

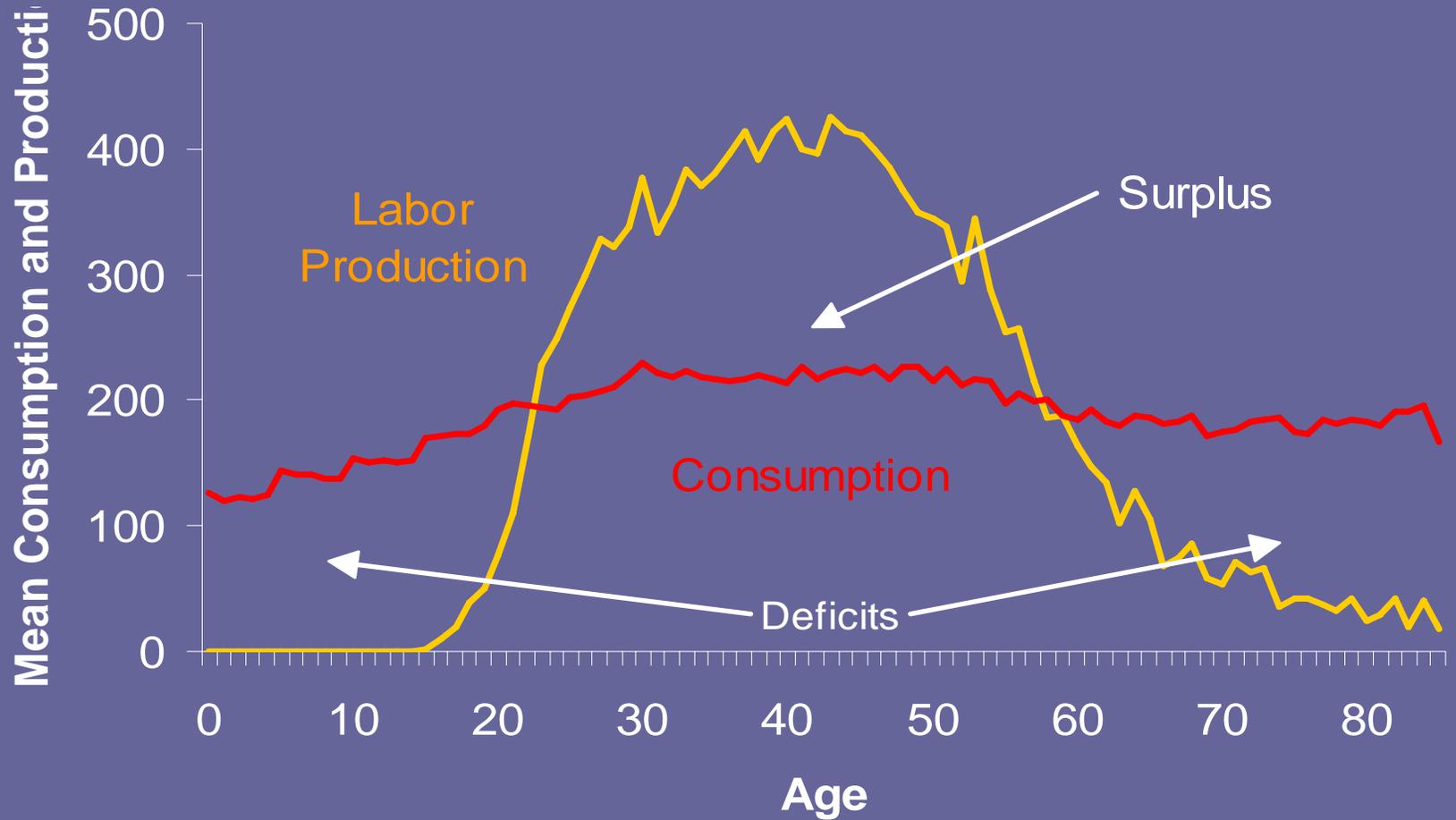
# Private Reallocations

Andrew Mason

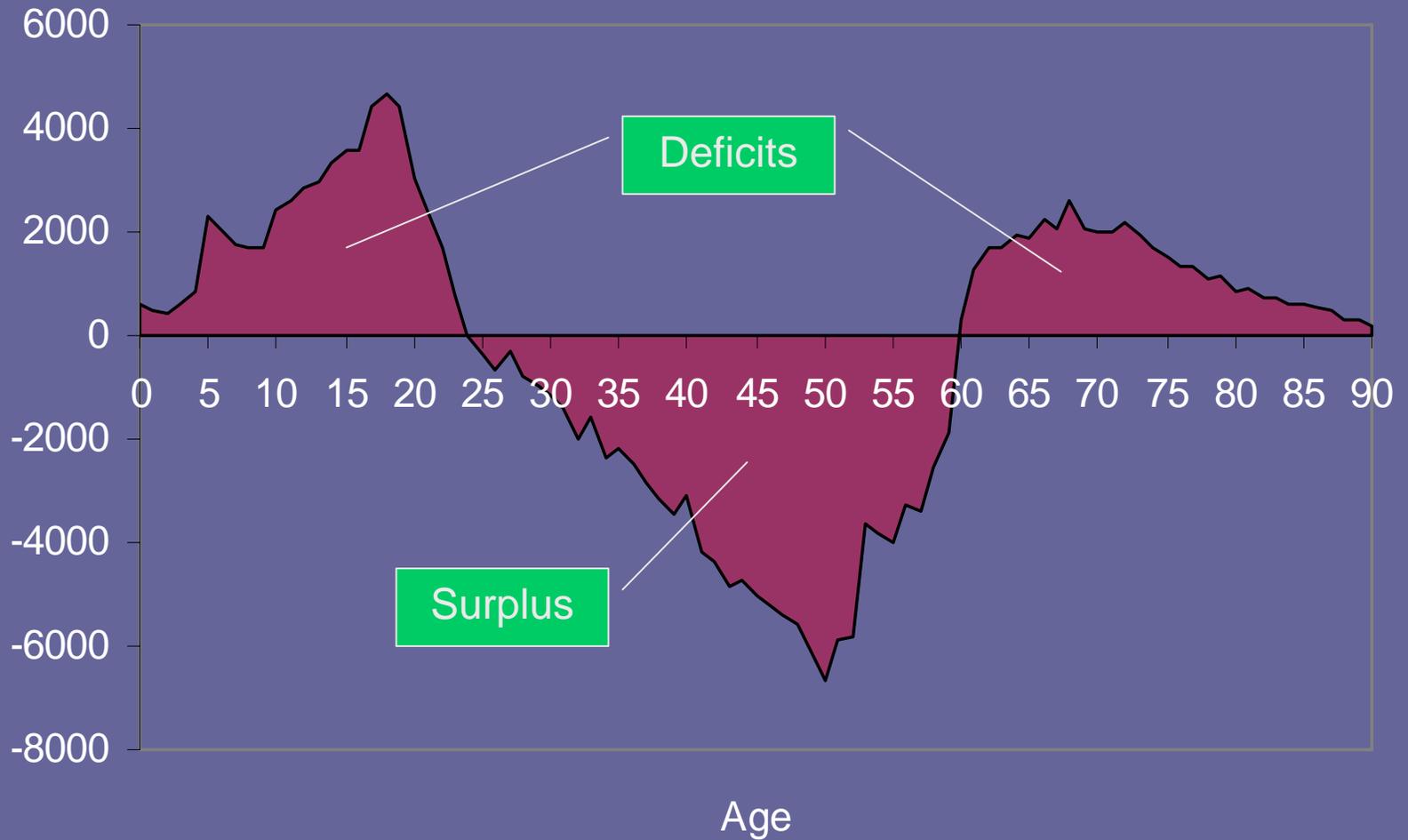
# Outline

- Private Asset Reallocations
  - Capital
  - Credit and Property
