

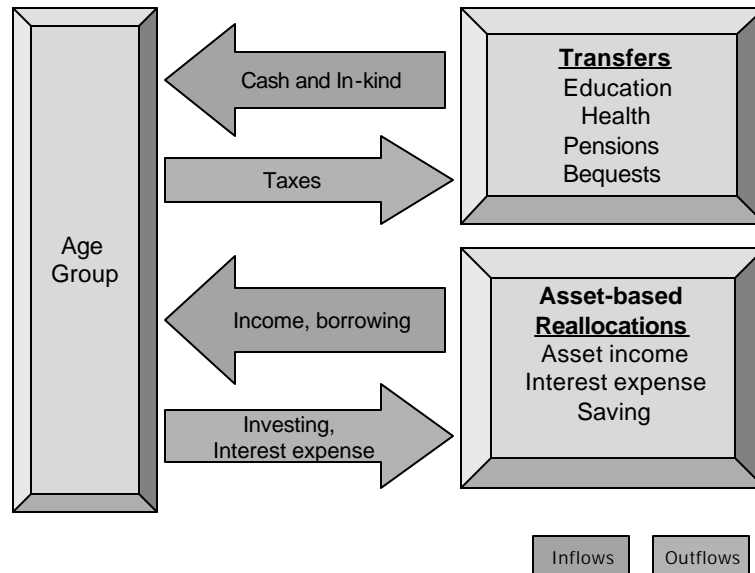
National Transfer Accounts and the Public Sector

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38th Summer Seminar on
Population

Role of the Public Sector

- The public sector generates inter-age flows in two distinct ways:
 - Transfers between age groups (or between 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 are often linked
 - Government increases debt in order to finance transfers.

Public National Transfer Flows



Outline of Talk

- Public Transfers
 - Concepts
 - Methods
 - Examples
- Public Asset-based Reallocations
 - Concepts
 - Methods
 - Examples
- Applications

Public Transfers

- Public transfers refer to economic resource flows
 - mandated by the government
 - between age groups or between an age group and the ROW
 - with no *quid pro quo*.
- Accomplished by
 - Taxing one age group or ROW (an outflow)
 - Providing benefits to another age group or ROW (an inflow)
- Outflows and inflows must equal; total net public transfers must equal zero.

The Flow Account Identity

- | | |
|---------------------|------------------|
| • Inflows | • Outflows |
| – Labor Income | – Consumption |
| – Asset Income | – Saving |
| – Transfer Received | – Transfers Paid |

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

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

Age Reallocations

Public Transfer Inflows

- In-kind transfers
 - Value of goods and services supplied by the government sector outside of the marketplace.
 - Equal to final public consumption expenditure.
 - Examples are education, health, national defense.
- Cash transfers
 - Cash payments to families or individuals.
 - Examples are public pensions, welfare payments, unemployment benefits, etc.
 - NOT a payment or deferred payment for services rendered, e.g., pensions for public workers.
- Inflows are classified by key sectors

Public Sector Inflows Classified by Sector.			
Sector	Public Transfers Inflows		
	Total Inflows	In-kind Inflows	Cash Inflows
Total			
Education			
Health			
Pensions			
Other Social Protection			
Other			

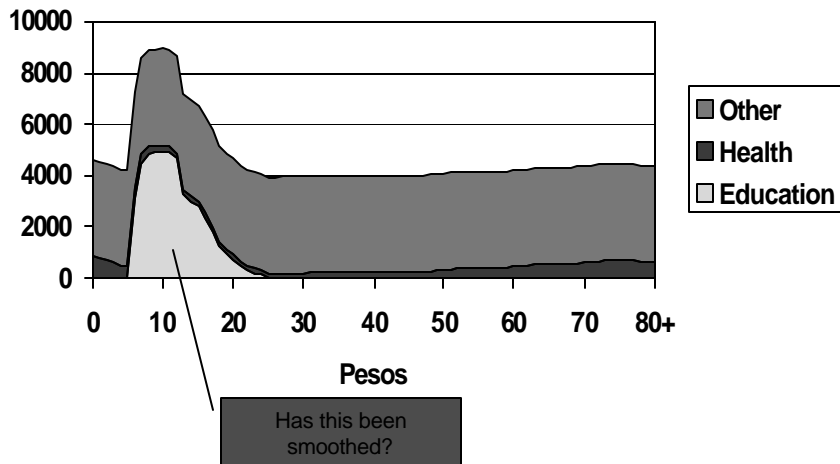
Measuring the Aggregate Public Transfer Inflows

