Economic Growth and Inequality in Bangladesh

Khan A. Matin*, Ph. D

Paper prepared for presentation at the 20th Biennial Conference on
Economics and Ethics
of the Bangladesh Economic Association to be held during 21-23 December, 2017 at
Dhaka, Bangladesh

---

* Professor(formerly) at the Institute of Statistical Research and Training(ISRT), University of Dhaka. Dhaka 1000. **E-mail:** kmatin@isrt.ac.bd kmatin_isrt@yahoo.com

Economic Growth and Inequality in Bangladesh

Khan A. Matin, Ph. D.

Abstract.

The study aims at analyzing the long term relationship between growth and inequality in Bangladesh. Following the seminal work of Simon Kuznets (1955), the causal relationship running from growth to inequality has been characterized as an inverted U-relationship, where inequality first rises with growth and subsequently falls as a country becomes richer. The decadal average annual growth rate of GDP has been estimated to be 3.74 per cent in 1970s, 3.71 per cent in 1980s, 4.96 per cent in 1990s, 5.87 per cent in the 2000s, and 6.45 per cent during 2011-16. In the last financial year(2015/16) GDP growth rate has been found to be 7.11 per cent. The per capita GDP growth rate has been estimated to be 1.32 per cent in the 1970s, 1.67 per cent in the 1980s, 3.16 per cent in the 1990s, 4.51 per cent in 2000s and 5.04 per cent during 2011-16. The income Gini coefficient increased from 0.34 in 1974 to 0.46 in 2010. The per capita real income had significant positive effect and income squared had significant negative effect on Gini coefficient. The fitted Gini curve indicated that may be we have just travelled half way on the locus of inverted U-relationship. The extent of inequality in landholding, education, employment, health, nutrition and reproductive health care has also been investigated. The land Gini exhibited declining trend from 0.54 in 1984 to 0.50 in 2008. The education Gini was found to be 0.52 in 2011. Differentials in adult literacy rate, enrolment rate, average years of schooling, literacy of ever married women were observed according to socioeconomic status of the population. Marked differences were observed in employment share according to gender and locality. The concentration curve and concentration index computed for women's literacy, children's nutrition, nutrition of mother, utilization of reproductive health care services- all exhibited a great deal of disproportionate concentration of the study variables according to wealth quintiles. Bangladesh has made considerable progress in the field of literacy, nutrition and reproductive health care but all have the essence of inequality. The increasing growth was accompanied by rising inequality over the period under consideration. Bangladesh's main challenge is now reducing income inequality. Disparity of income is both a virtue and a vice. The virtue of providing rewards for effort and generating economic growth must be balanced against the vice of inequality's manifest injustice. Beginning with July 2015 Bangladesh has been classified as a LMIC by the World Bank.

Keywords. Growth. Kuznets hypothesis. Income Gini coefficient. Inequality in landholding, employment, education, nutrition and health care. Bangladesh.

JEL Classification. JEL Classification. D63 E21 I32

Introduction.

Rising economic inequality through the distribution of income, consumption, wealth or assets is a major challenge. There is considerable concern in Bangladesh about the growing income inequality. Available household level information suggests that the distribution of income is much more unequal than the distribution of consumption. Income inequality as measured by the Gini coefficient for the distribution of income has risen substantially during the last four decades or so. The analysis is carried out by two interlinked method of measuring inequality: the Lorenz Curve and the Gini Coefficient. Both originate in the early years of the twentieth century. In 1905 Max Otto Lorenz

published a paper in an American Statistical Journal outlining the technique which was to bear his name. Corrado Gini's index of income inequality was published shortly afterwards in 1912 The study aims at analyzing the long term relationship between growth and inequality in Bangladesh. Following the seminal work of Simon Kuznets (1955), the causal relationship running from growth to inequality has been characterized as an inverted U-relationship, where inequality first rises with growth and subsequently falls as a country becomes richer. The relationship between growth and inequality is characterized by two-way causation. The rate and process of growth may shape the evolving pattern of inequality, and the existing pattern of inequality may in turn affect the prospects for growth. The pertinent questions are: What is the effect of inequality on economic growth and economic performance? Do more unequal societies enjoy better conditions for economic growth, or can inequality have a dampening effect on efficiency? What are the channels through which inequality has these effects? Does inequality create unfavorable conditions for the enactment of economic reforms that can lead to greater efficiency ? Apart from the inequality of income, the nature and trend of inequality in consumption expenditure, land holding, education, nutrition and utilization of health care services have been studied.

On the global front we have been listening to that the number of ultra rich people whose aggregate wealth is equal to the poorest half(3.6 bn) of the world population has reduced from 388 in 2010 to 62 in 2015. Recently revised and updated findings present that the number of billionaires whose wealth is equal to the that of the bottom half of the world population could be just 8 in 2016. The projected numbers indicate that by about 2022, there could be a single super rich individual whose wealth alone shall match the wealth of the bottom half of the world population. (Oxfam, 2017).
Oxfam calculations are based on data on wealth of the richest individuals from the Forbes Billionaires list and wealth of the bottom 50% from Credit Suisse Global Wealth Databook (2016).

Data:
The current statistics of the Bangladesh Bureau of Statistics(BBS, 2016), Bangladesh Bank(2016) Ministry of Finance(2016) and Bangladesh Demographic and Health Surveys (BDHS) are the main source of data. However on line data set available on the website of ADB, World Bank, OECD, UN and other organizations have also been used.

Inequality of what?

Inequality of Opportunity and Inequality of Outcomes : Intergenerational Transfer of Inequality.
In recent years, debates on inequality in development economics have been dominated by the concept of equality of opportunity. Implicit in this concept is a focus on access to basic services such as health, education, and basic infrastructure in childhood, and especially on eliminating discrimination in access because of inherited circumstances, such as gender, ethnicity, or location. Children born to poor family shall have no access to property, asset or wealth. They have limited access to finance. Entrenched inequality can significantly undermine individuals' aspirations in youth, affecting their subsequent educational and occupational choices. Their opportunity for mobility remains very limited. Inequality may damage trust—the foundation for social cohesion—and thus weaken collective decision making. These may well lead to social instability.

In this paper I shall be discussing inequality of income, landholding, employment, education, health and nutrition and reproductive health care utilization.

In modern economics, the thinking on social arrangements was initially shaped by welfarism, with utilitarianism being its most influential school of thought. According to utilitarianism, the social goal is to achieve "the greatest happiness for the greatest numbers".

Income growth and inequality.

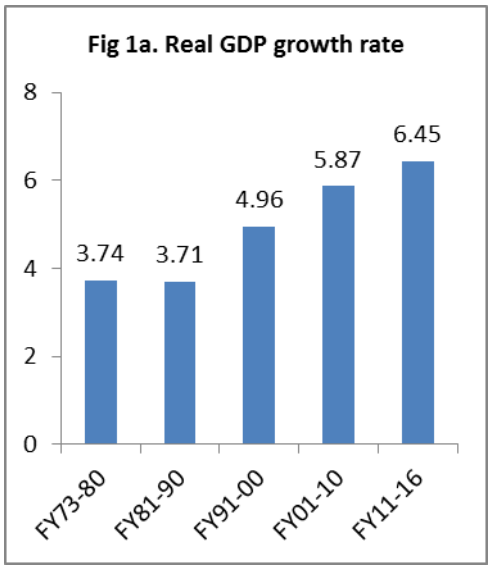
Almost all the great classical economist –from Adam Smith to Karl Marx propounded the theory that capital accumulation was key to growth, and that accumulation was driven by the savings of the people, which in turn depends on the distribution of income. They also assumed that the rich capitalists tended to save a bigger proportion of their income than the poor workers. The classical chain of reasoning can be divided into two parts: First part says that more unequal distribution of income results in higher savings and accumulation because the rich tend to save more, and the second part says the more you save the faster you grow. Thus the fastest way to goal should looks like

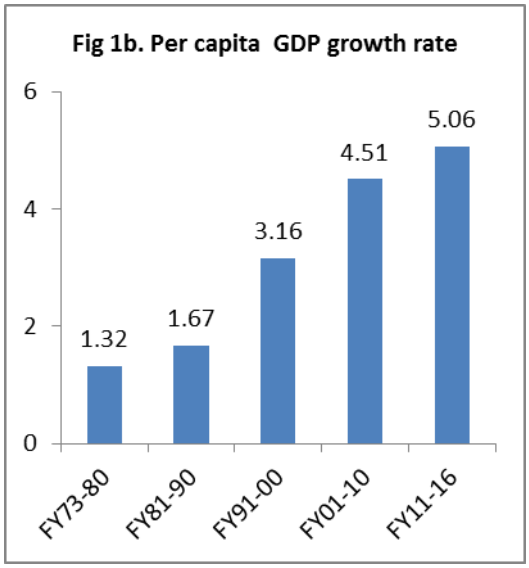
Income → Saving → Capital accumulation → Growth.

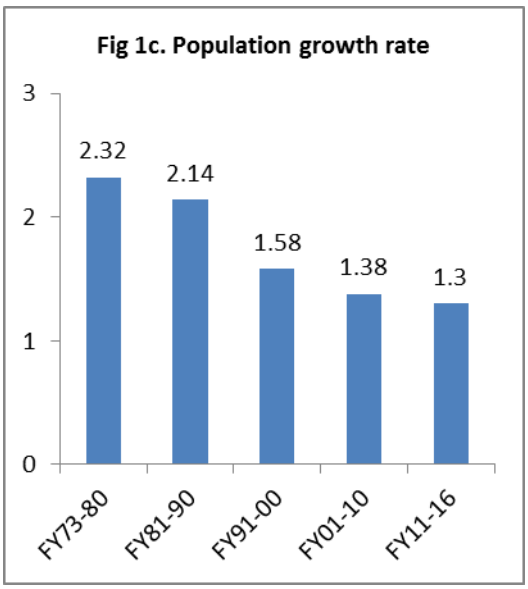
Moses Abramovitz (1956) the pioneer of the growth accounting called this major part of the contribution "measure of our ignorance" conveying the message that we knew very little of the forces that promotes growth. Other studies based more reliable data produced mixed findings. There are also indications that growth precedes rather than following capital accumulation**.**

Real GDP, Per capita GDP and Population growth.

Bangladesh experienced an unstable and a low average growth rate of real GDP during the 1970s and 1980s. The first two decades after the independence of Bangladesh in 1971 were the most difficult times in the country's economic history. The1970s passed by in trying to recover from the ravages of war, cyclones, floods and famine, and the 1980s were devoted to consolidating the success in recovery and reconstruction. The average annual growth rate in the first two decades was hovering around 3.7 per cent. However, since the early 1990s growth rate had been experiencing an increasing trend with some year-to-year fluctuations. The average annual growth rate in the 1990s was around 5 percent, which increased further to 5.9 percent during the 1st decade of the millennium. During the last five years the country has been maintaining an average annual growth rate of 6.4 percent. In the last financial year(2015/16) GDP growth rate has been found to be 7.11 per cent. The growth rate of per capita real GDP has been very low in the first two decades -1.3 per cent in the 1970s and 1.7 per cent in the 1980s. This low rate of growth in per capita income has been ascribed by many due largely to the high growth rate of population. But since then the growth rate of per capita real GDP started taking momentum- increased to 3.2 per cent in the 1990s, 4.5 per cent in the 2000s. In the last five years the average annual growth rate of per capita GDP was posted as 5 per cent. Over the period under consideration, the average annual growth rate of population has decreased from 2.34 per cent in the 170s to 1.30 per cent in the recent years. Figures 1a, 1b, 1c. Bangladesh's economic growth rates in recent years have been higher than most of the South Asian countries and many of the sub-Saharan African countries and thus it is a remarkable achievement by historical standards and also quite impressive in comparison with the developing world as a whole.







