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## Sharing the demographic dividend: Findings from low- and middle- income countries in Asia

All over Asia, people are having fewer children and are living longer. As a result, populations throughout the region are growing older.

During the early stages of this demographic transition, working-age men and women make up a relatively large proportion of the population compared with a small elderly population and a shrinking population of dependent children. This change in population age structure ushers in a period of accelerated economic growth termed the “first demographic dividend.” With fewer children, families and governments have more resources to raise standards of living, care for and educate each child, and invest in the economy.

Eventually, the small population of children reaches working age, while the large population of workers moves into retirement. At this stage, earlier investments in health, education, and physical capital can help maintain economic growth, based on a smaller, but more productive workforce. This “second demographic dividend” can be powerful and long lasting.

By providing estimates of labor income and consumption at every age, the National Transfer Accounts (NTA) project helps measure the economic impact of changes in population age structure throughout the demographic transition. In 2014, the East-West Center (EWC) and the Asia Pacific Regional Office of the United Nations Population Fund (UNFPA APRO) launched a project to expand and update NTA analysis for 15 low- and middle-income countries in Asia. The project includes national teams in Bangladesh, Cambodia, China, India, Indonesia, Iran, Lao People's Democratic Republic (PDR), Malaysia, the Maldives, Mongolia, Nepal, the Philippines, Thailand, Timor-Leste, and Vietnam.

In addition to measuring the economic effects of population aging, recent work by NTA teams sheds light on how both the contributions and benefits associated with the demographic dividend are shared—among age groups, between genders, among income groups, and between urban and rural residents. Better insights into these distributional issues can help policymakers maximize the potential of demographic change to stimulate economic growth and reduce the disparities among population groups.

## How will population change affect economic growth?

NTA assesses the potential for an economy to enjoy a demographic dividend by measuring changes in the “support ratio”—the number of “effective workers” relative to the number of “effective consumers.” To estimate the number of effective workers and effective consumers, individuals at each age are weighted by their labor income and consumption relative to individuals in the prime working-age group of 30–49.

Thus, people at age 50 might, on average, earn more than people in the prime working-

age group, so that each of them counts as more than one effective worker. By contrast, a young adult age 20 and an elderly person age 70 are both likely to earn considerably less than a person age 30–49, so each would count as less than one effective worker. The number of effective consumers is estimated in the same way, based on age-specific levels of consumption.

The support ratio is then calculated in terms of the number of effective workers as a percentage of the number of effective consumers. A support ratio of 50, for example, means that 50 workers are, on

average, supporting 100 consumers—themselves plus 50 others. When the support ratio is rising, effective workers are supporting fewer effective consumers, freeing up resources to raise consumption, saving, and investment. This is the first demographic dividend.

Among countries participating in the EWC/UNFPA project, support ratios in 2015 ranged from higher than 60 in Cambodia, Vietnam, and Thailand to lower than 50 in Timor-Leste and Nepal (Table 1). Between 2015 and 2035, support ratios are predicted to rise in 10 project countries—Bangladesh, India, Indonesia, Iran, Lao PDR, Malaysia, the Maldives, Nepal, the Philippines, and Timor-Leste.

Then, between 2035 and 2055, the support ratio will rise in only three countries—Indonesia, Lao PDR, and Timor-Leste. For the other countries, the first demographic dividend will be over. They may still enjoy a second demographic dividend, however, based on sound investments in physical capital and a productive workforce.

## Are children and the elderly benefitting from economic growth?

NTA data on per capita consumption at every age shed light on the economic resources directed toward children and the elderly compared with resources enjoyed by the working-age population. The data also single out consumption of education and healthcare, providing a measure of each country’s investment in the next generation of workers.

Differences in the distribution of resources among age groups are striking (Figure 1). Consumption by children relative to consumption by prime-age adults is particularly high in China, the Republic of Korea (KOR), and Taiwan Province of China (TWN) (right of figure) and particularly low in India, Cambodia, and the Philippines (at the left). Per capita consumption by the elderly relative to consumption by prime-age adults is particularly high in Japan (JPN) and the Maldives (top of figure) and particularly low in Lao PDR and Vietnam (at the bottom).

