

# Childcare Subsidies, Home Production, and Extended Income

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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?”

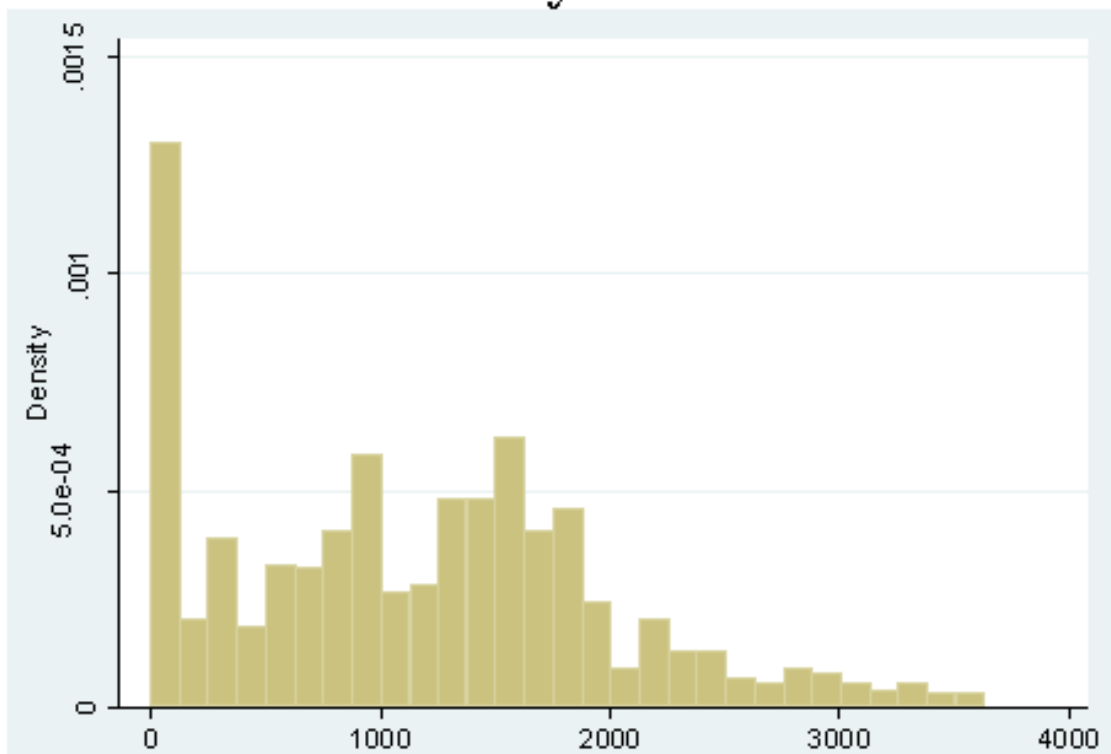


# Monetizing time spent on home production

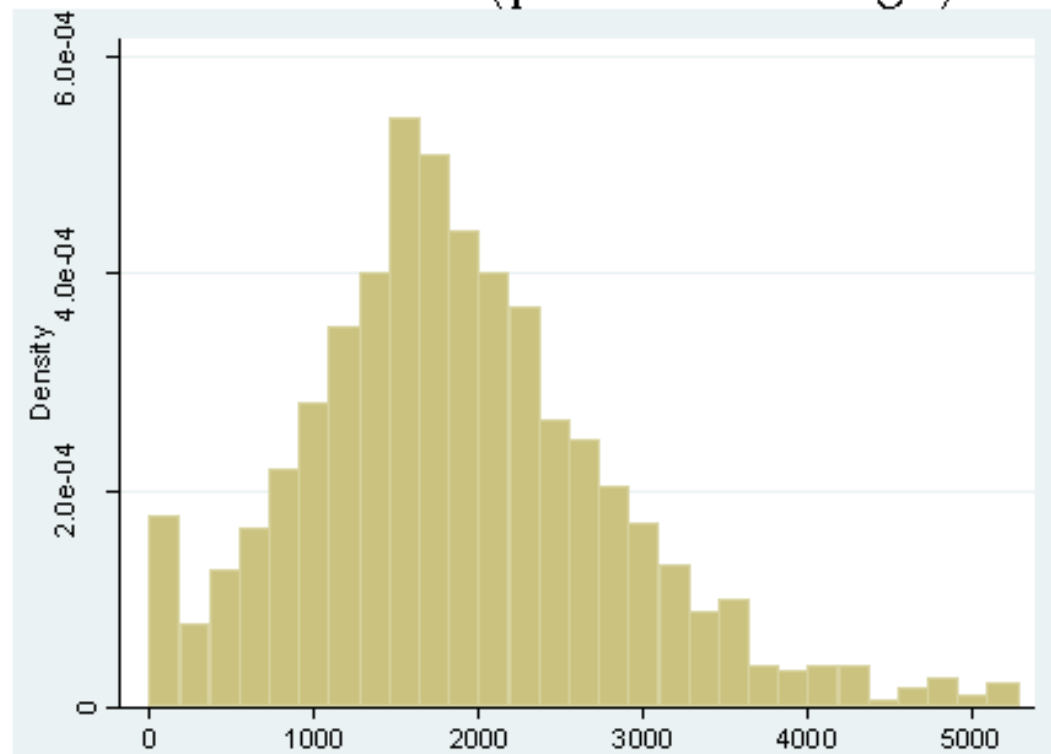
- Home production: cleaning, shopping, cooking, gardening, but not childcare
- Minimum wage: replacement costs (Frazis and Stewart 2011)
  - ▶ NL has a high minimum wage so uniform wage
  - ▶ Uniform wage for all ignores the quality aspect of the product and productivity of the individual compared to 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

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

- ▶  $Y$  – money income, home production, extended income
- ▶  $P$  – treatment period dummy
- ▶  $G$  – treatment group dummy
- ▶  $X$  – age, age<sup>2</sup>, single mother
- ▶  $\alpha$  – individual FE
- ▶  $\pi$  – time FE

# Descriptives for treatment and control group

	Treatment			Control			Diff-in-
	2009-2010	2012	Diff	2009-2010	2012	Diff	diff
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Age	38	40	1	43	46	3	-1
Gross money income €	1167	1119	-48	1232	1284	52	-100
Net money income €	834	798	-36	902	941	39	-75
Home production hours	82	76	-6	91	76	-15	9
Extended income (minimum)	1793	1688	-105	1919	1849	-70	-35
Extended income (observed)	2039	1841	-198	2138	2101	-37	-161
Extended income (predicted)	1814	1593	-221	2295	2341	46	-267



Table 2: Main results for monetized income

	Gross money income (€/m) (1)	Extended income		
		Minimum wage (€/m) (2)	Observed wage (€/m) (3)	Predicted wage (€/m) (4)
Treatment	46.57	214.3**	251.9*	306.6*
Period = 2012	-244.9	141.9	596.3	-453.1
Treatment = 1	-123.9**	-124.3	-175.7	-232.3*
Age	26.18	-391.5	-681.5**	-953.6**
Age squared	532.2	3,281	4,692*	12,412**
Single	338.2***	124.0	43.95	171.1
Period = 2010	-48.79	115.9	301.3*	-43.72
Constant	-637.8	12,139*	21,599***	20,036*
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

	(1)	(2)	(3)
	Market work (h/m)	Childcare at home (h/m)	Leisure (h/m)
Treatment	-1.82	2.14	-4.1
Observations	1,011	1,006	1,009
R-squared	0.018	0.180	0.027
Persons	337	337	337

# 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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