Notes: (1) average annual growth rate for each period.
(2) The FY73-80 refers to the period 1972/73 to 1979/80 and so on. Author's computation

Source: BBS. Bangladesh Bank. The data for the period FY1973 to FY2010 are at constant 1995/96, and for FY2011-2016 are from constant 2005/06 bases.

Relationship Between inequality and Per Capita Income. Kuznets Curve.

Simon Kuznets(1955) on the basis of the study of historical data of the developed countries observed that the pattern of distribution of income within a country changes in a specific way as the

country becomes richer. As it begins to grow from a low level of income, inequality first rises, and only after it has reached a certain level of affluence, that inequality begins to fall. Thus the diagram depicting the relationship of inequality and per capita income shall have an inverted U-shape. So at the early stage of development both inequality and growth shall go together. In fashionable language the assertion is that "you must let the cake grow first before sharing it equally". Subsequent analyses based on more detailed data came up with mixed findings. Some supporting the proposition of Kuznets while others opposing it. Information on the data set available for the period 1973/74 to 2010 is given in table 1 and Figure 2. The increase in inequality(Gini concentration ratio for income) along with the rise in real per capita GNI (at base 1995/96) is evident from the graph. However there appears to be a start of the decline in inequality from the per capita income level of Tk 20.5 thousand which at the prevailing exchange rate equals US$ 334 during the FY2005.. The Per capita GNI at current Taka was Tk 28.4 thousand which at the prevailing exchange rate turns out to be US$ 463 for the same period. This may put some of us in a worrisome situation to negotiate with the findings on declining value of Gini concentration ratio at such a low income level. Thus the million dollar question is –has Bangladesh reached that level of affluence where a decline in inequality is expected ?

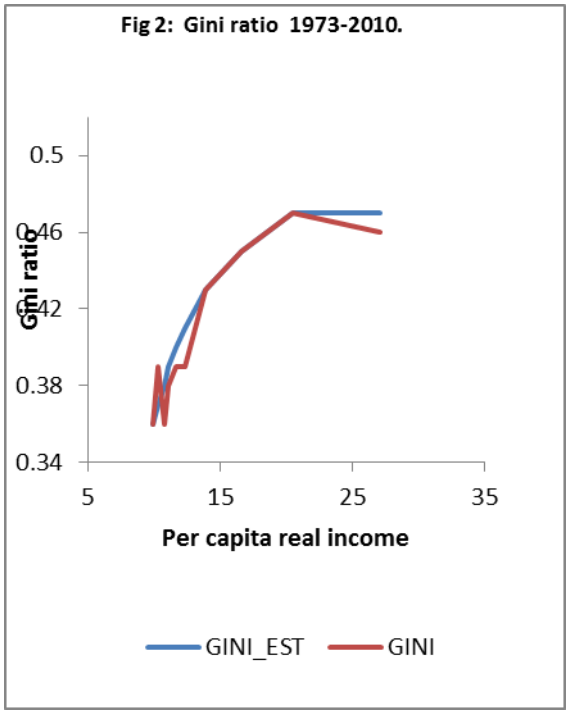
We have tried to fit a long term shape of Gini curve on the basis of data points available in table 1 . The Ordinary Least Squares method has been applied to estimate the parameters. The natural log transformation of per capita real income and its square term to capture the influence of higher income have been used as explanatory variables. The fitted Gini coefficients can be obtained from equation (1). And the curves of observed and expected Gini coefficients are shown in Figure 2. The income has significant positive effect on Gini coefficient while its square term has significant negative effect on Gini coefficient. The effects were statistically significant at 5 per cent level. The shape of the fitted Gini curve suggests that we are probably half way through in order to have its inverted U-shape on the basis of the published value of Gini coefficients.

Table 1: Real Per Capita GNI and Income .Gini Index: 1973 to 2010

Year	National		
	Per capita income (Thousand Tk)	Gini observed	Gini Fitted
1973-74	9.9	0.36	0.36
1981-82	10.3	0.39	0.37
1983-84	10.8	0.36	0.38
1985-86	11.1	0.38	0.39
1988-89	11.7	0.38	0.40
1991-92	12.4	0.39	0.41
1995-96	13.9	0.43	0.43
2000	16.6	0.45	0.45
2005	20.5	0.47	0.47
2010	27.1	0.46	0.47

Source and Note: BBS. Bangladesh Bank. Author's computation

.



$$GINI\_EST = -0.90 + 0.85lnINCOME - 0.13InINCOME^2 \quad (1)$$
$$(2.43) \quad (3.16) \quad (-2.75)$$
$$(P=.045) \quad (P=.016) \quad (.029)$$

$R^2 = 0.92, \quad F(2,7) = 39.51, \quad P=.000, \quad D.W.= 2.45$

Development of Landholding.

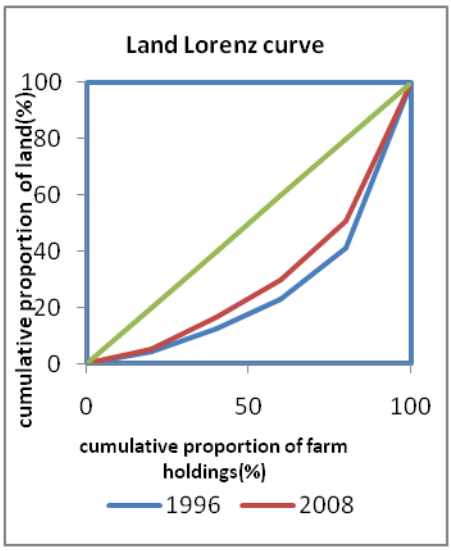
The information available on size distribution of land holding by farm size is given in table 2. It appears from the table that over a period of two and half decades the proportion of small farm(.05 to 2.49 acres) households has increased from 70.4 per cent in 1984 to 84.3 per cent in 2008 but the operated area under the small farm holdings has increased from 28.3 per cent in 1984 to 50.8 per cent in 2008. The proportion of medium size farm(2.50 to 7.49 acres holding has decreased from 24.7 per cent in 1984 to 14.2 per cent in 2008 and the operated area under the medium size holding has decreased from 45.1 per cent in 1984 to 37.1 per cent in 2008. The proportion of large farms (7.50 acres and above) has also experienced decline from 4.9 per cent in 1984 to 1.5 per cent in 2008. The proportion of operated area has decreased from 25.9 per cent in 1983/84 to 12.1 per cent in 2008. The overall mean land holding size of the operated area decreased from 2.26 acres in 1984 to 1.68 acres in 2008. The land Gini exhibited a declining trend from 0.5440 in 1984 to 0.5008 in 2008. The land Lorenz cuve is shown in Figure 3.

Table 2: Distribution of Farm Households and Their Operated Area: 1984-2008.

Items	Agriculture Census Year			
	1984	1996	2008	Change/a
Total farm Household(000)	10045(100)	11798(100)	14870(100)	2.00
Small farm	7066(70.4)	9423(79.9)	12534(84.3)	3.22
Medium farm	2483(24.7)	2077(17.6)	2109(14.2)	-6.27
Large farm	496(4.9)	297(2.5)	229(1.54)	-2.29
Total Operated Area(000 acres)	22678(100)	19957(100)	21945(100)	-1.34
Small	6573(29.0)	8219(41.2)	11152(50.8)	2.90
Medium	10226(45.1)	8282(41.5)	8128(37.0)	-0.85
Large	5879(25.9)	3456(17.3)	2665(12.2)	-2.28
Mean farm holding Size(acres)	2.26	1.69	1.48	-1.44
Per capita operated Size(acres)	0.25	0.17	0.16	-1.5
Land Gini	.5440	.5332	.5008	-0.33

a/ annual rate of growth (%) during 1984-2008 . b/ figures in parenthesis indicate percentage. Author's computation. Source. BBS. Census of Agriculture

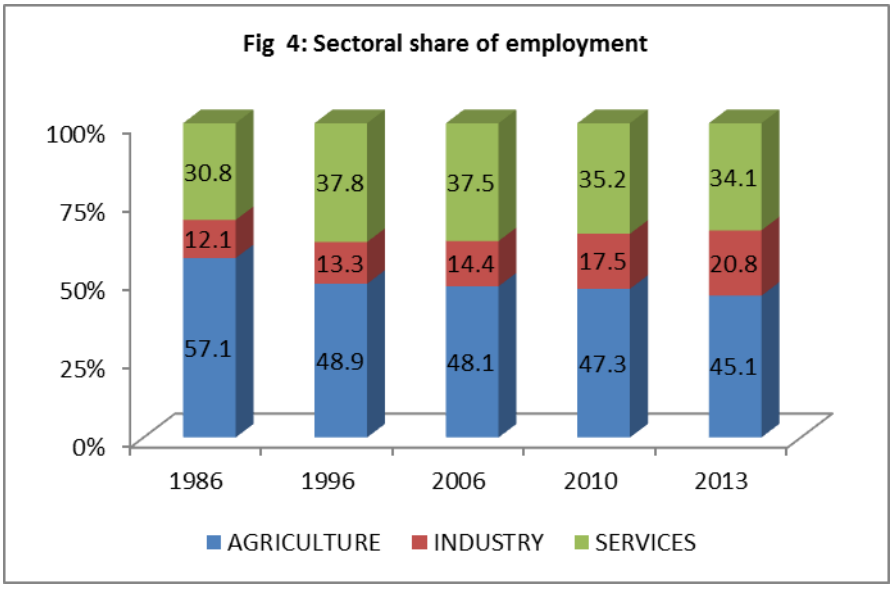
Fig 3. Land Lorenz curve



Source: BBS. Census of Agriculture. Author's computation.

Employment Development.

In 1972-73 total employed population was 20.73 million of which 57.4 per cent belonged to agriculture sector, 15.9 per cent to industry sector and 26.7 per cent belonged to tertiary sector. This number of employed population increased to 58.1 million in 2013 of which 45.1 percent belonged to agriculture sector 20.8 per cent belonged to industry sector and 34.1 per cent belonged to services sector. (Figure 4).



The least squares annual growth rate of per cent employed population in agriculture. industry and services sectors was found to be -0.99, 2.53 and 0.30 per cent respectively. The least squares growth for the employed population in agriculture, industry and services sectors were found to be 1.15 per cent, 5.02 per cent and 2.83 per cent respectively. The least squares annual growth rate for the total employed population was found to be 2.43 per cent. (Table 3).

.

Table 3 : Least Squares Growth Rate of Sectoral Shares (Per cent) of Employed Population: FY1973 To FY2013.

Sectors.	N (Mean)	Regression Coefficient (β^*)	t-ratio	P-value	R square	Least Squares Growth Rate(%)	D-W
Agriculture (Per cent)	41 (52.47)	-.009	6.20	.000	.83	-0.99	0.24
Industry (Per cent)	41 (11.72)	.025	18.21	.000	.91	2.53	0.12
Service (Per cent)	41 (35.81)	.003	4.44	.000	.44	0.30	0.47

Source and Notes. BBS. Author's Computation. The Agriculture sector consists of(a) Agriculture and Forestry (b) Fishing and (c) Mining and Quarrying. The Industry Sector consists of (a) Manufacturing (b) Electricity, Gas and Water Supply and (c) Constructions. The remaining various services categories comprise the Services Sector.

The Regression line is $\ln X_t = \alpha + \beta T$. *The average annual growth rate* $r = [\exp^{\beta^*} - 1] \times 100$, *where* β^* *is the least squares estimate of* β.

Employment Elasticities by Sectors.

For the overall economy the employment elasticity has declined from 0.59 in 2000 to 2006 to 0.38 in 2010 to 2013. The decline is considerable suggesting the shrinkage in the employment generating capacity of the economy during the period 2010 to 2013. Table 4. Among the broad sectors shown in the table agriculture is exhibiting its utmost restraint starting with the 2010s. The situation in the

Table 4. Employment elasticity by sectors. 2000 to 2013.

