Generational Economy and Population Ageing: National Transfer Accounts and Fiscal Policy

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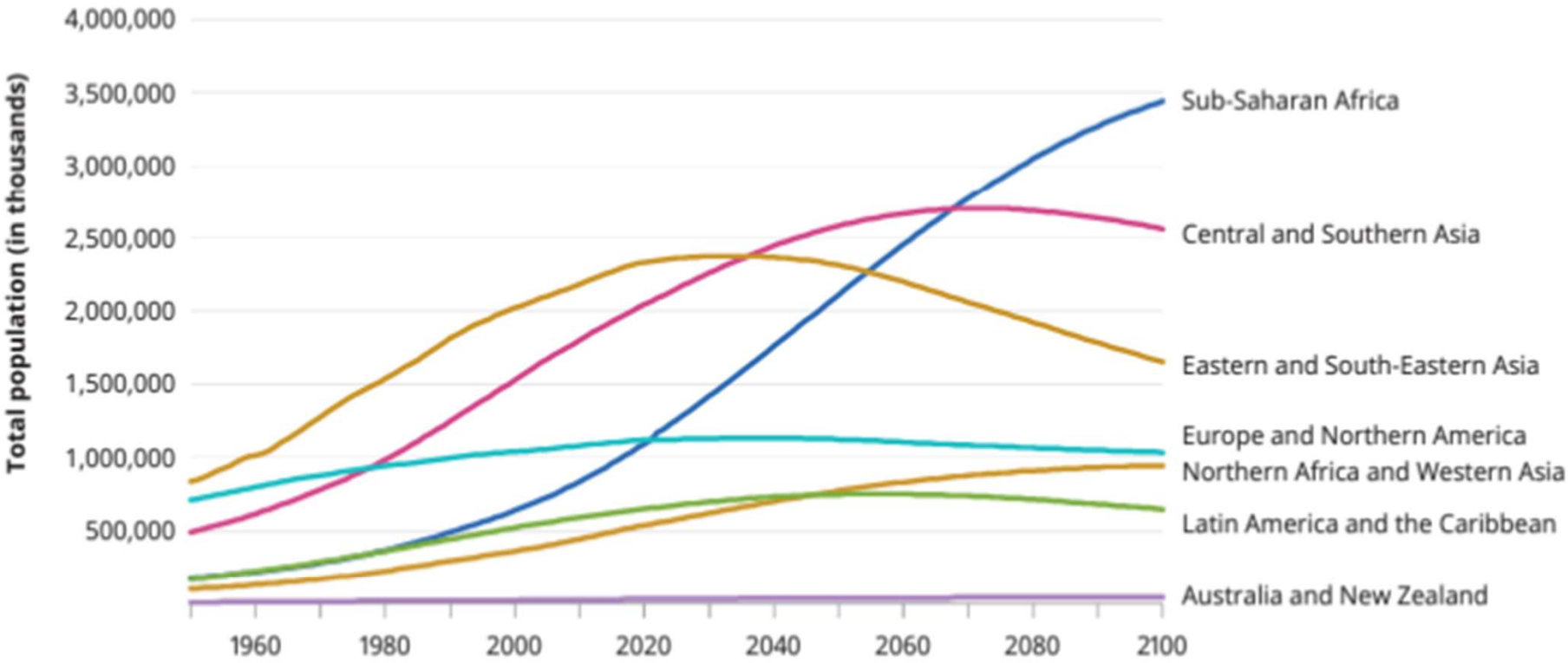
Questions

1. How do NTAs show the impact of changing demographics on fiscal policy?
2. How can we observe the impact of demographic shifts through NTAs?
3. Impact of demographic shifts on fiscal policy
4. Examples where some impact of demographic shifts was noticed/analysed through NTAs? (Signals noticed in changes of NTA data.)
   - 1st and 2nd demographic dividend
   - Fiscal sustainability

Growth in total population size in different countries and regions of the world



Source: UNFPA Technical Division, 2023.

Rapid Aging and Demographic Diversity in Asia-Pacific, % of 65+ population in 2023

