

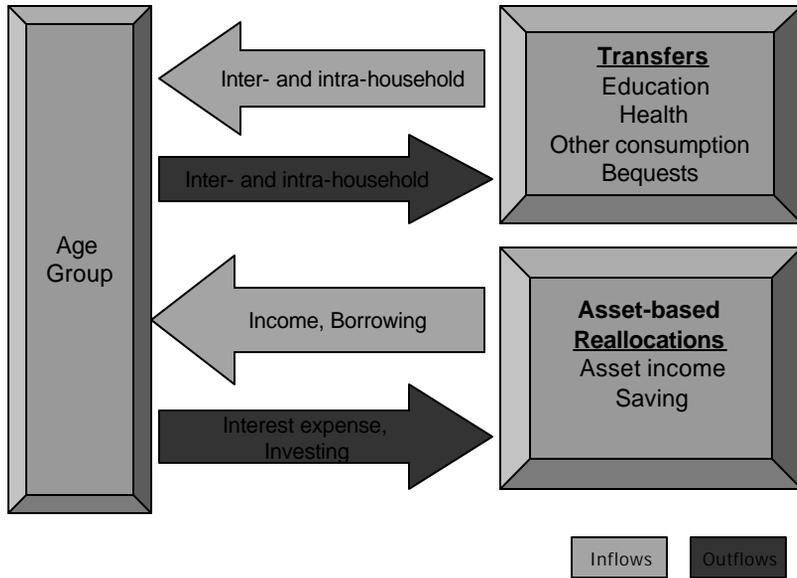
National Transfer Accounts and the Private Sector

Andrew Mason
38th Summer Seminar on
Population

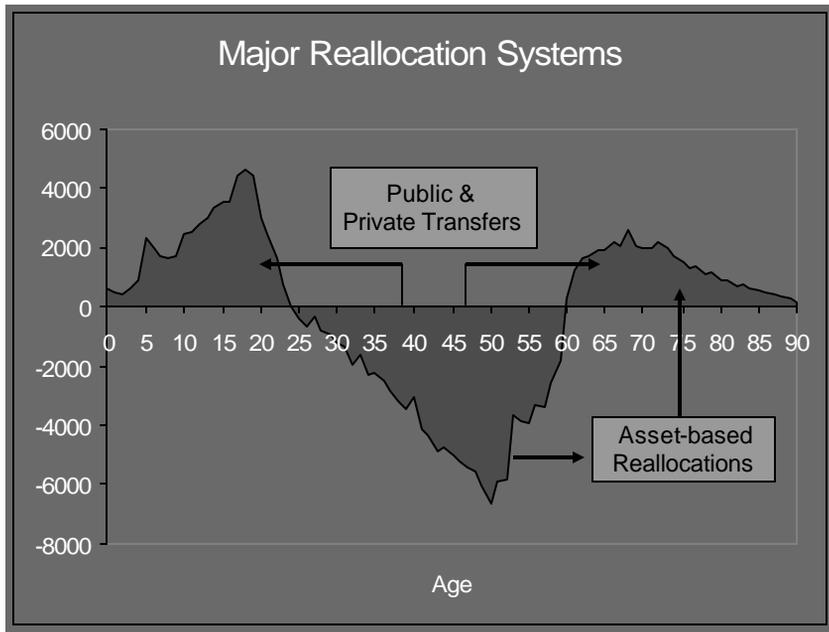
Role of the Private Sector

- The private sector generates inter-age flows in two distinct ways:
 - Transfers between age groups (or between an age group and the rest of the world)
 - Asset-based reallocations: asset income and saving and dis-saving of assets and debt.
- Transfers and asset-based reallocations may be linked:
 - Working age adults may incur debt to support their children or draw down assets to support their parents.

Private National Transfer Flows



Major Reallocation Systems



Private Transfers

- Shift of economic resources from one age group to another; non-market; no *quid pro quo*.
- Familial transfers
 - Inter-household transfers
 - Intra-household transfers
 - Capital transfers
- Non-familial transfers: transfers through private foundations, religious organizations, etc.

