United Nations | Department of Economic and Social Affairs

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National Transfer Accounts: Disaggregating National Accounts by age

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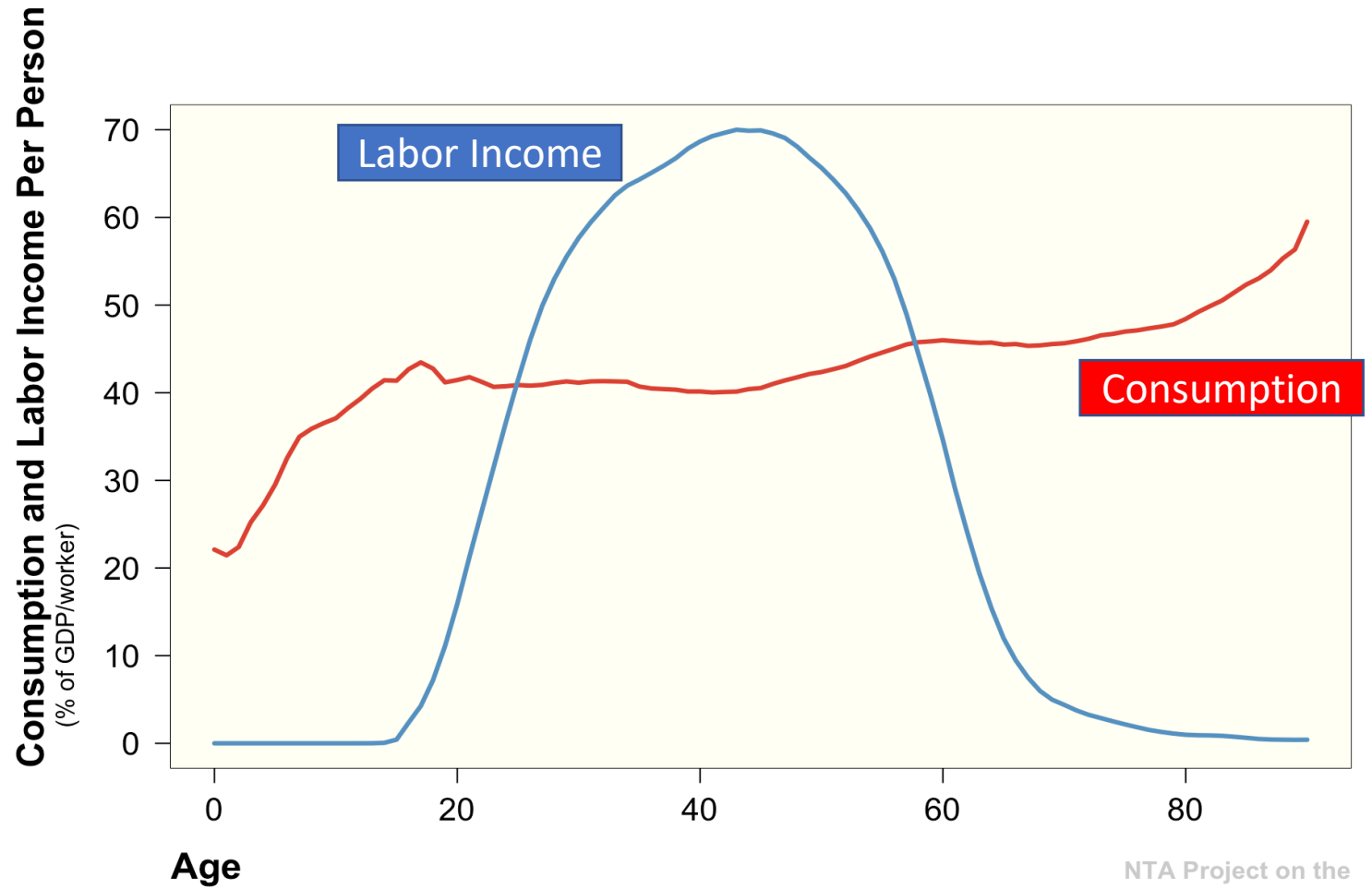**Fourth Beyond GDP Sprint**

Why disaggregate National Accounts by age?

✔ Assessing the impact of demographic change on economic growth.

✔ Forecasting the fiscal sustainability of education, health care, and social protection programs.

✔ Understanding how generational solidarity works -- how different generations support one another.

✔ Measuring the economic well-being of children and older persons.

I.
The economic life cycle is key to understanding the economic impact of population.

The economic life cycle is characterized by two periods of dependency during which individuals consume more than they produce.

Consumption and Labor Income Per Person

Consumption and Labor Income Per Person
(% of GDP/worker)

Labor Income

Consumption

70

60

50

40

30

20

10

0

0   20   40   60   80

Age

NTA Project on the
Generational Economy

How is this possible?

