

ECON B225: ECONOMIC DEVELOPMENT

Sebastian Anti,
Assistant Prof. of Economics, Bryn Mawr College

Gender and Development

Introduction

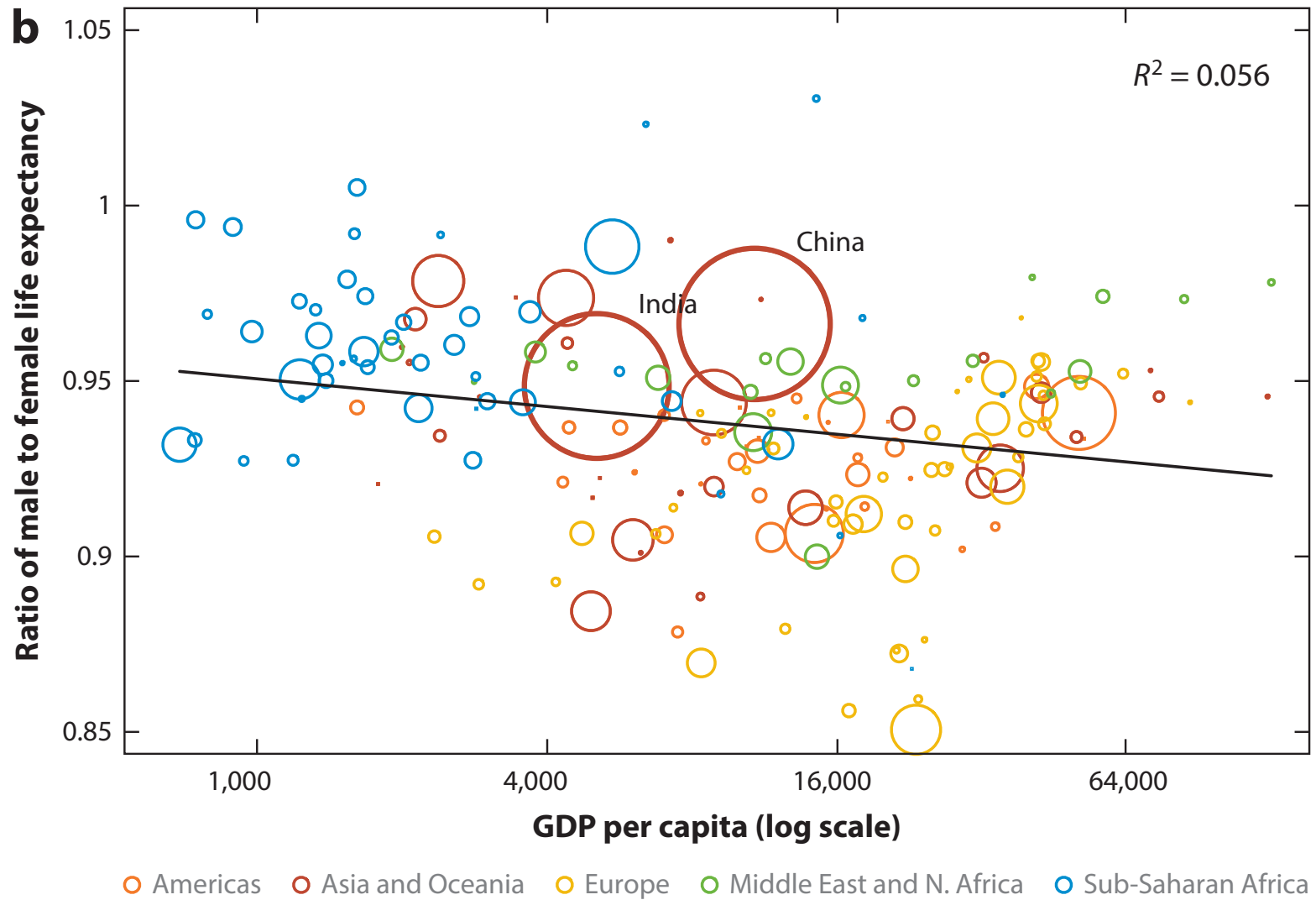
2

□ **Some basic empirical facts:**

- ▣ Gender inequality is more extreme in poor countries
- ▣ Larger disparities between genders in poor countries in:
 - Health
 - Education
 - Bargaining power within the household
 - Control over one's life
- ▣ Basic correlational results show this (next slides)