Sectors	CAGR Approach			
	2000 to 2006	2006 to 2010	2010 to 2013	2000 to 2013
GDP(All sectors)	0.59	0.55	0.38	0.52
Agriculture	0.73	0.67	0.21	0.58
Industry	1.24	1.85	0.89	1.07
Services	0.47	0.26	0.29	0.35

Source. BBS. LFS, BB Economic Trends. Author's computation.

industry sector showing some sign of encouragement in employment generation. For the period 2000 to 2010, the value of employment elasticity is greater than 1-indicative of a decline in labour productivity in the industry sector. The employment elasticity in the service sector has decreased from 0.47 in 2000 to 2006 to 0.26 in 2006 to 2010 and then showing slight improvement to 0.29 in 2010 to 2013. We need to consider the issue of labour productivity while interpreting these values. The 7th Five Year Plan used 0.45 as the employment elasticity for considering the employment generation at the aggregate level. Using the same employment elasticity as in the Sixth Plan (0.45 on aggregate based on specific sectoral elasticities), and a projected average annual GDP growth rate of 7.4% during 2016-2020 (and underlying production structure), varying from 7% (FY16) through 8.0% (FY2020), the economy will be creating additional jobs ranging from 2.3 million in FY16 to 2.9 million in FY20. What this means is that if the projected GDP growth materializes, employment generated in the economy will exceed additions to the labour force each year, so that many of the workforce currently unemployed or under-employed will have the opportunity to move into productive jobs, primarily in the formal manufacturing sector of the economy (7th FYP, p 52).

Employment shift by sectors.

Over the last four decades or so employment creation has shifted from agriculture to industry and service sectors. The employment in the agriculture sector has fallen from 19.8 million(57.1 per cent) in 2000 to 26.2 million(45.1) per cent) in 2013. As of 2013, the manufacturing has the largest share of 9.5 million(16.3 per cent) followed by 7.5 million(12.9 per cent) by trade, hotels and restaurants , 3.7 million(6.4 per cent) in the transport, storage and communication. Table 5. Since 2000, the share of employment in the trade sector has remained relatively stable hovering around 15.5 percent but decreased to 7.5million(12.9 per cent in 2013- while in the case of the manufacturing sector it increased from 9.5 per cent to 16.3 per cent in the same period. Most of the new jobs in the manufacturing sector have been in the RMG sector, construction, transport and other trade-related activities. As regards the rate of change, manufacturing sector had the highest growth(12.1 per cent) followed by 7.7 per cent in electricity, gas steam,7 per cent in the construction sector and 5.8 per cent in the financial and insurance sector. The overall rate of employment growth has been 3.8 per cent.

Emloyment Shift in Occupation.

In terms of occupations, indeed, the analysis reveals that the share of agriculture, forestry and fisheries has constantly declined from 51 per cent in 2000 to 46.3 per cent in 2010. Table 6. This decline has been mainly compensated with an increase in production and transport – from 20.8 per cent in 2000 to 24.9 per cent in 2010. The highest average rate of growth of 25.0 per cent was observed for Administrative and Managerial class, followed by 6.67 per cent for production & transport labourers, 5.0 per cent for professional and technical class and about 4 per cent for sales and service category. It is only the clerical workers group that has posted a decrease of 1.6 per cent per annum. The overall rate of increase of employed increased by 3.9 per cent per year.

Table 5: Employment (Million) shift by Sectors :2000-2010.

Sectors	2000	2003	2006	2010	2013	Growth rate/a
Labour force	40.7	46.3	49.5	56.7	60.7	3.8
Employment(All sectors)	39.0	44.3	47.4	54.1	58.1	3.8
Agriculture, forestry, and fishing	19.8	22.9	22.8	25.7	26.2	2.4
Mining and quarrying	0.2	0.1	0.1	0.1	0.2	0
Manufacturing	3.7	4.3	5.2	6.7	9.5	12.1
Electricity, gas, steam; water supply, sewerage, waste management, and remediation activities .	0.1	0.1	0.1	0.1	0.2	7.7
Construction	1.1	1.5	1.5	2.6	2.1	7.0
Wholesale and retail trade; repair of motor vehicles and motorcycles	6.1	6.7	7.8	8.4	7.5	1.8
Transportation and storage	2.5	3	4	4	3.7	3.7
Financial and insurance activities .	0.4	0.3	0.8	1.0	0.7	5.8
Others	5.1	5.2	5.2	5.7	8.1	4.5
Unemployment	1.8	2.0	2.1	2.6	2.8	4.3
Unemployment Rate(%)	4.4	4.3	4.2	4.6	4.3	-0.2

a/ annual rate of growth (%) during 2000-2013. Author's computation.
Source. BBS. LFS. ADB. Key Indicators for Asia and Pacific 2016.

Table 6: Employment (Million) shift by Occupations and growth rate :2000-2010

Occupations	2000	2003	2006	2010	Growth rate/a
Labour force	40.7	46.3	49.5	56.7	3.9
Employment(All occupations)	39.0	44.3	47.4	54.1	3.9
Professional, Technical	1.6	1.7	2.2	2.4	5.0
Administrative, Managerial	0.2	0.1	0.2	0.7	25.0
Clerical workers	1.2	1.5	1.0	1.0	-1.6
Sales workers	5.8	6.5	6.7	8.2	4.1
Service workers	2.2	2.0	2.8	3.0	3.6
Agri. Forestry, Fisheries	19.9	22.8	23.0	25.7	2.91
Production & transport labourers & others	8.1	9.7	11.5	13.5	6.67
Unemployment	1.8	2.0	2.1	2.6	
Unemployment Rate(%)	4.4	4.3	4.2	4.6	

a/annual rate of growth (%) during 2000-2010.
Author's computation. Source. BBS. LFS.

Employment shift by gender and location

Table 7, Panel A, B and C shows the findings on shift in employment by gender and location. We observe that there has been a slow but steady shift of the workforce from rural to urban areas. The share of rural employment out of total employment has decreased from 89 to 76 per cent between 1989 and 2003. Since then, this percentage has remained stable, indicating of the achievement of an equilibrium point.

Table 7: Employment shift by gender and location and growth rates:2000-2013.

Panel A. Employment (Million) shift by gender.

Gender	2000	2003	2006	2010	2013	Growth rate/a
Male employment	31.1 (79.7)/b	34.5 (77.9)	36.1 (76.2)	37.9 (70.0)	41.2 (70.9)	2.5
Female employment	7.9 (20.3)	9.8 (22.1)	11.3 (23.8)	16.2 (30.0)	16.8 (29.1)	8.7
Total employment	39.0 (100)	44.3 (100)	47.4 (100)	54.1 (100)	58.1 (100)	3.8

Panel B. Employment (Million) shift by location.

Location	2000	**2003**	**2006**	**2010**	2013	Growth rate/a
Urban employment	8.7 (22.3)/b	10.7 (24.1)	11.3 (23.8)	12.4 (22.9)	16.1 (27.7)	6.5
Rural employment	30.3 (77.7)	33.6 (75.9)	36.1 (76.2)	41.7 (77.1)	41.7 (72.3)	2.9
National	39.0 (100)	44.3 (100)	47.4) 100)	54.1 (100)	58.1 (100)	3.8

Panel C. Employment (Million) shift by gender, location ..

Locations	2000	2003	2006	2010	2013	Growth rate/a
Labour force	40.7	46.3	49.5	56.7	60.7	3.8
Employment	39.0	44.3	47.4	54.1	58.1	3.8
National	39.0	44.3	47.4	54.1	58.1	3.8
Male	31.1	34.5	36.1	37.9	41.2	2.5
Female	7.9	9.8	11.3	16.2	16.8	8.7
Urban	8.7	10.7	11.3	12.4	16.1	6.5
Male	6.6	8.2	8.6	8.8	11.6	5.8
Female	2.1	2.5	2.7	3.6	4.5	8.8
Rural	30.3	33.6	36.1	41.7	41.9	2.9
Male	24.1	26.3	27.5	29.1	29.6	1.7
Female	6.2	7.3	8.6	12.6	12.3	7.7
Unemployment	1.8	2.0	2.1	2.6	2.8	4.3
Unemployment Rate(%)	4.4	4.3	4.2	4.6	4.3	-0.2

a/ annual rate of growth (%) during 2000-2013. b/ figures in parenthesis indicate percentage

Regarding gender gap in shift in employment, we also notice a change in favour of female share of the employment. The percentage of female share in employment improved by about 9 percentage point during 2000-13- from 20.3 per cent in 2000 to 29.1 per cent in 2013. Progressing at this rate females of Bangladesh have to keep struggling for about two more decades or so for attaining gender parity in employment, other things remaining same.

During the last 13 years, the highest rate of growth of employment has been achieved by female-8.7 per cent at national, 8.8 per cent at urban and 7.7 per cent in rural areas. We mention here with concern that during the period 2010-13 the number of female employment in rural area decreased from 12.6 million to 12.3 million. The growth of rural male employment has been lowest(1.7 per cent), helping to lower down the growth rate of male employment at 2.5 per cent at national level. The urban male employment growth rate has been higher(5.8 per cent). The employment growth rate in rural area(2.9 per cent) is just the half of its rate in urban counterpart(5.8 per cent).

In the paragraphs that follows, some of the recent opinion of Asian Development Bank and the International Labor Organization are reproduced. In the opinion of International Labour Organization:

Formal job creation has been rather lacklustre :

Despite the strong economic performance that has characterized the Bangladesh economy in recent years, there has been little improvement in the overall labour market situation. Between 2000 and 2010 when GDP growth averaged nearly 6 per cent, the employment rate (ratio of employment to the working-age population) actually fell 1.7 percentage points to stand at roughly 67 per cent in 2010.One of the main challenges to creating enough employment opportunities is related to the fact that the working-age population has grown at a rate of more than 2 million people per year over the past two decades and is expected to grow at a rate of 2.2 million per year over the next decade. Yet formal job creation has averaged only 200,000 per year in the past 10 years. As a result, the incidence of informal employment increased from 75 per cent in 1999/00 to 87 per cent in 2010 – the highest in the region. Moreover, not all of the formal jobs are full-time. In fact, underemployment – defined as employment of less than 35 hours per week – is pervasive. In particular, the rate of underemployment increased from 16.6 per cent in 1999–2000 to 20.3 per cent in 2010. (ILO, 2013)

While the Asian Development Bank in its August 2016 briefs mentions the key employment challenge as:

Key Employment Challenges at a Glance.

• Capitalizing on the increase in the working-age population by raising the qualitative level of the labor force in both general and technical education with direct relevance to the needs of the labor market.• Reversing the decline in the female labor force participation rate.
• Raising GDP growth progressively to 8% a year, which is required to absorb the surplus labor within 15 years or so.
• Attaining job-rich growth where high employment growth is achieved alongside high output growth. This is a challenge because of the recent experiences of manufacturing and construction. In the former, employment growth has exceeded output growth, whereas, in construction, employment growth has been negative despite positive output growth.
• The above requires a genuine structural transformation of the economy through much more diversified growth, in general, and of manufacturing, in particular.

• A major challenge is to raise productivity and incomes from labor—of both the wage employed and the self-employed. Separate strategies are needed for the two groups.
• The decline in women's employment growth needs to be reversed. Particularly important is a diversification of women's jobs to include service sector jobs and jobs abroad.
• The skill composition of migrant workers needs to change toward more skilled workers.
• Bringing down the unemployment rate among the educated and youth. Higher returns associated with investment in higher education show that investment in education is useful. But the functioning of the labor market for educated job seekers needs to improve. (ADB, 2016a).

Apart from this policies to make growth more employment-friendly have to be adopted. These include: (i) facilitating structural transformation to create a greater number of productive jobs, and maintaining a balanced sectoral composition of growth between manufacturing, services, and agriculture; (ii) supporting development of small and medium-sized enterprises; (iii) removing factor market distortions that favor capital over labor; (iv) establishing or strengthening labor market institutions; and (v) introducing public employment schemes as a temporary bridge to address pockets of unemployment and underemployment
(Zhuang et al. 2014).

