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# Growth Trend and Changing Structure of Gross Domestic Product of Bangladesh: An Analysis

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*Abstract: Since independence Bangladesh has made significant strides in economic development through the growth of GDP and the structural changes in GDP. The aim of this paper is to analyse Growth Trend and Changing Structure of Gross Domestic Product (GDP) of Bangladesh in different regimes. In 1901 the real GDP was Rs 1.3 billion only which increased to RS 2.0 billion in 1911 with a absolute change RS 0.7 billion. The real GDP was RS 3.8 billion in 1921, RS 2.5 billion in 1931, RS 3.8 billion in 1941 and RS 7.0 billion in 1946. Before liberation, are have the average annual growth rate of real GDP during 1950 was 3.20% per year while, after liberation it was 4.3% between 1975 and 2000. The GDP was 465.6 billion taka in 1985-1986, 1105.2 billion taka in 1990-1991, 1663.2 billion taka in 1995-1996, 2535.5 billion taka in 2000-2001, 4157.3 billion taka in 2005-2006 and 6905.7 billion taka in 2009-2010. Although the economy has grown at the rate of 6-7% p.a. over the past few years Bangladesh still remains over-populated nation with high level of poverty. The economy of the country was mainly dependent on agriculture in the past. But Bangladesh had changed ever since the days of industrial revolution took place in England. In the manufacturing, the phenomenal growth of Ready Made Garments (RMG) industries has enabled Bangladesh to achieve a high growth rate of export, and yet the envisaged the development of a broader, more diversified and modern industrial and export base has not taken place. In 1990's the average growth rate of GDP was around 5 percent and more than 6 percent from 2000 and later on that is a clear indication of that how Bangladesh is performing to strengthen of economic growth as well as economic development; though the speed is slower comparing to many other countries in the world. The economy of Bangladesh is remained more or less stable maintaining a fair macroeconomic stability in spite of global economic recession. Bangladesh needs to accelerate the growth of GDP through rapid industrialization by SMEs for graduating from LDC to developing country within few years.*

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## 1.0 Introduction

The growth trend of Gross Domestic Product (GDP) is usually a good reflector of economic growth of country and the structural changes indicate the transformation of the economy. Bangladesh emerged as independent and sovereign country on 16 December 1971 after a nine-month long war of liberation. Since independence Bangladesh has made significant strides in economic development through the growth of GDP and the changes in sectoral share in GDP. According to the IMF gradation, Bangladesh ranked as the 48th largest economy in the world in 2007. Although the economy has grown at the rate of 6-7% p.a. over the past few years Bangladesh still remains over-populated nation with high level of poverty. The total area of Bangladesh is 147,570 sq. krn. and total population is over 140 million. About 36 percent of total population lives below the national poverty line in 2000 (WDR 2006, p. 278).

While more than half of the GDP belongs to the service sector, nearly two-thirds of Bangladeshis are employed in the agriculture sector, with rice as the single-most-important produce. Remittances from Bangladeshis working overseas, mainly in the Middle East and East Asia, as well as exports of garments are the main source of foreign **exchange earning. Economic growth is rather endogenous with slow** growth in foreign direct investment. Bangladesh's predominantly agricultural economy depends heavily on an erratic monsoonal cycle, with periodic flooding and drought(CIA). Although improving at a very faster rate but infrastructure to support transportation, communications, and power supply and water distribution are poorly developed (CIA). Bangladesh is limited in its reserves of oil, but recently there was huge development in coal mining. While the service sector has expanded rapidly during last two decades, country's industrial base remains narrow. The country's main endowments include its vast human resource base, rich agricultural land, relatively abundant water, and substantial reserves of natural gas although depleting very fast and may disappear in the next 7-8 years (CIA).

However, aid-dependence of the country has systematically been reduced since the beginning of 1990s. Coupled with this are the natural disaster like cyclones of 1970 and 1991, successive floods of the years of 1980, 1988, 1990 and 1998, devastating Sidre in late 2007 and mentionable great famine of 1974 have frequently obstacles the growth of economy and further accentuated the degree of development crisis. It is to be noted that after all these natural calamities, the economy of Bangladesh achieved a modest and reasonable steady annual growth rate of GDP just over four percent during last three decades which is higher than that of pre-independent era but some what low standard of contemporary achievement of neighboring countries of South Asia (Khan, 1995, p.2). The increasing number of the population was also a barrier on the way of growth of GDP, but the growth rate of population has declined remarkably in the recent few years and there has been considerable improvement in human resource development. In the Agriculture sector food grain production has grown slightly ahead of population growth, but the rest of the crop of agriculture has not grown equally. In the manufacturing, the phenomenal growth of Ready Made Garments (RMG) industries has enabled Bangladesh to achieve a high growth rate of export, and yet the envisaged the development of a broader, more diversified and modem industrial and export base has not taken place.

The economy of Bangladesh has experienced an average of 4% plus growth per annum throughout the 1990s. Even during the year of devastating floods (FY1999), the economy grew by 4.9%. Average GDP growth in the 1990s (FY1991-2000) was 4.78%, which was one percentage point higher than that of the previous decade (i.e.3.74% in FY1981-90). The second half of the 1990s demonstrated a more impressive growth performance (5.29%, FY1996-2000) in comparison to the first half (4.49% for FY1991-95). According to the revised estimates, GDP growth rate in FY2001 was 5.16% (Bhattacharya, 2002).The experience of the 1990s has given rise to the hope that the real GDP growth in the coming years will be higher than what has already been achieved. According to the draft Interim Poverty Reduction Strategy Paper (I-PRSP) report (2002), the real GDP growth in FY2004 and FY2005 were expected to be 6.0% and 6.3%, respectively. The growth rate of GDP at current market price is 15.5% in 2007-2008 and 12.6% in 2008-2009 while the growth rate of GDP at constant market price is 6.2% in 2007-2008 and 5.7% in 2008-2009.[1]

This paper is intended mainly to highlight the trend of GDP growth, structural changes of GDP in different phases of its political regimes.



