

Track A: NTA Orientation and Getting Started

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Macroeconomic Aspects of Intergenerational Transfer
Beijing, China

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Outline

1 Preliminaries

2 NTA motivation and goals

3 NTA features and organization

4 Data and basic methods

5 Steps to complete NTA

6 Extensions to “basic” NTA

7 Lab exercise

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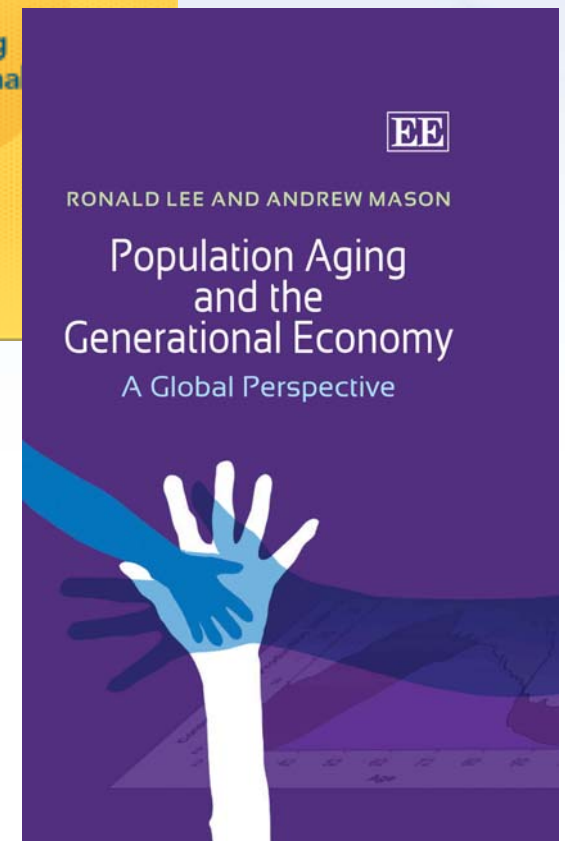
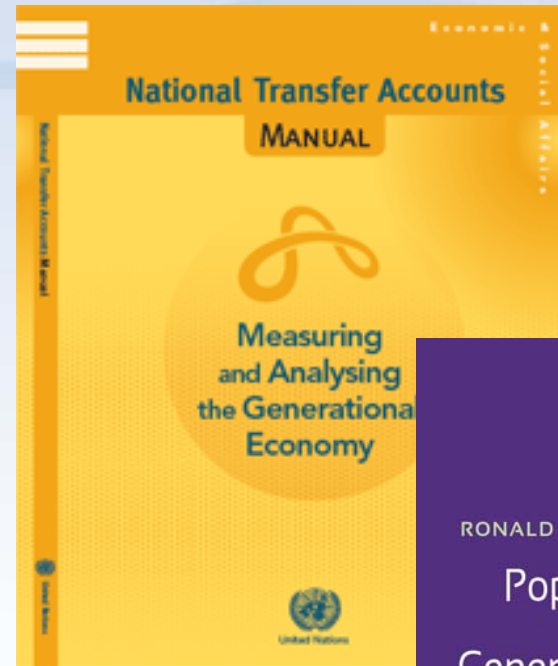
7 Lab exercise

1 Preliminaries

- Workshop objectives
 - Understand NTA project and estimates
 - Get started on macro controls and age profiles
- Introductions
 - Who are you?
 - What are your NTA objectives?
 - Tell us about your data, what you have, what you need to find:
 - Population counts
 - National accounts
 - Household surveys and administrative records

1 Preliminaries

- Does everyone have access to the NTA wiki?
(www.ntaccounts.org)
- Resources to learn more on the NTA wiki
 - NTA “course”
 - Link to NTA manual
 - Link to 2012 comparative volume