Sectoral Shares of GDP. 1973-2016.

A brief mention of sectoral GDP shift is in order. In table 8, we make a succinct presentation of the change in sectoral composition of GDP with a touch of the effect of shift in bases in the measurement of GDP. Bangladesh so far has computed annual GDP using four different base year- 1972/73, 1985/86, 1995/96 and 2005/06. The GDP series thus obtained are available in both current and constant prices of the base year for certain number of years in the published documents of Bangladesh Bureau of Statistics and Bangladesh Bank.

During FY1973, the sectoral contribution of GDP was- 52.4 per cent by agriculture sector, 11.3 per cent by industry sector and 36.2 per cent by the services sector according to 1972/73 constant prices. The sectoral share of GDP in 1985/86 constant was- 49.7 per cent for agriculture, 13.8 per cent for industry and 36.5 per cent for the services sector. The shrinkage of GDP in the agriculture sector by 2.5 (52.2-49.7) was absorbed into two other sectors-2.5 percentage point in the industry sector and 0.4 percentage point in the services. Table 8. The contribution of industry sector increased in the new base during the period as the contributions of more and more industrial activities were taken into account. For the FY1980, according to 1985/86 constant base, the sectoral share of GDP was -43.9 per cent by the agriculture sector,15.6 per cent by the industry sector and 40.5 per cent by the services sector. But according to 1995/96 the sectoral share of GDP was- 33.8 per cent for agriculture sector, 16.5 per cent for industry sector and 49.7 per cent for the services sector. Here we notice a shrinkage of agriculture sector GDP by 10.1 (43.9-33.8) percentage points, and an expansion of share of GDP of industry sector GDP by 1 percent and 9.2 percentage points in the service sector. Similar increasing contributions of secondary and services are also observed for other base shifting. It is observed that during the last four decades or so, the share of agriculture sector in GDP has decreased from 52.2 per cent in 1972/73 to 16.3 per cent in 2005-16, though at different bases. The industry sector has gained by 17.3 percentage point from 11.3 per cent in 1972/73 to 28,6 per cent in FY2015-16. The gain of services sector was by 18.9 percentage point, from 36.2 percent in 1972/73 to 55.1 per cent in 2015-16. The least squares growth rate for sectoral share of growth rate was -0.98 for agriculture sector, 1.02 for industry sector and .000 for the services sector for the period 1980 to 2013 at 1995/96 constant base. Table 9 and Figure 5. Whenever, a new base

for the measurement of GDP is introduced, the tertiary sector is crowned with expansion in its contribution. Why? Because a lot of new facilities have been introduced in the period since the last base year. But one pertinent question is- why this services sector keeps on revolving at the same share of its contribution for long?. Figure 5 shows that for the last 34 years during FY1980 to FY2013 the locus of the share of services sector GDP is almost a straight line, forbidding any rate of change other than zero with respect to change in time period-handing over the delicate task of the negotiations of mutual trade off to the remaining two sectors- agriculture and industry sectors. They have been mutually exchanging about 1 per cent growth in favor of secondary sector on an average for the last 34 years.

Table 8: Sectoral Shares of GDP at different bases. 1973-2016

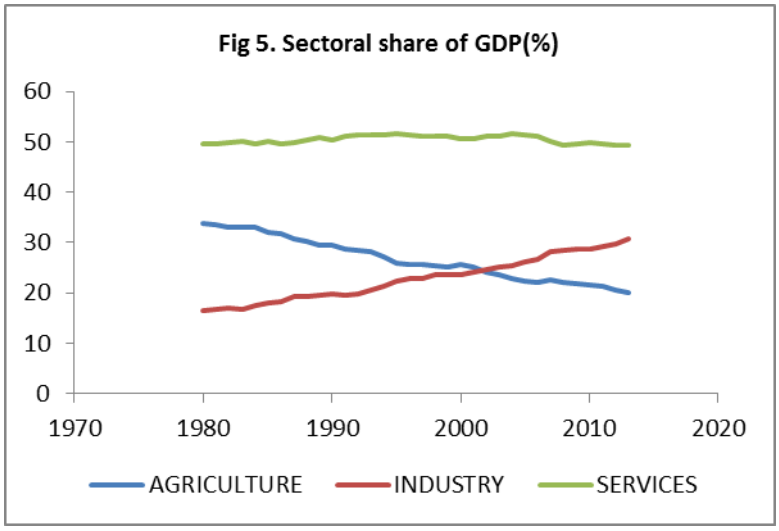
Base Constant price	Year	Sectoral shares of GDP(%)		
		Agriculture	Industry	Services
1972/73	1972/73	52.2	11.3	36.2
	1979/80	46.3	24.6	39.1
1985/86	1972/73	49.7	13.8	36.5
	1979/.80	43.9	15.6	40.5
1995/96	1979/80	33.8	16.5	49.7
	2005/06	22.1	26.8	51.1
	2011/12	20.0	28.8	51.2
2005/06	2005/06	19.5	22.6	57.9
	2011/12	18.2	25.3	56.5
	2015/16	16.3	28.6	55.1

Table 9 : Least Squares Growth Rate of Sectoral Shares (Per cent) of Real GDP at 1995/96 constant:FY1980-FY2013.

Sectors.	N (Mean)	Regression Coefficient (β^*)	t-ratio	P-value	R square	Least Squares Growth Rate(%)	D-W
Agriculture (Per cent)	34 (26.81)	-.016	50.01	.000	.98	-0.98	0.93
Industry (Per cent)	34 (22.07)	.019	49.57	.000	.99	1.02	1.03
Service (Per cent)	34 (51.12)	.000	1.50	.914	.00	0.00	0.59

Source and Notes. BBS. Author's Computation. The Agriculture sector consists of(a) Agriculture and Forestry (b) Fishing and (c) Mining and Quarrying. The Industry Sector consists of (a) Manufacturing (b) Electricity, Gas and Water Supply and (c) Constructions. The remaining various services categories comprise the Services Sector.

The Regression line is $\ln X_t = \alpha + \beta T$. *The average annual growth rate* $r = [\exp^{\beta^*} - 1] \times 100$, *where* β^* *is the least squares estimate of* β.



Development in Education.

Adult Literacy Rate:

Bangladesh has made substantial improvement in its indicators of education since its independence. From table 10 we can see that the adult literacy rate has increased from25.8 per cent in 1974 to 61.1 per cent in 2014. The average annual rate of growth has been 3.4 percent The have been difference in the increase in the level of literacy in all segments of the population such as male and female and locality such as rural and urban. Historically better educational facilities were located in urban area while compared to rural area. Due to prevailing customs and norms girls were not encouraged for schooling in earlier days. There are well reflected in the lower level of literacy for female while compared to male, and also higher literacy rate in urban area in comparison to rural area. But the situation has been observed to improve in rural and urban area in the last four decades or so due to the implementation of the various educational programs by the national government and bilateral programs. Particular incentives e.g. tuition, scholarship, etc. have been provided to the girl students to improve their access to educational institutions. These programs have been successful in bringing the girls to educational institutions and they have a gain in the rate of literacy while compared to the boys. At the national level the average annual rate of change of literacy has been 1.85 per cent for male while it was 8.52 per cent for female. In the urban area the increase in the rate of literacy for female is 2.90 per cent while the male experienced an increase of 0.61 per cent. The weighty impact of educational programs has been experienced by rural female who accomplished a hefty increase of 8.68 per cent while compared to a meager 1.88 per cent for the male counterpart. While passing we mention that in 1974, female had the lowest level of literacy in both rural and urban areas. The urban and rural differences in literacy was 24.7 per cent in 1974, which is still high- 13.0 per cent in 2014. The male female difference in literacy in 1974 was 24.0 percent which reduced to 6.5 percent in 2014.

Table 10: Adult Literacy Rates of population 15 years and above by sex and locality, Bangladesh 1974-2014.

Source	Year	Adult literacy rate(Per cent)								
		National			Urban			Rural		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
SVRS	2014	61.1	64.7	58.2	74.6	77.7	71.5	57.4	60.7	54.1
	2013	61.0	64.2	57.8	74.1	77.3	70.9	57.0	60.2	53.9
	2010	58.6	62.9	55.4	71.6	75.5	67.8	54.1	58.4	49.8
Literacy	2008	48.8	48.6	49.1	56.9	56.7	57.1	46.4	46.1	46.7
Survey	2005	41.5	47.0	36.7	55.7	62.7	49.5	36.7	41.7	32.4
	2002	38.8	46.3	32.0	61.5	69.8	53.9	34.5	41.6	27.8
Census	2001	47.9	53.9	40.8	64.3	70.3	57.1	41.9	47.9	35.9
	1991	35.3	44.3	25.8	54.4	62.6	44.0	30.1	38.7	21.5
	1981	29.2	39.7	18.0	48.1	58.0	34.1	25.4	35.4	15.3
	1974	25.8	37.2	13.2	48.1	62.5	33.1	23.4	34.6	12.1
Change: 1974-14		35.3	27.5	45.0	26.0	15.2	38.4	34.0	26.1	42.0
Rate of change/a		3.42	1.85	8.52	1.34	0.61	2.90	3.63	1.88	8.68
Ratio: 2014/1974		2.37	1.74	4.41	1.55	1.24	2.16	2.45	1.75	4.47

Note. a/annual rate of change(Per cent). Author's Computation. Source . BBS. Population Census. Literacy Survey. SVRS

Adults Literacy Rate by SES.

We have also analysed information on adult literacy rate by socioeconomic status of the population. Table11 provides evidence of wide differences in literacy rate according to socioeconomic status of the population for 2008. The adult literacy rate increased with the increase in socioeconomic status in all segments of the population shown in the table. At the national level, the adult literacy rate for the poorest was 28 per cent which increased to 75 per cent for the richest group of population. The ratio of bottom to top quintile in the adult literacy rate was 0.37 in all segments of the population except urban female who had slightly better situation in their a favour having a ratio of 0.43. The difference in male and female literacy rate in all the socioeconomic categories at national, rural and urban area

Table 11: Adult Literacy Rates of population 15 years and above by Wealth level, Gender and locality, 2008.

Wealth level	Adult literacy rate(per cent)								
	National			Urban			Rural		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Poorest	28	28	29	32	30	36	26	25	26
Poor	40	39	38	47	46	48	34	34	34
Middle	51	51	51	57	59	55	49	48	47
Rich	64	64	64	71	71	71	58	58	58
Richest	75	76	76	83	83	84	69	68	70
Poorest/ Richest	0.37	0.37	0.38	0.38	0.36	0.43	0.38	0.37	0.37

Source . BBS. Literacy Assessment Survey 2008. Author's computation

was very minimal-between 0-2 percentage point. However, the difference in urban and rural literacy rate in all the socioeconomic categories varied between 6-14 percentage point. The lowest difference

of 6 was observed for poorest part of the population which increased with the increase in socioeconomic status to a value of 14 percentage point for richest. Educational programs implemented so far have been successful in reducing the gender gap in adult literacy, but more efforts are in order to mitigate the issues involving urban rural divide.

Enrolment and SES.

Table 12 provides information about gross and net enrolment rate at primary, secondary and higher secondary level by socioeconomic status as indicated by wealth quintiles to which the students belong. For all levels of education shown in the table enrolment rate is highest in the richest quintile for both sex and male and female as well. This is true for both gross and net enrolment rate.

Primary Level.

Considering the primary level we see that the ratio of bottom to top quintile for both gross and net enrolment rate has improved in favour of the poorest quintile during the period 2005-10. For gross enrolment rate the ratio increased from 0.78 in 2005 to 0.88 in 2010. For net enrolment rate the ratio increased from 0.76 in 2005 to 0.89 in 2010 indicating an improved situation for the pupils in the poorest quintile. Regarding the enrolment of boys the change in ratio of bottom to top quintile has been same for both gross enrolment rate and net enrolment rate, from 0.69 in 2005 to 0.82 in 2010. As regards the girls there was no change in the ratio of bottom to top quintile of gross enrolment rate during 2005-10, having a value of 0.96 which is close to gender parity. The bottom to top ratio of net enrolment rate had a low value of 0.80 in 2005 which gained momentum in 2010 with a value of 0.95.

