Intergenerational mobility of housework time in the UK

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Outline

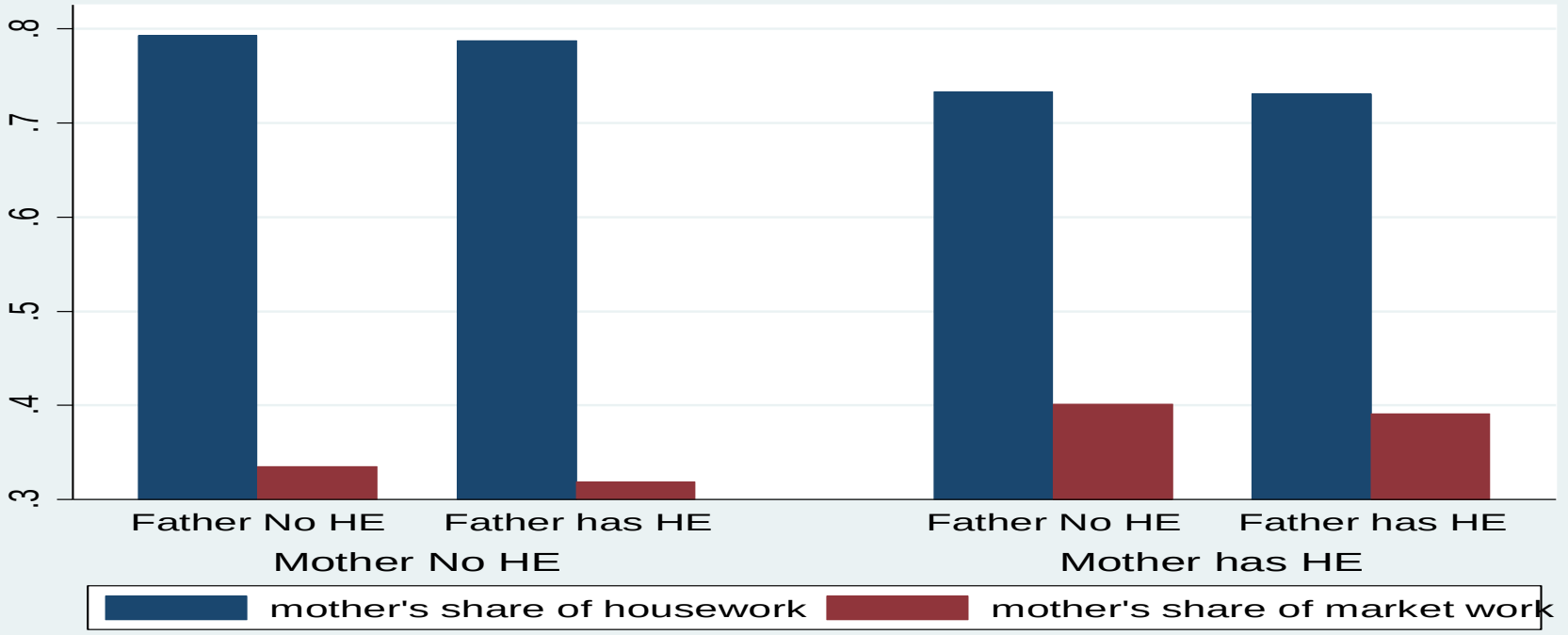
- Introduction
- Literature review
- UK Time Use Survey 2000
- British Household Panel Survey, 1992-2008
- Conclusions & final thoughts

Why intergenerational transmission of housework time

Importance in Economics:

- Gender economic inequality: housework reduces wages of women (e.g. Hersch and Stratton, 1997 2002; Bryan and Sevilla, 2011).
- Work-life balance: women deal with a “double burden” or “second shift” (Hochschild and Machung 1989; Schor 199;: Gimenez-Nadal and Sevilla, 2011).
- Experienced utility: housework ranks among the worst activities in terms of the utility obtained by individuals (Kahneman et al. 2004; Kahneman and Krueger, 2006; Krueger; 2007; Gimenez-Nadal and Molina, forthcoming).
- Measurement of GDP/well-being: contribution of household tasks to GDP (Krueger, 2009).

The division of household labor in UK couples



- BHPS: Mother's share of total housework 70-80%, in all subgroups while her share of total market work ranges 30-40%.
- UKTUS 2000: Mother's share of housework is 79% on average, for highly educated couples this share amounts to 72%.
- Consistent with empirical studies showing degree of gender asymmetry in the relationship between wages and housework.

