Potential applications of NTA in Singapore

• **Fiscal:** Evaluate the country’s fiscal sustainability in view of the ageing population and changing household structure:
  – Assess the sustainability of public and private finances
  – Assess impact of social policies on intergenerational transfers and public-private expenditure (e.g. impact of new initiatives such as the Silver Support Scheme on private transfers)

• **Manpower:** Investigate the effects of changing manpower policies, such as extending retirement age or changing LFPRs on the economic life-cycle and economic dependency; education policies and life-long learning.

• **Economic:** Model the effects of different economic/LF growth models on fiscal sustainability and economic dependency
Methodology

• Income – Consumption = Lifecycle deficit

• Lifecycle deficit = Private and public transfers + Private and public asset based reallocations

• Obtain age-specific profiles for income, consumption, transfers and asset based reallocations
  – Consumption and transfers by type (health, education, housing, pensions)

• Map to national aggregates for income
  – Adjust to population subsets (Singapore resident, SCs only)
  – Issues in development: Small, open economy; large GDP contribution from non-indigenous sources
Data sources

• Data from publicly available sources including MOF Budget websites and Department of Statistics (DOS)
  – E.g. DOS’ 2012/2013 Household Expenditure Survey
  – Singapore’s System of National Accounts data 2013

• All other data are author’s own estimates
Measuring economic flows across age groups

Economic life-cycle of Singapore residents, 2013

Resident per capita values, local currency

- Consumption
- Labour income

Resident aggregate values, local currency '000s

- Consumption
- Labour income
The lifecycle deficit (LCD)

Per capita economic life-cycle by age, Singapore residents, 2013

Residents per capita values, normalised to average labour income 30-49 years

- Total cost (LCD) of raising child from birth to age 23 was **9.2 years** of labour by a prime-age (30-49 year old) adult.
- Total cost (LCD) of supporting elderly surviving past 65 years is **11.8 years** of labour by a prime-age (30-49 year old) adult.
- Total surplus (labour income less consumption) of those aged 24-60) is equivalent to **13.0 years** of labour by a prime-age (30-49 year old) adult.
Age reallocations

Singapore resident population: age reallocations 61-85+
The Demographic Dividend in Singapore

Economic Support ratio

- First demographic dividend: +2.9% points per annum to GDP per capita
- Unwinding of first demographic dividend due to ageing: -1.5% points per annum to GDP per capita
Demographic dividend decomposition: migration

Economic support ratio: by place of birth (1970-2010)
Singapore’s Educational Dividend

% of working age population with tertiary qualifications: 53%

% of 65+ population with tertiary qualifications: 10%

2016
First and second demographic dividends

Modified second DD with projected educational dividend

-2.9% -0.3% 0.5% -2.9% -0.3% -0.3% 0.5% -2.9% -0.3% -0.3% 0.5% -2.9% -0.3% -0.3% 0.5% -2.9%

Second dividend  First dividend


-0.3% -0.7% -0.6% 4.9% 2.4% 3.0% 3.2% 3.5% 2.0% 1.5% 0.1% 0.5% -0.4% -0.3% -0.3% -0.3%
Human capital investment and TFR

Trade-off between human capital spending and fertility

Source: NTA Bulletin 8 (Figure 3)

Note: Lifetime human-capital spending per child is a synthetic cohort measure constructed by cumulating per capita health spending from ages 0–17 and per capita education spending from ages 3–26. To enable international comparisons, the values are expressed as a percentage of the average annual labor income of adults age 30–49 in each economy.
Fiscal sustainability
Next steps

• Approvals for publication of our NTA 2013 results for Singapore resident population
• Application for NTA Network membership
• Peer-review of SG NTA 2013
• NTA by highest education attained
• NTA by place of birth
• NTA by gender
• NTA for 2017/18
• National Time Transfer Accounts for 2017/18
ENGAGING MINDS, EXCHANGING IDEAS

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