The Flow Account Identity

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Inflows <ul style="list-style-type: none"> ▪ Labor Income ▪ Asset Income ▪ Transfer Received | <ul style="list-style-type: none"> ▪ Outflows <ul style="list-style-type: none"> ▪ Consumption ▪ Saving ▪ Transfers Paid |
|--|---|

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

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

Age Reallocations

How important are familial transfers?

Familial Transfers (Inflows) as a Percentage of Consumption, Taiwan and US

	Taiwan	US
Children*	64%	62%
Elderly*	39%	5%
Bequests	-17%	-17%

*Excluding capital transfers.

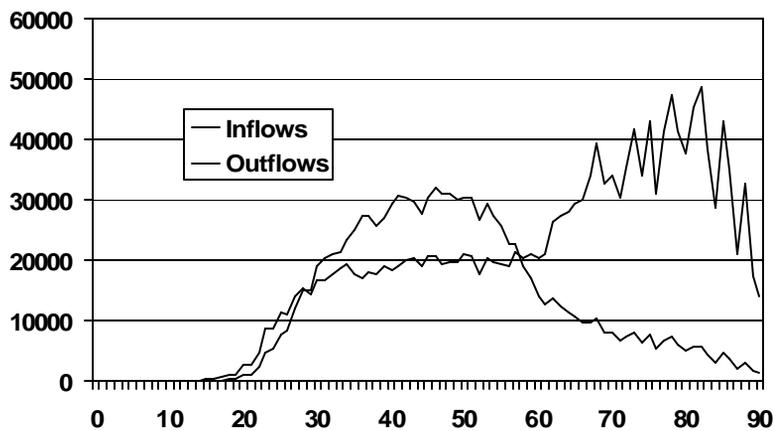
Forms of Familial Transfers

- Inter-household transfers
- Intra-household transfers
- Capital transfers, e.g., bequests

Inter-household Familial Transfers

- Assumption: All inter-household transfers are between household heads
- Inter-household transfers are estimated directly from FIES or similar surveys
- Capital transfers are excluded
- Differences between inflows and outflows
 - Reporting error: giving > receiving
 - Gifts to and from ghost households
 - Transfers to and from ROW

Per Capita Inter-household Transfers, Taiwan, 1998



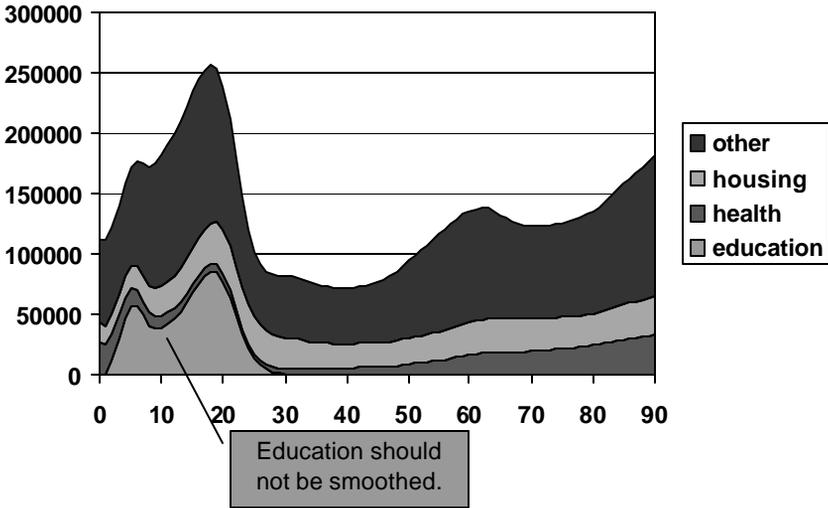
Intra-household Transfers: Principles and Assumptions

- Net inflows to individuals with consumption in excess of their net disposable income.
- Net outflows from individuals with net disposable income in excess of their consumption.
- Net disposable income is defined as labor income + net public transfers + net inter-household transfers.
- Disposable income is “taxed” at the same rate within each household.
- Residual is transferred to the household head and saved.
- If labor income + transfers insufficient, resources are transferred from the head (out of asset income and saving).