- Private Transfers
  - Inter-household
  - Intra-household
  - Capital transfers
- Concepts and principles, not calculation details

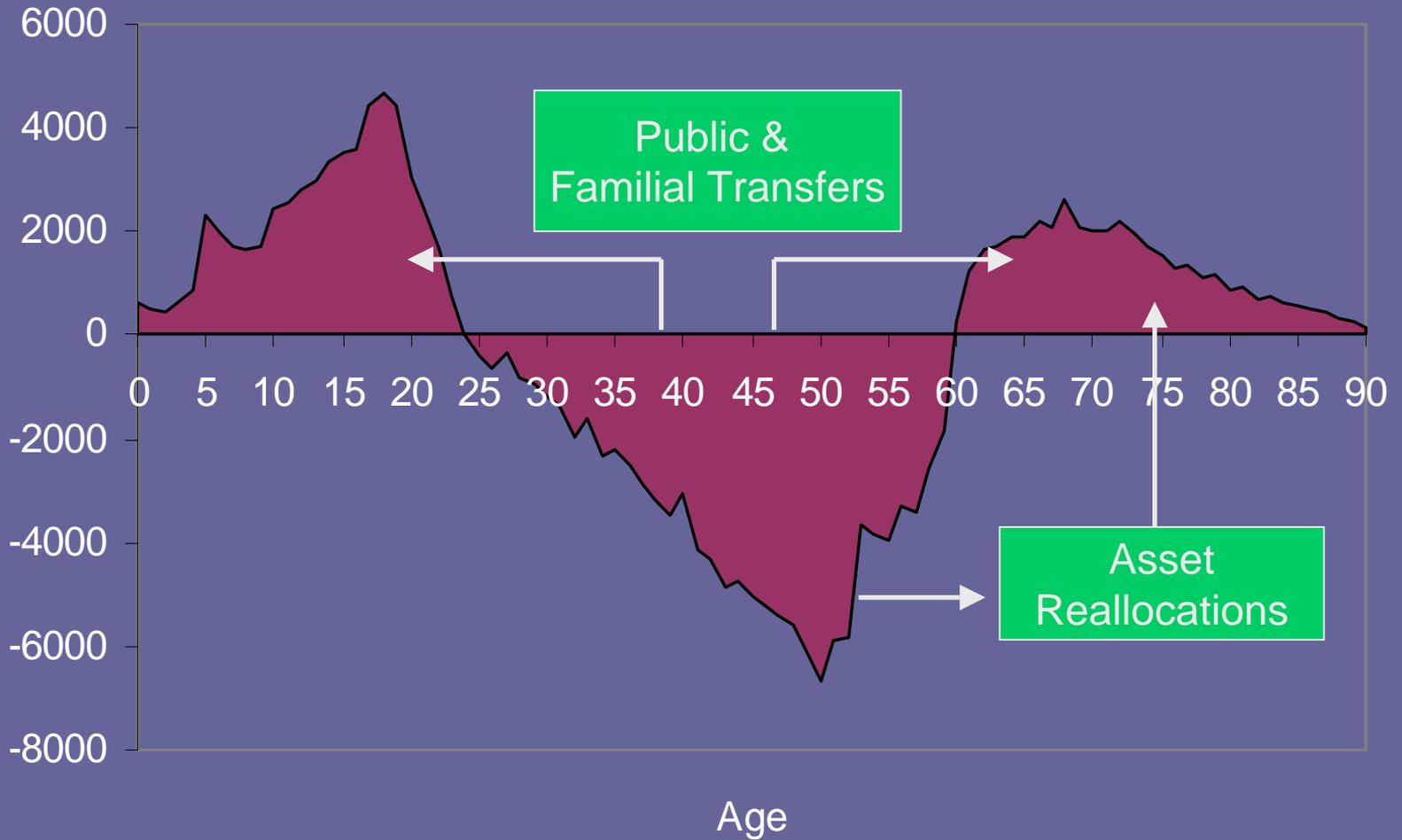
# Most Important Graph in the World!



