

Czech University of Life Sciences Prague
Faculty of Economics and Management
Department of Economics and Management



Master's Thesis

**The determinants of foreign trade development in the
People's Republic of Bangladesh**

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

Md Ismail Mia

Economics and Management
Economics and Management

Thesis title

The determinants of foreign trade development in the People's Republic of Bangladesh

Objectives of thesis

The aim of the present Master thesis is to identify the main determinants of foreign trade development in the People's Republic of Bangladesh.

Since Bangladesh is one of the Next Eleven (Jim O'Neill, 2012) emerging markets which economy is one of the world's fastest-growing economies, it becomes interesting to investigate the impact of foreign trade on this growth. Other research questions are – what changes have happened in the content and structure of the Bangladesh's foreign trade over the last 30 years and which countries were the main trade partners for Bangladesh then and which of them are the key partners now?

Methodology

The synthesis of relevant information from various reliable resources represented by printed literature, scientific articles, surveys, web sources will be done and used then in the practical part of the Master thesis.

Both theoretical and practical parts will rest on descriptive analysis and thematic synthesis. On the basis of gathered data for the period from 1990 to 2019 own research work will be focused on the regression analysis along with comparative techniques and statistical inference.

The proposed extent of the thesis

60-80

Keywords

Bangladesh, Foreign trade, Economic growth, Regression analysis

Recommended information sources

- FISCHER, S. – SCHMALENSSEE, R. – DORNBUSCH, R. *Introduction to macroeconomics*.
- GANDOLFO, G. *International finance and open-economy macroeconomics*. Berlin: Springer, 2002. ISBN 3-540-43459-3.
- GUJARATI, D N. *Econometrics by example*. London: Palgrave Macmillan Education, 2015. ISBN 978-1-137-37501-8.
- JENÍČEK, V. – KREPL, V. – ČESKÁ ZEMĚDĚLSKÁ UNIVERZITA V PRAZE. INSTITUT TROPŮ A SUBTROPŮ. *Foreign trade and development economics*. Prague: Czech University of Life Sciences, 2007. ISBN 978-80-213-1651-5.
- MONTIEL, P. *International macroeconomics*. Chichester: Wiley-Blackwell, 2009. ISBN 978-1-4051-8386-4.
- OECD. *Globalisation, Comparative Advantage and the Changing Dynamics of Trade*, OECD Publishing, Paris, 2011, <https://doi.org/10.1787/9789264113084-en>
- PITIGALA, N. What does regional trade in South Asia reveal about future trade integration? Some empirical evidence (English). Policy Research working paper series ; no. WPS 3497. Washington, 2005, DC: World Bank. <http://documents.worldbank.org/curated/en/456701468777914071/What-does-regional-trade-in-South-Asia-reveal-about-future-trade-integration-Some-empirical-evidence>
-

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Declaration

I declare that I worked by myself on my master's thesis, "The Determinants of Foreign Trade Development in the People's Republic of Bangladesh," and that I solely utilized the sources listed at the end. As the master's thesis author, I declare that the thesis does not violate the constitution on any copyrights.

In Prague on 31st March 2022

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The determinants of foreign trade development in the People's Republic of Bangladesh

Abstract

Bangladesh became independent after the liberation war in 1971. From 1971 to 1989 Bangladesh had been suffered a great economic crisis due to political instability and military government. Bangladesh has been developing economic and trade relations with the world since 1990 and become a notable country for economic development and continuous growth of economy among the nations of the world. At present Bangladesh is one of the world's fastest-growing economy in the world and has been recognized as an ideal for continuous development of economic growth. Bangladesh cooperates in foreign trade with various countries for economic growth such as the USA, the UK, Germany, France, Italy, China, India, and so on. And Bangladesh is a member of the world trade organization, World Bank, IMF, SAARC, ASEM, SAFTA, BIMSTEC, etc. In this master thesis, foreign trade development and its impact on economic growth have been analyzed. And also examine the main trade partners of Bangladesh in 1990 as well as 2019 along with the territorial structure of foreign trade partner of Bangladesh. The analysis covers the period from 1990 to 2019. The analysis has been performed by the regression model. According to this analysis dependent variables FDI, net export has a strong impact on the economic growth of the people's republic of Bangladesh.

Keywords

Bangladesh, Foreign Trade, Economic growth, Regression analysis, Export, Import, Territorial structure, Major trade partner country.

Determinanty rozvoje zahraničního obchodu v Bangladéšské lidové republice

Abstrakt

Bangladéš se stal nezávislým po osvobozené válce v roce 1971. Od roku 1971 do roku 1989 Bangladéš trpěl velkou ekonomickou krizí kvůli politické jednotnosti a vojenské vládě. Bangladéš rozvíjel hospodářské a obchodní vztahy se světem od roku 1990 a stal se významnou zemí pro hospodářský rozvoj a neustálý růst ekonomiky mezi národy světa. V současné době je Bangladéš jednou z nejrychleji rostoucích ekonomik na světě a je uznáván jako hybná síla trvalého rozvoje ekonomického růstu. Bangladéš spolupracuje v zahraničním obchodu s různými zeměmi pro ekonomický růst, jako jsou USA, Velká Británie, Německo, Francie, Itálie, Čína, Indie a tak dále. A Bangladéš je členem Světové obchodní organizace, Světové banky, MMF, SAARC, ASEM, SAFTA, BIMSTEC atd.. V této diplomové práci je analyzován vývoj zahraničního obchodu a jeho vliv na ekonomický růst. A také prověřit hlavní obchodní partnery Bangladéše pak v roce 1990 i 2019 spolu s teritoriální strukturou zahraničního obchodního partnera Bangladéše. Analýza pokrývá období let 1990 až 2019. Analýza byla provedena pomocí regresního modelu. Podle této analýzy mají závislé proměnné PZI, netexport silný dopad na ekonomický růst Bangladéšské lidové republiky.

Klíčová slova:

Bangladéš, Zahraniční obchod, Ekonomický růst, Regresní analýza, Export, Import, Teritoriální struktura, Země hlavního obchodního partnera.

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List of abbreviations

RMG	Readymade Garments
IMF	International monetary fund
WTO	World trade organization
OPEC	Organization of the Petroleum Exporting Countries
SAARC	South Asian Association for Regional Cooperation
ASEN	Association of Southeast Asian Nations
APEC	Asia-Pacific Economic Cooperation
BRICS	Brazil, Russia, India, China, and South Africa.
FDI	Foreign direct investment
GDP	Gross domestic product
OLS	Ordinary list square
OECD	Organization for Economic Co-operation and Development
AD	Anno Domino
GATT	General Agreement on Tariffs and Trade
ASEM	Asia-Europe Meeting
WB	World Bank
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
IFC	International Finance Corporation
MIGA	The Multilateral Investment Guarantee Agency
ICSID	The International Centre for Settlement of Investment Disputes
PTAs	Preferential Trade Agreements
FTAs	Free Trade Agreements
EAEU	Eurasian Economic Union
SAFTA	South Asian Free Trade Area
OIC	Organization of Islamic Cooperation
LDC	Least developed country
EPB	Export Promotion Bureau
CD	Custom duty
BB	Bangladesh bank
PCI	Per capita income

