#### 5.1.2 Robustness

In section 4 we saw that our model specifications do not pass all the exogeneity tests, even if background characteristics graphically appear to be smoothly distributed over the distribution of AUDIT-scores. Although calculations of the impact on birth weight from these imbalances in covariates suggest that the bias is small in our preferred specifications (less than 1 gram in absolute value), the estimates found in Table 3 could be biased due to selection at the threshold.

In Table 4 we therefore assess whether our estimates are biased by inspecting how sensitive our baseline estimates are to including different controls for maternal characteristics. In the first panel of Table 4, we extend the control variables to include dummies for mother's education, employment, country of birth, and age. The estimated effects are slightly altered by the inclusion of these controls. The estimate in Column 1 is still statistically significant at the 95 percent level. In panel B, we also include controls related to mother's health and behavior in the form of dummy variables for self-assessed health prior to pregnancy, whether or not the mother had been treated for mental ill-health, height at first visit, and whether or not she used tobacco (cigarettes and snuff) prior to pregnancy. The estimated effect in the column 1 model is slightly reduced whereas the effect in column 2 increases somewhat further when adding these additional controls.[8]

We are reassured by the fact that our preferred specifications remain relatively stable as we include the different sets of controls. This robustness analysis does not lead us to revise that the intervention has a small to negligible average effect on the birth weight of children.

#### 5.1.3 Effects across the distribution of birth weight

Even if the estimated average effect suggests that the intervention has a small to negligible impact on birth weight, this can mask larger impacts in different parts of the weight distribution. The effects may well be larger for children with elevated risk; for example children whose health is more susceptible to alcohol exposure or children who are at

[8] Since the number of observations is reduced due to missing data on some of the control variables in the extended controls, we estimate the model with basic controls on the same amount of observations as in Table 4 and, reassuringly, the results are not altered (see Table A.5 in Appendix).

**Table 4:** Reduced form RD estimates of the effect of passing the threshold to AUDIT 6 in birth eeight using different controls.

| | (1) Birth Weight | (2) Birth Weight |
|---|---|---|
| **Panel A: Extended controls 1** | | |
| AUDIT$\geq$6 | 26.281** | 3.450 |
| | (10.605) | (11.961) |
| R-squared | 0.028 | 0.024 |
| **Panel B: Extended controls 2** | | |
| AUDIT$\geq$6 | 25.709** | 5.681 |
| | (10.521) | (11.880) |
| R-squared | 0.061 | 0.055 |
| Polynomial | 1st Joint | 1st Separate |
| Audit range | 4-7 | 3-8 |
| Observations | 57,124 | 107,871 |

*Note:* The table presents reduced form RD estimates of the effect of Audit Score 6 on birth weight. Standard errors in parenthesis are clustered at unit*bin level (2190 clusters in AUDIT range 4-7, and 3223 clusters in AUDIT range 3-8). Extended controls 1 include birth year fixed effects, maternity unit fixed effects, controls for child's gender, as well as controls for mother's educational level, employment, age, and country of birth. Extended controls 2 include, apart from those just mentioned, controls for tobacco usage and maternal well-being prior to pregnancy. * Significant at 10 %; ** at 5 %; *** at 1 %.

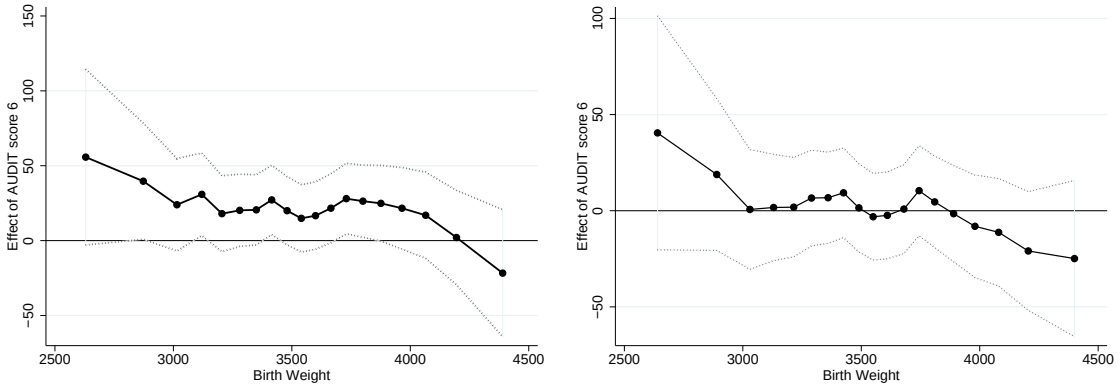
higher risk for other reasons.