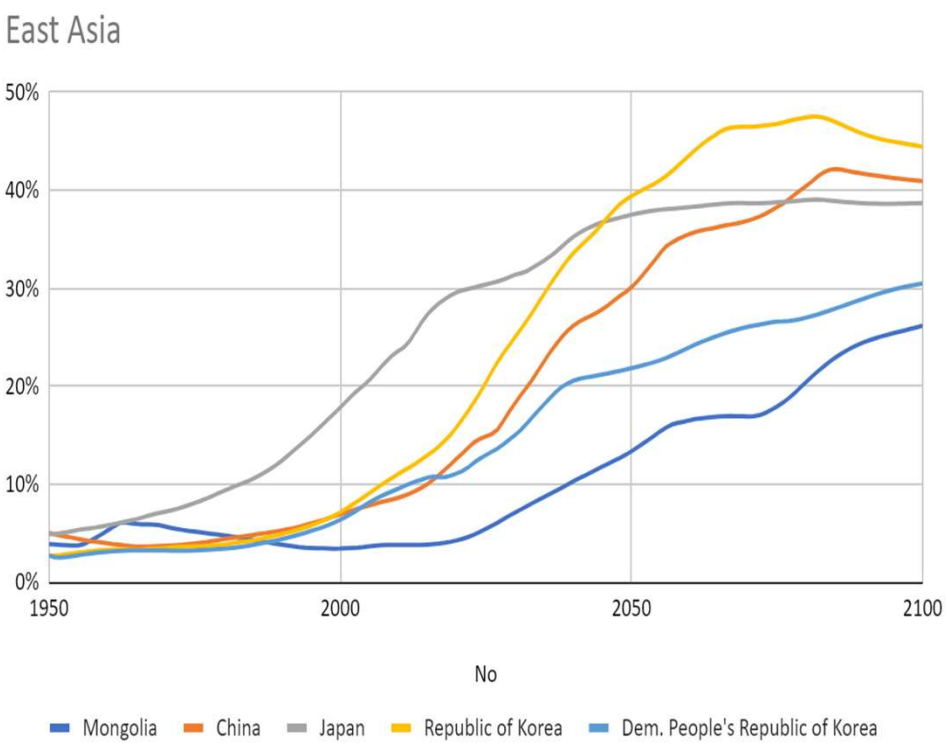


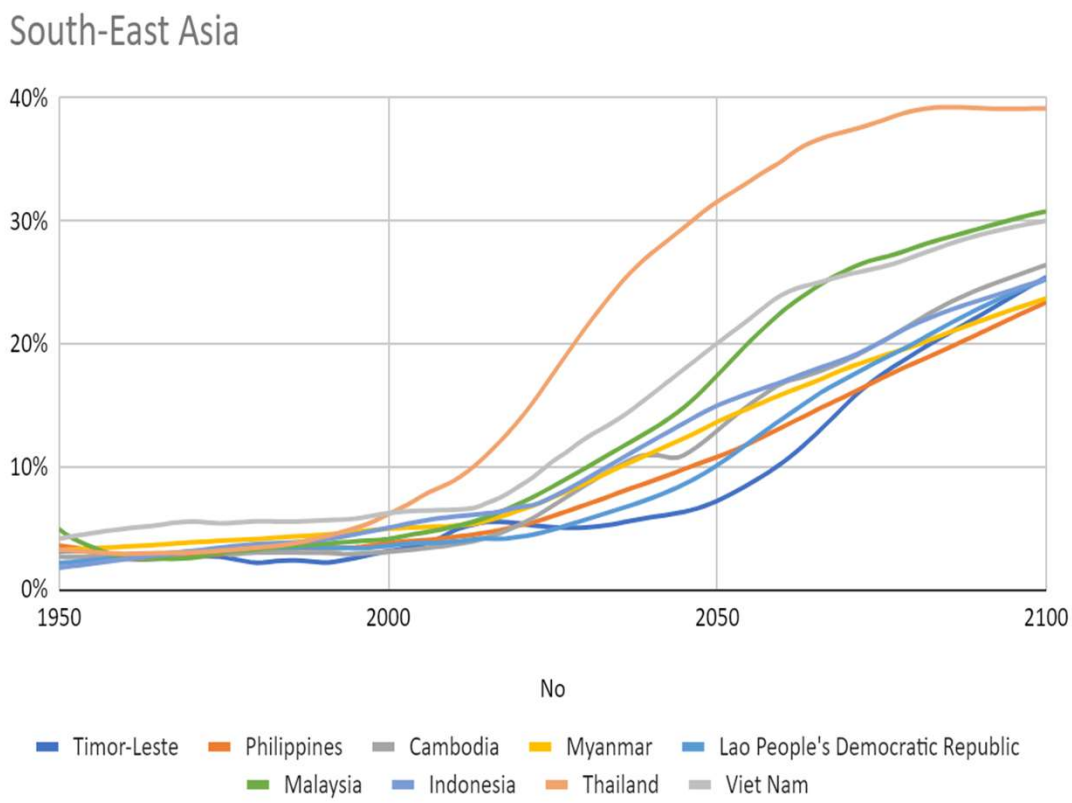


- **Averages:** East Asia & Pacific (13%), South Asia (6%), Pacific small states (5%)
- **Superaged countries** (more than 20% of people over 65 yrs): Japan (30%)
- **Aged countries** (more than 14% of people over 65 yrs): Australia (17%), New Zealand (16%), Republic of Korea (17%), Thailand (15%)
- **Ageing countries** (more than 7% of people over 65 yrs): Singapore (14%), China (13%), Democratic People's Republic of Korea & Sri Lanka (11%); India, Indonesia, Iran (7%), Vietnam (9%)
- **Next wave**: Bangladesh, Cambodia, Nepal (6%), the Pacific, Maldives, Philippines (5%), Pakistan, Lao (4%), PNG (3%)

Source: UN Population Prospects, 2022

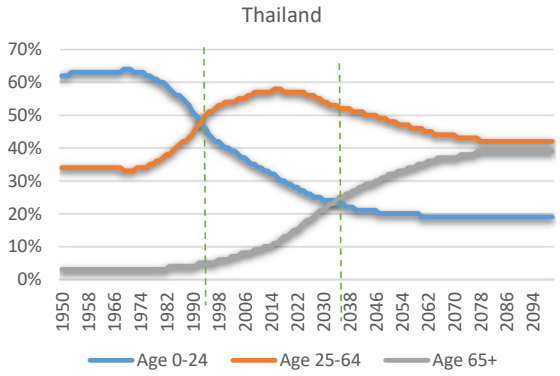
Percentage of older persons (65+) in Asia-Pacific (selected countries, 1950-2100)

