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Demographic changes in Bangladesh - Trends and policy implications

Successes of Bangladesh

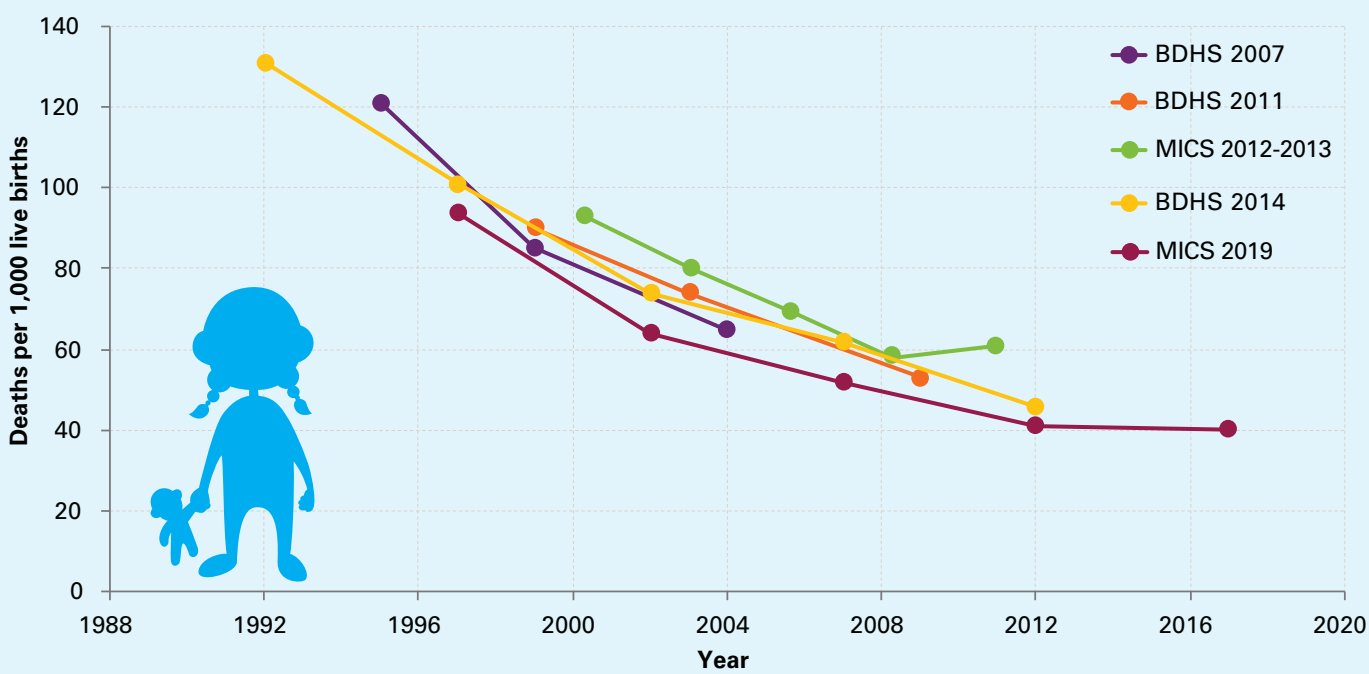
Bangladesh made great strides in socioeconomic development over the last few decades. One of the most notable indicators of that is a rapid reduction of the mortality of children under five years of age (under-five mortality [U5MR]). Between 1992 and 2019, U5MR of Bangladesh has declined from 121 to 40 per 1,000 live births – a reduction of 67 per cent in 27 years (Figure 1).

This reduction of young children's mortality rate, coupled with the success of family planning programme, also resulted in a rapid and consistent reduction of fertility rate. The total fertility rate (i.e. average number of children that a woman of reproductive age of 15 to 49 years gives birth to) decreased from 6.3 in 1975 to 2.3 in 2019 (Figure 2).

This shift from a high mortality and high fertility society to a low mortality and low fertility society is called "demographic transition". It is definitely a positive development and a great achievement for Bangladesh – since an alternative scenario would have been a continuation of high mortality and high fertility rates. Had the latter been a case, it would have resulted in the continuation of widespread poverty – a phenomenon which was called as "population explosion" in 1960s and 1970s and was very much feared for many developing countries including Bangladesh.

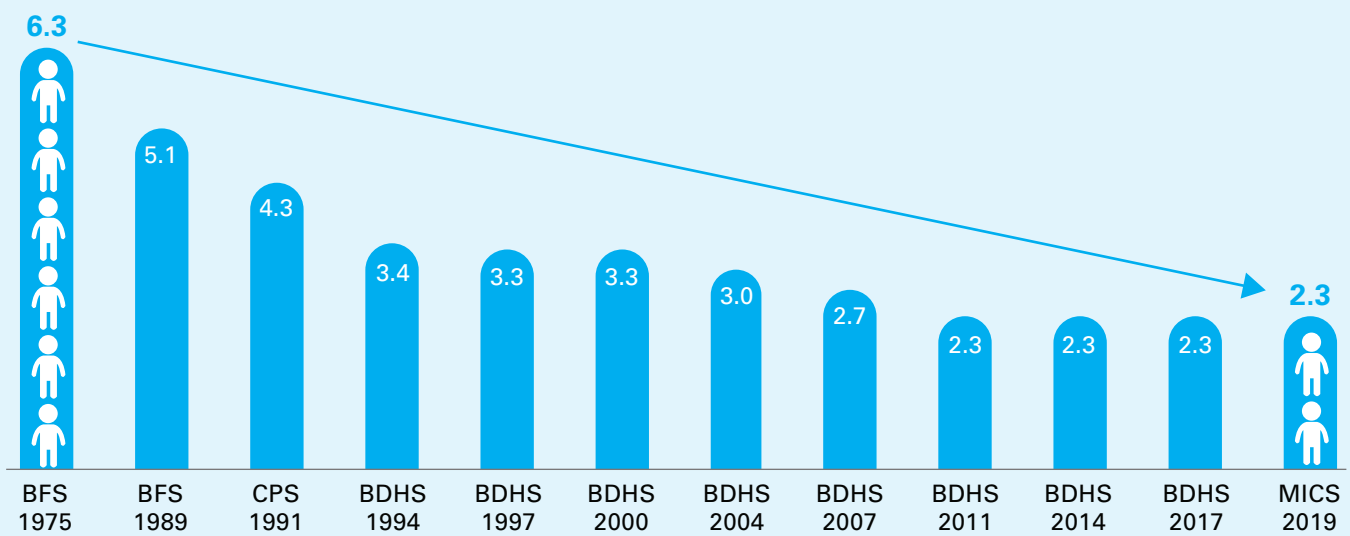
The shift from a high mortality and high fertility society to a low mortality and low fertility society is a positive development and a **great achievement for Bangladesh**