1 Introduction

In 1971, Bangladesh was emancipated from Pakistan. After the war of liberation, Bangladesh has been trying to develop the economic situation and maintain economic growth with the bilateral trade agreement with contemporary business policy. International trade in Bangladesh is very small compared to the population of Bangladesh, although it has grown rapidly in recent years. It has a limited range and is fluctuating in the global market. Bangladesh's government is making a concerted effort to attract export-oriented companies by cutting red tape and implementing various financial and tax reforms. Bangladesh almost doubled its exports in 1990 from about US 1.67671(OEC&CEPII,2021) billion in 1995 to almost double in 1999 to US 3.173 (OEC&CEPII,2021) billion in 1999 and between 1999 and 1995 to the US. 5.533 (OEC&CEPII,2021) billion in 1999. Bangladesh's largest commercial partner in the 1990s was the United States, which contributed for r 35.7% (OEC&CEPII,2021) of Bangladesh's exports in 1998-99. Readymade Garments make up the bulk of this percentage (RMG). Germany has a significant presence in Bangladesh's exports which contributes 10.4 percent of Bangladesh's total exports and is in the second position; the UK third, accounting for 8.3 percent. India is the largest importer of Bangladesh, accounting for 20.8 percent of total imports in 1998-99 (OEC&CEPII,2021). China is the second most important source, accounting for 9.3 percent, followed by Singapore with 8.6 percent and Hong Kong with 4.6 percent. Bangladeshi exports have shifted from agricultural products and raw and processed natural resources to labor-intensive products (such as clothes, footwear, and textiles) over the past decade, but Bangladesh has not been able to get skilled-intensive products other than India. Bangladesh lags far behind India in software and application development despite the government's efforts. Bangladesh has a longstanding experience of having a negative trade balance since it imports more items than it exports. later. It imported twice as much as it did in the 1970s and 1980s. Even during the comparatively prosperous 1999 fiscal year, the country only exported US\$5.523 (IMF,1999) billion in goods while importing US\$8.381 (IMF,1999) billion, resulting in a US\$2.858 billion trade deficit (IMF,1999). Non-Knit Men's Suits (\$7.06 billion), Knit T-shirts (\$6.92 billion), Knit Sweaters (\$5.71 billion), Non-Knit Women's Suits (\$5.39 billion), and Non-Knit Men's Shirts (\$2.5 billion) are Bangladesh's top exports, with the US (\$6.86 billion), Germany (\$6.69 billion), the United Kingdom (\$3.92 billion), Spain (\$3.41 billion), and France (\$3.33 billion) (OEC&CEPII,2021). Bangladesh imports Refined Petroleum (\$3.8 billion), Raw Cotton (\$1.9 billion), Petroleum Gas (\$1.42 billion), Heavy Pure Woven

Cotton (\$1.31 billion), and Scrap Iron (\$1.1 billion), primarily from China (\$17.3 billion), India (\$8.24 billion), Singapore (\$2.96 billion), Malaysia (\$2.33 billion), and Indonesia (\$1.91 billion) (OEC&CEPII,2021).

Currently, global output is declining due to the coronavirus epidemic situation which is an incredible decline, and this situation is just as worthy and unprecedented since the great despair of the 1930s. Bangladesh must bear the same bad effect that the actual target growth rate (8.5%) (Bangladesh Bank-2021) is resulting in a significantly lower GDP growth rate for FY20 than FY19.

Nevertheless, the current state of Bangladesh is one of the significant economic positions. This makes the 31st term 37th largest economy 7.9% (Bangladesh Bank-2021) higher in terms of nominal GDP rank terms and adjustment of purchasing power parity (PPP) and GDP growth rate which was higher than the world economic GDP growth rate.

Bangladesh is the next 11th largest fastest growing economy in the world (Jim O'Neill, 2012) Bangladesh is not a country where social conditions have improved in the last few decades. Now, in terms of World Bank and IMF figures, this is a role model for economic progress and sustainable development, especially for the South Asian region.

For a nation of foreign trade, business relations are the most immense part of the ultimate development. The state of foreign trade lacks the country's economic incoming and outgoing economic dynamism and abundance as well as production.

Foreign trade represents the transition of goods, services, capital, and equipment of others that came from one economic border to another state with the agreement of both parties under certain rules and agreements concerning international trade policy and ethics. Foreign trade theory was first developed in the 18th century by some economists such as Adam Smith and David Ricardo, and later by two home economists, Eli Heckscher and Bertil Ohlin, in the early 1900s. The Heckscher-Ohlin (H-O model) is reputed based on international trade theory. With the help of International Trade Theory, I can easily get a deeper understanding of the key determinants of foreign trade development required for my diploma thesis. Globalization opens the borders to people and opens access to trade and other movements around the world without hindrance. All international trade organizations are cooperating to conduct borderless international trade and are trying to increase foreign trade among interest groups such as WTO, EU, OPEC, SAARC, ASEAN, APC, BRICS). The main goal of these organizations is to maintain the balance of regional trade with substantial growth and to

maintain access to open foreign trade between member countries as seen in most cases in the international trade of EU countries. The issue of determining the development of foreign trade in the People's Republic of Bangladesh is a very wide area for discussion of diploma thesis. My essential work in this diploma was to find out the content and structure of Bangladesh's foreign trade over the last 30 years and to find out which countries were major trading partners and who were currently in favor of Bangladesh. Bangladesh has many manpower and manpower who are ready to export readymade garments which are mostly exported products from Bangladesh. Along with these products, Bangladesh exports shrimp, jute, leather goods, tea, and medicines. Bangladeshi export business is highly dependent on the United States and the European Union because they are the main market for Bangladesh's export trade. On the other hand, energy, capital goods, and food items are being imported from China, India, the EU, Kuwait, etc.

This study of a diploma thesis in the early 1990s discusses the key partner countries, as well as key indicators of the development of foreign trade in different years with those currently engaged in foreign trade in 2019. Discuss the impact of significant economic growth on foreign trade from 1990 to 2019. The statistical analysis of the regression model shows the relationship between the dependent variable of economic development and the distinct variable of foreign trade because it depends on whether variable change occurs when one or more are displayed.

2. Objectives and Methodology

2.1 Objectives

The objective of this master's thesis is to identify the main determinants of foreign trade development in the Peoples Republic of Bangladesh. Since Bangladesh is one of the next eleven (Jim O 'Neill, 2012), emerging markets with a 161 million(census,2011) population whose economy is one of the world's fastest-growing economies, it becomes interesting to investigate the impact of foreign trade on its growth. And others research questions are: to find out what changes have happened in the content and territorial structure of Bangladesh's foreign trade over the last 30 years and which countries were the main trade partner in 1990 and which were the key partners in 2019.

Primary Objective:

- ❖ To find out the determinants of foreign trade development and the impact of foreign trade on its economic growth in the People's Republic of Bangladesh

Secondary Objectives:

- ❖ which countries were the main trade partners for Bangladesh in 1990 and which of them were the key partners in 2019?
- ❖ What changes have happened in the content and territorial structure of Bangladesh's foreign trade development over the last 30 years from 1990 to 2019?

2.2 Methodology

The years 1990 through 2019 are examined in this diploma thesis. The choice of this period was based on the various historical events that influenced Bangladesh's foreign trade development.

There are two sections to the present diploma thesis: theoretical and practical. The initial term that will be used in the current diploma work is defined at the beginning of the first part. Theoretical research is subsequently based on a review of the literature based on the basic concepts of foreign trade theories and the impact of foreign trade on the economic growth of Bangladesh. An overview of the trade agreements and institutions that affect world trade. The work of foreign trade in economic growth is the subject of the final section of theoretical research. Significant historical events that had an impact on Bangladesh's economy and foreign trade over the past 30 years are presented at the beginning of the review practical segment.

The importance of trade relations in economic development is examined in the final portion of theoretical research. The next systematic step of the practical part is to display the types of selected economic indicators. In particular, the data set for the OLS model GDP current US (\$) dollar, annual inflation rate in percentage, FDI net inflows of GDP (%), and balance of payment (export-import) in million US (\$) dollar has been chosen for the dependent and independent variables of the OLS model, past, and present important trading countries, and the number of exports and imports. The descriptive analysis strategy is employed to achieve this objective. The next systematic step is to examine Bangladesh's foreign trade by emphasizing the export and import territorial structure as well as the turnover of the top business partners. The regression analysis and comparative approach at the end of the practical section are used to investigate the relationship between GDP growth, Volume of export and imports, prime trade partners country, indicators of foreign trade developments, and its impact on economic growth. The approach of the Ordinary Least Squares Regression model is utilized for this diploma thesis in the practical section. The data has been discussed below:

Econometric Analysis:

The quantitative relationships between economic variables are the focus of econometric analysis (BALL, R. J., & BURNS, T. (1974). A simple definition of econometrics is "the

quantitative study of actual economic phenomena based on the concurrent development of theory and observation, coupled with correct methods of reasoning." (SAMUELSON, & A., P., KOOPMANS, T. C., & STONE, J.R.N. 1954).