Consumption and Labor Income Per Person

Consumption and Labor Income Per Person
(% of GDP/worker)

Labor Income

Consumption

Age
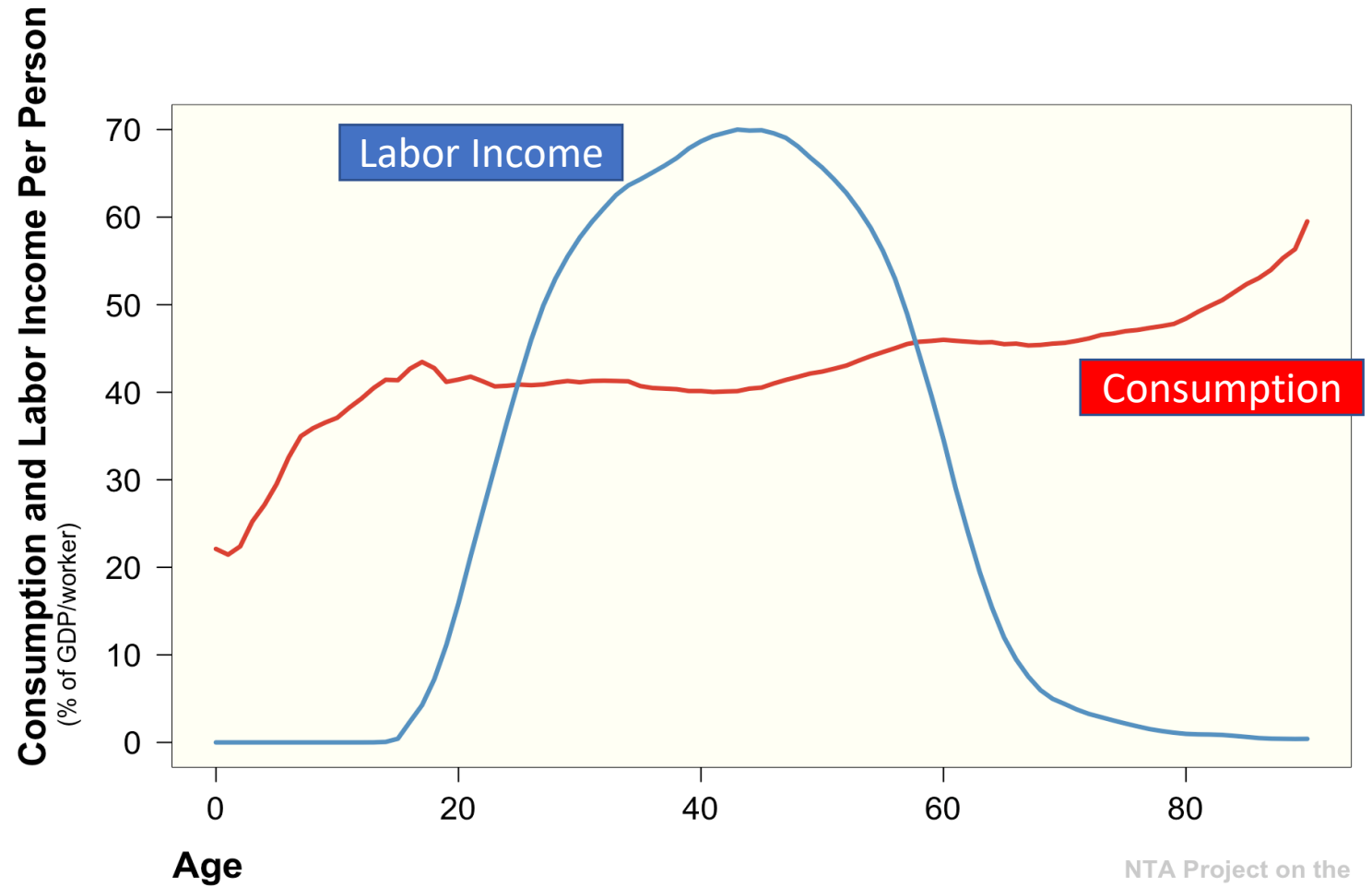
How is this possible?