Figure 1: Trend of under-5 mortality rates in Bangladesh



Sources: Bangladesh Demographic and Health Survey 2007, 2011, 2014; Multiple Indicator Cluster Survey 2012-13, 2019

Figure 2: **Total fertility rates, Bangladesh - 1975-2019**



Sources: BFS Bangladesh Family Planning Survey; BDHS Bangladesh Demographic and Health Survey; Multiple Indicator Cluster Survey (MICS)

Next challenge

At the same time, this quick shift from a high mortality and high fertility society to a low mortality and low fertility society means that the age structure of the country's population has been changing very rapidly. Figure 3a shows the actual and projected shapes of population pyramid of Bangladesh in 1980, 2015 and 2050.

In 1980, the age-wise population structure of Bangladesh was indeed in a "pyramid" shape though there was a dent in the middle due to excess mortality of particular age groups during the country's War of Independence in 1971.

As of 2015, the shape of the age-wise population structure could still be overall described as a pyramid. At the same time, there was already a dent at the bottom of the pyramid, showing that the number of children who are born started to decline.

By 2050, the shape of the projected age-wise population structure will no more be in a pyramid shape but very top-heavy. This change is what some demographers call a shift from a "pyramid" to a "kite". The shape of the age-wise population structure in 2050 clearly shows that a substantially smaller proportion of working-age population will need to support much larger proportion of older dependent population than today for the society as a whole.

For comparison, the change of population pyramid of Japan – one of the fastest aging societies in the world – is shown in Figure 3b. In the case of Japan, the shape was almost a complete pyramid in 1950 but then became mid-heavy by 2005. By 2055, it is projected to be completely top-heavy. Although it is not as extreme as the case of Japan, the basic shape of the population pyramid of Bangladesh will become much more similar to that of Japan by 2050s than today, suggesting that Bangladesh will face similar challenges that countries like Japan have been trying hard to address in the last few decades, i.e. implications of population aging.

Figure 3a: Population pyramid of Bangladesh, by age-group

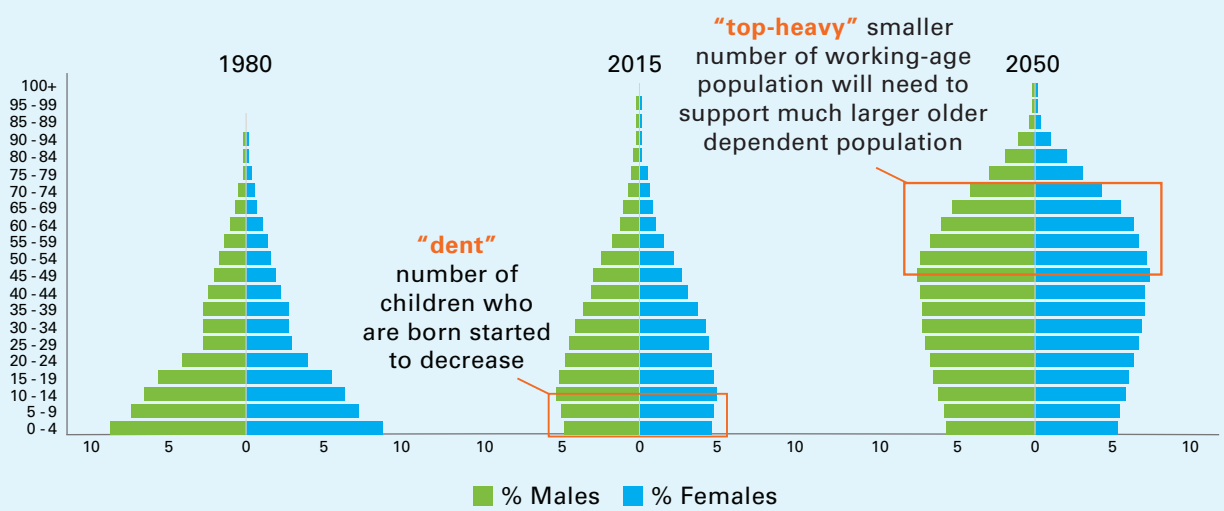
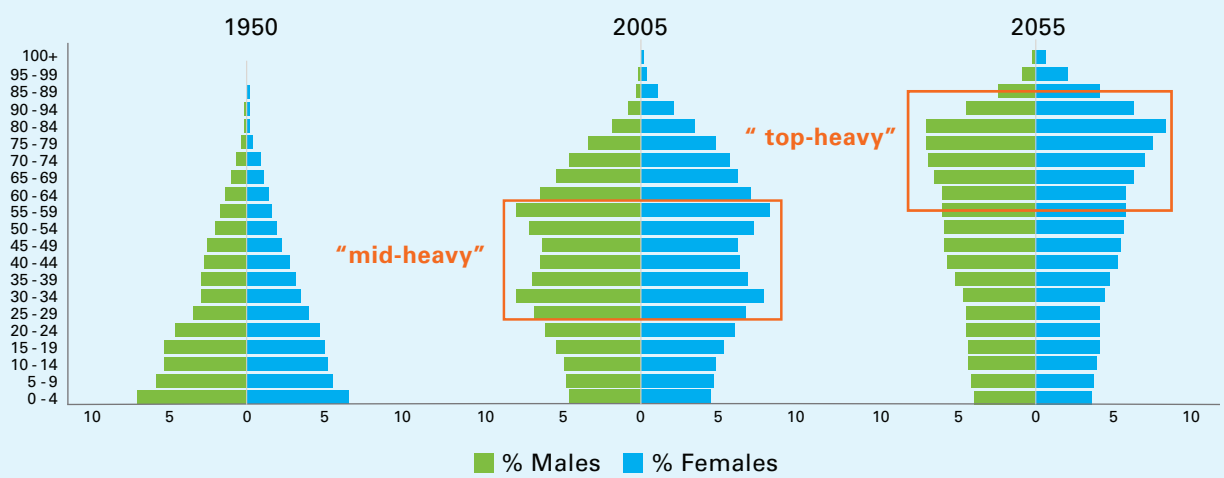