# Total Reallocations: Lifecycle Deficit



# Major Reallocation Systems



# 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 fixed.
  - Material
- Credit
  - Non-reproducible: aggregate net credit is zero.
  - 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.

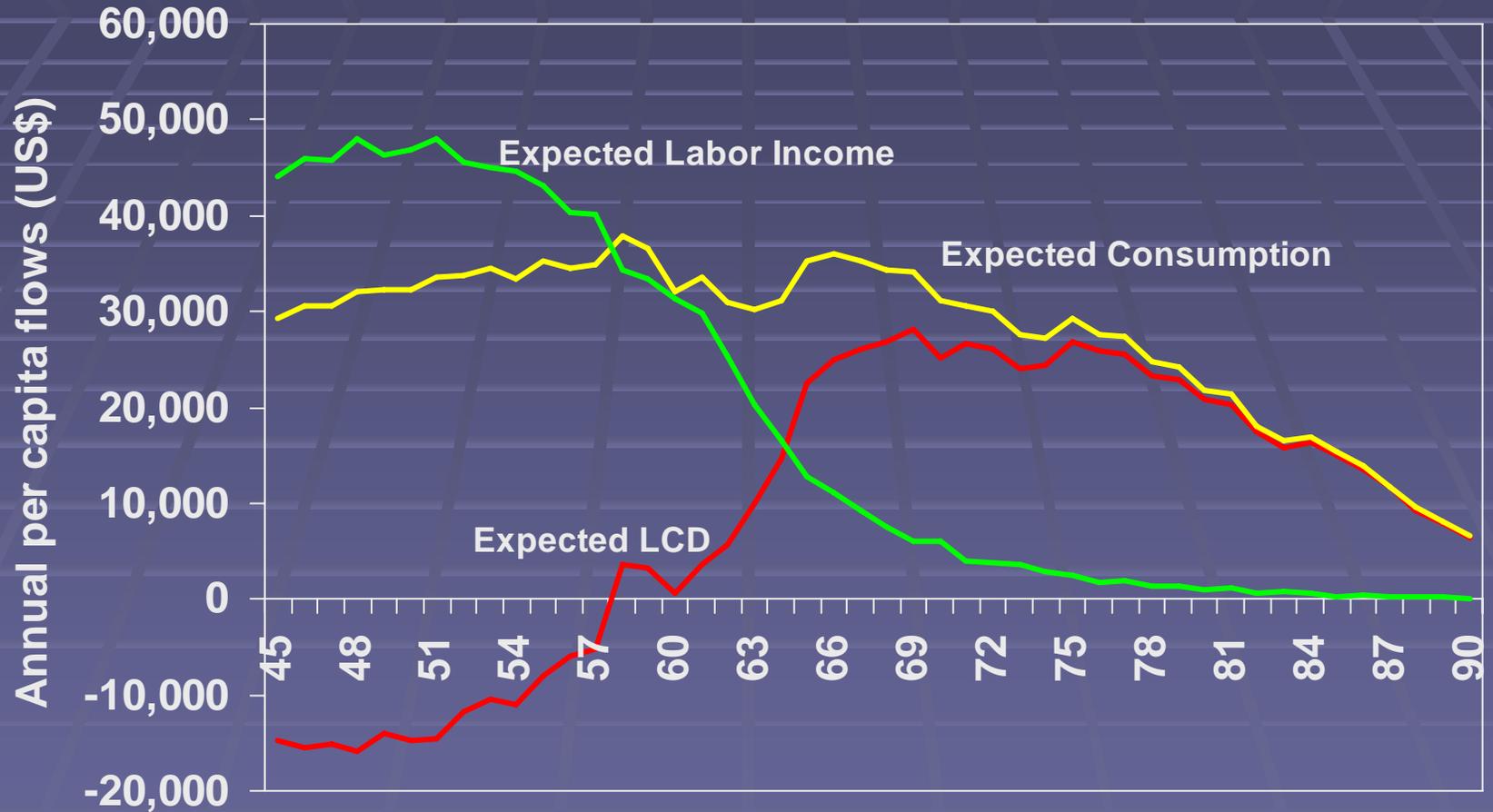
# Illustration of classification principle