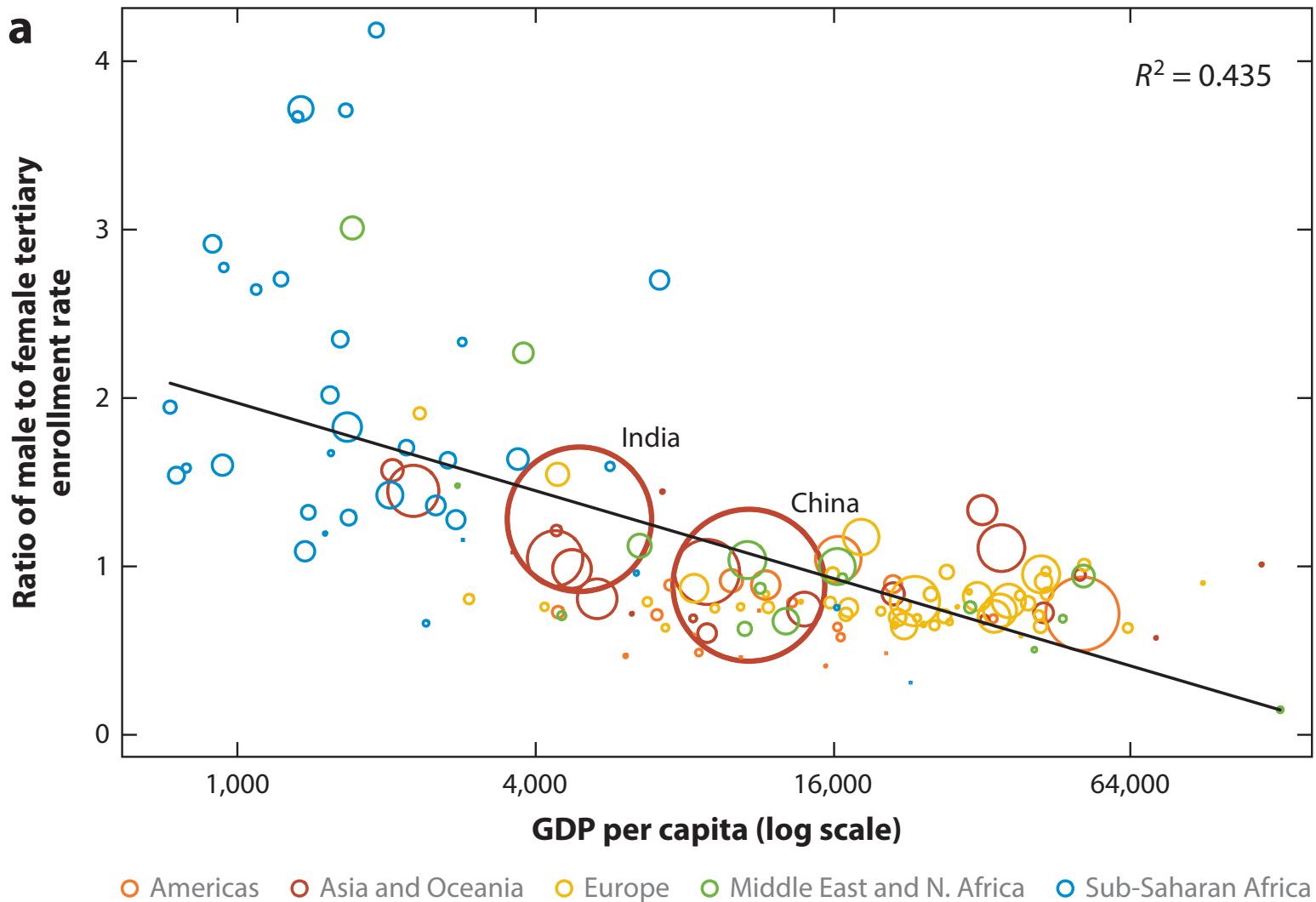
Life Expectancy

3



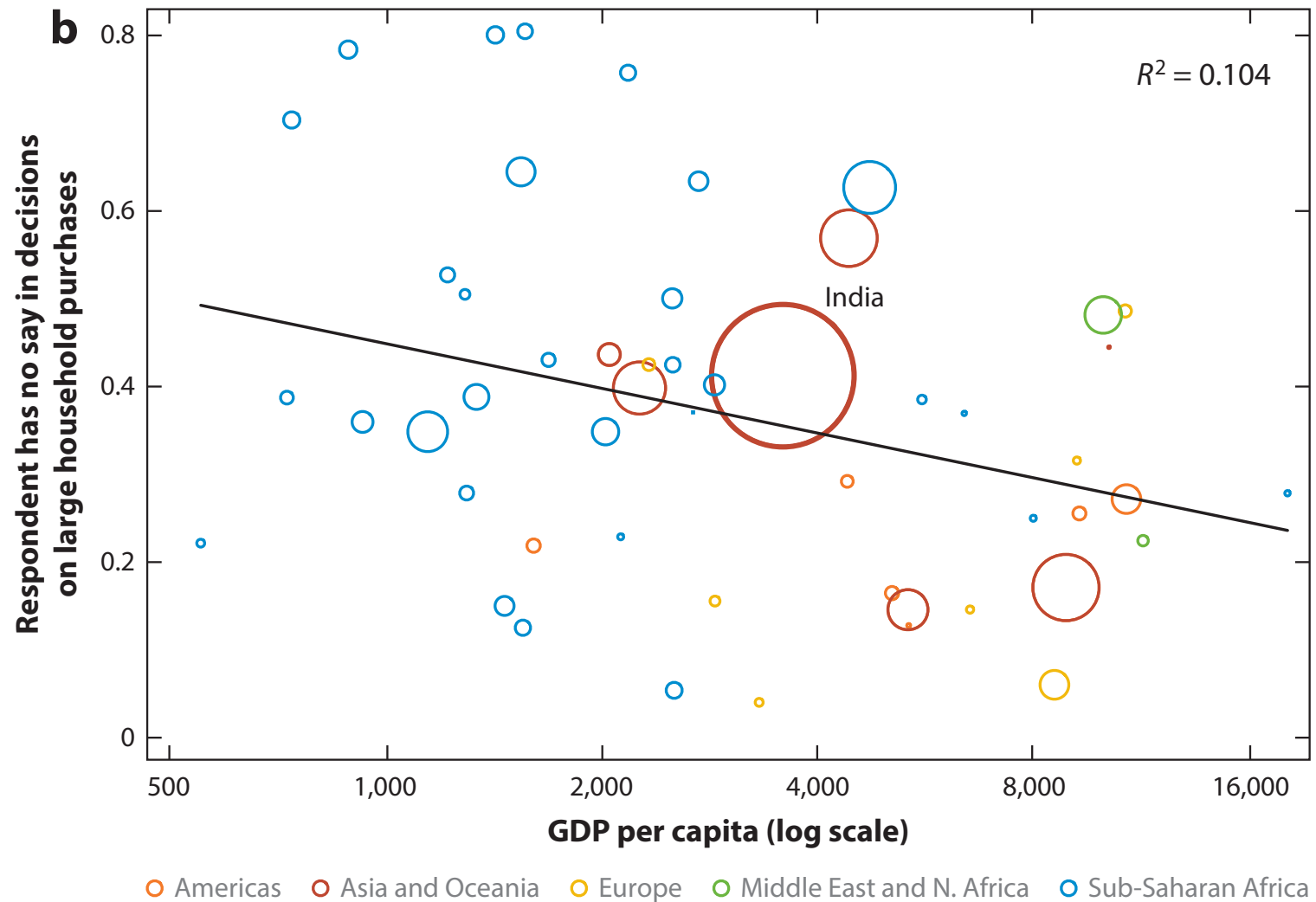
Education Beyond High School

4



Control over Household Spending

5



Obvious Questions Emerge

6

- **Does economic underdevelopment cause gender inequality? Reasons to think so:**
 - ▣ Sectoral weight in agriculture and basic manufacturing favors men
 - For whatever reason these sectors have gendered occupations
 - ▣ Development makes household labor more efficient (think of modern appliances) and frees up the traditional homemaker's time
 - ▣ Lower fertility in richer economies puts less pressure on women for child-baring responsibilities

More Questions

7

□ **Does more gender equality lead to development? There is reason to think so. Why?**

- ▣ Large body of (observational) research indicates that women spend household resources in ways more helpful for development like saving and investing in child health and education.
 - Why?: Unclear. Perhaps cultural or biological origins
 - Beneficial for physical and human capital accumulation
 - So much the case that many development interventions are designed around targeting women over men (97 percent of the Grameen Bank's 8.4 million borrowers for example were women in 2011)