Secondary level.

The difference in enrolment rate at the secondary level according to wealth quintile is worsening. The gross enrolment rate for all pupils(boys and girls) for the poorest quintile was only about 31 percent of enrolment of those who were in the affluent class in 2005 which increased to 45 per cent in 2010. The performance of pupils in terms of net enrolment rate was more or less similar to the gross enrolment rate. The bottom to top ratio in net enrolment rate increased from 0.33 in 2005 to 0.45 in 2010. The boys of the poorest households had only 25 per cent share of their counterpart in the richest households, this share had risen to 38 per cent in 2010. The change in the ratio of bottom to top quintile in net enrolment rate was more or less similar- increasing from 0.24 in 2005 to 0.39 in 2010. The ratio of enrolment rates of bottom/top quintiles was much better for girls in both gross and net enrolment rates. The gross enrolment ratio for girls increased from 0.36 in 2005 to 0.51 in 2010; the net enrolment ratio still better from 0.42 in 2005 to 0.55 in 2010.Table 12.

Higher secondary level.

Here, the proportion of boys and girls enrolled in the poorest quintile was very low, varying between 3-11 per cent. The proportion of boys and girls of richest quintile who were enrolled were much higher displaying wide range of variations in gross and net enrolment rates and the two time period considered. The ratio of bottom/top quintiles in gross enrolment rate for both boys and girls slightly increased from 0.12 in 2005 to 0.13 in 2010, regarding net enrolment rate, this ratio decreased from 0.15 in 2005 to 0.14 in 2010. The bottom/top quintile ratio in gross enrolment rate for boys was static

Table 12 : Enrolment rates by level of education and Wealth Quintile: 2005-2010

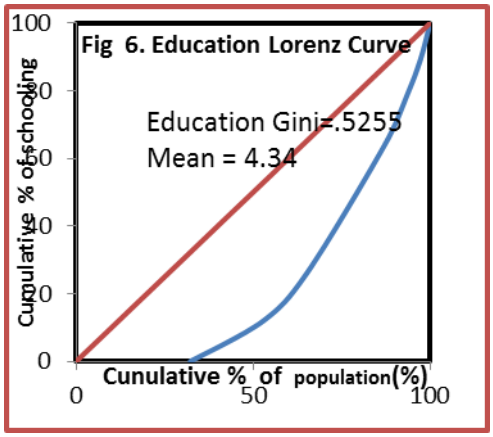
Level of education	Wealth Quintile	Gross Enrolment rate(%)		Net Enrolment rate(%)	
		HIES 2005	HIES 2010	HIES 2005	HIES 2010
Primary					
Boys and Girls	1st quintile	77	93	60	72
	5th quintile	99	105	80	81
Ratio (1st to 5th quintile)		0.78	0.88	0.76	0.89
Boys	1st quintile	71	85	56	66
	5th quintile	102	104	81	80
Ratio (1st to 5th quintile)		0.69	0.82	0.69	0.82
Girls	1st quintile	83	102	63	78
	5th quintile	96	106	79	82
Ratio (1st to 5th quintile)		0.96	0.96	0.80	0.95
Secondary					
Boys and girls	1st quintile	30	37	23	31
	5th quintile	98	82	69	66
Ratio (1st to 5th quintile)		0.31	0.45	0.33	0.45
Boys	1st quintile	25	31	16	25
	5th quintile	99	81	66	64
Ratio (1st to 5th quintile)		0.25	0.38	0.24	0.39
girls	1st quintile	35	43	30	37
	5th quintile	96	84	71	67
Higher Secondary		0.36	0.51	0.42	0.55
Boys and girls	1st quintile	7	11	3	5
	5th quintile	57	81	20	36
Ratio (1st to 5th quintile)		0.12	0.13	0.15	0.14
Boys	1st quintile	8	12	2	3
	5th quintile	57	83	9	40
Ratio (1st to 5th quintile)		0.14	0.14	0.22	0.07
Girls	1st quintile	6	10	3	7
	5th quintile	57	80	20	31
Ratio (1st to 5th quintile)		0.10	0.12	0.15	0.22

Source: 7th FYP. HIES 2005 and 2010. Author's computation.

at 0.14 in the time periods considered, while this ratio for net enrolment rate demonstrated a noticeable decline from 0.22 in 2005 to a low of 0.07 in 2010 suggesting a near calamity situation forboys in the poorest quintile. Regarding the girls, we see that the bottom/top quintile ratio of gross enrolment rate slightly increased from 0.10 in 2005 to 0.12 in 2010; this ratio for net enrolment rate showed an improving performance , from 0.15 in 2005 to 0.22 in 2010. Table 12.

Education Gini Coefficient: Population Census 2011

Analysing data from Population cenus 2011, the national Gini ratio is 0.5255 and the Gini ratio for rural area is 0.5403 and for the urban area Gini ratio is found to be 0.4578 suggesting a concentration at the lower end of the years of schooling in rural areas while compared to urban area. The Gini coefficient for female has been all along higher while compared to the Gini coefficient for male suggesting intra-concentration of inequality for female in all the locations. This pattern of differentials in Education Gini ratio is prevalent in all the divisions. Among the divisions Rajshahi, Rangpur and Sylhet had the higher value of Gini concentration ratio while Barisal, Chittagong and Khulna regions were on the lower value of Gini ratio. Figure 6.



Source: Population Census, Author's computation

Illiteracy of Ever married women:

Findings based on the analysis of illiteracy of ever married women(age 15-49) obtained in BDHS are presented in Table 13 and Figure 7. Table 13 shows that overall mean illiteracy rate of all women decreased from 32.1 per cent in 2007 to 23.5 per cent in 2014. In all the survey years considered in the table the illiteracy rate monotonically decreased with the increase in the socioeconomic status of the women as determined by wealth quintile. The ratio of illiteracy rate of poorest/richest quintile increased from 3.83 in 2007 to 5.17 in 2014 indicating a worsening situation for illiteracy of women in the bottom quintile. The illiteracy rate has decreased during 2007-14 in all the socioeconomic group of the women but the rate of decrease are different. The highest rate of reduction of 5.9 per cent in illiteracy was observed for women in the richest quintile, followed by 5.8 per cent for women in the middle quintile. The women in the poorest quintile has the minimum gain of 3.0 per cent. The average annual rate of decrease has been 3.8 per cent.

Table 13. Illiteracy Rate of Ever Married Women(age 15-49) by Wealth Index : BDHS 2007- 2014

	Percent Illiterate			
Wealth Index	BDHS2007	BDHS2011	BDHS2014	Change/a
Poorest	54.8	50.0	43.4	-3.0
Poorer	42.8	38.8	30.8	-4.0
Middle	35.8	24.3	21.6	-5.8
Richer	25.4	18.1	17.3	-4.5
Richest	14.3	9.8	8.4	-5.9
All Women	32.1	26.0	23.5	-3.8
Poorest/Richest	3.83	5.10	5.17	4.9
Concentration Index	-0.2535	-0.2618	-0.2784	

a/ annual rate of change (Per cent) during 2007-2014. Women in 'no education' category has been considered illiterate. Author's computation. BDHS 2007, BDHS2011,BDHS2014.

Concentration index and concentration curve.

In the analysis that follows we shall employ the technique of Concentration curve and concentration index in measuring the extent of inequality in education, health and nutrition sector variables. The concentration index and related concentration curve provide a means of quantifying the degree of income-related inequality in a specific variable. The two key variables underlying the concentration curve are: the variable (e.g. health, nutrition, education), the distribution of which is the subject of interest; and a variable capturing living standards, against which the distribution is to be assessed. In the present analysis study population, e.g. women, children etc are grouped according to socioeconomic status (e.g. wealth quintile). The ranking of the groups(which group is poorest, which group is second poorest, and so on) and the percentage of the sample, (e.g. 20% in each) is known.. The convention is that the index takes a negative value when the curve lies above the line of equality, indicating disproportionate concentration of the variable among the poor, and a positive value when it lies below the line of equality. If the variable, is a 'bad' such as ill health, a negative value of the concentration index means ill health is higher among the poor. Table 14 and equation (1) give the details of procedure for computing concentration index.

The concentration curve plots the cumulative percentage of the variable (Lp) in vertical axis against the cumulative percentage of the sample, ranked by living standards, beginning with the poorest, and ending with the richest (p) in horizontal axis. If everyone, irrespective of his living standards, has exactly the same value of the criterion variable, the concentration curve will be a 45^0 line, running from the bottom left-hand corner to the top right-hand corner. This is known as the line of equality. If, by contrast, the health sector variable takes higher (lower) values amongst poorer people, the concentration curve will lie above (below) the line of equality. The further the curve is above the line of equality, the more concentrated the health variable is amongst the poor. The techniques have been widely used in the analysis of health variable. But I find no problem in assessing the concentration of illiteracy. Figure 7 gives the illiteracy concentration curve for ever married women. The concentration index computed for the year 2007 was found to be -0.2535 which increased to -0.2784 in 2014 indicating that concentration of illiteracy in the lower socioeconomic status is on the rise. The concentration curves drawn for the years 2007, 2011 and 2014 all laid above the line of equality suggesting that there have been concentration of illiteracy among the women belonging to lower quintiles.

Table 14. Inequality in Literacy of Women by Wealth Quintile:BDHS 2014

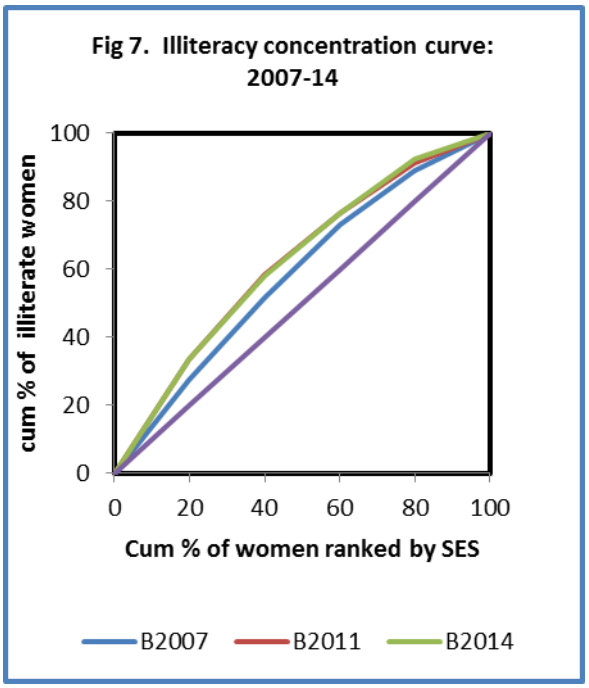
Wealth Quintile	No of Women	Relative Per cent	Cum % Women p	No of Illiterate Women	Relative Per cent	Cum % Illiterate Women L(p)	Per cent Illiterate	Conc. index
1st	3251	18.2	18.2	1410	33.5	33.5	43.4	-.0183
2nd	3360	18.8	37.0	1036	24.6	58.1	30.8	-.0491
3rd	3621	20.3	57.3	782	18.6	76.7	21.6	-.0730
4th	3769	21.1	78.4	652	15.5	92.2	17.3	-.1380
5th top	3842	21.5	100.0	326	7.7	100.0	8.4	0
Total	17863	100.0		4206	100.0		23.5	-.2784
1st/5th							5.17	

Source: BDHS 2014 . Author's computation.

The concentration Index is given by the formula (Fuller and Lurry, 1977).

$$C = (p_1L_2 - p_2L_1) + (p_2L_3 - p_3L_2) + (p_3L_4 - p_4L_3) + (p_4L_5 - p_5L_4) + \ldots + (p_{T-1}L_T - p_T L_{T-1}). \quad (1)$$

where p is the cumulative percent of the sample ranked by economic status, $L(p)$ is the corresponding concentration curve ordinate, and T is the number of socioeconomic groups.



