This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 613247.

THE NTA AGE-PATTERNS OF PRODUCTION, TRANSFERS, CONSUMPTION AND SAVING

AGENTA Workshop,
Vienna, November 22, 2017

Tanja Istenič
Faculty of Economics,
University of Ljubljana
INTRODUCING AGE INTO THE SNA

Basic procedure:
1. estimating aggregate control from the SNA and/or related sources
2. estimating the age distribution of the variable using survey data or administrative sources (weighted averages)
3. adjusting the age profile to match the aggregate control from SNA
4. smoothing: to minimize the random variation; Friedman’s SuperSmoother

Source: Istenič, Hammer, Šeme, Lotrič Dolinar, Sambt, 2017 (forthcoming)
Three different types of data:
1. data from national accounts → to construct aggregate controls
2. population data → to adjust age distribution to the aggregate control
3. survey/administrative data → to obtain the distribution of variables by age
   - EU-SILC 2011 (income recorded for the calendar year preceding the interview; age at the end of income reference period; upper age limit 80+)
   - HBS 2010 (five-year age groups only)
**Labour income**
- Earnings
- Self-employment labour income

**Consumption**
- Private consumption
- Public consumption
- Education, health, and other

**Life cycle deficit** = consumption – labour income

Source: Istenič et al., 2017
- individual level data; source: EU-SILC

- **Earnings** include:
  - cash/non-cash gross income (also holiday leave payment, compensation for food, transportation)
  - employer’s social contributions
  - income of individuals younger than 16

- **Self-employment labour income** operating profit/loss less interest on business loans

Source: Istenič et al., 2017
TOTAL LABOUR INCOME

Source: Istenič et al., 2017
- household level data
- the allocation rules are introduced
- sources: HBS, EU-SILC (imputed rents)

Austria, 2010

Source: Istenič et al., 2017
PRIVATE CONSUMPTION, EDUCATION AND HEALTH

- **Education**
  - source: HBS
  - combining data on household expenditures and number of enrolled in different levels of education
  - pre-primary and primary, secondary, post-secondary non-tertiary, and tertiary education
  - unit costs are equal for all household members enrolled in a specific level

- **Health**
  - source: HBS
  - regression method to estimate the share of household member's expenditure
- modified Deaton’s equivalence scale

- allocation of household expenditures: share of a member/sum of shares of all members
TOTAL PRIVATE CONSUMPTION

Source: Istenič et al., 2017
sources: administrative records, in some cases survey data

Czech Republic, 2010

Source: Istenič et al., 2017
- deriving the aggregate consumption expenditure by education level (data sources: Eurostat - COFOG, UNESCO)
- calculate the expenditure per enrolled person for each level (Eurostat)
- calculating enrolment rates by level at each age
- calculating per capita expenditures

Austria, 2010

Source: Istenič et al., 2017
- comparable administrative data source for all EU countries is not available
- using the pre-calculated age profiles of health care consumption from the Ageing Working Group

Selected EU countries, 2010

Source: Istenič et al., 2017 (based on AWG 2012/15)
Composed of two categories:

- collective consumption (allocated equally to all individuals)
- individual consumption (allocated to beneficiaries of public programmes)
  - old age and sickness and disability – long-term care distribution (source: AWG)
  - unemployment, family and children, and housing - taking the age profiles of the corresponding public cash transfers (explained later)
Public age reallocations
- Net public transfers = public transfer inflows – public transfer outflows
- Public asset-based reallocations = public asset income – public saving

Private age reallocations
- Net private transfers: inter-household and intra-household transfers
- Private asset-based reallocations = private asset income – private saving
PUBLIC TRANSFER INFLOWS

- assigned to the beneficiaries of specific public program
- public transfer inflows \textit{in-kind} = public consumption
- public transfer inflows \textit{in-cash}: direct payments by the government \rightarrow reported in EU-SILC
  - subcategories: education, health, pensions, unemployment, housing, family and children allowances, miscellaneous social protection

\textbf{Italy, 2010}

Source: Istenič et al., 2017
PUBLIC TRANSFER INFLOWS

Source: Istenič et al., 2017
- taxes, social security contributions, other current transfers
  - taxes on asset income
  - taxes on labour income
  - taxes on consumption

- the age patterns are based on already calculated age profiles

- if public outflows are insufficient to finance inflows, a public transfer deficit is generated (≈ public ABR)

Source: Istenič et al., 2017

Slovenia, 2010
PUBLIC TRANSFER OUTFLOWS

Source: Istenič et al., 2017
to compile the age profiles we use the public transfer outflows (excluding ABR) age profile.

Slovenia, 2010

Source: Istenič et al., 2017
PRIVATE INTER-HOUSEHOLD TRANSFERS

- reported on the household level (source: EU-SILC) → flowing to/from the household head
- relative importance of inter- and intra-household transfers

Source: Istenič et al., 2017
an indirect estimation method
using household structure from EU-SILC + already calculated age-profiles
non-head members with the deficit receive inflows from members in surplus
if household total deficit > household total surplus → deficits are financed by household heads (ABR)
Private asset income
- Capital income
- Property income

Private saving – residual category:

\[ S^f(a) = Y^l(a) - C(a) + \tau^g(a) + \tau^{inter}(a) + \tau^{intra}(a) + Y^{Af}(a) + Y^{Ag}(a) - S^g(a) \]
GENDER EXTENSION

- age-and gender-specific averages
- limitation: non-availability of macro controls
  - gender-specific age profiles adjusted to match the total

Austria, 2010

Source: Istenič et al., 2017
GENDER-SPECIFIC LCD FINANCING

Source: Istenič et al., 2017
This project has received funding from the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement no 613247.