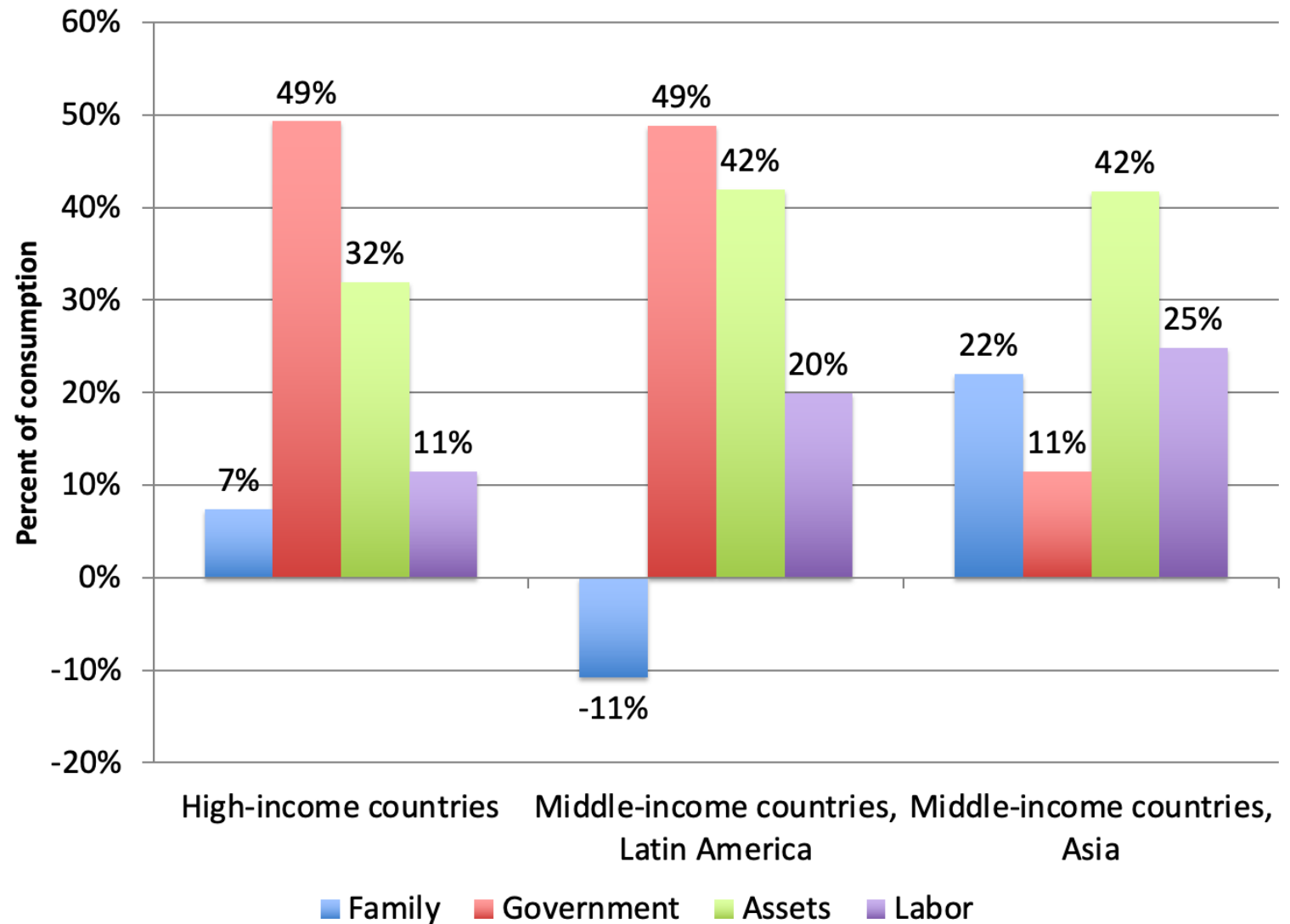The life cycle pattern of consumption is supported by large flows of economic resources between age groups.
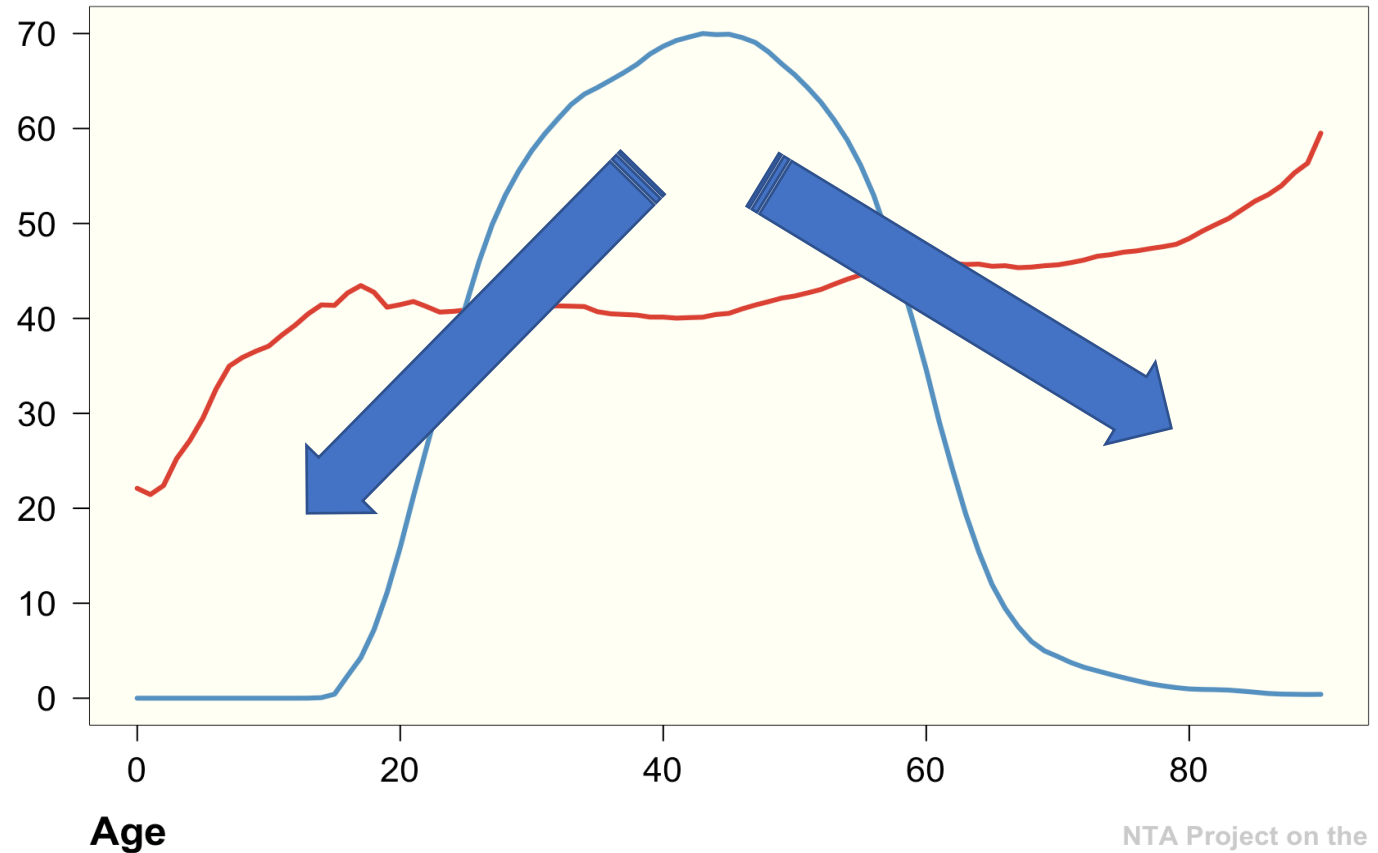