Consumption and Time Use Responses to Unemployment

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- **Research question:** What are the time use and consumption effects of a job loss?
- Why is it relevant?
  - Evaluation and optimal design of unemployment insurance schemes.
  - Key input for the calculation of life cycle model parameters.

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  literature overview

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  - **Rich data:** This is the first study to combine expenditure and time use data in a longitudinal micro data set.
  - **Novel evidence:** The estimation results allow conclusions to be drawn about crucial parameters in the life cycle model.
  - **Institutional setting:** Most previous studies are based on data for the USA.

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- Two relevant extensions:

  - Consumption may change in case it is **complementary with leisure/work time**.

  - Expenditures may decrease in case they are **substitutable by home production**.

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  - **Time use categories:** paid work, commuting to work, household chores, activities with children, informal care, leisure activities, sleeping and resting, schooling, and personal care.

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- We observe **173** transitions into unemployment and **127** transitions into employment.

Methodology

- We set up the regression equation

$$Y_{it} = \beta_0 + \beta_1 UNEMP_{it} + \boldsymbol{\beta}_2' \mathbf{X}_{it} + \boldsymbol{\beta}_3' \mathbf{t}_t + \alpha_i + \epsilon_{it},$$

where $UNEMP_{it}$ is an unemployment dummy, $\mathbf{X}_{it}$ is a vector of control variables, and $\mathbf{t}_t$ is a vector of time dummies.

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- We estimate the equation by **pooled OLS** and **fixed effects**.

Results

Table 1 Total Expenditure

OLS-1	OLS-2	FE
-434.809*** / 20.48%	-217.212*** / 10.23%	-108.949* / 5.13%
(56.364)	(52.214)	(63.769)

Results

Table 2 Disaggregated Expenditure 1 - FE

Mortgages	Rent	Utilities	Transport
19.702 / 4.33%	-16.115 / 14.51%	12.829* / 7.08%	-22.051*** / 16.69%
(20.359)	(10.995)	(7.028)	(7.055)
Insurances	**Alimony**	**Debts**	**Cleaning**
-5.85 / 2.96%	-3.800 / 21.80%	-8.351 / 27.27%	-5.378* / 14.43%
(9.638)	(4.258)	(6.397)	(3.211)
Food in	**Childcare**	**Holidays**	**Other**
-15.827 / 4.95%	-2.146 / 8.17%	2.514 / 2.23%	-5.378* / 14.43%
(11.481)	(5.767)	(10.541)	(3.211)

Results

Table 3 Disaggregated Expenditure 2 - FE

Food out	Tobacco	Clothes
5.373 / 8.45%	-3.636 / 17.31%	-4.698 / 4.44%
(9.159)	(4.456)	(10.394)
Personal Care	**Medical Care**	**Leisure**
1.138 / 2.68%	-12.804** / 52.72%	-10.125/ 16.89%
(5.469)	(5.780)	(6.629)
Schooling	**Donations**	**Other**
1.324/ 11.74%	-8.364* / 17.34%	-2.027 / 13.12%
(6.080)	(4.884)	(4.140)

Results

Table 4 Time Use - FE

Paid Work	Commuting	Household Chores
-19.612*** / 57.45%	-2.474***/ 55.79%	5.493*** / 57.53%
(1.367)	(0.280)	(1.09)
Childcare	**Informal Care**	**Leisure Activities**
0.488 / 10.76%	0.325 / 10.16%	8.281***/ 25.76%
(0.385)	(0.556)	(2.434)
Schooling	**Sleeping and Resting**	**Personal Care**
0.684 / 44.42%	0.256 / 58.017%	0.296 / 3.55%
(0.683)	(1.685)	(0.775)

Results

Table 5 Disaggregated Time Use - FE

Small house jobs	Care Plants/Animals	Cooking	Shopping
0.665*** / 22.36%	0.598** / 22.15%	0.594*** / 22.16%	0.105 / 9.68%
(0.256)	(0.242)	(0.158)	(0.095)
Sports	**TV Watching**	**Radio Listening**	**Reading**
0.295*** / 15.19%	3.892*** / 22.19%	-0.116 / 0.64%	0.798*** / 28.96%
(0.107)	(0.567)	(1.025)	(0.280)
Music Listening	**Going Out**	**Volunteering**	**Other Activities**
-0.291 / 3.01%	0.128 / 10.71%	0.755***/ 68.51%	0.790*** / 42.17%
(0.686)	(0.104)	(0.214)	(0.169)

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  - The generosity of the UI benefit system.
  - The largest expenditure categories being subject to long-term contracts.

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Life Cycle Parameters

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  Life Cycle Parameters
- We find no heterogeneity of our results across age, and no asymmetry between job loss and job find.

THANK YOU

Appendix 1 - Literature

- **Consumption:** Stephens (2004), Bentolila & Ichino (2008), and Christelis et al. (2015).
- **Time use:** Krueger & Muller (2012), Aguiar et al. (2013), and Gimenez-Nadal & Molina (2014).
- **Time use and consumption**: Ahn et al. (2004), Aguiar & Hurst (2005), and Burdan & Hamermesh (2010).

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Aappendix 2 - Theory (Parameters)

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- Using our estimation results, we obtain $\gamma/\eta = \mathbf{0.62}$.
- This result suggest a γ near the upper end of the estimates provided by the literature (often between **0.4** and **0.8**), and an η that is just above one.

Appendix 2 - Theory (Model)

- Consider the utility function

$$U = \sum_{t=0}^{T} (1+\delta)^{-t} \left[u(c_t) + \theta \frac{l_t^{1-\frac{1}{\gamma}}}{1-\frac{1}{\gamma}} \right], \tag{1}$$

where $c_t = \left[a c_{mt}^{\frac{\eta-1}{\eta}} + (1-a) h_{n_t}^{\frac{\eta-1}{\eta}} \right]^{\frac{\eta}{\eta-1}}$.

- Individuals chose c_{mt}, h_{nt} and l_t to maximize utility subject to

$$A_{t+1} = (1+r)(A_{t-1} + w_t h_{mt} - c_{mt}), \tag{2}$$

and

$$l_t = T - h_{mt} - h_{nt}. \tag{3}$$

Appendix 2 - Theory (Model)

- For an individual that becomes unemployed at period τ, the model yields

$$\frac{\gamma}{\eta} = \frac{\ln(1 - h_{n\tau}) - \ln(T - h_{mt} - h_{n\tau-1})}{\ln(c_{m\tau-1}/c_{m\tau}) - \ln(h_{n\tau-1}/h_{n\tau})}. \tag{4}$$

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