

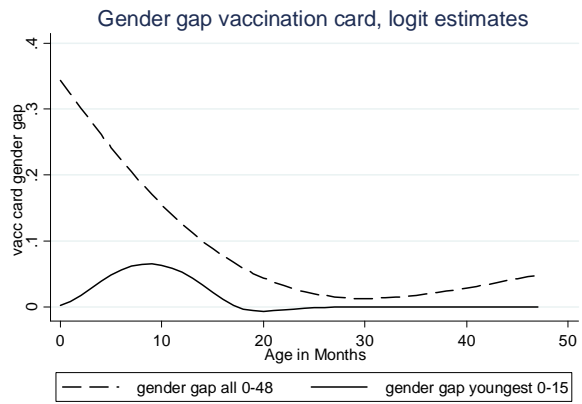
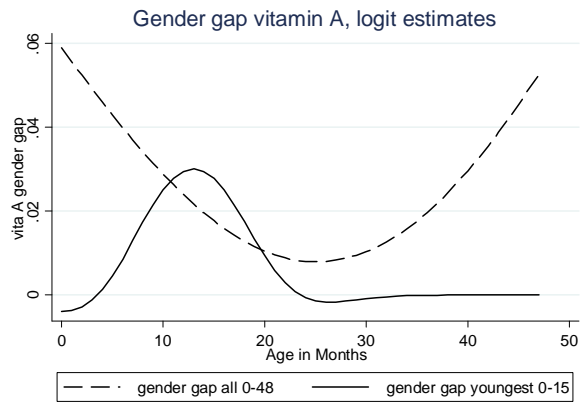
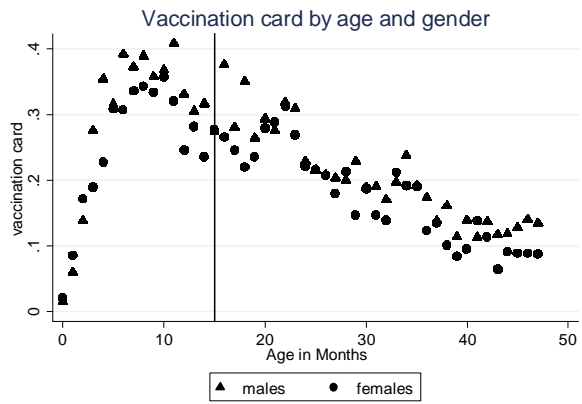
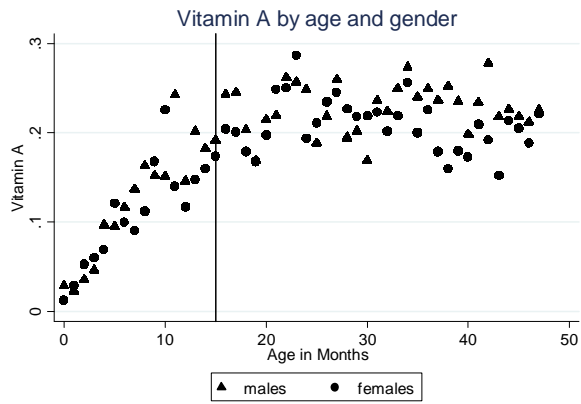
## **Online Appendix**

Child Gender and Parental Investments In India:

Are Boys And Girls Treated Differently?

*By* Silvia Helena Barcellos, Leandro S. Carvalho and Adriana Lleras-Muney

APPENDIX FIGURE 1: Bias in gender gaps for vitamin A and vaccination card



**APPENDIX TABLE 1: EFFECT OF CHILD'S GENDER ON LIVING ARRANGEMENTS, YOUNGEST CHILDREN 15 MONTHS AND YOUNGER. RURAL HOUSEHOLDS.**

| <b>Panel A: Effect of gender on family living arrangements in the DHS 1992. Youngest children 0-15 months old</b> |                     |                       |   |                       |                                |                                  |                             |                                  |                              |                                  |
|---|---------------------|-----------------------|---|-----------------------|--------------------------------|----------------------------------|-----------------------------|----------------------------------|------------------------------|----------------------------------|
| Dependent variable:   | Husband lives home? |                       | Is mother the wife of the household head? |                       | # of other sibs living at home |                                  | # of sisters living at home |                                  | # of brothers living at home |                                  |
|   | OLS                 | Logit (beta reported) | OLS                                       | Logit (beta reported) | OLS                            | Negative binomial (IRR reported) | OLS                         | Negative binomial (IRR reported) | OLS                          | Negative binomial (IRR reported) |
| Male=1  | 0.008               | 0.084                 | -0.009                                    | -0.038                | -0.004                         | 0.998                            | 0.034                       | 1.04                             | -0.037                       | 0.953                            |
|   | [0.007]             | [0.075]               | [0.011]                                   | [0.043]               | [0.034]                        | [0.021]                          | [0.024]                     | [0.029]                          | [0.021]*                     | [0.026]*                         |
| Obs   | 11517               | 11517                 | 11624                                     | 11624                 | 11627                          | 11627                            | 11627                       | 11627                            | 11627                        | 11627                            |
| Mean of Y   | 0.89                | 0.89                  | 0.461                                     | 0.461                 | 1.644                          | 1.644                            | 0.86                        | 0.86                             | 0.784                        | 0.784                            |

