

An Overview of National Transfer Accounts

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June 5, 2008

Warning

- ▶ Illustrative estimates and calculations are presented here which are not finalized and should not be used further.

Outline

I. National Transfer Flow Account

- Basic Concepts
- Age reallocations
 - Economic mechanisms
 - Transfers
 - Asset-based Reallocations
 - Sectors
 - Public
 - Private

II. Wealth Transfers, Wealth Revaluations, Other Gains, and the Balance Sheet: Briefly Described

I. National Transfer Flow Account

National Transfer Accounts

- ▶ Measure economic flows across age groups in a systematic and comprehensive way.
- ▶ Flows are identified by the economic mechanisms and the mediating institutions.
- ▶ Accounts complement the UN System of National Accounts and are constructed in a manner consistent with macroeconomic aggregates.

The Flow Account Identity

► Inflows

- Labor Income
- Asset Income
- Transfer Received

► Outflows

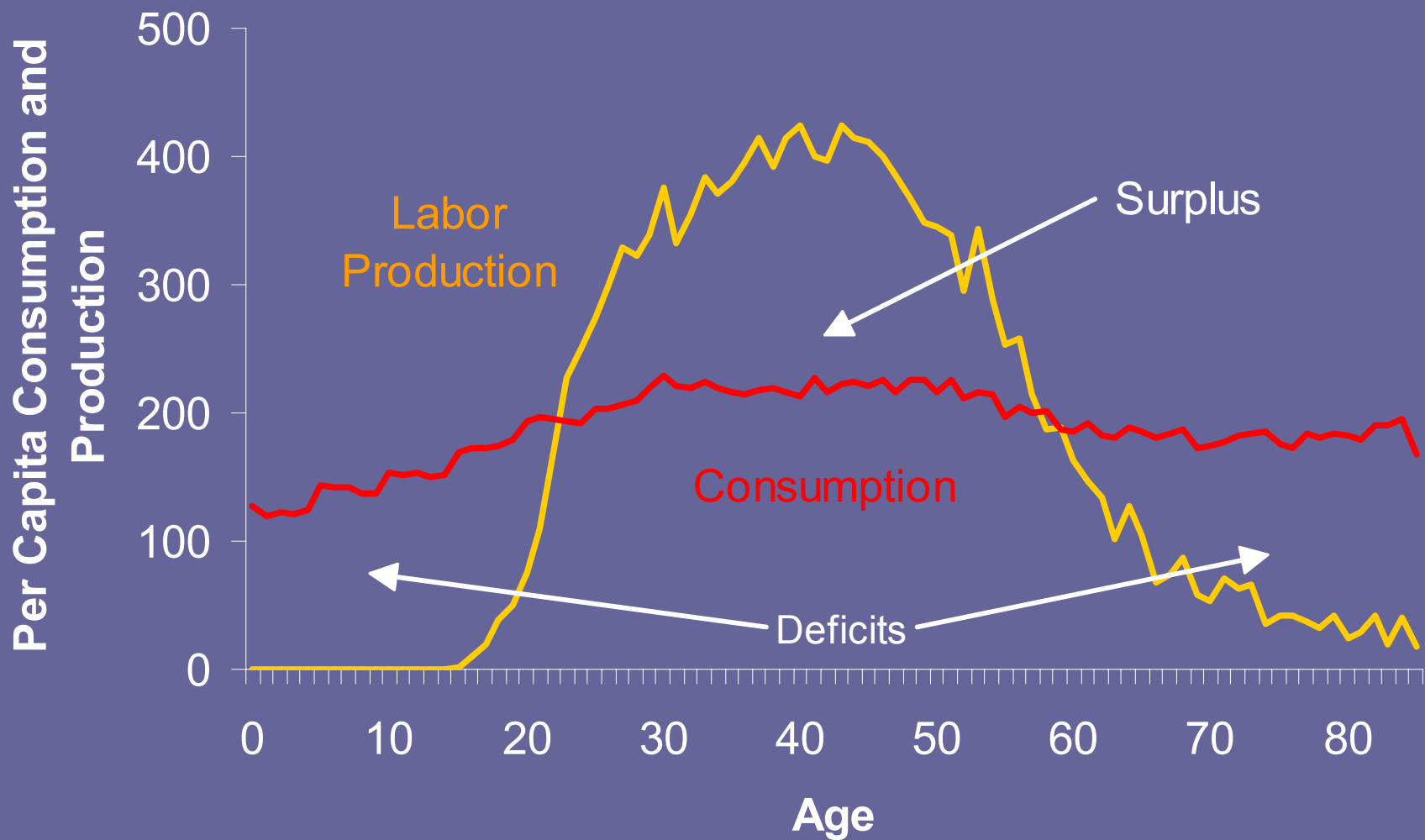
- Consumption
- Saving
- Transfers Paid

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

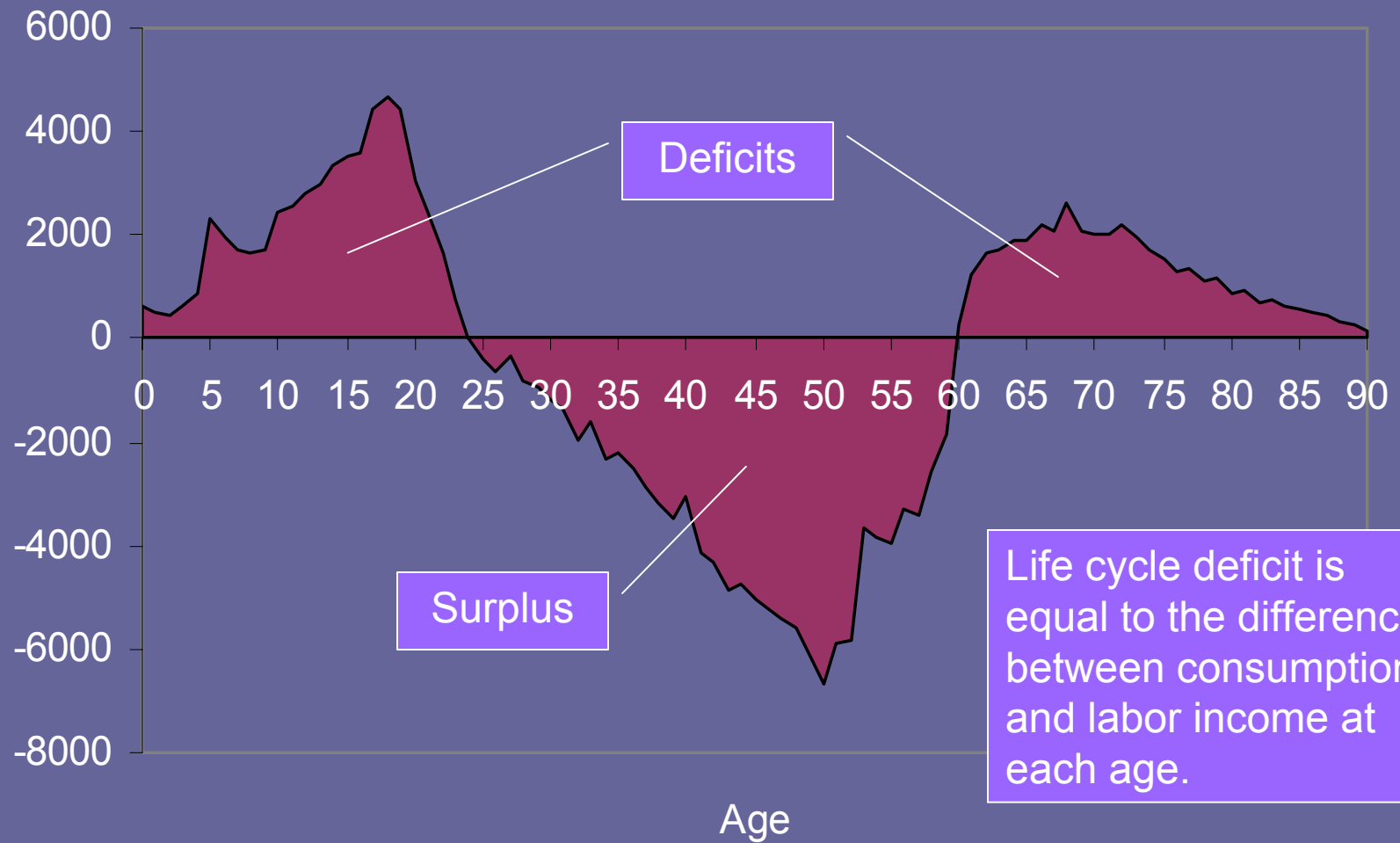
$$\underbrace{C(a) - Y^l(a)}_{\text{Lifecycle Deficit}} = \underbrace{Y^a(a) - S(a)}_{\text{Asset-based Reallocations}} + \underbrace{\tau^+(a) - \tau^-(a)}_{\text{Net Transfers}}$$