- 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.

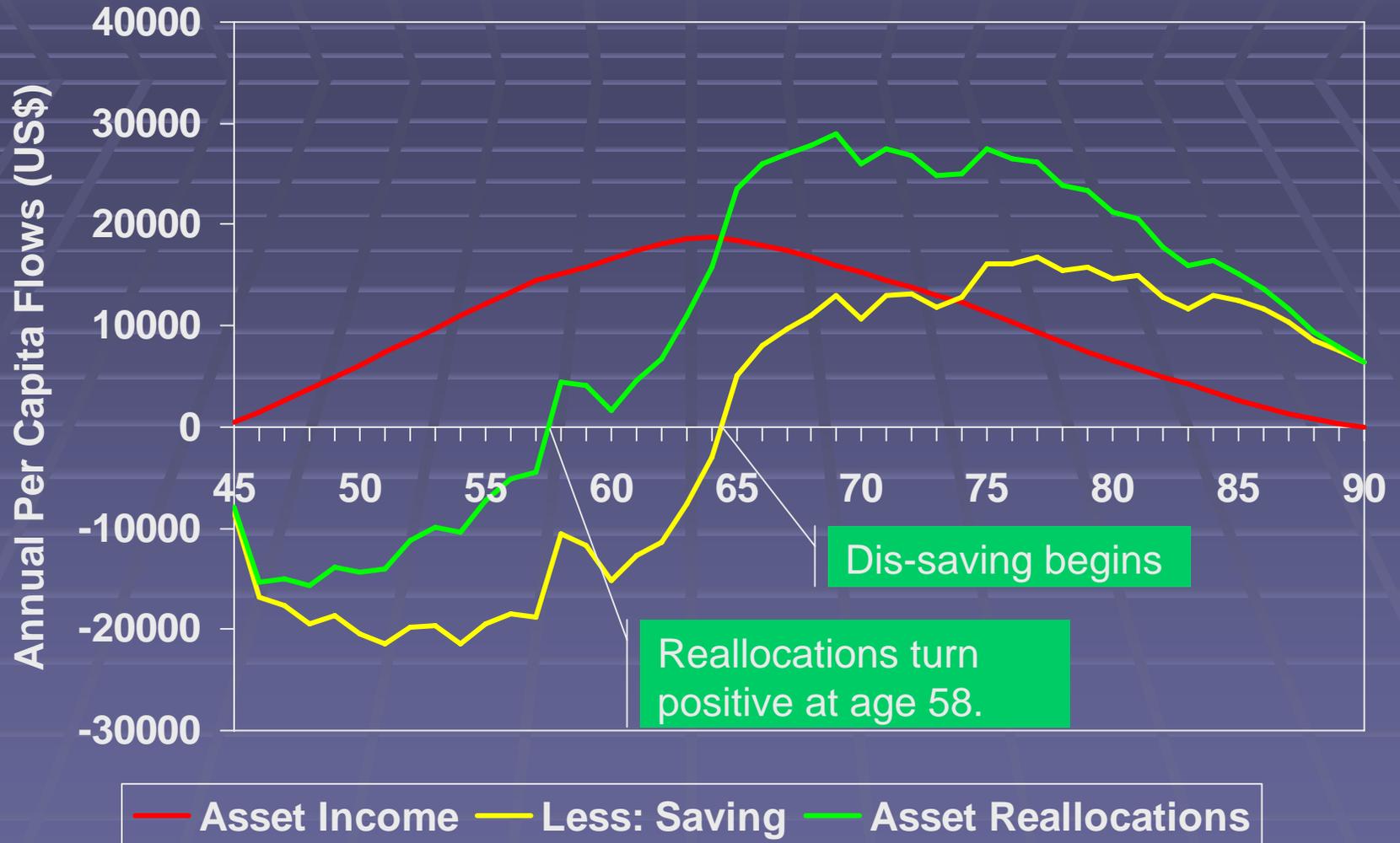
# A Lifecycle Saving Scenario: US Synthetic Cohort

- Consumption and labor income profiles for US 2000 hold
- US 2000 survival rates, death at age 90
- Asset reallocation only to shift 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 Reallocations, Life Cycle 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 ( $LCD >$ )
- 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

- 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

$$\begin{aligned} S(a) &= I_K(a) + I_M(a) \\ &= y_I(a) + y_A(a) + \tau(a) - c(a) \end{aligned}$$

# Private Transfers

- Reallocation of economic resources from one age group to another
- Familial transfers
  - Inter-household transfers
  - Intra-household transfers
  - Capital transfers
- Non-familial transfers: transfers through private foundations, religious organizations, etc.