The goal of the econometric analysis is to find the correct set of assumptions that are both realistic and specific enough to make full use of the given data.

- ✓ Specification: The difficulty of properly matching the lag reactions of a supposed theoretical model to the autocorrelation structure of the related observable time-series datum is known as a specification (Chevillon, G., Hecq, A., & Laurent, S. 2018)
- ✓ Estimation: Statistical inference techniques are used to generate econometric models using economic data. The models are estimated based on the observed data set and then checked for applicability. This is an aspect of the modeling's statistical inference. (N., S., & D.X. 2017). Various types of estimation are to be used in econometric analysis. In this diploma thesis Ordinary list square method(OLS) will be used in the practical analysis.
- ✓ Forecasting: Simply said, it's a forecast of the data's future worth. Ex-post forecasts (made beyond the period of estimation but within the period where data is still accessible) and ex-ante forecasts (forecasts for periods when data is not available) are the two sorts of forecasts (D., & Suits, B. 1962)

The Linear Regression Model:

The linear regression model depicts the relationship between the left-hand side variable (also known as the dependent variable, regressed, or explained variable) and the right-hand side variables (also called independent variables, regressors, explanatory variables (HAYASHI, & Fumio,2011).

The Linearity Assumption: The variables on both sides of the equation — the dependent and independent variables – have a linear connection.

The Strict Exogeneity Assumption: The mean is conditional on the regressors for all observations, implying that the error term's unconditional mean is zero.

No multicollinearity: The independent variables do not have a perfect linear relationship.

Spherical error variance: The error term has no serial correlation

The economic model:

A reduced depiction of reality is used to establish testable hypotheses about economic activity in an economic model. An economic model is a series of mathematical equations that describe a theory of economic activity (Kwok, V., & Leland, H. 1982)

$$Y_{1t} = \beta_{11}Y_{2t} + \gamma_{11}X_{1t} + \gamma_{12}X_{2t} + \gamma_{13}X_{3t} + u_{1t} \quad (1)$$

The econometric model:

An econometric model is a statistical model that describes the statistical relationship that is considered to exist between a set of economic quantities and a specific economic occurrence (Ray, C. F., & J. Shiller, R. 1990).

The addition of an error component distinguishes an economic model from an econometric model. While both models are simplified representations of real-world processes, the econometric model includes an error component that accounts for the impact of additional factors not captured in the data. The error term, also known as the disturbance term, refers to the parts of the dependent variable that the independent variable cannot predict, (Das, 2019).

Generally, an econometric model consists of :

1. a collection of equations that describe the behavior The observable variables and disturbances are divided into two portions in these equations, which are obtained from the economic model. (Cornwell, C., & N. Trumbull, W. 1994)
2. a declaration concerning the errors in variable values observed. (Cornwell, C., & N. Trumbull, W. 1994)
3. a depiction of the disturbances' probability distribution. (Cornwell, C., & N. Trumbull, W. 1994).

The simple equation model can be expressed:

$$y = f(X_1, X_2, X_3) \quad (2)$$

A simple economic model can be expressed as follows

$$y_t = \beta_0 + \beta_1 x_{1t} \quad (3)$$

Here, β_0 = the parameter to be estimated

If the economic model can be converted to an econometric model as follow;

$$y_t = \beta_0 + \beta_1 x_{1t} + u_t \quad (4)$$

Where u_t = denotes the error term or random variable

The first equation is a straightforward economic model that conceptually describes the link between dependent and independent variables. The error term is introduced into the second equation, which examines real-world events. Reasons explain whether there is a direct or indirect relationship between endogenous and exogenous variables. A sort of economic model that may be empirically tested is the econometric model (DAS, & P. 2019).

Data set for econometric model:

Various data set can be used in an econometric model like:

Time series data:

Time series data are collected throughout time and provide information on the numerical values of variables from one period to the next (GRANGER, C. W. J. 1981). For instance, a time series of data for export-import of Bangladesh from 1990 to 2019 can be found.

Cross-sectional data:

Cross-section statistics provide information on variables affecting individual agents (such as customers or producers) at a certain point in time (E. Lorensen, W., A. Jolesz, F., & Kikinis, R. 2021). A cross-sectional data represents a group of potential customers that refers to the expansion of different products and services by each group, for example, household income, household usage, and statistical data on other demographic, social, and economic conditions.

Panel data:

The panel data are the results of a series of surveys of a single (cross-section) sample across time. Panel data sets are composed of sequential blocks or cross-sections of data, each containing a time series (Schmidt, P., & C. Sickles, R. 1984).

Estimation of Parameters using Ordinary Least Squares Method:

Model verification of OLS

Economic verification

Economic verification of the model is carried out to see if it is consistent with economic theories. To avoid including irrelevant factors and excluding relevant variables, it is critical to determine whether the variables included are relevant. Economic verification also accesses the effect of variables on endogenous and exogenous variables in the face of change. It's also necessary to assess the accuracy of the signs and the magnitude of the numerical values of the estimated parameters (Skoruks, D. 2014).

Statistical verification of the model:

Statistical verification evaluates the statistical significance of the calculated parameters, equations, and the complete econometric model (J. Stigler, G. 1962).

The t-test is used to determine whether there is statistical evidence that adding a certain parameter to the model is significant.

The t-value is computed as:

t- value= *parameter absolute/ value its standard error*

$$t\text{-value} = \frac{|y_i|}{S_{y_i}} \quad (6)$$

The resulting t-value is compared to a constant value from the t-table depending on the selected α .

Statistical significance of estimated parameters: Confidence intervals confidence interval is another approach to examine the statistical significance of the values. As seen below, the confidence interval is calculated.

$$y_i = \gamma_i \pm t\alpha S_{y_i} \quad (7)$$

The parameter isn't statistically significant if the confidence interval has a value of zero (0).

The F-test determines the statistical significance of the whole model.

Statistical significance can be performed using F-test. It indicates if statistical evidence exists to support or refute the relevance of the explanatory variables considered together.

Coefficient of Determination (or "fitness of fit") is a measurement of how well something fits together.

This equation can be computed as:

$$R^2 = \frac{ESS}{TSS} = 1 - \frac{RSS}{TSS} \tag{8}$$

Where:

$$ESS \text{ (Explained Sum of Squares)} = \sum(\hat{y}_i - \bar{y})^2$$

$$TSS \text{ (Total Sum of Squares)} = \sum(y_i - \bar{y})^2$$

$$RSS \text{ (Residual Sum of Squares)} = \sum(y_i - \hat{y}_i)^2$$

Econometric verification:

The econometric model's assumptions are confirmed as follows:

- ✓ Specification assumption
- ✓ Zero mean assumption
- ✓ Homoscedasticity using White test
 - Non-autocorrelation assumption using Durbin Watson test and Breusch-Godfrey test
 - Independent variables are non-random and fixed in repeated samples
 - Lack of perfect multicollinearity
 - Normal distribution of the error term using Jarque-Bera test

Several tests are performed with software, and the model's relevance can be determined using the value of P. H0 is being rejected when the P-value < the significant level

The rationale for choosing this period is that there is a lot of practical information that has affected the financial condition of Bangladesh and the development of foreign trade. The study is based on data from the Bangladesh International Trade Center and the World Trade Organization, as well as data from the World Bank, the Bangladesh Economic Book Review, and other online sources.

To preserve the systematic review policy, thematic synthesis is being used to give a consistent relationship between the statistical data and the subsequent decision. The analytical basis of the study is economic growth, trade development indicators, important trading countries in the past and present, and the number of exports and imports. Diploma work is done in full US dollars.

3. Literature Review

3.1 Definition of basic terms

Numerous products and services are exchanged between the countries involved in foreign trade. In general, foreign trade represents the exchange of goods, products and services across national boundaries.