1. GOB, Finance Division, Bangladesh Economic Review 2010 (Bengali Version), (Dhaka: Finance Division, June 2010), p. 8.

### 1.2 Objectives

The purpose of this paper is to;

i) analyze the growth trend of GDP of Bangladesh;

ii) analyze the structural changes of GDP of Bangladesh;

iii) analyze the sectoral growth and share of GDP of Bangladesh

iv) put forward some recommendations for sustained GDP growth and the improvement in structural changes of GDP.

### 1.3 Scope of the Paper and Limitations

This paper explains the trend growth of GDP and structural changes of GDP of Bangladesh in different political regimes. It examines the impact of GDP growth and structural chances of Bangladesh economy. The study identified some major contributors of GDP in national economy to reduce the poverty through human development. The researcher dose not comes from economic discipline. The paper does not cover the complete indicators of GDP. Due to the shortage of time all relevant books, papers, and journals are not referred to prepare the assignment. These are the limitations of this paper.

### 1.4 Methodology

This paper uses data obtained from various secondary sources. Explanatory research method is taken to analyze the growth trend and changing structure of GDP of Bangladesh.

Trend Growth Functions and Compound Growth Rates

Compound Growth Rate (CGR) is computed by taking the form of mathematical equation as $X_t = X_0(1+r)^t$, where X is the concerned variable, t represents time periods. The procedure is as follows[2] :

1. Taking natural logarithm on both sides of the equation $X_t = X_0(1+r)^t$
2. $\ln X_t = \ln X_0 + t \ln (1+r)$, let $\beta_0 = \ln X_0$ and $\beta_1 = \ln (1+r)$ the original equation can be written as $\ln X_t = \beta_0 + \beta_1 t$
3. Adding disturbance error term the econometric specification takes the form as $\ln X_t = \beta_0 + \beta_1 t + u_t$
4. The model specified above takes the form of a linear regression model in the sense that coefficients $\beta_0$ and $\beta_1$ are in

2. Damodar N. Gujarati, Basic Econometrics, (McGraw-Hill/Irwin: New York, 2003, Fourth Ed.), pp. 175-181.

linear form. The model becomes a semilog or log-lin form. Here $X_0$ is the regressand and t is repressor. $\beta_1$ gives instantaneous growth rate( at a point in time).

5. Using OLS method of linear regression we get the estimate of $\beta_1$ which are the coefficients of time variable. Once $\beta_1$ are estimated then we take anti-log of $\beta_1$. Then 1 is subtracted from the anti-log of $\beta_1$ and the results are multiplied by 100 to get the compound growth rate.
6. The formula for Trend Growth Rate (TGR) takes the following form: CGR = [Anti-log of estimated $\beta_1$ - 1] X 100.

The GDP Trend Function:

$\text{Log } X = \beta_0 + \beta_1 T + \varepsilon_t$

[Log X = GDP in natural logarithm, T = Year, $\varepsilon_t$ = Error Term, $\beta_1$ = Coefficient]

Compound Annual Growth Rate (CAGR)

The compound annual growth rate is calculated by taking the nth root of the total percentage growth rate, where n is the number of years in the period being considered. This can be written as follows:

$CAGR = [V_1 / V_0]^{1/N} - 1$

Where $V_1$ = Ending Value, $V_0$ = Beginning Value, N= Years

**Structural Breakpoint Test**

The structural change in GDP is tested by using 'Chow Breakpoint Test'. It is very important for long-run time series to identify parameter stability over the period of investigation. Two types of diagnostic test are generally used for structural breakpoint - Chow Test is used when the possible break point in the data series can be identified a 'priory' and CUSUM test is used when the breakpoint in the data is not known as a 'priory'.' In this study the study period is broken by two sub-periods such as pre-liberalization from 19972-1973 to 1989-1090 and post-liberalization from 1990-91 to 2009-2010. Therefore Chow Test is applied to test the parameter stability. The structural change can be measured by the two intercepts or two slopes of the models in pre-liberalization and post-liberalization periods. The procedure for Chow test is as follows:

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3. H. R. Seddighi, K. A. Lawler and A. V. Katos, Econometrics: A Practical Approach, (New York: Routledge, 2000), pp. 82-83.

1. Estimate the model by OLS using the whole or unbroken series to generate the Residual Sum of Squares (RSS).
2. Estimate the model by OLS for sub-period n1 observations to generate RSS1 for the period before the break.
3. Estimate the model by OLS for sub-period n2 observations to generate RSS2 for the period after the break.
4. Variance of the error term of the models should be remained unchanged, when variance is not constant then Chow is applied.
5. If RSS of the entire period is equal to the sum of RSSl and RSS2 then there s no structural break. F test is used to find out the structural change.

The Chow Test is simply the F-test which can be formulated by the following formula:

$$F = \frac{(RSS-(RSS1 + RSS2)/k}{(RSSl-(RSS2)/(n1+n2 -2k)}$$

Where,

RSS = RSS of the combined regression model of $n_1$ and $n_2$ observations with $(n_1 + n_2 - k)$ degree of freedom(df)

RSS1 = RSS of the trend regression model of $n_1$ observations with df = $(n_1 - k)$

RSS2 = RSS of the trend regression model of $n_2$ observations with df = $(n_2 - k)$

$n_1$ = observations of the periods before trade liberalization

$n_2$ = Observations of the periods after trade liberalization

k= number of parameter to be estimated

Hypotheses

$H_0 : b_1 = a_1; b_2 = a_2$

$H_1$ : $H_0$ is not true.