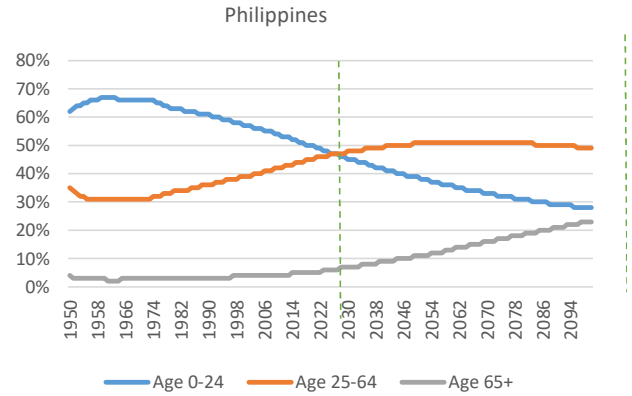


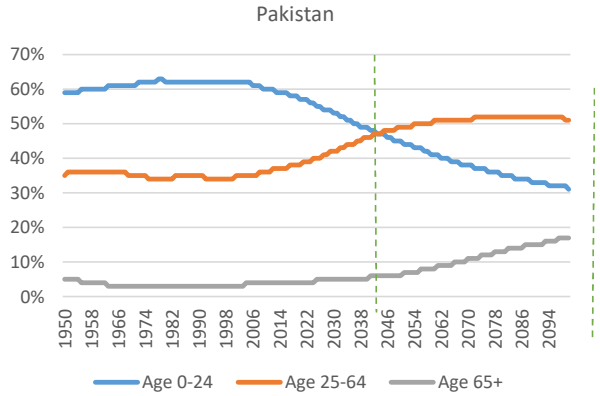


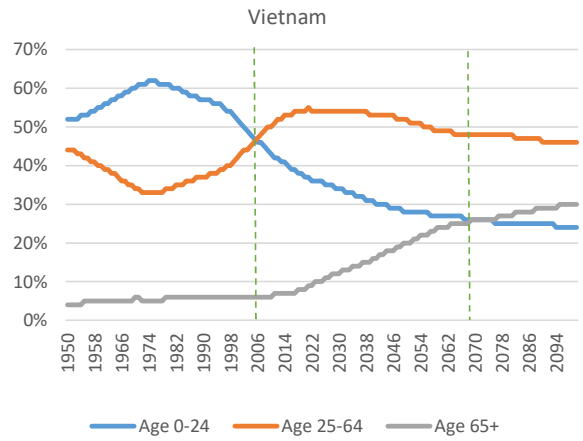
Source: UN Population Prospects, 2022

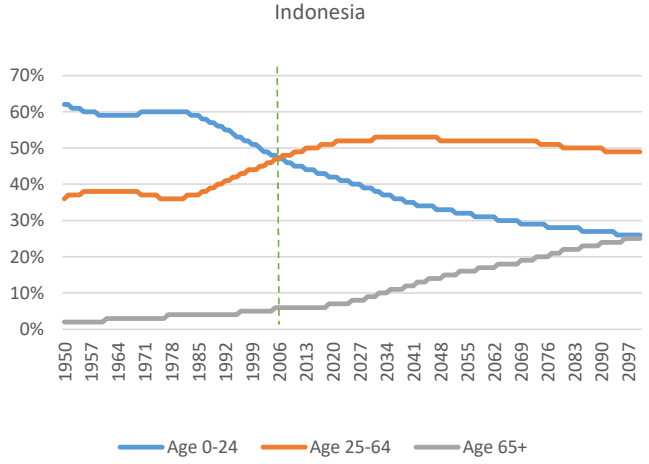
Trend in population shares by age group, selected countries, 1950-2100