| <b>Panel B: Effect of gender on household composition TUS (1998-1999). Youngest children under 1 year old</b> |                    |                        |                      |                        |                           |                        |                        |                        |                       |                        |
|---|--------------------|------------------------|----------------------|------------------------|---------------------------|------------------------|------------------------|------------------------|-----------------------|------------------------|
| Dependent variable:   | # Men 15 and older |                        | # Women 15 and older |                        | # Children 14 and younger |                        | # Girls 14 and younger |                        | # Boys 14 and younger |                        |
|   | OLS                | Poisson (IRR reported) | OLS                  | Poisson (IRR reported) | OLS                       | Poisson (IRR reported) | OLS                    | Poisson (IRR reported) | OLS                   | Poisson (IRR reported) |
| Male=1  | 0.209              | 1.153                  | 0.158                | 1.111                  | -0.149                    | 0.917                  | 0.046                  | 1.054                  | -0.196                | 0.793                  |
|   | [0.082]**          | [0.063]***             | [0.072]**            | [0.053]**              | [0.137]                   | [0.073]                | [0.101]                | [0.121]                | [0.102]*              | [0.098]*               |
| Obs   | 562                | 562                    | 562                  | 562                    | 562                       | 562                    | 562                    | 562                    | 562                   | 562                    |
| Mean of Y   | 1.46               | 1.46                   | 1.49                 | 1.49                   | 1.73                      | 1.73                   | 0.88                   | 0.88                   | 0.86                  | 0.86                   |

The standard errors [in brackets] are computed taking survey design into account in the DHS and in the TUS they allow for heteroskedasticity. Each coefficient corresponds to a separate estimation, where the dummy for the youngest child's gender is the only covariate. In the TUS (Panel B) we estimated Poisson rather than negative binomial models because some of the negative binomial models in the TUS did not converge. Survey weights are used in estimation. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**APPENDIX TABLE 2: TESTING IDENTIFYING ASSUMPTION, TIME USE SURVEY (1998-1999)**

| Sample:<br>Dependent variable: | Youngest child    |         |                         |            |               |            |
|--------------------------------|-------------------|---------|-------------------------|------------|---------------|------------|
|                                | Age under 2 years |         | Age 2-3 years (N=2,233) |            | Age 4-5 years |            |
|                                | Male=1            |         | Male=1                  |            | Male=1        |            |
|                                | beta              | se      | beta                    | se         | beta          | se         |
| Scheduled Tribe                | -0.035            | [0.023] | -0.020                  | [0.021]    | -0.007        | [0.025]    |
| Scheduled Caste                | -0.024            | [0.020] | 0.016                   | [0.020]    | 0.002         | [0.024]    |
| Hindu                          | 0.005             | [0.015] | 0.038                   | [0.014]*** | 0.028         | [0.016]*   |
| Land Owned (in acres)          | 0.336             | [0.452] | -0.163                  | [0.394]    | 1.47          | [0.515]*** |
| Observations                   |                   | 1,947   |                         | 2,283      |               | 1,625      |
| <b>Pvalue (Joint Test)</b>     |                   | 0.559   |                         | 0.047      |               | 0.012      |

Standard errors (in brackets). Coefficients reported from separate linear regressions, where a dummy for the gender of the youngest child is regressed on a characteristic and a constant. The coefficient on each characteristic is reported here. The p-value for the joint test comes from regressing the youngest child's gender on all the characteristics and testing whether they are jointly significant. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**APPENDIX TABLE 3: EFFECT OF CHILD GENDER ON HOUSEHOLD CHILDCARE TIME BY DEMOGRAPHIC GROUP, TIME USE SURVEY (1998-1999)**

