Motivation

- Equality of Opportunity theory (EOp; Roemer, 1998):
  - Dichotomous distinction of characteristics into circumstances & effort
  - *“Canonical moment” from which on indiv. responsible for choices*
- Empirics: mainly cross-sectional more recent cohort-based analysis
- Resolving this distinction and abstracting from canonical moment
- Income opportunities available to individual across life-cycle
  - “Contingent” circumstances (i.e., contingent on past decisions/shocks)
  - Outcome of interest: future (life-time) income opportunities
- How opportunities change across life-cycle? At what ages do opportunities narrow down? When do circumstances “hit”?

Related Literature

- Lifecycle income: lifecycle bias of using current as proxy for lifetime income; heterogeneous profiles & income mobility (Haider and Solon, 2006; Blundell et al., 2015)
- Intergenerational mobility: confirm sizeable bias due to heterogeneity in profiles by parental background (Mello et al., 2022; Nybom and Stuhler, 2016; Björklund and Jäntti, 2020)
- Inequality of Opportunity: (Mello et al., 2022; Nybom and Stuhler, 2016; Björklund and Jäntti, 2020)
- Intergenerational mobility: confirms sizeable bias due to heterogeneity in profiles by parental background (Mello et al., 2022; Nybom and Stuhler, 2016; Björklund and Jäntti, 2020)
- Lifecycle income: lifecycle bias of using current as proxy for lifetime income; heterogeneous profiles & income mobility (Haider and Solon, 2006; Blundell et al., 2015)
- Inequality of Opportunity: (Mello et al., 2022; Nybom and Stuhler, 2016; Björklund and Jäntti, 2020)
- Life-cycle bias of using current as proxy for lifetime income; heterogeneous profiles & income mobility (Haider and Solon, 2006; Blundell et al., 2015)

Conceptual Framework

- Panel of finite population \( i \in \{1, \ldots, N\} \), observed across lifecycle \( t \in \{0, \ldots, L\} \)
  - At \( t \), each \( i \) is characterized by outcome \( y_{it} \), characteristics \( x_{it} \)
  - Individual’s lifetime outcome (e.g., income) is given by
    \[
    Y_t = G(y_{it}, \ldots, y_L)
    \]
    where function \( G \) aggregates individual’s outcomes across life-cycle
  - At \( t \in [0, L-1] \), individual’s lifetime outcome is described by a distribution of potential lifetime outcomes, i.e., future distribution of lifetime outcome is given by the CDF function
    \[
    Y_t(z) = \text{Prob}(Y_t \leq z; X_{t-1} = X_{t+1})
    \]
    where \( X_{t+1} \) are the attributes partitioning the population into types
  - Partition gets finer over time if types sharing same \( X_{t+1} \) in \( t \) split into different subtypes in later periods
  - Given such partition of population into types, the full population can, at time \( t \), be characterized by type-specific CDFs

Empirical Description of the Income Process

- Prediction of heterogeneous lifecycle income profiles (Blundell et al., 2015; Mello et al., 2022)
  - permanent vs. transitory components
  - \[ Y_{it} = \alpha_i + \beta_{it} A_{it} + \gamma_i Z_{it} + \delta_i P_{it} + \omega_{it} \]
  - with \( \omega_{it} = r_{it} \cdot P_{it} + \tau_{it} \cdot A_{it} \)
  - **permanent AR(1)**
  - **transitory MA(1)**
- **Challenge: Inequality Assessment**
  - From start of life \( t_0 \) to completion of lifecycle \( t_L \), type-specific \( Y_t \) distribution becomes successively more compressed as we are moving from ex-ante to ex-post outcomes.
  - Intermediate steps \( t_L \) enable ex-interim assessment across types:
    - Between-type inequality via population-weighted distances of type-specific pairs of outcome distributions (Bratthu and Solon, 2020)
    - Aggregating these pairwise distances to summary measure
    - Distinguish how mean (G) and variance (V) of distributions evolve over time by types, e.g., among different types with identical LT outcome
    - usage of Markowitz expected utility approximation (\( EU = \frac{1}{2} \alpha^T \Sigma^{-1} \beta \))
  - Aggregation of Income risks (Coefficient of variation Antelano et al (2022)) across future lifecycle in the spirit of opportunity gaps (Fleurbaey and Schokkaert, 2009; Moramarco et al, 2020)
  - Expected present discounted value of LT income (Eshaghnia et al., 2022) = mean outcome of a given type
  - Aggregation of (expected) future income flow relies on prediction of those profiles for cohorts that have not fully completed their lifecycle
  - Relate measures to income process components

Work Agenda

- **Goal**: Describe development of opportunities across social groups
  - when type-specific lifetime outcome distributions start to compress
  - for which types such compression hits earlier
- **Empirical implementation using Swedish Multi-generational register (Björklund and Jäntti, 2020)**
- **Derive proxies for more scarce data sources to be used in cross-country analysis**
- **Prediction exercise from older to younger cohorts**

References