs ($2009)	37703.751	51439.982	40134.563	53251.996	37024.700	49719.866	39307.087	51299.323
Birth charges ($2009)	109900.010	143672.036	111630.416	142796.624	108577.401	142137.935	109685.382	140488.466
Observations	3600		2405		3458		2281	

Panel C: BC-L [c]								
	Analysis sample Mean	SE	No oz heaps Mean	SE	No 100g heaps Mean	SE	No oz or 100g heaps Mean	SE
Gestational age	28.823	3.192	28.435	3.416	28.844	3.182	28.435	3.416
Child is male	0.535	0.499	0.528	0.499	0.534	0.499	0.528	0.499
Child is singleton	0.838	0.369	0.826	0.379	0.838	0.369	0.826	0.379
Apgars score	7.451	2.379	7.180	2.574	7.469	2.366	7.180	2.574
Mom is nonwhite	0.614	0.487	0.655	0.475	0.614	0.487	0.655	0.475
Mom's age	24.837	6.551	25.290	6.695	24.830	6.550	25.290	6.695
Mom is nonmarried	0.609	0.488	0.618	0.486	0.609	0.488	0.618	0.486
Mom drank during pregnancy	0.018	0.133	0.021	0.142	0.018	0.132	0.021	0.142
Mom smoked during pregnancy	0.206	0.405	0.212	0.408	0.206	0.405	0.212	0.408
Any pregnancy risk	0.487	0.500	0.495	0.500	0.485	0.500	0.495	0.500
Induction of labor	0.084	0.278	0.084	0.278	0.084	0.278	0.084	0.278
Cesarean delivery	0.410	0.492	0.411	0.492	0.410	0.492	0.411	0.492
Observations	60319		20267		59415		20267	

Notes:

[a] Data from the ECLS-B. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses.

[b] All variables from the HCUP-SID AR 2006-2013, AZ 2006-2007, NC 2006-2010, NM 2012, VT 2012 databases. Sample limited to infants with a person identifier, living in the bottom quartile of the zip code income distribution and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.

[c] All variables from NCHS 2001 Birth Cohort Linked Birth - Infant Death Data Files. Sample limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.

Appendix Table 5: Pretreatment Characteristics at the 1200-gram Cutoff, HCUP-SID and BC-L

Panel A: HCUP SID[a]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Child is nonwhite	Arkansas	Arizona	North Carolina	New Mexico	Cesarean delivery	Child is male	Child is singleton	Year
Flexible Linear Parametric Model - within 200g window									
	0.0365	0.0496	0.0222	-0.0529	-0.0214	-0.0152	-0.0864	0.0561	0.2420
	(0.0733)	(0.0681)	(0.0628)	(0.0412)	(0.0238)	(0.0639)	(0.0683)	(0.0600)	(0.2959)
Observations	843	911	911	911	911	911	911	911	911
Nonparametric - local linear within CCFT window									
	0.0672	0.0554	0.0052	-0.0345	-0.0317	-0.0859	-0.1003	0.0671	0.3234
	(0.0826)	(0.0754)	(0.0662)	(0.0405)	(0.0266)	(0.0854)	(0.0815)	(0.0595)	(0.3220)
Observations	3287	3600	3600	3600	3600	3600	3600	3600	3600
Eff obs left	580	600	632	749	619	478	619	808	531
Eff obs right	537	539	567	693	554	466	555	745	487
BW Local Poly	268	247	264	319	256	208	257	338	223