In order to assess if effects are heterogeneous by birth weight, we examine how the intervention impacts the quantiles of the distribution of birth weight (Firpo et al. 2009). Figure 5 shows the estimates from an unconditional birth weight quantile regression for our preferred specifications: it tells us how the birth weight quantiles are affected by passing the AUDIT threshold and becoming targeted for the MI-intervention. The large dots represent the point estimates at each quantile.[9] In the left plot we see that for the joint linear specification over the AUDIT-range 4-7 the effect is positive at around 15-25 grams but mostly statistically insignificant (95 % level) across the distribution of normal birth weight children. However, at the lowest quantiles (p=0.05 and p=0.10) the effect increases to 56 grams and with an upper bound of 114 grams.[10] At the highest quantiles (p=95), on the other hand, the estimate becomes negative but is not statistically significant. The right plot shows the corresponding estimates for the separate linear specification over the AUDIT-range 3-8. Also here the estimates are stable across the distribution of normal birth weight children, but are close to zero. Again we find the largest point estimates for the lowest quantiles, but these results do not reach statistical significance. In this model we can rule out effects larger than 100 grams in the lowest quantiles.

The results suggest that the MI-intervention contribute to differential impact across the birth weight distribution: health benefits are larger for infants at higher risk. Still, this analysis does not lead us to revise the view that the intervention has a small to negligible average effect on the birth weight of children.

[9] The estimates from the unconditional quantile regressions for different quantiles are found in Table A6 in Appendix.

[10] Table A.7 in Appendix shows the birth weight of different quantiles in our samples.




**(*a*)** 1st order joint polynomial, AUDIT 4-7 **(*b*)** 1st order separate polynomial, AUDIT 3-8

**Figure 5:** Unconditional quantile effects of passing the threshold to AUDIT 6 on birth weight.
*Note:*The figure displays the estimates of unconditional quantile regressions with basic controls including birth year fixed effects, maternity unit fixed effects, and dummy for child's gender. The solid line shows how passing the threshold to AUDIT score 6 affects the birth weight quantile (where each dot represents a separate quantile). The dotted lines represent the 95% confidence interval.

### 5.2 Effects on other measures of infant health

The results from estimating the effects of having an AUDIT score of 6 or higher over the distribution of birth weight suggest that the effect of the treatment is larger for children of low birth weight. If the treatment impacts children at risk rather than children of average birth weight this may be important from a policy perspective. To better understand how the targeted MI-intervention affects child health, we study the likelihood of passing the threshold for low birth weight (2500 grams), gestational age, and the probability of being born prematurely (born before 37 completed weeks of gestation). Furthermore, we test whether there are differences in the size of the effect depending on gestational age.

Table 5 Columns 1 and 2 reports the effects of having an AUDIT score of 6 or higher on the probability of passing the threshold for low birth weight using our preferred specifications. The point estimates in Panel A, when only controlling for the basic covariates, suggest that the probability of being born above 2500 grams is increased by around 0.5-0.6 percentage point, but the effect is only marginally, or not statistically significant. When adding controls for predetermined socioeconomic characteristics the point estimates are stable in size and not statistically significant, as seen in Panels B and C. This suggests that although the effect of the treatment was higher in the lower parts of the birth weight

distribution, the treatment has no effect on the probability of passing the low birth weight threshold.

Columns 3 and 4 show the effect of becoming targeted for the MI-intervention on the gestational age in our preferred specifications. The point estimate in Column 3 Panel A suggests that gestational age increases by 0.07 weeks. Although statistically significant, the estimate is small and corresponds to an increase of less than 0.2 percent relative to the average gestational age of 39.3 weeks. The point estimate in Column 4 for the separate linear specification over the AUDIT-range 3-8 is of similar size, and the small effects are stable when adding the different set of controls for predetermined maternal characteristics in Panels B and C.

