Human capital effects of one-on-one time with parents
Evidence from a Swedish childcare access reform

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We study the effects of increased opportunities for one-on-one time with a parent during infancy on the human capital formation of children. To this end, we exploit a nationwide reform that mandated Swedish municipalities to offer childcare for infants’ older siblings, while parents were on parental leave to care for their infants. We find no robust overall effects on the children’s 6th grade test scores, but we find evidence of positive effects on test scores for sons of less than university educated mothers and daughters of highly educated mothers. Exploring potential pathways, we find no evidence of changes in quantity of parental time, suggesting instead improved quality of parent-child interactions during infancy as a result of less competition for parental time.

MOTIVATION: There is growing evidence that early childhood conditions are important determinants of children’s human capital development.

• Socioeconomic skill gaps are associated with gaps in child related investments, such as language exposure and human capital enhancing parenting styles (Francosconi and Heckman, 2016).
  ➢ We estimate the effects of exogenously increased opportunities to undisturbed one-on-one time with a parent, potentially improving both quality and quantity of parental investments.

• Children’s cognitive development benefits especially from time spent in educational activities with their parents (mothers), early investments have larger effects than later (e.g. Hein and Felfe, 2014).
  ➢ We estimate the effects of investments during infancy, a period important for parent child attachment and for the child’s socioeconomic development (Moilun et al., 2018).

• Differential/transfer parental time investments in younger siblings possibly explains why they fare worse than older siblings in many different dimensions (e.g. Black et al., 2005; Lehmahl et al., 2018).
  ➢ We estimate the effects of the home environment of younger siblings becoming more similar to that of firstborns, implying less sibling interactions, and a possible reallocation of parental time from the older sibling to the younger child, both key drivers of birth order effects.

• Parental stress is found to be higher for low educated mothers (Parkes et al., 2015). Boys are more sensitive to adverse childhood environment (Bertrand and Pan, 2013) and girls to cognitive stimulus (Fort et al., 2019).
  ➢ We estimate heterogeneous effects with respect to gender and maternal education.

METHOD: We exploit a Swedish childcare access reform implemented in 2002.

• Older siblings guaranteed 15 hours childcare per week while their parent was on parental leave
  ➢ Childcare is highly subsidized and of high quality

• Estimate intention-to-treat effects in a differences-in-differences setting
  ➢ Comparing infants with and without siblings of childcare age
  ➢ Comparing infants born pre- and post-reform
  ➢ Restricted to municipalities that were most affected by the reform
  ➢ Placebo analysis using municipalities that were least affected

• We compare standardized core subject test scores at age 13 (standard deviation)
• Heterogeneous effects
• Gender, socio economic status (maternal education)
• Mechanisms
  ➢ Child health: mental and physical
  ➢ Family environment: maternal mental health, separation, fertility, maternal labor supply, age at childcare enrollment, division of parental leave, sibling spillovers

RESULTS: Although families took advantage of the better opportunities for one-on-one time, this did not have a statistically significant effect on child test scores on average.

• The estimate of 0.029 sd (standard deviation) is imprecise but relatively large
  ➢ About half of the difference between firstborns and higher parity children

Table 2. Main results: Effects of better opportunities for one-on-one time on average test scores

<table>
<thead>
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<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>One-on-one</td>
<td>0.029</td>
<td>0.043**</td>
<td>0.017</td>
</tr>
<tr>
<td>Observations</td>
<td>(0.019)</td>
<td>(0.021)</td>
<td>(0.025)</td>
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<tr>
<td>Control mean</td>
<td>-0.0790</td>
<td>-0.199</td>
<td>0.0467</td>
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<tr>
<td></td>
<td>n=247,238</td>
<td>n=123,614</td>
<td>n=123,624</td>
</tr>
</tbody>
</table>

For BOYS test scores improved by 0.043 sd
• Driven by sons of less than college educated mothers
• Positive effect in the bottom of the test score distribution

For GIRLS no average effect on test scores
• Test scores improved for daughters of university educated mothers
• Positive effect in the middle of the test score distribution

MECHANISMS: There are several pathways through which the increased access to childcare of older siblings may affect children’s school performance.

• No strong effect on child health
  ➢ Possibly improved mental health in school age for boys
  ➢ Possibly worse health in preschool age for groups where test scores were affected

• No evidence of sibling spillovers or effects on parent leave division between parents

CONCLUSION: In this project we find that increased opportunities for one-on-one time during infancy seem to improve the educational outcomes for some children, while not for all.

• Strong first stage for all, thus heterogeneity likely reflect differences in gains, rather than utilization
• Consistent with improvements in the quality of parent-infant interaction (more undivided attention)
• Suggest a potential for family policy to strengthen the home environment in disadvantaged families

REFERENCES:

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