- In-kind public transfer inflows
 - Total: Final consumption expenditure (Use of Disposable Income Account)
 - Sector composition: ask Beet
- Cash public transfer inflows
 - Total: Secondary Distribution of Income Account
 - Sector composition: ask Beet

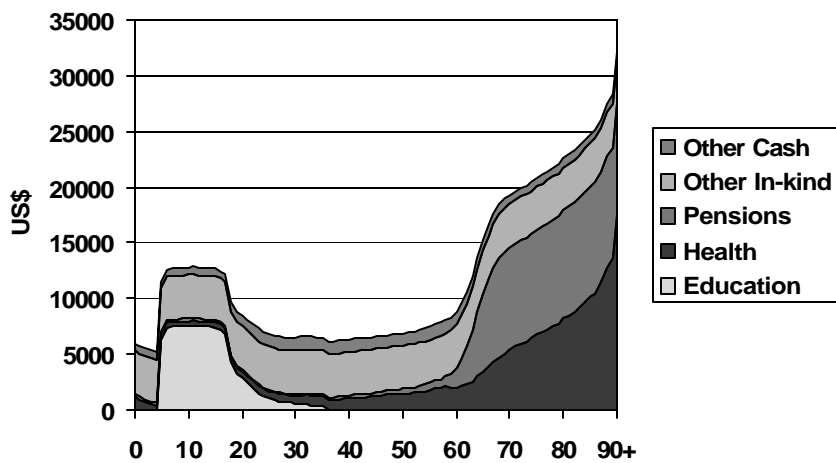
Estimating the Age Profiles of Public Transfer Inflows

- In-kind transfers
 - Identical to public consumption
 - Age profiles already estimated as part of economic lifecycle
- Cash transfers
 - Administrative records
 - Household and individual surveys using parametric or non-parametric allocation methods.

Per Capita Public Transfer Inflows, Philippines, 1999



Per Capita Public Transfer Inflows, United States 2003



Public Transfer Outflows

- Public transfer outflows are resources taken without compensation or *quid pro quo*.
- Taxes refers to explicit claims or assessments levied on individuals or institutions.
- Implicit taxes refer to
 - Non-tax revenues generated by the government
 - Surplus of state-owned enterprise
 - Dividends, rents, and royalties
 - Net borrowing
- Public transfer outflows from the ROW
 - Grants from foreign governments and international organizations

Computing Public Transfer Outflow Totals

Taxes	Implicit Taxes	UN SNA Source
Taxes on production and imports less subsidies	Property income	Primary Distribution of Income Account
Current taxes on income, wealth, etc.; Social contributions	Other Current Transfers	Secondary Distribution of Income
	Capital Transfers; Net lending (+)/net borrowing (-)	Capital Account

Tax Profile

- What economic resource is being taxed?
 - The tax is borne by those who pay it (workers, asset owners, consumers, etc.)
- How is the taxed economic resource distributed across age groups?
 - Use NTA age-profiles of labor income, asset income, consumption, and other profiles as needed.
- How does the tax rate vary by age?
 - What are the rules: *a priori* basis.
 - Administrative records
 - Household or individual surveys