 - See for example Duflo (2003) and Thomas (1994) for some of this literature

Summing Up Importance of Gender

8

- **So gender equality seems likely to be both an outcome and a driver of economic development**
 - ▣ Classic case of causality going in both directions
- **As you can imagine: Economists and researchers are trying to figure out both sets of relationships**
- **Reading for this week provides an example of recent research in the latter**
 - ▣ See the optional Tolonen reading for an example of the former

Armand et al. (2020)

9

- **Research Question:** Does the gender of the recipient of a conditional cash transfer affect how a household spends on non-durables? And if so, how much?
- **Why might gender of the recipient matter?**
 - ▣ Women might have different preferences than men. perhaps learned from cultural norms or determined biologically
 - ▣ If the woman controls the funds, it is more likely to end up being spent on children and future benefits

Motivation

10

- **Most CCT programs target women to improve their well-being and power in household decision making**
 - ▣ Based on large body of “observational” research
 - This means not based on experiments
 - Causality is a concern in this work
 - ▣ Prior experimental research has not been able to establish that women receiving payments causes better outcomes for households

Prior Literature on the Question

11

- **Observational studies indicate that the gender of who controls resources in the household affects outcomes**
- **Experimental Evidence is Scarce**
 - ▣ One study in Morocco (Benhassine et al. 2015)
 - Randomization failed
 - ▣ One study from Burkina Faso (Akresh et al. 2012)
 - Didn't study food

Policy Outline

12

□ **Macedonian Conditional Cash Transfer for Secondary School Education**

- Aims to increase school enrolment and completion for the poor
- “Means tested”
- Starts in Fall 2010
- Transfer (roughly 250 USD) every quarter, conditional on children attending school at least 85% of the time
- Gender of who received the payment was randomized
 - Either mother of the child or the (usually male) “household head”

Data

13

- **Baseline survey in December 2010** (8 months before the start of the program)
 - ▣ 1,053 households
 - ▣ Attrition is 8.9%, same between treatment and the control group
 - ▣ Treatment and control groups are statistically the same in measurable characteristics prior to treatment
- **Follow up survey in 2012**