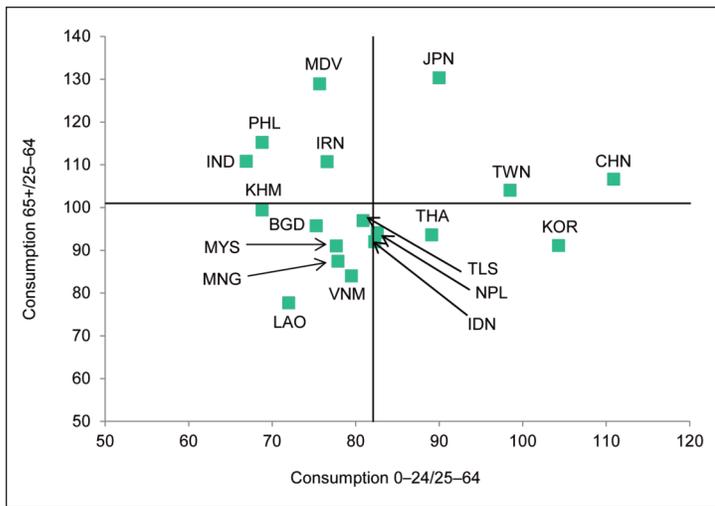
**Table 1. Support ratio in 2015, estimated annual change (%) in the support ratio for 2015–2035 and 2035–2055, and human-capital spending in various base years for 15 countries in Asia.**

Country and base year for NTA data	Support ratio, 2015 (number of effective producers per 100 effective consumers) <sup>a</sup>	Estimated annual change in support ratio (%)		Human-capital spending (% of average annual labor income of a prime age (30–49) adult) <sup>b</sup>
		2015–2035	2035–2055	
Bangladesh (BGD) 2010	58	0.38	–0.25	145
Cambodia (KHM) 2009	69	–0.02	–0.28	194
China (CHN) 2007	53	–0.93	–0.65	378
India (IND) 2004	56	0.29	–0.11	175
Indonesia (IDN) 2012	57	0.13	0.01	431
Iran, Islamic Republic of (IRN) 2011	54	0.46	–0.53	321
Lao People’s Democratic Republic (LAO) 2012	53	0.67	0.14	154
Malaysia (MYS) 2009	55	0.33	–0.33	316
Maldives (MDV) 2010	55	0.1	–1.23	183
Mongolia (MNG) 2014	56	–0.38	0.11	349
Nepal (NPL) 2011	45	0.98	–0.24	146
Philippines (PHL) 2011	55	0.13	–0.02	167
Thailand (THA) 2011	61	–0.46	–0.49	503
Timor-Leste (TLS) 2015	34	0.53	0.95	231
Vietnam (VNM) 2012	64	–0.58	–0.44	229

Source: Calculated from NTA data.

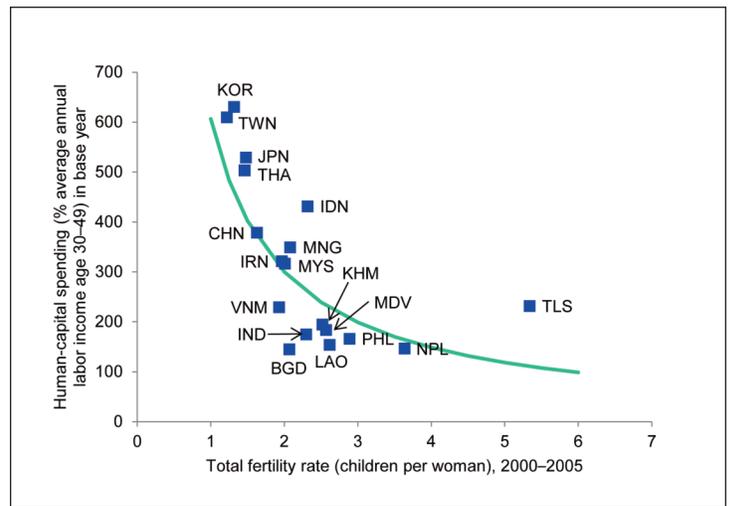
<sup>a</sup>The effective number of producers sums the population in each one-year age group, weighted to incorporate age differences in employment and productivity estimated for the base year. The effective number of consumers sums the population in each one-year age group, weighted to incorporate age differences in consumption estimated for the base year. Weights of consumption and labor income are kept constant.

