Childcare Subsidies, Home Production, and Extended Income
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Discussant:
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How to assess living standards?

- The literature is preoccupied with money income
- Home production ('time') generally ignored whilst it:
  - Complements market income by allowing for independent additional consumption possibilities (Frick et al. 2012)
  - Supplements when faced with income shock (Becker 1965): insurance role (Aguiar et al. 2013; Guler & Taskin 2013)
- Evaluate causal dynamics in ‘extended income’ following exogenous policy shock using diff-in-diff
Policy shock with ‘discontinuity’

- Early 2012 cut in childcare benefits in the Netherlands
- Net cost increase for formal day care by 20-33% (Akgunduz et al. 2015)
- Subsidies only for parents with children at primary school
- Focus on mothers: responsive to financial incentives & childcare costs (Chapela 2011) and more often in-work poor (Marx & Nolan 2012)
- Allows for a diff-in-diff:
  - Treatment: mothers aged 21-50 with child aged < 12
  - Control: mothers aged 21-50 with child aged 12-18
LISS Panel Data

- Balanced panel using observations from 2009 and 2010 pre-treatment and 2012 post-treatment
- Gross and net monthly money income
- Time use comes from recall data not time diaries
- “How much time spent in household chores over the past 7 days?”
Monetizing time spent on home production

- Home production: cleaning, shopping, cooking, gardening, but not childcare
- Minimum wage: replacement costs (Frazis and Stewart 2011)
  - NL has a high minimum wage so uniform wage
  - Uniform wage for all ignores the quality aspect of the product and productivity of the individual compared to the specialist
- Observed wage: opportunity costs
  - Allows heterogeneity in the capacity to earn money and income and the individual’s productivity in home production
  - However, individuals don’t have free choice of working unlimited hours in their paid job and highly productive workers are also highly productive at home
- Predicted wage: individual ‘average productivity’ (Frick et al. 2012)
  - Allows for individual variation in productivity as well as in opportunities
Gross money income

Extended income (predicted wage)
Difference-in-Difference Model

\[ y_{it} = \beta_0 + \beta_1 P_t + \beta_2 G_{it} + \beta_3 P_t \cdot G_{it} + \beta_4 X_{it} + \alpha_i + \pi_t + \epsilon_{it} \]

- \( Y \) – money income, home production, extended income
- \( P \) – treatment period dummy
- \( G \) – treatment group dummy
- \( X \) – age, age\(^2\), single mother
- \( \alpha \) – individual FE
- \( \pi \) – time FE
## Descriptives for treatment and control group

<table>
<thead>
<tr>
<th></th>
<th>Treatment</th>
<th>Control</th>
<th>Diff</th>
<th>Treatment</th>
<th>Control</th>
<th>Diff</th>
<th>Diff-in-diff</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>38</td>
<td>40</td>
<td>1</td>
<td>43</td>
<td>46</td>
<td>3</td>
<td>-1</td>
</tr>
<tr>
<td><strong>Gross money income €</strong></td>
<td>1167</td>
<td>1119</td>
<td>-48</td>
<td>1232</td>
<td>1284</td>
<td>52</td>
<td>-100</td>
</tr>
<tr>
<td><strong>Net money income €</strong></td>
<td>834</td>
<td>798</td>
<td>-36</td>
<td>902</td>
<td>941</td>
<td>39</td>
<td>-75</td>
</tr>
<tr>
<td><strong>Home production hours</strong></td>
<td>82</td>
<td>76</td>
<td>-6</td>
<td>91</td>
<td>76</td>
<td>-15</td>
<td>9</td>
</tr>
<tr>
<td><strong>Extended income (minimum)</strong></td>
<td>1793</td>
<td>1688</td>
<td>-105</td>
<td>1919</td>
<td>1849</td>
<td>-70</td>
<td>-35</td>
</tr>
<tr>
<td><strong>Extended income (observed)</strong></td>
<td>2039</td>
<td>1841</td>
<td>-198</td>
<td>2138</td>
<td>2101</td>
<td>-37</td>
<td>-161</td>
</tr>
<tr>
<td><strong>Extended income (predicted)</strong></td>
<td>1814</td>
<td>1593</td>
<td>-221</td>
<td>2295</td>
<td>2341</td>
<td>46</td>
<td>-267</td>
</tr>
</tbody>
</table>
### Table 2: Main results for monetized income