In this paper:

- Examine the relationship between housework time of children and that of their parents in the UK.
- Combine two data sources for the UK:
  - The UK Time Use Survey (2000).
  - British Household Panel Survey (BHPS).
- The time use data suggests a positive effect of both parents' housework time, consistent with other studies.
- Fixed-effect (FE) using BHPS indicate that only father's housework time is significant.
  - However, FE estimates are likely to be a lower bound due to exacerbated measurement error
- Endogenize father-mother housework ratio using both parents' lagged working hours or their difference:
  - IV estimates fully support the FE results.
  - IV results indicative rather than conclusive.

Literature Review: transmission in the uses of time

- Intergenerational transmission of attitudes and preferences in the uses of time:
  - Cunningham (2001) shows that the parental division of labor when a son was growing up affects the adult son's participation in routine housework once he marries.
  - Cardoso, Fontainha and Monfardini (2012) find positive evidence in France, Germany and Italy for the link between time allocation by parents and by youngsters.
  - Alvarez and Miles (2012) find in Spain a significant positive correlation between a more egalitarian parents' allocation of housework and a less asymmetrical distribution of domestic chores between sons and daughters.
  - Solaz and Wolff (2015) find for a sample of French couples a positive relationship between child's and parents' housework time.

The intergenerational transmission of the uses of time

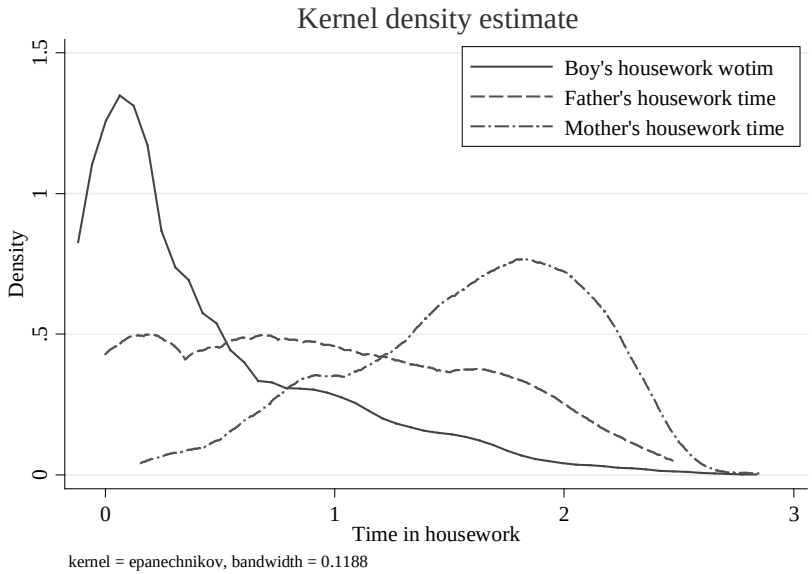
- Mechanisms to explain the associations between parents' and children's uses of time:
  - Intergenerational transmission of preferences: parents influence preference formation of the child (Wolfinger, 2000; Amato and DeBoer, 2001; Booth and Kee, 2009), in many cases through the culture of the country (Carroll, Rhee and Rhee, 1994; Fernandez, Fogli and Olivetti, 2004; Fernandez and Fogli, 2006).
  - Parental role model: there are gender norms about what a man or a woman should or should not do, with a social cost of deviating from the behaviors expected under these norms (Akerlof and Kranton, 2000). Under these circumstances, parents may try to transmit these roles to their children so that they will conform to these gender norms of the society in the future.
  - Imitation: "doing by watching" attitude.
- Disentangling any of the channels is very complicated (Solaz and Wolf, 2015)