| Dependent variable:                             | Childcare by females 15 and older |                     |                          |                          | Childcare by males 15 and older |                   |                          |                          | Childcare by females 14 and younger |                   |                          |                          |
|---|-----------------------------------|---------------------|--------------------------|--------------------------|---------------------------------|-------------------|--------------------------|--------------------------|-------------------------------------|-------------------|--------------------------|--------------------------|
|   | (1)                               |                     | (2)                      |                          | (3)                             |                   | (4)                      |                          | (5)                                 |                   | (6)                      |                          |
|   | Any care?                         | Any care?           | minutes of care $\geq$ 0 | minutes of care $\geq$ 0 | Any care?                       | Any care?         | minutes of care $\geq$ 0 | minutes of care $\geq$ 0 | Any care?                           | Any care?         | minutes of care $\geq$ 0 | minutes of care $\geq$ 0 |
| Model:  | Probit                            | Probit              | OLS                      | OLS                      | Probit                          | Probit            | OLS                      | OLS                      | Probit                              | Probit            | OLS                      | OLS                      |
| <b>Panel A: Youngest kids under 1 year old</b>  |                                   |                     |                          |                          |                                 |                   |                          |                          |                                     |                   |                          |                          |
| Male = 1  | 0.036<br>[0.029]                  | 0.073<br>[0.051]    | 39.949<br>[12.833]***    | 42.586<br>[22.277]*      | 0.04<br>[0.052]                 | 0.031<br>[0.082]  | 6.798<br>[6.405]         | 5.581<br>[8.416]         | 0.032<br>[0.126]                    | 0.106<br>[0.196]  | -3.184<br>[26.099]       | 67.028<br>[40.359]*      |
| Male * (# other children under 6)               |                                   | -0.033<br>[0.032]   |                          | -2.312<br>[14.883]       |                                 | 0.011<br>[0.052]  |                          | 1.42<br>[4.941]          |                                     | -0.058<br>[0.107] |                          | -55.313<br>[28.478]*     |
| # other children under 6                        |                                   | 0.019<br>[0.022]    |                          | 0.047<br>[9.071]         |                                 | 0.027<br>[0.035]  |                          | 3.077<br>[3.259]         |                                     | 0.046<br>[0.070]  |                          | 37.022<br>[19.390]*      |
| Constant  |                                   |                     | 160.771<br>[8.843]***    | 160.711<br>[15.049]***   |                                 |                   | 33.938<br>[3.980]***     | 30.042<br>[5.441]***     |                                     |                   | 68.769<br>[20.923]***    | 20.052<br>[19.749]       |
| Observations                                    | 560                               | 560                 | 560                      | 560                      | 555                             | 555               | 555                      | 555                      | 117                                 | 117               | 117                      | 117                      |
| <b>Panel B: Youngest kids under 2 years old</b> |                                   |                     |                          |                          |                                 |                   |                          |                          |                                     |                   |                          |                          |
| Male = 1  | -0.002<br>[0.017]                 | 0.062<br>[0.032]**  | 14.507<br>[6.696]**      | 33.564<br>[11.627]***    | 0.02<br>[0.026]                 | 0.075<br>[0.042]* | 4.208<br>[2.887]         | 10.104<br>[4.486]**      | 0.086<br>[0.066]                    | 0.2<br>[0.113]*   | 15.334<br>[14.516]       | 67.198<br>[27.503]**     |
| Male * (# other children under 6)               |                                   | -0.051<br>[0.020]** |                          | -15.668<br>[7.515]**     |                                 | -0.045<br>[0.028] |                          | -4.752<br>[2.876]*       |                                     | -0.082<br>[0.062] |                          | -36.441<br>[14.866]**    |
| # other children under 6                        |                                   | 0.022<br>[0.014]    |                          | 3.253<br>[4.999]         |                                 | 0.022<br>[0.020]  |                          | 3.327<br>[2.035]         |                                     | 0.027<br>[0.044]  |                          | 18.503<br>[9.141]**      |
| Constant  |                                   |                     | 148.327<br>[4.600]***    | 144.247<br>[7.984]***    |                                 |                   | 24.458<br>[1.871]***     | 20.281<br>[2.840]***     |                                     |                   | 48.055<br>[8.148]***     | 22.041<br>[10.417]**     |
| Observations                                    | 1936                              | 1936                | 1936                     | 1936                     | 1907                            | 1907              | 1907                     | 1907                     | 408                                 | 408               | 408                      | 408                      |

Robust standard errors in brackets. The dependent variable in columns under (1), (3) and (5) is an indicator for whether household members of a given demographic group reported spending time taking care of children. The dependent variable in columns under (2), (4) and (6) is the number of minutes per day spent with child care by all household members of a given demographic group. Panel A reports results for households whose youngest child is under 1 year old, panel B for those whose youngest is under 2. Columns under (1) to (6) show results for rural households. The variable "# Other children under 6" excludes the youngest child. Its mean is equal to 1.23 children. Survey weights are used for estimation. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**APPENDIX TABLE 4: ADDITIONAL RESULTS ON EFFECT OF GENDER ON PARENTAL INVESTMENTS.**