Public Transfer Outflows (Taxes)	Tax Incidence or Source of Outflow
Taxes on Income	Income earners (asset and labor income)
Taxes on Profits and capital gains	Asset owners (asset income)
Taxes on earnings including contributions of employers	Employees (earnings)
Taxes on Payroll and workforce	Employees (earnings or per capita)
Taxes on Property	Property owners (value of asset)
Taxes on Goods and Services	Consumers (value of consumption of goods and services subject to tax)
Taxes on International Trade and Services	Various: Consumers, Workers, Owners of Capital, Rest of the World.
Other Taxes	Various
Social Contributions	Employees and self-employed (earnings)
Grants	Rest of the World

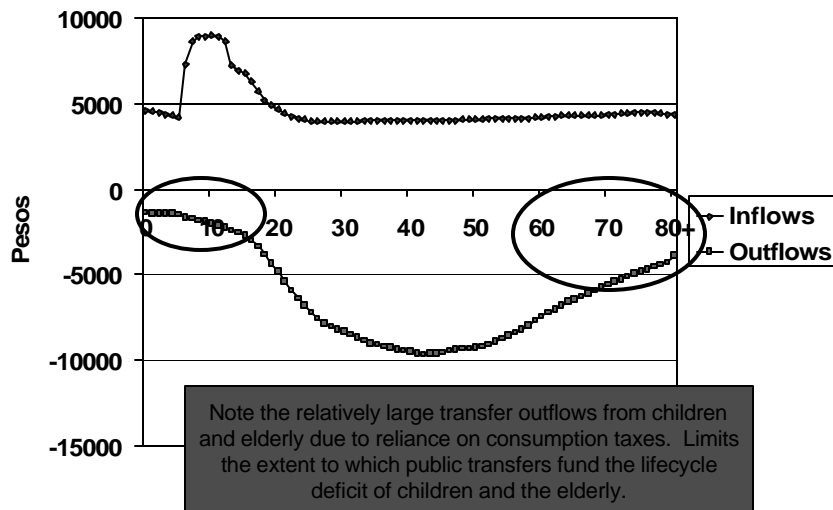
Other Revenue

- Grants: Transfer outflows from ROW.
- Asset income
 - Assets are owned by taxpayers
 - Two flows of equal but opposite sign are generated
 - A public asset-based Inflow: public asset income
 - A public transfer outflow: implicit tax
 - Implicit tax has the same profile as the general (explicit) tax profile.

Public Borrowing

- Same principles as apply to public asset income
- Public debt is owned by taxpayers
- Public borrowing generates two flows
 - Public asset-based inflow: public borrowing
 - Public transfer outflow: implicit tax
- Implicit tax has the same profile as the general (explicit) tax profile.

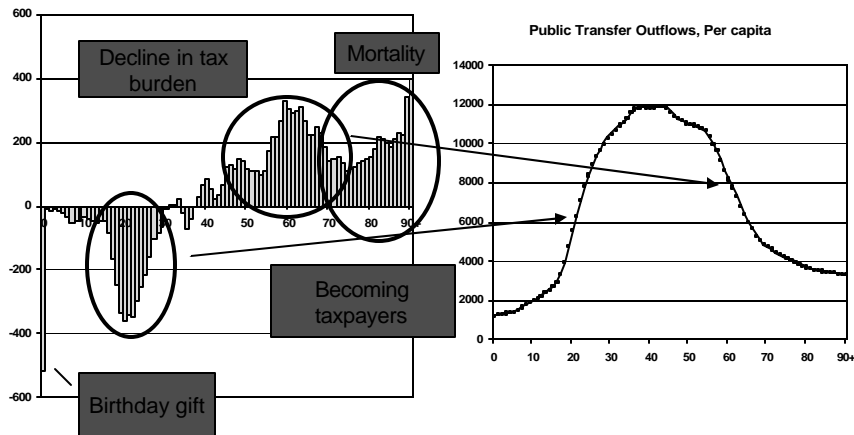
**Per Capita Public Transfer Inflows and Outflows,
Philippines, 1999**



Public Transfers: Bequests

- Public assets and debts are held by taxpayers
- Each year the outgoing generation of taxpayers bequeaths its share of public assets and debts
- Each year the incoming generation of taxpayers inherits its share of public assets and debts
- Net bequests depends on the age profile of tax payments.
- Calculation details in the methods paper and in the spreadsheet.