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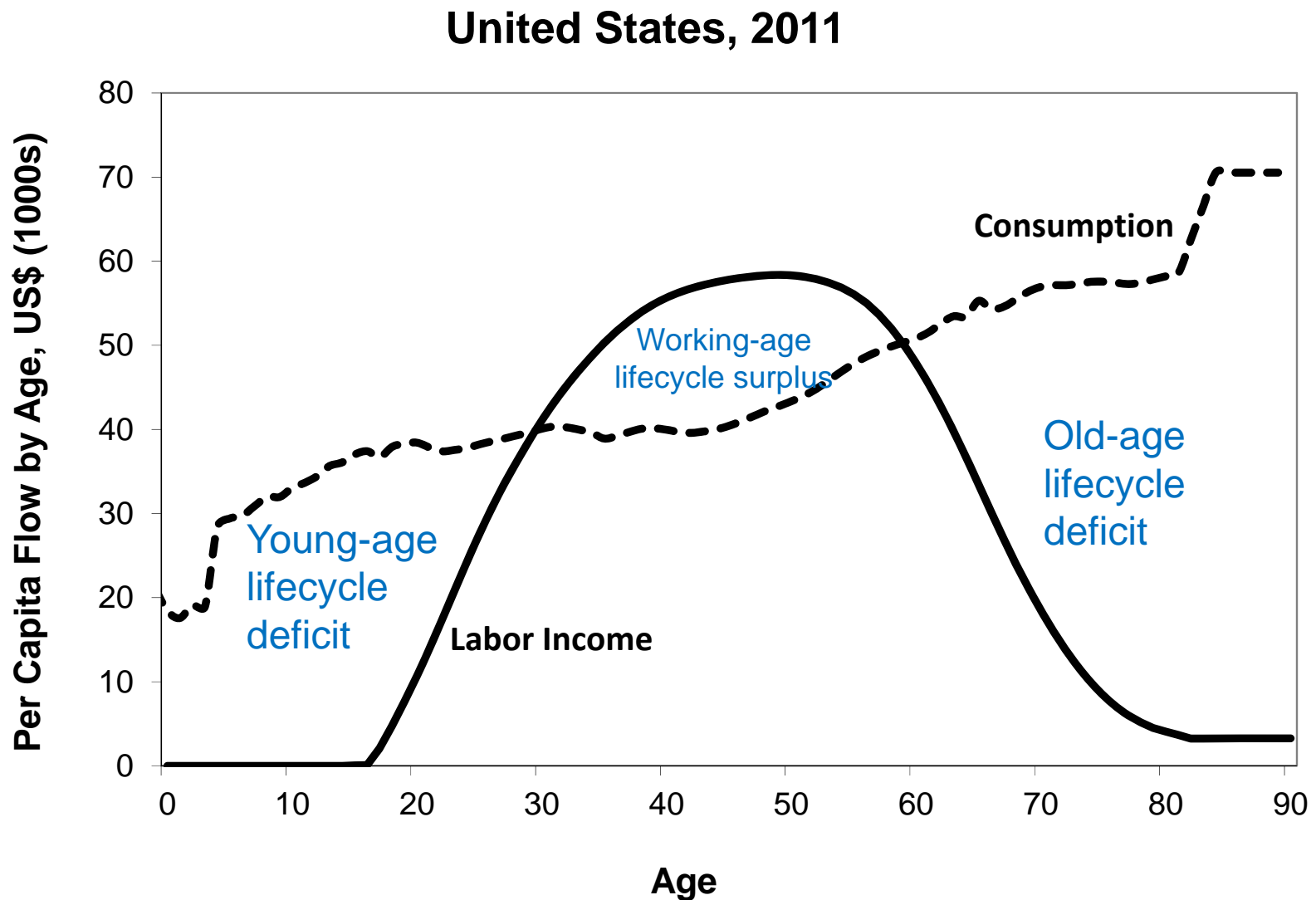
6 Extensions to “basic” NTA