$H_0$ : There is no change of GDP between pre and post liberalization Regime

$H_1$ : There is significant change of GDP between pre and post liberalization Regime

Decision Rule: if the value of computed F statistic is greater than the critical F value then we reject the null hypothesis of structural stability.

1.5 Definition of the Key Terms

GDP: The full term of 'GDP' is Gross Domestic Product. GDP is defined as the total market value of all final goods and services produced in a country within a year or a certain period of time. GDP can be estimated by ether income method or expenditure method. Generally, GDP = Consumption + Investment + Government Expenditures + Exports - Imports (Samuelson, 1983). Nominal GDP, also called 'money GDP', is calculated on the basis of the current price or today's price, by which comparison between GDPs of different years may be incorrect because of the impact of inflation. Real GDP, also called 'Constant Price GDP', is estimated 'by converting current information into' a standard price of a specific year or years

GNP: GNP means 'Gross National Product.' GNP is the market value of all final goods and service produced in a country in a year. In an open economy Net Export Value (X-M) is added to GDP in measuring GNP. That is, GNP = GDP+(X-M).

Growth: The word 'growth' has some synonyms, such as, development, growing, increase, increment, etc. Economic Growth is related to a quantitative sustained increase in the country's per capita income accompanied by expansion in its labor force, consumption, capita and volume of Trade. Economic Growth as a long-term rise in capacity to supply increasingly diverse economic goods to its population, this growth capacity based on advancing technology and the institutional and ideological adjustment that it demands.

Growth Trend: Growth Trend means how the GDP of a country is being changed over years. It indicates a long term growth path of economy different economic variables within the economy. Using ordinary least squares method, the growth trend of an economy can be measured.

1.6 Layout of the Paper

The paper is divided into five sections. Following the introductory part section two examines brief economic history and Economic Environment of Bangladesh. The growth trends of GDP since 1901 has been analysed in section three. Section four takes a close look at the structural changes of GDP. The final section puts forward the implications of the findings for policies related to the sustained growth rate of GDP as well as the improvements in the structural changes in GDP.

## 2.0 Brief Economic History of Bangladesh

East Bengal, the eastern segment of Bengal province of undivided India became East Pakistan in 1947 as the eastern segment of Pakistan and later Bangladesh in 1971 as independent and sovereign country. The region, being a prosperous region of South Asia until modem times, had the advantages of a mild, almost tropical climate, fertile soil, ample water, and an abundance of fish, wildlife, and fruit. The standard of living compared favorably with other parts of South Asia. As early as the thirteenth century, the region was developing as an agrarian economy. It was not entirely without commercial centers, and Dhaka in particular grew into an important business hub during the Mughal Empire. The British, however, on their arrival in the late eighteenth century, chose to develop Calcutta, now the capital city of West Bengal, as their commercial and administrative center in South Asia. The development of East Bengal was thereafter limited to agriculture. The administrative infrastructure of the late eighteenth and nineteenth centuries reinforced East Bengal's function as the primary agricultural producer--chiefly of rice and jute--for processors and traders in Calcutta and beyond. Integration of East Bengal with the world economic system remained traditionally low.

Some of the same factors that had made East Bengal a prosperous region became disadvantages during the nineteenth and twentieth century. As life expectancy increased, the limitations of land and the annual floods increasingly became constraints on economic growth. Preponderance on traditional agricultural methods became obstacles to the modernization of agriculture. Geography severely limited the development and maintenance of a modem transportation and communications system.

The partition of British India and the emergence of India and Pakistan in 1947 severely disrupted the former colonial economic system that had preserved East Bengal (now Bangladesh) as a producer of jute and rice for the urban industrial economy around Calcutta. East Pakistan had to build a new industrial base and modernize agriculture in the midst of a population explosion. The united government of Pakistan expanded the cultivated area and some irrigation facilities, but the rural population generally became poorer between 1947 and 1971 because improvements did not keep pace with rural population increase. Pakistan's five-year plans opted for a development strategy based on industrialization, but the major share of the development budget went to West Pakistan, that is, contemporary Pakistan. The lack of natural resources meant that East Pakistan was heavily dependent on imports, creating a balance of payments problem. Without a substantial industrialization program or adequate agrarian expansion, the economy of East Pakistan steadily declined. Blame was placed by various observers, but especially those in East Pakistan, on the West Pakistani leaders who not only dominated the government but also most of the fledgling industries in East Pakistan.

Following the violent events of 1971 leading to the fight for independence, the highest rural population density in the entire world, an annual population growth rate between 2.5 and 3 percent, chronic malnutrition for perhaps the majority of the people, and the dislocation of between 8 and 10 million people who had fled to India and returned to independent Bangladesh by 1972. The new nation had few experienced entrepreneurs, managers, administrators, engineers, or technicians. There were critical shortages of essential food grains and other staples because of wartime disruptions. External markets for jute had been lost because of the instability of supply and the increasing popularity of synthetic substitutes. Foreign exchange resources were minuscule, and the banking and monetary system was unreliable. Although Bangladesh had a large work force, the vast reserves of under-trained and underpaid workers were largely illiterate, unskilled, and underemployed. Commercially exploitable industrial resources, except for natural gas, were lacking. Inflation, especially for essential consumer goods, ran between 300 and 400 percent. The war of independence had crippled the transportation system. Hundreds of road and railroad bridges had been destroyed or damaged, and rolling stock was inadequate and in poor repair. The new country was still recovering from a severe cyclone that hit the area in 1970 and causes 250,000 deaths. India, by no means a wealthy country and without a tradition of giving aid to other nations, came forward immediately with massive economic assistance in the first months after the fighting ended. Between December 1971 and January 1972, India committed US$232 million in aid to Bangladesh, almost all of it for immediate disbursement.