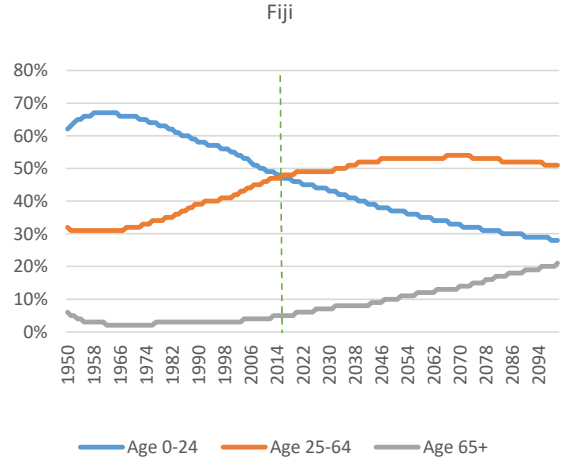








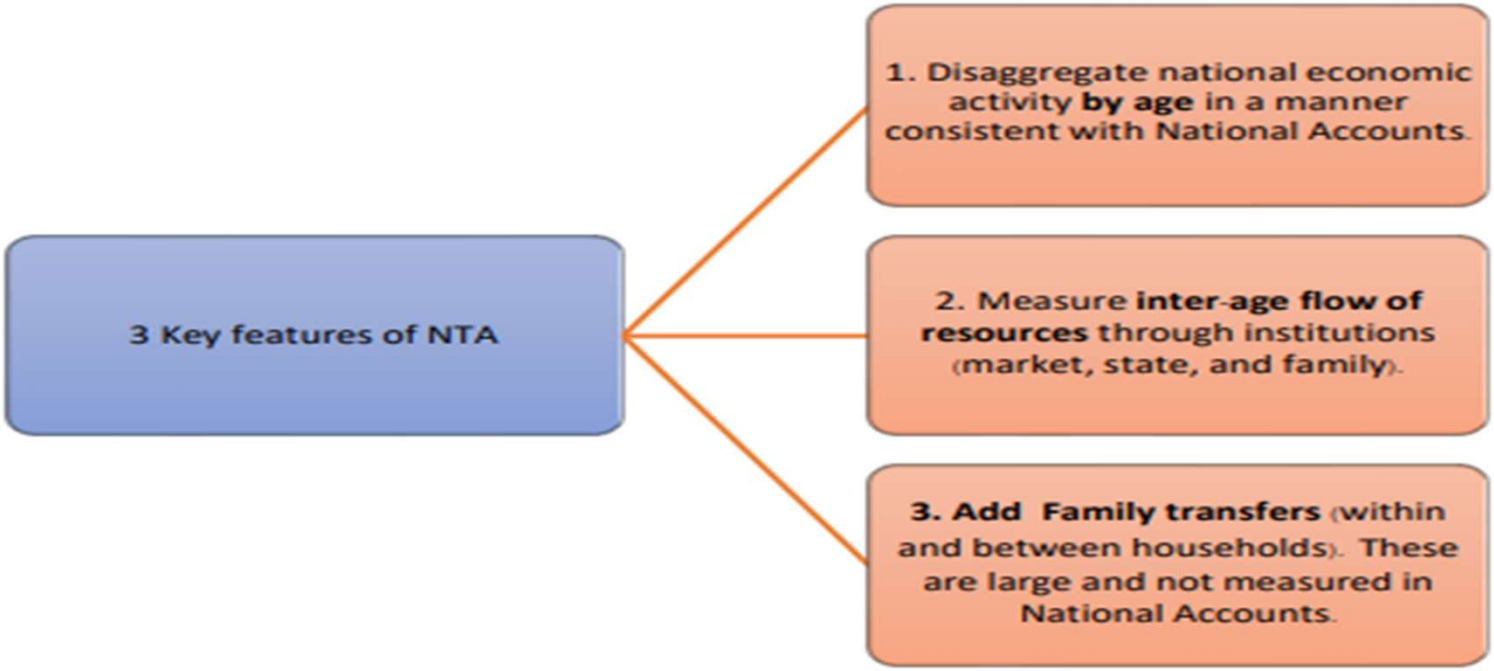




Source: UN Population Prospects, 2022

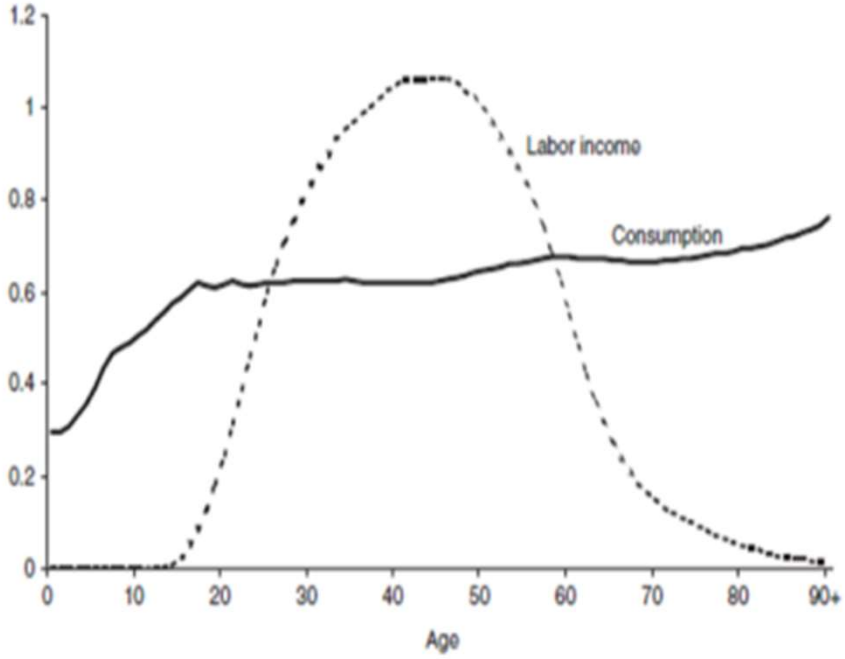
What is NTA

- Integrates population into economy (Constructed using population estimates, surveys, administrative records, macroeconomic data).
- Quantifies how each age groups acquires and uses economic resources (comprehensive output)
- Consistent with UN System of National Accounts (implication on macro-economy and comparative)
- NTA is a tool to generate evidence on 'GDP with people', an extension of SNA with social variables – age, sex, socio-economic indicators



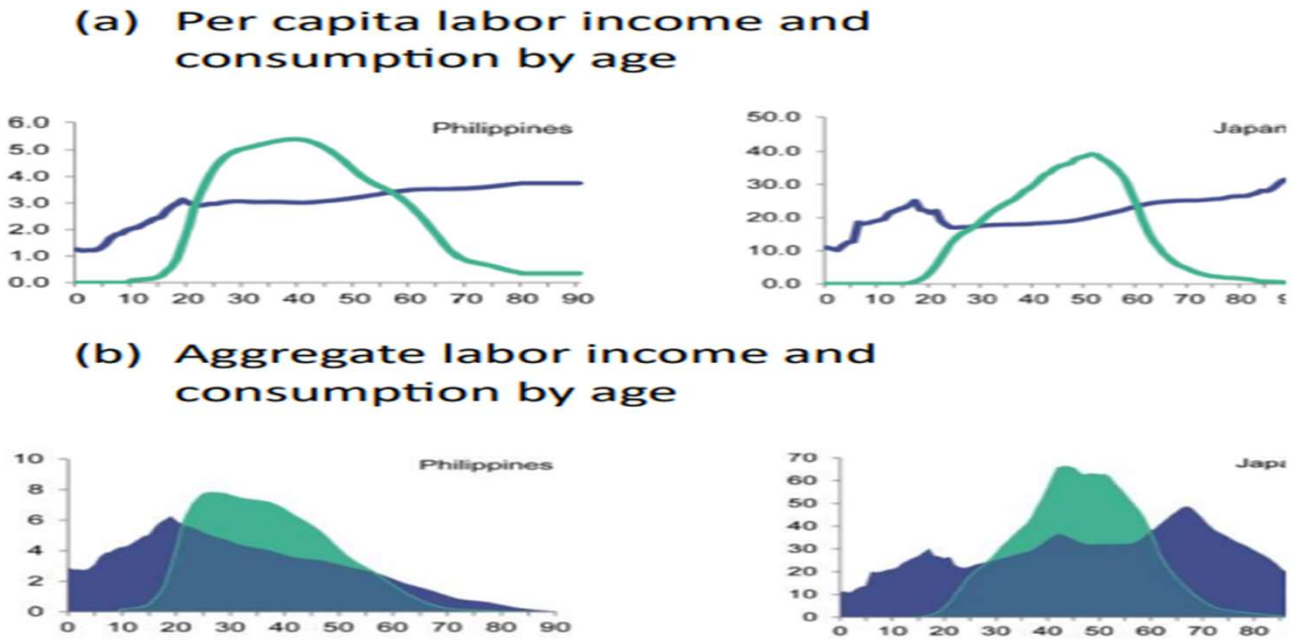
Source: Sang-Hyop Lee, 2022

Understanding the generational structure of the economy through the economic life cycle, where working-age adults produce more than they consume while children and older persons consume more than they produce, is crucial in assessing the economic impact of demographic changes



