Notes

Suggested citation: NTA Network (2024) *NTA Indicators* accessed on [date], www.ntaccounts.org.

These NTA indicators quantify the direct effect of changes in population size and age structure on selected macroeconomic measures. The indicators are constructed combining population projections with age profiles of consumption and labor income for 181 countries. The age profiles of economic variables are held constant over the simulation and, hence, all changes are due to shifts in the number of people at each age.

The consumption and labor income profiles are constructed following the methods described in Lee and Mason (2011) and UN (2013). Labor income by age includes earnings and an estimate of the value of work by the self-employed and unpaid family workers. It incorporates age variation in labor force participation, hours worked, unemployment, and wages. Consumption includes all public and private consumption allocated to individuals and the age groups to which they belong. Estimates of the NTA age profiles are currently available for approximately 60 countries. The age profiles for other countries were constructed using methods described in Mason, Lee, et al (2017).

All age profiles have been estimated for a recent year in the local currency of the country in question. Values were deflated (inflated) to 2010 and then converted to 2010 PPP dollars using deflators and exchange rates from the World Bank Development Indicators.

Values for regional groups and income groups were constructed from the 181 country sample. Counts and monetary values are summed over the countries within each group. These are then used to calculate country group estimates of indicator ratios and growth rates.

Population estimates and projections by single year of age from 1950 to 2100 are taken from the United Nations World Population Prospects 2022, medium variant.

Changes and percentage changes in the indicators are all centered five-year moving averages.

Key Indicators

Support ratio: Effective workers as a percentage of Effective consumers.

Demographic dividend: Rate of growth of per capita income due to combined effect of first and second dividend.

Pension wealth/Total labor income: Pension wealth as a percentage of total labor income.

Age Structure Indicators

Support ratio: Effective workers as a percentage of Effective consumers.

Child GAP ratio: Gap between consumption and labor income of persons aged 0-24 as a percentage of total labor income. Source: Mason and Lee (2018)

Old-age GAP ratio: Gap between consumption and labor income of persons aged 65 and older as a percentage of total labor income. Source: Mason and Lee (2018)

GAP ratio: Gap between consumption and labor income as a percentage of total labor income. Source: Mason and Lee (2018)

Mean age of population: Average age of the population.

Mean age of consumption: Central age of the aggregate age profile of consumption.

Mean age of labor income: Central age of the aggregate age profile of labor income.

Longitudinal support ratio: Present value of prospective lifetime effective years of working as a percent of the present of prospective lifetime effective years of consuming.

Demographic Dividend Indicators

First dividend: Rate of growth of per capita income due to growth of the support ratio in percent.

Second dividend: Rate of growth of per capita income due to capital deepening.

Demographic dividend: Rate of growth of per capita income due to combined effect of first and second dividend.

First dividend index: Cumulative effect of first dividend on per capita income relative to value in 1970.

Second dividend index: Cumulative effect of second dividend on per capita income relative to value in 1970.

Demographic dividend index: Cumulative effect of first and second dividend on per capita income relative to value in 1970.

Consumption and Labor Income Indicators

Consumption: Product of the per capita consumption at each age and the estimated or projected population of that age accumulated across age. Base year age profile of consumption is assumed to shift by 1.5 percent per year.

Labor income: Product of the per capita labor income at each age and the estimated or projected population of that age accumulated across age. Base year age profile of labor income is assumed to shift by 1.5 percent per year.

Consumption per capita: Consumption divided by population.

Labor income per capita: Labor income divided by population.

Population Counts

Population: UN estimates and projections (medium fertility variant) based on World Population Prospects 2017.

Effective consumers: Consumption weighted sum of population by age. Weights are equal to per capita consumption at age x relative to per capita consumption of persons 30-49.

Effective workers: Labor income weighted sum of population by age. Weights are equal to per capita labor income at age x relative to per capita labor income of persons 30-49.

Wealth Indicators

Pension wealth: Present value of consumption less present value of labor income over the remaining lives of all persons in the pre-retirement phase or older. Age profiles of consumption and labor income are assumed to grow at 1.5 percent per year. A discount rate of 3 percent (real) is used to calculate the present value. Pre-retirement phase begins at age for which pension wealth turns positive, typically 45 years of age.

Pension wealth per capita: Pension wealth divided by population.

Pension wealth/PVC at pre-retirement phase and older: Pension wealth as a share of the present value of future lifetime consumption for those in the pre-retirement and retirement phases of their lifecycles.

Pension wealth/Total labor income: Pension wealth as a percentage of total labor income.

Sources

Ronald Lee and Andrew Mason, lead authors and editors, 2011. *Population Aging and the Generational Economy: A Global Perspective* (Cheltenham, UK and Northampton, MA: Edward Elgar).

Andrew Mason and Ronald Lee 2017 "Intergenerational Transfers and the Older Population" Workshop on Future Directions for the Demography of Aging, National Academy of Sciences, Washington, DC, August 17-18.

Andrew Mason, Ronald Lee, Michael Abrigo, and Sang-Hyop Lee 2017 “Support Ratios and Demographic Dividends: Estimates for the World” United Nations Department of Economic and Social Affairs, Population Division, Technical Paper No. 2017/1. <https://www.un.org/en/development/desa/population/publications/pdf/technical/TP2017-1.pdf>

United Nations, Department of Economic and Social Affairs, Population Division, 2013 *National Transfer Accounts Manual: Measuring and Analyzing the Generational Economy* (New York, NY, United Nations).