Bangladeshi leaders slowly began to turn their attention to developing new industrial capacity and rehabilitating its economy. The static economic model adopted by these early leaders, however-including the nationalization of much of the industrial sector--resulted in inefficiency and economic stagnation. Beginning in late 1975, the government gradually gave greater scope to private sector participation in the economy, a pattern that has continued. A few state-owned enterprises have been privatized, but many, including major portions of the banking and jute sectors, remain under government control. Population growth, inefficiency in the public sector, resistance to developing the country's richest natural resources, and limited capital have all continued to restrict economic growth. In the mid-1980s, there were encouraging signs of progress. Economic policies aimed at encouraging private enterprise and investment, privatizing public industries, reinstating budgetary discipline, and liberalizing the import regime were accelerated. From 1991 to 1993, the government successfully followed an enhanced structural adjustment facility (ESAF) with the International Monetary Fund (IMF) but failed to follow through on reforms in large part because of preoccupation with the government's domestic political troubles. In the late 1990s the government's economic policies became more entrenched, and some of the early gains were lost, which was highlighted by a precipitous drop in foreign direct investment in 2000 and 2001. In June 2003 the IMF approved 3-year, $490-million plan as part of the Poverty Reduction and Growth Facility (PRGF) for Bangladesh that aimed to support the government's economic reform program up to 2006. Seventy million dollars was made available immediately. In the same vein the World Bank approved $536 million in interest-free loans.

The performance of the Bangladesh economy in the face of a number of unfavourable factors in FY08 was remarkable indicating the resilience of the economy and its strong growth potential. Despite two consecutive floods and devastating cyclone Sidre outbreak of avian flu, political uncertainty, shaken business confidence, labour unrest in the RMG sector and soaring commodity prices in the international market, the real GDP grew by an estimated 6.2 percent in FY08, only slightly lower than 6.4 percent growth in FY07. Measured at current market prices, the GDP of Bangladesh in FY08 was estimated at Taka 5,419 billion representing a nominal growth of 14.7 percent in FY08 compared with 13.7 percent recorded in FY07. In FY08, the country's per capita GDP increased by about 4.9 percent in real terms and about 13.2 percent in nominal terms.

With reasonable support from agriculture sector, the 6.2 percent real GDP growth was propelled mainly by industry sector and services sector. The expansion was broad-based, registering positive growth in all sectors and sub-sectors of the economy. Spurred by a 6.9 percent growth in industry sector and 6.7 percent growth in services sector, GDP growth during the year was also aided by 3.6 percent growth in the agriculture sector. The services sector made the highest contribution of 54.1 percent to the overall GDP growth, followed by industry sector of 33.2 percent and agriculture sector of 12.7 percent.

## 2.1 Economic Environment

During the early 1990s, Bangladesh made considerable progress in stabilizing and liberalizing its economy. As a result, inflation was much lower than previously, and average annual real GDP growth in 1992-98 was above 5%, largely led by exports involving ready-made garments (RMGs). Indeed, one of the most striking features of Bangladesh's trade is that textiles and particularly clothing dominate exports: their combined share grew from 70.4% in 1992 to 83.5% in 1998; by contrast, jute, which had previously been Bangladesh's main export, comprising around half of total exports through the mid-1980s, accounted for only 6% in 1998. This dramatic change in the composition of exports is the consequence of Bangladesh's increased integration into the multilateral trading system.

Agriculture still accounts for 30% of GDP while employing 63% of total labour force. The RMG-dominated manufacturing sector and services, accounting for 9% and 61% of GDP, respectively, have been the sources of the economy's growth. Unfortunately, real annual GDP growth, averaging around 5% during the review period, has not been sufficient to make much of a dent in the poverty that pervades Bangladesh; GDP per capita in 1998199 was only US$345, among the lowest in the world.

## 3.0 Growth Trend of GDP

In this section the growth trend of real GDP since 1901 has been analyzed. Before liberation, are have the average annual growth rate of real GDP during 1950 was 3.20% per year while, after liberation it was 4.3% between 1975 and 2000 ( Abedin, 1990). It also should be noted that from the 1980's, our population growth rate began to decline and reached an average rate of 2%. Since then the annual average growth rate become higher than that of population growth.

Table- 1: Growth Trend of Real GDP of Bangladesh in 1901-1946

| Year | Real GDP (in billion Rs) | Absolute Change | Remarks |
|---|---|---|---|
| 1901 | 1.3 | | 3 times rise in 40 years. |
| 1911 | 2.0 | 0.7 | |
| 1921 | 3.8 | 1.8 | |
| 1931 | 2.5 | 1.3 | |
| 1941 | 3.8 | 1.3 | |
| 1946 | 7.0 | 3.2 | |

Source: M. Zainul Abedin, Commercial Banking in Bangladesh, Dhaka: NILG, 1990, P.57.

It is evident from Table-1 that the sizes of real GDP and its absolute changes were too low in the British colonial era. In 1901 the real GDP was Rs 1.3 billion only which increased to RS 2,0 billion in 1911 with a absolute change RS 0.7 billion. The real GDP was RS 3.8 billion in 1921, RS 2.5 billion in 1931, RS 3.8 billion in 1941 and RS **7.0** billion in 1946.