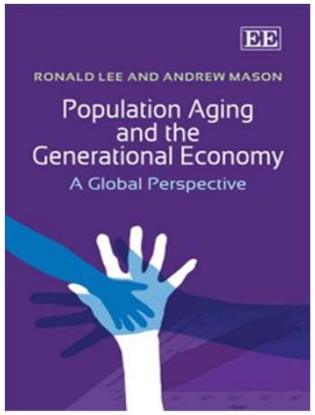
The lifecycle deficit (LCD) is defined as Consumption (C) less Labor Income (YL). The lifecycle deficit is positive during the dependent years and negative during the working years.

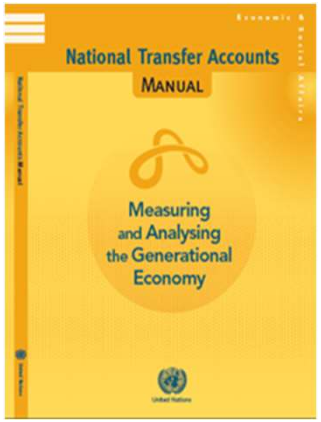
Young and aged societies have different generational economic structure

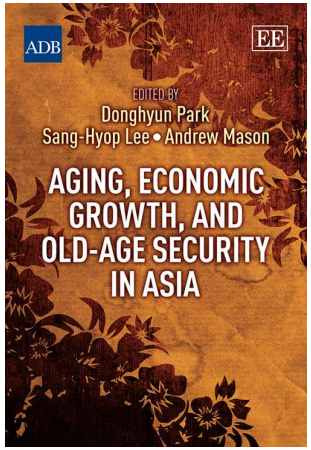


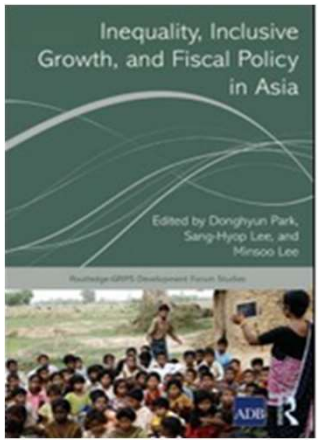
Title: Economic Lifecycle of the Philippines (young society) and Japan (aged society)
Source: Tim Miller and Nicole Mun Sim Lai's PPT (National Transfer Accounts: Disaggregating National Accounts by age| 21 April 2022)

Recent publications (see ntaccounts.org)









ECONOMIC DEMOGRAPHY

Is low fertility really a problem? Population aging, dependency, and consumption

Ronald Lee,[1]* Andrew Mason,[2,3]* members of the NTA Network†

Longer lives and fertility far below the replacement level of 2.1 births per woman are leading to rapid population aging in many countries. Many observers are concerned that aging will adversely affect public finances and standards of living. Analysis of newly available National Transfer Accounts data for 40 countries shows that fertility well above replacement would typically be most beneficial for government budgets. However, fertility near replacement would be most beneficial for standards of living when the analysis includes the effects of age structure on families as well as governments. And fertility below replacement would maximize per capita consumption when the cost of providing capital for a growing labor force is taken into account. Although low fertility will indeed challenge government programs and very low fertility undermines living standards, we find that moderately low fertility and population decline favor the broader material standard of living.

Economic behavior, abilities, and needs vary strongly over the human life cycle. During childhood and old age, we consume more than we produce through our labor. The gap is made up in part by relying on accumulated assets. It is also made up through intergenerational transfers, both public and private, that shift resources from some generations to others with no expectation of direct repayment. Private transfers occur when parents rear their children and when older people assist their adult children or receive assistance from them. Public transfers include public education, publicly funded health care, public pensions, and the taxes to pay for these programs. Because of these economic interdependencies across age, fertility rates that are falling or already low will drive rapid population aging in economies around the world. Forty-eight percent of the world's people live in countries where the total fertility rate (TFR) was below replacement, about 2.1 births per woman for 2005 to 2010. The TFR is 1.5 births per woman in Europe and 1.4 births per woman in Japan (*1*). With fertility this low, population growth will give way to population decline, and population aging will be rapid. The median age of the Southern European population, for example, is projected to reach 50 years of age by 2040 as compared to 41 in 2010 and 27 in 1950 (*1*). In 2013, governments in 102 countries reported that population aging was a "major concern," and 54 countries had enacted policies intended to raise fertility (*2*).

This is a remarkable reversal from decades of concern about the economic and environmental consequences of high fertility and rapid population growth (*3*). Should we now be alarmed about low fertility, population decline, and population aging? Should governments encourage their citizens to bear more children to balance the dramatic future increase in the number and proportion of elderly?