Columns 5 and 6 show the effect of having an AUDIT score of 6 or higher on the probability of being born prematurely (born before 37 completed weeks of gestation). The point estimate in Column 5 Panel A suggests that the probability of being born preterm is reduced by 0.8 percentage point which corresponds to a reduction of 14 percent relative to the average. As seen in Panels B and C, the size of this effect is stable to the inclusion of extended controls but the statistical significance drops to the 90 percent level when including controls related to maternal health before pregnancy. When including a the full set of controls for predetermined maternal characteristics in Panel C, the point estimate from the model in Column 6 also suggest a reduction in probability of being born prematurely.

In an additional analysis (see Table A8 in the Appendix), we separate the sample of women depending on gestational age in order to test whether the effect of the targeted preventive intervention on birth weight is larger for preterm born infants (born before 37 completed weeks of gestation).[11] While these results suggest that the effect is larger for preterm infants than for children born at term, the estimates become noisy and are not statistically significant in most of the specifications.

Taken together, the results in Table 5 and those from splitting the sample of women according to gestational age do not lead us the change the conclusion that, although there is suggestive evidence of a reduction in risk of being born preterm, the intervention has small to negligible effects on factors related to infant health.

[11] Note that since gestational age is also an outcome, these results myst be interpreted with care.

**Table 5:** Reduced form RD estimates of the effects of passing the threshold to AUDIT 6 on the likelihood of passing the low birth weight threshold, gestational age, and probability of preterm birth.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Above 2500 grams | | Gestational Age | | Born Premature | |
| | | | **Panel A: Basic controls** | | | |
| AUDIT≥6 | 0.006* | 0.005 | 0.069** | 0.063* | -0.008** | -0.006 |
| | (0.003) | (0.003) | (0.033) | (0.037) | (0.004) | (0.004) |
| R-squared | 0.008 | 0.005 | 0.014 | 0.009 | 0.010 | 0.006 |
| Observations | 73,185 | 137,348 | 71,637 | 134,481 | 73,185 | 137,348 |
| | | | **Panel B: Extended controls 1** | | | |
| AUDIT≥6 | 0.005 | 0.004 | 0.076** | 0.068* | -0.009** | -0.008 |
| | (0.003) | (0.004) | (0.036) | (0.041) | (0.004) | (0.005) |
| R-squared | 0.011 | 0.007 | 0.018 | 0.012 | 0.012 | 0.008 |
| Observations | 57,124 | 107,871 | 57,124 | 107,871 | 57,124 | 107,871 |
| | | | **Panel C: Extended controls 2** | | | |
| AUDIT≥6 | 0.005 | 0.004 | 0.076** | 0.071* | -0.009* | -0.008* |
| | (0.003) | (0.004) | (0.036) | (0.041) | (0.004) | (0.005) |
| R-squared | 0.015 | 0.011 | 0.024 | 0.018 | 0.015 | 0.010 |
| Observations | 57,124 | 107,871 | 57,124 | 107,871 | 57,124 | 107,871 |
| Polynomial | 1st Joint | 1st Separate | 1st Joint | 1st Separate | 1st Joint | 1st Separate |
| Audit range | 4-7 | 3-8 | 4-7 | 3-8 | 4-7 | 3-8 |

*Note:* The table presents reduced form RD estimates of the effect of Audit Score 6 on the probability of birth weight above 2500 grams, on the gestational age in weeks, and on the probability of being born premature. Standard errors in parenthesis are clustered at unit*bin level (2190 clusters in AUDIT range 4-7, and 3223 clusters in AUDIT range 3-8). Basic controls include birth year fixed effects, maternity unit fixed effects, and dummy for child's gender. Extended controls 1include birth year fixed effects, maternity unit fixed effects, controls for child's gender, as well as controls for mother's educational level, employment, age, and country of birth. Extended controls 2 include, apart from those just mentioned, controls for tobacco usage and maternal well-being prior to pregnancy. * Significant at 10%; ** at 5%; *** at 1%.

### 5.3 Effects on pregnant women's behavior

In addition to the direct effects on birth weight, we also examine whether the targeted MI-intervention has effects on a wider range of maternal behavior. There are several arguments for why the intervention could affect also other dimensions of mothers' behavior. Activities such as smoking can for example be complementary to alcohol consumption, and it can also be that midwifes at the targeted MI-interventions are able to promote behavioral changes in other dimensions that are beneficial to the child.