Age Reallocations

Most Important Graph in the World: The Economic Lifecycle



Lifecycle Deficit



**NT Flow Account, Aggregate. Taiwan, 1998 (NT\$ billion),
*nominal***

	Total	Age				
		0-19	20-29	30-49	50-64	65+
Lifecycle Deficit	832	1,704	7	-1,329	25	424
Consumption	6,570	1,775	1,163	2,376	757	499
Private	5,290	1,244	951	2,040	640	414
Public	1,280	531	212	335	117	85
Less: Labor income	5,738	70	1,156	3,704	732	75

Lifecycle deficit is the difference between production and consumption over the lifecycle. All values are totals for the age group. Per capita values are also estimated.

Classification of Inter-age Flows

► Economic form

- Asset-based
 - Profits, rent, interest and other asset income
 - Saving and dis-saving
- Transfers – economic flow with no *quid pro quo*, i.e., no counter-flow.

► Mediating institution

- Public flows are mediated by the government
- Private flows are mediated by households, families, NGOs, private individuals, etc.

Major Reallocation Systems

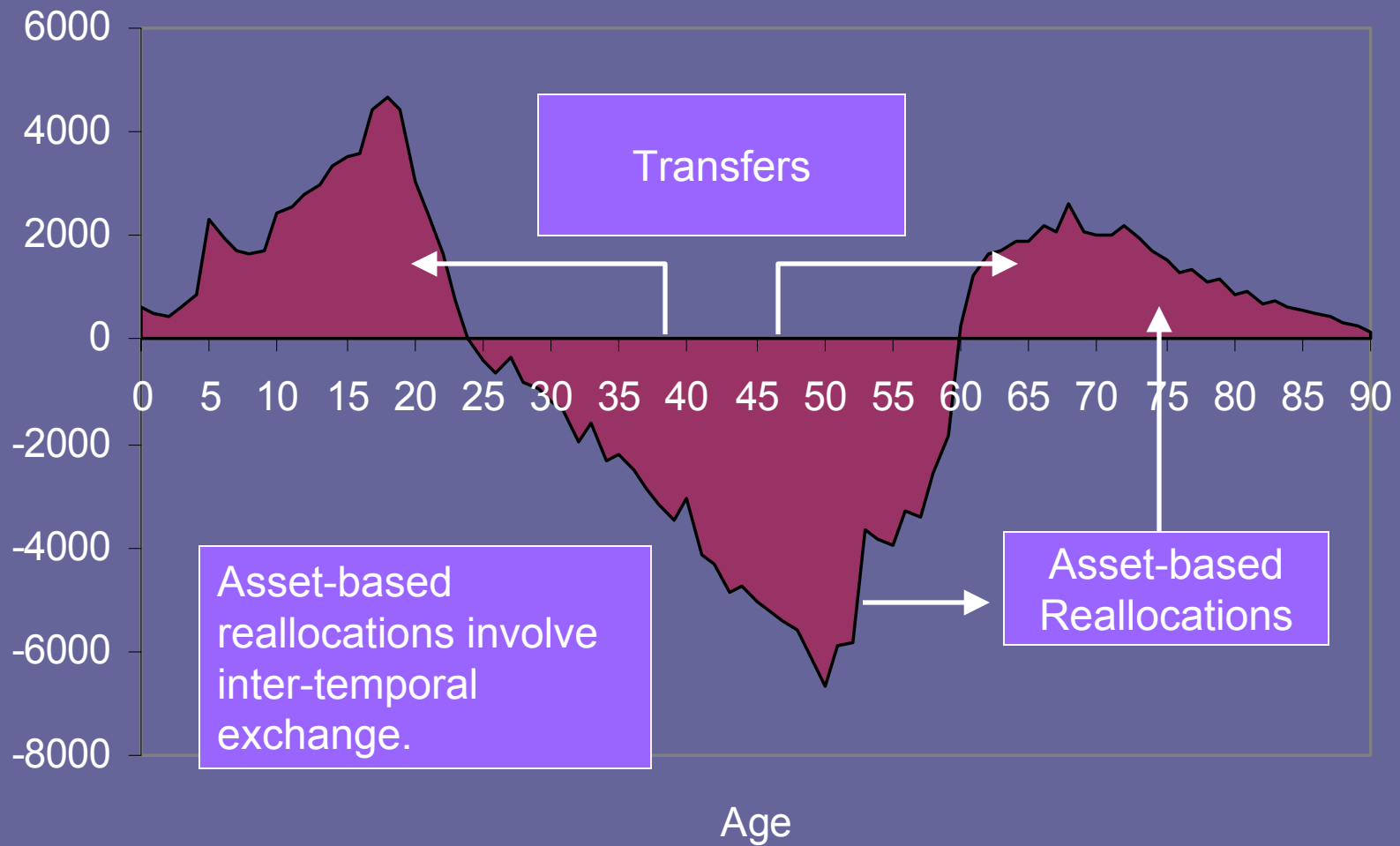


Table 1. A Classification of NTA Reallocations.

	Asset –based Reallocations		Transfers
	Capital	Credit	
Public	Public infrastructure	Public debt Student loans Money	Public education Public health care Unfunded pension plans
Private	Housing Consumer durables Factories Farms Inventories	Consumer credit	Familial support of children and parents Bequests Charitable contributions

Source: Adapted from Lee 1994.

NT Flow Account, Aggregate. Taiwan, 1998 (NT\$ billion), nominal

	Total	Age				
		0-19	20-29	30-49	50-64	65+
Reallocations	832	1,704	7	-1,329	25	424
Asset-based reallocations	861	-5	-26	499	181	213
Income on Assets	2,456	4	175	1,539	528	211
Less: Saving	1,595	9	201	1,040	347	-2
Transfers	-29	1,710	33	-1,828	-155	211
Public	2	611	51	-673	-103	116
Private	-31	1,099	-18	-1,155	-52	95

Note. Some columns do not total because of rounding.

Lower panel measures the reallocation systems employed to satisfy the lifecycle deficits and surpluses at each age.

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Asset-based reallocations are equal to asset income (profits, interest income and rent) less saving. Age groups with negative asset reallocations are saving in excess of their asset income.

