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Research Paper

Movement of the economy of Bangladesh with its sector-wise contribution and growth rate

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ABSTRACT

Bangladesh is an overpopulated south Asian developing country. Agriculture, industry, and service are the 3 sectors of its economy, and these sectors are divided into 20 sub-sectors. The objective of this study is to show the movement of its economy along with its sector-wise contribution and growth rate. The study is conducted based on secondary data collected from the website of the Bangladesh Bureau of Statistics. On average, yearly, the contribution of the agricultural sector is 12.46%, the industrial sector is 32.80%, and the service sector is 50.63% in its national Gross Domestic Product (GDP), but the contribution of the industrial sector is increasing, while the contribution of agricultural and service sectors is decreasing. On the other hand, on average yearly, the growth rate of the agricultural sector is 3.32%, the industrial sector is 8.80%, and the service sector is 5.89%, while the national GDP growth rate is 6.44%. Among 20 sub-sectors, the manufacturing sub-sector showed the highest contribution, 22.47%, and growth rate, 11.59%, in 2021. The study claims the economy of Bangladesh is moving toward the industrial sector. The economy of Bangladesh has successfully recovered from the COVID-19 negative shock, but the economy is suffering from another negative shock, the Russia-Ukraine war. Further study is required to measure the Russia-Ukraine war's effect on Bangladesh's economy.

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1. INTRODUCTION

Bangladesh is a small and overpopulated south Asian country. Its area is 1,47570 km^2, but it has a 168 million population. The economy of Bangladesh is growing at a moderate speed. It shows Gross Domestic Product (GDP) growth rate above 6% from 2011 to 2021 except for 2020, dec to the COVID-19 shock [1]. Agriculture, industry, and service are the three hands of the economy of Bangladesh. In the last fiscal year, FY 2020-21, the contribution of agriculture, industry, and service was 12.07%, 36.0%, and 51.92%, respectively, in the economy of the country. Although the industrial sector of the country is growing fast, the maximum labor force is working in the agricultural sector. The labor force survey of the country shows 41%, 39%, and 20% of the country's labor force is employed in agriculture, service, and industry, respectively.

Agriculture is one of the main arms of the economy of Bangladesh. As a catalyst of sustainable development and economic growth, agriculture of the country has been contributing significantly since a long ago. Bangladesh is one of the most suffering countries in the world due to global climate change, so it is an important threat to the country's agriculture. The scarcity of water is one of the major problems in the northwestern part of Bangladesh [2]. Climate change is an ongoing process, so policymakers of the country should allocate more funds to develop climate change adaptive crop varieties. By taking into account the future unfavorable effects of climate change on food security and employment, policymakers of the country should develop and distribute drought-tolerant high-yield varieties of crops among the farmers at an affordable rate [3].

The industrial sector of the economy of Bangladesh is growing fast than agriculture and service. Ready-made garment is the highest export incoming sector in Bangladesh. The textile industry of the country contributes approximately $ 28 billion per year which is 82% of the total export income of the country [4]. Ready-made garments, chemicals, power, and frozen food are the most important industries in Bangladesh. The textile industry, with 25% shareholders, engineering industry, 18% shareholders, chemical industry, 15% shareholders, power industry, 10% shareholders, and the food industry, 9% shareholders are the top industry in Bangladesh [5]. The industrial sector is developing at the cost of environmental quality in Bangladesh [6].

The service sector is the most contributory sector in the economy of Bangladesh. Major service activities in the economy are wholesale and retail trade, transportation and storage, real estate activities, financial and insurance activities, human health and social work activities, and public administration and defense. The service is one of the most important factors to establish a sector as a successful industry [7]. To maintain economic growth and develop a sustainable industry, service activities play an important role.

Agriculture, industry, and service are the 3 sectors of the economy of Bangladesh, and these sectors are divided into 20 sub-sectors. The agricultural sector is a combination of crops, animal farming, forestry, and fishery. The industrial sector is the sum of mining, manufacturing, energy, water, and construction. The service sector is the combination of trade, transportation, accommodation, information, finance, real estate, professional activities, administrative, defense, education, health, entertainment, and other service-related activities. Beyond these 20 sub-sectors, there is an additional class of the economy which is the tax-less subsidy. The objectives of the study are to show the trend of sector-wise contribution and growth rate in the economy and decompose the national economy into different sub-sectors. Policymakers of the country might use the study to make national policy, and other stakeholders, national and international bodies, might use it to understand the national economy of Bangladesh.