Figure 3b: Population pyramid of Japan, by age-group



Source: United Nations: World Population Prospects 2019

Rapid aging of the population

Internationally, population aged 0 to 14 years is called "junior dependent population". Similarly, the population aged 65 years and above is called "senior dependent population". Those who are in-between – 15 to 64 years – are called "working age population" (Table 1).

Table 1: International standard age classification

Age Group	Term
0-14 years of age	Junior dependent population
15-64 years of age	Working age population
65 years and above	Senior dependent population

Those societies where the percentage of senior dependents accounts for 7 per cent or more of the total population is called an "aging society". When the same rate doubles (i.e. 14 per cent or more of the total population), it is called an "aged" society.

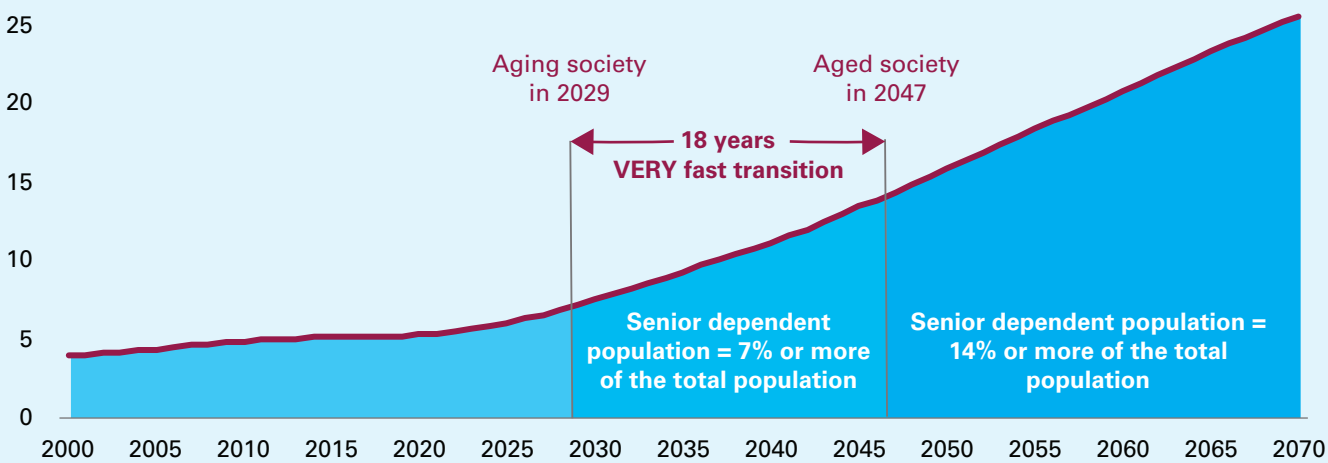
One of the ways to measure the speed of aging of different societies is to calculate the number of years taken for a society to transit from an aging society to an aged society, i.e. moving from 7 percentage point to 14 percentage points in terms of the proportion of senior dependent population aged 65 years and above in the society.

According to the above-mentioned categorization, Bangladesh will become an aging society in 2029 and an aged society in 2047 (Figure 4).

Subtracting 2029 from 2047, it gives a period of 18 years for Bangladesh to transit from an aging society to an aged society (Figure 5).