Table- 2: Growth Trend of Real GDP of Bangladesh in 1950-1970

| Year | Real GDP (in billion Pak. Rs) | Absolute change | Remarks |
|---|---|---|---|
| 1950 | 10.9 | | 3 times rise in 20 years |
| 1960 | 14.4 | 3.5 | |
| 1965 | 20.6 | 6.2 | |
| 1970 | 32.6 | 12 | |

Source: M. Zainul Abedin, Commercial Banking in Bangladesh, Dhaka: NILG, 1990, P.57.

Table-2 shows that in 1950 real GDP was Pak Rs 10.9 billion which rose 14.5 billion in 1960. The real GDP increased substantially to Pak Rs 20.6 billion in 1965 and Pak Rs 32.6 in 1970 with absolute change Pak Rs 6.2 billion and Pak Rs 12.0 billion respectively. It indicates that the real GDP has been increased rapidly and substantially compared to the figures in British colonial era.

Table- 3: Growth Trend of Real GDP of Bangladesh in 1973-2000

| Year | Real GDP (in billion BDT) | Absolute Change | Per capita Income (in US $) |
|---|---|---|---|
| 1973 | 201.6 | - | $80 |
| 1975 | 293.8 | 92.2 | 110 |
| 1980 | 338.5 | 44.7 | 130 |
| 1985 | 46.9 | 68.4 | 170 |
| 1990 | 514.4 | 107.5 | 200 |
| 1995 | 642.4 | 128.0 | 250 |
| 2000 | 801.7 | 152.3 | 350 |

Source: M. Zainul Abedin, Commercial Banking in Bangladesh, **Dhaka:** NILG, 1990, P.57; GOB, Bangladesh Economic Review, various issues.

Table-3 shows that in 1973 real GDP was BDT 201.6 billion while per capita was US $80. In 1975, real GDP was BDT 293.8 billion and absolute change in real GDP was BDT 92.2 billion. But between 1975 and 1985, the absolute changes in real GDP became slowest (44.7, 68.4). This slow pace o real GDP could be explained by political instability and ups and down in the economy. However the changes in real GDP regained and faster after 1990 due to the regime of elected democratic government in the country. In 2000, our real GDP become BDT 801.7 billion and per capita income US $350. It is evident that our real GDP and per capita income have been raised four times in 27 years from 1973 to 2000. It is noted that the average annual growth rate of real GDP was 4.3% during 1975-2000 and the same for per capita income was 2.1%. And in 2007, our per capita income is US $ 527. The per capita GDP at current market price is US$ 684 in 2009-2010.

From the figures of real GDP presented in Table-1, Table-2 and Table-3 it is evident that the real GDP has been substantially changed over times as well as the living standard of the people of Bangladesh is improving gradually.

Table-4: Nominal Growth Trend of Gross Domestic Product, 1972-73 to 2009-2010

(in million BDT)

| Fiscal Year | GDP at Current Market Prices | Annual Growth Rate (%) |
|---|---|---|
| 1972-1973 | 67813 | - |
| 1973-1974 | 103042 | 51.95 |
| 1974-1975 | 169174 | 64.18 |
| 1975-1976 | 150064 | -11.30 |
| 1976-1977 | 157794 | 5.15 |
| 1977-1978 | 197502 | 25.16 |
| 1978-1979 | 236749 | 19.87 |
| 1979-1980 | 280777 | 18.60 |
| 1980-1981 | 322136 | 14.73 |
| 1981-1982 | 361740 | 12.29 |
| 1982-1983 | 408308 | 12.87 |
| 1983-1984 | 489787 | 19.96 |
| 1984-1985 | 561944 | 14.73 |
| 1985-1986 | 632691 | 12.59 |
| 1986-1987 | 727711 | 15.02 |
| 1987-1988 | 799929 | 9.92 |
| 1988-1989 | 890598 | 11.33 |
| 1989-1990 | 1003288 | 12.65 |
| 1990-1991 | 1105181 | 10.16 |
| 1991-1992 | 1195424 | 8.17 |
| 1992-1993 | 1253695 | 4.87 |
| 1993-1994 | 1354123 | 8.01 |
| 1994-1995 | 1525178 | 12.63 |
| 1995-1996 | 1663240 | 9.05 |
| 1996-1997 | 1807013 | 8.64 |
| 1997-1998 | 2001766 | 10.78 |
| 1998-1999 | 2196972 | 9.75 |
| 1999-2000 | 2370856 | 7.91 |
| 2000-2001 | 2535464 | 6.94 |
| 2001-2002 | 2732010 | 7.75 |
| 2002-2003 | 3005801 | 10.02 |
| 2003-2004 | 3329731 | 10.78 |
| 2004-2005 | 3707070 | 11.33 |
| 2005-2006 | 4157280 | 12.14 |
| 2006-2007 | 4724770 | 13.65 |
| 2007-2008 | 5458220 | 15.52 |
| 2008-2009 | 6147950 | 12.64 |
| 2009-2010 | 6905710 | 12.33 |

Source: Economic Survey of Bangladesh & Bangladesh Economic Review, various Issues.

The annual growth rates of GDP at current market price are shown in column three of the above table. The growth rates are 51.95% in 1973-1974, 64.18% in 1974-1975. Then we observe a negative growth of GDP in 1975-1976 which is (-) 11.30%. This is the only negative growth rate of GDP during the study period which may be explained as the famine and global economic shock in 1975-1976. Since 1976-

1977 we observe positive growth rates of GDP with fluctuation in the trends of growth. In 2005-2006 the growth rate is 12.14%, the same in 2007-2008 is 15.52% and 12.33% in 2009-2010.