Asset-based Reallocations

- ▶ All asset-based reallocations involve inter-temporal exchange.
- ▶ Capital is a reproducible asset
 - Outflow at one age.
 - Inflow at one or more subsequent ages in one of two forms:
 - ▶ Stream of income
 - ▶ Sell asset
 - Note that investment/capital can only be used to shift resources from younger to older ages.

Asset-based Reallocations, Credit

- ▶ Credit and other financial assets involve two parties, e.g., creditor and debtor
- ▶ If debtor in age group x borrows from creditor in age group y in year t
 - Inflow to debtor at age x in year t ; outflows in subsequent periods (interest and debt repayment)
 - Outflow from creditor at age y in year t ; inflows in subsequent periods.
- ▶ Credit can be used to shift resources from older to younger ages (credit cards, student loans)

Non-reproducible Asset-based Reallocations

- ▶ Non-reproducible assets
 - Land
 - Fossil fuels
 - Other sub-soil minerals (gold, diamonds, etc.)
- ▶ Inter-age flows generated by
 - Earning rent
 - Buying and selling the asset
- ▶ Outflows and inflows must always balance
- ▶ With either credit or non-reproducible assets the counterpart can be members of another age group or the rest of the world (ROW)

Asset-based Reallocations

- ▶ Estimates do not depend on any particular behavioral theory, but will reflect whatever motives or exogenous shocks are operating
- ▶ Possibilities: lifecycle saving, intentional bequests, accidental bequests, dowries and other capital transfers at time of marriage, other capital transfers from elderly to adult children, buffer-stock model, etc.
- ▶ Further discussion below.

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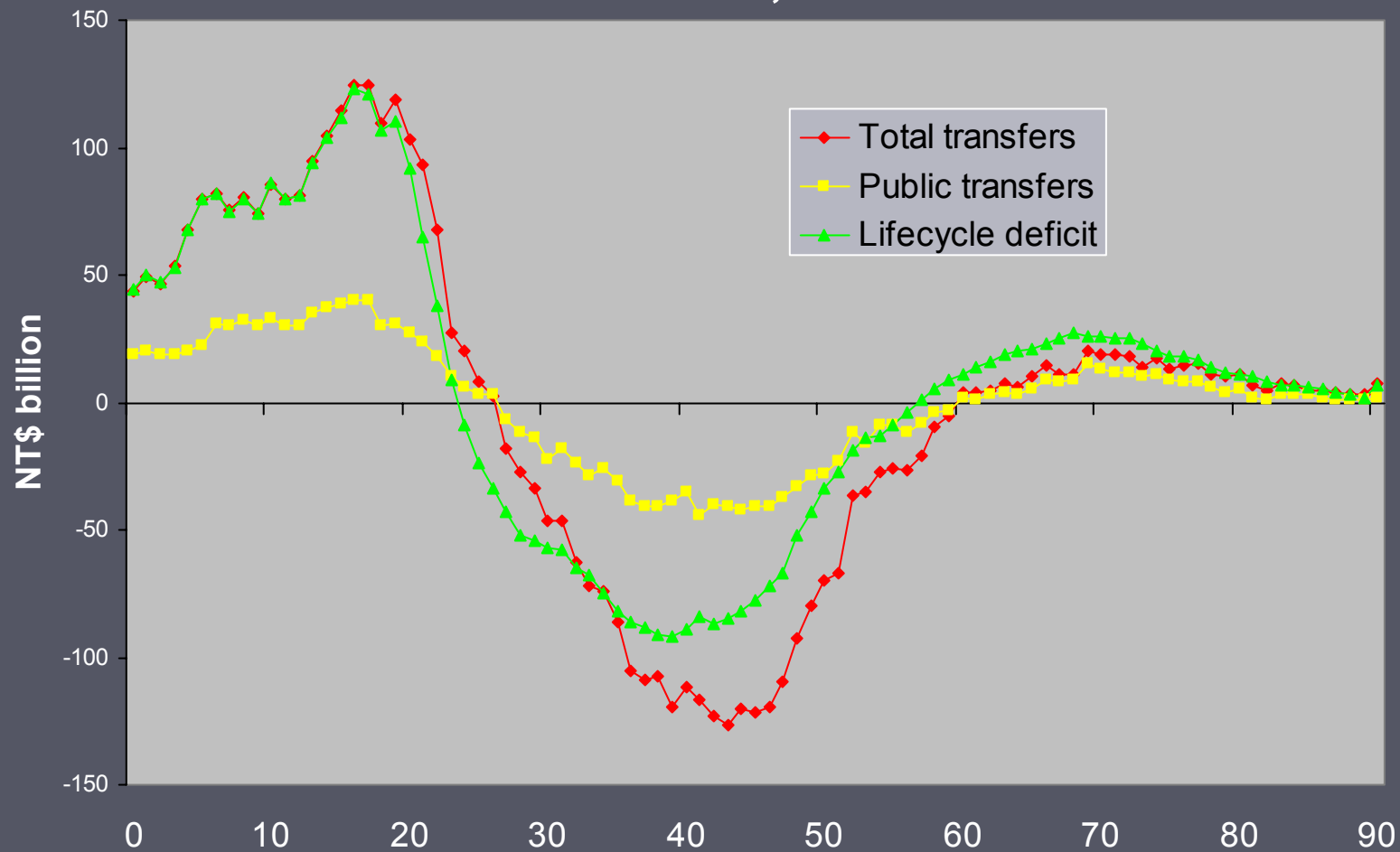
Note. Some columns do not total because of rounding.

Net transfers consist of public transfers (cash transfers + in-kind transfers less taxes) and private transfers (mostly familial transfers). Positive values imply that inflows exceed outflows.

Transfers

- ▶ Transfers are defined as flows that involve no explicit *quid pro quo*.
- ▶ Many transfers may involve some implicit obligation, e.g., transfers between children and parents.
- ▶ Transfers must balance, i.e., inflows = outflows in total. Account on previous page doesn't include transfers to and from ROW.
- ▶ Retirement benefits paid to public workers as part of their employment contract are not transfers.

Transfers and the Lifecycle Deficit Taiwan, 1998



Summary of Economic Mechanisms for Reallocating Resources

- ▶ Two economic mechanisms exist for reallocating resources
 - Transfers – members of one age group provide economic resources to members of another age group.
 - Asset-based reallocations – involve inter-temporal exchange
 - ▶ Investment – outflow in current period creates capital owned by members of the age group. In subsequent periods at older ages, capital yields income or can be sold. Generates inflows at older ages.
 - ▶ Credit – One age group lends to another age group. Outflow from one age group; equal inflow to another age group. Subsequent periods flow is reversed. Reverse flow may be payment of interest or principal.
 - Transfers and credit always involve balanced flows, i.e., inflows and outflows must be equal – including flows to and from ROW.
- ▶ Reallocations to children are predominantly transfers. In principle children could rely on asset-based reallocations by accumulating debt (student loans; credit card debt), but they do not do so in most countries.
- ▶ Reallocations to the elderly may be dominated either by asset-based reallocations or transfers.

Flow Account and Sectors

- ▶ Flows are classified by sector based on the mediating institution.
 - Public sector: flows to and from individuals through general government.
 - Private sector: flows to and from individuals through financial and non-financial firms, households or families, and non-profit institutions serving families (NPISHs)
 - Rest of the world (ROW): flows between the domestic economy and other economies (governments, firms, individuals, etc.)
- ▶ NTA measures all flows from the perspective of individuals not from the perspective of the sector. A public inflow is an inflow to individuals through the public sector. It is not an inflow to the public sector.
- ▶ Example: From the perspective of the government taxes are an inflow. From the perspective of individuals paying the taxes and NTA, they are public transfer outflows.