Foreign trade encompasses the exchange of goods and services across national borders. Foreign trade, especially in countries with rich and growing economies, is an important component of GDP, which improves a country's economy (Tamiz Deen Dilik and Gokman Ayata Al-A 2017). Foreign trade is the exchange of goods, services, and materials across national borders, as well as the impact of this trade on the domestic and global economy (Markusen, Al, 1995). Foreign trade emphasizes economics of scale, product inequality, and factor composition differences as fundamental factors in the world trade structure. These factors, when considered together, account for a large proportion of specialized patterns, trade volume, factor content, and a wide range of trade patterns across regions (Helpman, E.1999). According to Nelson, DCA (2009), an independent import/export business is a person or firm that sells foreign-made goods (imports), sells domestic (domestic) products to other countries (exports), or acts as foreign-made goods or both. The activities of foreign trade are the two most essential elements between exports and imports that I can discuss from the economist's perspective.

Goods and services sold by individuals or countries are known as exports (Nelson, D.C.A. 2009). The formula to calculate the net quantity of export is:

$$\text{Net export} = \text{Value of export} - \text{the value of import} \quad (9)$$

Exports are goods and services that are produced in one country and bought by people from another country.

Imports are goods and services that people in one country buy from another country instead of buying things made in their own country.

The financial, market value of all products and services produced in a country in one year is known as Gross Domestic Product (GDP), (van den Bergh, J. C. J. M. 2007, February).

The equation for calculating the **GDP** is

GDP = private consumption + gross private investment + government investment + government spending + (exports – imports).

$$\text{GDP} = C + I + G + X - M \quad (10)$$

C= In a country's economy, all personal expenses are defined as consumption, which includes sustainable goods (which last more than 3 years), non-sustainable goods (food and clothing), and services.

G= Total state expenditures, including staff salaries, road construction / repair, public schools and military expenditures.

I= The total amount of capital equipment, inventory, and housing costs by a country.

X-M= the difference between total (export-import) is called net export

GDP is calculated using four main components.

- Personal consumption expenditures.
- Investment.
- Net exports.
- Government expenditure.

Gross Domestic Product (GDP) includes the value of goods and services produced within the borders of a country by citizens and non-citizens, usually within a given period of time. The total value of products and services generated within a country's geographical place over a period of time, normally one year, is stated as GDP.

The population is the entire group of members of the same species who inhabit the very same region and crossbreed. A populace is comprised of people who correspond to a certain kind and reside in the same territory. People's well-being is dictated by how they interact with one another and their circumstances. (Tarsi, K., & Tuff, T. 2012).

A population is a distinctive group of individuals, whether this is a country or a group of people who share the same trait. The study of statistics from a population sample under a group or subgroup is called population. (B. Griffith, A., Salguero-Gomez, R., Merow, C., & McMahon, S. 2016)

Inflation is the rate at which the economy grows (Musarat, M. A., Salah Alaloul, W., & Liew, M. S. 2020). The rate at which commodities and services' buying power diminishes

over time. Inflation is indicated by inflation, which necessitates rapid analysis of inflation (Musarat, M. A., Salah Alaloul, W., & Liew, M. S. 2020).

Inflation is generally defined as a broad measure of the rising cost of living in a particular economy (FORTUNE, J. NEILL,1987).

Inflation is an estimate of how expensive the collection of goods and inflation equals become over time, usually in one year. (IMF)

$$\text{Rate of inflation} = \frac{CPI_x - CPI_{x-1}}{CPI_{x-1}} \quad (11)$$

The value of a foreign currency described in the domestic unit is defined as an exchange rate (Gevorkyan, A. V. 2020). In terms of investment, the exchange rate is the value of the currency between countries, and the change from one period to the next is the exchange rate return, where uncertainty is a measure of the scattering of exchange rate changes (Misra, P. 2018).

Direct investment is often associated with long-term business participation and is seen as a strategy to establish a foundation in a multinational corporation (IMF,2010)

Foreign direct investment (FDI) is defined by the Organization for Economic Co-operation and Creation (OECD) as the development of a long-term partnership through direct investment by a resident organization of one nation in another. (OECD,2008).

FDI is defined as the investment of a foreign investor in a host country to obtain actual possession (WORLD BANK, 1996).

3.2 History of foreign trade

In the early 2500s BC, international trade began based on the free exchange of goods. Archaeological evidence suggests that the Sumerians of northern Mesopotamia relied on maritime trade in textiles and metals. Before 2000 BC, Greek profited from olive oil and wine trading for grain and metal (Seyoum, Ph.D., B.2008). Many instruments of contemporary trade have been introduced by Greece and its remote settlements by about 340 BC, including banking and credit, insurance, trade agreements, and special diplomatic and other privileges (Seyoum, Ph.D., B.2008). In the first century AD, the Romans worked with the Chinese on the Silk Road, developing complex trade routes through multiple trade routes and water. The center of international trade had migrated from the Mediterranean to Western Europe by the end of the fifteenth century. Spain, Portugal, and, subsequently, the

Netherlands, were international trading sub-centers. One of the more industrialized parts of Europe that were primarily dependent on cash imports or credit letters (Seyoum, Ph.D., B.2008) is transitioning from a livelihood economy. Trade boomed after the discovery of America in 1492 and the opening of the sea voyage to India in 1498, and the boom of luxury products and food items such as sugar, tobacco, etc., and in Europe, coffee became more commonly available. The main purpose of global expansion (colonization) in the fifteenth century was to increase national economic hegemony (commercial policy) by exploiting colonies for the exclusive advantage of the country at home. The colonies were seen as outposts of the domestic economy which would reduce dependence on competing countries through exports and discovery of precious metals and increase national wealth. This was the first phase of colonization, which lasted until 1750 when the Industrial Revolution in England began. Commercial motives rather than regional gains guided the second phase of foreign progress to the historical stage (1765-1900). By 1815, Britain had transformed its empire into a multinational concern, and it emerged as a leading colonial power (Seyoum, Ph.D., B.2008). The Industrial Revolution changed the social and economic structure of England in the 1860s and demanded the international expansion of the mass production product market. In foreign affairs such as Britain led the free-trade doctrine because of non-trade. Due to the industrial and economic advantages over other countries, Britain has the most advantage from free trade in the probability period (Seyoum, Ph.D., B.2008).

- the formation of local trade relations - (6th -13th centuries) The emergence of international trade routes from the Mediterranean to the East.
- Stage of regional foreign trade relations formation (12th -15th centuries) Concentration of foreign trade relations in the Mediterranean, Baltic and Northern seas.
- The beginning of the globalization of foreign trade relations (15th-17th centuries) The relocation of international trade routes to the Atlantic, Indian, and Pacific oceans due to the great geographical discoveries.
- the intensification of foreign trade relations – the industrial revolution (18th-19th centuries), industrialization of Western Europe, and the USA
- militarization of foreign trade relations (end of 19th - beginning of 20th century) connected with World War I and World War II
- Stage of active influence of integration blocks and associations on foreign trade relations (middle and the second part of 20th century).

3.3 Theory of international trade

The issue of the efficiency of foreign trade has been linked to some of the most fundamental issues in economic theory. The emergence of theories, models, and concepts describing the driving force of this process reflects the history of international trade. Foreign trade is a system that connects the goods of the world to the foreign trade of all countries. As the world market began to grow in the sixteenth and seventeenth centuries, so did the rise of international trade. The intertemporal open economy model is used as a case study to explain the problem of repetitive theories in the phenomenon of repetition and analysis between economic thought and international trade theory (*Klug Adam & Bordo Michael*, 2006). There is a driving force behind its growth by distributing benefits to participating countries in world trade. International trade theory explains how international trade flows are conducted. International trade is a process that countries specialize in and can increase the productivity of their natural resources. Countries can improve their population by increasing the volume of products and services they produce (Bloomfield, 1994).

International trade theory is a term used to indicate the interpretation of foreign trade. Or, in other words, these would be the reasons why a nation or an organization offers or legitimizes the conduct of international trade. Or, more generally, how a business or a country can conduct international trade economically.