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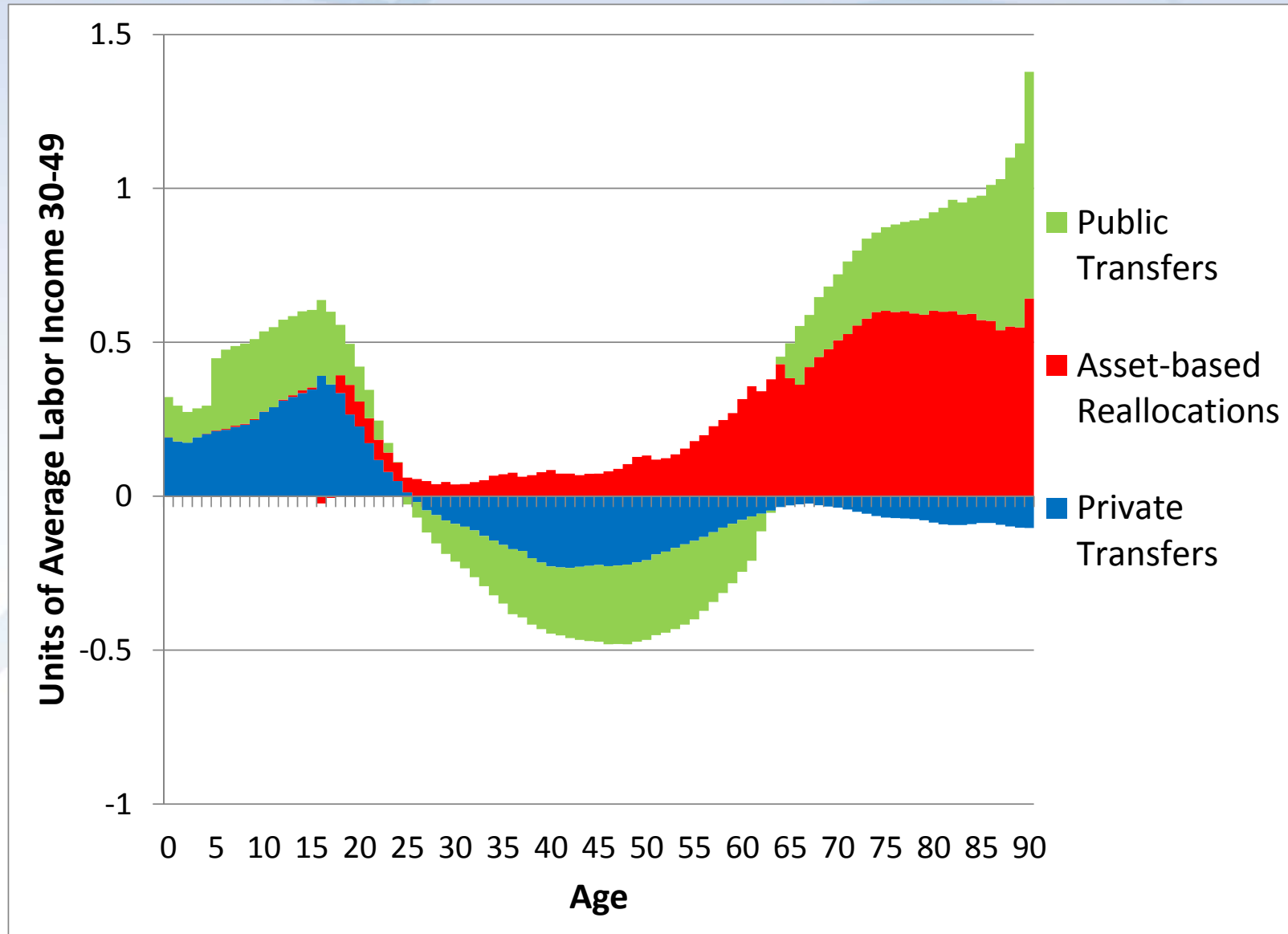
2 NTA Motivation and Goals

- Measuring the generational economy
 - How we produce, consume, share, and save resources by age
 - Research network of teams in more than 40 countries
- Motivating questions
 - How do changes in population age structure affect economies and economic growth?
 - How does economic life vary by age?
 - How does the intergenerational economic system affect the economy and prospects for growth?