Empirical Strategy

14

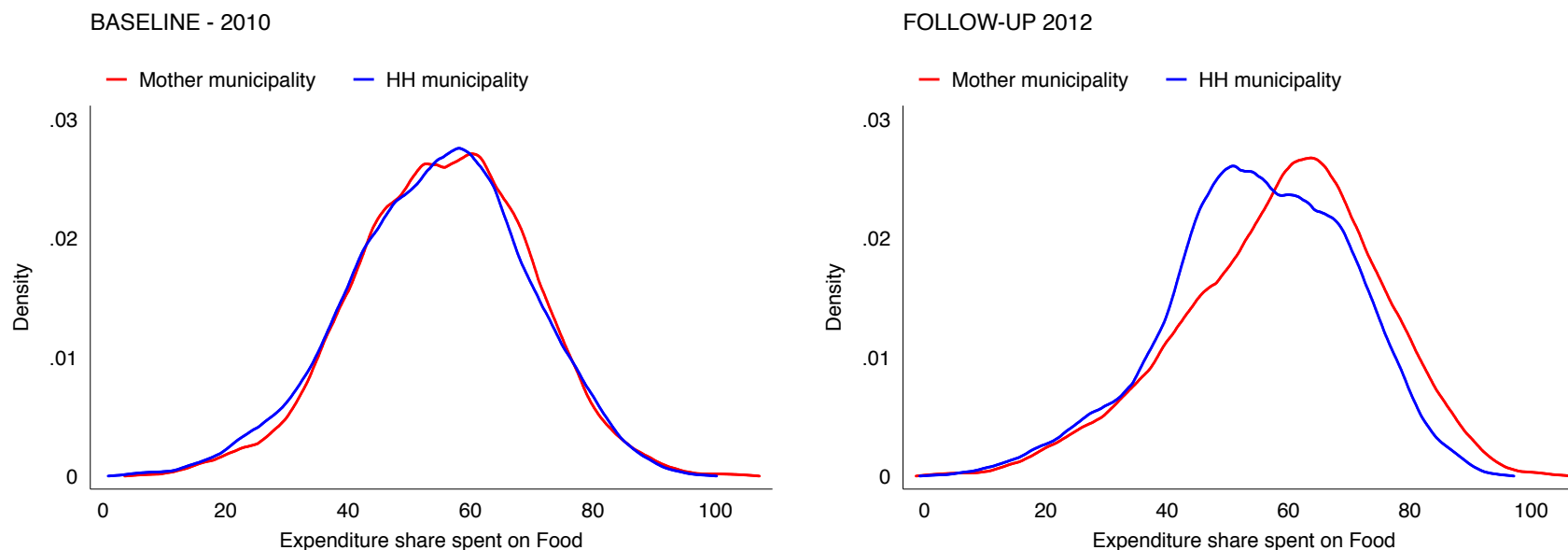
- **This is an RCT, so the strategy rests on the randomization**
- **Here is their very simple model:**

$$w_{ij} = \beta_0 + \beta_1 mother_i + X_i' \beta_2 + V_j' \beta_3 + \varepsilon_{ij}$$

Results: Visualization

15

Figure 1: Non-parametric distribution fit for food budget shares at baseline and follow-up



Note. The distribution fit is estimated non-parametrically using a Kernel density. The left panel shows the comparison between Mother and HH municipalities at baseline, while the right panel shows the same comparison at follow-up. A two-sample Kolmogorov-Smirnov test statistic is equal to 0.04 at baseline (p-value for equality of distributions equal to 0.79) and to 0.16 at follow-up (p-value < 0.01).

Results

16

Table 4: Household expenditure on non-durables and budget shares, by treatment status

