The Demographic Dividend In Bangladesh:An Illustrative Study

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Abstract: The demographic dividend can be defined as the potential economic benefit offered by changes in the age structure of the population, during the demographic transition, when there is an increase in working-age population and an associated decline in the dependent age population. Bangladesh is also going through the demographic transition, and is experiencing a once-in-a-lifetime demographic dividend as the working-age population bulges and the dependency ratio declines For obtaining timing of demographic dividend, growth rate of labour force and population, and demographic support ratio have been utilized using UN World Population Prospects(2010 Revision) data. All the indicators support the view that the 1st demographic dividend starts in 1980 and continues for a period of 60 years up to 2040. The level and trend of important measures of fertility, mortality , dependency ratio and support ratio over the period 1950-2011. The possibility of a second dividend arises because some of the gains in per capita income can be diverted to raising productivity and thereby raising standard of living for future generations. This outcome can be generalized in a variety of ways. One important possibility is by increasing investment in human capital. Increase in investment in physical capital should also be emphasized. For economic benefits to materialize, there is a need for policies dealing with education, public health, and those that promote labour market flexibility and provide incentives for investment and savings. On the contrary, if appropriate policies are not formulated, the demographic dividend might, in fact, be a cost, leading to unemployment and an unbearable strain on education, health, and old age security.

Introduction.

Social scientists, mainly economists and demographers, continue to argue whether population growth encourages, discourages or is independent of economic growth. The focus of this debate however has mainly remained confined to population size and growth, giving little consideration to the age structure of the population. Bringing age structure dynamics in this debate can be attributed to Coale and Hoover (1958), who argued that sustained high fertility and falling mortality make governments and households burdened with high youth dependency rates, lowering tax revenues and household savings, respectively. Economists have recently begun to focus on the impact of changing age structure of the population moving beyond the Malthusian emphasis on population growth [Mason (2005); Birdsall, *et al.* (2001); Sachs (2002); Bloom and Canning (1999); Bloom and Freeman (1986); Bloom and Sachs (1998); and Bloom and Williamson (1998)]. The interest in relation between population change and economic growth has reignited because of the demographic transition taking place in the developing countries, which are at varying stages in experiencing declining fertility and mortality rates.

The Life Cycle Consumption Model.

The life cycle consumption model (Bloom et al, 2001) suggests that different age groups in a population have different economic implications. The young need investment in health and education, adults supply labour, income and savings and at old ages there is a need for retirement income and, again, a requirement to invest in health. As the relative size of each of these age groups change in the population similar is the respective impact of the economic behaviour

associated with different ages. This relation is summarised in the lifecycle income and consumption model, a schematic representation of which can be found in Figure 1. As a result of declining population growth and consequent changes in age structure, the proportion of working-age population is increasing in most developing

countries, offering a window of opportunity to these countries, referred to as the

'demographic dividend'. Life cycle consumption model for some Asian countries are given in figure.

The First Demographic Dividend:

The measure of economic support ratio has been advocated to find the extent of first demographic dividend. First the age structure of the population is summarized by the economic support ratio defined as the effective number of producers(L) divided by the effective number of producers(L). The effective number of producers is calculated using the population weighted by age-specific labour income values. The effective number of producers is calculated in similar fashion using age-specific consumption weights. Thus the economic support ratio(L/N) is:

Economic Support Ratio = $L/N = \sum Wy(x) P(x)/ \sum Wc(x)P(x)$

Where Wy are age age specific labour income weights and Wc are age specific consumption weights, and P(x) is the population in age group x.

Income per effective consumer, a measure of per capita income adjusted for age variation in consumption, is the product of the support ratio and income per worker;

$$Y/N = (L/N)(Y/L)$$

In growth terms, the growth rate of income per effective consumer depends on age structure effect and a productivity effect that measures the income(or output)

$$g[Y/N) = g[L/N] + g[Y/L].$$

Demographic Support Ratio:

Given the limitations of availability of age specific Labour income and consumption data of Bangladesh, the present analysis uses the demographic support ratio which can be defined as ratio of working age(20-59) population to Population in ages (0-24 and ages 60 and above)

Demographic Support Ratio= $W20-59/[D0-24 + D60+)$.

The figure shows the trend of support ratio for the period 1950-2100. The 1st demographic dividend starts when its value starts increasing and continues to the period when it starts declining. The dividend period extends for about 60 years from 1980 to 2040.

The Second Demographic Dividend:

The effect of age structure on the economy would be captured entirely by the first dividend if all of the gains in the per capita income were used to increase the current consumption. Those alive during the dividend period would be able to achieve higher standard of living, but the gains

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would be lost to future generations. The possibility of a second dividend arises because some of the gains in per capita income can be diverted to raising productivity and thereby raising standard of living for future generations. This outcome can be generalized in a variety of ways. One important possibility is by increasing investment in human capital. Increase in investment in physical capital should also be emphazised. The saving and investment scenario in Bangladesh in last one decade is given in figure   . and Table   .

Demographic Transition and Demographic Dividend in Bangladesh: 1950-2100

Using the UN projections (2010 Revision), this section looks into what the future may hold for Bangladesh demographically. UN projections provide three variants—low, medium and high— and the present paper mainly uses the medium variant to analyze the demographic in Bangladesh. However information based on low and high variant are also provided.