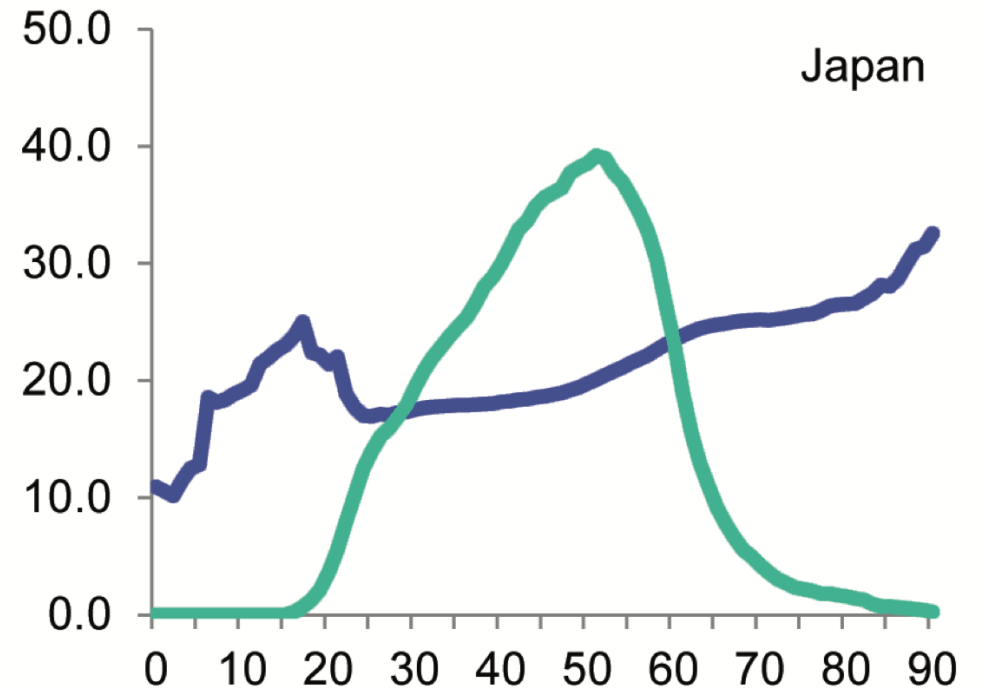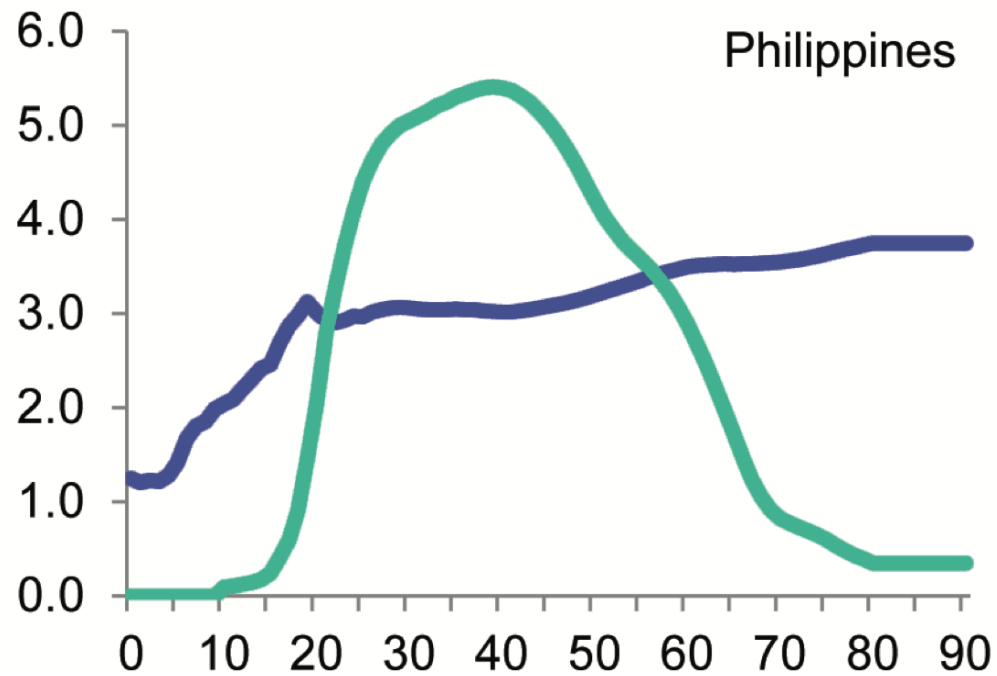
Three institutions support these flows: family, government, and financial markets.