In general, there are two sorts of international trade: territory trade and advanced, firm-based trade. The Traditional country-based trade also has some differences like mercantilism, absolute advantage, comparative advantage, Heckscher -Ohlin theory, and Leontief paradox. To determine the concepts of modern firm-based theory, similarity theory, product life cycle theory, world strategic rivalry theory, and Porter's National Competitive Advantage Theory. Mercantilist Theory, a. Smith's Absolute Benefit Theory, d. Ricardo and DS Mill's theory of comparative advantage, Hexcher-Olin's theory, product life cycle theory, M. Porter's theory, and Samuelson and Stolper's theory are important theories. (Lam, T.-D. 2016).

Trade theory of mercantilism

By the seventeenth century, **mercantilism** was one of the earliest theories of international trade. According to this idea, a country's gold and silver reserves should be increased by increasing exports and limiting imports. In terms of this policy, a country should have a trade surplus, where exports exceed imports. This method was used by many countries from the

1500s to the late 1800s. Import restrictions were imposed by these countries, now known as protectionism. **Protectionism** is a policy where the government actively defines the interests of the domestic economy by one or more governments. The complex system of customs duties, tariffs, and barriers was created because of a business policy using security measures. The demands of the growing capitalist economy were not met by this notion.

William D. Grampp emphasized the liberal elements of eighteenth-century mercantilist philosophy in English as an important addition to the discussion of mercantilism since 1952. Grampp's argument can be traced back to Adam Smith, highlighting substantial commercialist elements in the English liberal economy. As a result, TW Hutchison in a systematic article raises the issue of whether there was a 'Smithian Revolution'. And it is undeniable that Smith's *Wealth of Nations* (1776) was a game-changing analysis of a self-balanced economic system (Magnusson, L. 2003).

Absolute Advantages Theory

The person who first proposed the Theory of Absolute Advantages. A. Smith is responsible for the next step in the development of international trade theory. According to A. Smith, the role of government is to take steps to develop products based on cooperation and the division of labor, as well as to consider support for a free trade system. Adam Smith (1723-90) and David Ricardo (1772-1823) both advanced classical economic theories of the eighteenth century. According to Adam Smith, international trade is crucial for economic growth because it increases the size of the market and allows each country to benefit from increasing income on a scale based on the division of labor and efficiency (Lam, T.-D. 2016).

Comparative advantages

David Ricardo emphasizes the inequality of production methods that specializes in a country producing goods where it has **comparative advantages** and when there is no need to increase revenue on a scale, there can be consistent returns on the scale of each production process. In addition, Smith and Ricardo agree on one point: trade can produce a product of one country that is cheaper than other countries, each country will be able to specialize in production to be able to enjoy more without trade. To put it another way, a country's factor endowment and production strategy determine the amount of each product it produces. Every nation seems to have a competitive opportunity to produce one of these two proportional items (Lam, T.-D. 2016). Eli Hexcher (1919) and Bartill Ohlin (19133).

Heckscher-Ohlin model

The Heckscher-Ohlin model, a general balanced mathematical model of international trade, was developed by the Stockholm School of Economics. It is assumed that there are only two countries (1 and 2), each containing two trade items (X and Y) and two manufacturing elements (A and B) (capital and labor). Both countries employ the same technology and produce their products and manufacture for the same reasons. Factor Price Equalization Theorem, Stolper-Samuelson Theorem, Ribsinsky Theorem, and Rybakinsky Theorem are the main components of the H-O model. (Lahiri, S., & Ono, Y. 1995).

The 'Factor Content' method, which measures and tests the factor content of trade (exports and imports) in the case of relative factor endowments, has been used to test the H-O model experimentally in multi-well, multi-country and multifactor contexts. Leontif (1953) uses input, output, and trade data for the United States to show that, despite being a capital-rich economy, its exports outnumbered its imports, making it a net importer of capital-net exporter of rich products and labor rich products (Mumit, A., & Goswami, G. G. 2011).

Product lifecycle theory

Over the past 20 years, **product lifecycle theory** has become a significant organizational principle in the study of technological innovation, and it is also being championed by leading business scholars as a tool of strategic choices (Windrum, P., & Birchenhall, C. 1998). R. Vernon, an American economist, formulated life cycle theory. Accordingly, an economic entity goes through a certain cycle of technological progress: it starts as a top product, then matures and eventually becomes an intermediate or extroverted product. The theory of product cycles or product life cycles adopts a similar approach to explain how foreign (or international) trade structures change as the technological (or innovation) gap hypotheses develop. The level of technology used, according to all arguments, is the most essential factor in shaping the structure of international trade (V.J.č., & V.K. 2009). According to the product life cycle theory, the opportunities for foreign trade depending on the individual producer or country of production. When the product matures and is technically managed by other producers, the country loses significant comparative advantage over the top east, and the product is produced and sold by a country of moderate technological development (V.J.č., & V.K. 2009).

3.4 Foreign trade indicator

International trade indicator is a monetary economic statistic that describes the number of foreign transactions performed by a country, a group of countries, or an administrative-territorial structure (region): one month, one quarter, or the whole.

Goods and services trade statistics, as well as forecasts, trade by firm size, terms of trade, adding domestic value to total exports, and the import-to-export ratio are all included in the foreign trade index.

The main areas of international trade economic activity are (J.Trebilcock, M., & Howse, R. 2005). There is complete independence in matters of foreign economic activity.

- ❖ Economic self-reliance
- ❖ Issues of international economic activity are considered equally.
- ❖ In trade and economic interaction, there should be no bias.
- ❖ Foreign trade activity is a matter of mutual interest.
- ❖ The rights of subjects engaged in international economic activities and the protection of the state of legitimate interests
- ❖ Foreign investment
- ❖ Political stability as well as a good business environment.
- ❖ Diplomatic relation with partner countries

The most important indicators of international trade activity (J.Trebilcock, M., & Howse, R. 2005).

- Trade relations with agreements, tariff advantage and most favor nations
- Exchange rate and balance of payments flexibility
- Favorable rules of origin and regional trading agreements(GATT)
- Government procurement, subsidies, and countervailing duties
- Domestic coordination policy and security measures
- Anti-dumping policy and protective action

3.5 Foreign trade and its role in a country's economy:

Trade is an international exchange of goods, inputs and technologies that benefit society in two ways. Different countries have different capabilities and specialize in making different products, there is always a demand (G.V.VIJAYASRI 2013). Most of the countries participating in active trade are active in creating employment, encouraging people to save,

increasing foreign exchange earnings and improving investment productivity by shifting investment from low to high utilization (Om, S., & Bhandari, R. (2005).

The significance of foreign trade in the world has been thoroughly researched, as has the role of international trade in a variety of issues. The advantages of foreign trade are provided to the countries which drive its growth. The concept of global trade explains the rationale for these gains from foreign trade, as well as the factors that may affect the flow of foreign trade. The global economy is a strategy that allows countries to increase the productivity of available resources and therefore increase the number of products and services they produce as well as the well-being of their populations by improving their skills.

International trade is a strategically important activity in the development process of a developing economy (Om, S., & Bhandari, R.(2005). Different countries have different capabilities and specialize in making different products, there is always a demand (G.V.VIJAYASRI 2013).

Economy relates to the optimal use of limited resources and their proper allocation. The distribution of economic resources between countries is also a matter of international trade(G.V.VIJAYASRI 2013).

International trade is the type of trade that drives the world economy. International trade allows industrialized nations to use their resources, such as technology, capital and labor, more efficiently (Om, S., & Bhandari, R. (2005).

The exchange of goods and services enables many companies to participate in the international economy, inviting new direct investors. Foreign trade has a big influence on a country's economic development. International trade and economic growth have become much more crucial as a result of rising countries adopting trade liberalization policies. Globalization is critical for worldwide trade and economic development. In support of international trade gains, developing countries are increasingly driving the success of the world economy(G.V.VIJAYASRI 2013).

The international trade factor drives growth through income growth, which increases demand, which in turn encourages technological advancement and increases productivity in the economy (G.V.VIJAYASRI 2013).