In Grönqvist et al (2016) we find that the introduction of the Risk drinking project within Swedish maternity care had effects on maternal behavior extending beyond the birth of the child and on a wider range of health behaviors. In fact we find evidence of reduced smoking during pregnancy and suggestive evidence of increased breastfeeding, but it is not clear whether it was the targeted intervention or if it was other parts of the program that generated the effects. We therefore analyze if passing the AUDIT threshold and becoming targeted for the MI-intervention affects the likelihood that the child is exclusively breastfed one month after delivery and whether the mother quit smoking during pregnancy. We restrict attention to our preferred specifications.

Table 6 Column 1 reports the effects of having an AUDIT score of 6 or higher on the probability of breastfeeding for the joint linear specification over the AUDIT-range 4-7. The point estimate in Panel A, where we only control for the basic covariates, suggests that the likelihood of breastfeeding is increased by 1 percentage point, but the effect is not statistically significant. In Panel C where we also control for predetermined socioeconomic characteristics (dummies for mother's education, employment, country of birth, and age) and controls related to mother's health and behavior (dummies for self-assessed health prior to pregnancy, whether or not the mother have been treated for mental illhealth, height at first visit, and whether or not she used tobacco (cigarettes or snuff) prior to pregnancy) we find that the estimated effect is reduced to 0.8 percentage points and still not statistically significant. In column 2 we see a similar pattern when using the separate linear specification over the AUDIT-range 3-8: The estimated effect is relatively

unaffected as we add additional control variables in Panels B and C. These results suggest that the targeted MI-intervention has no impact on the likelihood of breastfeeding, unlike the results found in Grönqvist et al (2016).

Columns 3 and 4 show the effect of becoming targeted for the MI-intervention on the probability of smoke cessation. The outcome variable is an indicator for whether the pregnant woman smoked at registration in week 8-12 but not in week 32. In section 4 we saw that for our preferred specifications, the likelihood of smoking prior to the pregnancy is higher for mothers passing the AUDIT threshold. In this analysis it is therefore important to control for tobacco use (cigarettes or snuff) prior to pregnancy. In column 3, which reports the effects for the joint linear specification over the AUDIT-range 4-7, we in Panel A find a positive and statistically significant effect of being eligible to treatment on probability of ceasing to smoke: The estimate suggests that the probability to quit smoking between registration and week 32 is increased by 0.6 percentage points, corresponding to 23 percent at the mean. When adding controls for maternal characteristics in Panel B, the estimate is unchanged. The effect is however reduced in size and becomes statistically insignificant in Panel C when controlling for tobacco use before pregnancy. In column 4, where we use the separate linear specification over the AUDIT-range 3-8, the estimates are closer to zero (and become slightly smaller when controlling for previous tobacco use). Hence, we find no support that the reduced likelihood of smoking following the introduction of the Risk drinking project (reported in Grönqvist et al. 2016) follows from the targeted MI-intervention.

**Table 6:** Reduced form RD estimates of the effect of passing the threshold to AUDIT 6 on breastfeeding and smoking.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Probability of breastfeeding | | Probability of smoke cessation | |
| | **Panel A: Basic controls** | | | |
| AUDIT≥6 | 0.010 | 0.014 | 0.006** | 0.005 |
| | (0.008) | (0.009) | (0.003) | (0.004) |
| R-squared | 0.029 | 0.023 | 0.023 | 0.019 |
| Observations | 60,475 | 113,426 | 72,098 | 135,506 |
| | **Panel B: Extended controls 1** | | | |
| AUDIT≥6 | 0.006 | 0.012 | 0.006* | 0.001 |
| | (0.009) | (0.010) | (0.003) | (0.004) |
| R-squared | 0.049 | 0.043 | 0.041 | 0.034 |
| Observations | 47,658 | 89,925 | 56,698 | 107,119 |
| | **Panel C: Extended controls 2** | | | |
| AUDIT≥6 | 0.008 | 0.014 | 0.004 | -0.000 |
| | (0.010) | (0.010) | (0.003) | (0.004) |
| R-squared | 0.061 | 0.054 | 0.111 | 0.109 |
| Observations | 47,658 | 89,925 | 56,698 | 107,119 |
| Polynomial | 1st Joint | 1st Separate | 1st Joint | 1st Separate |
| Audit range | 4-7 | 3-8 | 4-7 | 3-8 |

*Note:* The table presents reduced form RD estimates of the effect of Audit Score 6 on the probability of breastfeeding 4 weeks after pregnancy and on the probability of smoke cessation. Standard errors in parenthesis are clustered at unit*bin level (2190 clusters in AUDIT range 4-7, and 3223 clusters in AUDIT range 3-8).Basic controls include birth year fixed effects, maternity unit fixed effects, and dummy for child's gender. Extended controls 1include birth year fixed effects, maternity unit fixed effects, controls for child's gender, as well as controls for mother's educational level, employment , age, and country of birth. Extended controls 2 include, apart from those just mentioned, controls for tobacco usage and maternal well-being prior to pregnancy. * Significant at 10%; ** at 5%; *** at 1%.