Table 5: Compound Growth Rate of GDP[4] during 1972-1973 to 2009-2010

| Period | Estimated Trend Regression | CGR[1] (%) |
|---|---|---|
| Pre-liberalised Regime 1972-1973 to 1989-1990 | LogX= 11.31 + 0.145T | 15.60 |
| Post-liberalized Regime 1990-1991 to 2009-2010 | LogX= 12.04 + 0.094T | 9.86 |
| Overall 1972-73 to 2009-2010 | LogX= 11.62 + 0.110T | 11.63 |

Note: CGR = [Anti-log of estimated b – 1] X 100, log means natural logarithm.
Source: Author's own calculation.

The results of the estimates suggest that during pre-liberalized regime i.e. from 1972-1973 to 1989-1990 the compound growth rate of GDP is 15.60 per cent, the same for post-liberalized regime i.e. from 1990-1991 to 2009-2010 is 9.86 per cent and for the overall period i.e. from 1972-1973 to 2009-2010 is 11.63 per cent. So it can be concluded that CGR of GDP during pre-liberalized regime is higher than that of post-liberalized regime.

The growth rate of GDP at constant market price, based on 1995-1996, is shown in table 6.

Table 6: GDP Growth Rate at Constant Market Price

| Year | Growth Rate[5] | Per Capita GNI (in US $) | Per Capita GDP (in US $) |
|---|---|---|---|
| 1998-1999 | 4.87 | 374 | 362 |
| 1999-2000 | 5.94 | 381 | 368 |
| 2000-2001 | 5.27 | 374 | 362 |
| 2001-2002 | 4.42 | 378 | 361 |
| 2002-2003 | 5.26 | 411 | 389 |
| 2003-2004 | 6.27 | 440 | 418 |
| 2004-2005 | 5.96 | 463 | 441 |
| 2005-2006 | 6.63 | 476 | 447 |
| 2006-2007 | 6.43 | 523 | 487 |
| 2007-2008 | 6.19 | 608 | 559 |
| 2008-2009 | 5.74 | 676 | 620 |
| 2009-2010 | 6.00 | 750 | 684 |

Source: Bangladesh Economic Review 2010 (Bengali Version), p. 239

4 GDP at current market price
5 GDP Growth at Constant Market Price.

It is evident from the above table that the growth rate of GDP is on rising trend. It reaches the highest level at 6.63% in 2005-2006. However the is growth rate is sustained around 6% in the recent years. On the other hand, Per Capita GNI and Per Capita GDP are also on increasing trends. The Per Capita GNI has increased to US$ 750 in 2009-2010 from US$ 374 in 1998-1999. The Per Capita GDP has increased to US$ 684 in 2009-2010 from US$ 362 in 1998-1999.

## 4.0 Structural Change in GDP

The structural change in GDP is measured by the Chow Breakpoint Test. Here the whole study period is divided as pre-liberalized regime from 1972-1973 to 1989-1990 and post-liberalized regime from 1990-1991 to 2009-2010. The econometric result of Chow test is given below;

Chow Breakpoint Test: 1989

| | | | |
|---|---|---|---|
| F-statistic | 46.58249 | Prob. F(2,34) | 0.000000 |
| Log likelihood ratio | 50.12675 | Prob. Chi-Square(2) | 0.000000 |

The F-statistic is very high as compared to the table value of F-statistic at F(2, 34) degree of freedom and the p-value is found as 0.0000 which indicates that the null hypothesis of structural stability i.e. no structural change between pre and post liberalization regime in Bangladesh is rejected at any level of significance. So it can be concluded that there exists highly significant structural change in the trend of GDP.

## 5.0. Changing Structure of GDP of Bangladesh

The structure or the composition of GDP indicates the process of major changes of economy a country. Though the economy of Bangladesh was largely based on agriculture in terms of production and employment but the contribution to GDP has dwindled from 50 percent in 1972-73 to 21 percent in 2004. It indicates that the economy of Bangladesh is gradually shifting towards manufacturing and services. From a mainly feudal agrarian base, the economy of Bangladesh has undergone rapid structural transformation towards manufacturing and services. The contribution of the agriculture sector to GDP has dwindled fi-om 50 percent in 1972-73 to around 20 percent in 1999-2000. The agricultural sector is, however, still the main employment provider. The staple crop is rice, with paddy fields accounting for nearly 70% of all agricultural land.

Industrial production growth has averaged more than 6% over the last 5 years. The export sector has been the engine of industrial growth, with ready-made garments leading the way, having grown at an average of 30% over the last 5 years. Primary products constitute less than 10 percent of the country's exports; the bulk of exports are manufactured/processed products, ready-made garments and knit wears in particular.

## 5.1 Changing status of GDP

From the emergence of Pakistan, East Pakistan, a part with the majority of her population confronted manifold disparities. A very insignificant portion of total budget was spent for East Pakistan. It was around 20% though was increased to maximum 35% at the end of the 1960's. Almost all of the government opportunities wake in favor of the people of West Pakistan. Most of the economic agencies were established there. Agro-based raw materials catered by East Pakistan were used in industrialization of West Pakistan. As a result, the then economy favored

West Pakistan to be inflated in growth and East Pakistan was leering extracted. Then the real GDP of East Pakistan was only Rs. 32.66 [GDP rate was 3.2% (1950-70)]. In such condition, Bangladesh has achieved independence aiming the position where social justice, equitable distribution of income and wealth, and optimum economic growth will the held. Of course, Bangladesh has done letter them lee fare 1971. In 2007 our GDP rate was 6.5%, though it is still not enough to fulfill the goal of our glorious independence. The study examines how much progress in economic growth is having had after liberation.