Illiteracy still an issue:

With the progress it is currently making, Bangladesh needs another 44 years to have an initial level of literacy skills for all its citizens and 78 years to attain the advanced level, according to a report of Campaign for Popular Education . While the number of people in each level of literacy has increased,

the main driver behind this increase has been the overall population growth. And although progress has been made in various levels of literacy, the pace of progress has remained sluggish — 0.7 percent annually. This is obviously unsatisfactory as the progress made has clearly been stymied, most noticeably, by social constraints. One example would be the large number of children, who are still not attending schools in spite of the government making primary education free for all. Instead, they are being forced into child labour to economically support their struggling families. But even when we do have individuals going through the education system for a long enough period of time, sometimes, their level of literary competency remains awfully low compared to what is acceptable. Not only does this cast a shadow on the quality of education that is being provided, but it also indicates to the existence of deep systemic problems within the entire system that needs addressing for there to be any substantial improvement. And to identify these and address the most fundamental problems within our education system, the authorities must involve experts to devise a comprehensive strategy for improving the quality of education. Meanwhile, by removing the various social constraints, access to education can be increased significantly across the board. [The daily Star. Editorial. 24 December 2016).

Development in Health and Nutrition.

Infant and Child Mortality.

During 1970s, the infant and child mortality in were considerably high in Bangladesh. For earlier years of the nation we have information from studies on Population Growth Estimation(PGE) Experiment, Bangladesh Retrospective Survey of Fertility and Morality(BRSFM), World Fertility Survey/Bangladesh Fertility Survey and UN World Population Prospects. During 1970s the infant mortality rate was in the vicinity of 150-160 per thousand live births, and the Under 5 mortality rate was in the range of 230-250 per thousand live births. But infant and child mortality has decreased greatly over the last four decades or so due to the implementation of massive population and health related programmes mostly financed by the bilateral and multilateral donors in the form of relief, grants and loans. By mid 1980 various reform programmes for enhancing access to educational institutions were initiated starting with the universalisation of primary education project.

Table 5: Infant and Under 5 Mortality :2004-2014.

Wealth quintile	2004		2014		Change/a	
	Infant mortality	Under 5 mortality	Infant mortality	Under 5 mortality	Infant mortality	Under 5 mortality
Poorest	90	121	43	53	-5.2	-5.6
Poorer	66	98	52	63	-2.1	-3.6
Middle	75	97	41	47	-4.5	-5.1
Richer	59	81	31	37	-4.7	-5.4
Richest	65	72	24	30	-6.3	-5.8
Total	65	88	38	46	-4.1	-4.8
Ratio: 1^{st}/5th	1.38	1.68	1.79	1.77		

a/ annual rate of growth (%) during 2004-2014. Author's computation.
Infant mortality rate ($_1q_0$).Under 5 mortality rate ($_5q_0$). Deaths per 1,000 live births. Source. BDHS Final Reports 2004 and 2014

The BDHS provides information on the level and trend of infant and child mortality in regular and comparable framework. The value of infant mortality rate decreased from 87 in 1993-94 to 38 in 2014. The value of under 5 mortality also showed similar decline from 133 per thousand live birth in 1993-94 to 46 in 2014. Table 5 provides information on the change of infant and under 5 mortality rates according to wealth quintile of the children's households. In general, infant and child mortality are inversely related to the socioeconomic status of households as it is expected The highest decline in both infant mortality (-6.3%) and under 5 mortality(-5.8%) has been observed for the richest households, followed by decline of -5.2% of infant mortality and -5.6% decline of under 5 mortality for the poorest households. Here the performance of the households in the poorest quintile in utilizing the health care facilities appears to be judicious, great and exceptional. While studying the inter temporal change in other characteristics such as access to education and in child nutrition, the gain of the households in the bottom quintiles was at its lowest rung. That's not all, a careful look at the change in the achievements of infant and under 5 mortality suggests that all the sample households irrespective of socioeconomic status fought a very fierce battle in materializing the facilities available for the preventions of deaths of their children at their early life. On the other hand- was it that the inputs for the prevention of infant and child deaths were optimal? - or was it that the programmes were implemented very efficiently of which we don't here very often? It has been argued that the reductions in mortality in Bangladesh in general, has largely been remain concentrated at the early and young age of the population. At the end of the day for the year 2014 we have expectation of life (at birth) increased to 69.1 years for male and 71.6 years for female and 70.7 for both male and female from a humble level of 46. 31 for male, 46.25 for female and 46.28 for both male and female in the early 1970s.

Children's Nutritional Status

Stunting:

There has been some improvement in child nutritional status over the past decades. Table 15a Figure 8a. The level of stunting among children under age 5 has declined from 50.6 percent in 2004 to 36.1 percent in 2014 The proportion of stunted children under five years of age varied inversely with the household wealth quintile. For the year 2014 , it was highest(49.2%) in the bottom quintile and lowest(19.4%) in the top quintile, and the rate ratio of bottom/top quintiles was 2.54. During the period 2007-14 the gain in the change in the rate of reduction in stunting has been highest of 3.75% for the children of richest families followed by children from richer famililies. As is expected, children from the households in poorest quintile has to be satisfied with the lowest rate of reduction of 1.27%. The concentration index increased from 0-.1233 in 2007 to -0.1639 indicating concentration of stunting in the lower wealth quintiles of the household. The concentration curve laid above the line of equity(45^0 line) indicating that there is good deal of concentration of under nutrition in stunting the lower wealth quintiles. Table 16.

Wasting:

The proportion of wasting of children decreased from 14.5% in 2004 to 14.3% in 2014. The proportion wasting also varies inversely with the household wealth quintiles. Table 15b and Figure 8b. For the year 2007 the highest proportion(20.8%) of wasting was found for bottom household quintile while lowest proportion (13.2%) of wasting was found for the children of the top household wealth quintile and the rate ratio for bottom/top quintiles was 1.58. The value of concentration index was found to be -0.0575 for 2007 which increased to -0.0878 in 2014 and was found to be indicating concentration of wasting among children from households belonging to lower quintiles The

concentration curve laid above the line of equity(45^0 line) indicating that there is good deal of concentration of under nutrition in the lower wealth quintiles

Underweight:

The proportion of underweight children decreased from from 42.5% in 2004 to 32.6% in 2014**.**, The proportion underweight children also varies inversely with the household wealth quintiles. For the year 2007, the highest proportion(50.5%) of underweight was found for bottom household quintile while lowest proportion (26.0%) of underweight was found for the children of the top household wealth quintile and the rate ratio for bottom/top quintiles was 1.94. The value of concentration index was found to be -0.1090 for 2007 which increased to -0.1718 in 2014 indicating concentration of underweight among children from households belonging to lower quintiles. The concentration curve laid above the line of equity(45^0 line) indicating that there is good deal of concentration of underweight in the lower wealth quintiles. Table 15c and Figure 8c.

There has been some improvement in child nutritional status over the past decade The level of stunting among children under age 5 has declined from 50.6 percent in 2004 to 36.1 percent in 2014. In the last three years it declined by 5.2 percentage points. Wasting increased to 17.4 percent in 2007 from 14.5 percent in 2004 and has gradually declined since then, to 14.3 percent in 2014. The level of underweight has declined from 42.5 percent in 2004 to 32.6 percent in 2014. The HPNSDP 2011-16 targets for 2016 are 38 percent for stunting and 33 percent for underweight. The 2014 BDHS data show that these targets have been achieved.

Table 15a: Trend in Stunting(Ht/A) of children under age 5 by Wealth Index :BDHS 2007- 2014

Wealth Index	Stunting (Percent stunted)			Change/a
	BDHS2007	BDHS2011	BDHS2014	
Poorest	54.0	53.7	49.2	-1.27
Poorer	50.7	45.4	42.2	-2.39
Middle	42.0	40.7	35.9	-2.07
Richer	38.7	35.9	31.0	-2.84
Richest	26.3	25.7	19.4	-3.75
All Women	43.2	41.3	36.1	-2.35
Poorest/Richest	2.05	2.09	2.54	3.41
Concentration Index	-.1233	-.1452	-.1639	

*Source: BDHS. Author's computation***.** *a/ annual rate of change (Per cent) during 2007-2014*

Table 15b . Trend in Wasting (Wt/Ht) of children under age 5 by Wealth Index :BDHS 2007- 2014

Wealth Index	Wasting (Percent)			
	BDHS2007	BDHS2011	BDHS2014	Change/a
Poorest	20.8	17.5	17.1	-2.54
Poorer	17.8	16.2	16.5	-1.04
Middle	16.9	17.7	12.8	-3.46
Richer	17.6	13.6	13.1	-3.65
Richest	13.2	12.1	11.7	-1.62
All Women	17.4	15.6	14.3	-2.54
Poorest/Richest	1.57	1.45	1.46	-1.00
Concentration Index	-.0575	-.0674	-.0878	

Source: BDHS. Author's computation. a/ annual rate of change (Per cent) during 2007-2014

Fig 8a. stunting concentration curve.

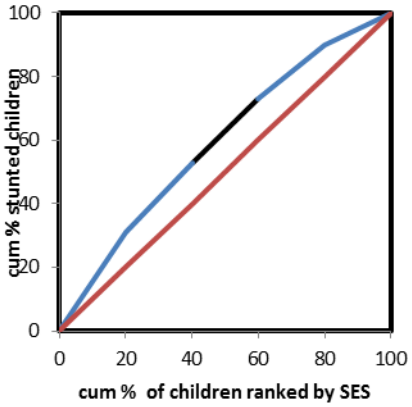


Fig 8b. Wasting concentration curve

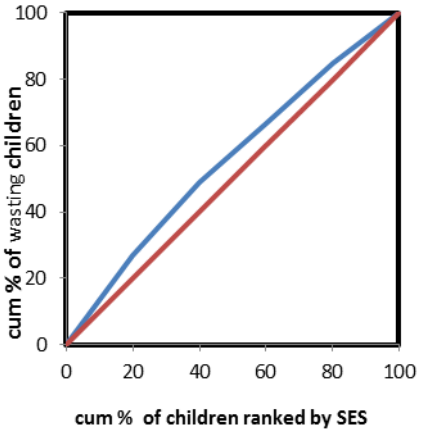


Fig 8c. Underweight concentration curve

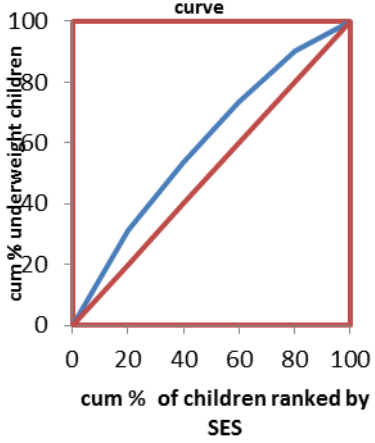


Table 15c . Trend in Underweight (Wt/A) of children under age 5 by Wealth Index :BDHS 2007- 2014

Wealth Index	Underweight(Percent)			Change/
	BDHS2007	BDHS2011	BDHS2014	a
Poorest	50.5	50.3	45.1	-1.53
Poorer	45.9	41.6	38.7	-2.24
Middle	41.0	36.0	32.1	-3.10
Richer	38.1	27.5	27.3	-4.05
Richest	26.0	20.9	17.4	-4.72
All Women	41.0	36.4	32.6	-2.93
Poorest/Richest	1.94	2.41	2.59	4.79
Concentration Index	-.1090	-.1361	-.1718	

Source: BDHS. Author's computation. a/annual rate of change (Per cent) during 2007-2014

Table 16. Inequality in Children's Nutrition(Stunting:Ht/A)) by Wealth Quintile:BDHS 2014

Wealth Quintile	No of childr en	Relati ve Per cent	Cum % Childr en p	No of Stunted children	Relati ve Per cent	Cum % Childre n Stunted L(p)	Per cent Stunte d	Conc.. index
1st	1661	22.7	22.7	817	30.9	30.9	49.2	-.0082
2nd	1383	18.9	41.6	584	22.1	53.0	42.2	-.0168
3rd	1464	18.8	60.4	525	19.9	72.9	35.9	-.0419
4th	1465	20.0	80.4	454	17.2	90.1	31.0	-.0970
5th top	1345	18.6	100.0	261	9.9	100.0	19.4	0
Total	7318	100.0		2641	100.0		36.1	-.1639
1st/5th							2.5	

Source: BDHS 2014 . Author's computation.