There are large difference in the role these 3 institutions play over time and between countries.
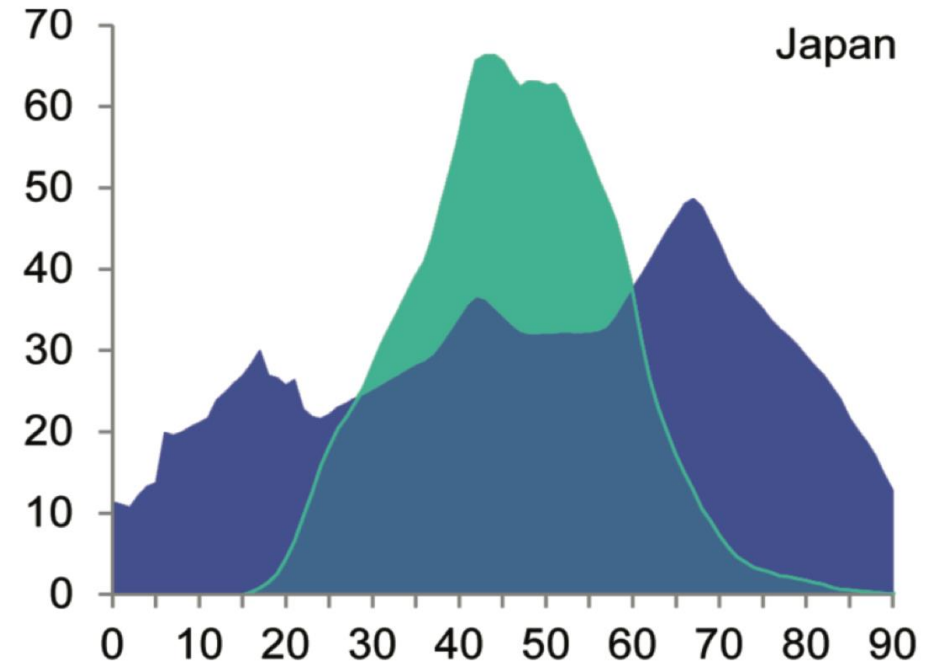