Public Sector

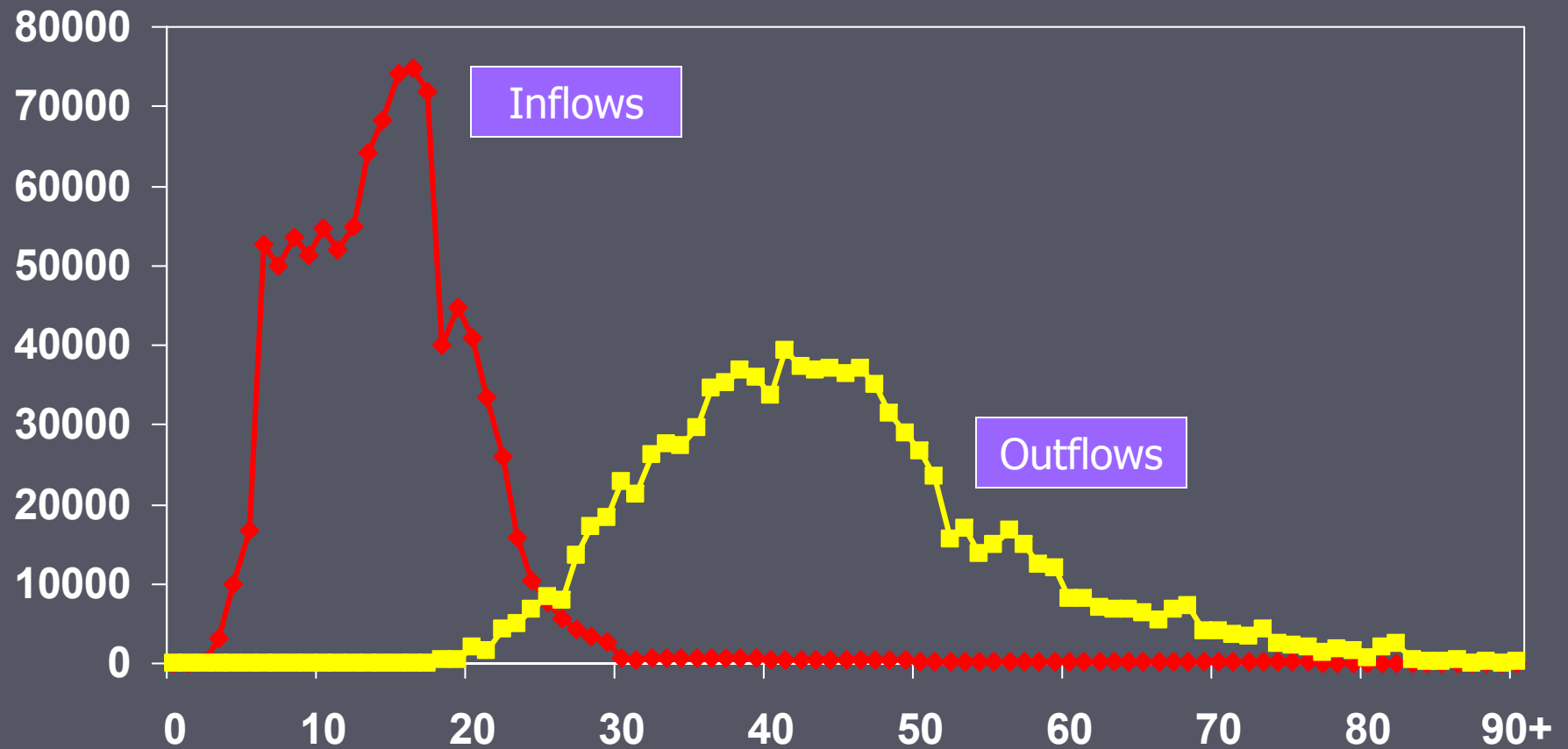
Public Sector in NTA

- ▶ Government has two intergenerational functions
 - Transfers resources across age groups
 - ▶ Cash transfers (public pensions, unemployment benefits)
 - ▶ In-kind transfers (education, health care, national defense)
 - Manages public assets
 - ▶ Borrows and lends thereby creating public wealth and debt
 - ▶ Pays and receives asset income on public financial assets (and debt).
 - ▶ Public capital does not yield income by assumption in SNA.

Public Transfers

- ▶ Public transfer system consists of a set of mutually exclusive and exhaustive programs.
- ▶ Programs vary across countries and can be broadly defined by sector (education, health, etc.) or narrowly defined (Aid for Teenage Mothers, National Retraining Program for Aging Professors, etc.)
- ▶ Emphasis is on age-related programs.
- ▶ A public transfer program is measured in NTA by:
 - Outflows from taxpayers that fund the program classified by age.
 - Inflows to the beneficiaries of the program classified by age.
 - Total inflows and outflows must be equal.