2. METHODOLOGY

The study is conducted based on the secondary data collected from the website of the Bangladesh Bureau of Statistics of the Government of the People's Republic of Bangladesh. On the website, there is an uploaded file entitled "Gross Domestic Product (GDP) of Bangladesh, 2020-21 (Final)", and all data are collected from this file. In the original file, data was in the fiscal year, but for analysis intention, it has been converted into the calendar year. The fiscal year titled "FY 2020-21" has been considered as the calendar

year titled "2021" for analytical purposes. The central bank of Bangladesh is Bangladesh Bank. Due to different internal and external factors, the exchange rate between the Taka, Bangladesh currency, and the US dollar is fluctuating frequently. The Interbank USD/BDT exchange rate was the day´s lowest rate of 104.25 and the day´s highest rate of 107.00 on December 28, 2022. In the original data file, the GDP value of the economy was in the Taka, TK, so for easy understanding of the international communities, the study converts the GDP from TK to USD. As a conversion rate, the study considers the average rate of the lowest and highest rate on December 28, 2022. The exchange rate of this study is 105.63, with averages of 104.25 and 107.00, which means 1 USD is equal to 105.63 TK.

3. RESULTS AND DISCUSSION

Table 1 presents the GDP at a constant price of Bangladesh based on the 2016 base year along with sector-wise contribution to the national economy. In 2016, the contribution of agriculture, industry, and service sectors was 13.46%, 31.07%, and 51.21%, respectively, to the national economy. After 6 years, in 2021, the contribution of agriculture, industry, and service sectors turned into 11.61%, 34.64%, and 49.93%, respectively. The tax-less subsidy of the country reduced to 3.82% in 2021 from 4.26% in 2016.

Table 1. GDP at Constant Prices of Bangladesh with Sector Wise Share

Year	GDP (Billion USD)	Agriculture Share%	Industry Share%	Services Share%	Tax Less Subsidy Share%
2016	196.52	13.46	31.07	51.21	4.26
2017	209.47	13.04	31.56	51.10	4.30
2018	224.80	12.58	32.41	50.74	4.28
2019	242.52	12.04	33.53	50.27	4.16
2020	250.88	12.04	33.58	50.50	3.88
2021	268.29	11.61	34.64	49.93	3.82
Average		12.46	32.80	50.63	

On average of 6 years from 2016 to 2021, the contribution of agriculture, industry, and service sectors was 12.46%, 32.80%, and 50.63%, respectively. The economy of Bangladesh expanding gradually along with its 3 major sectors, agriculture, industry, and service. Figure 1 shows the sector-wise contribution to the national GDP of the country from 2016 to 2021.

