

Technical Appendix to CONSUMPTION AND HABITS: EVIDENCE FROM PANEL DATA

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Appendix

Data Source

Rotating panel from the Spanish Continuous Family Expenditure Survey ('Encuesta Continua de Presupuestos Familiares') from 1985:I to 1995:IV, provided by the National Statistical Office (Instituto Nacional de Estadística, INE). The consumption information in this data set is very detailed. In each of the eight interviews, the person of reference is asked to report expenditures on 279 different categories.

Variables

Education: There is information on the degree of education received by the head of the household. It is grouped in the following categories: Illiterate and no schooling, Primary education, Secondary education, and University education.

Number of children: Variable for number of children younger than 14.

Husband's labour market situation: Dummy equals 1 if the husband is employed and 0 otherwise.

Wife's labour market situation: Dummy equals 1 if the wife is employed and 0 otherwise.

Home-ownership: Dummy equals 1 if the individual is the owner of the house.

Town Pop > 500,000: Dummy equals 1 if the individual lives in an urban area.

Town Pop < 10,000: Dummy equals 1 if the individual lives in a rural area.

Family Income: Total monetary income.

Interest Rates: Nominal interest rates are a weighted average of the different amount borrowed by households from banks and saving banks; see Cuenca (1994) for details.

Table A1
Descriptive Statistics

Variables	Mean	Std. Deviation
Husband's age	36.52	7.38
Wife's age	34.05	7.69
Family composition		
Couples no children	0.08	0.25
Number of children < 14	1.99	1.04
Education		
Illiterate and no schooling	0.04	0.21
Primary education	0.41	0.46
Secondary education	0.41	0.49
University education	0.14	0.35
Home-ownership	0.72	0.44
Town Pop > 500,000	0.13	0.34
Town Pop < 10,000	0.21	0.41
Labour market status		
Husband employed	0.95	0.21
Wife employed	0.32	0.47

Table A2
Descriptive Statistics of Consumption Expenditures

Variables	Mean	Q25	Q50	Q75
Levels				
Food	127,370	81,822	115,310	158,314
Transport	79,990	26,000	50,947	97,985
Services	124,171	47,975	91,170	162,619
First differences				
ΔFood	771	-29,561	702	30,914
ΔTransport	916	-26,962	177	28,526
ΔServices	2236	-39,804	960	41,873

Table A3
Mean Budget Shares

	As a % of Food, Tr. and Serv.	As a % of Food, Tr., Serv. and Cond.	As a % of total cons. (including durables)
Food	41.9	27.6	25.1
Transport	22.6	14.5	13.2
Services	35.5	22.3	20.3
Conditioning goods	–	35.6	32.4

Table A4
Marginal Rate of Substitution Function. Estimates in Levels

	Food	Transport	Services
Food	-0.0182 (0.024)		
Transport	-0.0420 (0.020)	0.0028 (0.008)	
Services	-0.1057 (0.028)	-0.0085 (0.009)	0.0131 (0.015)
Food \times Wife works	0.0498 (0.040)		
Transport \times Wife works	0.0534 (0.046)	0.0001 (0.013)	
Services \times Wife works	0.1678 (0.099)	-0.0070 (0.023)	0.0210 (0.048)
Conditioning goods	-0.0032 (0.062)	-0.0209 (0.028)	-0.0289 (0.048)
Cond. \times Wife works	0.0453 (0.211)	0.0505 (0.049)	0.0615 (0.117)
Age of the husband	0.0067 (0.008)	0.0013 (0.002)	-0.0034 (0.003)
Age ² of the husband	-0.0067 (0.008)	0.0001 (0.001)	0.0001 (0.001)
Illiterate and no school.	-0.1291 (0.122)	-0.0324 (0.025)	-0.0537 (0.038)
Secondary educ.	-0.0702 (0.054)	-0.0172 (0.013)	-0.0590 (0.027)
University educ.	-0.1334 (0.137)	-0.0345 (0.044)	-0.0875 (0.128)
Children < 14	-0.0314 (0.025)	-0.0082 (0.006)	-0.0249 (0.011)
Wife works	-2.0760 (1.549)	-0.6754 (0.500)	-1.6418 (0.991)
Husband works	0.0049 (0.133)	0.0198 (0.041)	-0.0270 (0.061)
Home-ownership	-0.0266 (0.049)	-0.0034 (0.014)	-0.0017 (0.029)
Town pop > 500,000	0.0041 (0.066)	0.0154 (0.020)	0.0160 (0.043)
Town pop \leq 10,000	-0.068 (0.060)	-0.0043 (0.014)	-0.0196 (0.025)
Age of the spouse	0.0030 (0.009)	0.0010 (0.002)	0.0022 (0.003)
Age ² of the spouse	0.0001 (0.001)	-0.0001 (0.001)	0.0001 (0.001)
Trend	-0.0001 (0.003)	0.0002 (0.001)	0.0009 (0.001)
$\ln c_{t-1} = \ln c_{t+1}$	-0.0109 (0.017)	-0.0010 (0.003)	-0.0068 (0.006)
Constant	-3.0266 (9.834)	1.2271 (1.327)	1.0 (-)
Efficient Sargan test (82 d.o.f)	110.72 (1.9%)	125.75 (0.13%)	
Number of observations	2,606	2,606	2,606