	BASELINE				FOLLOW-UP			
	(1) HH	(2) Mother	(3) Difference	(4) Difference	(5) HH	(6) Mother	(7) Difference	(8) Difference
Ln Real Expenditure	7.47 [0.42]	7.46 [0.46]	-0.01 (0.06)	0.01 (0.04)	7.52 [0.54]	7.54 [0.58]	0.02 (0.07)	0.01 (0.06)
Ln Durables	9.95 [1.33]	9.92 [1.11]	-0.04 (0.15)	-0.07 (0.12)	10.50 [0.87]	10.55 [1.23]	0.04 (0.12)	0.07 (0.09)
<i>Expenditure Shares:</i>								
Food	54.63 [14.29]	55.49 [13.89]	0.86 (1.56)	0.87 (1.35)	55.01 [14.83]	58.77 [16.46]	3.76** (1.86)	3.73** (1.57)
Tobacco and alcohol	3.23 [5.66]	3.15 [6.34]	-0.08 (0.59)	-0.20 (0.50)	3.96 [6.47]	2.71 [4.62]	-1.26* (0.68)	-0.74 (0.55)
Clothing	5.23 [4.58]	4.24 [3.82]	-1.00* (0.57)	-0.18 (0.37)	5.37 [5.19]	4.25 [4.73]	-1.13** (0.53)	-0.71 (0.48)
Education	3.97 [6.54]	4.83 [7.40]	0.86 (0.70)	0.49 (0.56)	3.87 [5.12]	4.43 [5.92]	0.55 (0.55)	0.56 (0.51)
Health	14.16 [12.54]	12.84 [10.37]	-1.32 (1.04)	-1.37 (1.00)	10.65 [11.11]	9.83 [10.09]	-0.82 (0.93)	-1.45* (0.87)
Utilities and other expenses	18.78 [9.38]	19.45 [8.84]	0.68 (1.12)	0.39 (0.83)	21.12 [10.77]	20.02 [11.48]	-1.10 (1.25)	-1.39 (1.14)
Observations	515	528	1043	1043	410	415	825	825
Demographic controls	-	-	No	Yes	-	-	No	Yes

Note. Standard deviations in brackets, standard errors clustered at municipality level in parenthesis. *** denotes significance at 1%, ** at 5%, and * at 10%. Total expenditure is reported in real terms and computed in logarithms. Budget shares are defined as the ratio between expenditure on a specific category and total household expenditure on non-durables. Budget shares are multiplied by 100. In columns 3-4 and 7-8 differences are estimated from running the corresponding least squares regression on the Mother municipality dummy, equal to 1 if the transfer is made to mothers and zero otherwise. Demographic controls include age and education of partners, ethnicity dummies, household size and composition, regional dummies, indicator variables for rural area and for living in the capital city.

Estimating Demand Systems

17

- Huge literature on how to estimate “demand systems”
- Leads to intimidating econometric models based on theoretical models (see Deaton and Millbauer 1990)

$$w_{ij}^{FOOD} = \beta_0 + \beta_1 tmother_{ij} + \delta \ln \left(\frac{exp_{ij}}{a(p)} \right) + \eta \ln \left(\frac{exp_{ij}}{a(p)} \right) * tmother_{ij} + \\ + \sum_{n=1}^N \gamma_{ijn} \ln(p_{nj}) + X'_i \beta_2 + V'_j \beta_3 + \epsilon_{ij}$$

Results

18

Table 5: Structure of food budget shares of food expenditure, by treatment status

	BASELINE				FOLLOW-UP			
	(1) HH	(2) Mother	(3) Difference	(4) Difference	(5) HH	(6) Mother	(7) Difference	(8) Difference
Starches	43.72 [16.14]	41.81 [17.24]	-1.91 (2.09)	-2.57 (1.77)	38.83 [17.58]	40.09 [17.10]	1.26 (1.98)	0.92 (1.84)
Meat, fish and dairy	34.99 [13.90]	35.78 [15.03]	0.79 (1.75)	1.62 (1.33)	34.74 [15.18]	34.07 [14.90]	-0.67 (1.59)	0.20 (1.44)
Fruit and vegetables	7.33 [6.09]	8.14 [6.94]	0.81 (0.74)	0.87 (0.66)	9.89 [8.10]	9.67 [6.96]	-0.22 (0.78)	-0.16 (0.76)
Salt and sugars	12.23 [7.48]	12.63 [7.84]	0.40 (0.80)	0.19 (0.64)	13.82 [8.52]	13.23 [7.21]	-0.59 (0.80)	-0.94 (0.73)
Other food	0.41 [2.11]	0.35 [2.27]	-0.06 (0.19)	-0.11 (0.17)	1.19 [5.66]	1.36 [6.27]	0.17 (0.58)	-0.09 (0.54)
Observations	519	533	1052	1052	412	416	828	828
Demographic controls	-	-	No	Yes	-	-	No	Yes

Note. Standard deviations in brackets, standard errors clustered at municipality level in parenthesis. *** denotes significance at 1%, ** at 5%, and * at 10%. Food budget shares are defined as the ratio between expenditure on a specific category and total food expenditure. Food budget shares are multiplied by 100. In columns 3-4 and 7-8 differences are estimated from running the corresponding least squares regression on the Mother municipality dummy, equal to 1 if the transfer is made to mothers and zero otherwise. Demographic controls include age and education of partners, ethnicity and religion dummies, household size and composition, regional dummies, indicator variables for rural area and for living in the capital city.