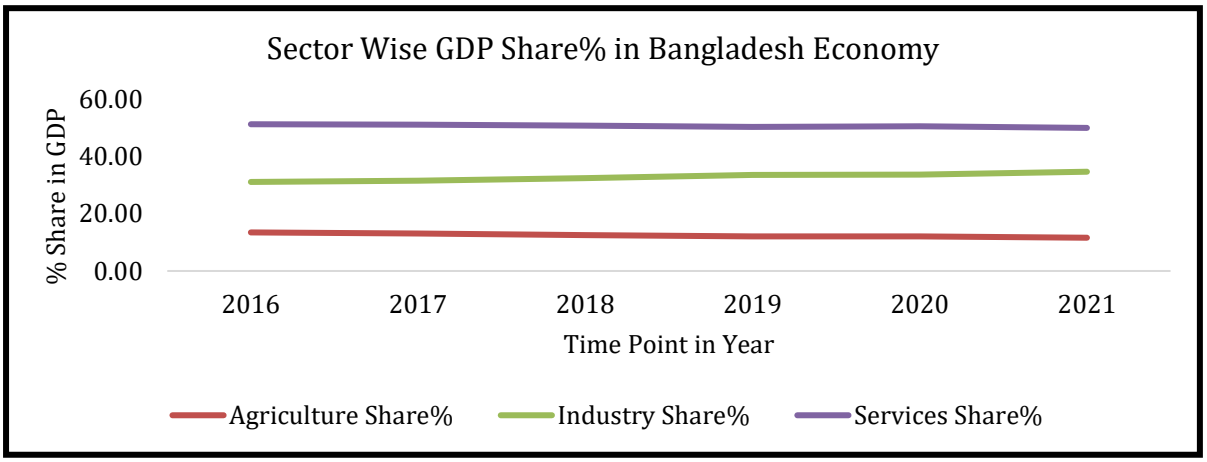


Figure 1. Sector Wise Contribution in GDP of Bangladesh

According to Figure 1, the industrial sector is gaining its share, but the agriculture and service sectors are losing their share. According to this study, the economy of Bangladesh is moving towards industry gradually. Table 2 represents the year-wise GDP and sector-wise growth rate of the economy of

Bangladesh. The GDP growth rate of the country was 6.59% in 2017, and it turned to 6.94% in 2021. Due to the COVID-19 shock, the growth rate of the country was 3.45% in 2020. The country has successfully recovered its economy from the COVID shock. The Russia-Ukraine war is another concerning issue for Bangladesh and the global economy. Due to this war, Bangladesh has been suffering from a high dollar rate, high inflation rate, supply chain management problems, and so many economic problems since February 2022. Due to the war shock, the economy of the country may slow down in the next few years. However, further study is required regarding the effect of the Russia-Ukraine war on the economy of Bangladesh.

Table 2. GDP and Sector Wise Growth Rate of Bangladesh Economy

Year	GDP Growth Rate%	Agriculture Growth Rate %	Industry Growth Rate%	Services Growth Rate%
2017	6.59	3.20	8.27	6.37
2018	7.32	3.54	10.20	6.55
2019	7.88	3.26	11.63	6.88
2020	3.45	3.42	3.61	3.93
2021	6.94	3.17	10.29	5.73
Average	6.44	3.32	8.80	5.89

In 2017, the GDP growth rate of the country was 6.59%, but the growth rate of agriculture, industry, and service was 3.20%, 8.27%, and 6.37%, respectively, which means the growth rate of the industrial sector was higher than national GDP and other sectors. After 5 years, in 2021, the GDP growth rate of the country was 6.94%, but the growth rate of agriculture, industry, and service was 3.17%, 10.29%, and 5.73%, respectively. Except for 2020, the COVID-19 shock year, each year from 2017 to 2021, the growth rate of the industrial sector was higher than the GDP and other sectoral growth rates. On average of 5 years from 2017 to 2021, the GDP growth rate of the country was 6.44%, while the rate of agriculture was 3.32%, the rate of industry was 8.80%, and the rate of service was 5.89. The study is claiming the economy of Bangladesh is moving towards the industrial sector rather than agriculture and service. Table 3 shows the sector and sub-sector-wise decomposing of the economy of Bangladesh in 2020 and 2021.

Table 3. GDP of Bangladesh at Constant Prices Based on 2016 Base Year (Billion USD)

Sub-Sector Number	Sectors and Sub-Sectors of Bangladesh Economy	GDP in 2020	GDP in 2021	Share % in 2021	Growth % in 2021
	A. Agriculture	30.20	31.15	11.61	3.17
1	Agriculture, forestry	23.65	24.34	9.07	2.92
2	Fishing	6.54	6.81	2.54	4.11
	B. Industry	84.26	92.93	34.64	10.29
3	Mining and quarrying	4.62	4.92	1.83	6.49
4	Manufacturing	54.02	60.28	22.47	11.59
5	Electricity, gas, steam and air condition	2.94	3.22	1.20	9.54
6	Water supply, sewerage, waste management	0.23	0.25	0.09	6.65
7	Construction	22.45	24.26	9.04	8.08
	C. Services	126.71	133.97	49.93	5.73
8	Wholesale and retail trade, repair	36.11	38.87	14.49	7.64
9	Transportation and storage	18.45	19.19	7.15	4.04
10	Accommodation and food service activities	2.70	2.82	1.05	4.53
11	Information and communication	3.11	3.33	1.24	7.11
12	Financial and insurance activities	7.86	8.32	3.10	5.82
13	Real estate activities	20.93	21.65	8.07	3.42