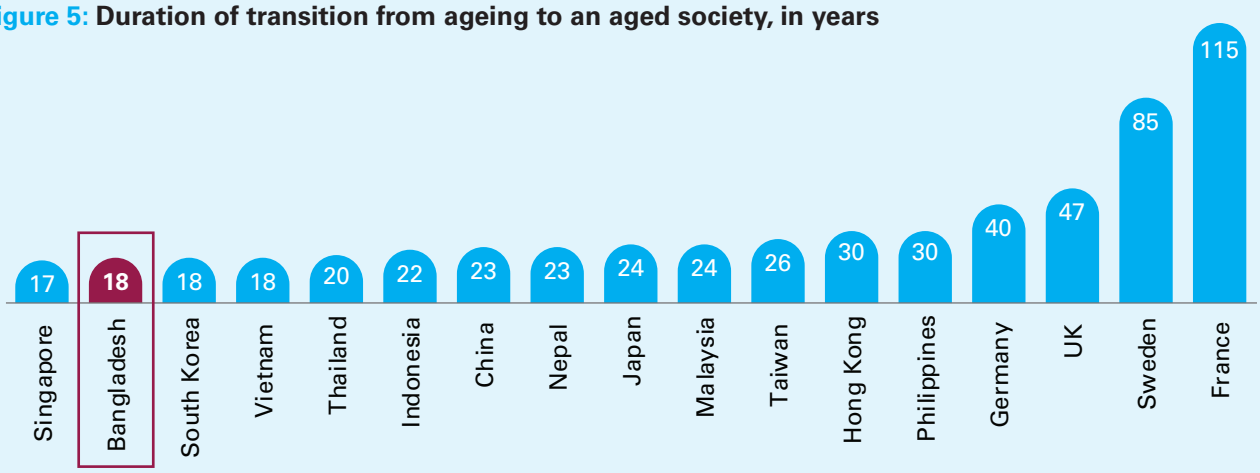
This is one of the fastest speed of aging compared with both historical (eg. France, Germany, UK and Sweden) and contemporary data of other countries. Although the age-wise population structure of Bangladesh is "young" today, the trend of population aging in Bangladesh will progress very fast in the next several decades.

Figure 4: Percentage of population aged 65 years and above, Bangladesh - 2000-2070



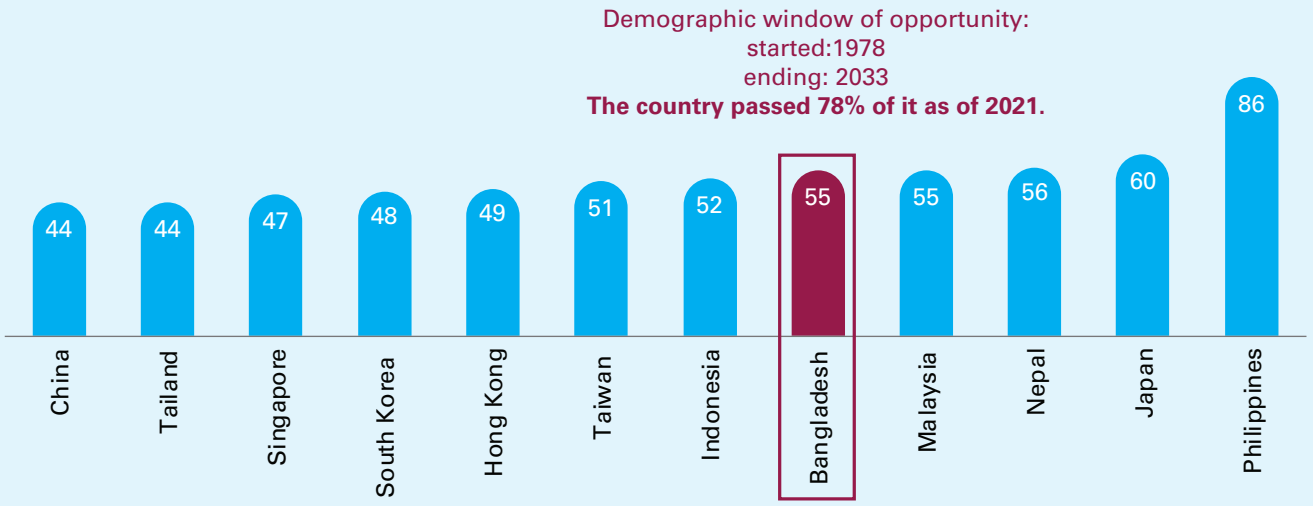
Source: United Nations: World Population Prospects 2019

Figure 5: Duration of transition from ageing to an aged society, in years



Source: United Nations: World Population Prospects 2019 and Oizumi (2013)

Figure 6: Demographic window of opportunity - Bangladesh and other Asian countries, in years



Source: United Nations: World Population Prospects 2019

Finite demographic window of opportunity

What are other implications which this rapid change of population age structure will have for the country's development?

One of them is the overall duration of the demographic window of opportunity of the country. Demographic window of opportunity is a period during which the proportion of a country's working age population aged 15 to 64 years is very prominent compared with dependent populations, i.e. junior dependent population aged 0 to 14 years and senior dependent population aged 65 years and above. In simple terms, it means that there is a more number of people who can work very productively than non-working and dependent population. Therefore, other things being equal, this is a very favorable situation for a country's economic development. In other words, it is a "sweet spot" for a country's economic development.

The duration of the demographic window of opportunity differs from one country to another depending on how it goes through its demographic transition.

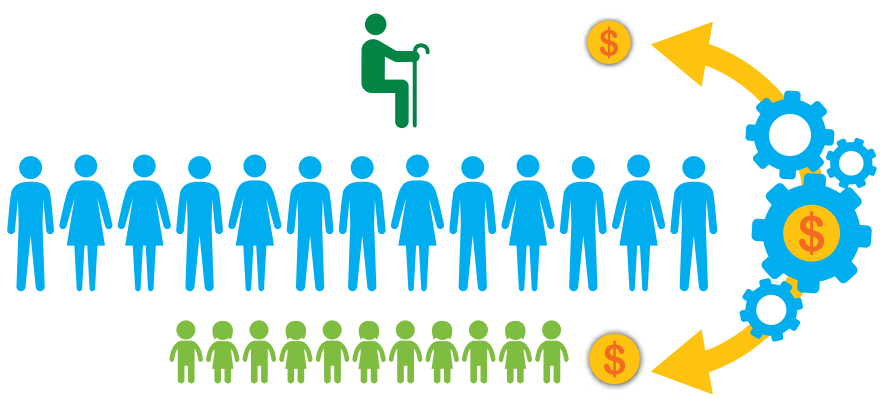
In the case of Bangladesh, the share of country's working age population aged 15 to 64 years started to increase vis-à-vis the total population in 1978. This can be defined as the beginning of its demographic window of opportunity.