EVOLUTION OF DEMOGRAPHIC TRANSITION AND DEMOGRAPHIC DIVIDEND IN BANGLADESH :

 Important Indicators

      a) Crude Birth Rate and Crude Death Rates
      b) Annual Population Growth Rate
      c) Total Fertility Rate
      d) Expectation of life at birth
      e) Population Pyramid, 1950, 1975, 2010, 2050 and 2100
      f) Percentage share of Young, Working Age and Old Age population
      g)   Median Age(years)
      h) Dependency Ratio: Total, Young and Old
      i) Labor Force and Population Growth Rate
      j) Demographic Dividend
      k) Timing and Duration of demographic dividend
         (i) Diffrence in growth rate of labour force and and population (ii)
          Demographic support ratio.
      l) Population at different educational levels
      m) Saving and Investment

In all the variants of population projections   demographic dividend   in Bangladesh started in 1980 and   according to low variant it will end in 2035 and according to medium and high variant   it will end in 2040.   So, Bangladesh has already experienced three decades of demographic dividend. The country is in the midway of dividend period. There are more 3 decades to pass on.

The demographic dividend can be defined as the potential economic benefit offered by changes in the age structure of the population, during the demographic transition, when there is an increase in working-age population and an associated decline in the dependent age population. What needs to be emphasized here is that economic gains from demographic dividend are not certain, as the term might misleadingly imply. Economic returns are not solely function of demographic dividend. For economic benefits to materialise there is a need for policies dealing   with

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education, public health and those that promote labor market flexibility, and provide incentives for investment and savings. On the contrary, if appropriate policies are not formulated demographic dividend might, in fact, be a cost, leading to unemployment and an unbearable strain on education, health and old age security. Pakistan is also going through the demographic transition, with fertility rates finally showing a declining trend. It is now experiencing a once in a lifetime demographic dividend as the working-age population bulges and the dependency ratio declines. This paper looks into the demographic dividend being offered to Pakistan and what it holds for the country in future. The paper is divided into five sections. After giving an introduction to the topic, section two gives a brief account of the literature on issues related to demographic dividend. Section three looks into the demographic evolution leading to the demographic dividend in Pakistan, while section four examines the key mechanisms that can influence the ability to capitalise on the demographic dividend in Bangladesh. The last section deals with conclusions of the study and policy implications that emerge from it.

The 'demographic dividend' leads to opportunities for growth in output per capita in two principal ways. One, there is an age-structure impact on total GDP due to increasing proportion of working-age group in total population, increasing the ratio of producers to consumers.

Labour Supply
Demographic transition passes through a phase when it adds to the labour force in two ways. One, the number of people in the working-ages gets bigger, and two, women are more likely to enter the labour market as fertility level declines. However, it depends on the ability of the market and workers to make able use of this scenario.

Savings
Lifecycle variations in productivity lead individuals to vary their savings over their ifetime in order to accommodate their consumption . Demographic transition thus encourages savings which in turn can boost country's ability for investment and growth

Human Capital
It is premised that demographic transition has significant effect on investment in human capital. Increasing life expectancy makes parents invest more in their children's human capital as the premium of higher education increases and lasts longer. As a consequence, the labour force becomes more productive, gets higher wages and there is improvement in the standard of living With shrinking of young population pressure on the education system is reduced, which can help countries to invest more in improving the quality of education and in higher levels, rather than in making investment in basic education. It cannot be emphasised enough that it is not the quantity but the quality of education that is more important for human capital formation and economic growth .

Population by age groups and sex (percentage of total population)

Bangladesh: 1950

Males   Females

Bangladesh: 2010

Bangladesh: 2050

Bangladesh: 2100

Population by Age and Sex((Per cent of total Population):Bangladesh 2010
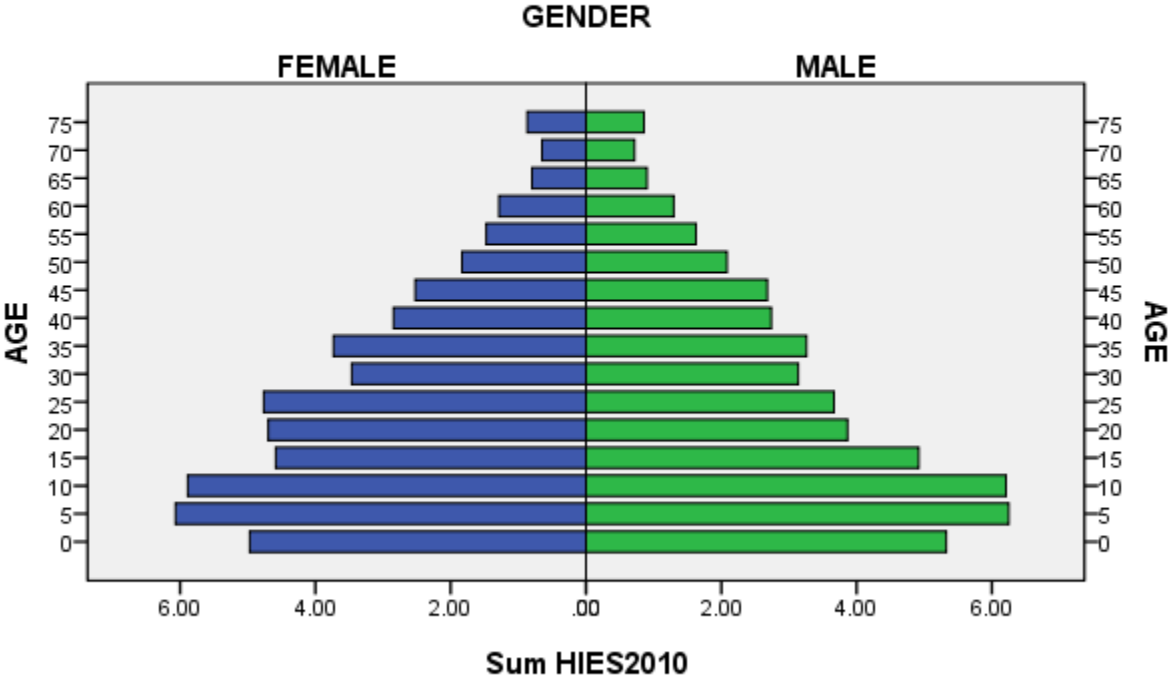
Source: HIES 2010