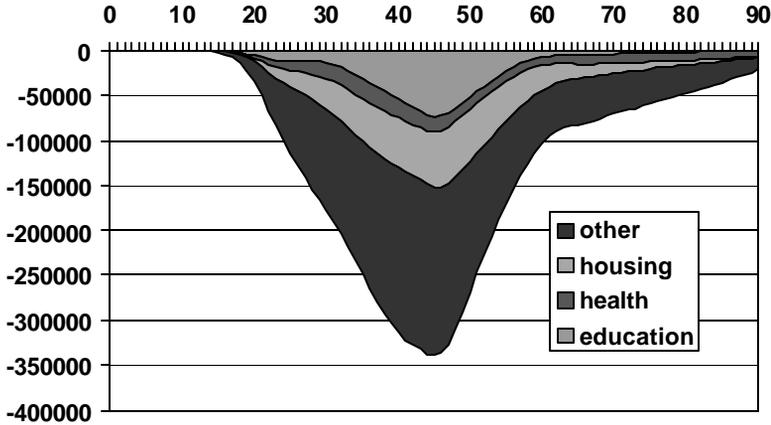
Note on Methodology

- Computation facilitated if a single comprehensive survey provides estimates of key variables for individuals;
- Controlling for age and household consumption, individual’s consumption is assumed to be independent of the individual’s income.
- Detailed methods described on website; STATA program available.
- Special cases, e.g., multiple survey methods, discussed on NTA website.

Per Capita Intra-household Transfer Inflows, Taiwan, 1998



Per Capita Intra-household Transfers, Taiwan, 1998



Intra-household Transfers: Issues

- Intra-household transfers are only as good as consumption estimates;
- Importance of imputing income variables, e.g., labor income and public transfers to individual members;
- In the absence of information about individual heterogeneity, only net intra-household transfers can be estimated.

Private Capital Transfers

- Inter- and intra-household transfers support current consumption.
- Capital transfers are large and infrequent.
- Capital transfers are intended to transfer wealth, *per se*, to descendants.
- Examples
 - Bequests
 - Household mergers
 - Headship succession
 - Dowry and brideprice?

A Simple Model of Patrilineal Succession

- Households consist of father and his sons; Father is the head until his death; eldest son takes over as head; brothers remain.
- Mortality of eldest males and households equivalent.
- Capital outflows:
 - Identical to bequests;
 - Depend on mortality of males/households and covariance between mortality and wealth.
- Capital inflows:
 - New households are reconstituted ghost households (with sons as heads)

Complexities

- Head may abdicate household leadership prior to his or her death
 - Household fusion
 - Headship succession
 - In NTA system wealth follows headship: death of the household not death of an individual leads to a capital transfer.

Complexities

- Intra-generational succession
 - In many societies, household leadership passes to the surviving spouse if any;
 - In NTA, this is a non-event in the sense that the household of age a survives;
 - However, the death of the head may precipitate an inter-generational transfer even though the household persists;
 - Relevant to modeling relationship between household transitions and mortality.