Data: The UKTUS 2000

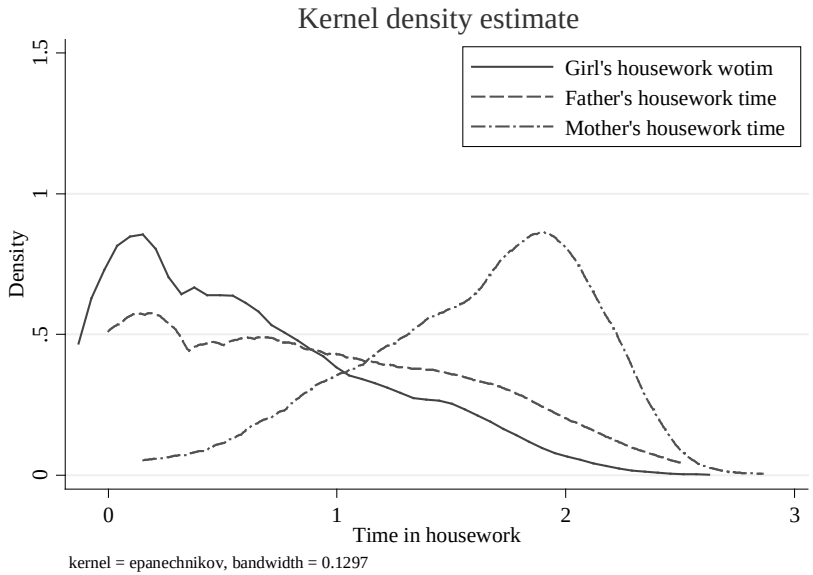
- The UK Time Use Survey 2000
  - Only time use survey with information on all HH members from the UK.
  - Part of the Multinational Time Use Survey (MTUS).
  - Constructed from nationally representative time-diary studies.
  - Diary questionnaire on individual activities throughout the 24-hour day.
  - 2 diaries for each respondent, 1 weekend and 1 weekday.
  - We consider housework as primary activities: total number of hours devoted to cooking, washing up, housework, odd jobs and domestic travel per day.
- We select children aged 11-18 living with two heterosexual parents aged 60 or below (N=1,771)

Distribution of log(housework time), by child's gender

Boys

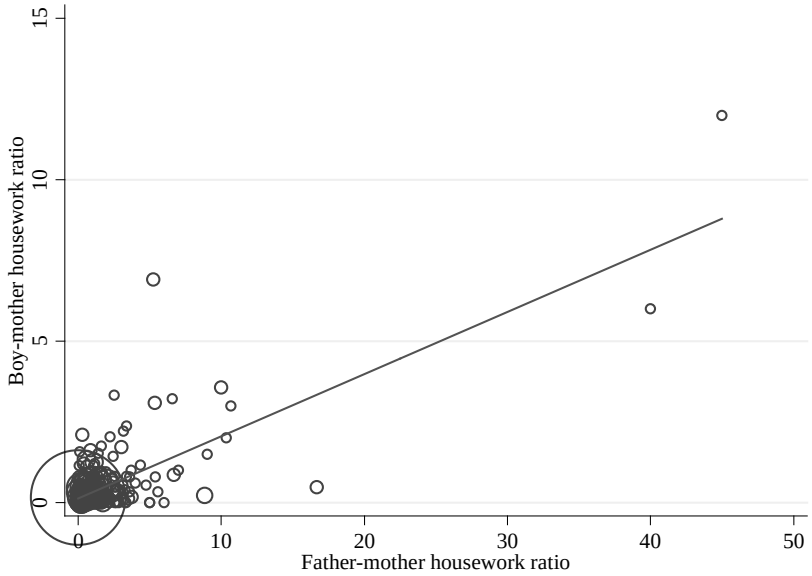


Girls

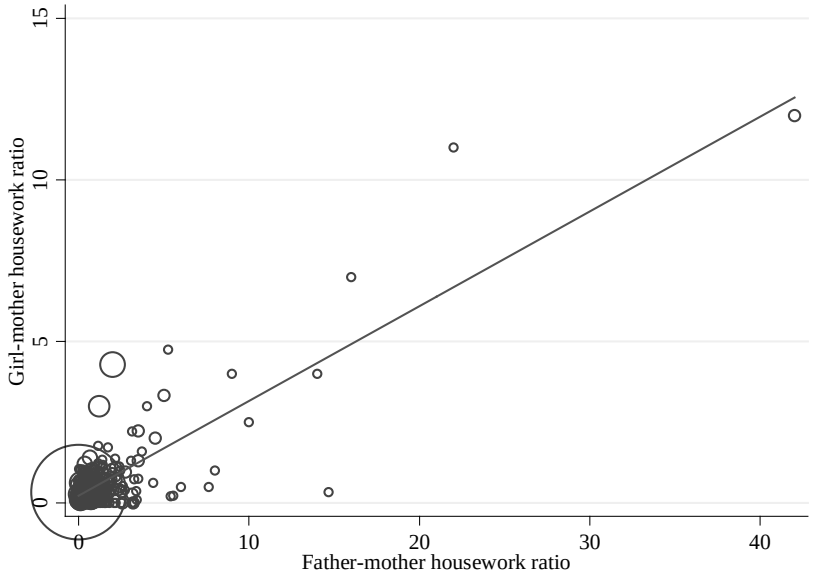


Correlation Between parents' and children's housework, ratios

Boy-mother vs father-mother:
Slope coeff=0.19



Girl-mother vs father-mother:
Slope coeff=0.29



Sizes of dots reflect number of observations for each data point

Empirical strategy

- **<u>OLS as benchmark</u>**:

$$\text{lnkid'sTime}_{ih} = \alpha+\beta_1\text{lnDad'sTime}_{ih}+ \beta_2\text{lnMum'sTime}_{ih}+\gamma X_{ih}+\varepsilon_{ih}$$

for child "*i*" in household "*h*" and *X* denotes demographics.

- Regression controls for:
  - Parents: employment status (ref.: not-working), education (ref.: primary education) , and age.
  - Child: age, gender (male), student or unemployed.
  - Household: household size, number of children<18, household owns dwelling.

- <u>Fixed-effects (FE)</u> to address (permanent) individual/household heterogeneity in preferences (2 diaries per respondent):

$$\text{D.lnkid'sTime}_{ih} =\alpha+\beta_1\text{D.lnDad'sTime}_{ih}+\beta_2\text{D.lnMum'sTime}_{ih}+\delta \text{Day}_{ih}+\upsilon_{ih}$$

where D. is the difference operator.

The ratio form

- We also estimate the ratio-form where the child-mother housework ratio depends on the father-mother housework ratio, separately for boys and girls
  - Parsimonious way of allowing for permanent heterogeneity of individuals/households preferences for housework
- Male/female (stereotypical) tasks
  - Typical male tasks: lawn care, house maintenance.
  - Typical female tasks: physical care, food preparation or cleanup.
  - ***Mumsnet*** survey of 1000 working mothers: men and women take primary responsibility of 3/36 chores respectively (men only empty the bins, change light bulbs and do a spot of DIY).
- Suggesting that housework can be seen as regular behaviour for mothers, but more sporadic for fathers.
- Father's involvement could be more important at the margin.

Analysis of UK Time Use Survey 2000

	Log (boy's hswk+1)		Log (girl's hswk+1)	
	OLS	FE	OLS	FE
Log(Father's housework+1)	0.124***	0.208***	0.084**	0.074*
	(0.035)	(0.040)	(0.033)	(0.043)
Log(Mother's housework+1)	0.100**	0.091*	0.097**	0.142**
	(0.039)	(0.049)	(0.046)	(0.056)
Young Person's Age	0.005	-	0.031**	-
	(0.013)	-	(0.014)	-
Day Fixed-Effects	Yes	Yes	Yes	Yes
Person Fixed-Effects	No	Yes	No	Yes
Observations	894	894	853	853
R-squared	0.109	0.156	0.128	0.211