Note. Quarterly dummies included. Standard errors (robust to heteroscedasticity) in parentheses. Sargan test followed by degrees of freedom in parentheses, followed by p-value.

Table A5
Intertemporal Euler Equations. Estimates in Levels

	Food	Transport	Services
Food	0.0089 (0.045)		
Transport	-0.0479 (0.075)	0.0028 (0.005)	
Services	-0.0656 (0.090)	-0.0082 (0.009)	0.0068 (0.010)
Food \times Wife works	0.0110 (0.078)		
Transport \times Wife works	0.0791 (0.126)	-0.0066 (0.010)	
Services \times Wife works	0.0675 (0.234)	-0.0116 (0.012)	0.0222 (0.042)
Conditioning goods	-0.0076 (0.05)	-0.0310 (0.021)	-0.0489 (0.011)
Cond. \times Wife works	0.1623 (0.370)	0.0619 (0.031)	0.1346 (0.077)
Age of the husband	-0.0045 (0.012)	-0.0023 (0.001)	-0.0063 (0.002)
Age ² of the husband	0.0002 (0.001)	0.0001 (0.001)	0.0001 (0.001)
Illiterate and no school.	-0.2890 (0.145)	-0.0456 (0.014)	-0.0988 (0.022)
Secondary educ.	-0.0107 (0.071)	-0.0106 (0.011)	-0.0111 (0.028)
University educ.	-0.0759 (0.144)	-0.0190 (0.035)	-0.0430 (0.087)
Children < 14	-0.0267 (0.036)	-0.0085 (0.005)	-0.0231 (0.011)
Wife works	-2.0755 (2.638)	-0.9156 (0.238)	-2.0897 (0.052)
Husband works	0.0177 (0.197)	0.0319 (0.025)	0.0747 (0.027)
Home-ownership	-0.0309 (0.074)	-0.0042 (0.011)	-0.0232 (0.018)
Town pop > 500,000	0.0423 (0.098)	0.0144 (0.021)	0.0332 (0.052)
Town pop \leq 10,000	0.0379 (0.100)	0.0062 (0.011)	0.0352 (0.018)
Age of the spouse	0.0046 (0.013)	0.0028 (0.001)	0.0081 (0.002)
Age ² of the spouse	-0.0003 (0.001)	-0.0001 (0.001)	-0.0030 (0.001)
Trend	-0.0039 (0.003)	-0.0080 (0.001)	-0.0023 (0.001)
$\ln c_{t-1} = \ln c_{t+1}$	-0.0191 (0.032)	0.0004 (0.003)	-0.0094 (0.005)
Constant	2.5636 (3.649)	2.5816 (0.421)	1.0(-)
Efficient Sargan test (82 d.o.f)	115.67 (0.84%)	130.14 (0.06%)	
Number of observations	2,606	2,606	2,606

Note. Quarterly dummies included. Standard errors (robust to heteroscedasticity) in parentheses. Sargan test followed by degrees of freedom in parentheses, followed by p-value.