Trend in nutritional status of Women.

Short stature height(Height <145 cm.)

The percentage of women in low stature height(height<145 cm.) decreased from 15.6 per cent in 2004 to 12.6 percent in 2014. The ratio of bottom to top quintile of percentage of low stature height decreased from 2.59 in 2007 to 1.73 in 2014. The concentration index for 2007 was found to be -0.1154 in 2007 which decreased to -0.1081 in 2014. Low body mass index (<18.5 kg/m2) and/or short stature (height <145 cm) are common in women in low-income countries, with the highest rates of the former observed in southern and southeastern Asia. Figure 9a.

Thin women(BMI<18.5):

The proportion of women with BMI<18.5 decreased from 52.0 percent in 1997 to 18.6 per cent in 2014. The proportion of thin women varies inversely with the wealth quintile of the household. The bottom to top quintile ratio declined from 3.23 in 2007 to 1.73 in 2014. The concentration index was found to be -0.1889 for 2007 which increased to -0.2692 for 2014. Figure 9b.

Overweight (BMI>25.0). The proportion of overweight(BMI>25.0) women increased from2,8 percent in 1997 to 23.8 percent in 2014. In 2014 the proportion of overweight women was 8.4 per cent in the poorest quintile which increased with the increase in the wealth quintile and in the richest

quintile the 46.6 percent of the women was overweight. The bottom to top ratio in the proportion of overweight women increased from 0.10 to 0.18 . The concentration index was found to be 0.4440 in 2007 which decreased to 0.3078 in 2014. Figure 9c.

Utilization of Reproductive Health Care Services.

Antenatal Care:

The percentage of women receiving antenatal care from medically trained provider increased from 51 per cent in 2004 to 64 per cent in 2014. The percentage of women utilizing antenatal care varies inversely with the wealth quintiles. In 2014 the highest(90.0%) percentage of women utilizing antenatal care was for the top quintile and the lowest(35.6%) was found for women in the bottom wealth quintile. The rate-ratio of bottom/top quintiles was 0.40. The value of concentration index was found to be 0.2055 for 2007 which decreased to 0.1614 in 2014 indicating good deal of concentration in the utilization of antenatal care services among women in richer quintiles. The concentration curve laid below the line of equity as expected.Figure 10a.

Delivery Assistance by MTP.

The percentage of women receiving assistance in delivery care by the medically trained provider increased from 37.4 per cent in 2007 to 42.1 per cent in 2014. The percentage of women utilizing delivery assistance by MTP varies inversely with the wealth quintiles. In 2014 the highest (70.2) 8%) percentage of women utilizing delivery care was for the top quintile and the lowest (17.9) was found for women in the bottom wealth quintile. The rate-ratio of bottom/top quintiles was 0.42. The value of concentration index for 2014 was found to be 0.2604 indicating good deal of concentration in the utilization of delivery care services among women in richer quintiles. The concentration curve laid below the line of equity as expected. Figure 10b.

Place of Delivery:

The per cent of deliveries taking place at the health facility increased from 14.6 per cent in 2007 to 37.4 Per cent in 2014. The proportion of mother who had deliveries at health facility increased with the increase in her socioeconomic status. In 2014 highest(70.2%) percentage of mothers who used health facility for delivery was in the top quintile, while proportion of mothers in the poorest quintile using health facility for delivery was only 14.9 per cent. The ratio of bottom to top quintile percentage in using health facility increased from 0.10 2007 to 0.21 in 2014. The concentration index for 2014 was found to equal to 0.2981 implying good deal of concentration of using health facility at the upper quintiles of the women. Figure 10c.

Delivery at C-Section.

The proportion of mothers who had delivery at C-Section increased from 7.5 per cent in 2007 to 22.9 per cent in 2014. The proportion of women using C-section for delivery increased with the increase in the wealth quintile to which the women belong. The ratio of bottom to top quintile of the proportion of women using C-section increased from 0.10 in 2007 to 0.13 in 2014. The concentration index for the year 2014 was found to be 0.3750 implying that a greater utilization of C-section is done by the women from well to do family. The concentration curve laid below the line of equity.

Bangladesh is one of the top performers in ensuring nutrition and basic medical care, and health and wellness, according to the Social Progress Index 2016 prepared on a study on 133 countries. The nutrition and basic medical care has the smallest number of countries which did well and Bangladesh is one of them.(SPI, 2016).

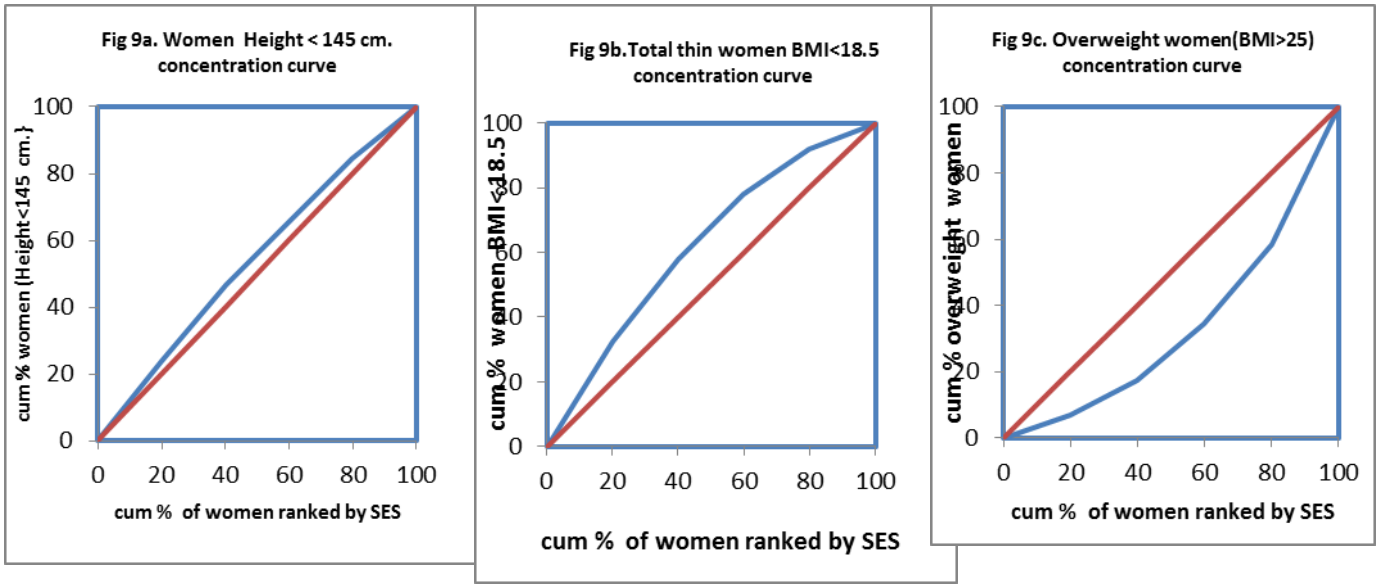


Fig 9a. Women Height < 145 cm. concentration curve
cum % women (Height<145 cm.)
cum % of women ranked by SES
Fig 9b.Total thin women BMI<18.5 concentration curve
cum % women BMI<18.5
cum % of women ranked by SES
Fig 9c. Overweight women(BMI>25) concentration curve
cum % overweight women
cum % of women ranked by SES

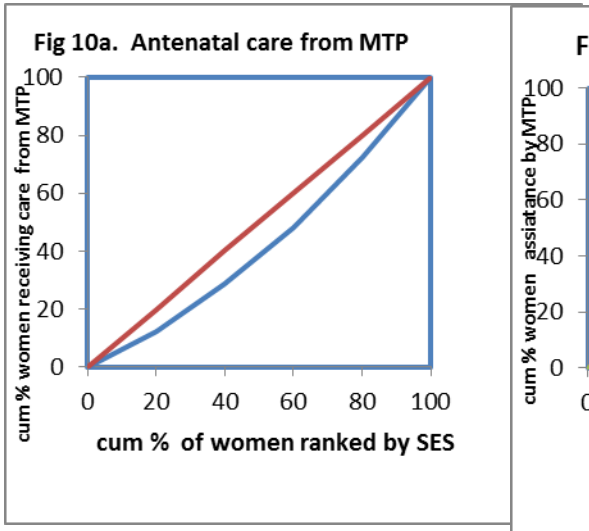


Fig 10a. Antenatal care from MTP
cum % women receiving care from MTP
100
80
60
40
20
0
0
20
40
60
80
100
cum % of women ranked by SES

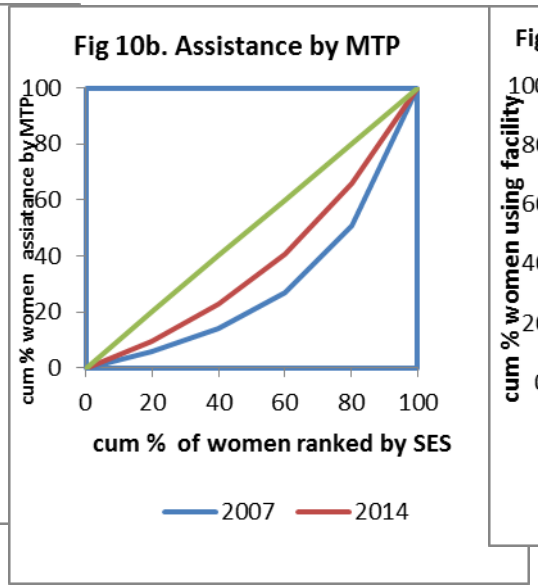


Fig 10b. Assistance by MTP
cum % women assiatance by MTP
100
80
60
40
20
0
0
20
40
60
80
100
cum % of women ranked by SES
2007
2014

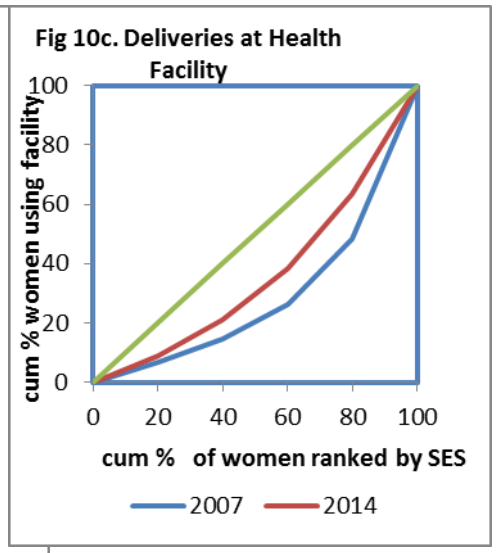


Fig 10c. Deliveries at Health Facility
cum % women using facility
100
80
60
40
20
0
0
20
40
60
80
100
cum % of women ranked by SES
2007
2014

Graduation from LDC.