Results

19

Table 6: Food Engel curve

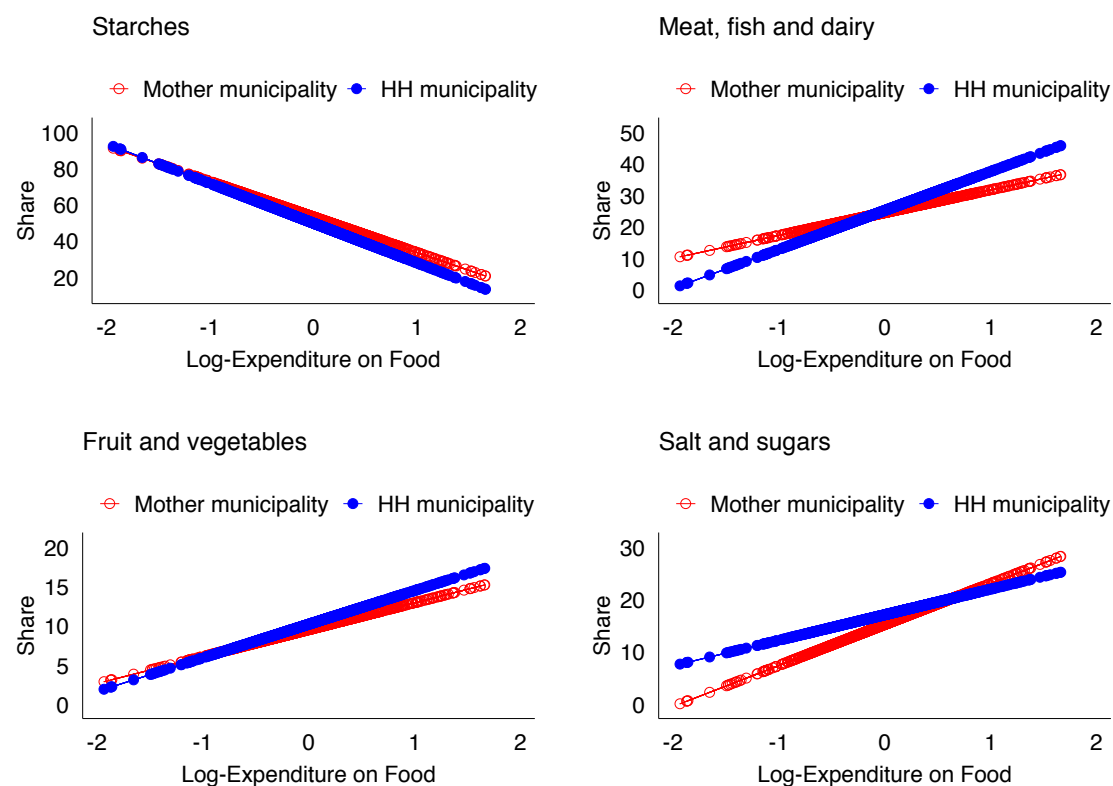
Main:	Dep.var.: Food budget share			
	Mother Municipality		Actual transfer to mother	
	(1)	(2)	(3)	(4)
Mother	4.13*** (1.54)	4.15*** (1.55)	5.63*** (2.00)	5.63*** (1.98)
Expenditure	-9.63*** (3.68)	-8.77** (4.18)	-9.37** (3.72)	-9.42** (4.02)
Mother x Expenditure		-1.39 (2.92)		0.14 (3.63)
Controls	Yes	Yes	Yes	Yes
Observations	811	811	811	811
R^2	0.232	0.232	0.234	0.234
F-test for joint significance of main and interaction (p-value)	.	0.01	.	0.01
Endogeneity test (p-value)	0.00	0.00	0.00	0.00