Table A6
First Stage Results. MRS in differences

Variable	Food		Transport		Services	
	F-test	Partial R ²	F-test	Partial R ²	F-test	Partial R ²
Food	4.98	0.21	16.41	0.46	6.23	0.25
Transport	2.47	0.11	14.76	0.44	4.69	0.20
Services	5.78	0.23	17.07	0.47	3.54	0.16
Food \times Wife works	2.15	0.10	16.72	0.13	7.63	0.28
Transport \times Wife works	3.54	0.16	2.97	0.48	8.25	0.30
Services \times Wife works	4.16	0.18	17.69	0.31	6.50	0.25
Conditioning goods	4.31	0.18	8.44	0.49	6.20	0.24
Cond. \times Wife works	3.75	0.16	18.38	0.47	7.64	0.29
Wife works	3.98	0.17	17.23	0.25	7.33	0.28
Husband works	7.56	0.28	6.43	0.43	5.52	0.22
$\ln c_{t+1}$	9.69	0.34	14.44	0.16	4.68	0.20
Number of observations	2,606		2,606		2,606	

Note. p-values for the F-test are all equal to 0.00.

Table A7
First Stage Results. Euler equation in differences

Variable	Food		Transport		Services	
	F-test	Partial R ²	F-test	Partial R ²	F-test	Partial R ²
Food	5.25	0.22	11.70	0.44	6.31	0.25
Transport	3.64	0.16	13.79	0.44	7.72	0.29
Services	8.17	0.30	14.18	0.46	6.72	0.26
Food × Wife works	3.07	0.14	15.03	0.47	10.65	0.36
Transport × Wife works	4.26	0.18	3.14	0.14	10.01	0.34
Services × Wife works	4.66	0.20	16.47	0.49	8.02	0.30
Collaterals	4.76	0.20	7.34	0.29	4.41	0.19
Collaterals × Wife works	4.44	0.19	17.79	0.51	10.30	0.35
Wife works	4.81	0.20	15.87	0.49	10.16	0.35
Husband works	6.88	0.26	5.17	0.21	6.40	0.25
ln c_{t+1}	9.80	0.33	7.36	0.42	16.24	0.46
Number of observations	2,606		2,606		2,606	

Note. p-values for the F-test are all equal to 0.00.

Table A8
Marginal Rate of Substitution Function. Estimates in Differences

	Food	Transport	Services
Food	0.0150 (0.006)		
Transport	-0.0462 (0.006)	0.0263 (0.005)	
Services	-0.0254 (0.006)	-0.0139 (0.001)	0.0079 (0.003)
Food × Wife works	0.0277 (0.008)		
Transport × Wife works	0.0396 (0.008)	-0.0211 (0.008)	
Services × Wife works	0.0751 (0.017)	0.0107 (0.003)	0.0388 (0.010)
Conditioning goods	-0.0167 (0.011)	-0.1204 (0.009)	-0.0051 (0.005)
Cond. × Wife works	0.0014 (0.024)	0.1236 (0.013)	0.0134 (0.011)
Age of the head	-0.0116 (0.003)	-0.0023 (0.002)	0.0005 (0.001)
Age ² of the head	-0.0040 (0.002)	-0.0002 (0.001)	-0.0010 (0.001)
Illiterate and no school.	-0.0901 (0.037)	-0.0538 (0.031)	0.0001 (0.005)
Secondary educ.	-0.0304 (0.019)	-0.0225 (0.017)	-0.0006 (0.007)
University educ.	-0.0881 (0.029)	0.0919 (0.033)	-0.0101 (0.021)
Children < 14	-0.0073 (0.011)	-0.0014 (0.006)	0.0026 (0.002)
Wife works	-0.7837 (0.234)	-1.1677 (0.132)	-0.5335 (0.146)
Husband works	-0.0245 (0.033)	-0.0129 (0.014)	-0.0110 (0.008)
Home-ownership	0.0049 (0.025)	0.0059 (0.016)	0.0249 (0.006)
Town pop > 500,000	-0.0033 (0.025)	0.0801 (0.030)	-0.0181 (0.006)
Town pop ≤ 10,000	0.0348 (0.036)	0.0009 (0.010)	-0.0188 (0.006)
Age of the spouse	0.0111 (0.003)	0.0003 (0.002)	-0.0007 (0.001)
Age ² of the spouse	0.0001 (0.001)	-0.0010 (0.001)	0.0001 (0.001)
Trend	-0.0007 (0.001)	0.0111 (0.005)	0.0050 (0.001)
ln c_{t-1} = ln c_{t+1}	-0.0108 (0.004)	0.0003 (0.002)	-0.0010 (0.0005)
Constant	0.7470 (0.058)	1.0262 (0.110)	1.0 (-)
Efficient Sargan test (82 d.o.f)	96.06 (13.7%)	100.19 (8.4%)	
Number of observations	2,606	2,606	2,606