World trade contributes to economic expansion if new policies and benefits are flexible enough to support changes in the social and economic environment.

3.6 Trade agreements and organizations:

Bangladesh is a part of international organizations and economic alliances such as WTO, IMF, SAARC, ASEM, WB,

World trade organization

The World Trade Organization (WTO) is the only global body that regulates international trade rules among the member countries. Most of the world's trade nations have decided to be bound by the WTO accords, which are recognized by national parliaments. The goal is to make trade as simple, predictable, and unobtrusive as possible.

The World Trade Organization (WTO) was established on January 1, 1995, in Geneva, Switzerland. Uruguay round negotiations gave birth to the World Trade Organization (WTO) (1986-1994). The total number of member countries are 164 members since 29 July 2016 representing 98% of the total world trade. The World Trade Organization (WTO) performs several functions, including establishing a global system of trade regulations, serving as a venue for trade negotiations, resolving legal trade disputes among its members, and supporting third-world countries. WTO member countries make all important decisions: either through their ministers (who attend for at least two consecutive years) or through their ambassadors or representatives (who meet regularly in Geneva).

To join the WTO, a government must align its economic and trade policies with WTO guidelines and accept WTO membership conditions.

Bangladesh has been a member of WTO since January 1, 1995, and GATT since December 16, 1972.

World Bank (WB)

The World Bank, often known as the World Bank Group, is an international organization affiliated with the United Nations that funds initiatives that assist member countries in growing their economies. The bank, headquartered in Washington, D.C., is the world's largest financial aid provider to underdeveloped countries. WB provides technical assistance and policy advice to ensure the implementation of open market reforms in support of international lenders.

The World Bank is the result of the United Nations and the Financial Conference (known as the Bretton Woods Conference), which was established in 1944. The goal is to establish an

international economic organization after the 2nd World War. Its early loans were intended to aid in the reconstruction of Western Europe following World War II. It was a prominent player in funding investments in infrastructural projects in emerging countries, such as roads, hydro energy, water and sewage facilities, marine ports, and airports, beginning in the mid-1950s.

World Bank consist of five organizations are:

- ✓ The International Bank for Reconstruction and Development (IBRD) is located in Washington, D.C. global development bank. The IBRD provides credit to creditworthy low- and middle-income developing countries at market interest rates.
- ✓ the International Development Association (IDA):
In the 1960s, the International Development Association (IDA) was established to provide interest-free long-term financial loans, technical support, and policy assistance to developing countries in certain areas, such as health, education, and rural development programs. The IBRD generates most of its finances on international financial markets, whereas the IDA's loan operations are supported by contributions from wealthy countries.
- ✓ International Finance Corporation (IFC):
The IFC provides loans, loan guarantees, and equity finance to businesses in developing nations in conjunction with private investors.
- ✓ the Multilateral Investment Guarantee Agency (MIGA):
- ✓ The MIGA protects international investors from non-commercial risks in developing nations by providing loan guarantees and insurance.
- ✓ the International Centre for Settlement of Investment Disputes (ICSID):
ICSID's activities are separate from those of the IBRD, which acts as a mediator or arbitrator in resolving investment disputes between foreign investors and the host country.

IMF

In July 1944, the International Monetary Fund (IMF) was established in the United States under the Bretton Woods Conference. The 44 countries participated in creating a framework for international economic cooperation to reduce the devaluation of competitive currencies and contribute to the Great Depression of the 1930s. The main reason for establishing the IMF is to support the stability of an international monetary system that includes exchange

rates and an international payment network system that allows countries and their citizens to conduct international and business transactions. It is a non-profit and voluntary organization that promotes international financial cooperation and financial stability. It also contributes to the eradication of global poverty by facilitating international trade, increasing employment, and fostering long-term economic growth. The IMF is directed and maintained by the 190 member states.

Bangladesh became a member on August 17, 1972, and on April 11, 1994, it acknowledged the requirements laid out in Article VIII, Sections 2, 3, and 4.

SAARC

The South Asian Association for Regional Co-operation (SAARC) was established on December 8, 1985, in Dhaka, Bangladesh. SAARC consists of eight member countries namely Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. On January 17, 1987, the Association's Secretariat was established in Kathmandu.

The SAARC Charter states that the organization's goal is to promote the welfare of South Asians and improve their quality of life. Accelerate the region's economic, social, and cultural development, and ensure that everyone has the possibility of living in integrity and fulfilling their full potential; Promote and enhance South Asian countries' collective self-reliance; Also, to promote mutual trust, respect, and collaboration.

ASEM

In 1996, the Asia-Europe Meeting (ASEM) was established as an international initiative to enhance conversation and cooperation between Asia and Europe.

The purpose of establishing ASEM is to share common values such as political, economic, social, cultural, educational and respect and equal participation among Asian and European countries. The summit brings together key figures from each state and government, the President of the European Council, the President of the European Commission, and the Secretary-General of the ASEM, every 2 years, for cooperation between the member countries. Ministers and senior officials from ASEM countries also engage in sectoral talks. Initially, ASEM was formed in 1996 by 15 EU member states, 7 ASEAN member countries, China, Japan, Korea, and the European Commission but now has a total of 53 member countries, including the European Union and the ASEAN Secretariat, including 30 European and 21 Asian countries.

Bangladesh joined the Asia-Europe Meeting (ASEM) in 2012 to expand economic trade with the organization as well as with its partner countries, especially in the European market.

3.7 Global trade overview

The global trade scenario represents the total trade volume where the global trade volume (goods and services) had an upward trend in 2015, 2016 and 2017 at 2.6%, 2.4%, 5.4% respectively. Following 2018, 2019 has been adverse downward trend was declined at 3.8 % and .09 % continuously due to the pandemic situation. The imports of advanced economic were at 4.2 percent in 2015 and 2.7 percent in 2016 and also 4.3 percent 3.3 percent in 2018 and at 1.7 percent in 2019 that is the lowest percentage shared globally from the imports of advanced economics and on the other hand emerging and developing economics represent the negative -0.6% in 2015 later at 2.0%, 7.5 %, 5.6 %, and -1.0 percent in the year of 2016,2017,2018 and 2019 respectively.

Table 1 Global trade overview from 2015 to 2019 (percentage change)

	2015	2016	2017	2018	2019
World Trade overview (Goods and Services)	2.6	2.4	5.4	3.8	0.9
Imports					
Advanced Economies	4.2	2.7	4.3	3.3	1.7
Emerging and Developing Economies	-0.6	2.0	7.5	5.6	-1.0
Exports					
Advanced Economies	3.6	2.2	4.4	3.1	1.3
Emerging and Developing Economies	1.3	2.5	7.2	4.3	0.5

Source: Bangladesh Economic Book review. <https://mof.portal.gov.bd/site/page/28ba57f5-59ff-4426-970a-bf014242179e/Bangladesh-Economic-Review-2021>

The global trade picture for exports focusses on the advance economics 3.6%,2.2%, 4.4%,3.1%, and 1.3% following the year of 2015,2016,2017,2018 and 2019 sequentially. Emerging and developing economies of exports had increased at 1.3% 2.5%, 7.2% during the year 2015,2016, and 2017. After that, the year 2018 and 2019 had massive reductions at 4.3% and .05% continuously.

3.8 Bangladesh Trade Agreement

Free trade agreement

As a result of its transformation from Least Developed Country to Developing Country, Bangladesh will lose duty-free access to both developed and developing countries. The Ministry of Commerce has begun development efforts in trade with a variety of countries to address these concerns. As part of these efforts, Bangladesh has signed Preferential Trade Agreements (PTAs) and Free Trade Agreements (FTAs) with several commercially important countries (Bangladesh economic book review,2019). The Nepal-Indonesia Partnership Agreement is nearing completion. Malaysia, Sri Lanka, the United States, Thailand, Japan, Lebanon, Morocco, Canada, ASEAN, and the Eurasian Economic Union have all conducted feasibility studies to establish free trade agreements (FTAs/PTAs) (EAEU). Furthermore, the government has begun conducting feasibility assessments (Bangladesh economic book review,2019). The Ministry of Commerce has indeed performed a feasibility assessment for signing FTA/PTAs with Malaysia, Sri Lanka, the United States, Thailand, Japan, Lebanon, Morocco, Canada, ASEAN, and the Eurasian Economic Union (EAEU). Furthermore, the ministry has made steps to perform feasibility studies to conclude free trade agreements (FTAs) with Australia, the Philippines, Nigeria, Iraq, Kenya, Sierra Leone, Senegal, and South Korea (Bangladesh economic book review,2019).