14	Professional, scientific and technical activities	0.43	0.45	0.17	5.09
15	Administrative and support service act	1.78	1.88	0.70	6.02
16	Public administration and defense	8.58	9.10	3.39	6.05
17	Education	6.53	6.90	2.57	5.81
18	Human health and social work activities	7.73	8.55	3.19	10.60
19	Arts, entertainment and recreation	0.35	0.37	0.14	5.76
20	Other service activities	12.14	12.52	4.66	3.08
	Tax less subsidy	9.72	10.24	3.82	5.33
	Total GDP of Bangladesh	250.88	268.29	100.00	6.94

The agricultural sector is the sum of crops, animal production, forestry, and fishery. Although agricultural contribution was only 11.61% in 2021, 9.07% from agriculture and forestry, and 2.54% from the fishery, it is most significant for the livelihood of the country. Most of the raw materials in the industrial and service sectors come from agriculture. The fishery is one of the most potential sub-sectors among the 20 sub-sectors in the economy, but the country has not had enough success to extract its marine fisheries from the Bay of Bengal [8]. The policymakers of the country have to invest more funds in developing human and technological skills and research cells to extract its marine resources. Figure 2 shows the sub-sector-wise contribution to the GDP of Bangladesh in 2021.

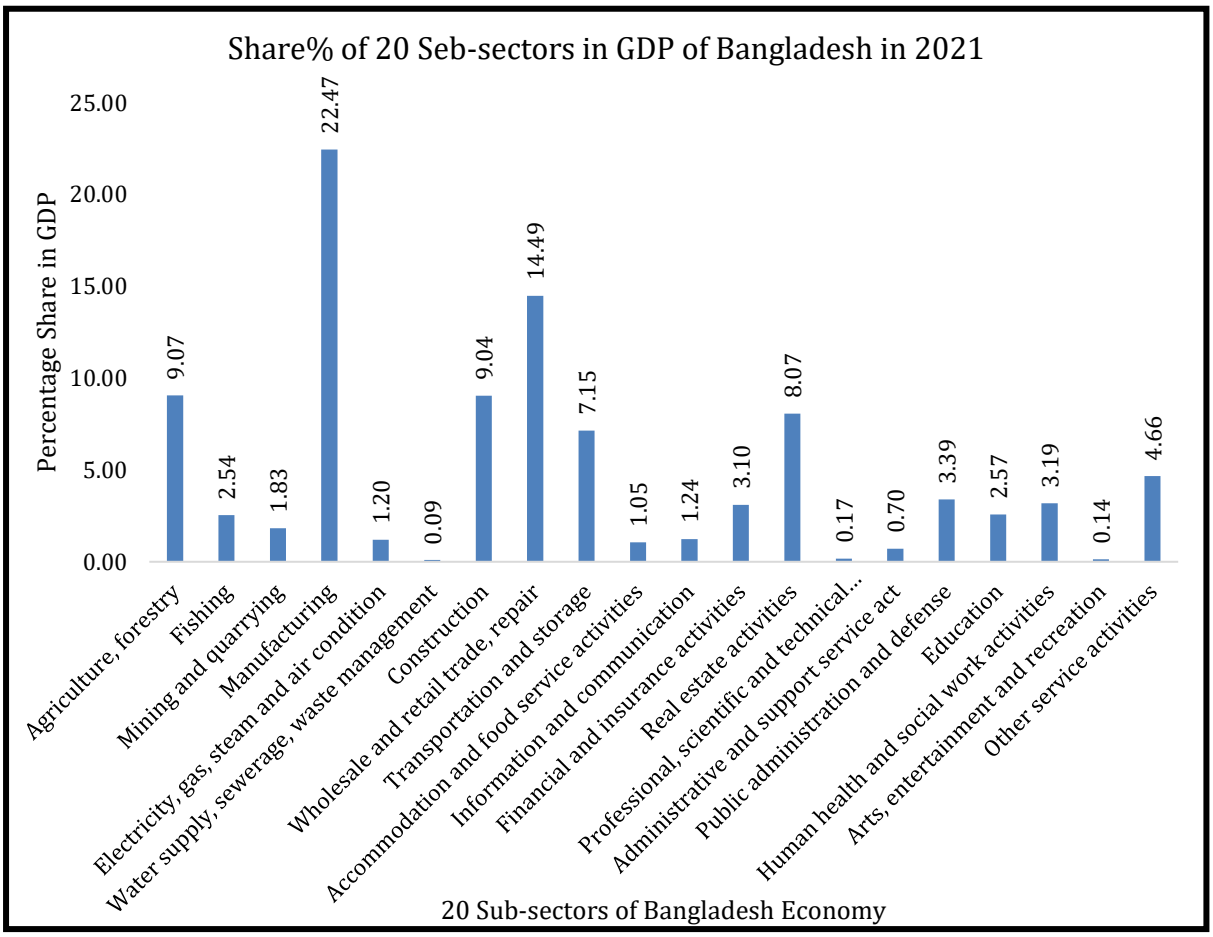


Figure 2. Sub-Sector Wise Contribution in GDP of Bangladesh

The industrial sector of the country is subdivided into 5 sub-sectors namely mining, manufacturing, energy, water, and construction. The contribution of the mining sub-sector was 1.83%, the manufacturing sub-sector was 22.47%, the energy sub-sector was 1.20%, the water sub-sector was 0.09%,

and the construction sub-sector was 9.04% in 2021. Among these 5 sub-sectors, the manufacturing sub-sector showed the highest growth rate, 11.59%, and the energy sub-sector showed the second highest growth rate, 9.54% in 2021. The economy of Bangladesh is moving towards the industrial sector, and energy is the primary requirement for manufacturing, so the manufacturing and energy sub-sectors are showing a significant growth rate.

The service sector is the highest contributory sector in the Bangladesh economy. Trade, transportation, real estate, public administration, and finance are the top service sub-sectors of the country. The contribution of trade, transportation, real estate, public administration, and finance sub-sector was 14.49%, 7.15%, 8.07%, 3.39%, and 3.10%, respectively, and the growth rate was 7.64%, 4.04%, 3.42%, 6.05%, 5.82%, respectively, in 2021. Health and education