| Dependent variable:                      | Model:     | Rural areas |   |            |                   |   |                  | Urban areas |   |                  |        |         |
|--|------------|-------------|---|------------|-------------------|---|------------------|-------------|---|------------------|--------|---------|
|  |            | Mean Y      | youngest children ages 0-15<br>N = 11,445 |            |                   | youngest children ages 0-12<br>N= 9,249 |                  |             | youngest children ages 0-15<br>N= 4,158 |                  |        |         |
|  |            |             | Coeff.                                    | [s.e]      | Coeff.            | [s.e]                                   | Mean Y           | Coeff.      | [s.e]                                   | Mean Y           | Coeff. | [s.e]   |
| Ever breastfed?                          | OLS        | 0.953       | 0.006                                     | [0.004]    | 0.000             | [0.002]                                 | 0.943            | 0.007       | [0.006]                                 | 0.951            | 0.000  | [0.009] |
| # months breastfed                       | cens. reg. | 7.673       | 1.802                                     | [0.574]*** | 1.813             | [0.593]***                              | 6.018            | 1.413       | [0.707]**                               | 7.431            | 0.301  | [0.665] |
| log(# months breastfed)                  | cens. reg. | 1.803       | 0.289                                     | [0.092]*** | 0.300             | [0.099]***                              | 1.583            | 0.291       | [0.145]**                               | 1.78             | 0.017  | [0.110] |
| Vitamin A?                               | OLS        | 0.116       | 0.014                                     | [0.007]**  | 0.013             | [0.006]**                               | 0.101            | 0.010       | [0.007]                                 | 0.191            | 0.023  | [0.015] |
| Vaccination card?                        | OLS        | 0.275       | 0.043                                     | [0.009]*** | 0.041             | [0.009]***                              | 0.272            | 0.046       | [0.010]***                              | 0.402            | -0.003 | [0.019] |
| BCG                                      | OLS        | 0.448       | 0.036                                     | [0.011]*** | 0.032             | [0.010]***                              | 0.415            | 0.038       | [0.012]***                              | 0.663            | -0.001 | [0.019] |
| DPT 1st dose                             | OLS        | 0.470       | 0.048                                     | [0.011]*** | 0.045             | [0.010]***                              | 0.434            | 0.050       | [0.012]***                              | 0.636            | -0.005 | [0.018] |
| DPT 2nd dose                             | OLS        | 0.354       | 0.035                                     | [0.010]*** | 0.032             | [0.009]***                              | 0.310            | 0.028       | [0.011]**                               | 0.536            | 0.006  | [0.020] |
| DPT 3rd dose                             | OLS        | 0.261       | 0.031                                     | [0.009]*** | 0.028             | [0.008]***                              | 0.215            | 0.029       | [0.010]***                              | 0.426            | 0.021  | [0.021] |
| Polio 1st dose                           | OLS        | 0.472       | 0.049                                     | [0.011]*** | 0.046             | [0.010]***                              | 0.435            | 0.049       | [0.012]***                              | 0.641            | 0.009  | [0.019] |
| Polio 2nd dose                           | OLS        | 0.368       | 0.037                                     | [0.010]*** | 0.034             | [0.009]***                              | 0.321            | 0.033       | [0.011]***                              | 0.548            | 0.006  | [0.020] |
| Polio 3rd dose                           | OLS        | 0.271       | 0.032                                     | [0.009]*** | 0.029             | [0.008]***                              | 0.221            | 0.029       | [0.010]***                              | 0.438            | 0.020  | [0.020] |
| Measles                                  | OLS        | 0.147       | 0.020                                     | [0.008]*** | 0.018             | [0.007]***                              | 0.095            | 0.023       | [0.007]***                              | 0.217            | -0.004 | [0.018] |
| <b><i>Dummies for Age in Months?</i></b> |            |             | <b><i>No</i></b>                          |            | <b><i>Yes</i></b> |   | <b><i>No</i></b> |             |   | <b><i>No</i></b> |        |         |

*Note* : Each row corresponds to four different regressions. The first regression reproduces the main results in Tables 5 and 6 (for youngest children under 15 months living in rural areas). The second regression controls for dummies for age in months. The third set excludes the age dummies and restricts to the youngest children under 12 months. Finally, the last regressions shows results for youngest children under 15 months living in urban areas. The dependent variable is listed in the rows. The reported coefficient is for Male = 1. Survey weights are not used and no controls (besides age dummies) are included. The number of observations for each age group varies from outcome to outcome because there are a few missing values. Cens. reg. is a censored regression. The urban sample was constructed using the same restrictions as our main estimation sample--we dropped twins and individuals with missing predetermined covariates.