# 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%

\*Inter-vivos transfers only.

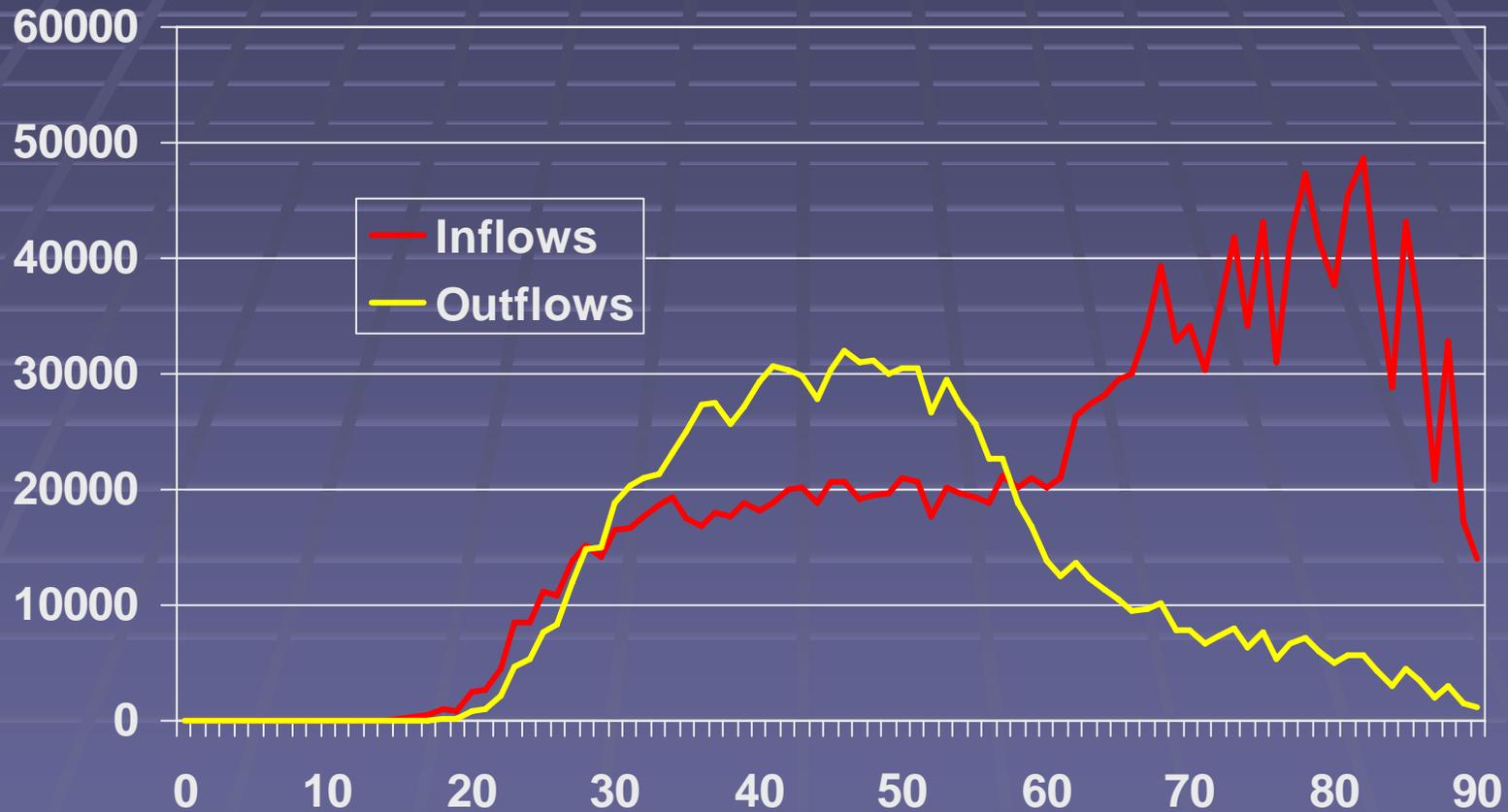
# Forms of Familial Transfers

- Inter-household *inter vivos* transfers
- Intra-household *inter vivos* transfers
- Bequests and other capital transfers