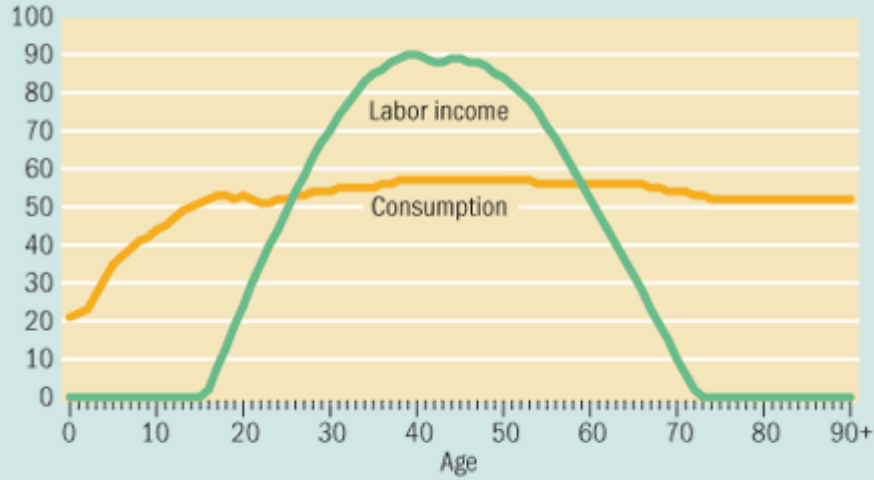Total Population : 148.49 Million, Male 73.57 Million, Female: 74.91 Million

Sex Ratio: (Male/Female)100 = 98.21.
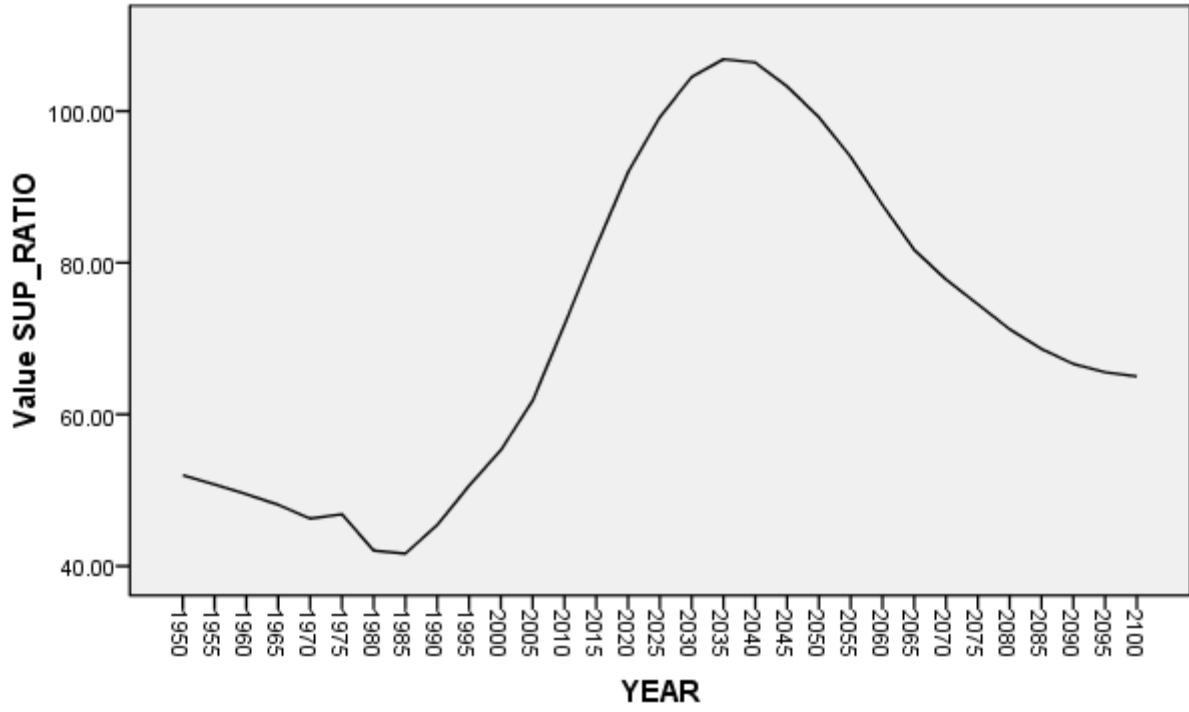
Chart 2

Economic life cycle of a typical Thai worker

Each individual has only 33 years to build the dividend.

(per capita labor income and consumption per year; 1998, thousand baht)

Source: Amonthep Chawla, 2006, "National Transfer Account Estimates for Thailand," www.ntaccounts.org.

Support Ratio: Bangladesh : 1950TO 2100

Source : UN(2010), Medium Variant.