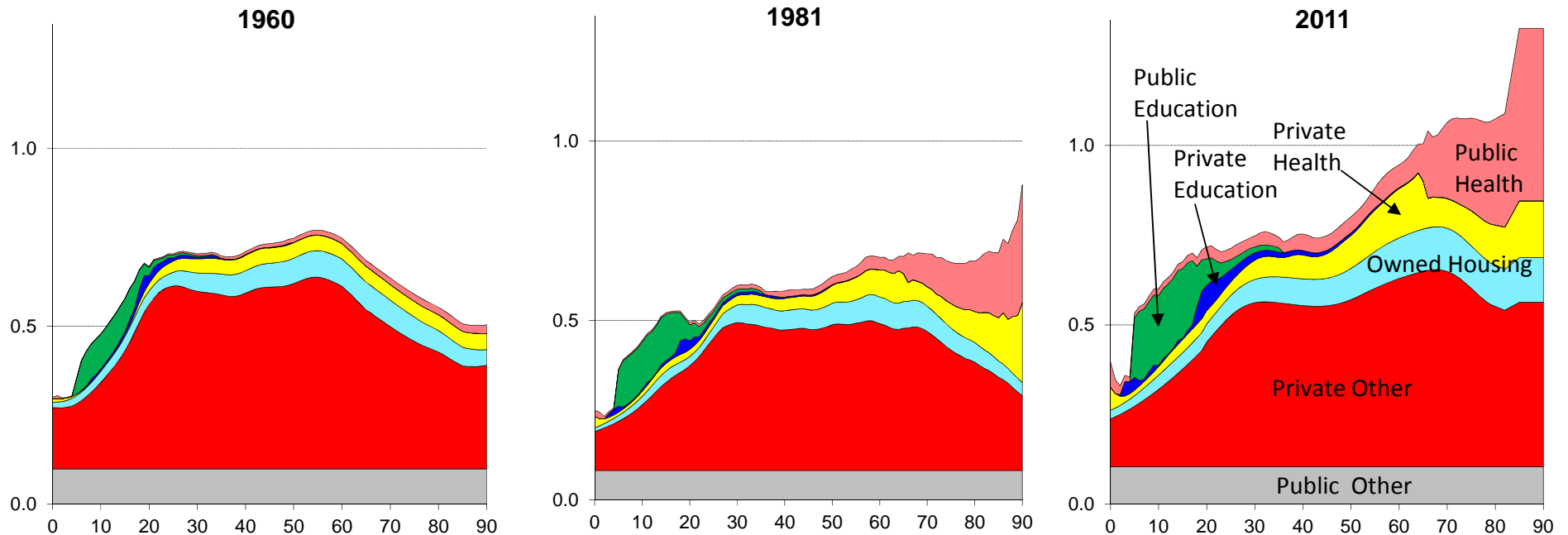
NTA Example – Economic lifecycle



NTA Example – Reallocations



Example of change over time (US total consumption)



In units of average labor income,
ages 30-49

2 NTA Motivation and Goals

- What do we learn from NTA?
 - Are our support systems sustainable?
 - Does the generational economy affect economic growth?
 - Changing age patterns?
- Example: Demographic dividends
 - First DD: Age structures favorable to production
 - Second DD: Age structures favorable to capital
 - Fertility decline associated with greater HK investment per child
 - Older populations concentrated in ages with more assets that can be invested to increase the K/L ratio

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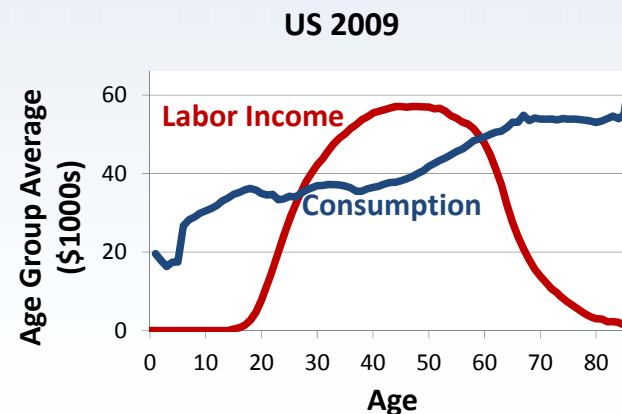
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3 NTA features and organization

- What is an age profile?
 - A schedule of age-specific average flow amounts
 - Based on flow measure or proxy indicator from:
 - A household survey
 - A government report
 - Other NTA age profiles
 - NTA assumptions
 - Smoothed over age
 - Adjusted up or down so that aggregate flow matches an aggregate estimate from national accounts



3 NTA features and organization

- NTA age profiles disaggregate national accounts by age
 - Now focused on flow account; will eventually include asset revaluation and wealth accounts
- NTA is generally consistent with the System of National Accounts (SNA) except:
 - SNA tracks by sector (corporate, gov't, household) but NTA is always from the individual perspective
 - Government, corporate, and household flows imputed to the individuals who “own” those institutions
 - SNA does not include intra-household transfers, that is an innovation of NTA
 - Some changes in SNA aggregates