# 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



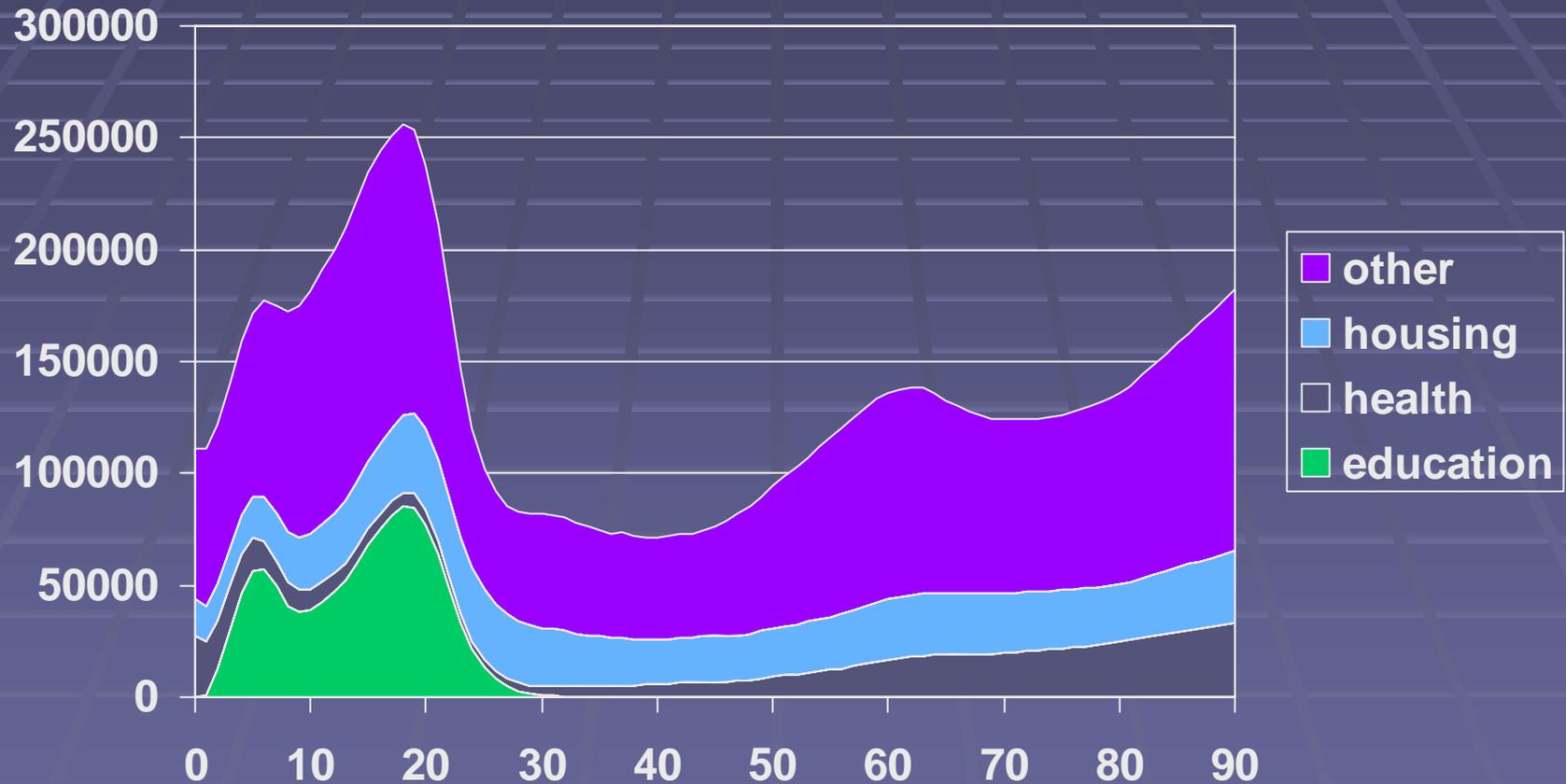
# Intra-household Transfers: Principles and Assumptions

- 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.