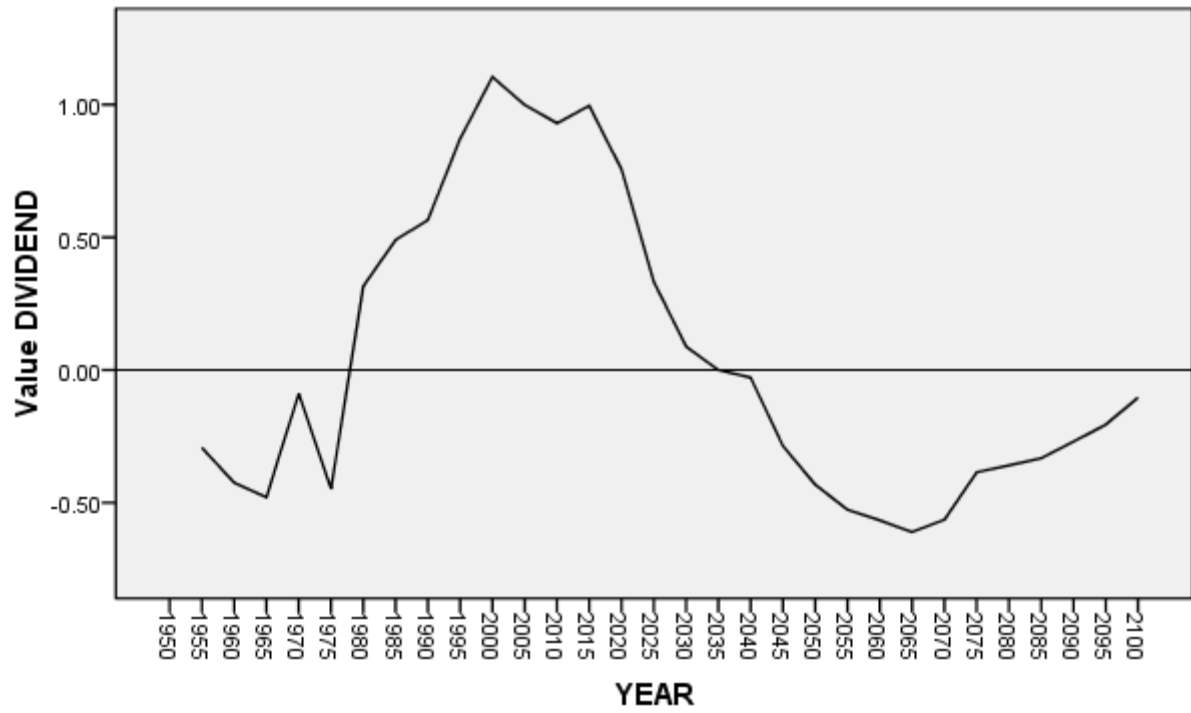## Growth Rate of Support Ratio(Per cent):Bangladesh :1950 - 2100.
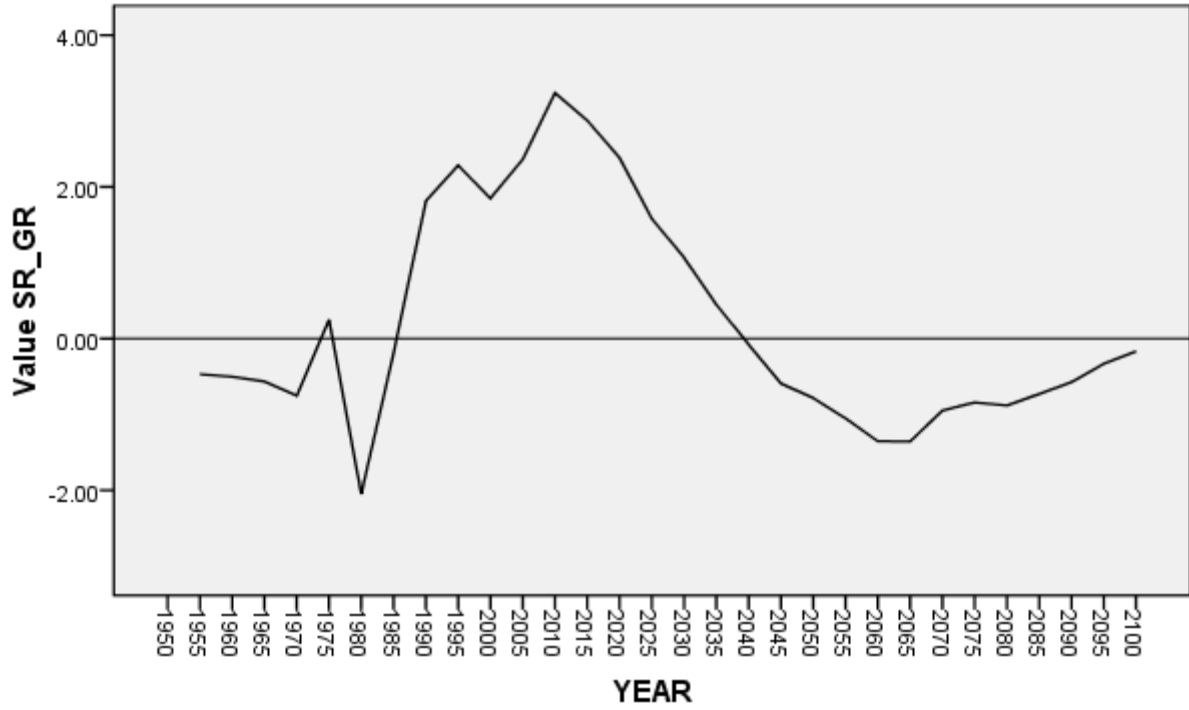
Source : UN(2010), Medium Variant.