***,** and* indicate significant at 1%, 5% and 10% using robust s.e.

Analysis of UK Time Use Survey 2000

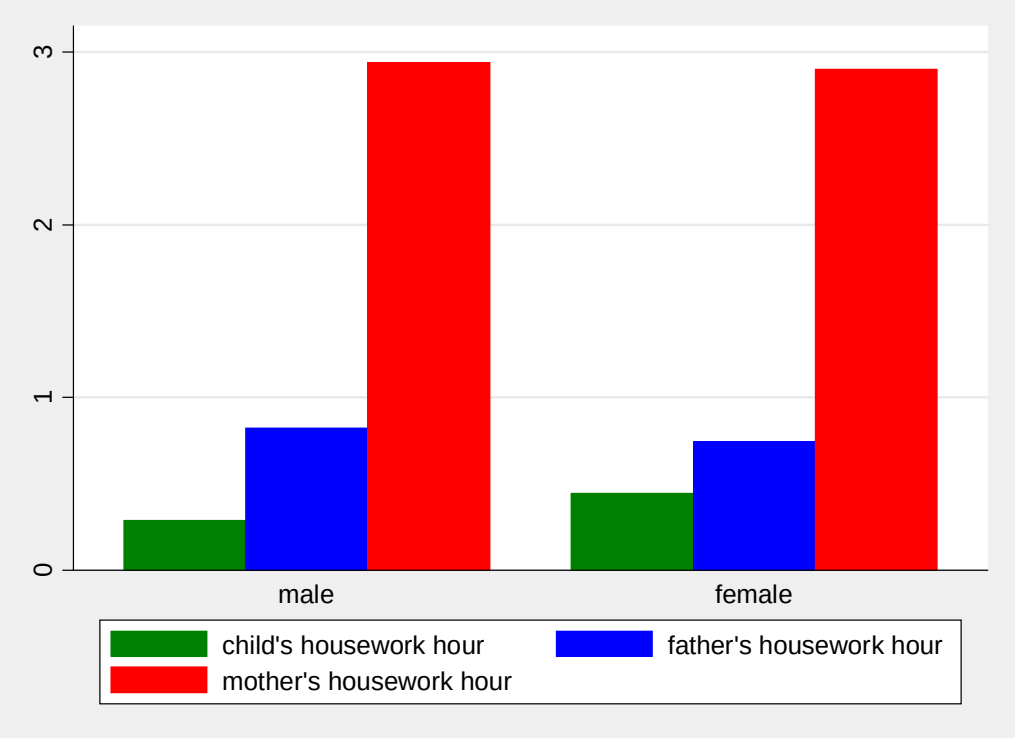
	Boy/mother hswk raio		Girl/mother hswk ratio	
	OLS	FE	OLS	FE
Father-mother hswk ratio	0.200***	0.221***	0.308***	0.302***
	(0.039)	(0.015)	(0.041)	(0.021)
Young Person's Age	0.041*	-	0.039*	-
	(0.022)	-	(0.020)	-
Day Fixed-Effects	Yes	Yes	Yes	Yes
Person Fixed-Effects	No	Yes	No	Yes
Observations	894	894	853	853
R-squared	0.325	0.355	0.318	0.347

***,** and* indicate significant at 1%, 5% and 10% using robust s.e.

British Household Panel Survey (BHPS)

- The longest longitudinal survey of HHs in the UK in 1991-2008
- All individuals aged 16+ are interviewed annually
- Information on family composition, education, labour market experience, earnings, incomes and benefit receipts
- In W2+, “About how many hours do you spend on housework in an average week, such as time spent cooking, cleaning and doing the laundry?”
- We construct a sample of young people aged 16-18, who are living with both parents aged 60 or below, in waves 2-18.

Housework time, by gender of children



- Girls spend over 50% more time on household chores than boys
- Fathers of boys work 0.08 hour/day and are 2 ppts less likely to have zero hours, than fathers of girls
- No significant diff in mothers by gender of child
- Summary stats show that the BHPS sample is broadly comparable to the UK Time Use Survey in terms of demographics
- Differences in levels housework time: recall bias, primary/secondary activities

Analysis of the BHPS 1992-2008

	Log (boy's hswk+1)		Log (girl's hswk+1)	
	OLS	FE	OLS	FE
Log(Father's housework+1)	0.093***	0.046*	0.064***	0.036
	-0.019	-0.026	-0.021	-0.030
Log(Mother's housework+1)	-0.038**	-0.005	0.014	0.005
	-0.017	-0.024	-0.020	-0.025
Young Person's Age	0.010*	-0.025	0.026***	-0.038
	(0.006)	-0.028	(0.007)	-0.028
Household Fixed-Effects	No	Yes	No	Yes
Observations	2,270	2,270	2,409	2,409
R-squared	0.05	0.027	0.058	0.066

***,** and* indicate significant at 1%, 5% and 10% using robust s.e.

Analysis of the BHPS 1992-2008

	Boy/mother hswk raio		Girl/mother hswk ratio	
	OLS	FE	OLS	FE
Father-mother hswk ratio	0.121***	0.086***	0.095***	0.101*
	(0.028)	(0.015)	(0.019)	(0.059)
Young Person's Age	0.014	0.003	0.027***	-0.024
	(0.009)	-0.036	(0.009)	-0.043
Household Fixed-Effects	No	Yes	No	Yes
Observations	2,270	2,270	2,409	2,409
R-squared	0.222	0.098	0.18	0.117