## 6 Conclusions

In this paper, we have evaluated whether targeted preventive BI impacts infant health and maternal behavior such as breastfeeding and smoking. Based on the decision rule at Swedish maternity clinics to initiate a BI using MI techniques to women who score 6 or

higher on the AUDIT instrument, we applied a reduced form RDD to identify the causal effect of being eligible to treatment.

We find that the targeted alcohol preventive MI-intervention has small to negligible average effect on infant health measured by birth weight. Estimating the effect of the BI across the distribution of birth weight suggests that the impact is larger in the lowest quintile of birth weight, which indicates that health benefits are larger for infants at risk. Overall however, the magnitude of the effects across the distribution of birth weight is stable and small. Since we have no direct information on MI-intervention we cannot determine whether the small to negligible effects on birth weight is due to a low effectiveness of the targeted MI-intervention or whether the take-up of the intervention is low despite the decision rule.

Results from the analysis where we study gestational age and the probability of being born above the low birth weight threshold of 2500 grams further support the conclusion that the targeted alcohol preventive MI-intervention has minor effects on infant health. We do however document suggestive evidence that being eligible for treatment reduces the probability of being born prematurely.

We find no evidence of the BI leading to more women breastfeeding or ceasing to smoke during the pregnancy. Grönqvist et al. (2016) finds that the introduction of the screening and BI program improved infant health by having an impact on maternal behavior. Given that the focus in this study is on different outcomes, it is difficult to directly compare the results to those in Grönqvist et al. (2016). It is therefore not possible to definitely conclude whether it is the BI targeted towards women at risk or if it is the program at large that affected maternal behavior after birth.

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# Appendix

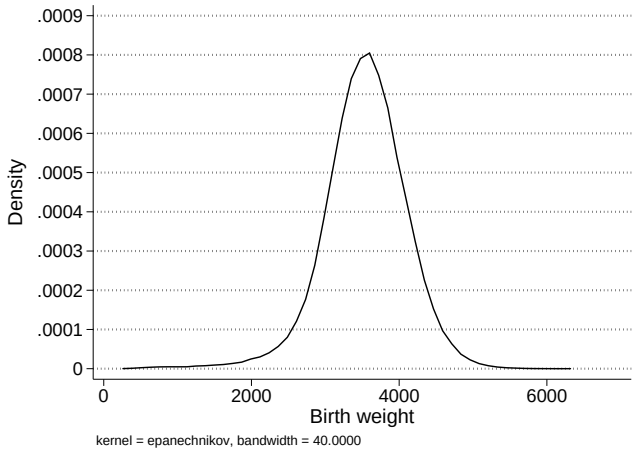
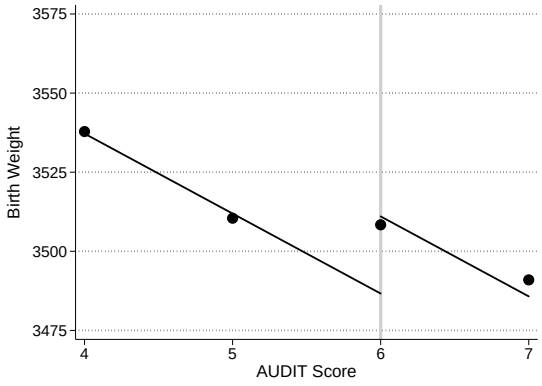
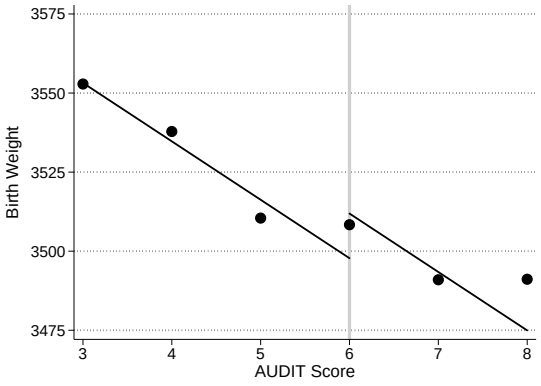