The Flow Account Identity

- Inflows

- Labor Income
- Asset Income
- Transfer Inflows

- Outflows

- Consumption
- Saving
- Transfer Outflows

$$\underbrace{Y^l(a) + Y^a(a) + \tau^+(a)}_{\text{Inflows}} = \underbrace{C(a) + S(a) + \tau^-(a)}_{\text{Outflows}}$$

$$\underbrace{C(a) - Y^l(a)}_{\text{Lifecycle Deficit}} = \underbrace{Y^a(a) - S(a)}_{\text{Asset-based Reallocations}} + \underbrace{\tau^+(a) - \tau^-(a)}_{\text{Net Transfers}}$$

Age Reallocations

3 NTA features and organization

- Reallocations are classified by economic form and mediating institution:

A Classification of NTA Reallocations.			
	Asset-based Age Reallocations		Transfers
	Capital and Other Non-Financial Assets	Credit	
Public	Public infrastructure Public land and sub-soil minerals	Public debt Student loans Money	Public education Public health care Unfunded pension plans
Private	Housing Consumer durables Factories, Farms Private land and sub-soil minerals Inventories	Consumer credit	Familial support of children and parents Bequests Charitable contributions

Source: Mason, Lee et al. (forthcoming); adapted from Lee (1994).

3 NTA features and organization

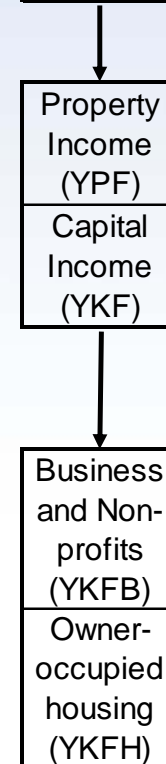
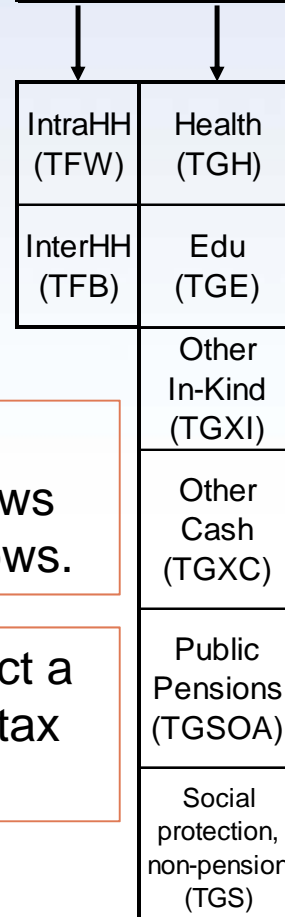
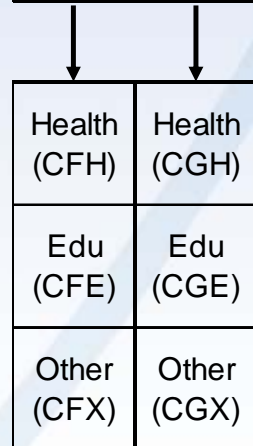
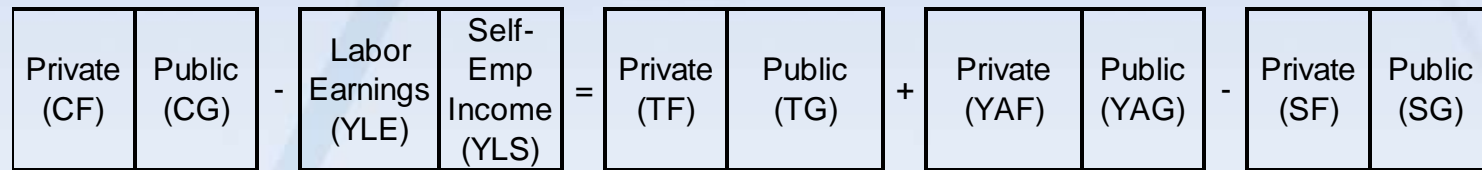
- Asset-based reallocations allow for inter-temporal exchange
 - Save now, spend later
 - Go into debt and spend now, repay later
 - Invest now, spend flow of returns in future
- Transfers involve no explicit quid pro quo
 - May involve implicit obligation, e.g., transfers between children and parents
 - Transfers must balance (inflows = outflows), but may also include net transfers to or from Rest-of-World

Organization of accounts

$$\boxed{\text{Life Cycle Deficit (LCD)}} = \boxed{\text{Reallocations (R)}}$$

$$\boxed{\text{Life Cycle Deficit (LCD)}} = \boxed{\text{Transfers (T)}} + \boxed{\text{Asset-Based Reallocations (RA)}}$$

$$\boxed{\text{Consumption}} - \boxed{\text{Labor Income}} = \boxed{\text{Transfers (T)}} + \boxed{\text{Asset Income (YA)}} - \boxed{\text{Net Saving (S)}}$$



Transfers have inflows and outflows.