Then, the share of this population is projected to start shrinking in 2033, which can be defined as the end of the country's demographic window of opportunity.

Based on this, the total duration of Bangladesh's demographic window of opportunity is calculated as 55 years. This is shorter than that of Japan – one of the fastest aging societies in the world – which had 59.5 years of demographic window of opportunity. It is also not so different from Asian "tiger economies" that have been enjoying a longer period of economic growth.

As of 2021, Bangladesh has passed 78 per cent of its demographic window of opportunity. (Figure 6).

Demographic window of opportunity is a period during which the proportion of a country's working age population is very prominent compared with dependent populations. **It is a "sweet spot" for a country's economic development but at the same time finite.**



Increasing onus of working age population

Another implication of this rapid aging of the population is a quick change of ratio between the number of working-age persons (15 to 64 years of age) and the number of senior dependent population (65 years and above).

In 1960, about 20 persons of working age were supporting one senior dependent in Bangladesh. By 2020, this ratio has reduced to roughly 13 persons of working age to one person of senior dependent age. By 2040, it will become 6 persons of working age to one senior dependent, i.e. half of today's ratio in less than two decades calculating from 2021.

Finally by 2060, it is projected that this ratio will become 3 persons of working age to one senior dependent – one-forth of today's ratio in 39 years calculating from 2021 (Figure 7). While there can be differences in the number of years to be taken depending on the data sources, the basic trend is the same.

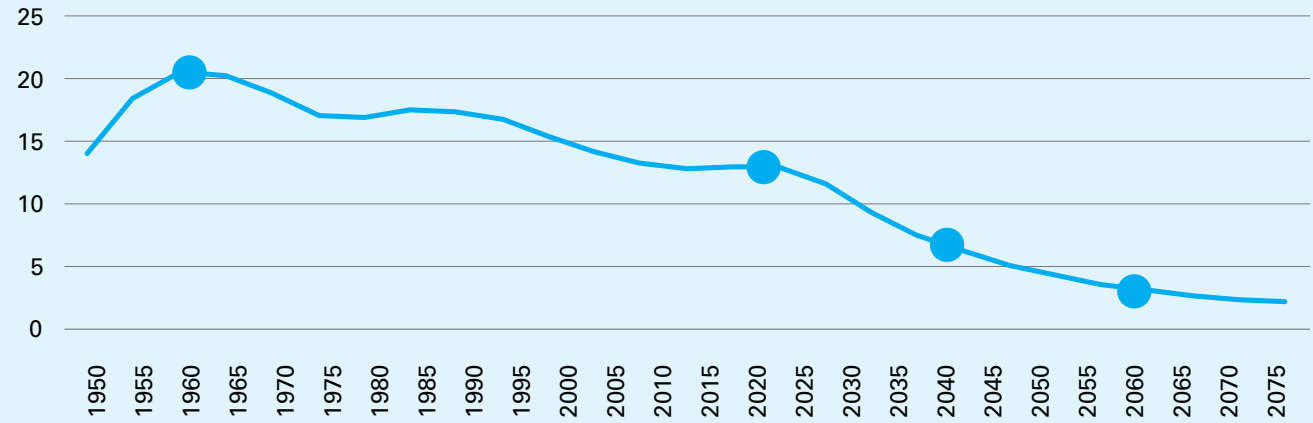
This will be possible and sustainable only if the productivity of today's children becomes much more than today's adults by the time they become adults themselves.

This in turn makes it very critical for Bangladesh to make highly prioritized and time-sensitive investments in today's children while the country's demographic window of opportunity is still open so that they can keep the society going and continue to develop the country on a sustainable basis.

To put the matter in perspective, with an increasing healthy life expectancy (i.e. years spent in good health), the situation and meaning of "old age" have also been changing substantially over time. Today, people can stay younger and more productive for a longer period of time than decades ago. Nevertheless, the speed of demographic changes mentioned in these analyses are so fast and their implications so significant that we cannot afford ignoring them.

In terms of age group-wise growth of the population, the growth rate of working age population aged 15 to 64 years has been declining since 1990s. It is projected to start decreasing in terms of absolute number as well after 2045. From now onwards, the rate of decline of the proportion of this age group is expected to be much faster than that of the total population of the country, which has also been on a declining trend but at a slower pace (Figure 8).

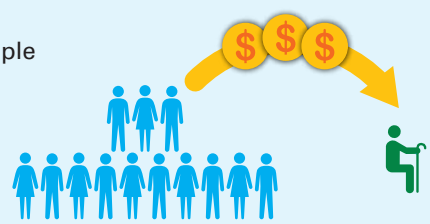
Figure 7: Number of working-age persons (15-64 years) supporting one old age person (65 years and above) in Bangladesh 1950-2075



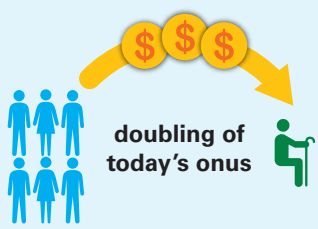
Source: United Nations: World Population Prospects 2019

1960, roughly **20** people of working age were supporting **one** senior dependent.

2020, roughly **13** people of working age are supporting **one** senior dependent.