Public Education Transfers, Taiwan, 1998, Per Capita Values

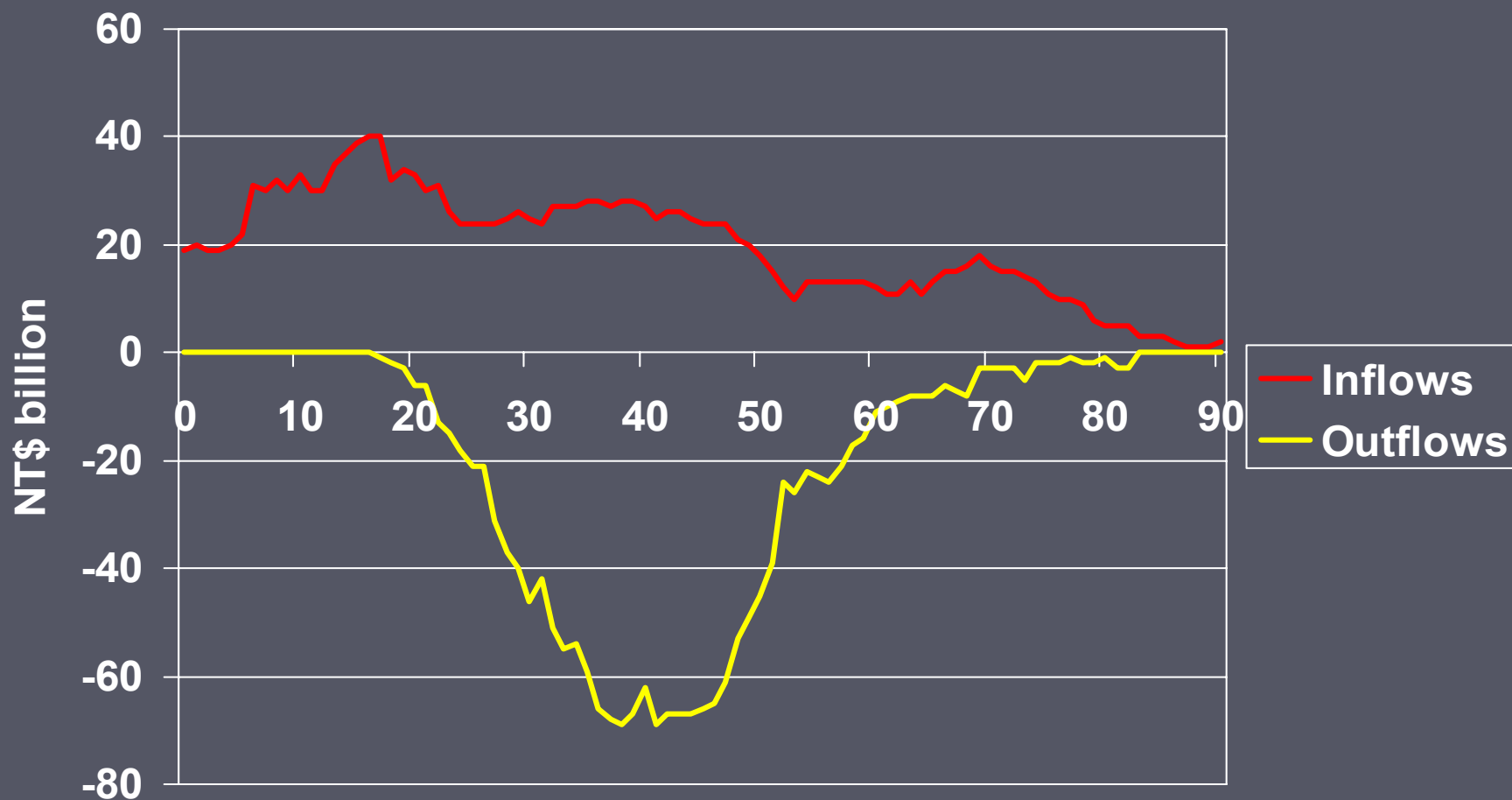


Three Important Questions

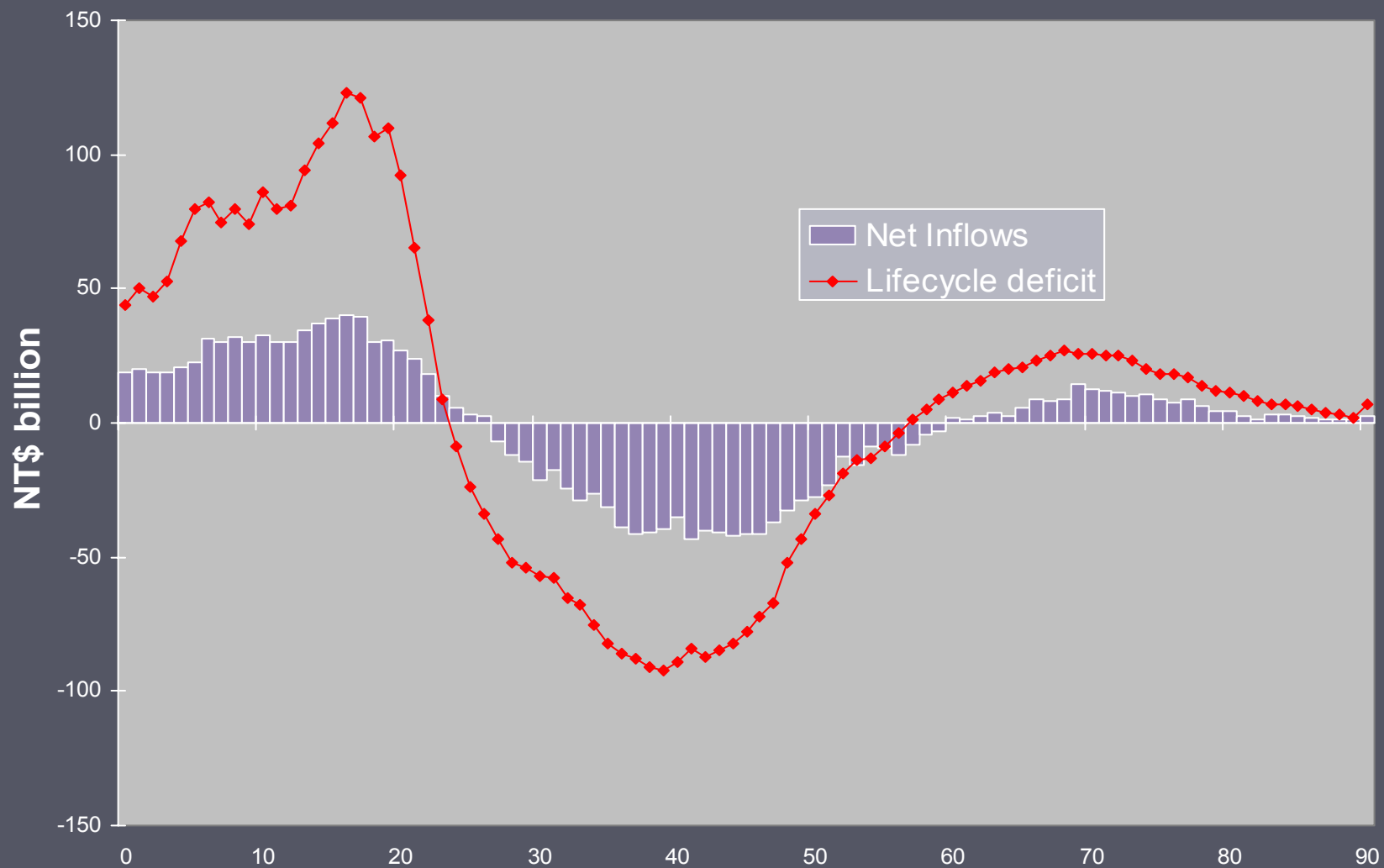
- ▶ How large is each program (annual expenditure)?
- ▶ Which age groups benefit (inflows)?
- ▶ Which age groups bear the cost (outflows)?

Answering these questions will be taken up in detail in the lecture on public transfers.

Public Transfer Inflows and Outflows, Taiwan, 1998



Net Public Transfers and the Lifecycle Deficit, Taiwan 1998



Public Asset-based Reallocations

- ▶ Public saving is a mechanism by which current taxpayers can increase the resources available to future residents.
- ▶ Public saving may target particular age groups
 - Building schools or assisted living centers
 - Public pensions funds
- ▶ Or public saving may provide general support with no particular age targeting.

Public Debt

- ▶ Governments frequently run deficits and most have substantial public debt.
- ▶ Public debt must be paid by future generations. But if governments borrow to fund public investment, they are providing benefits to as well as imposing costs on future generations. If governments are efficient, benefits and costs should more or less be equal with no net flow.
- ▶ Hence, the critical issue is public saving not public lending or borrowing.
- ▶ Problem: Income from public capital is not measured or included in SNA. Thus, the benefit to the current population from past public investment is understated.