In the earlier section we have broadly focused on the growth trend, growth rate of real GDP in different regimes, now we will concentrate on sectors of our economy and its contribution to the GDP. The major sectors of our economy, in terms of their contribution, are agriculture, industry and services.

## 5.2 Economic Sectors

### 5.2.1 Agriculture

The agriculture sector achieved a moderate growth of 3.6 percent in FY08. Most Bangladeshis earn their living from agriculture. Although rice and jute are the primary crops, maize and vegetables are assuming greater importance. Due to the expansion of irrigation networks, some wheat producers have switched to cultivation of maize which is used mostly as poultry feed. Tea is grown in the northeast. Because of Bangladesh's fertile soil and normally ample water supply, rice can be grown and harvested three times a year in many areas. Due to a number of factors, Bangladesh's labor-intensive agriculture has achieved steady increases in food grain production despite the often unfavorable weather conditions. These include better flood control and irrigation, a generally more efficient use of fertilizers, and the establishment of better distribution and rural credit networks. With 28.8 million metric tons produced in 2005-2006 (July-June), rice is Bangladesh's principal crop. By comparison, wheat output in 2005-2006 was 9 million metric tons.

5.2.2 Manufacturing & Industry

Many new jobs - mostly for women - have been created by the country's dynamic private sector driven ready-made garment industry, which grew at double-digit rates through most of the 1990s. By the late 1990s, about 1.5 million people, mostly women, were employed in the garments sector. During 2001-2002, export earnings from ready-made garments reached $3,125 million, representing 52% of Bangladesh's total exports.

Eastern Bengal was known for its fine muslin and silk fabric before the British period. The dyes, yam, and cloth were the envy of much of the pre-modern world. Bengali muslin, silk, and brocade were worn by the aristocracy of Asia and Europe. The introduction of machine-made textiles from England in the late eighteenth century spelled doom for the costly and time-consuming handloom process. Cotton growing died out in East Bengal, and the textile industry became dependent on imported yam. Those who had earned their living in the textile industry were forced to rely more completely on farming. Only the smallest vestiges of a once-thriving cottage industry survived. Other industries which have shown very strong growth include the chemical industry, steel industry, mining industry and the paper and pulp industry.

5.2.3 Service Sector

The services sector contributed 49.4 percent of total GDP in FY08.Within this,14.4 percent was attributable to wholesale and retail trade followed by 10.4 percent in transport, storage and communication,7.5 percent in real estate, renting and business activities and 7.0 percent in community, social and personal services. Overall activities in the services sector, registered 6.7 percent growth in FY08 compared to 6.9 percent in FY07. Despite some fluctuations, the growth appears to be broad-based across sub-sectors.

5.2.4 Sectoral Composition of GDP

Looking at the sectoral shares in GDP, it is observed that in the agriculture sector the share of crops and horticulture sub-sector(comprising of 56 percent in the overall agriculture) declined to 11.7 percent in FY08from 12.0 percent in FY07. While the share of forest and related services sub-sector which is relatively small in size, remained the same, the share of animal farming sub-sector declined marginally. The share of fishing sub-sector declined marginally from 4.7 in FY07 to4.6 percent in FY08.In the industry sector, while the share of manufacturing sub-sector increased, the share of construction sub-sector declined, the share of mining and quarrying, and power, as and water supply sub-sectors which are relatively small in size remained unchanged. The low share of power, gas and water supply partly reflected the supply side bottlenecks constraining growth in the economy. n the services sector, the share of wholesale andFY08, affecting the growth potential of a number of activities in both urban and rural areas.

The long-term trend showing a shift of the sectoral composition of GDP away from agriculture towards services and industry continued in FY08. During the year under review, while the share of services sector and industry sector increased from 49.2 percent and 29.4 percent respectively to 49.4 percent and 29.7 percent respectively, the share of agriculture sector in GDP came down from 21.4 percent to 20.9 percent.

Table-7: Changing Structure of GDP from 1949-50 to 1999-2000

(in %)

| Year/Sector | Agriculture (Primary) | Industries (Secondary) | Service (Tertiary) | Total |
|---|---|---|---|---|
| 1949-1950 | 70 | 4 | 26 | 100 |
| 1959-1960 | 62 | 5 | 33 | 100 |
| 1965-1966 | 57 | 8 | 35 | 100 |
| 1969-1970 | 55 | 10 | 35 | 100 |
| 1973-1974 | 49 | 11 | 40 | 100 |
| 1974-1975 | 49 | 10 | 40 | 100 |
| 1980-1981 | 44 | 11 | 45 | 100 |
| 1984-1985 | 41 | 10 | 49 | 100 |
| 1990-1991 | 32 | 12 | 56 | 100 |
| 1994-1995 | 26 | 15 | 59 | 100 |
| 1999-2000 | 25 | 15 | 60 | 100 |

Source: Statistical Pocket Book of East Pakistan, various issues, Statistical Year Book, various issues, Economic Survey of Bangladesh, various issues.

Table-8: Changing Structure of GDP from 1980-1981 to 2009-2010[6]

(in %)

| Year | Agriculture (Primary) | Industries (Secondary) | Service (Tertiary) | Total |
|---|---|---|---|---|
| 1980-1981 | 33.07 | 17.31 | 49.62 | 100 |
| 1985-1986 | 31.15 | 19.13 | 49.73 | 100 |
| 1990-1991 | 29.23 | 21.04 | 49.73 | 100 |
| 1995-1996 | 25.68 | 24.87 | 49.45 | 100 |
| 2000-2001 | 25.03 | 26.20 | 48.77 | 100 |
| 2005-2006 | 21.84 | 29.03 | 49.14 | 100 |
| 2008-2009 | 20.48 | 29.86 | 49.66 | 100 |
| 2009-2010 | 20.16 | 29.95 | 49.90 | 100 |

Source: Bangladesh Economic Review 2010 (Bengali Version), p. 25

Now it can be examined the contributions of these three prime sectors to GDP of Bangladesh with the help of another's statistical information's. Table-8 shows that before 2000-2001, the contribution of agriculture to GDP was the higher comparing to that of industry. In 1990-1991 and later on, service sectors become faster one and agriculture is turned down; and industry sector in flourishing gradually. But for More employment and economics growth, emphasis should be given on agriculture through modernization, mechanization and diversification. As it is the most potential for Bangladesh, its bumper harvest will make the industry sector inflated and healthy.