<sup>b</sup>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.



**Figure 1. Per capita consumption by children (age 0–24) and the elderly (age 65+) expressed as a percent of per capita consumption by adults age 25–64.** The simple average values for consumption by children and the elderly in all 18 countries divide the figure into four quadrants. Data points to the left of the vertical line indicate lower than average consumption by children. Data points below the horizontal line indicate lower than average consumption by the elderly. See Table 1 and text for economy designations and base years.

Source: Calculated from NTA data.



**Figure 2. Tradeoff between human-capital spending and fertility.** 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. See Table 1 and text for economy designations and base years.

Source: Human-capital spending calculated from NTA data; total fertility rate from United Nations, Department of Economic and Social Affairs, Population Division (2017). *World population prospects: The 2017 revision*. <https://esa.un.org/unpd/wpp/DataQuery/>. Accessed 26 October 2017.

A comparison of human-capital spending with fertility rates (Figure 2) shows that societies with lower fertility tend to spend more on the health and education of each child. Seven countries in the region spend less on children’s health and education than would be expected, given their fertility rates—Bangladesh, India, Lao PDR, the Maldives, Nepal, the Philippines, and Vietnam. In addition to Asia’s advanced economies (Republic of Korea, Taiwan Province of China, and Japan), human-capital spending on children’s health and education is particularly high in Thailand, Indonesia, and Timor-Leste given their fertility levels in 2000–2005.

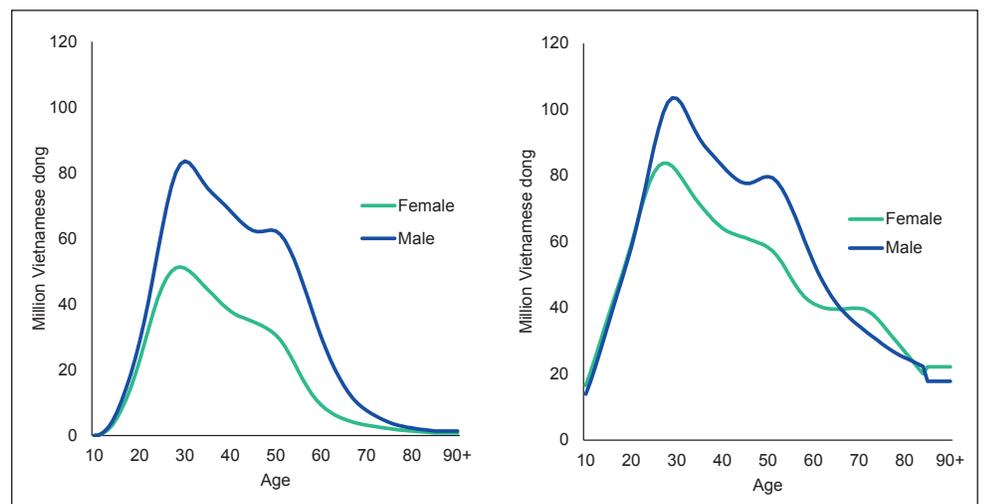
### What is the full economic contribution of women?

Standard measures of labor income fail to take into account a great deal of unpaid work—work that is most often performed by women. Such work typically includes care of children and other family members plus cooking, cleaning, and other types of housework.

NTA teams in several countries are estimating the value of this unpaid work by

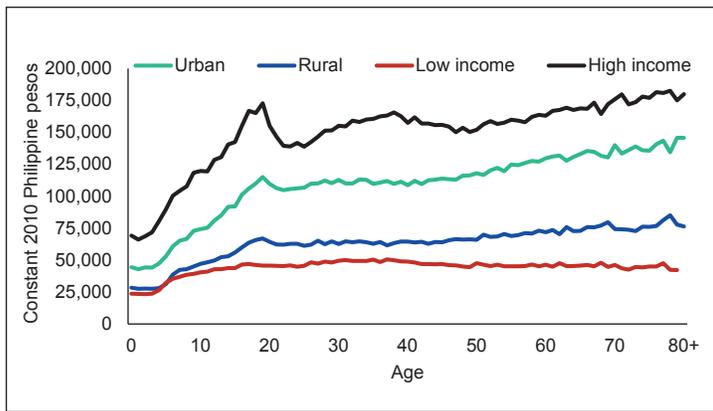
measuring the time spent on each household task, as recorded in time-use surveys, and multiplying the time spent by the average wage for the same type of work in the labor market. In Vietnam, for example, when the value of paid and unpaid work is added together, women’s full labor contribution is shown to be much closer to men’s than if