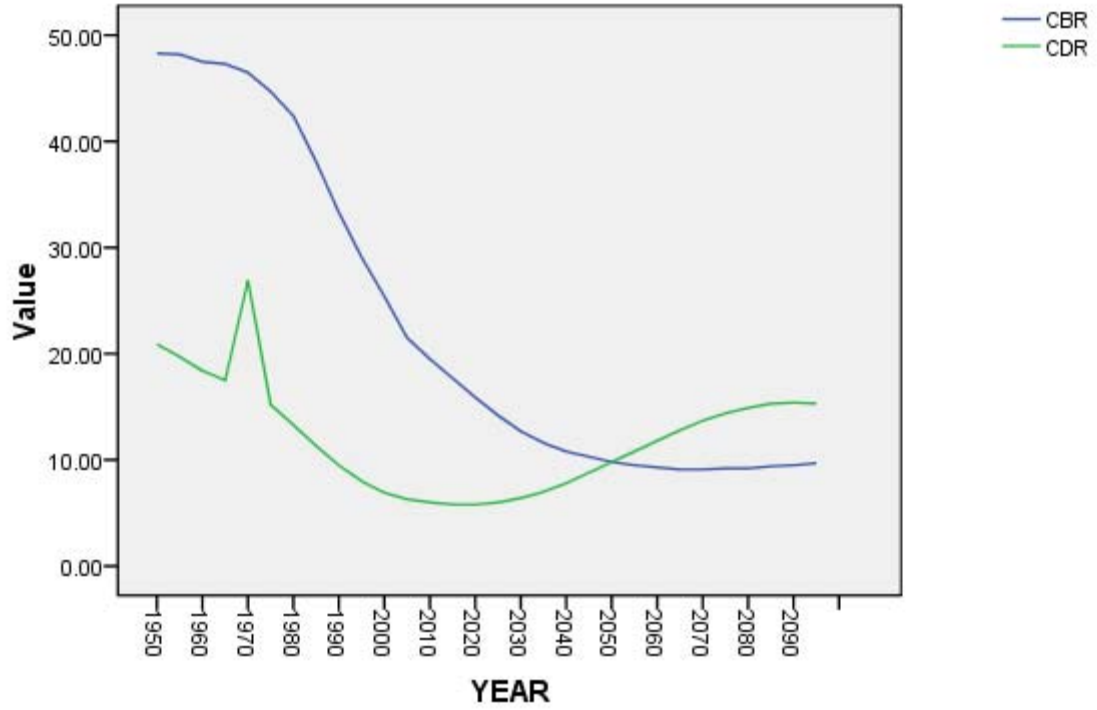## Annual growth rate of Population and Labor Force : Bangladesh :1950 - 2100.
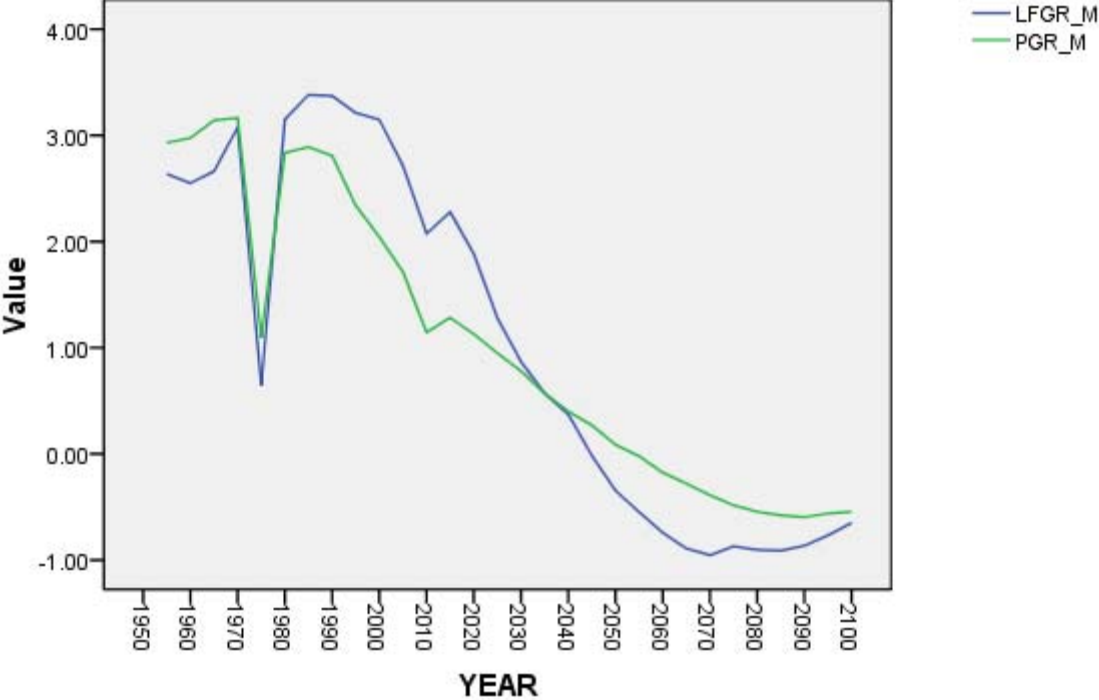
Source : UN(2010), Medium Variant.

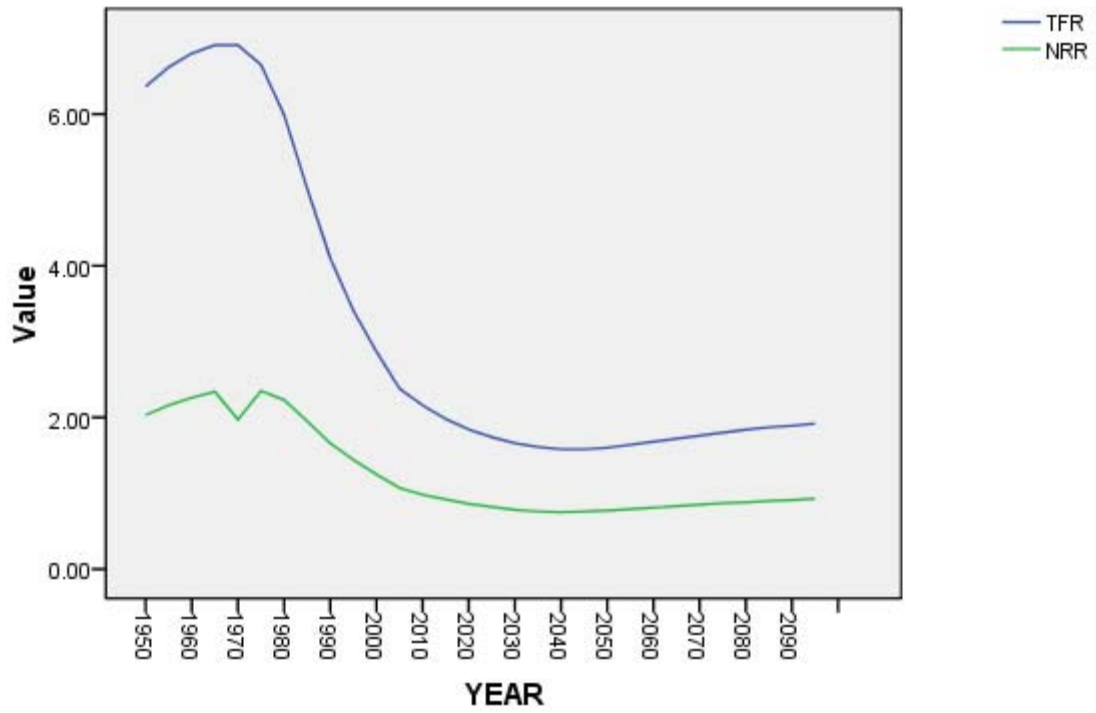**Period of Demographic Dividend : Bangladesh :1950 - 2100.**