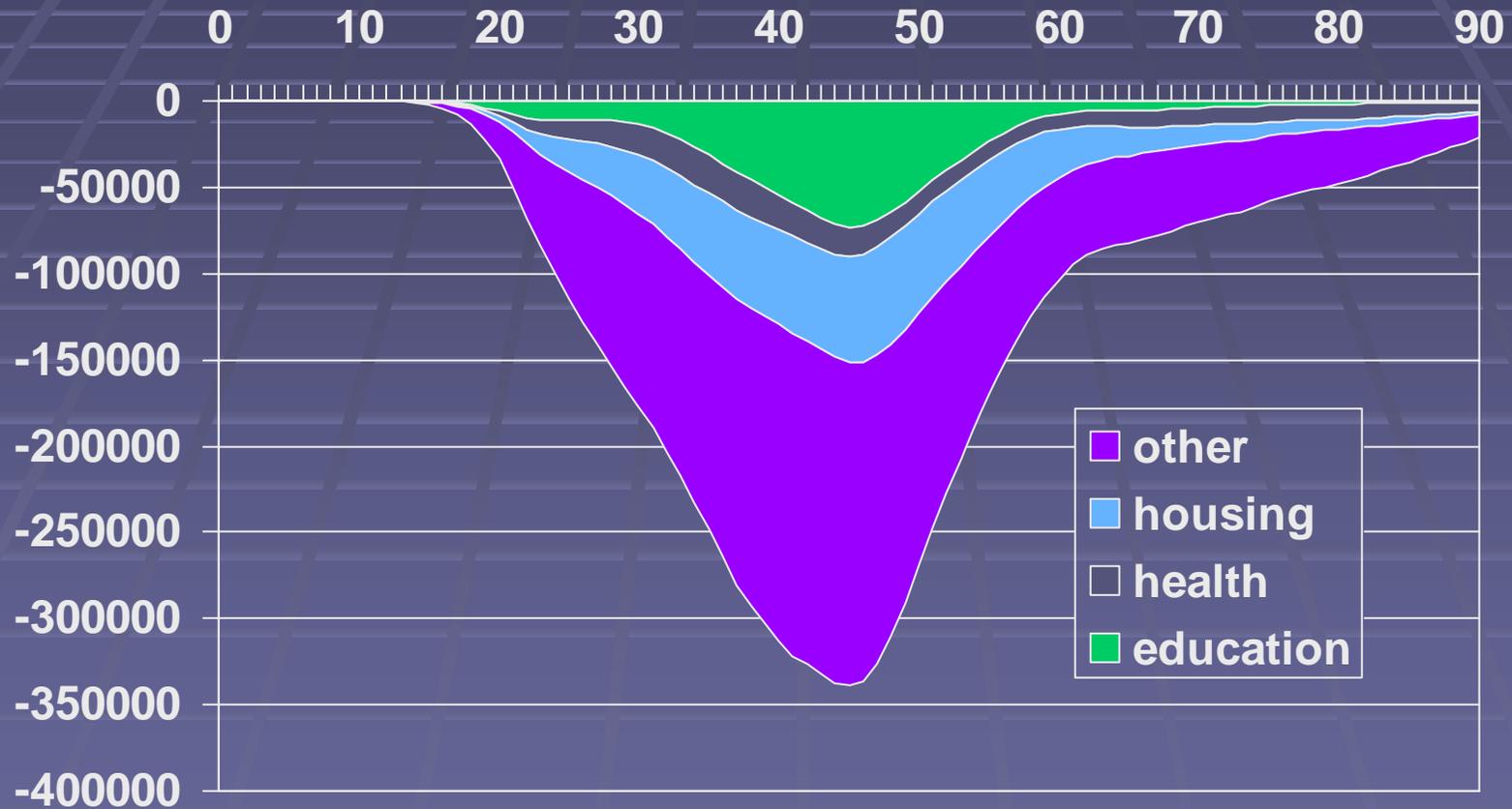
# Warning!

- Method requires estimates of key variables for individuals or detailed imputation methods;
- For Taiwan, we have labor income and net public cash transfers for each household member;
- Controlling for age, consumption is assumed to be independent of an individuals income.

# 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.

# Generational Succession: Familial Capital Transfers

- Inter- and intra-household transfers support current consumption
- Capital transfers are intended to transfer wealth, per se, to descendant generations

# 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 co-variance between mortality and wealth.
- Capital inflows:
  - New households are reconstituted ghost households (with sons as heads)
  - Estate taxes.

# 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 rather than an inter-generational transfer;

# Complexities

- Sharing rules for intergenerational transfers
  - Eldest son
  - Equal division
  - Other?
- Estate taxes
  - Bequests
  - Other capital transfers

# Complexities

- Other Capital Transfers
  - Estate tax avoidance
  - Other *inter vivos* capital transfers
    - Dowry
    - Bride price
    - Fancy wedding
    - Help with house