market work is considered alone (Figure 3). Such analysis makes it possible to measure women’s full contribution to the economy, assess the potential barriers that household responsibilities pose for women’s education and careers, estimate the “hidden” costs of children, and track progress toward greater gender equality.



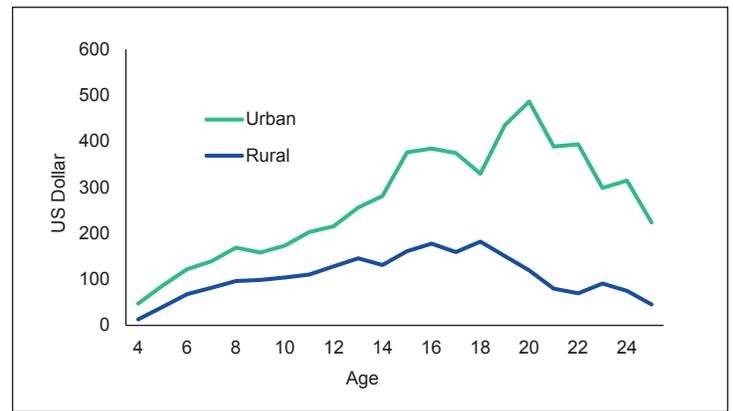
**Figure 3. Per capita labor income by gender omitting (left) and including (right) the value of unpaid care and housework, Vietnam, calculated from data for 2012 and 2015.**

Source: Income from market labor is derived from NTA data for 2012; income from household labor is derived from the Vietnam Time-Use Survey of 2015.



**Figure 4. Annual per capita consumption by place of residence and income group, Philippines, 2011.**

Source: Calculated from NTA data.



**Figure 5. Annual per capita spending on education by place of residence, Timor-Leste, 2014–2015.**

Source: Calculated from NTA data.

### How are the benefits of economic growth distributed by residence and income group?

NTA teams in some countries have estimated consumption rates by age group in urban and rural areas and among high- and low-income groups. Results from the Philippines (Figure 4) are typical for many countries. As expected, per capita consumption in 2011 was higher among Filipinos who had high incomes and who lived in urban areas.

Breaking down this finding by age adds some interesting insights. Among young people, consumption spikes at ages 17–19 for those in the high-income group, reflecting expenditure for secondary and college education. There is a similar, but much less pronounced, consumption spike for urban adolescents, but very little or no spike for adolescents who are poor or who live in rural areas, suggesting that these young people are not benefiting from the investment in education that could

make them more productive workers in the future.

Similar differences are observed among the elderly. For Filipinos who have high incomes or live in urban areas, consumption rises steadily with age, reflecting rising spending on healthcare. The rise is much smaller for the elderly in rural areas, and there is no consumption rise at all for the elderly who are poor.

Similar to the pattern in the Philippines, spending on education in Timor-Leste varies widely between urban and rural areas (Figure 5). Annual per capita consumption of education peaks at US\$486.4 among 21-year-olds who live in urban areas, two and one-half times higher than the peak of US\$181.9 for 19-year-olds in rural areas.

### Some implications for policymakers

Projected changes in the support ratio (Table 1) indicate that 10 low- and middle-income countries in Asia will enjoy a first

demographic dividend over the next 18 years, while for five countries the first dividend years are coming to a close. Over the following 20 years, this special demographic boost to economic growth will come to an end almost everywhere in the region.

Policies to improve the productivity of the workforce can help take advantage of the demographic dividend and promote economic growth in the longer term. Investment in the health and education of children is critical, particularly children in low-income households and rural areas who will become a large proportion of tomorrow's workforce.

Programs that help women combine household and childcare duties with education and careers provide another boost to economic growth. And finally, policies that facilitate saving and investment by today's workers will help assure an adequate level of consumption for tomorrow's expanding elderly population.



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