are very basic human needs, but the contribution of these 2 sub-sectors was 3.19%, and 2.57%, respectively, and the growth rate was 10.60%, and 5.81%, respectively, in 2021. Due to the COVID-19 effect and its recovery investment the growth rate of the health sub-sector was the second highest, 10.60%, in 2021. The policymakers of the country should more invest in food, health, and education sub-sectors.

4. CONCLUSION

The economy of Bangladesh is growing at a moderate speed along with its 3 sectors and 20 sub-sectors. On average, yearly, the contribution of the agricultural sector is 12.46%, the industrial sector is 32.80%, and the service sector is 50.63%. Although agriculture has the lowest share percentage of the national GDP, it has the highest contribution to the livelihood of the country. Further, most of the raw materials for the industry and service sectors are extracted from agriculture. Policymakers of the country should focus more on its agricultural development. The average yearly growth rate of the agricultural sector is 3.32%, the industrial sector is 8.80%, and the service sector is 5.89%, which indicates the economy of Bangladesh is moving towards the industrial sector. In 2021, among 20 sub-sectors, the highest and second highest contributory sub-sectors were manufacturing and trade, respectively, but the highest and second highest growth-driving sub-sectors were manufacturing and health, respectively. The economy of Bangladesh has successfully recovered from the COVID-19 negative shock, but the economy of the country is suffering from another negative shock, the Russia-Ukraine war. Further study is required to measure the Russia-Ukraine war's effect on the economy of Bangladesh.

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Author Contributions Statement

Name of Author	C	M	So	Va	Fo	I	R	D	O	E		Vi	Su	P	Fu
Mehedi Hasan Manik	✓	✓	✓	✓		✓		✓	✓	✓		✓			

C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
I : **I**nvestigation
R : **R**esources
D : **D**ata Curation
O : Writing - **O**riginal Draft
E : Writing - Review & **E**diting
Vi : **Vi**sualization
Su : **Su**pervision
P : **P**roject administration
Fu : **Fu**nding acquisition

Conflict of Interest Statement

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Informed Consent

All participants were informed about the purpose of the study, and their voluntary consent was obtained prior to data collection.

Ethical Approval

Not Applicable.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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