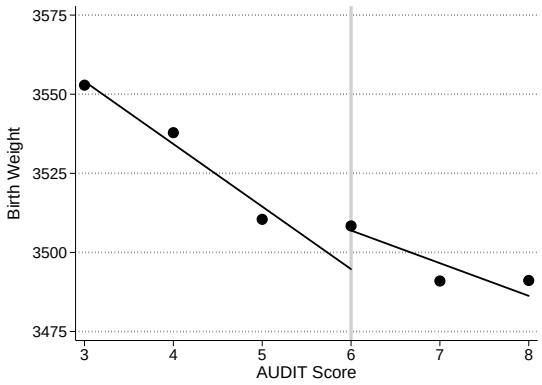

**Figure A1:** Kernel Density of Birth Weight



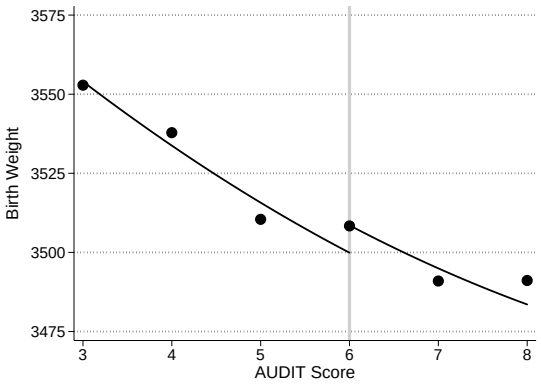

**(*a*)** 1st order joint polynomial, AUDIT 4-7




**(*b*)** 1st order joint polynomial, AUDIT 3-8




**(*c*)** 1st order separate polynomial, AUDIT 3-8




**(*d*)** 2nd order joint polynomial, AUDIT 3-8

**Figure A2:** Effect of passing the threshold to AUDIT 6 on birth weight, not residualized

*Note*:The figure shows the average birth weight by AUDIT score in the ranges 4-7 and 3-8 using different control functions. The vertical line indicates the threshold for being eligible to treatment.

**Table A1:** Reduced form RD estimates of the effect of passing the threshold to AUDIT 6 on birth weight using triangular weights.

| | (1) Birth Weight | (2) Birth Weight |
|---|---|---|
| AUDIT≥6 | 15.630** | 5.982 |
| | (7.039) | (10.136) |
| Observations | 137,348 | 137,348 |
| R-squared | 0.020 | 0.020 |
| Polynomial | 1st Joint | 1st Separate |
| Audit range | 2-9 | 2-9 |
| Covariates | Basic | Basic |

*Note:* Standard errors in parenthesis are clustered at unit*bin level. The Table shows the effect of being eligible to treatment using weighted local linear regression. We use a triangular kernel, as suggested by Lee and Lemieux (2010), which assigns linearly decreasing weights to each observation which decrease with the distance to the AUDIT cutoff of 6. This implies that observations farther away from the cutoff are given less importance in the estimations. The weights are constructed manually and put weight 0 on observations with AUDIT score 2 and 9 (implying that these observations are not included in the estimations), small weights on observations scoring 3 and 8, slightly higher on observations scoring 4 and 7, and the highest weight on observations scoring 5 and 6. Column 1 shows the results for the specification with a joint linear slope and Column 2 show the results from the model with a separate linear slope. * Significant at 10%; ** at 5%; *** at 1%.

**Table A2:** Reduced form RD estimates of the effect of passing the threshold to AUDIT 6 on birth weight, estimated without controls.

| | (1) Birth Weight | (2) Birth Weight | (3) Birth Weight | (4) Birth Weight |
|---|---|---|---|---|
| AUDIT≥6 | 23.493** | 13.661 | 2.612 | 8.326 |
| | (11.250) | (8.536) | (10.848) | (9.375) |
| Observations | 73,185 | 137,348 | 137,348 | 137,348 |
| R-squared | 0.001 | 0.001 | 0.001 | 0.001 |
| Polynomial | 1st Joint | 1st Joint | 1st Separate | 2nd Joint |
| Audit range | 4-7 | 3-8 | 3-8 | 3-8 |
| Covariates | No | No | No | No |

*Note:*The table presents reduced form RD estimates of the effect of Audit Score 6 on birth weight. Standard errors in parenthesis are clustered at unit*bin level (2190 clusters in AUDIT range 4-7, and 3223 clusters in AUDIT range 3-8). * Significant at 10%; ** at 5%; *** at 1%.