Source : UN(2010), Medium Variant.

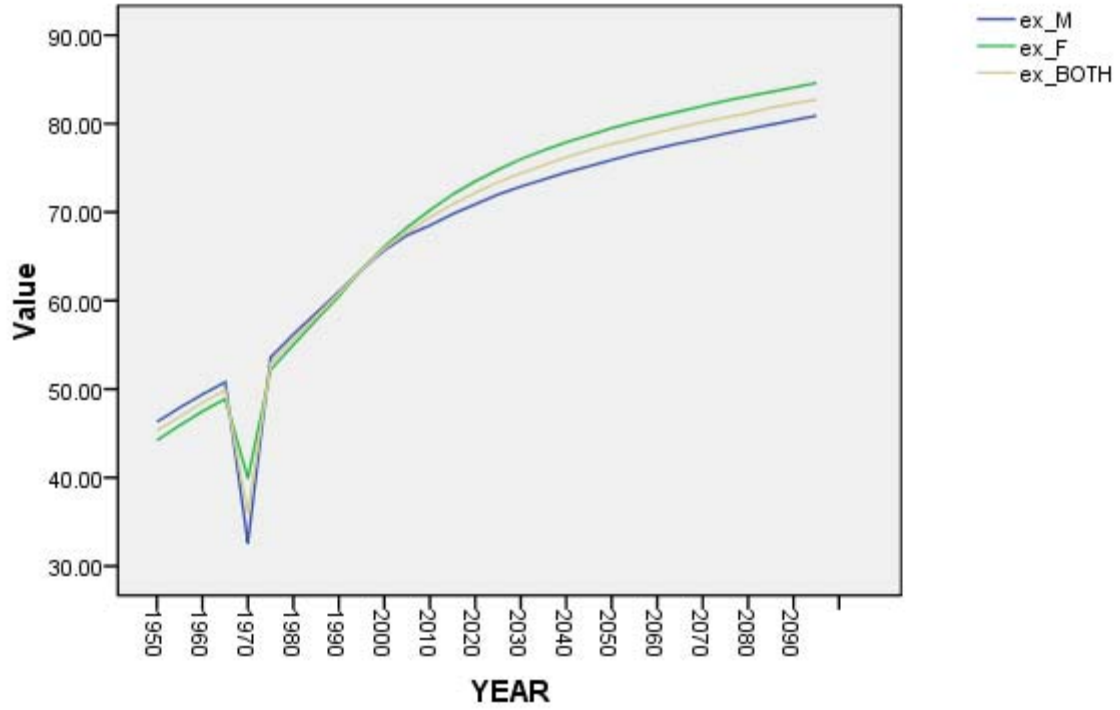**CBR and CDR per 1000 Population: Bangladesh :1950 - 2100.**

Source : UN(2010), Medium Variant.

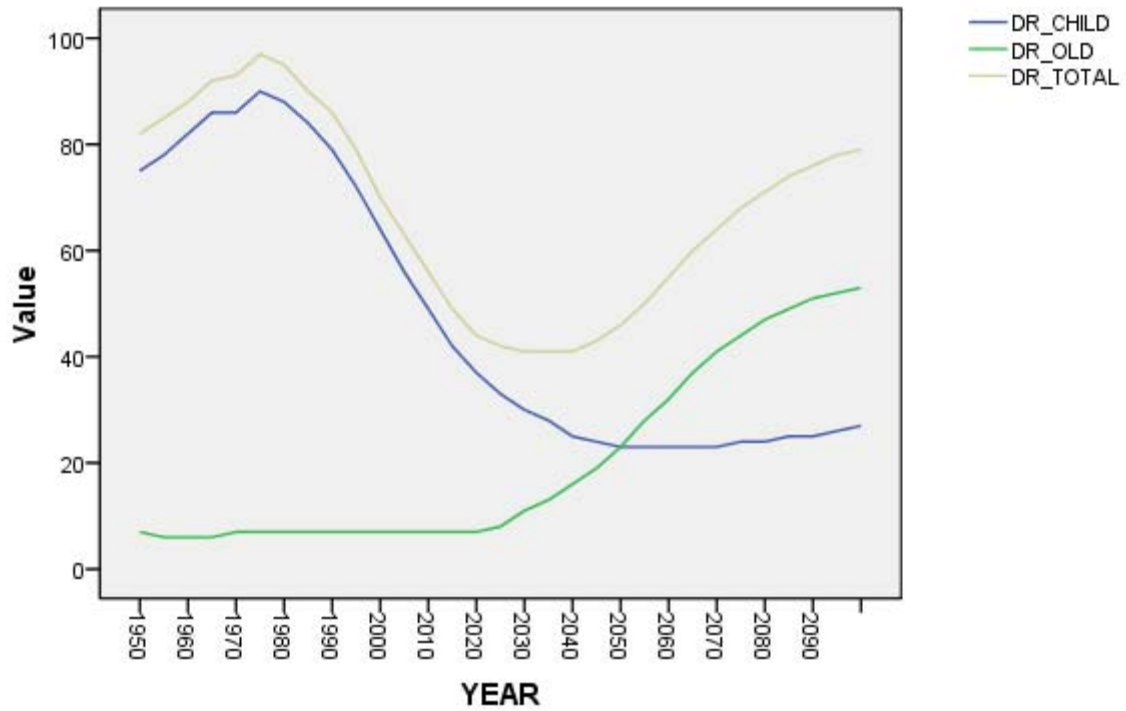TFR and NRR per Woman: Bangladesh :1950 - 2100.