Also collect a full set of tax profiles.



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4 Data and basic methods

- Data: Population, national accounts, household surveys, administrative data
1. Population estimates:
 - Single year of age to 90+
 - Evaluated for quality
 - Can use UN World Population Prospects if problems with national estimates
 - Significant non-household population?

4 Data and basic methods

2. National accounts data (in SNA format):

- List of main SNA tables given in the manual, need tables by sector
- Which government agencies produce your accounts? How do they publish the results? What is available in international databases?
- Will probably also need:
 - Government expenditure records
 - Entries for your country in the International Monetary Fund's Government Finance Statistics (GFS) publications

4 Data and basic methods

3. Household surveys

- Income and expenditure surveys give direct measures or indicators of relative age patterns
- May need to supplement with specialized surveys (older people, institutionalized population)

4. Administrative data

- Government reports on public program participation by age
- May give monetary flows
- May only have participation indicators

4 Data and basic methods

- Necessary features of household surveys and administrative records:
 - Nationally representative
 - Designated household head/householder
 - Sufficient sample size
 - Household roster by age, sex, work/school status
 - Includes necessary indicators:
 - Income by source (including work, government benefits, gifts, interest and dividend income, etc.)
 - Expenditure by type (amounts paid for consumption, taxes, gifts, etc.)

How to calculate an age profile

1. Calculate the macro control from national accounts
2. Identify a measure or proxy indicator for the flow:
 1. From household survey:
 - Use individual-level data if available
 - Otherwise allocate household amount to individuals in the household
 2. From administrative records
 3. On *a priori* grounds (i.e. assumed or calculated from other age profiles)
3. Calculate single-year age group averages: May have to adjust for any missing populations (i.e. persons not represented in survey or administrative records)
4. **Smooth:** Evaluate to ensure that no real variation has been eliminated
5. **Adjust to controls:** Evaluate adjustment factor to test the validity of the age shape

4 Data and basic methods

- Smoothing:
 - Reduces noise from sampling
 - Smooth lowest-level components only
 - Beware of eliminating “real” features of the age pattern
 - Peaks/valleys, elbows, zeros
 - False negative values should be replaced with zeros
 - Details and examples in manual appendix

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Gather Data

- Identify available surveys, administrative records, national accounts, and population data
- Choose base year in which all necessary data are available
- Obtain data permissions and copies of datasets
- Evaluate data quality, coverage, usability

Lifecycle Accounts

- Calculate macro controls for components of consumption and labor income (some teams prefer to calculate all macro controls at this stage)
- Estimate age patterns from administrative and survey data
- Smooth, adjust to controls, and evaluate

5 Steps to complete NTA

Public Age Realloc.

- Calculate macro controls for public reallocations (taxes, transfers, asset income, and saving)
- Estimate age shapes for these variables from administrative and survey data
- Smooth, adjust to controls, and evaluate

Private Age Realloc.

- Calculate macro controls for private reallocations (transfers, asset income, and saving)
- Estimate age shapes for inter-household transfers, asset income, and saving from survey data
- Smooth, adjust to controls, and evaluate
- Estimate components of intra-household transfers from already estimated profiles and sharing algorithm
- Smooth, adjust to modified controls, and evaluate
- Estimate private saving as the balancing item

5 Steps to complete NTA

- Review and evaluate all estimates
 - See manual for list of checks
- Document estimates on the wiki
- Upload data and documentation in the wiki database

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- Further disaggregate NTA age profiles by other characteristics:
 - Socioeconomic status
 - Gender
 - Geography (region, urban-rural, etc.)
- National Time Transfer Accounts
- Wealth accounts
- Bequests
- Policy-relevant analyses and indicators

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- Read country profile questionnaire
 - Any questions you do not understand? Ask!
 - Any items you do not know?
 - Any data you may not be able to get?
- Work through simplified example of calculating a few age profiles
 - You can use the provided example data, or try to use your own and modify the code as necessary
 - Macro controls are given, you will learn more about how to calculate them for your country this afternoon