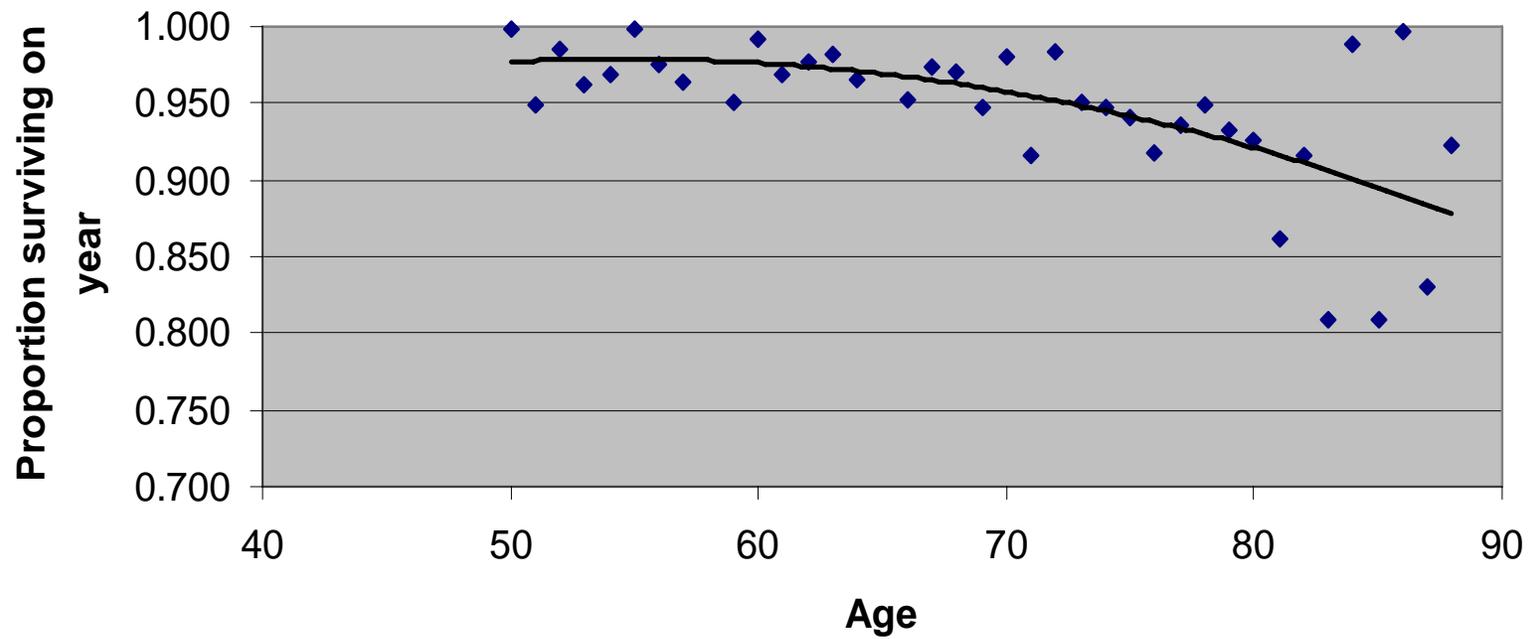
# NTA Bequests

- Transfers that arise due to the decline in the number of households:

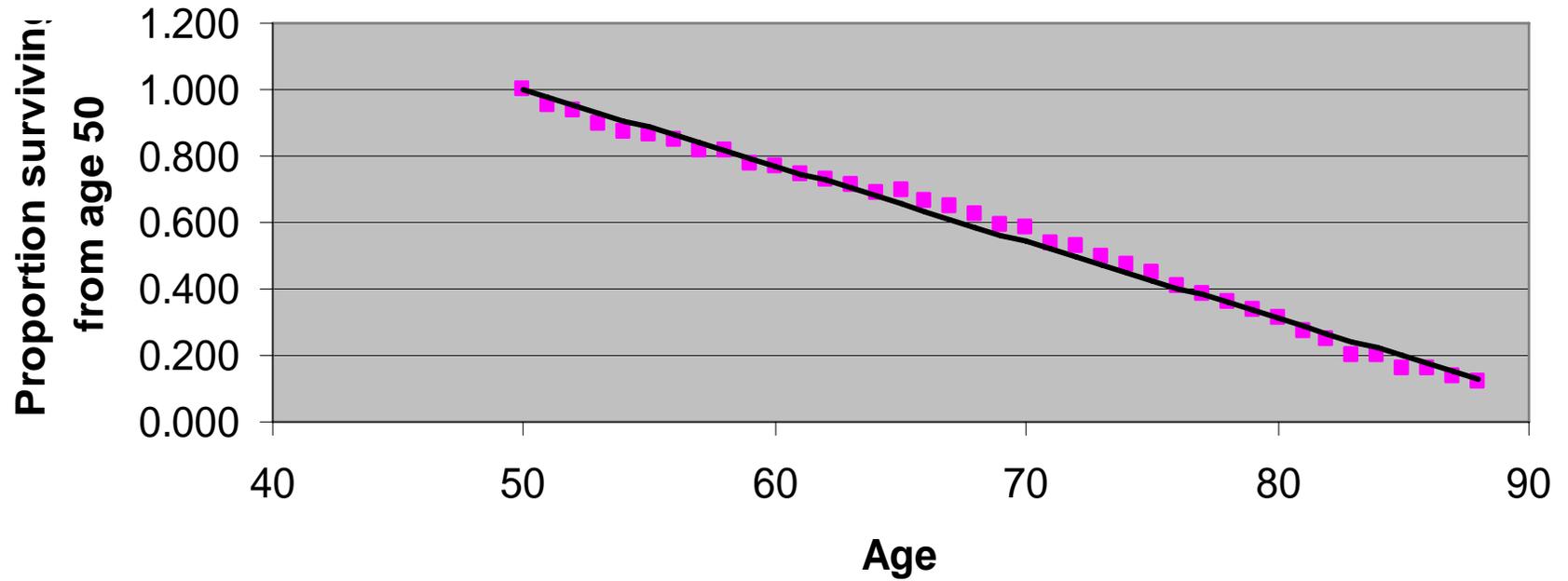
$$l^h(a, t) = H(a + 1, t + 1) / H(a, t) \text{ for } a > a^*$$

- Decline is due to:
  - Death to the household head
  - Fusion (parents move in with their children)
  - Generational succession (headship designation passes to younger generation)

## Household Survival Rate, Taiwan, 1978-1998



## Cumulative Survival, Taiwan, 1978-1998



# NTA Bequests - Outflows

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

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

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

Correlation between  
wealth and survival:  $\rho_{Ah}$

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

# NTA Bequests - Inflows

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

# Other Issues

- Estate taxes
- Other capital transfers

The End