How do older persons finance their consumption?

Economic life cycle of individuals:
Average labor income and consumption by age

Economic life cycle of societies:
Aggregate labor income and consumption by age
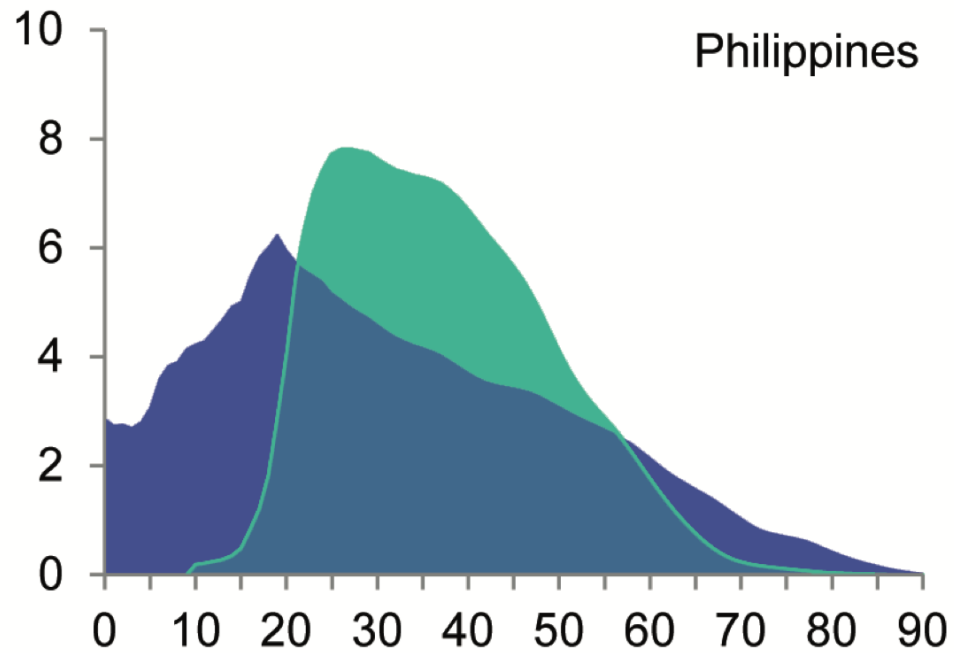
II.
What is NTA?

National Transfer Accounts (NTA)

THREE KEY FEATURES

① Disaggregate national economic activity **by age** in a manner consistent with National Accounts.

② Measure **inter-age flow of resources** through institutions (market, state, and family).

③ **Add: Family transfers** (within and between households). These are large and not measured in National Accounts.

The individual is the unit of analysis in NTA

Conceptual Framework

Individuals,
not households.

Estimation Strategy

Averages by age.

91 population groups: age 0, age 1, age 2, ..., age 89, age 90+

Firms, NPISHs, and governments are treated as agents of individuals. The main aggregates of National Accounts are disaggregated by age group: labor income, asset, property income, consumption (private and public), savings, government/public transfer. In addition, family/private transfers: both within and between households – not measured in National Accounts.

The NTA Flow Balancing Equation for Each Individual

INFLOWS:

Labor Income

+

Asset Income

+

Government Transfers

+

Transfers from Family

=

OUTFLOWS:

Consumption

+

Savings

+

Taxes

+

Transfers to Family

Institutions

Financial Markets

Government

Families
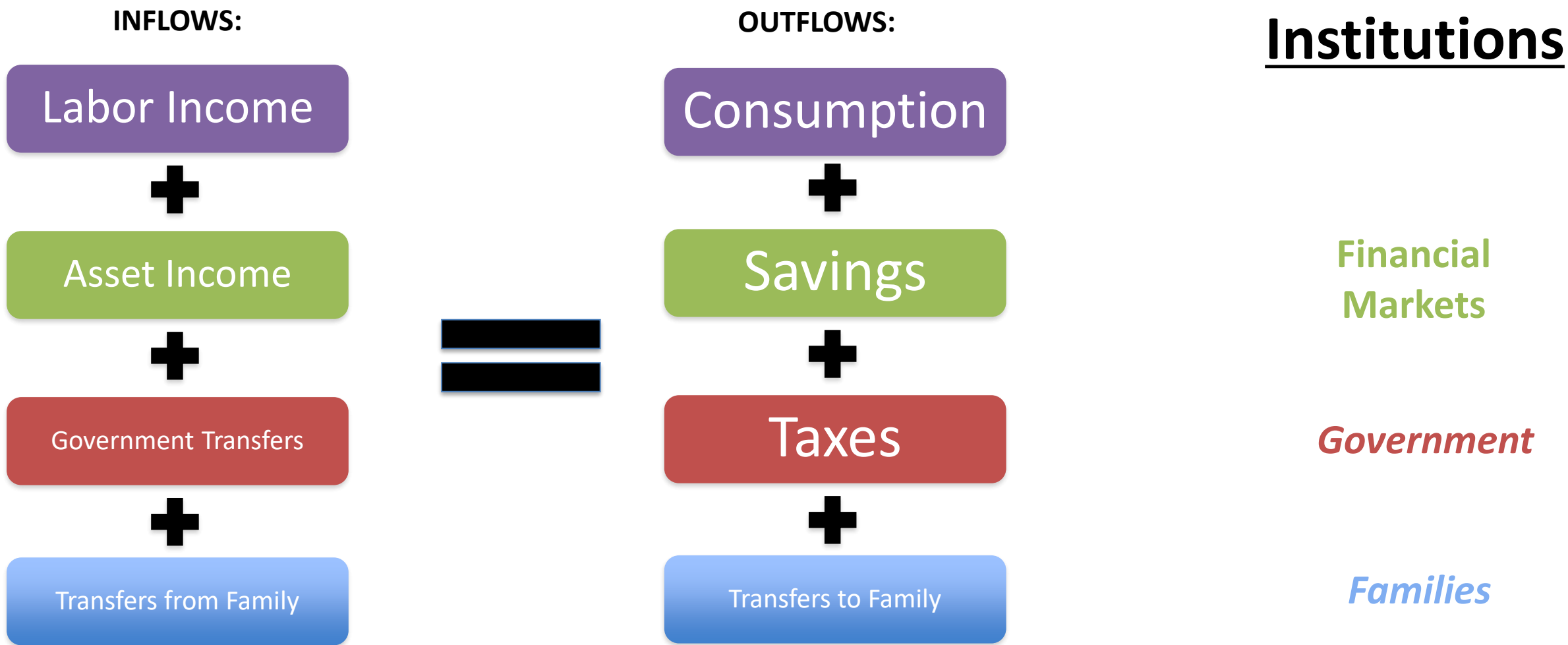
SNA and NTA

$$C + S = Y^l + Y^k + Y^p + \tau$$

Consumption + Savings = Primary Income + Transfers

$$C(x) + S(x) = Y^l(x) + Y^k(x) + Y^p(x) + \tau(x)$$

Disaggregate by age

$$C(x) - Y^l(x) = [Y^k(x) + Y^p(x) - S] + \tau^g(x) + \tau^f(x)$$

Life cycle deficit   =   Asset-based reallocations + Public Transfers + Private Transfers

III.
Estimation

Data requirements

TOTALS: National Accounts

AVERAGE AGE PROFILES: Household income and expenditure surveys; Administrative records

POPULATION COUNTS BY AGE: Population estimates and projections.

$$C = \sum \beta * c(x) * p(x)$$

Behind the curtain…

- Closing the micro-macro gap: adjusting for under-reporting.
- Consumption weights to assign household consumptions to individuals.
- Missing wealthy people in surveys.
- Small sample sizes and the need to smooth across age.
- Imputation for allocating household health expenditures to individuals.