**Table A3:** Reduced form RD estimates of the effects of passing the threshold to AUDIT 6 on breastfeeding and smoking, estimated without controls.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Probability of breastfeeding | | Smoke Cessation | |
| AUDIT$\geq$6 | 0.008 | 0.013 | 0.006 | 0.004 |
| | (0.013) | (0.012) | (0.005) | (0.005) |
| Observations | 60,475 | 113,426 | 72,098 | 135,506 |
| R-squared | 0.001 | 0.003 | 0.002 | 0.004 |
| Polynomial | 1st Joint | 1st Joint | 1st Separate | 2nd Joint |
| Audit range | 4-7 | 3-8 | 3-8 | 3-8 |
| Covariates | No | No | No | No |

*Note:*The table presents reduced form RD estimates of the effect of Audit Score 6 on the probability of breastfeeding 4 weeks after pregnancy and on the probability of smoke cessations. Standard errors in parenthesis are clustered at unit*bin level (2190 clusters in AUDIT range 4-7, and 3223 clusters in AUDIT range 3-8). * Significant at 10%; ** at 5%; *** at 1%.

**Table A4:** Reduced form RD estimates of the effects of passing the threshold to AUDIT 6 on likelihood of passing the low birth weight threshold, on gestational age, and on probability of being born premterm, estimated without controls.

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Above 2500 grams | | Gestational Age | | Born Premature | |
| AUDIT$\geq$6 | 0.006* | 0.005 | 0.068 | 0.063 | -0.008* | -0.006 |
| | (0.003) | (0.003) | (0.042) | (0.042) | (0.005) | (0.005) |
| Observations | 73,185 | 137,348 | 71,637 | 134,481 | 73,185 | 137,348 |
| R-squared | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| Polynomial | 1st Joint | 1st Separate | 1st Joint | 1st Separate | 1st Joint | 1st Separate |
| Audit range | 4-7 | 3-8 | 4-7 | 3-8 | 4-7 | 3-8 |
| Covariates | No | No | No | No | No | No |

*Note:*The table presents reduced form RD estimates of the effect of Audit Score 6 on the probability of birth weight above 2500 grams, on the gestational age in weeks, and on probability of being born premature. Standard errors in parenthesis are clustered at unit*bin level (2190 clusters in AUDIT range 4-7, and 3223 clusters in AUDIT range 3-8). * Significant at 10%; ** at 5%; *** at 1%.

**Table A5:** Reduced form RD estimates of the effect of passing the threshold to AUDIT 6 on birth weight, estimated with basic controls using the reduced sample for which we have information on all covariates.

| | (1) Birth Weight | (2) Birth Weight | (3) Birth Weight | (4) Birth Weight |
|---|---|---|---|---|
| AUDIT≥6 | 27.970*** | 14.419* | 3.003 | 9.282 |
| | (10.609) | (8.053) | (11.942) | (10.041) |
| Observations | 57,124 | 107,871 | 107,871 | 107,871 |
| R-squared | 0.025 | 0.021 | 0.021 | 0.021 |
| Polynomial | 1st Joint | 1st Joint | 1st Separate | 2nd Joint |
| Audit range | 4-7 | 3-8 | 3-8 | 3-8 |
| Covariates | Basic | Basic | Basic | Basic |

*Note:* The table presents reduced form RD estimates of the effect of Audit Score 6 on birth weight. Standard errors in parenthesis are clustered at unit*bin level (2190 clusters in AUDIT range 4-7, and 3223 clusters in AUDIT range 3-8). Basic controls include birth year fixed effects, maternity unit fixed effects, and dummy for child's gender. * Significant at 10%; ** at 5%; *** at 1%.