**APPENDIX TABLE 5: EFFECT OF CHILD GENDER ON ANTHROPOMETRIC MEASURES, AGES 0-15 MONTHS, DHS 1992**

| Dependent variable: | Height-for-age Z score | Stunted = 1<br>(height-for-age Z score < 2 s.d. below reference median) |                    | Weight-for-age Z score |                  | Underweight=1<br>(weight-for-age Z score < 2 s.d. below reference median) |                  | Weight-for-height Z score |                   | Wasted=1<br>(Weight-for-height Z score < 2 s.d. below reference median) |                  |                     |                  |
|---------------------|------------------------|---|--------------------|------------------------|------------------|---|------------------|---------------------------|-------------------|---|------------------|---------------------|------------------|
|                     |                        | controls?   | DHS                | UK                     | DHS              | UK  | DHS              | UK                        | DHS               | UK  | DHS              | CDC                 | DHS              |
| Male = 1            | no                     | -0.218<br>[0.043]***  | -0.074<br>[0.049]  | 0.057<br>[0.015]***    | 0.017<br>[0.015] | -0.162<br>[0.033]***  | 0.013<br>[0.039] | 0.04<br>[0.012]***        | -0.005<br>[0.013] | -0.063<br>[0.038]*  | 0.028<br>[0.050] | 0.036<br>[0.011]*** | 0.001<br>[0.014] |
| Male = 1            | yes                    | -0.225<br>[0.043]***  | -0.085<br>[0.048]* | 0.059<br>[0.015]***    | 0.02<br>[0.015]  | -0.165<br>[0.032]***  | 0.008<br>[0.038] | 0.041<br>[0.012]***       | -0.004<br>[0.013] | -0.067<br>[0.037]*  | 0.02<br>[0.050]  | 0.036<br>[0.011]*** | 0.002<br>[0.014] |
| Obs                 |                        | 6396  | 6396               | 6396                   | 6396             | 8550  | 8550             | 8550                      | 8550              | 6411  | 6411             | 6411                | 6411             |
| Mean of Y           |                        | -1.3  | -1.353             | 0.323                  | 0.361            | -1.51   | -2.026           | 0.381                     | 0.525             | -0.727  | -1.253           | 0.137               | 0.309            |

Standard errors [in brackets] are computed taking survey design into account. Each coefficient corresponds to a separate estimation. Controls include all variables in Table 3: # of brothers, # of sisters, birth month, mother's age, mother's caste (2 dummies), mother's religion (3 dummies), mother's years of education, whether mother was born in rural area, mother's age at first marriage, mother's age at first birth, and whether mother speaks Hindi. The other measures are standardized using the UK (1990) standards or the 2000 CDC standards. The UK standards are not available for height for age. CDC standards for height are not available for children under 2. Survey weights are used in estimation. For children under 2 the standards use length rather than height, which is measured while lying instead of standing. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**APPENDIX TABLE 6: ADDITIONAL RESULTS ON EFFECT OF GENDER ON PARENTAL INVESTMENTS. CHILDREN AGES 0-15 MONTHS**

| Dependent variable:     | Model:     | Youngest live children ages 0-15<br>N=11,445 |        |          | First born only (among youngest live children ages 0-15)<br>N=3,053 |        |          | Live and dead children (would be ages 0-15 months at the time of the survey)<br>N= 12,492 |        |          | mortality (information imputed for kids who died too young to receive the investment) |             |
|-------------------------|------------|--|--------|----------|---|--------|----------|---|--------|----------|---|-------------|
|                         |            | Coefficient on I(male=1), [s.e]              | Mean Y | % effect | Coefficient on I(male=1), [s.e]                                     | Mean Y | effect t | Coefficient on I(male=1), [s.e]   | Mean Y | % effect | Lower Bound   | Upper Bound |
| Ever breastfed?         | OLS        | 0.006 [0.004]                                | 0.954  | 1%       | 0.008 [0.010]   | 0.95   | 1%       | -0.004 [0.005]  | 0.915  | 0%       | -0.007  | -0.002      |
| # months breastfed      | reg.       | 1.33 [0.448]***                              | 7.626  | 17%      | 0.514 [0.911]   | 7.78   | 7%       | 1.104 [0.405]***  | 7.555  | 15%      | -0.954  | 1.283       |
| log(# months breastfed) | cens. reg. | 0.199 [0.069]***                             | 1.797  | 11%      | 0.077 [0.139]   | 1.82   | 4%       | 0.176 [0.068]***  | 1.784  | 10%      | -0.13   | 0.176       |
| Vitamin A?              | OLS        | 0.016 [0.006]**                              | 0.133  | 12%      | 0.018 [0.014]   | 0.15   | 12%      | 0.016 [0.006]**   | 0.126  | 13%      | -0.039  | 0.077       |
| Vaccination card?       | OLS        | 0.043 [0.008]***                             | 0.287  | 15%      | 0.066 [0.021]***  | 0.34   | 19%      | 0.037 [0.008]***  | 0.271  | 14%      | 0.036   | 0.039       |
| BCG                     | OLS        | 0.037 [0.009]***                             | 0.457  | 8%       | 0.025 [0.022]   | 0.54   | 5%       | 0.03 [0.009]***   | 0.432  | 7%       | 0.03  | 0.03        |
| DPT 1st dose            | OLS        | 0.048 [0.009]***                             | 0.476  | 10%      | 0.043 [0.022]**   | 0.56   | 8%       | 0.047 [0.009]***  | 0.45   | 10%      | 0   | 0.091       |
| DPT 2nd dose            | OLS        | 0.034 [0.009]***                             | 0.364  | 9%       | 0.008 [0.021]   | 0.44   | 2%       | 0.034 [0.009]***  | 0.343  | 10%      | -0.015  | 0.083       |
| DPT 3rd dose            | OLS        | 0.028 [0.008]***                             | 0.27   | 10%      | 0.007 [0.020]   | 0.34   | 2%       | 0.028 [0.008]***  | 0.254  | 11%      | -0.023  | 0.082       |
| Polio 1st dose          | OLS        | 0.051 [0.009]***                             | 0.477  | 11%      | 0.04 [0.022]*   | 0.56   | 7%       | 0.051 [0.009]***  | 0.451  | 11%      | 0.003   | 0.094       |
| Polio 2nd dose          | OLS        | 0.038 [0.009]***                             | 0.374  | 10%      | 0.018 [0.021]   | 0.45   | 4%       | 0.038 [0.009]***  | 0.353  | 11%      | -0.011  | 0.086       |
| Polio 3rd dose          | OLS        | 0.031 [0.008]***                             | 0.277  | 11%      | 0.018 [0.020]   | 0.35   | 5%       | 0.031 [0.008]***  | 0.26   | 12%      | -0.02   | 0.085       |
| Measles                 | OLS        | 0.018 [0.007]***                             | 0.149  | 12%      | 0.02 [0.017]  | 0.20   | 10%      | 0.018 [0.007]***  | 0.14   | 13%      | -0.04   | 0.081       |