2040, roughly **6** people of working age will need to support **one** senior dependent.



2060, roughly **3** people of working age will need to support **one** senior dependent.

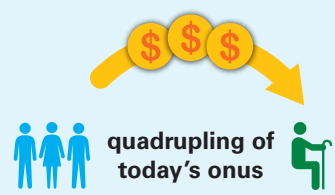
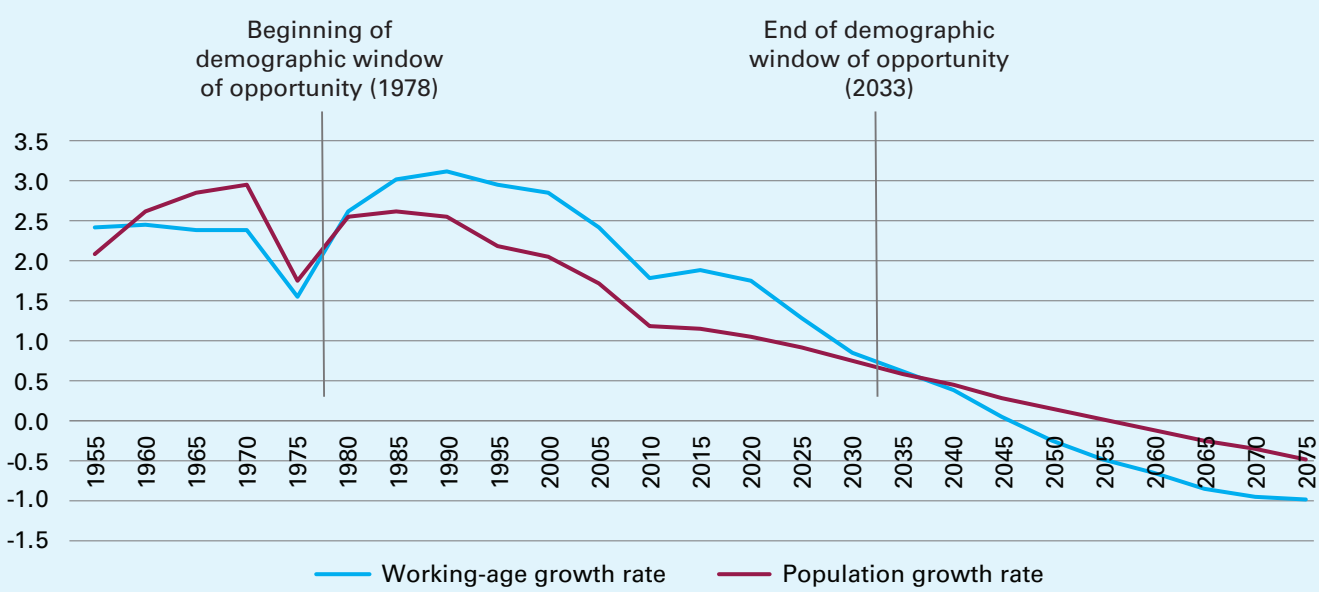
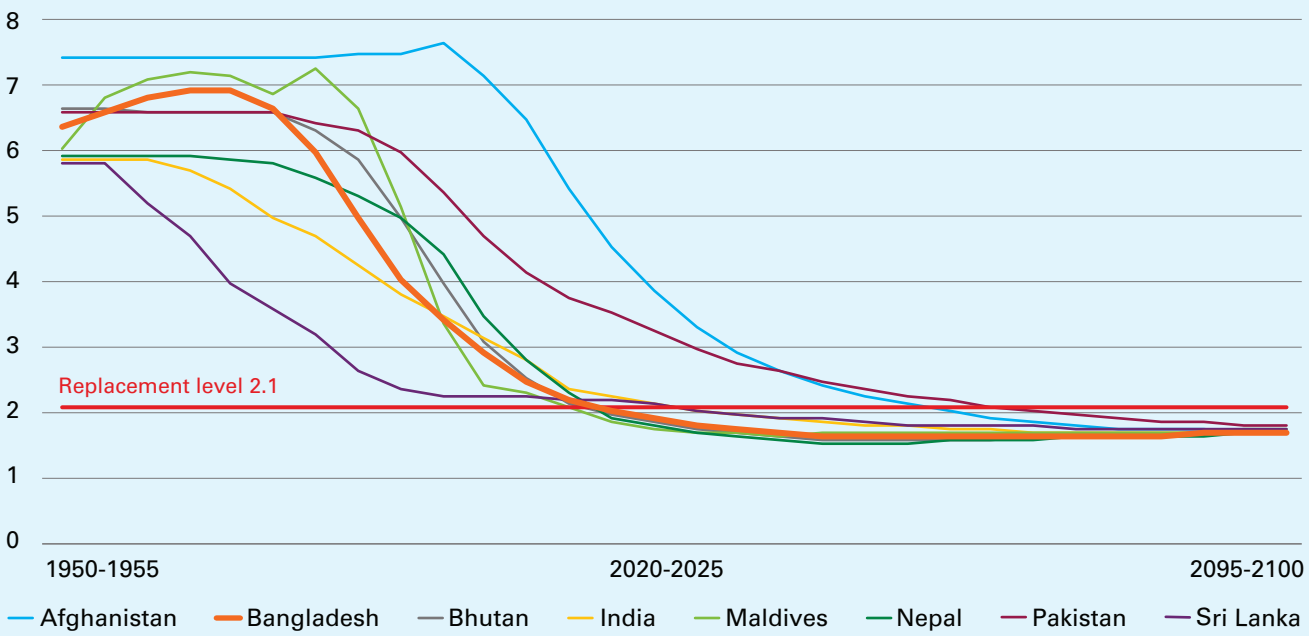