Identifying an optimal population policy is likely to be impossible for several reasons. First, children yield direct satisfaction and impose

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POPULATION AND DEVELOPMENT REVIEW

Original Article | Open Access

Six Ways Population Change Will Affect the Global Economy

Andrew Mason ✉ Ronald Lee, members of the NTA Network

First published: 14 February 2022 | https://doi.org/10.1111/padr.12469 | Citations: 11

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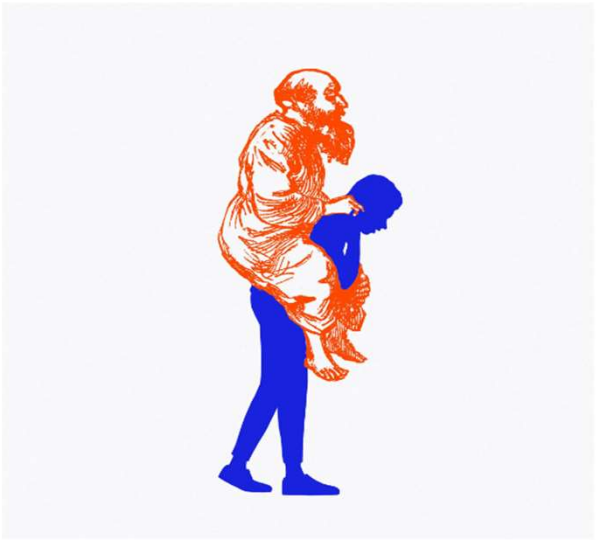
OPINION

Older Americans Are Winning the Economic War of the Generations

Oct. 27, 2023



NTA can inform policy in many areas

How do young and old people, who consume more than they produce, support themselves—do they rely on their families, on taxpayers through government programs, on assets accumulated during their working years or inherited, or by going into debt?

Will the rapid growth of elderly populations slow economic growth?

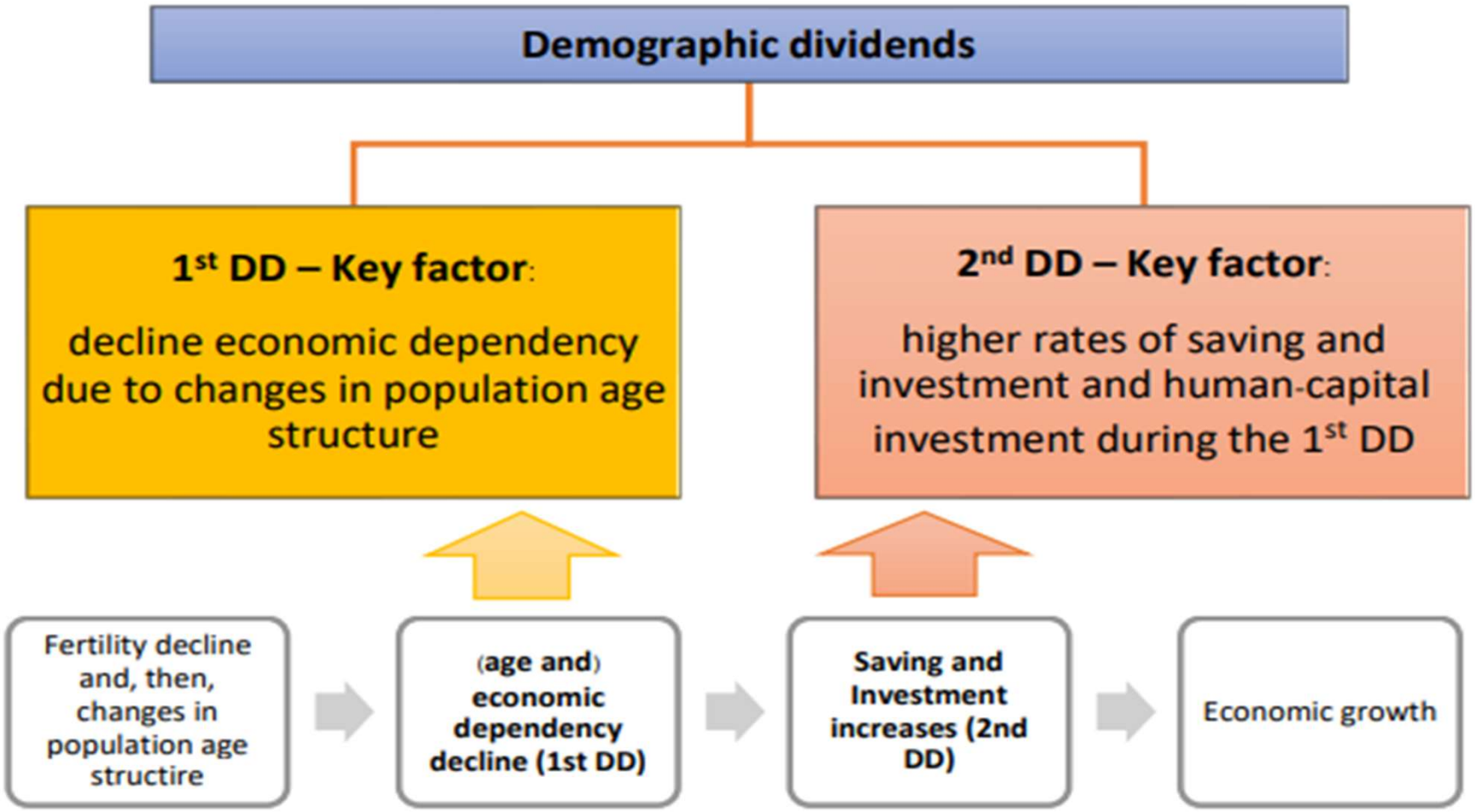
How can countries best take full advantage of the demographic dividend?

What are the likely impacts of population aging generational equity?

What are the policy implications of demographic change for education and healthcare for children?

Given the growing number of old people, are public pension and healthcare programs sustainable? And what about family support systems?