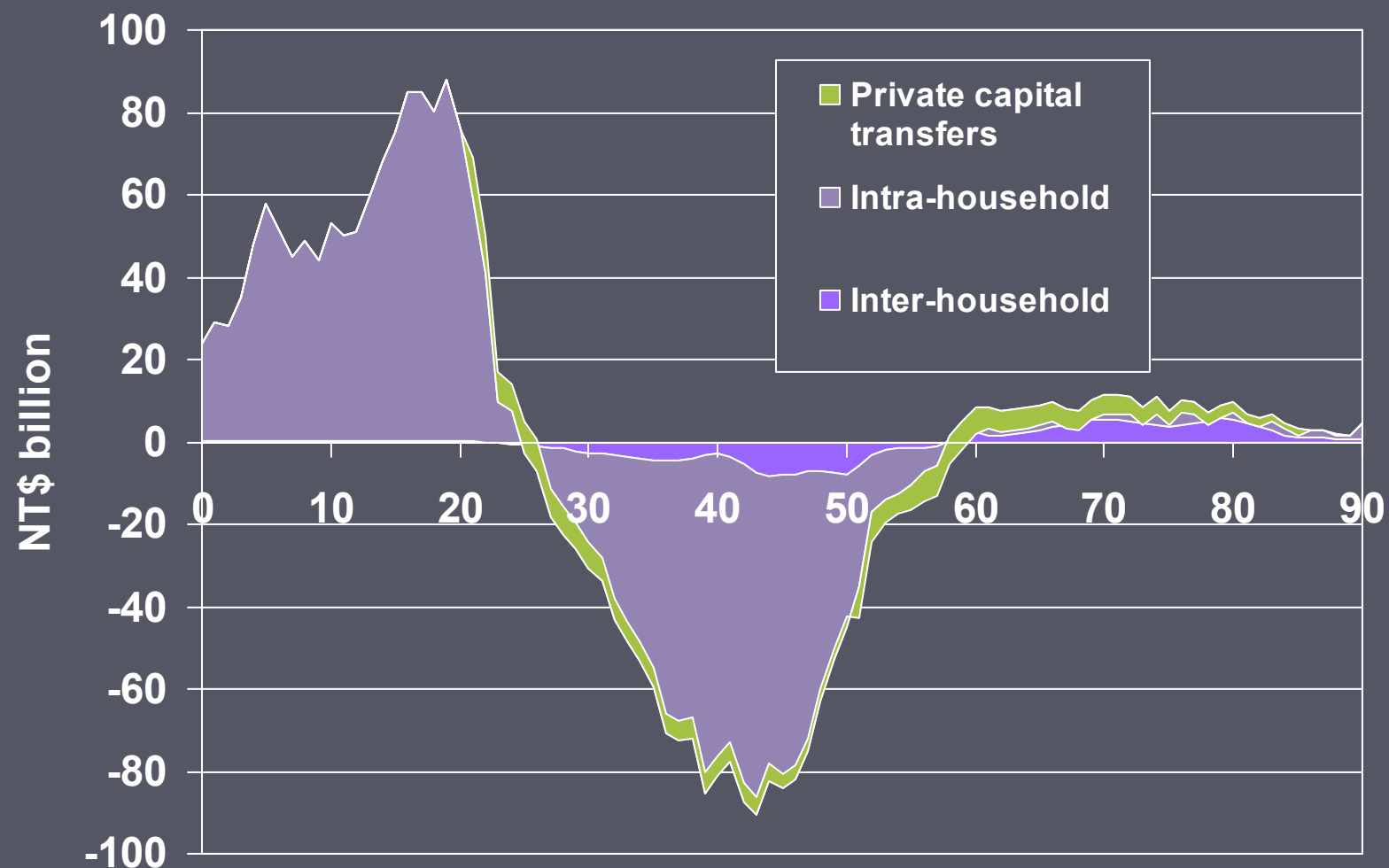
Private Sector

- ▶ Intermediaries: households, families, NGOs, private individuals
- ▶ Transfer function: individuals give and receive transfers
 - Inter-household transfers
 - Intra-household transfers
 - Capital transfers, e.g., bequests
- ▶ Asset related function
 - Accumulate and dis-accumulate assets
 - ▶ Capital
 - ▶ Public and private debt
 - ▶ Other assets
 - Earn asset income

Households vs. Individuals

- ▶ Consumption, labor income, public transfers, and intra-household private transfers are allocated to individuals;
- ▶ Inter-household private transfers are between household heads;
- ▶ Assets are held by the household head; saving is by household heads; capital transfers, e.g., bequests, are between household heads.

Net Private Transfer, Taiwan, 1998



Private Asset-based Reallocations

- ▶ Many competing saving models (with strong views among proponents of alternative models)
 - Lifecycle model
 - Intentional bequests due to altruism
 - Accidental bequests due to uncertainty about age at death
 - Buffer-stock model (Deaton)
 - Others
- ▶ *Inter vivos* asset transfers neglected (dowry and other wedding gifts; transfer of home by older parents)

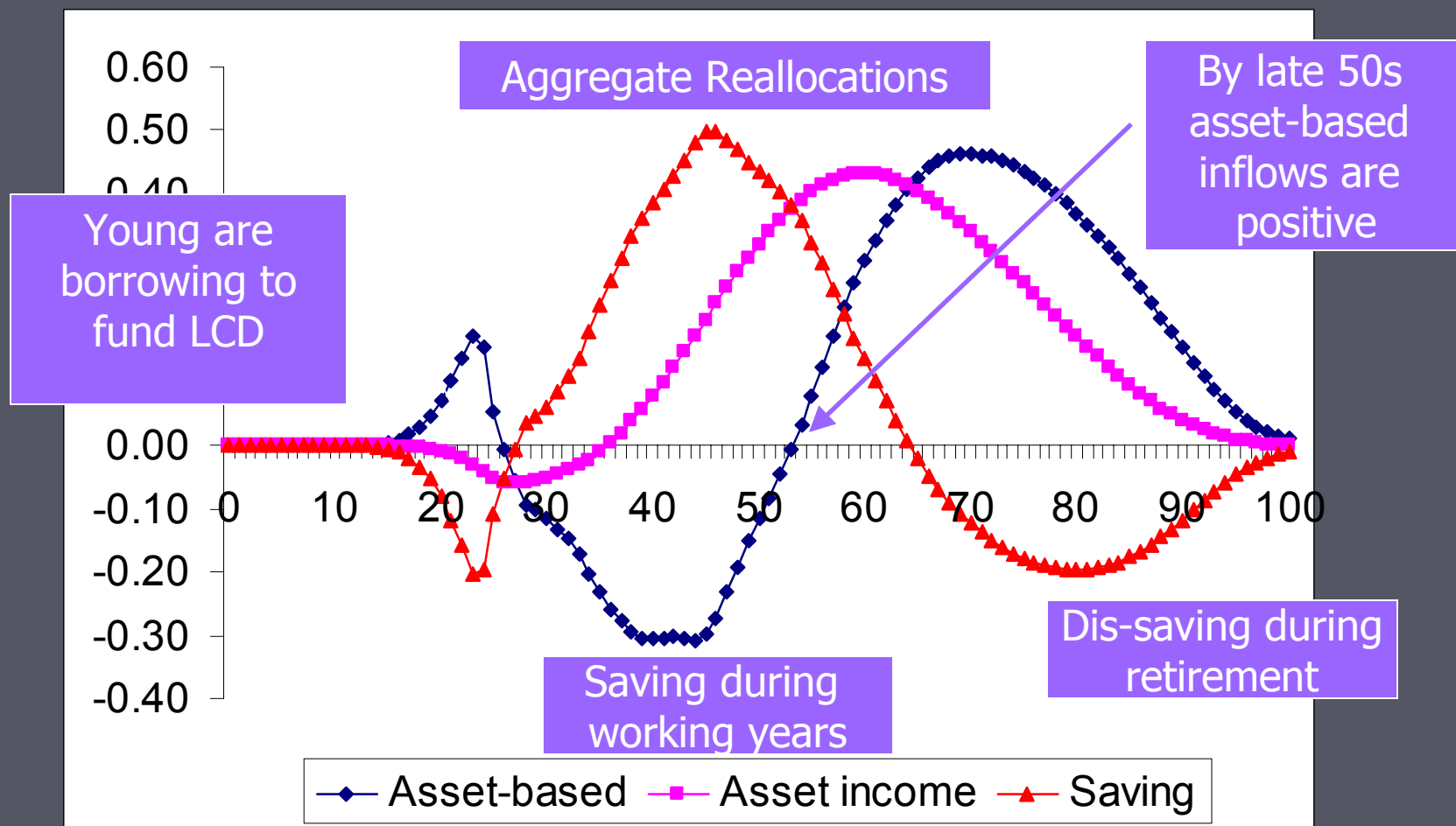
Relating Theory to Estimates

- ▶ Observed patterns reflect multiple and sometimes complementary objectives
- ▶ Most theories relate to cohort behavior; our estimates are (mostly) cross-sectional.
- ▶ NTA estimate of saving includes all private saving
 - Advantage over household saving
 - Uncertainty about age-profile of corporate saving
- ▶ Saving is the balancing item. All errors are captured in saving and asset-based reallocations.