Each coefficient corresponds to a separate estimation, and survey weights are not used. No controls are included. The number of observations for each age group varies from outcome to outcome because there are a few missing values. Cens. reg. is a censored regression. Upper bounds assume that all dead girls would have not received inputs (for dummy variables) or would have been given the 25th percentile of the girls' outcomes distribution. For boys we assume that had they lived they would all have been given inputs (for dummy variables) or given the 75th percentile of boys' outcome distribution. For upper bounds we assume the opposite. We use this rule to imput investments for dead children for whom the information from mothers' reports are missing or for children who died too young to have receive the investment (before 2 months for polio/DPT 1st dose, before 3 months for polio/DPT 2nd dose, before 4 months for polio/DPT 3rd dose, before 6 months for vitamin A and before 9 months for measles ).



**APPENDIX TABLE 7. EFFECT OF CHILD GENDER ON HOUSEHOLD CHILD CARE TIME, TIME USE SURVEY (1998-1999)**

| Model:   | OLS                                     | OLS                                     | Logit                     | OLS                         | Tobit                     |
|--|---|---|---------------------------|-----------------------------|---------------------------|
| Dependent variable:                            | Number of minutes per day, including 0s | Number of minutes per day, including 0s | Any care? (Beta reported) | Number of minutes per day>0 | Number of minutes per day |
|  | (1)                                     | (2)                                     | (3)                       | (4)                         | (5)                       |
| <b>Panel A: Youngest kids under 1 year old</b> |   |   |                           |                             |                           |
| Male=1   | 32.772<br>[17.669]*                     | 30.018<br>[17.511]*                     | 0.613<br>[0.397]          | 24.226<br>[17.344]          | 36.309<br>[18.855]*       |
| Controls?                                      | no                                      | yes                                     | no                        | no                          | no                        |
| Obs  | 562                                     | 562                                     | 562                       | 516                         | 562                       |
| Mean Y   | 236.62                                  | 236.62                                  | 0.93                      | 255.51                      | 236.62                    |
| <b>Panel B: All kids 0-5 years old</b>         |   |   |                           |                             |                           |
| number of boys 5 and under                     | -1.538<br>[3.773]                       | -1.991<br>[3.761]                       | -0.088<br>[0.066]         | 1.913<br>[4.014]            | -2.639<br>[4.582]         |
| number of children 5 and under                 | 37.16<br>[3.195]***                     | 37.98<br>[3.236]***                     | 0.598<br>[0.064]***       | 26.688<br>[3.376]***        | 48.21<br>[3.855]***       |
| Controls?                                      | no                                      | yes                                     | no                        | no                          | no                        |
| Obs  | 5,949                                   | 5,949                                   | 5,949                     | 4,660                       | 5,949                     |
| Mean Y   | 137.09                                  | 137.09                                  | 0.78                      | 176.63                      | 137.09                    |

Robust standard errors in brackets. The dependent variable in all columns except (3) is the number of minutes per day spent with child care by all household members. The dependent variable in column (3) is an indicator variable for positive childcare time. The controls include dummies for household caste (2 dummies), a dummy for whether the household was Hindu and the area of the land owned and possessed by the household. Survey weights are used in estimation. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**APPENDIX TABLE 8: COMPARING ESTIMATES FOR YOUNGEST AGES 0-15 TO ESTIMATES FOR ALL OTHER CHILDREN AGES 0-48**