Net Public Bequests, Uruguay, 1994



Source: Bucheli, Ceni, Gonzalez 2007.

II. Asset-based Public Reallocations

The Flow Account Identity

- Inflows
 - Labor Income
 - Asset Income
 - Transfer Received
- Outflows
 - Consumption
 - Saving
 - Transfers Paid

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

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Age Reallocations

Asset-based Reallocations

- Net Inflows = Asset income – Saving
- Asset income is the return to any asset
 - Capital → profits or operating surplus
 - Credit/debt → interest income/expense
 - Land and subsoil resources → rent
- Saving refers to the net acquisition of assets: capital, net credit, land and subsoil resources

Comparing Public and Private Asset-based Reallocations

- Ownership
 - Private assets and debts belong to the individuals who acquire them.
 - Public assets and debts do not belong to the taxpayers who acquire them.
 - Thus, a cohort of taxpayers does not establish a claim on future resources for itself by engaging in public saving.
 - Nor does it create a future obligation for itself by accumulating public debt.
 - Claim or obligation is passed on to future taxpayers.
- An Exception
 - Governments can create programs that mimic private asset transactions.
 - Example: Central Provident Funds tax workers and deposit the revenue in an account owned by the workers.

Comparing Public and Private Asset-based Reallocations

- Constraints on indebtedness
 - Children cannot acquire private debt because contracts against them are not enforceable.
 - Governments can acquire private debt on behalf of children.
- Debt and transfers may be combined to support child consumption
 - Parents can go into debt and transfer resources to children.
 - Governments can also go into debt to finance public transfers to children.

Public Asset-based Reallocations

- Public asset-based reallocations
 - Inflow to and outflows from taxpayers.
 - Age reallocations are realized primarily through (increased) transfers from taxpayers to children and the elderly.
- Public credit
 - Generates flows between taxpayers and private investors.
 - Age reallocations depend on the extent to which their age profiles differ.

Forms of Asset-based Reallocations: Asset Income

- Asset income (+)/Asset expense (-)
 - Income, i.e., value of service, attributable to public capital is assumed to be 0 in NIPA.
 - Public credit and debt yield interest income and expense, respectively.
 - Publicly-owned land and sub-soil resources yield rent.
 - Governments may receive dividends from corporations and other distributions from state-owned enterprise or quasi-corporations.
- Asset income is an inflow to the “owners” of public assets (taxpayers)

Forms of Asset-based Reallocations: Saving

- Public sector can acquire non-financial assets
 - Net capital formation (Gross capital formation less consumption of fixed capital)
 - Net acquisitions of valuables and non-produced, non-financial assets, e.g., land and sub-soil resources
- Public sector can acquire financial assets/debt: net lending (+)/net borrowing (-)
- Acquiring an asset generates an outflow
- Acquiring debt generates an inflow

Asset-based Reallocations: Saving and Bequests

- Public assets and debts are transferred from one generation of taxpayers to the next.
- Transfer is equivalent to a net change in assets, i.e., saving.
- Methods for estimating public transfers and public saving through bequests are identical.

Measuring Aggregate Public Asset-based Flows

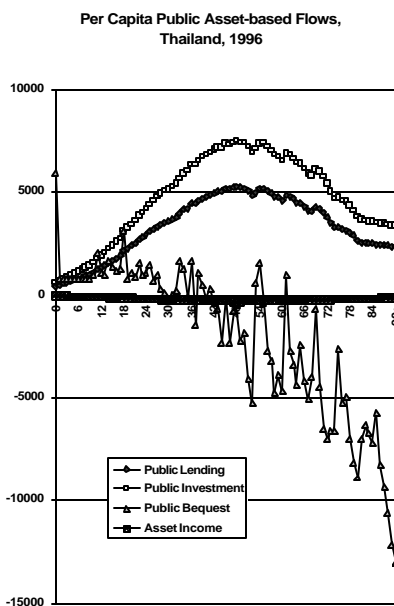
- Asset Income
 - Property Income
 - Interest
 - Distributed income of corporations
 - Rent
 - Other
 - UN SNA 1993, Primary Distribution of Income Account (Table 7.1., Account II.1.1, D.4 Property Income)

