Combining Income and Consumption Data at Household Level:
An Analysis of Intra-household Transfers Based on NTA Micro Data

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Micro-Distributional NTA, May 2020
1. Building NTA micro-data that contain information on income, consumption and intra-household transfers

2. Using micro data to analyse the role of families in the generational economy
Motivation: Where does negative net saving come from?

Source: www.wittgensteincentre.org/ntadata
Motivation: Where does negative net saving come from?

Negative saving effect generated by method of combining income and consumption?

Two type of young adults with same level of consumption:

1. Living in own household with higher than average income
2. Living with parents with less than average income

=> Imputation of age-specific average income results (wrongly!) in:

• Dissaving of those living in own household
• Underestimation of intra-household transfers of those living with parents

=> We need to account for the correlation between income and consumption at household level
Motivation: Role of the family in the transfer system

Detailed analysis of intra-household transfers

- Estimates of intra-household inflows and outflows (we average them out by imputing average income and consumption in hh-roster)
- Intrahousehold transfers provided by parents: analyse them separately from their peers

Zannella et al. (2018): A Quantitative Assessment of the Rush Hour of Life in Austria, Italy and Slovenia

=> Rush hour of life only indirectly related to age; it is caused by having children
1. Combining income and consumption data at individual level
**Income: EU-SILC**
- Includes yearly income at individual level
- Asset income not or very badly captured

**Consumption: consumer expenditure survey**
- Consumption and income at household level
- Observes consumption expenditure over a two-week period (accounts for large consumption items)

⇒ Huge variation in consumption: between individuals and between 2 week periods for the same individual
Imputing consumption in income survey

Estimation of consumption function for households based on CES:

\[ c_j = \bar{c} + \beta_1 \times y_j + \beta_2 \times \text{hhmem} + \varepsilon_j \]

- \( c_j \) … consumption per member of household \( j \)
- \( \bar{c} \) … autonomous consumption (about 10,000 Euros)
- \( \beta_1 \) … marginal propensity to consume (about 0.74)
- \( y_j \) … income per household member
- \( \beta_2 \) … economies of scale (-1200€ per additional member)
- \( \text{hhmem} \) … number of equivalent consumers (NTA scale)

R2 is about 0.28
Imputed consumption

- We do make mistakes when imputing consumption in income survey

⇒ They should not affect our analysis by age.
Problems with income in surveys:

• Asset income underreported/not captured in EU-SILC

• Income at older ages not well captured in EU-SILC; stops at age 80
Post-imputation adjustment

⇒ **Imputed values are adjusted so, that the age-averages correspond to the NTA age profiles**

Disadvantages: distortion of the relation between income and consumption

Advantages:
- Fits better to the NTA age profiles
- Reduces effect of inappropriate imputation model of consumption at old age

Post-imputation adjustment sub-optimal solution! Possible improvements:
- Finding better consumption function (imputed consumption fits to NTA)
- Survey that captures asset income better (e.g. HFCS)
- Imputation of asset income in the income survey
Intra-household inflows and outflows
Young adults have higher consumption than disposable income (neg. saving)

⇒ Regular interhousehold transfers
   not captured (bad data)

⇒ Assets transfers: young persons
   finance part of their consumption by
   asset transfers: bequests, gifts

! Taking a loan for financing assets (house, flat) is not directly captured in NTA – does
not change net wealth
2. Analysing the role of the family in the transfer system
Total private transfers: 33 billion Euros

Transfers to dependent children: 21 billion Euros

Pensions: about 48 billion Euros
Intra-household transfer by parental status

Share of the population with dependent children by age

Share of the population with children

0 1 2 3 4 5 6 7 8 9 1
0 10 20 30 40 50 60 70 80
Parents with dependent children

Family households provide a large share of their income to children.

=> Final disposable income is considerably lower in households with children
Outlook

Further step:

• Including public transfers in the micro-data

• Public cash benefits included
• Public contributions (TGO) can be estimated using micro-simulation models (EUROMOD)
• Public education based on education status
• Public health could be based on risk-based approach: what would be the insurance for addressing age-specific health risks

Are families, the group with highest risk of poverty, net contributors to the public transfer system or net recipients?