|                                  |            | No Controls for Family Size        |            |        |          |  |            |        |          | Controlling for Number of Siblings Alive |         |            |                    |  |        |          |            |        |            |      |       |
|----------------------------------|------------|------------------------------------|------------|--------|----------|--|------------|--------|----------|--|---------|------------|--------------------|--|--------|----------|------------|--------|------------|------|-------|
|                                  |            | 1. Youngest ages 0-15<br>N= 11,445 |            |        |          | 2. All Children ages 0-47<br>N= 32,407 |            |        |          | 3. Youngest ages 0-15<br>N= 11,445       |         |            |                    | 4. All Children ages 0-47<br>N= 32,407 |        |          |            |        |            |      |       |
| Dependent variable:              | Model:     | I(male)                            |            | Mean Y | % effect | I(male)                                |            | Mean Y | % effect | P-value                                  | I(male) |            | Number of Siblings |  | Mean Y | % effect | P-value    |        |            |      |       |
|                                  |            | Coeff.                             | [s.e]      |        |          | Coeff.                                 | [s.e]      |        |          | Test                                     | Coeff.  | [s.e]      | [s.e]              | % effect                               | Coeff. | [s.e]    | Coeff.     | [s.e]  | % effect   | Test |       |
| Ever breastfed?                  | OLS        | 0.006                              | [0.004]    | 0.953  | 1%       | 0.000                                  | [0.002]    | 0.983  | 0%       | 0.365                                    | 0.006   | [0.004]    | 0.000              | [0.001]                                | 1%     | 0.000    | [0.002]    | 0.001  | [0.001]*   | 0%   | 0.362 |
| # months breastfed<br>breastfed) | cens. reg. | 1.800                              | [0.574]*** | 7.673  | 23%      | 1.565                                  | [0.291]*** | 21.810 | 7%       | 0.774                                    | 1.846   | [0.570]*** | 0.600              | [0.191]***                             | 24%    | 1.561    | [0.291]*** | -0.179 | [0.083]**  | 7%   | 0.735 |
| Vitamin A?                       | OLS        | 0.014                              | [0.007]**  | 0.116  | 12%      | 0.020                                  | [0.007]*** | 0.217  | 9%       | 0.988                                    | 0.014   | [0.007]**  | -0.014             | [0.002]***                             | 12%    | 0.020    | [0.007]*** | -0.026 | [0.002]*** | 9%   | 0.976 |
| Vaccination card?                | OLS        | 0.043                              | [0.009]*** | 0.275  | 16%      | 0.030                                  | [0.007]*** | 0.190  | 16%      | 0.048                                    | 0.043   | [0.009]*** | -0.037             | [0.003]***                             | 16%    | 0.030    | [0.007]*** | -0.027 | [0.002]*** | 16%  | 0.038 |
| BCG                              | OLS        | 0.035                              | [0.011]*** | 0.448  | 8%       | 0.045                                  | [0.008]*** | 0.555  | 8%       | 0.624                                    | 0.035   | [0.011]*** | -0.050             | [0.003]***                             | 8%     | 0.045    | [0.008]*** | -0.047 | [0.003]*** | 8%   | 0.697 |
| DPT 1st dose                     | OLS        | 0.048                              | [0.011]*** | 0.470  | 10%      | 0.053                                  | [0.008]*** | 0.602  | 9%       | 0.780                                    | 0.048   | [0.010]*** | -0.049             | [0.003]***                             | 10%    | 0.052    | [0.008]*** | -0.048 | [0.003]*** | 9%   | 0.857 |
| DPT 2nd dose                     | OLS        | 0.034                              | [0.010]*** | 0.354  | 10%      | 0.046                                  | [0.008]*** | 0.536  | 9%       | 0.319                                    | 0.034   | [0.010]*** | -0.046             | [0.003]***                             | 10%    | 0.045    | [0.008]*** | -0.051 | [0.003]*** | 8%   | 0.362 |
| DPT 3rd dose                     | OLS        | 0.031                              | [0.009]*** | 0.261  | 12%      | 0.037                                  | [0.008]*** | 0.464  | 8%       | 0.331                                    | 0.031   | [0.009]*** | -0.039             | [0.003]***                             | 12%    | 0.036    | [0.008]*** | -0.050 | [0.003]*** | 8%   | 0.370 |
| Polio 1st dose                   | OLS        | 0.049                              | [0.011]*** | 0.472  | 10%      | 0.055                                  | [0.008]*** | 0.607  | 9%       | 0.866                                    | 0.049   | [0.011]*** | -0.047             | [0.003]***                             | 10%    | 0.055    | [0.008]*** | -0.050 | [0.003]*** | 9%   | 0.952 |
| Polio 2nd dose                   | OLS        | 0.037                              | [0.010]*** | 0.368  | 10%      | 0.047                                  | [0.008]*** | 0.555  | 8%       | 0.481                                    | 0.037   | [0.010]*** | -0.045             | [0.003]***                             | 10%    | 0.046    | [0.008]*** | -0.050 | [0.003]*** | 8%   | 0.541 |
| Polio 3rd dose                   | OLS        | 0.032                              | [0.009]*** | 0.271  | 12%      | 0.034                                  | [0.008]*** | 0.482  | 7%       | 0.542                                    | 0.032   | [0.009]*** | -0.037             | [0.003]***                             | 12%    | 0.034    | [0.008]*** | -0.050 | [0.003]*** | 7%   | 0.599 |
| Measles                          | OLS        | 0.020                              | [0.008]*** | 0.147  | 14%      | 0.039                                  | [0.008]*** | 0.401  | 10%      | 0.047                                    | 0.020   | [0.007]*** | -0.025             | [0.002]***                             | 14%    | 0.038    | [0.008]*** | -0.044 | [0.003]*** | 9%   | 0.055 |