Panel B:BC-L[b]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Apgar score	Cesarean delivery	Mother drank while pregnant	Induction of labor	Child is male	Mother’s age	Mother's race is nonwhite	Any pregnancy risk	Child is singleton	Mother is nonmarried	Mother smoked while pregnant
Flexible Linear Parametric Model - within 200g window											
	-0.0319	0.0234	-0.0023	-0.0070	-0.0445**	-0.4623*	0.0243	0.0103	0.0061	0.0048	-0.0333*
	(0.0757)	(0.0202)	(0.0056)	(0.0095)	(0.0203)	(0.2752)	(0.0200)	(0.0201)	(0.0166)	(0.0197)	(0.0171)
Observations	7946	9856	8893	9815	9880	9880	9880	9751	9880	9880	8921
Nonparametric - local linear within CCFT window											
	-0.1004	0.0249	-0.0069	-0.0129	-0.0590***	-0.5746*	0.0325	-0.0051	0.0065	0.0116	-0.0327*
	(0.0980)	(0.0242)	(0.0069)	(0.0114)	(0.0217)	(0.3393)	(0.0217)	(0.0237)	(0.0208)	(0.0210)	(0.0175)
Observations	47392	60155	53911	60024	60319	60319	60319	59678	60319	60319	54053
Eff obs left	3864	5680	4364	5460	7041	4841	6481	5510	5660	7835	7266
Eff obs right	3929	6240	4433	5565	7147	4950	7067	5611	5751	7914	7695
BW Local Poly	191	237	197	220	275	200	270	226	234	306	324

Notes:
[a]All variables from the HCUP-SID AR 2006-2013, AZ 2006-2007, NC 2006-2010, NM 2012, VT 2012 databases. Sample limited to infants with a person identifier, living in the bottom quartile of the zip code income distribution and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.
[b] All variables from NCHS 2001 Birth Cohort Linked Birth - Infant Death Data Files. Sample limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 6: Effects of SSI Eligibility on Participation in other Public Programs

	(1)	(2)	(3)
	TANF	Food Stamps	WIC
Flexible Linear Parametric Model - within 200g window			
	-0.091	0.051	0.025
	(0.107)	(0.130)	(0.107)
Observations	250	250	250
Nonparametric - local linear within CCT window			
	-0.079	0.078	0.055
	(0.112)	(0.163)	(0.111)
Observations	650	650	650
Eff obs left	200	150	200
Eff obs right	200	150	200
BW Local Poly	354.3	223.8	346.9

Notes: Data source is ECLS-B 9-month wave. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.

All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 7: Missing Values across 1200-gram Threshold, HCUP-SID

	(1)	(2)
	Payer 1 missing	Payer 2 missing
Flexible Linear Parametric Model - within 200g window		
	0.0255	-0.0217
	(0.0637)	(0.0460)
Observations	911	911
Nonparametric - local linear within CCFT window		
Observations	660	660
	0.0089	-0.0055
	(0.0665)	(0.0477)
Observations	3600	3600
Eff obs left	621	743
Eff obs right	556	685
BW Local Poly	259	314

Notes: All variables from the HCUP-SID AR 2006-2013, NC 2006-2010, NM 2012, VT 2012 databases. Sample limited to infants with a person identifier, living in the bottom quartile of the zip code income distribution and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 8: Infant Mortality-BC-L 2001 Birth Cohort, All States

	(1) Infant Death	(2) Post Neonatal Death	(3) Neonatal Death
Flexible Linear Parametric Model - within 200g window			
	-0.0036	-0.0011	-0.002
	-0.0098	(0.0057)	-0.008
Observations	9880	9880	9880
Nonparametric - local linear within CCFT window			
	0.0107	0.0031	0.0063
	-0.014	(0.0063)	-0.0117
Observations	60319	60319	60319
Eff obs left	3484	6372	3441
Eff obs right	3629	6513	3590
BW Local Poly	146	258	141

Notes: All variables from NCHS 2001Birth Cohort Linked Birth - Infant Death Data Files. Sample limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 9: Maternal Depression, and Services Received at 9-month wave, ECLS-B

	(1) CESD (maternal depression)	(2) Any services received
Flexible Linear Parametric Model – within 200g window		
	0.251	0.097
	(1.679)	(0.106)
Observations	200	250
Nonparametric - local linear within CCFT window		
	0.157	0.150
	(2.287)	(0.133)
Observations	600	650
Eff obs left	100	150
Eff obs right	100	100
BW Local Poly	200.8	205.8

Notes: Data source is ECLS-B 9-month wave. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.