Source : UN(2010), Medium Variant.

Life Expectancy at Birth(eo) by Sex: Bangladesh :1950 - 2100.
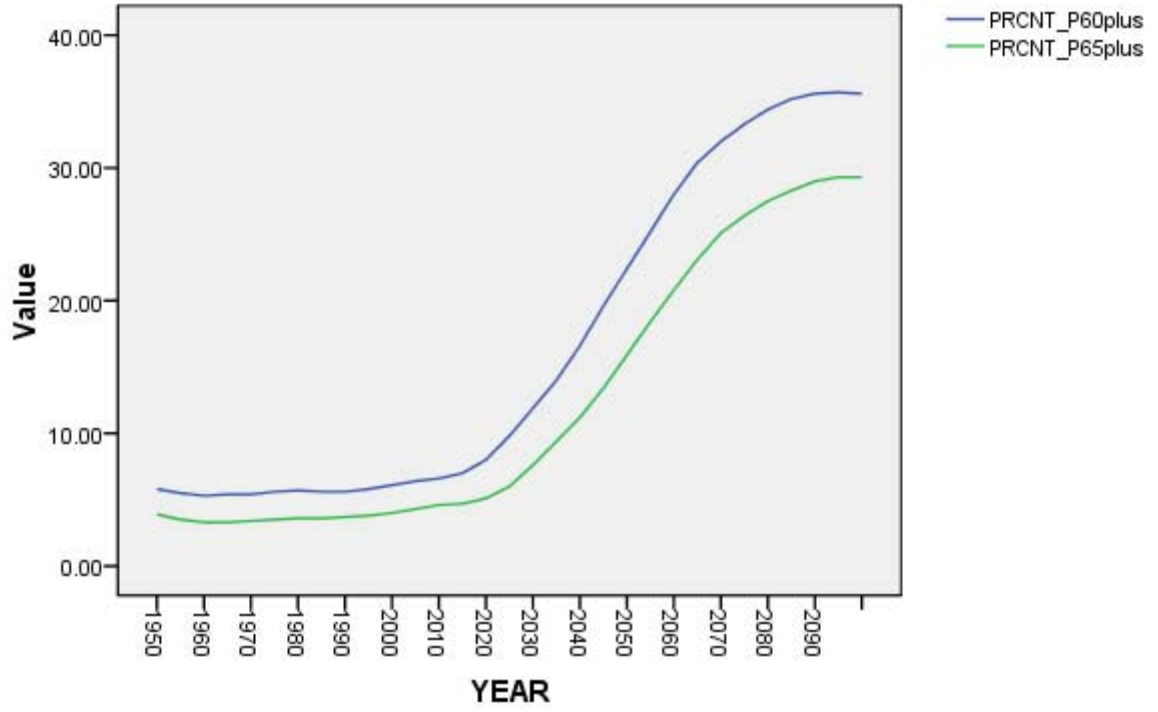

Source : UN(2010), Medium Variant.

Dependency Ratio(Child, Old and Total): Bangladesh :1950 - 2100.
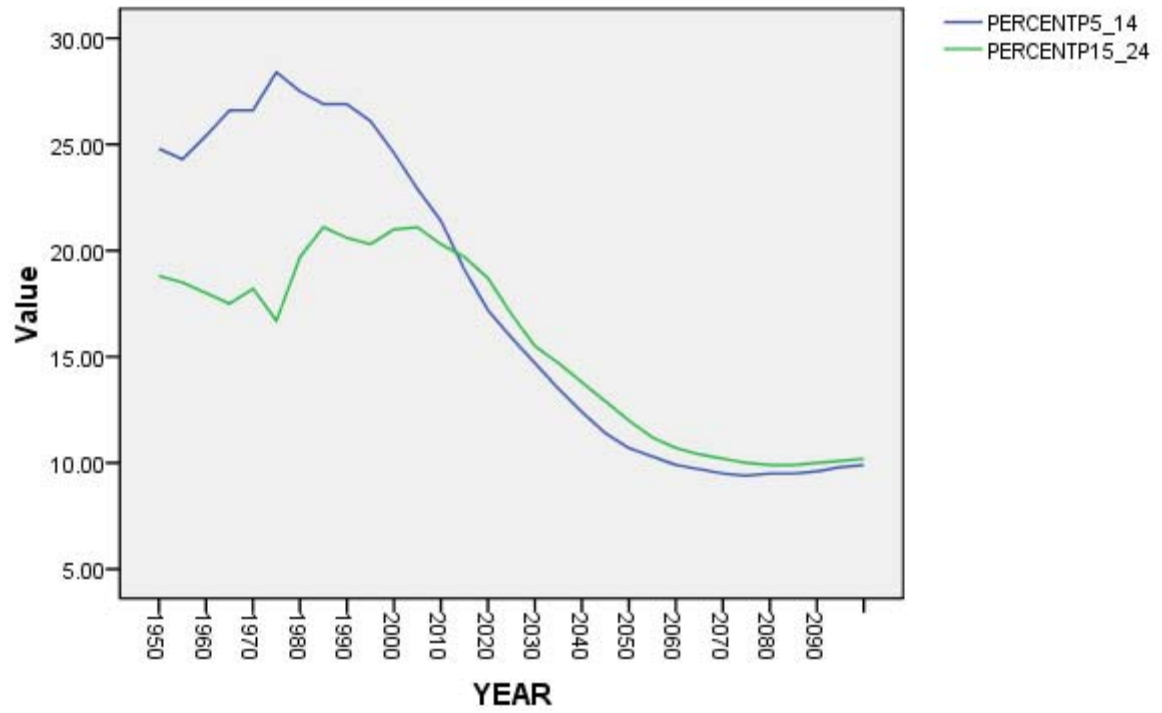