Complexities

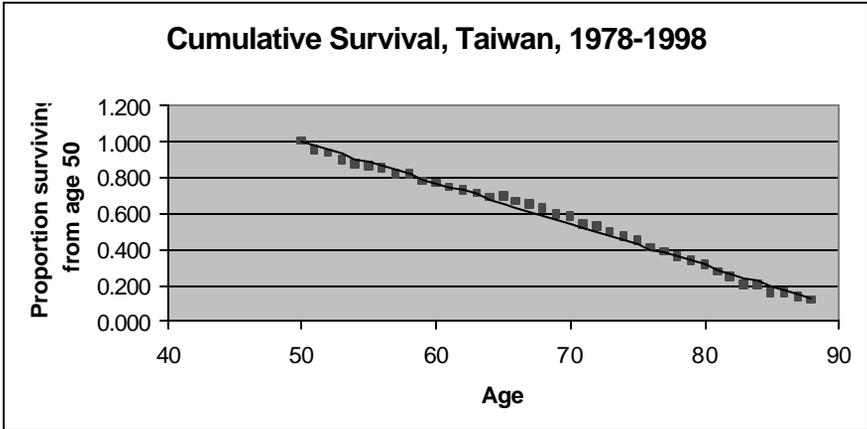
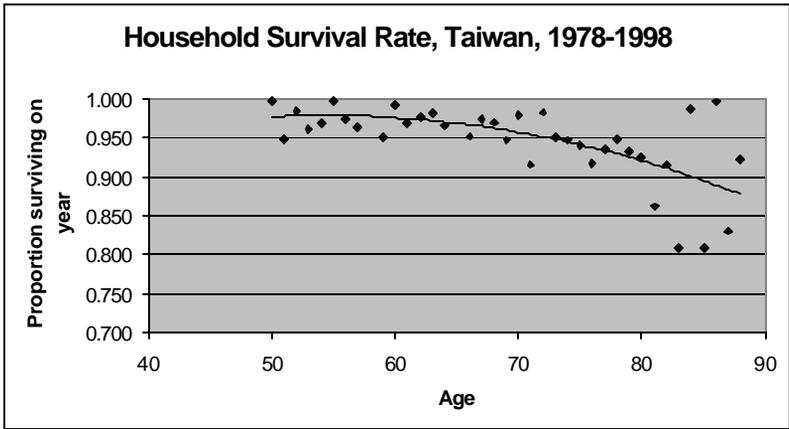
- Intra-generational transfers II
 - If individuals or couples purchase annuities, their death leads to an intra-generational transfer, which is not measured in NTA, rather than an inter-generational transfer.

Complexities

- Sharing rules for intergenerational transfers
 - Eldest son
 - Equal division
 - Other?

NTA Bequests

- Transfers that arise due to the decline in the number of households:
 - Decline is due to:
 - Death to the household head
 - Fusion (parents move in with their children)
 - Generational succession (headship designation passes to younger generation)



NTA Bequests - Outflows

$$l^A(a, t) = l^h(a, t) + \mathbf{r}_{Ah} CV_A \sqrt{l^h(a, t)(1 - l^h(a, t))}$$

Survival of cohort wealth: $l^A(a, t)$

Survival of households: $l^h(a, t)$

Correlation between
wealth and survival: \mathbf{r}_{Ah}

Coefficient of variation for
wealth: CV_A

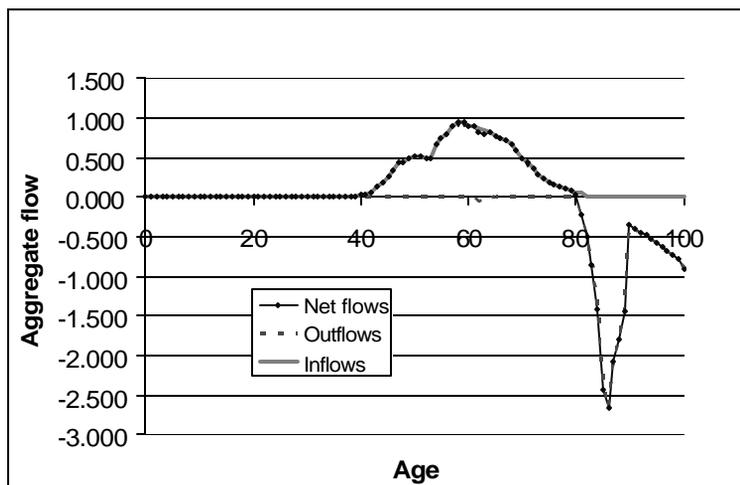
NTA Bequests - Outflows

- The correlation between wealth and household survival captures some of the complexities:
 - Effect of wealth on individual survival
 - Effect of wealth on household fusion and headship transition
- Illustration for Taiwan
 - CV(asset income) = 1.4
 - proxy for CV(assets)
 - rho = 0.1.