Regional trade agreement

Table 2 Bangladesh Bilateral Trade Agreement except for the SAARC Countries

Country	signature date	Country	signature date
Cambodia	04-08-2006	Bulgaria	18-11-1985
China	01-01-1993	Egypt	22-07-1974
Indonesia	24-01-2004	Germany	24-07-1972
Iran	09-06-2005	Hungary	05-04-1972
Iraq	10-05-1981	Kenya	01-09-1982
Kuwait	04-06-1979	Mali	27-08-1995
Kuwait	14-02-2011	Morocco	15-09-1999
Malaysia	01-12-1977	Poland	21-06-1972
North Korea	28-02-1974	Romania	15-09-1997
South Korea	1-07-1973	Senegal	27-05-1974
Thailand	22-08-1977	Sudan	29-07-1976
United Arab Emirates	11-05-1984	Turkey	27-07-1976
Vietnam	24-09-1996	USA	25-11-2013
Albania	25-04-1988	Uganda	16-10-1974
Algeria	14-10-1976	Ukraine	15-06-2007
Belarus	20-05-2007	Uzbekistan	14-02-1998
Brazil	13-02-1976	Zimbabwe	14-10-1989

Sources: Bangladesh ministry of commerce. <https://mincom.gov.bd/>

The Asia-Pacific Economic Cooperation Agreement (APEC):

APEC was established to respond to the urgent steps and implementation of trade expansion programs for developing member states for Asia and the Pacific (ESCAP) by the decisions contained in the Bangkok Agreement (United Nations ESCAP, 2005), the Economic and Social Commission for Asia and the Pacific (ESCAP) amended. APEC comprises Bangladesh, China, India, Korea, Laos, and the Democratic Socialist Republic to promote trade dialogue among the member states (United Nations ESCAP, 2005).

South Asian Free Trade Agreement (SAFTA)

SAFTA was established on 6 January 2004 in Islamabad, Pakistan during the SAARC Summit.

The South Asian Free Trade Agreement was advanced to establish free trade blocs in Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka, bringing together the economies of a total population of 1.8 billion (as of 2011). The region's seven foreign ministers signed a SAFTA framework agreement to eliminate customs taxes on all traded commodities to zero by 2016 (Bangladesh economic book review.2019).

Double taxation avoidance agreement

Table 3 Double taxation avoidance agreements

Country and date of agreements
Bangladesh & Nepal DTA 25.02.2020
Bangladesh & Kuwait DTA Agreement 2014 Eng.
Bangladesh & Bhutan DTA 25.02.2020
Bangladesh & China DTA Agreement (Gazette)
Bangladesh & Canada DTA Agreement (Gazette)
Bangladesh & Vietnam DTA Agreement (Gazette) 2004
Bangladesh & USA DTA Agreement (Gazette) 2007
Bangladesh & UK DTAA (Gazette) 1979
Bangladesh & UAE DTA Agreement (Gazette) 2011
Bangladesh & Turkey DTA Agreement (Gazette) 1999
Bangladesh & Thailand DTA Agreement (Gazette) 1997
Bangladesh & Switzerland DTA Agreement (Gazette) 2007
Bangladesh & Sweden DTA Agreement (Gazette) 1982
Bangladesh & Sri Lanka DTA Agreement (Gazette) 1986
Bangladesh & South Korea (Gazette) DTAA 1983
Bangladesh & Singapore DTA Agreement (Gazette) 1980
Bangladesh & Romania Agreement (Gazette)
Bangladesh & Poland Agreement (Gazette)
Bangladesh & Philippines Agreement (Gazette)
Bangladesh & Pakistan DTA Agreement (Gazette)

Bangladesh & Norway DTA Agreement (Gazette)
Bangladesh & Netherlands Agreement (Gazette) 1993
Bangladesh & Myanmar DTA Agreement (Gazette) 2008
Bangladesh & Mauritius DTA Agreement (Gazette) 2009
Bangladesh & Malaysia DTA Agreement (Gazette) 1983
Bangladesh & KSA DTA Agreement (Gazette) 2011
Bangladesh & Japan DTA Agreement (Gazette) 1991
Bangladesh & Italy DTA Agreement (Gazette) 1997
Bangladesh & Germany DTA Agreement (Gazette) 1994
Bangladesh & France DTA Agreement (Gazette) 1987
Bangladesh & Denmark DTA Agreement (Gazette) 1996
Bangladesh & Belgium DTA Agreement (Gazette) 1998
Bangladesh & Belarus DTA Agreement (Gazette) 2013
Bangladesh & Bahrain DTAA
Bangladesh & Indonesia DTA Agreement (Gazette) 2007
Bangladesh & India DTAA (Gazette) 1991&2013

Source: Ministry of commerce Bangladesh. <https://mincom.gov.bd/>

Trade Preferential System among OIC Countries (TPS-OIC) agreements

Bangladesh signed the concerned Rules of Origin on 25 February 2011 and ratified it on 23 June 2011 under the Framework Agreement on Trade Preferential System among OIC Members (TPSOIC), which was agreed in 1997 to boost trade within the OIC countries. Furthermore, in February 2012, Bangladesh delivered an offer list of 476 products. Following the signature of this agreement, Bangladesh will be able to enhance exports to other member nations by utilizing the 30% priority provided under the Rules of Origin as an LDC. (Bangladesh economic book review.2019)

Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)

In June 1997, the BIMSTEC Framework Agreement was signed, and in February 2004, another Framework Agreement was signed to construct the BIMSTEC Free Trade Area. Bangladesh, India, Myanmar, Sri Lanka, Thailand, Nepal, and Bhutan are members of an alliance of South and Southeast Asian countries. This agreement is now undergoing

negotiations in the areas of trade in products, trade in services, and investment. The agreement has identified fourteen fields for collaboration (Bangladesh economic book review.2019).

3.9 Trade policy of Bangladesh:

The policy reform movement gained traction following the return of democracy in 1991. The major political parties have all agreed on a liberal economic agenda, demonstrating a genuine and long-term commitment to change and liberalization (Majumder, S. C., & Rana, M. M. 2016). A wave of reforms and liberalization efforts have been launched and executed since then, effectively changing the policy landscape.

Among these initiatives, Bangladesh Trade Policy has been established to reduce tariffs, eliminate many quantitative constraints (QRs), develop flexible exchange rate system, and facilitate various financial and revenue benefits for export promotion. (Majumder, S. C., & Rana, M. M. 2016)

Bangladesh import trade Policy Order (2012-15)

The core objectives of the Bangladesh Trade Policy Support Program (IPO 2012-15) are to create a competitive position with WTO derivatives, facilitate a smooth process of import of capital goods and raw materials, facilitate technological and technological innovation and Permission to import necessary goods based on urgent need.