Table-9: Sectoral Growth Trend GDP (1981-2000)

| Year/Sector | Agriculture (Primary) | Industry (Secondary) | Service (Tertiary) | Total GDP | Per capita GDP |
|---|---|---|---|---|---|
| 1981-2004 | 2.77 | 6.51 | 4.33 | 4.41 | 2.54 |
| 1981-1985 | 2.68 | 5.70 | 3.83 | 3.72 | 1.54 |
| 1986-1990 | 2.40 | 5.86 | 3.58 | 3.74 | 1.50 |
| 1995-1996 | 1.55 | 7.47 | 4.15 | 4.39 | 2.36 |
| 1996-2000 | 4.88 | 6.44 | 4.18 | 5.21 | 3.83 |

Source: Iqbal Ahmed. "GDP Experience Structural changes" New Age, 16 June, 2004 P.1, compiled and rearranged by Prof. M. Z. Abedin.

From 1981 to 2004, the industry sector has contributed the highest to GDP at the rate of 6.5 1. The second in service sector at the rate of 4.33 and followed by agriculture sector at the rate of 2.77. From 1991-

6 At constant market price, base year 1995-96

1995, agriculture sectors contribution has declined to 1.55 percent but during 1996-2000 it, has secured a boom at the rate of 4.88. Table- 6 shows the economic sectors in more details which give us sectoral contributions to GDP at current market price for different fiscal years. Here we have the positive picture of our economic growth. The agro based sectors such as agriculture, forestry, and fishing are flourishing slowly while gas, watch resource, service and health sectors are rapidly improving.

Table-10: Sectoral Growth Trend of GDP (1980-1981 to 2009-2010)

| Year/Sector | Agriculture (Primary) | Industry (Secondary) | Service (Tertiary) | Total GDP[7] |
|---|---|---|---|---|
| 1980-1981 | 3.31 | 5.13 | 3.55 | 3.74 |
| 1985-1986 | 3.31 | 6.72 | 4.10 | 3.34 |
| 1990-1991 | 2.23 | 4.57 | 3.28 | 3.24 |
| 1995-1996 | 3.10 | 6.98 | 3.96 | 4.47 |
| 2000-2001 | 3.14 | 7.45 | 5.53 | 5.41 |
| 2005-2006 | 4.94 | 9.74 | 6.40 | 7.02 |
| 2008-2009 | 4.12 | 6.46 | 6.32 | 5.90 |
| 2009-2010 | 4.39 | 6.42 | 6.59 | 6.09 |

Source: Bangladesh Economic Review 2010 (Bengali Version), p. 25

## 6.0 Conclusion

The resilience of Bangladesh economy is testified by the sustained growth rate of GDP over the recent years. Though the growth rate is low for faster economic development but Bangladesh has been surviving well against all odds in the global economy. The IMF and World Bank predict GDP growth over the next 5 years will be about 6.5%, well short of the 9-10% needed to lift Bangladesh out of its severe poverty. The initial impact of the end of quotas under the Multi-Fiber Arrangement has been positive for Bangladesh, with continuing investment in the ready-made garment sector, which has experienced annual export growth in excess of around 20%. Downward price pressure means Bangladesh must continue to cut final delivered costs if it is to remain competitive in the world market. Foreign investors in a broad range of sectors are increasingly frustrated with the politics of confrontation, the level of corruption, the slow pace of reform and privatization and deregulation of the public sector and the lack of basic infrastructure e.g. roads. While investors view favorably recent steps

7 Growth Rate of GDP at production price.

by the interim government to address corruption, governance, and infrastructure issues, most believes it is too early to assess the long-term impact of these developments. Bangladesh has made significant strides in economic development through the growth of GDP and changes in sectors' contributions to the economy since independence in 1971. The economy has improved vastly in the 1990s. Up to 1990, Bangladesh has been achieving lower rate of her economic growth due to the post war worst situation, shortage of resource political instability and military regime, natural disasters and increasing number of population in the country. In 1990's the average growth rate of GDP was around 5 percent and more than 6 percent from 2000 and later on that is a clear indication of that how Bangladesh is performing to strengthen of economic growth as well as economic development; though the speed is slower comparing to many other countries in the world. For graduation of Bangladesh from LDC higher GDP growth rate is warranted. By raising the growth rate of exports to 21 per cent or more and reducing the growth rate of imports to 15 per cent or less, the desirable growth rate of GDP can be achieved. More emphasis is be needed for agricultural and industrial output because share of agricultural sector has substantially reduced and industrial GDP remains still low in recent years, but service sector's GDP is swelling. The contribution of all sectors to GDP needs to be increased in a balanced way in order to avoid higher rate of inflation. A number of initiatives such as modernization in agriculture, distribution of subsidies, interest-free loans among peasants and reformation of traditional land-ownership pattern, development of SMEs could be taken under proper government care. It is expected that Bangladesh would be a medium income level country in the near future if it is possible to maintain prudent the macroeconomic management.

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