Source: UNFPA Asia-Pacific Office, forthcoming. NTA Digital Booklet



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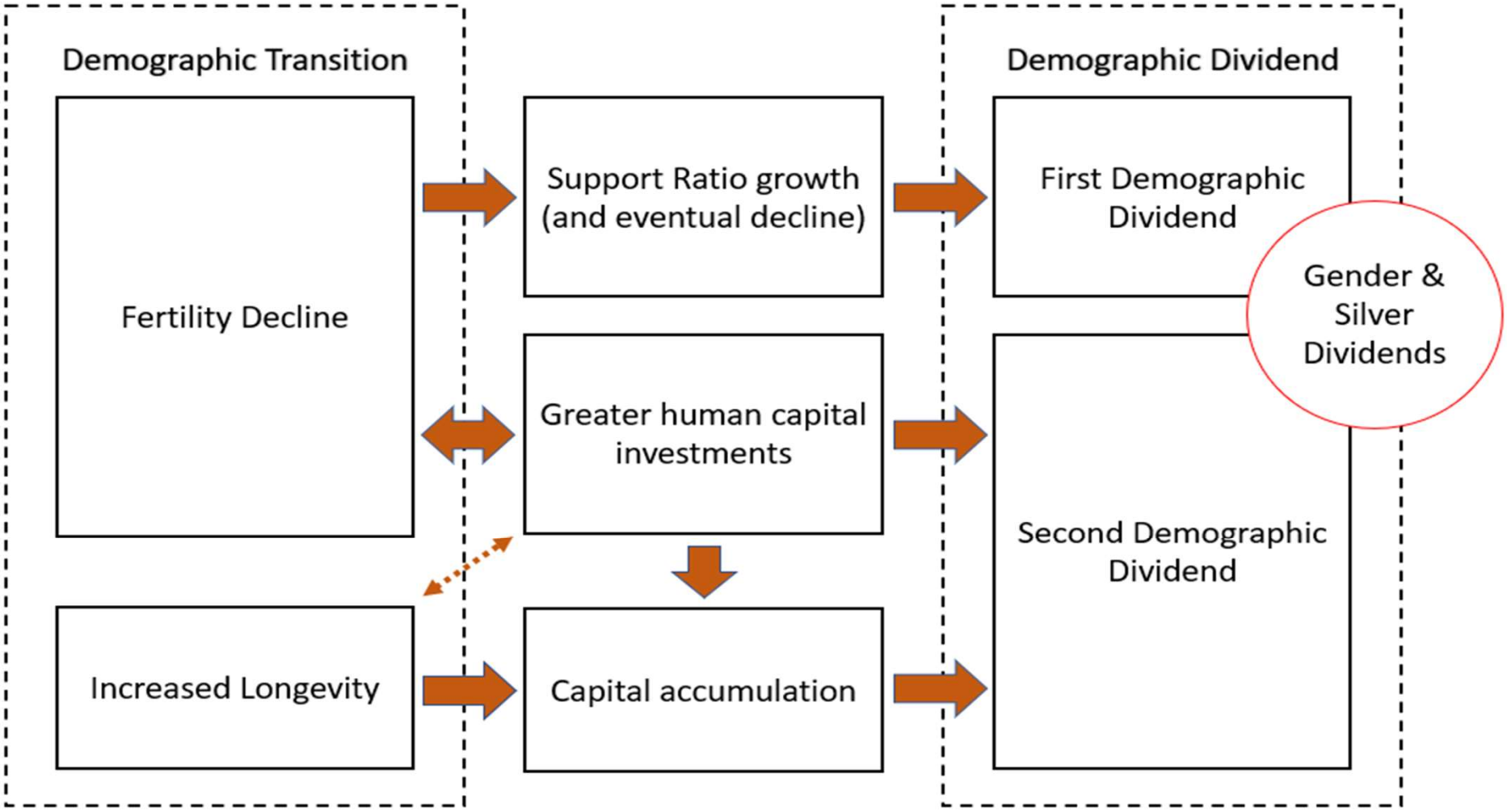


Source: Michael Abrigo, a presentation given in August 2023

Estimation of 1st and 2nd Demographic Dividends

Consumption Identity

$$\frac{C}{N} = (1-s)\frac{Y}{L}\frac{L}{N}$$

C – aggregate consumption

Y – aggregate income

s – saving rate (S/Y)

L – effective number of workers

N – effective number of consumers

Effective producers and consumers

$$L = \sum_{0}^{\omega} \frac{y_l(x)}{\overline{y}_l(30-49)} P(x)$$

$$N = \sum_{0}^{\omega} \frac{c(x)}{\overline{c}(30-49)} P(x)$$

$P(x)$ – population age x

$y_l(x)$ – per capita labor income age x

$\overline{y}_l(30-49)$ – per capita labor income age 30-49

$c(x)$ – per capita labor income age x

$\overline{c}(30-49)$ – per capita consumption age 30-49

Two Dividends

Channel for first dividend:
Increase in the support ratio (L/N) holding other factors, saving and income per effective worker, constant.

$$\frac{C}{N} = (1-s)\frac{Y}{L}\frac{L}{N}$$

Two Dividends

$$\frac{C}{N} = (1-s)\frac{Y}{L}\frac{L}{N}$$

Channel for second dividend:
Changes in saving and capital per effective worker influence income, from labor and assets, per effective worker.