Note. Quarterly dummies included. Standard errors (robust to heteroscedasticity) in parentheses. Sargan test followed by degrees of freedom in parentheses, followed by p-value.

Table A9

Intertemporal Euler Equations. Estimates in Differences

	Food	Transport	Services
Food	0.0072 (0.008)		
Transport	-0.0145 (0.005)	0.0140 (0.014)	
Services	0.0006 (0.004)	-0.0032 (0.002)	0.0034 (0.003)
Food \times Wife works	-0.0366 (0.012)		
Transport \times Wife works	0.0043 (0.010)	-0.0632 (0.035)	
Services \times Wife works	-0.0384 (0.011)	-0.0080 (0.004)	0.0090 (0.008)
Conditioning goods	-0.0393 (0.011)	-0.0171 (0.026)	0.0046 (0.006)
Cond. \times Wife works	0.0623 (0.024)	-0.0200 (0.014)	0.0191 (0.013)
Age of the head	-0.0115 (0.003)	0.0002 (0.003)	-0.0007 (0.001)
Age ² of the head	-0.0013 (0.0002)	-0.0005 (0.0002)	-0.0002 (0.0004)
Illiterate and no school.	-0.1148 (0.046)	0.0386 (0.037)	0.0064 (0.006)
Secondary educ.	-0.0281 (0.021)	0.0596 (0.024)	0.0062 (0.010)
University educ.	-0.0640 (0.031)	0.0951 (0.045)	-0.0427 (0.021)
Children < 14	-0.0143 (0.014)	-0.0234 (0.008)	0.0001 (0.002)
Wife works	-0.632 (0.219)	-0.4149 (0.264)	-0.1600 (0.148)
Husband works	-0.0569 (0.030)	-0.0236 (0.015)	-0.0063 (0.007)
Home-ownership	-0.0079 (0.024)	-0.1032 (0.051)	-0.0030 (0.007)
Town pop > 500,000	-0.0637 (0.025)	0.0947 (0.045)	0.0150 (0.015)
Town pop \leq 10,000	-0.0536 (0.041)	-0.0076 (0.020)	-0.0041 (0.006)
Age of the spouse	0.0170 (0.003)	0.0014 (0.004)	0.0009 (0.0008)
Age ² of the spouse	0.0004 (0.0002)	0.0001 (0.0002)	0.0004 (0.0002)
Trend	-0.0026 (0.001)	0.0002 (0.0003)	-0.0004 (0.0003)
$\ln c_{t-1} = \ln c_{t+1}$	-0.0213 (0.005)	-0.0135 (0.009)	-0.0011 (0.001)
Constant	0.9877 (0.048)	1.9506 (0.901)	1.0 (-)
Efficient Sargan test (82 d.o.f)	99.32 (9.4%)	87.40 (32.1%)	
Number of observations	2,606	2,606	2,606

Note. Quarterly dummies included. Standard errors (robust to heteroscedasticity) in parentheses. Sargan test followed by degrees of freedom in parentheses, followed by p-value.