Figure 8: Population growth rates by age group and working status, Bangladesh 1955-2075



Source: United Nations: World Population Prospects 2019

Figure 9: Total fertility rate of South Asian countries: 1950-2100



Source: United Nations: World Population Prospects 2019

Comparison with the regional trends

This trend of rapid population aging is not unique to Bangladesh but by now can be found in many parts of the world including South Asia. Figure 9 shows the actual and projected changes of total fertility rates (i.e. average number of children whom a woman of reproductive age of 15 to 49 years gives birth to) for eight SAARC countries. The total fertility rates of the countries like Bhutan, Maldives and Nepal have already become below replacement level (2.1 per couple)[1]. Bangladesh, India and Sri Lanka will follow the same path soon. The only "outliers" in this regard for now are Afghanistan and Pakistan, but it is also a matter of time for them to converge with the trend of the rest of the region.

Some governments in South Asia region started to pay serious attention to the forthcoming aging and aged society in terms of related projections and its policy implications. For instance, the Ministry of Finance of the Government of India dedicated one full chapter of its annual signature report *Economic Survey* to the issue of forthcoming aging society in India and its substantial implications in July 2019.[2] Similarly, the National Planning Commission of the Government of Nepal issued a policy paper on the aging society and its implications for Nepal Society in March 2017.[3]

Bangladesh has become the first country in the South Asia region which incorporated the analysis of rapidly changing population dynamics and their implications in the country's latest five-year plan (8th Five-Year Plan 2020-2025).[4] This is a significant development and can serve as an evidence base for the required policy actions.

Need to "pay forward"

The combination of rapid aging of the society, finite demographic window of opportunity and increasing onus of working age population means that very swift policy decisions and actions are required for Bangladesh to address the concerned challenges in a timely manner. More specifically, Bangladesh need to invest substantially more in children on a priority basis NOW, particularly in such areas as health; nutrition; water, sanitation and hygiene; education including early childhood development; child protection; and social protection. In addition to the child right point of view which is extremely important, investment in these issue areas makes sense as there has been ample evidence from all over the world that shows very high economic return on investment from them. For instance, investment in quality early childhood development programme can have the annual return on investment of as high as 13.7 per cent per year which is *"Much higher than the annual return on equities in the U.S. stock marketpost – Second World War through the 2008 meltdown."* [5]

Table 2: Health expenditure (public) as % of GDP

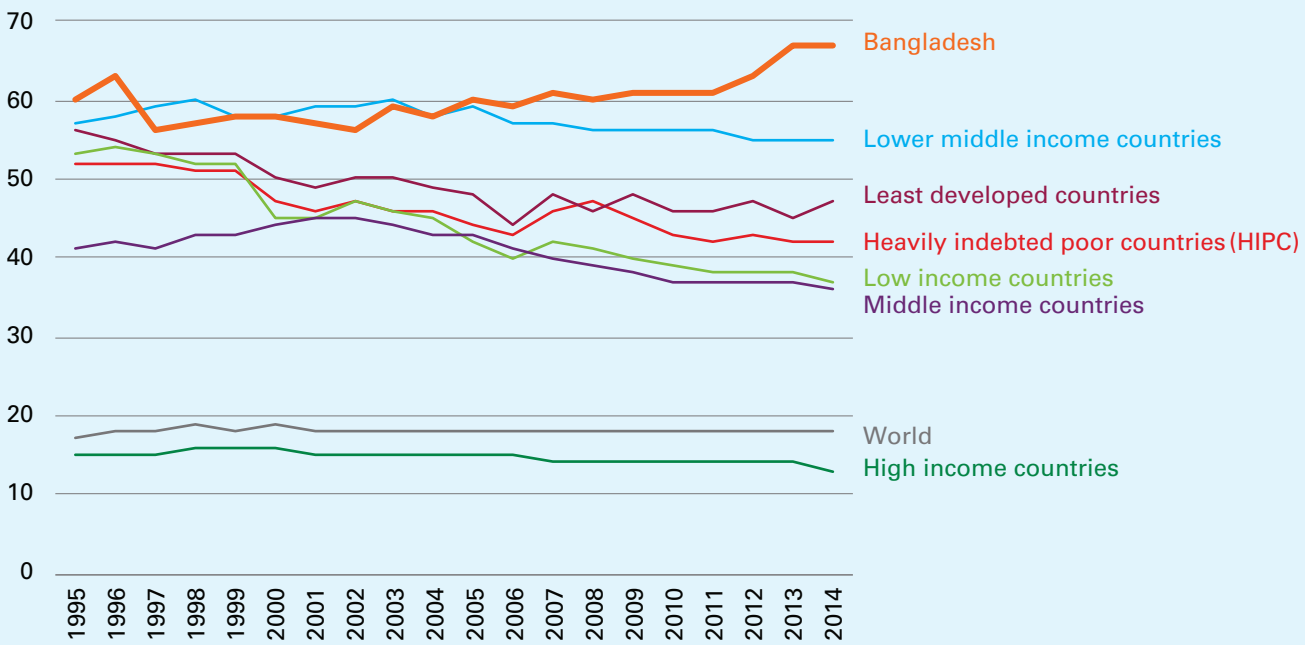
	1995	2014
Bangladesh	1.20%	0.79%
World	5.29%	5.99%

Investing in children is not a matter of charity or adding a "soft" side to economic development. It is essential for all the countries including Bangladesh to take the maximum advantage of favorable conditions during the demographic window of opportunity and to be prepared well for the challenges of forthcoming aging and aged society. Historically, Bangladesh as a country has been showing the overall low levels of investment in social sectors like health and education compared with the global averages (Table 2, Figure 10 and 11). This makes it very crucial for the country to review the situation quickly and increase the level of resource allocation and utilization in the concerned sectors.[6]

To be sure, what Bangladesh need in this context is NOT mere "children in number" based on simple pronatalistic policies but children who are raised to their fullest potential to be able to move the society forward strongly. Further, the analysis in this paper is not a "doomsday scenario" in any way. The very fact that the number of children born has started to decline means that the country can increase the amount of investment per child within a given fiscal space. This in turn will lead to services of better quality for children in the concerned issue areas and eventually their better development.