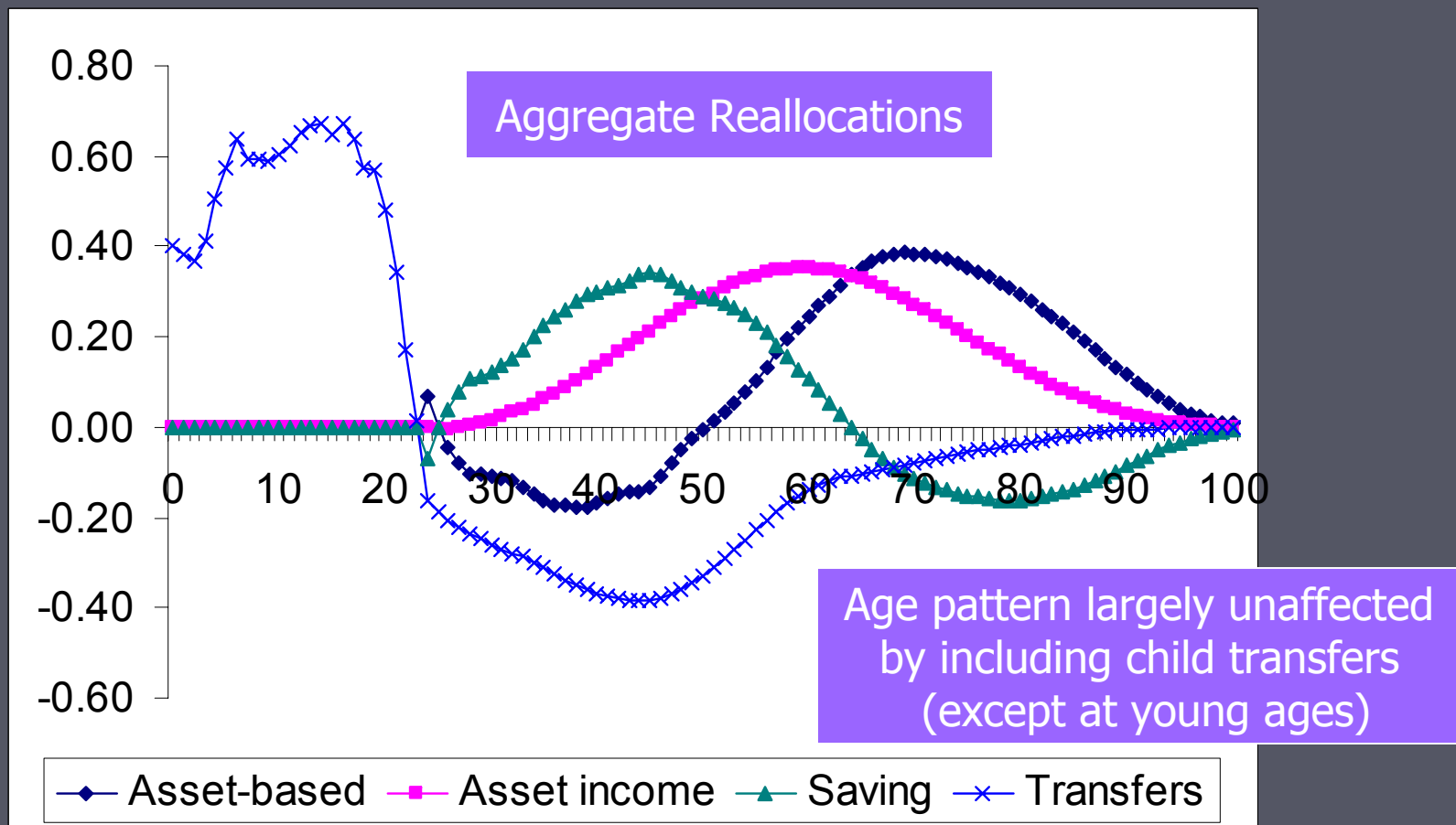
Lifecycle Saving Theory

- ▶ Simplest model: No children, no transfers, lifecycle deficit is met entirely through asset-based reallocations.
- ▶ If this simple model were correct, what would we expect to observe?
- ▶ Simulation
 - Survival rates are recent estimates for the U.S.
 - Population growth rate of 0.5 percent per year.
 - Interest rate and discount rate are set to 0.06.
 - Labor productivity growth is 1.5 percent per year.
 - Age profiles of labor income and consumption based on Taiwan 1998 estimates.

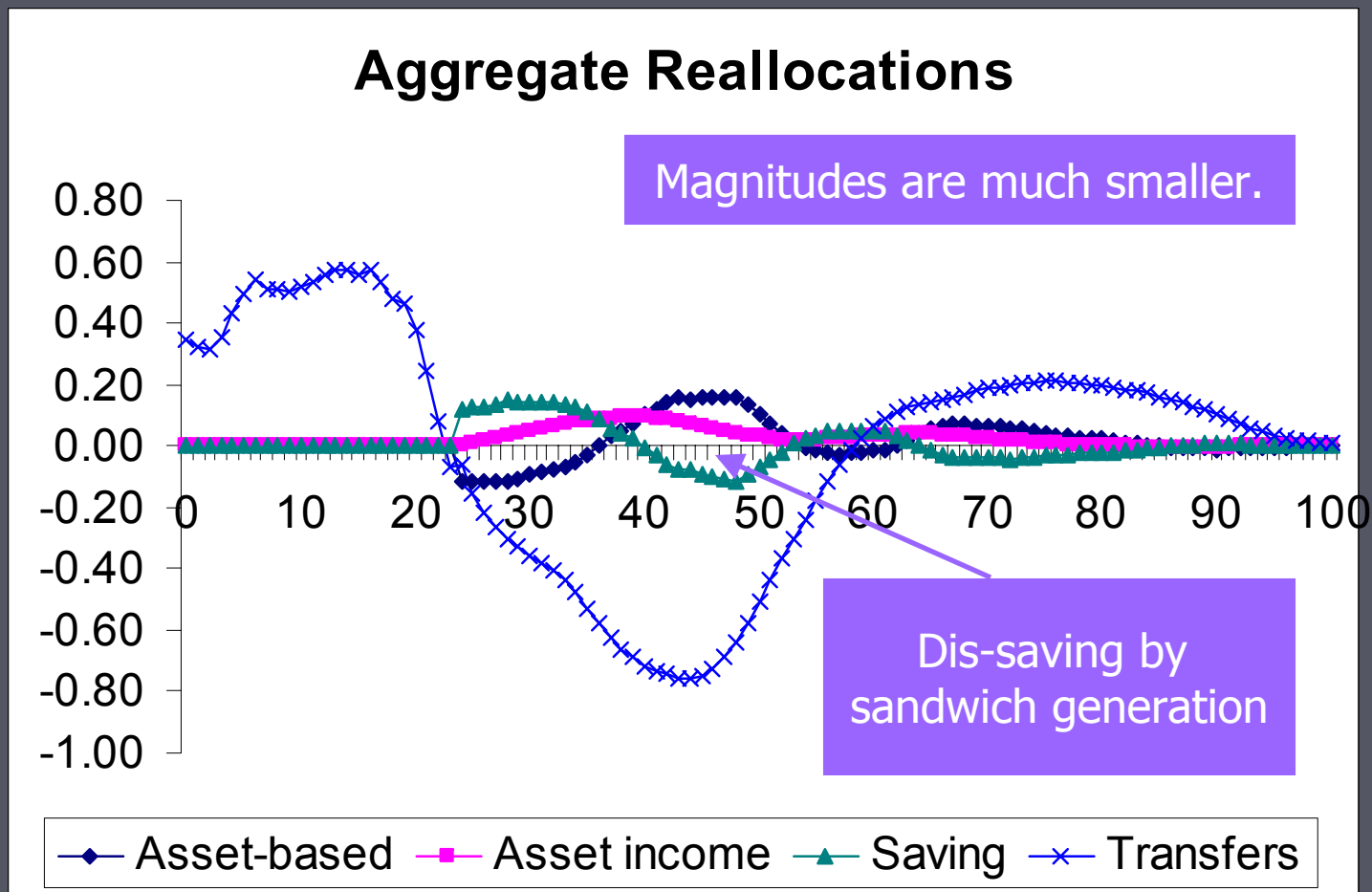
Asset-based reallocations for the naïve lifecycle model (no children, no transfers) with economic lifecycle estimates from Taiwan 1998.