All sample sizes rounded to nearest 50 as per NCES confidentiality restrictions. Parametric regressions have bootstrapped and non-parametric regressions have robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Appendix Table 10: Robustness to Alternate Specifications, BC-L and HCUP-SID

Panel A: HCUP-SID [a]							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	200g linear	200g quadratic	150g linear	150g quadratic	CCFT	200g linear with covariates	CCFT with covariates
Transfer to home health care	0.0123	0.1431*	0.0674	0.1632*	0.1300*	0.0612	0.1523**
	(0.0579)	(0.0822)	(0.0667)	(0.0945)	(0.0771)	(0.0501)	(0.0597)
Payer 2: Medicaid	0.2283	0.4141	0.2507	0.7700***	0.3676*	0.1668	0.1077

Panel B: BC-L [b]							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	200g linear	200g quadratic	150g linear	150g quadratic	CCFT	200g linear with covariates	CCFT with covariates
Infant Mortality	-0.0036	0.0054	0.0001	0.0179	0.0107	-0.0021	0.0104
	(0.0098)	(0.0139)	(0.0112)	(0.0166)	(0.0140)	(0.0102)	(0.0146)

Notes:
[a] All variables from the HCUP-SID AR 2006-2013, AZ 2006-2007, NC 2006-2010, NM 2012, VT 2012 databases. Sample limited to infants with a person identifier, living in the bottom quartile of the zip code income distribution and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.
[b] Data from NCHS 2006 to 2010 Birth Cohort Linked Birth - Infant Death Data Files. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants at 32 weeks gestation with birth weights between 1200 and 1250 grams were dropped from the sample.

Appendix Table 11: Robustness to Alternative Samples and Falsification Tests, BC-L and HCUP-SID

Panel A: HCUP-SID [a]						
	(1) Baseline	(2) Only Ounce Heaps	(3) Without NY	(4) 1100g	(5) 1300g	(6) Birth zip-code Q3 and Q4
Transfer to home health care- 200	0.0123	0.0610	--	-0.0965*	0.0550	-0.0455
	(0.0579)	(0.1096)		(0.0499)	(0.0550)	(0.0775)
Transfer to home health care- CCFT	0.1300*	0.1159	--	-0.1132*	0.0674	-0.0242
	(0.0771)	(0.1271)		(0.0608)	(0.0665)	(0.0681)
Payer 2: Medicaid-200	0.2283	0.1102	--	-0.2491	0.0851	0.0607
	(0.1874)	(0.4308)		(0.1722)	(0.1883)	(0.3853)
Payer 2: Medicaid-CCFT	0.3676*	-0.0897	--	-0.2917	0.1209	-0.0593

Panel B: BC-L [b]						
	(1) Baseline	(2) Only Ounce Heaps	(3) Without NY	(4) 1100g	(5) 1300g	(6) Mothers with college degree
Infant Mortality- 200	-0.0036	-0.0013	-0.0034	-0.0004	0.0005	-0.0289**
	(0.0098)	(0.0121)	(0.0101)	(0.0114)	(0.0095)	(0.0131)
Infant Mortality-CCFT	0.0107	0.0258	0.0065	0.0082	0.0098	-0.0283
	(0.0140)	(0.0164)	(0.0143)	(0.0177)	(0.0143)	(0.0187)

Notes:

[a] All variables from the HCUP-SID AR 2006-2013, AZ 2006-2007, NC 2006-2010, NM 2012, VT 2012 databases. Sample limited to infants with a person identifier, living in the bottom quartile of the zip code income distribution and gestational age <=32 weeks. Infants born at 32 weeks between 1200 and 1250 grams were dropped from the sample.

[b] Data from NCHS 2006 to 2010 Birth Cohort Linked Birth - Infant Death Data Files. All regressions limited to infants with mother with a high school degree or less and gestational age <=32 weeks. Infants at 32 weeks gestation with birth weights between 1200 and 1250 grams were dropped from the sample.