Demography is not destiny. At the same time, it does set clear and strong parameters within which countries need to take conscious decisions and actions in a time-bound manner to make the best out of the situation in one demographic stage and be prepared for the opportunities and challenges in the next.

Figure 10: Share of out-of-pocket expenditure on healthcare, 1995 to 2014, in per cent



Source: World Bank - WDI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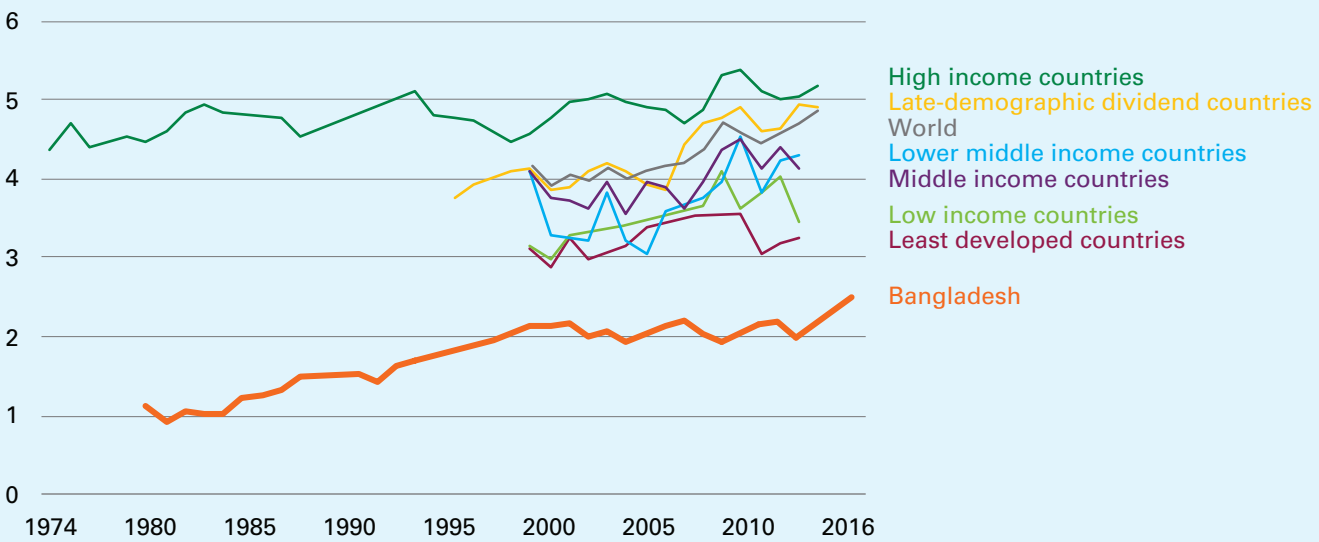
Based on the above-mentioned analyses, it is right, justifiable and necessary both morally and economically to consider the investment in children as an act of *"paying forward"* to the generations who need to support us in our old age and continue to develop our society in the future. And if we expect them to play that role for us, we must invest in their growth so that they are equal to the challenges expected. This is a form of fulfilling inter-generational accountability – just like old-age pension which became very popular after the Second World War has been well accepted by now globally as a legitimate act of *"paying afterward"* to those people who have worked hard and supported us while we were dependent on them. The analyses in this paper show that this perspective is very much required for the macro development discourse in Bangladesh today.

Figure 11: Total government expenditure on education, 1974 to 2016, as % of GDP



Source: World Bank

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Endnotes

1 "Replacement level" is the level of fertility rate where the overall population size of a society stabilizes from one generation to another.
2 Ministry of Finance (2019), India's Demography at 2040: Planning Public Good Provision for the 21st Century, Chapter 7 (pp. 128-147) of the Economic Survey, Delhi, Government of India (https://www.indiabudget.gov.in).
3 National Planning Commission (2017), Demographic Changes of Nepal: Trends and Policy Implications, Kathmandu, Government of Nepal (https://www.npc.gov.np).
4 General Economics Division, Bangladesh Planning Commission (2020), 8th Five Year Plan July 2020-June 2025, Dhaka, General Economic Division and the Bangladesh Planning Commission (pp. 607-611; https://oldweb.lged.gov.bd).
5 The National Public Radio (NPR) (2016), *How Investing In Preschool Beats The Stock Market, Hands Down,* Washington, D.C., National Public Radio (https://www.npr.org/); James J. Heckman, *There's more to gain by taking a comprehensive approach to early childhood development,* Heckman Equation Project (https://buildthefoundation.org); and Garcia, Jorge Luis, et.al., *The Life-Cycle Benefits of An Influential Early Childhood Program,* Cambridge, Massachusetts, National Bureau of Economic Research (https://www.nber.org).
6 For the sources of data of these tables and figures, see the following site of Our World in Data: (A) https://ourworldindata.org for Table 2; (B) https://ourworldindata.org for Figure 10; and (C) https://ourworldindata.org/ for Figure 11.

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