Source, Andrew Mason and Ron Lee, 2013. Demographic Dividend Working Group, a presentation given in Barcelona

1st and 2nd Demographic Dividend

- The 1st dividend will vary in the future due to
  - Demography: the speed and timing
  - Labor patterns of workers, esp. older workers or women as productive workforces
  - Spending patterns of elderly vs. younger people

- Population aging also leads to a 2nd dividend
  - To fund the old-age consumption in excess of labor income, individuals must accumulate lifecycle wealth
  - Asset-based reallocation leads to increase in capital per worker
  - Higher per child spending on health and education – capability to invest better on human capital development of young people during 1st dividend

Source: Sang-Hyop Lee, 2022

Public policy can influence dividends, fiscal sustainability, and also inequality through each channels (1)

- Labor patterns
  - Utilizing female, youth, and elderly labor force
  - Increasing productivity (via effective education, health investment and training)
  - Improving the school to work transition
  - Improving the work to retirement transition
    - Raise or eliminate mandatory retirement policies
    - Address low productivity of older workers through continuing education programs and employment practices
  - Encouraging saving and investment to create employment

Source: Sang-Hyop Lee, a presentation for UNFPA Asia-Pacific ROUsing the National Transfer Accounts (NTA) for Intergenerational Policy Advancement, 5 Oct 2021,

Public policy can influence dividends, fiscal sustainability, and also inequality through each channels (2)

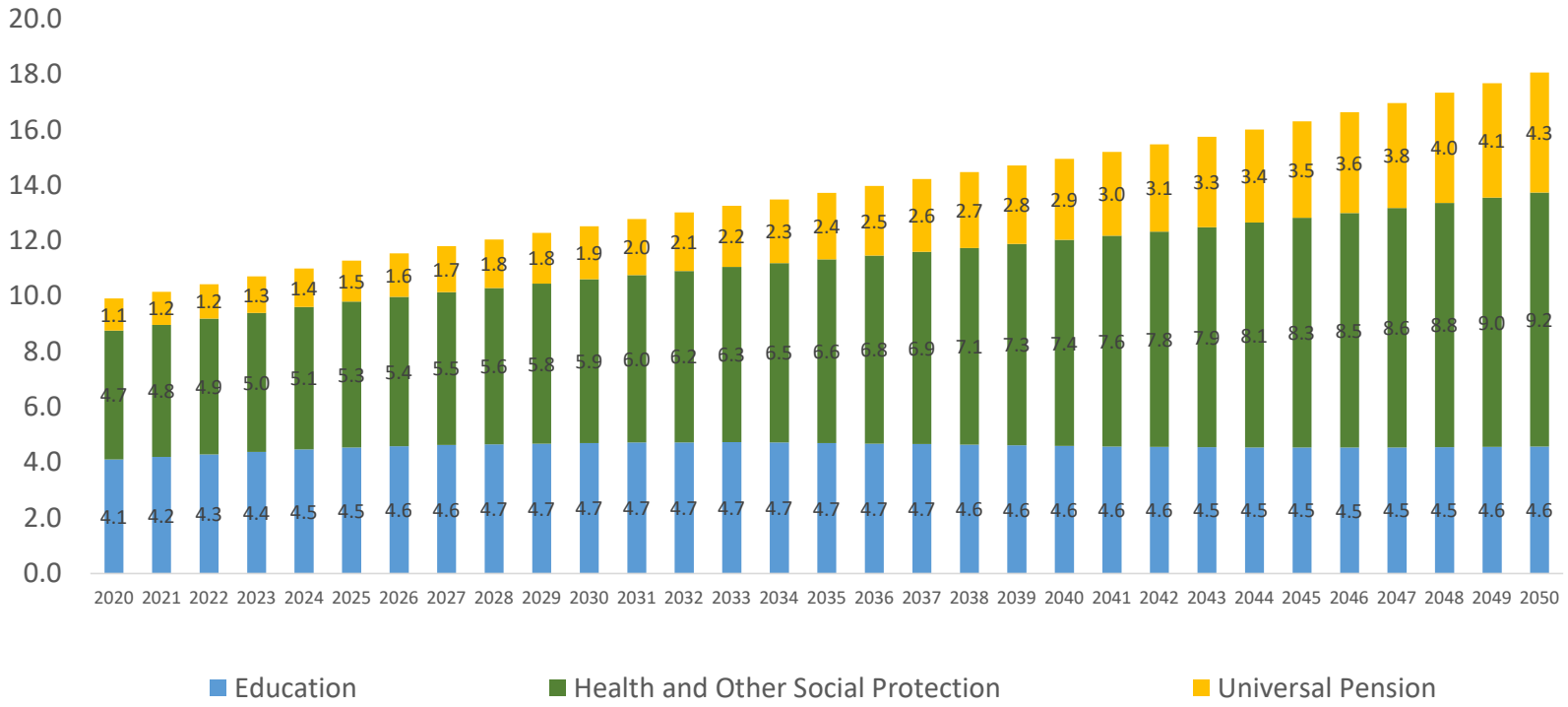
- Consumption patterns
  - Achieving efficiency of spending on education and health including long-term care
  - As health improves, spending on young elderly for health and retirement could be reduced
  - Avoiding excess reliance on transfers to support consumption
- The aforementioned policies, i.e., improving education and health, utilizing female, youth, and elderly labor force, avoiding excess reliance on transfers can also contribute to achieving equity.

Source: Sang-Hyop Lee, a presentation for UNFPA Asia-Pacific ROUsing the National Transfer Accounts (NTA) for Intergenerational Policy Advancement, 5 Oct 2021,

- Are current government programs fiscally sustainable?

- How has the intergenerational economy changed over time?

Even WITHOUT increase in per capita government transfers, social spending rapidly increases due to population aging (the case of Maldives)



Source: Sang-Hyop Lee, 2022. NTA report for UNFPA Maldives,

NTA and fiscal sustainability

How do demographic changes affect “fiscal sustainability”?

When the population structure changes with an increasing proportion of older persons and a decreasing birth rate, it is anticipated that the future will see a decline in taxpayers, primarily from the working-age group. Meanwhile, the number of beneficiaries of public services and social welfare, such as pensions and healthcare is expected to rise. This trend may lead to risks and long-term fiscal challenges for the country

Source: UNFPA Asia-Pacific Office, forthcoming. NTA Digital Booklet

Forthcoming work on NTA by UNFPA Asia-Pacific Regional Office

Capacity development

Advocacy and awareness raising