Note: Each row corresponds to four different regressions numbered in the columns from 1 to 4. The dependent variable is listed in the rows. Survey weights are not used and no controls are included. Cens. reg. is a censored regression. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**APPENDIX TABLE 9: EFFECT OF CHILD GENDER ON VACCINATIONS, DHS 1992**

|   |     | controls? | BCG                 | DPT 1st<br>dose     | DPT 2nd<br>dose     | DPT 3rd<br>dose     | Polio 1st<br>dose   | Polio 2nd<br>dose   | Polio 3rd<br>dose   | Measles             |
|---|-----|-----------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Panel A: Youngest kids 0-15 months old. OLS</b>                      |     |           |                     |                     |                     |                     |                     |                     |                     |                     |
| Male = 1  | no  |           | 0.036<br>[0.011]*** | 0.048<br>[0.011]*** | 0.035<br>[0.010]*** | 0.031<br>[0.009]*** | 0.049<br>[0.011]*** | 0.037<br>[0.010]*** | 0.032<br>[0.009]*** | 0.02<br>[0.008]***  |
| Male = 1  | yes |           | 0.033<br>[0.010]*** | 0.047<br>[0.010]*** | 0.033<br>[0.009]*** | 0.03<br>[0.009]***  | 0.047<br>[0.010]*** | 0.036<br>[0.009]*** | 0.031<br>[0.009]*** | 0.019<br>[0.007]*** |
| <b>Panel B: Youngest kids 0-15 months old. LOGIT (beta reported)</b>    |     |           |                     |                     |                     |                     |                     |                     |                     |                     |
| Male = 1  | no  |           | 0.144<br>[0.043]*** | 0.195<br>[0.042]*** | 0.152<br>[0.044]*** | 0.162<br>[0.048]*** | 0.198<br>[0.042]*** | 0.159<br>[0.043]*** | 0.164<br>[0.047]*** | 0.161<br>[0.060]*** |
| Male = 1  | yes |           | 0.17<br>[0.051]***  | 0.23<br>[0.050]***  | 0.175<br>[0.050]*** | 0.182<br>[0.053]*** | 0.232<br>[0.051]*** | 0.185<br>[0.049]*** | 0.184<br>[0.052]*** | 0.165<br>[0.064]*** |
| Obs   |     |           | 11591               | 11591               | 11587               | 11587               | 11609               | 11605               | 11605               | 11520               |
| Mean of Y   |     |           | 0.448               | 0.47                | 0.354               | 0.262               | 0.472               | 0.368               | 0.271               | 0.147               |
| <b>Panel C: Youngest kids 9-15 months old. OLS</b>                      |     |           |                     |                     |                     |                     |                     |                     |                     |                     |
| Male = 1  | no  |           | 0.036<br>[0.017]**  | 0.058<br>[0.017]*** | 0.055<br>[0.017]*** | 0.052<br>[0.016]*** | 0.058<br>[0.017]*** | 0.051<br>[0.017]*** | 0.054<br>[0.016]*** | 0.038<br>[0.015]**  |
| Obs   |     |           | 4815                | 4808                | 4806                | 4806                | 4822                | 4818                | 4818                | 4759                |
| Mean of Y   |     |           | 0.573               | 0.613               | 0.525               | 0.434               | 0.617               | 0.545               | 0.453               | 0.313               |
| <b>Panel D: Youngest kids 0-15 months old with vaccination card OLS</b> |     |           |                     |                     |                     |                     |                     |                     |                     |                     |
| Male = 1  | no  |           | -0.017<br>[0.014]   | 0.005<br>[0.009]    | -0.004<br>[0.019]   | 0.023<br>[0.021]    | 0.006<br>[0.010]    | -0.005<br>[0.019]   | 0.027<br>[0.021]    | 0.016<br>[0.019]    |
| Obs   |     |           | 3338                | 3338                | 3338                | 3338                | 3338                | 3338                | 3338                | 3338                |
| Mean of Y   |     |           | 0.869               | 0.947               | 0.747               | 0.574               | 0.94                | 0.75                | 0.574               | 0.271               |

Standard errors [in brackets] are computed taking survey design into account. Each coefficient corresponds to a separate estimation, and survey weights are used. The number of observations for each age group varies from outcome to outcome because there are a few missing values. Controls include all variables in Table 1: # of brothers, # of sisters, birth month, mother's age, mother's caste (2 dummies), mother's religion (3 dummies), mother's years of education, whether mother was born in rural area, mother's age at first marriage, mother's age at first birth, mother speaks Hindi, prenatal care use, number of prenatal care visits, tetanus shot, number of tetanus shots, and home delivery. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1