<table>
<thead>
<tr>
<th>Gross money income (€/m)</th>
<th>Minimum wage (€/m)</th>
<th>Observed wage (€/m)</th>
<th>Predicted wage (€/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment 46.57</td>
<td>214.3**</td>
<td>251.9*</td>
<td>306.6*</td>
</tr>
<tr>
<td>Period = 2012 -244.9</td>
<td>141.9</td>
<td>596.3</td>
<td>-453.1</td>
</tr>
<tr>
<td>Treatment = 1 -123.9**</td>
<td>-124.3</td>
<td>-175.7</td>
<td>-232.3*</td>
</tr>
<tr>
<td>Age 26.18</td>
<td>-391.5</td>
<td>-581.5**</td>
<td>-953.6**</td>
</tr>
<tr>
<td>Age squared 532.2</td>
<td>3,281</td>
<td>4,692*</td>
<td>12,412**</td>
</tr>
<tr>
<td>Single 338.2***</td>
<td>124.0</td>
<td>43.95</td>
<td>171.1</td>
</tr>
<tr>
<td>Period = 2010 -48.79</td>
<td>115.9</td>
<td>301.3*</td>
<td>-43.72</td>
</tr>
<tr>
<td>Constant -637.8</td>
<td>12,139*</td>
<td>21,599***</td>
<td>20,086*</td>
</tr>
</tbody>
</table>

| Individual FE yes        | yes                | yes                 | yes                  |
| Time FE yes              | yes                | yes                 | yes                  |
| Observations 1,011       | 1,011              | 1,011               | 1,011                |
| R-squared 0.025          | 0.025              | 0.018               | 0.071                |
| Persons 337              | 337                | 337                 | 337                  |
Sensitivity tests

- Net income and net extended income
- Unbalanced panel
- Removed families with new babies in 2011
- Topcoded hours (99%)
- Not clear where time comes from
Table 3: Time spent on other categories

<table>
<thead>
<tr>
<th></th>
<th>(1) Market work (h/m)</th>
<th>(2) Childcare at home (h/m)</th>
<th>(3) Leisure (h/m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment</td>
<td>-1.82</td>
<td>2.14</td>
<td>-4.1</td>
</tr>
<tr>
<td>Observations</td>
<td>1,011</td>
<td>1,006</td>
<td>1,009</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.018</td>
<td>0.180</td>
<td>0.027</td>
</tr>
<tr>
<td>Persons</td>
<td>337</td>
<td>337</td>
<td>337</td>
</tr>
</tbody>
</table>
Conclusions

- No response to the treatment on money income
- Lower decrease in home production for treatment group
  - Mothers with below-average # of home production hours decreased their hours the most
- Home production is an income-smoothing device
- When monetized, the affected group becomes richer
- Not clear where time came from
Comments

- Multitasking or recall bias or social desirability bias
  - Often doing a household task while with children
  - Possible that overreporting could differ between groups if mothers of different aged children perceive more time pressure

- Questions about paid work are “usual hours”, not actual hours, so maybe it is not the right comparison with actual hours on home production, also did you include second jobs

- Control for # of household children
  - # household children in different age categories (0-2, 3-5, 6-12, 12-18)
  - This could be why home production falls more for controls as kids 12-18 are getting older and doing more chores or have moved out of the home
    - There are questions about whether the eldest living-at home child helped with household tasks?
Comments

- Interact single mother with subsidy or estimate separately for single mothers/married and cohabiting women (exclude households with 3+ adults)
- Control for spousal income
- What happens to fathers time?
  - Zero is still interesting
- What about longer-term effects on work time – 2013 survey?
  - Perhaps it is hard to change employment or work hours in short-run in response to policy change
- State how many respondents are in the treatment and control groups
- Additional references: Gimenez-Nadal & Molina *REHO* 2014, Burda & Hamermesh *Economics Letters* 2010 (find evidence of increased household production to smooth consumption over the business cycle), Craig & Brown 2015 and Stewart & Allard 2015 (discuss multitasking and childcare)
Contact Information

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