NTA Bequests - Inflows

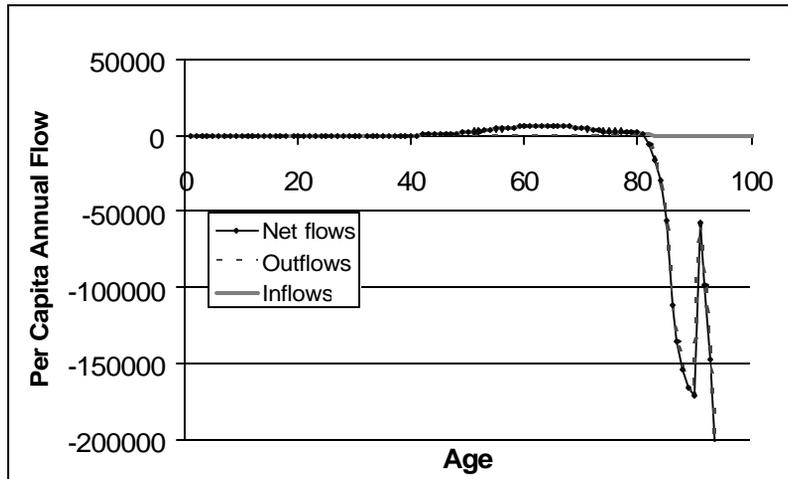
- Sharing Rules
 - Equal sharing among surviving offspring who are household heads.
 - Parity bias, e.g., eldest or eldest son
 - Gender bias – no effect
- Inflows are to households of non-head beneficiaries

Private Asset Transfers, Taiwan, 1998, Aggregate Values, Draft.



Source: Mason 2007.

Private Asset Transfers, Taiwan, 1998, Per Capita Values, Draft.



Source: Mason 2007.

Methodology for Private Capital Transfers Available on the NTA Website

Asset Reallocations

- Involve inter-temporal exchange.
- Asset is acquired in one period (an outflow)
- Asset yields income in subsequent period (an inflow); or,
- Asset is liquidated in subsequent period (an inflow)
- Reallocation is in upward direction – from younger to older ages – except as noted.

Types of Assets

- Capital
 - Reproducible: aggregate supply can vary.
 - Material
- Land
 - Non-reproducible: aggregate supply is relatively fixed.
 - Material
- Sub-soil resources
 - Non-reproducible; depletable
 - Material
- Credit
 - Reproducible, but aggregate net credit is zero.
 - Domestic credit can be positive or negative.
 - Non-material: credit can be negative; can be used to reallocate downward – from older to younger ages.

Examples of Asset Reallocations

- Capital: A worker invests in a company; when she retires she receives dividends and eventually sells her share of the company (upward flow).
- Land: A worker buys land from a retiree; when he is older he receives rent and eventually sells his land (upward flow).
- Credit: A college student borrows from a worker (downward flow); after graduation she repays the worker (upward flow).

Classifying Saving by Asset Type

- Most saving is through financial intermediaries; therefore, acquisition of assets is often indirect.
- Governing principle: saving is classified by *ultimate use* of the funds.
- Credit reallocations: consumer credit only.

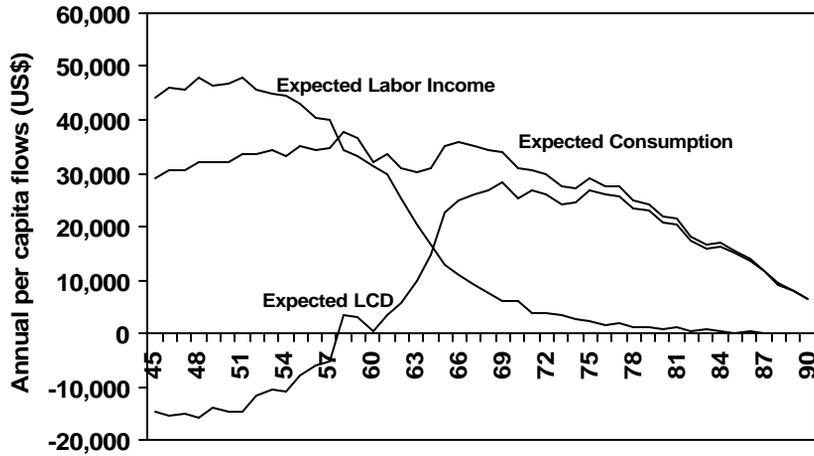
Illustration of classification principle