***,** and* indicate significant at 1%, 5% and 10% using robust s.e.

Heterogeneous effects: by mother's employment

	Log of (youth's hswk+1)		Child-mother hswk ratio	
	Boy	Girl	Boy	Girl
Panel A: Mother working				
Log of (father's housework+1)	0.054*	0.042		
	(0.029)	(0.033)		
Log of (mother's housework+1)	0.032	0.020		
	(0.029)	(0.029)		
Father-mother housework ratio			0.058	0.069
			(0.048)	(0.052)
Observations	1757	1868	1757	1868
R^2	0.025	0.078	0.031	0.086
Panel B: Mother not working				
Log of (father's housework+1)	0.041	-0.005		
	(0.049)	(0.075)		
Log of (mother's housework+1)	0.004	-0.019		
	(0.043)	(0.062)		
Father-mother housework ratio			0.093***	0.475*
			(0.016)	(0.241)
Observations	513	541	513	541
R^2	0.131	0.109	0.291	0.255

Heterogeneous effects: by mother's education

	Log of (youth's hswk+1)		Child-mother hswk ratio	
	Boy	Girl	Boy	Girl
Panel C: Mother without higher qualifications				
Log of (father's housework+1)	0.029	0.067*		
	(0.030)	(0.036)		
Log of (mother's housework+1)	-0.041	0.007		
	(0.029)	(0.032)		
Father-mother housework ratio			0.097***	0.060
			(0.018)	(0.055)
Observations	1434	1549	1434	1549
R^2	0.051	0.087	0.186	0.137
Panel D: Mother with higher qualifications				
Log of (father's housework+1)	0.089*	-0.008		
	(0.049)	(0.052)		
Log of (mother's housework+1)	0.088**	-0.003		
	(0.043)	(0.040)		
Father-mother housework ratio			0.002	0.223***
			(0.091)	(0.050)
Observations	836	860	836	860
R^2	0.037	0.108	0.030	0.219

Commenting on the BHPS Results

- Use the same specification as for the UK Time Use Survey and convert housework time from weekly to daily, and add unity before taking logs
- In OLS, only father's housework is significantly positive for both boys and girls
- In FE, father's housework significant for both boys and girls in the ratio form specification
- Significant finding: only father's housework matters.
- Effect of father's housework time more pronounced:
  - For boys: if mother is working or has higher education qualifications
  - For girls: if mother does not have higher education qualifications
  - Lack of precision due to small samples (only around 800 distinct young persons with at least two observations)

IV Results

Dep var=child-mother hswk ratio	Boys	Boys	Girls	Girls
	Exact-id	Over-id	Exact-id	Over-id
Father-mother housework ratio	0.194***	0.202***	0.276***	0.289***
	(0.037)	(0.038)	(0.073)	(0.072)
Hansen J statistic $\chi^2(1)$ *(p-value)*	-	0.346 (0.557)	-	0.600 (0.439)
***First-stage*: dep var = father-mother housework ratio**				
Difference in Father and mother's lagged weekly working hours	-0.0083*** (0.0011)		-0.0059*** (0.0014)	
Father's lagged weekly working hours		-0.0057*** (0.0016)		-0.0045*** (0.0014)
Mother's lagged weekly working hours		0.1217*** (0.0015)		0.0081*** (0.0021)
F-test of excluded instruments (p-value)	51.94 (0.0000)	37.07 (0.0000)	17.60 (0.0000)	9.06 (0.0001)
Observations	2160	2160	2291	2291

***,** and* indicate significant at 1%, 5% and 10% using robust s.e.

- Short-panel estimates likely to suffer from exacerbated measurement error problem leading to downward biased estimates (see e.g. Buddelmeyer et al.)
  - FE could be regarded as a lower bound.
  - Address the measurement error problem using IV.
  - Only look at the ratio form with one endogenous variable

IV strategy

- Instrumented by the father and mother's lagged weekly working hours, or their difference
- F-stat>10 in the first stage in 3 specifications, and all IVs are individually significant and have the expected signs
- P-values for the Hansen J-statistic are equal to 0.35 or above
- The fact that 2SLS estimates are 2-3 times as large as FE estimates consistent with the view that the latter are lower bounds.
- Few studies on housework time have applied both FE and IV methods (Hersch & Statton 1997, 2002; Bryan & Sevilla 2011)
  - All conclude that housework is effectively exogenous in FE, hence no need to further apply IV.

Conclusions

- Find positive correlations between parents' and children's housework time in the UK Time Use Survey:
- Use BHPS to deal with time-invariant unobserved heterogeneity.
- Find only father's housework has a positive and significant effect on child's housework, once we allow for permanent household unobserved heterogeneity.
- Suggestive evidence points to the importance of parental role models and the intergenerational transmission of preferences (gender role attitudes) in the intergenerational transmission of housework.
- Public policy towards greater gender equality in domestic work – multiplier effect on future generations.