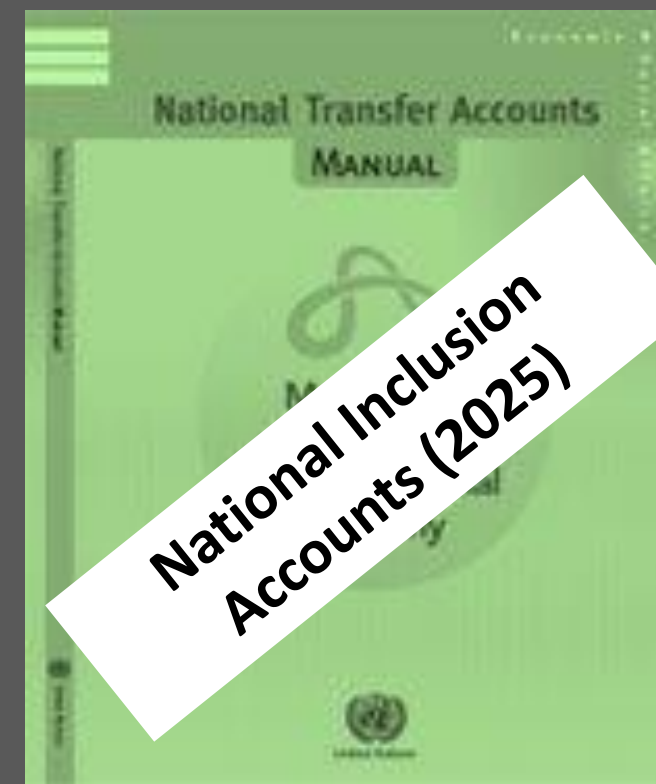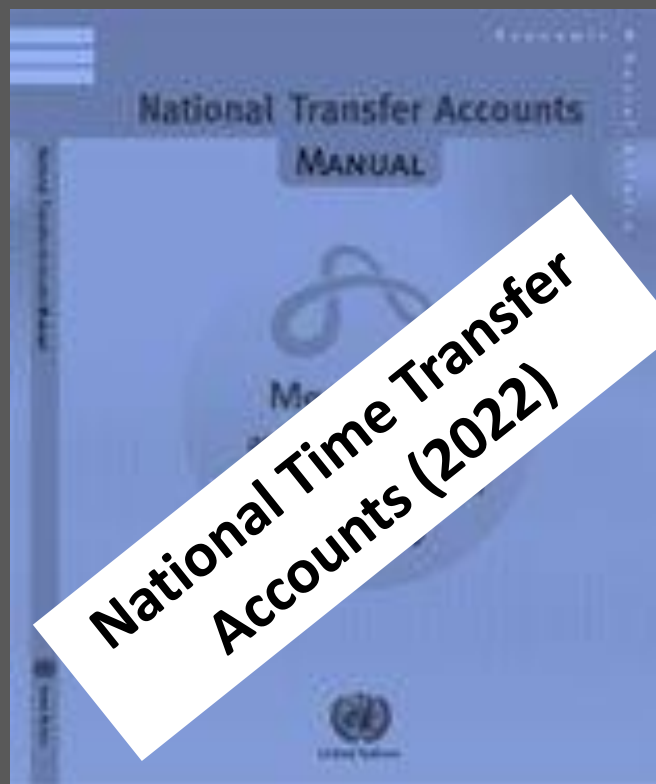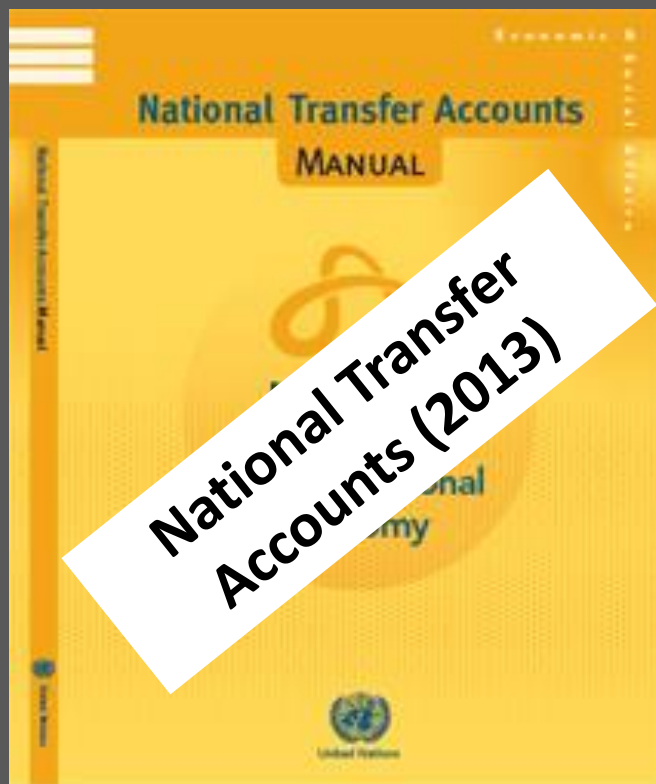DESA produces manuals and provides technical assistance to Member States

UN DESA

Measuring national economic activity disaggregated by population groups

| By age | By age & gender | By age & socio-economic group |

National Transfer Accounts (2013)

National Time Transfer Accounts (2022)

National Inclusion Accounts (2025)

NTA Network

82 Country Teams

22 are led or co-led by national government;

2 have instituted NTA as part of official national statistics : Colombia and Rep. of Korea.

AFRICA

Benin
Botswana
Burkina Faso
Cabo Verde - Cameroon
Central African Republic
Chad – Congo
Cote d'Ivoire
Egypt
Equatorial Guinea
Eswanti - Gabon
Gambia
Ghana
Guinea Conakry
Guinea-Bissau
Kenya
Liberia
Mali
Mauritania
Mozambique
Niger
Nigeria
Sao Tome and Principe
Senegal
South Africa
Togo

ASIA AND PACIFIC

Australia
Azerbaijan
Bangladesh
Cambodia
China
India
Indonesia
Iran
Israel
Japan
Kyrgyzstan
Lao PDR
Malaysia
Maldives
Mongolia
Nepal
Pakistan
Philippines
Singapore
* Rep. of Korea *
Sri Lanka
Thailand
Vietnam

EUROPE and NORTHERN AMERICA

Austria
Canada
Finland
France
Germany
Hungary
Italy
Luxembourg
Moldova
Netherlands
Poland
Russian Federation
Slovenia
Spain
Sweden
Turkey
United Kingdom
United States

LATIN AMERICA and CARIBBEAN

Argentina
Bolivia
Brazil
Chile
* Colombia *
Costa Rica
Ecuador
El Salvador
Guatemala
Jamaica
Mexico
Paraguay
Uruguay

4 Key Strengths of NTA Method

1. Integral vision	2. Individual	3. International	4. Long-run Focus
• **Of government action**: health, education, pensions, taxation. • **Of economic actors**: government, markets, and families. • Interlinkages	• Economic life cycle! • Makes economic statistics "relatable." Grounded in the lives of families. • Me and Us. Solidarity.	• A common framework being estimated for 100 countries • within a global network of 82 country teams.	• **Gradual adaptation** of government programs and family support systems to population ageing. • **Implementation** of social policy with long-run goals (inequality, intergenerational equity).

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