Amidst this backdrop, Bangladesh has been classified as a lower middle income country(LMIC) by World Bank beginning July 2015. As per the World Bank criteria, Bangladesh graduated to lower middle-income country status as its GNI per capita reached to above US$1046, which is the WB's standard. The country is now making an all out efforts to meet the United Nations criteria of graduation from the least developed country. The next review for graduation from the least developed country by the Committee for Development Policy(CDP) is due in 2018, where the three different criteria that are presently considered are (a) per capita GNI by World Bank Atlas method (b) human asset index(HAI) and (c) economic vulnerability index(EVI). The criteria are developed and refined periodically by the CDP. That is why it is sometimes compared with as striking a moving goal post. The ECOSOC has to endorse the CDP recommendations for graduation of a country and the UNGA has to confirm it. According to UNCTAD Report on Least Developed countries 2016- Bangladesh along with five other countries might meet the statistical pre-eligibility for graduation in 2018 and full eligibility in 2021.

How to address inequality?

It will not be out of context to reiterate the fact that to talk about inequality was not a very welcome thing in Bangladesh even in the recent past. Why? Mostly because the people were probably made to belief that everyone is equal here! Growth is there. It is the ultimate panacea. Although a near volcanic eruptions were abound across the globe- on apprehension that a handful of individuals are going to be the owner of most of the wealth of this planet in no time. In one of my earlier paper (Matin, 2014) I have quoted the concern of the world leaders and academics regarding the consequences of entrenched inequality on society and I feel no need in repeating them here. I have also discussed Bangladesh government's efforts in applying social safety net programs in mitigating inequality in another paper(Matin, 2015).

On the global front we have been listening to that the number of billionaires whose wealth is equal to the poorest half(3.6 bn) has reduced from 388 in 2010 to 62 in 2015. Recently revised and updated findings present that the number of billionaires whose wealth is equal to the that of the bottom half of the world population could be just 8 in 2016. The projected numbers indicate that by about 2022, there could be a single super rich individual whose wealth shall match the wealth of the bottom half of the world population. The richest are accumulating wealth at such an astonishing rate that the world could see its first trillionaire in just 25 years(Oxfam, 2017).

The major problem involved is to regard growing inequality as an issue. Policies should be adopted in such a way that income of the lower 90 per cent of the households increases at faster rate than the rate of increase of income of the top 10% of the households. Some steps should be taken as redistribution of income and wealth in favour of the poor where possible such as safety net programs. It has to be supported by strong political commitment and leadership. The policy instruments are available in abundance.

The 7th FYP regarding the issue of addressing inequality says:

The reduction of income inequality is a tough challenge and a long term endeavour. It laid lot of emphasis on reducing the initial gap of endowment of assets and human capabilities among different

strata of population. Human development strategy with emphasis on alleviating the access gap for the poor is one powerful instrument. Facilitating asset accumulation through better access to credit for the poor can be helpful for reducing income inequality. Better strategy for social inclusion by eliminating physical and social barriers is another important instrument. The experience of Western Europe suggests that fiscal policy can be a very powerful instrument for reduction of income inequality. This calls for both increased public spending on social sectors (health, education, sanitation, water supply and social protection) and very importantly a well-designed personal income taxation system that taxes all sources of income at a progressive rate. The dynamic redistribution of wealth, assets and income through policies, regulations and institutions that seek to increase human capital and earnings capabilities of the poor citizens hold much better promise and prospects. Access to better education and healthcare is a fundamental right of the Bangladeshi citizen and requires utmost attention of the government. A strong social protection system is another instrument for improving income distribution. These policies have worked in some advance countries in the world to contain and lower income inequality.

Clearly, a major way that the government can help improve income distribution is by making faster progress in building up the human capital of the poor. This will equip the poor to get better and higher paying employment. An educated and healthy labour force can also help increase the rate of growth of GDP while improving income distribution.

The strategy adopted in the 7^{th} five year plan are (i) to increase the level of spending on education from 2.2 per cent of GDP in the base year to 3.0 per cent in end year 2020 (ii) to increase the spending on health from 0.8 per cent of GDP in base year to 1.2 percent in end year (iii) to increase spending in social protection from its base year level of 2.2 per cent of GDP to 2.3 per cent in end year (iv) to increase spending in rural infrastructure from 2.0 of GDP in base year to 3.0 per cent in the end year.

References.

ADB. 2016a. Employment and the Labor Market in Bangladesh: Overview of Trends and Challenges. ADB Briefs No. 62. August 2016. ADB. Manila
ADB. 2016b. Key Indicators for Asia and the Pacific 2016. 47th Ed. ADB. Manila
ABB. 2016c. Employment-Bangladesh. ADB. Manila

Bangladesh Bank. Economic Trends. December 2016. Also previous Reports. Statistics Department. Bangladesh Bank. Dhaka.

BBS. Statistical Yearbook of Bangladesh 2015. Bangladesh Bureau of Statistics. Ministry of Planning. Dhaka.

BBS. 2012. Population and Housing Census 2011. Socioeconomic and demographic Report. National Series. Volume 4. Bangladesh Bureau of Statistics. Ministry of Planning. Dhaka. Also previous Census Reports

BBS. 2011. Household Income and Expenditure Survey(HIES) 2010. Also previous Reports.

Credit Suisse. Global Wealth Report 2014.

Boushey, Heather and Carter C. Price. 2014. How Are Economic Inequality and Growth

Chowdhury.O. H.and S. R. Osmani. 2010. Towards Achieving the Right to Health: The Case of Bangladesh . The Bangladesh Development Studies 33(1-2):

Conservable Economist. September 27th, 2011. The Kuznets Curve and Inequality Over the last 100 Years.

Causa, Orsetta, Alain de Serres and Nicolas Ruiz .2014 . Can growth-enhancing policies lift all boats? An analysis based on household disposable incomes, OECD Economics Department Working Papers, OECD Publishing, Paris, forthcoming.

Economist, London. October 13th, 2012. For Richer, for Poorer.

ESCAP. 2015. Economic Survey of Asia and the Pacific. 2015. United Nations. New York.

Fuller, M., and D. Lury. 1977. Statistics Workbook for Social Science Students. Oxford, United Kingdom: Phillip Allan.

Gini, C. (1912). "Italian: Variabilità e mutabilità" 'Variability and Mutability', C. Cuppini, Bologna, 156 pages. Reprinted in Memorie di metodologica statistica (Ed. Pizetti E, Salvemini, T). Rome: Libreria Eredi Virgilio Veschi (1955).

Gwatkin, Davison R et al. 2005. Reaching the Poor With Health, Nutrition and Population Services: What works, what Does not and Why. The World Bank. The Washington D. C.

-------2007. Socioeconomic Difference In Health, Nutrition and Population Within Developing Countries:Ghana. The World Bank. Washington D.C.

Hong, R and V. Mishra. 2006. Effect of Wealth Inequality on Chronic Under Nutrition In Colombian Children. J. Health , Population and Nutrition 24(1):89-99

Hong, R, JE Banta, JA Betancourt. 2006. Relationship Between Household Wealth Ineqaulity and Chronic Childhood Under Nutrition In Bangladesh. Int J Equity Health 2006:5-15

Hussain, Z and J. Zutt. 2014. What has happened to Poverty and Inequality Lately ?. The Financial Express. 21st Anniversary Issue Supplement Part 2. November 27th, 2014. Dhaka

ILO. 2013. BANGLADESH: seeking better employment conditions for better socioeconomic outcomes. Studies on growth with equity.ILO. Geneva.

Islam, R. 2013. Addressing the Challenge of Economic Inequality. The Daily Star. 22nd Anniversary Special Supplement March 19th, 2013. Dhaka.

Kakwani, N.C, A. Wagstaff and E. Van Doorslaer. 1997. Socioeconomic Inequalities In Health: Measurement, Computation and Statistical Inference. Journal of Econometrics 77(1):87-104

Matin, K. A. 2014. Income Inequality in Bangladesh. Paper presented at the 19th Biennial Conference of the Bangladesh Economic Association(BEA) held in Dhaka during 25-27 November, 2014.

_____ 2012. Demographic Dividends in Bangladesh: The Time To Act is Now. Paper presented at 18th Biennial Conference of the Bangladesh Economic Association(BEA) held in Dhaka during September 14-16, 2012.

NIPORT, Mitra & Associates and Macro International Inc. 2016. Bangladesh Demographic and Health Survey 20014. Dhaka.

Osmani, S. R. 1996. Is Income Equality Good for Growth. Pp 30-60 in Abu Abdullah and A. R. Khan(eds), State Market and Development. Essays in Honour of Rehman Sobhan ., The University Press Limited. Dhaka.

Osmani, S.R. 2015. Linking Equity and Growth In Bangladesh. Background paper prepared for The Seventh Five Year Plan of the Government of Bangladesh. Planning Commission. Dhaka.

Sack, David A. Achieving The Millennium Development Goals for Health and Nutrition in Banagladesh:Key Issues and Interventions-An Introduction. Journal of Health, Population and Nutrition(JHPN):26(3):253-261. Dhaka.

Titumir, R. A and K. M. M. Rahman. 2011. Poverty and Inequality in Bangladesh. Working Paper. Unnayan Onneshan. Dhaka,

Krugman, P. 1992. The Rich, The Right and the Facts: Deconstructing Income Distribution Debate. The American Prospect. The Fall Issue.

Kuznets, S. 1955. Economic Growth and Income Ineqauality. American Economic Review. 45:1-28

Lorenz, M. O. (1905). Methods of measuring the concentration of wealth.Journal of Statistical Association **9** (70): 209–219.

MoF. 2016. Bangladesh Arthanaitik Samikkha(Bangladesh Economic Review) 2016. Finance Division. Ministry of Finance .Dhaka.

Persson, T and G. Tabellini. 1994. Is Inequality Harmful for Growth. Review of Economic Studies 60:775-66.

OECD. 2014. Income Inequality Up date June 2014. OECD Publishing, Paris

OXFAM. 2017. An Economy for the 99%. Oxfam briefing paper. January 2017.London

Planning Commission. 2011. Sixth Five Year Plan FY2011-FY015. Accrelating Growth and Reducing Poverty. Part I: Strategic Directions and Policy Framework. Ministry of Planning. Dhaka.

Planning Commission. 2014. Mid-Term Implementation Review of the Sixth Five Year Plan (2011-15) of Bangladesh. General Economics Division. Planning Commission. Ministry of Planning. Bangladesh progress report—poverty reduction strategy paper. IMF country report no. 15/305. November 2015.

Planning Commission. 2015. Seventh Five Year Plan FY2016-FY015. Accrelating Growth, Empowering Citizens . General Economics Division. Planning Commission Ministry of Planning. Dhaka.

Planning Commission. 2016. Millenium Development Goals(MDGS):End-Period Stocktaking and Final Evaluation(2000-15). General Economics Division. Planning Commission Ministry of Planning. Dhaka.

Rahman, Rushidan I. and Rizwanul Islam. 2013. Female labour force participation in Bangladesh:trends, drivers and barriers. ILO Asia-Pacific Working Paper Series. ILO. Geneva

Robinson, Sherman. 1976. A Note on the U Hypothesis Relating Income Inequality and Economic Development. American Economic Review 66(3): 437-440.

Sen, A. K. 1992. Inequality Reexamined. Calendron Press. Oxford.

Thomas, Vinod , Yan Wang and Xibo Fan. 2001. Measuring Education Inequality. Gini Coefficients of Education. Policy Research Working Paper WPS 2525. World Bank. Washigton D.C.

Yunus, M. 2014. Redesigning Economics to Redesign the World. Why are we missing a collective destination?. The Financial Express and the Daily Star. Dhaka 18-19 November, 2014.

Wade, R. H. 2005. Inequality and Globalization. Pp 23-34 in Q. K. Ahmad(ed), Emerging Global Economic Order and The Developing Countries. Bangladesh Economic Association/The University Press Limited. Dhaka.

WHO. 2011. Nutrition- Nutrition of women in the preconception period, during pregnancy and the breastfeeding period. Report by the Secretariat. EB130/11. Geneva.

Zhuang, J, R. Kanbur, and C. Rhee. 2014. Rising inequality in asia and policy implications. Working Paper 2014-14. Charles H. Dyson School of Applied Economics and Management. Cornell University. Ithaca. New York.