**Table A6:** Unconditional quantile regression estimates of the reduced form effect of passing the threshold to AUDIT 6 on birth weight

| | 5th (1) | 10th (2) | 25th (3) | 50th (4) | 75th (5) | 90th (6) | 95th (7) |
|---|---|---|---|---|---|---|---|
| | | | **Panel A: Range 4-7, 1st joint** | | | | |
| AUDIT≥6 | 55.745* | 39.681** | 17.995 | 14.880 | 24.882* | 2.068 | -21.709 |
| | (29.928) | (19.797) | (12.913) | (11.473) | (12.905) | (16.082) | (21.646) |
| Observations | 73,185 | 73,185 | 73,185 | 73,185 | 73,185 | 73,185 | 73,185 |
| R-squared | 0.009 | 0.011 | 0.016 | 0.021 | 0.022 | 0.017 | 0.015 |
| Polynomial | 1st Joint | 1st Joint | 1st Joint | 1st Joint | 1st Joint | 1st Joint | 1st Joint |
| Audit range | 4-7 | 4-7 | 4-7 | 4-7 | 4-7 | 4-7 | 4-7 |
| | | | **Panel B: Range 3-8, 1st separate** | | | | |
| AUDIT≥6 | 40.469 | 18.840 | 1.852 | -3.141 | -1.540 | -20.928 | -24.877 |
| | (31.026) | (20.145) | (13.175) | (11.495) | (12.790) | (15.732) | (20.720) |
| Observations | 137,348 | 137,348 | 137,348 | 137,348 | 137,348 | 137,348 | 137,348 |
| R-squared | 0.005 | 0.007 | 0.013 | 0.018 | 0.018 | 0.014 | 0.011 |
| Polynomial | 1st Sep. | 1st Sep. | 1st Sep. | 1st Sep. | 1st Sep. | 1st Sep. | 1st Sep. |
| Audit range | 3-8 | 3-8 | 3-8 | 3-8 | 3-8 | 3-8 | 3-8 |
| Covariates | Basic | Basic | Basic | Basic | Basic | Basic | Basic |

*Note:*The table presents the estimates from the unconditional quantile regressions. Each column shows how passing the threshold to AUDIT score 6 affects the birth weight at a specific quantile. Basic controls include birth year fixed effects, maternity unit fixed effects, and dummy for child's gender* Significant at 10%; ** at 5%; *** at 1%.

**Table A7:** Average birth weight at each quantile for two different AUDIT ranges.

| | AUDIT 4-7 | AUDIT 3-8 |
|---|---|---|
| Quantile | Birth Weight (g) | |
| 5th | 2630 | 2640 |
| 10th | 2873 | 2890 |
| 15th | 3015 | 3030 |
| 20th | 3120 | 3130 |
| 25th | 3205 | 3215 |
| 30th | 3280 | 3290 |
| 35th | 3350 | 3360 |
| 40th | 3415 | 3425 |
| 45th | 3480 | 3490 |
| 50th | 3540 | 3550 |
| 55th | 3600 | 3610 |
| 60th | 3665 | 3680 |
| 65th | 3730 | 3744 |
| 70th | 3800 | 3810 |
| 75th | 3875 | 3890 |
| 80th | 3965 | 3980 |
| 85th | 4065 | 4080 |
| 90th | 4195 | 4205 |
| 95th | 4390 | 4400 |

**Table A8:** Reduced form RD estimates of the effect of passing the threshold to AUDIT 6 on birth weight where sample is split according to gestational age.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Preterm Birth | | Term Birth | |
| | Birth Weight | Birth Weight | Birth Weight | Birth Weight |
| AUDIT$\geq$6 | 31.688 | 27.000 | 13.532 | -7.040 |
| | (56.294) | (58.498) | (8.630) | (8.951) |
| Observations | 4,122 | 7,538 | 69,063 | 129,810 |
| R-squared | 0.136 | 0.088 | 0.031 | 0.028 |
| Polynomial | 1st Joint | 1st Joint | 1st Separate | 2nd Joint |
| Audit range | 4-7 | 3-8 | 3-8 | 3-8 |
| Covariates | Basic | Basic | Basic | Basic |

*Note:*The table presents reduced form RD estimates of the effect of Audit Score 6 on birth weight, separated according to gestational age. Standard errors in parenthesis are clustered at unit*bin level. Basic controls include birth year fixed effects, maternity unit fixed effects, and dummy for child's gender. * Significant at 10%; ** at 5%; *** at 1%.