Note. Bootstrap standard errors clustered by municipality (2000 replications) are presented in parentheses. *** denotes significance at 1%, ** at 5%, and * at 10%. Dependent variable is the food budget share, defined as the ratio between the expenditure on food and the total household expenditure. “Expenditure” is the (demeaned) total household expenditure on non-durable. In columns 1-2, the main variable is the “Mother municipality” dummy variable, equal to 1 if the household resides in a Mother municipality and 0 otherwise. In columns 3-4, the main effect is a dummy variable equal to 1 if a woman received at least one payment during the first two years of the program and is instrumented using the “Mother municipality” dummy. Controls include age and education of partners, ethnicity dummies, household size and composition, regional dummies, indicator variables for rural area and for living in the capital city, food price control and the number of children enrolled in school. Endogenous variables are instrumented using a control function approach (see section 4.2). The endogeneity test is performed as a joint Wald test for the equality to zero of all coefficients in the polynomial of residuals.

Results

20

Figure 2: Estimated Engel curves for food categories



Note. The graphs present the estimated Engel curves (holding other control variables constant at the average) for food categories for households living in a Mother municipality and for households living in a HH municipality. Estimated coefficients are reported in column 2 of Table 7. Log-Expenditure on Food is demeaned.

Results

Table 7: Demand system for the food basket

Main:	Dep.var.: Food budget share of food category			
	Mother Municipality		Actual transfer to mother	
	(1)	(2)	(3)	(4)
Starches				
Mother	3.46*	3.46*	4.86*	4.60*
	(1.96)	(1.95)	(2.68)	(2.72)
Food Expenditure	-20.28***	-21.93***	-19.66***	-20.63***
	(5.44)	(5.92)	(5.46)	(5.40)
Mother x Food Expenditure		2.31		3.26
		(2.82)		(3.43)
Meat, fish and dairy				
Mother	-0.69	-0.69	-0.89	-0.44
	(1.73)	(1.69)	(2.43)	(2.44)
Food Expenditure	8.72	12.39**	8.64	10.28*
	(5.32)	(5.91)	(5.32)	(5.39)
Mother x Food Expenditure		-5.13**		-5.54*
		(2.54)		(3.25)
Fruit and vegetables				
Mother	-0.69	-0.69	-1.01	-0.88
	(0.79)	(0.79)	(1.08)	(1.07)
Food Expenditure	3.67	4.27	3.36	3.83
	(2.69)	(2.85)	(2.72)	(2.75)
Mother x Food Expenditure		-0.85		-1.55
		(1.17)		(1.50)
Salt and sugars				
Mother	-1.87**	-1.87**	-2.59**	-2.89**
	(0.86)	(0.84)	(1.13)	(1.16)
Food Expenditure	6.98***	4.87*	7.04***	5.90**
	(2.57)	(2.89)	(2.55)	(2.64)
Mother x Food Expenditure		2.94**		3.83**
		(1.18)		(1.71)
Observations	814	814	814	814

Note. Bootstrap standard errors clustered by municipality (2000 replications) are presented in parentheses. *** denotes significance at 1%, ** at 5%, and * at 10%. Dependent variables are the shares of food expenditure spent on each category. “Food Expenditure” is total (demeaned) food. In columns (1) and (2), the main variable is the “Mother municipality” dummy variable, equal to 1 if the household resides in a Mother municipality. In columns (3) and (4), the main effect is a dummy variable equal to 1 if a woman received at least one CCT payment and is instrumented using the “Mother municipality” dummy. Controls include age and education of partners, ethnicity dummies, household size and composition, regional dummies, indicator variables for rural area and for living in the capital city, food price control and the number of children enrolled in school. Endogenous variables are instrumented using a control function approach (see section 4.2).