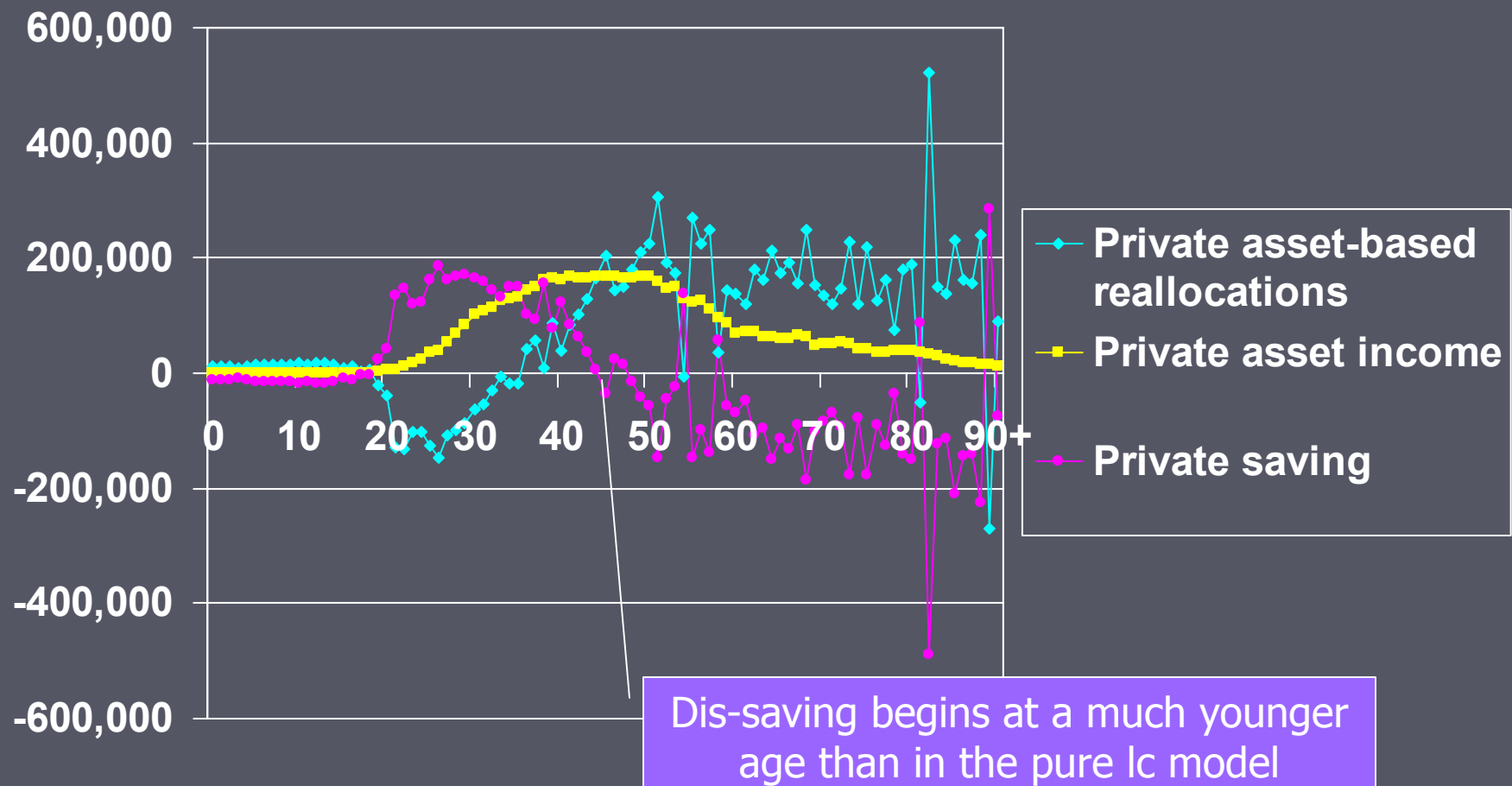
Asset-based reallocations for the lifecycle model, downward transfers to children, no upward transfers, economic lifecycle and transfer estimates based on NTA for Taiwan 1998.



Asset-based reallocations for the lifecycle model, downward and upward transfers allowed, economic lifecycle and transfer estimates based on NTA for Taiwan 1998.



Private Asset-based Reallocations, Per Capita Values, Taiwan, 1998.



III. Wealth Transfers, Wealth Revaluations, Other Gains, and the Balance Sheet: Briefly Described

Wealth Transfers, Wealth Revaluations, Other Gains, and the Balance Sheet

- ▶ Basic organizing principle of SNA and NTA is describe flows (income) and stocks (wealth) and their inter-relationship over time.
- ▶ The focus in NTA is on the cohort.

$$\text{Wealth}(a,t) = \text{Net Additions to Wealth}(a,t) + \text{Wealth}(a-1,t-1)$$

Wealth(a,t)

- ▶ Wealth(a,t) is wealth at the end of the period held by age group a.
- ▶ Wealth is documented in NTA and SNA by the balance sheet.
- ▶ NTA will distinguish public and private wealth.
- ▶ NTA will distinguish assets and transfer wealth.

Net Additions to Wealth

- ▶ Flow Account measures the allocation of income generated during the current period. Saving is the amount of income devoted to increasing or decreasing assets.
- ▶ Wealth also increases because of wealth transfers. Assets transferred between sectors or age groups. Bequests an example. Note that wealth transfers, e.g., bequests, are no longer included in the flow account.
- ▶ Wealth revaluations refer to changes in wealth due to changes in asset prices.
- ▶ Other gains refer to changes unrelated to economic activity, e.g., natural disasters, wars, etc.

Progress on the Additional Accounts

- ▶ Basic principles are being discussed at NTA meetings.
- ▶ Most important piece is probably wealth transfers.
 - How can we best estimate bequests?
 - What information is available about other transfers
 - ▶ Marriage
 - ▶ Generational secession
- ▶ Issues not the focus of this workshop.

Summary

- ▶ Inter-age flows are an inevitable consequence of the economic lifecycle
- ▶ Flows constraint provides an organizing principle
 - Transfers
 - Asset-based reallocations
- ▶ Complete accounting by sector
 - Public (education, health, pensions, public debt)
 - Private (especially family)
 - Rest of the world (remittances, international capital flows)
- ▶ Complete NTA
 - Relationship between stocks and flows
 - Asset transfers, asset revaluations, and other net changes in assets

Support for this project has been provided by:

- National Institute on Aging: R37-AG025488 and R01-AG025247
- NUPRI MEXT Academic Frontier Project, Government of Japan
- John D. and Catherine T. MacArthur Foundation
- International Development Research Center (IDRC)
- United Nations Population Fund (UNFPA)

The End