Source : UN(2010), Medium Variant.

Percent of Population 60+ and 65+ :1950 - 2100.
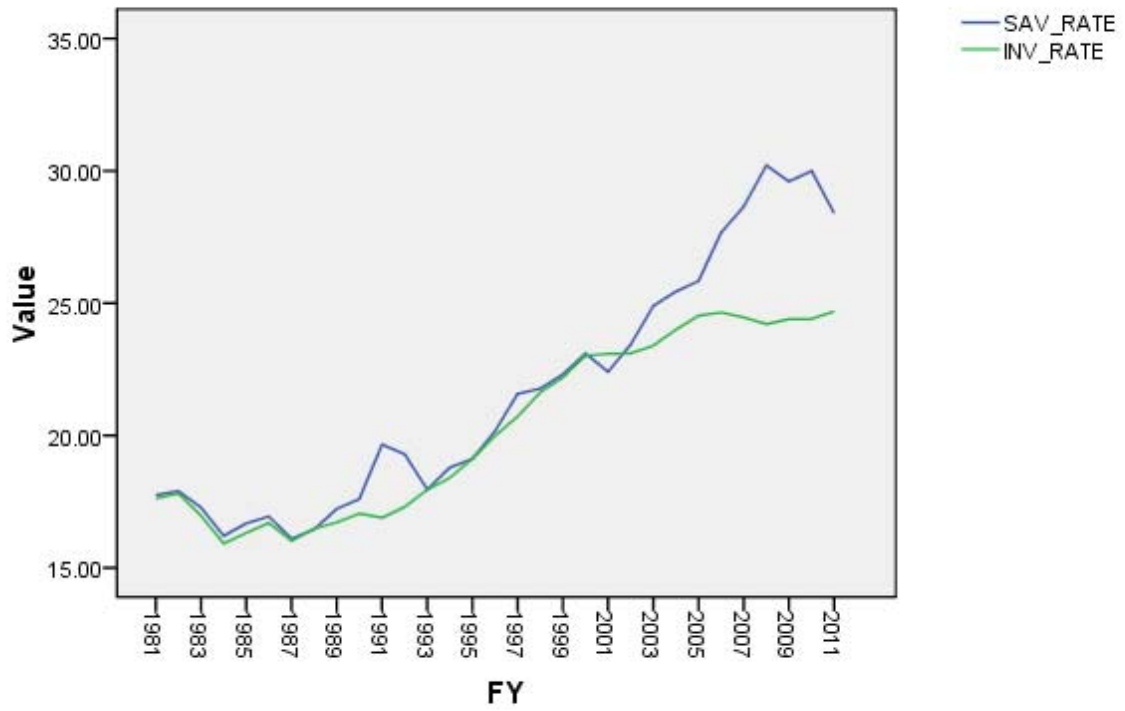

Source : UN(2010), Medium Variant.

School Age Population: Bangladesh :1950 - 2100.

Source : UN(2010), Medium Variant.

Saving and Investment Rate : Bangladesh: FY 1981 TO FY 2012.

Bangladesh Economic Survey. Author's Computation.

Table . Savings and Investment: FY01 TO FY 12

Types	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11^P	FY12
Public												
Investment	7.2	6.4	6.2	6.2	6.2	6.0	5.4	5.0	4.7	5.0	5.3	
Domestic Saving					1.4	1.4	1.4	1.4	1.3	1.4	1.3	
DS-I Gap					-4.8	-4.6	-4.0	-3.6	-3.4	-3.6	-4.0	
Private												
Investment	15.8	16.8	17.2	17.8	18.3	18.6	19.0	19.3	19.7	19.4	19.5	
Domestic Saving					18.6	18.8	18.9	19.0	18.8	18.8	18.3	
DS-I Gap					0.3	0.2	-0.1	-0.3	-0.9	-0.6	-1.2	
Total												
Investment	23.1	23.1	23.4	24.0	24.5	24.6	24.4	24.2	24.4	24.4	24.7	
Domestic Saving	18.0	18.2	18.6	19.5	20.0	20.2	20.3	20.3	20.1	20.1	19.6	
DS-I Gap	-5.1	-4.9	-4.8	-4.5	-4.5	-4.4	-4.1	-3.9	-4.3	-4.3	-5.1	
National Savings	22.4	23.4	24.9	25.4	25.8	27.7	28.7	30.2	29.6	30.0	28.4	
Foreign Saving	4.6	5.2	6.3	5.9	5.8	7.5	8.4	9.9	9.3	9.9	8.8	
National S-I Gap	-1.0	0.3	1.5	1.4	1.3	3.1	4.3	6.0	5.2	5.6	3.7	

Source and note
P provisional
BBS. Cited in BB Annual Report 2010-11, Table 2.5, P 19, Table IV, P230
BES 2011, Table Annex 1.2