Measuring Aggregate Public Asset-based Flows

- Public saving (+ net capital transfers)
 - Change in non-financial assets
 - Net capital formation (Gross capital formation less consumption of fixed capital)
 - Acquisitions less disposals of valuables and non-produced, non-financial assets, e.g., land and sub-soil resources
 - Change in financial assets
 - Net lending (+)/net borrowing (-)
 - UN SNA 1993, Capital Account (Table 10.1., Account III.1)

Measuring the Age Profiles

- Taxpayers own public assets and debt in proportion to their share of general taxes
- Age profile of asset income and expense is proportional to the age profile of general taxes.
- Age profile of public saving and investment is proportional to the age profile of general taxes.



Source: Chawla 2007.

- Public saving was positive in 1996.
- Saving exceeded investment; i.e., positive lending (reducing national debt)
- Interest income is small negative (interest on public debt).
- Public capital exceeds public debt. Bequests lead to downward transfer.

III. Possible Applications

Poverty and Inequality

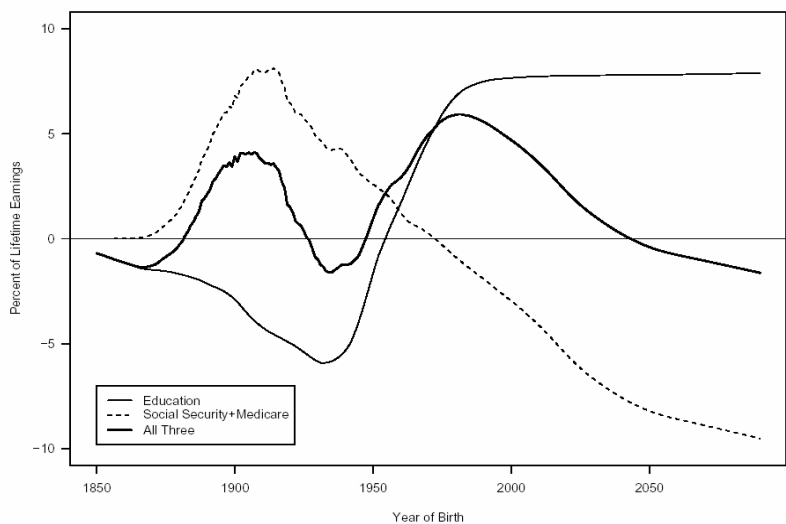
- Children and the elderly depend on public transfers
- How the public sector fulfills these roles influence:
 - General poverty rates
 - Poverty rates for children and the elderly
- What factors influence the role of the public sector
 - Age structure

Generational Equity

- How is the public sector influencing the distribution of economic resources across birth cohorts including those not yet born?
- Similar to Generational Accounting which looks primarily at taxes (outflows in NTA terminology).
- NTA public sector measures both outflows and inflows (birth cohorts in the future may pay more taxes but receive more benefits)

Generational Effect of US Public Sector

Fig 4. NPV at birth of expected lifetime Education, Social Security and Medicare benefits as percent of lifetime earnings



Source: Bommier, Lee, et al.

Macroeconomic Performance

- Second dividend depends on the extent to which the elderly are relying on public transfers rather than saving.
- Human capital investment
 - How much is the public sector investing in human capital?
 - Does public investment crowd out private investment?
 - What factors influence public investment in human capital?

Sustainability of Public Programs

- How will specific public programs and government budgets in general be affected by changes in age structure?
- What reforms would make them sustainable?

Use of the NT Flow Account

- NT Flow Account for one year provides partial information:
 - Current spending on the elderly
 - Current spending on children (including human capital spending)
- More complete answers possible with:
 - Historical accounts
 - Projection or simulation models
 - Steady-state, golden rule assumptions.

The End