- Sanjay buys a house for \$100,000
 - Down payment is \$10,000
 - Loan of \$90,000 from Rita (through the bank)
- Investment in capital
 - Sanjay \$10,000
 - Rita \$90,000
- As Sanjay repays Rita his investment increases and hers declines.

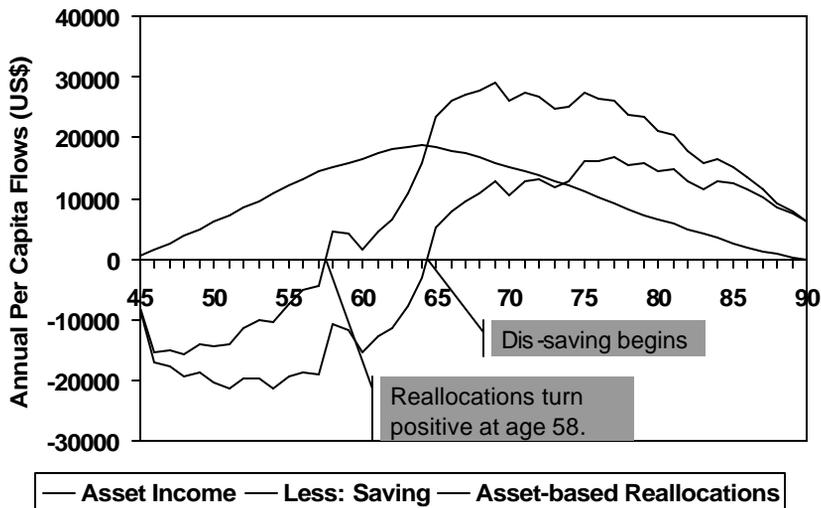
A Lifecycle Saving Scenario: US Synthetic Cohort

- Consumption and labor income profiles for US 2000 hold
- US 2000 survival rates, death at age 90
- Asset reallocations only to shift resources from the working ages to old age
- Saving concentrated at the end of the working ages
- Costless annuities; 6 per cent real rate of interest

Expected Labor Income, Consumption, and Lifecycle Deficit



Asset-based Reallocations, Lifecycle Model



Pure Lifecycle Asset Reallocations

- Reallocations less than zero for ages with a lifecycle surplus ($LCD < 0$)
- Saving (outflow) exceeds asset income (inflow)
- Reallocations > 0 for ages with a lifecycle deficit ($LCD > 0$)
- Asset income exceeds saving.
- Eventually dis-saving occurs.

Why asset reallocations deviate from the lifecycle model

- Time effects: short-run economic fluctuations may dominate any particular year
- Other motives
 - Education for children
 - Sandwich years (supporting kids and parents)
 - Raising consumption at young ages
 - Bequest motive

Bequest Motive

- Save during working ages
- Re-invest asset income
- Flows at high survival ages
 - Outflow in the form of saving
 - Inflow in the form of asset income
 - Net reallocations zero or negative
- Flows at low survival ages
 - Dis-saving (inflow) matched by transfer (outflow)

Computation: Asset Income

- Aggregate control is based on NIPA estimates
- Age profile based on
 - Age profile of asset income from household survey; or
 - Age profile of assets from a household survey

Computation: Private Saving

- Current estimates do not distinguish between the alternative forms of saving (investment, land, credit)
- Saving is a balancing item equal to the difference between inflows and all other outflows

$$\begin{aligned} S^f(a) &= I_K^f(a) + I_M^f(a) \\ &= y_i(a) + y_A(a) + \mathbf{t}(a) - c(a) - S^g(a) \end{aligned}$$

The End