The Bangladesh Trade Policy Scheme also maintains the system of payment of value-added tax and refunds for export-oriented industries (EOIs) through the process of specially bonded warehouses and customs-drawback system on input imports used in the final production. (Majumder, S. C., & Rana, M. M. 2016). EOIs are also allowed to import duty-free samples relevant to the manufacture of exportable products (within certain restrictions). Assuming that clearance from the Export Promotion Bureau is received (EPB), (Majumder, S. C., & Rana, M. M. 2016)

Bangladesh Export Trade Policy Order 2012-15

Export Policy 2012-15 has emphasized the need of increasing exports, increase the productivity of export-oriented sectors, and enable the overall development of the export sector by strengthening local export-oriented businesses' capabilities. Five Business Promotion Councils have already been established as part of public-private cooperation to

improve exporters' capacity and knowledge, as well as to alleviate supply limitations, allowing for continuous export supply (Majumder, S. C., & Rana, M. M. 2016) The scope of these councils will eventually be enlarged. Through increased export growth, it is envisioned that this Export Policy will play a pioneering role in job creation and poverty relief (Majumder, S. C., & Rana, M. M. 2016)

Ready-made garments (RMG), the majority of which are exported to the United States and the European Union, regulate Bangladesh's export regulations. Companies that operate as bonded warehouses or export processing zones account for nearly all garment exports. There was also an arrangement in force until June 2005 that paid subsidies for local materials used by garment exporters. Apart from that, a standard set of duty neutralization schemes (such as duty drawback), export incentives (such as preferential export financing), export promotion institutions, and activities are available, comparable to those used in many developing countries (Majumder, S. C., & Rana, M. M. 2016)

Bangladesh trade liberalization policy

Trade Policy Reforms

Over the previous three decades, Bangladesh's trade policy has seen significant changes. The government has adopted a free trade policy congruent with global market economy tendencies, the Uruguay Round Accord, and the World Trade Organization's agreement since the early 1990s (Majumder, S. C., & Rana, M. M. 2016). In 1997/98, the government established a five-year export program and a more flexible five-year import policy to achieve a favorable trade balance and long-term growth in the foreign exchange reserve position. (Majumder, S. C., & Rana, M. M. 2016).

To achieve this goal, the government has pursued a restricted protective strategy that takes into account several crucial problems such as public health, security, and religious limitations. In addition, the government has been implementing more liberal import and export policies and initiatives, including tariff rate reductions and harmonization, as well as the removal of several quantitative limits on imports (Majumder, S. C., & Rana, M. M. 2016).

Tariff Rationalization of Bangladesh:

During the 1990s, Bangladesh not only reduced tariff rates but also rationalized its tariff structure. The country has made progress toward its goal of making customs tariffs simpler and more transparent (Majumder, S. C., & Rana, M. M. 2016). The top customs duty rate has lowered from 350 percent in FY 1992 to 32.5 percent in FY 2003 (Majumder, S. C., & Rana, M. M. 2016). In FY 1992, it was 57% which decreased to 16.5% in FY 2003. Thus, the overall unpaid tariff tax has been reduced. Bangladesh's average protection tax also declined from 1992 to 2003. The rate was 61% in 1992, down from 22% in 2003. Bangladesh has made tremendous progress toward achieving some degree of regularity and eliminating various tariff anomalies that emerged because intermediate products had higher duties than final products (Majumder, S. C., & Rana, M. M. 2016).

Bangladesh's nominal import protection level is currently the lowest in South Asia, and the country's tariff reduction in the early 1990s was one of the most rapid among reforming countries. Because of changes in the tariff structure, both nominal and effective protection rates have decreased over time (Majumder, S. C., & Rana, M. M. 2016).

3.10 Bangladesh major export and import product

Table 4 Bangladesh major exporting product

Export product	Description
Ready-made Garments & Knitwear	The ready-made garments (RMG) sector accounts for almost 80% of Bangladesh's overall export profits. Knitwear made with locally knitted textiles is eligible for duty-free or zero-tariff entry into the EU, Japan, Australia, Norway, and Canada. Bangladesh is a significant knitwear supplier to the European Union.
Textiles for the Home	Towels, bathrobes, washcloths, cooking gloves, dishcloths, napkins, bed sheets, bed coverings, and pillow covers are all examples of Bangladeshi household textiles. The biggest importers of Bangladeshi home textiles are the United Kingdom, the United States, France, Canada, Germany, Belgium, Sweden, Austria, Malaysia, the United Arab Emirates, Italy, Hong Kong, Japan, and Saudi Arabia.

Leather and Leather Goods	shoes, moccasins, travel goods, suitcases, briefcases, and fashion accessories, such as belts, wallets, handbags, and case holders
Jute and Jute Products	biodegradable bags and sacks for packing agricultural products, minerals, fertilizer, cement, sand, and sugar
Agricultural Products	vegetables, fruits, aromatic fine rice, tea, spices, chanachur, potato chips, fruit juice, and pickles. Saudi Arabia, Kuwait, the United Kingdom, the United States, and Germany are major agro-importers
Fish and Shrimps	fresh and brackish water fish, including shrimp and crabs. . Bangladesh exports frozen shrimp to the United States, Japan, Belgium, the United Kingdom, the Netherlands, France, and Germany, among others.
Light Engineering Industries	Motorbikes, vehicle component components, diverse equipment/machinery, steel and copperware, optical and medical instruments
Ceramic Tablewares	A prominent manufacturer and exporter of high-quality ceramic tableware. Bangladeshi ceramic tableware is well known and in demand in Sweden as well as in the USA, UK, Italy, Spain, France, New Zealand, Netherlands and Australia.
Pharmaceuticals	Bangladesh currently exports a diverse range of pharmaceutical items to over 100 nations, including the highly regulated markets of the United States and the European Union
Software and ICT products	Bangladesh's software export earnings surpassed \$100 million. Bangladeshi software is currently exported to the United States, the United Kingdom, Canada, Australia, Denmark, the Netherlands, Germany, India, and Japan.
Toiletries and Cosmetics	Bangladeshi toiletries and cosmetics have improved dramatically in terms of quality and packaging in recent years.
Electrical and electronic equipment	The electrical and electronic sector in Bangladesh is one of the world's fastest-growing and most promising industries. Bangladesh now exports a vast variety of household appliances,

	as well as other electronic and electrical goods, to Africa, the Middle East, and other regions worldwide.
Ships and vessels	Shipbuilding has emerged as a key perspective industry in Bangladesh in recent years, with significant export potential. Bangladesh today has approximately 200 shipbuilding and repair facilities, most of which are situated in Dhaka, Chittagong, Narayanganj, and Khulna.

Source: Author own elaboration based on Bangladesh economic book review, 2021
<https://mincom.gov.bd/>

Bangladesh is the world's most populous country in the world. Compare to several population and supply of goods and services are not sufficient. Due to the large population demands Bangladesh needs to import high volume of goods and services from partner countries rather than export. Bangladesh had import volume at \$4.13 billion in 1990 and from the year 1990 to 2019 last 30 years had huge dependence on importing products and services. Where Bangladesh had export volume reached \$64.86 billion in 2019 which is a difference of \$60.73 billion from 1990. During these thirty years, there are a large volume of imports for the number of increased consumer goods as well as capital goods demand for the development of infrastructure and industrialization during these periods.

Bangladesh major importing goods and services and also capital goods

Table 5 Bangladesh major importing goods and services

Major Primary Commodities	Major Industrial Commodities	Capital Machinery
Rice	Edible Oil	equipment
Wheat	Petroleum Products	computers
Oil Seeds	Fertilizer	Automobiles
Crude Petroleum	Clinker	iron and steel
Cotton	Staple Fiber	electrical apparatus and equipment
	Yarn	

Source: own elaboration based on an economic book review,2021.
<https://mincom.gov.bd/>

The following categories account for the majority of Bangladesh's imports in 2019. The percentage of total imports into Bangladesh that each product category represents is also given.

1. 5.8 billion worth of equipment, including computers (11.5 percent of total imports)
2. Cotton is the second most valuable crop with a market value of 5.4 billion (10.8 percent).
3. Mineral fuels, including oil, are valued at 4.4 billion (8.7 percent).
4. 3.2 billion (6.4 percent) on electrical equipment and tools
5. 2.9 billion iron and steel (5.8 percent)
6. Plastics and plastic products: 2.2 billion (4.4 percent)
7. Automobiles: 1.7 billion (3.5 percent)
8. 1.6 billion (3.2 percent) for man-made fiber
9. Filaments constructed of man-made materials: \$1.42 billion (2.8 percent)
10. Knit or crochet cloth is worth \$1.35 billion (2.7 percent)

Bangladesh's primary imports account for about three-fifths (59.7%) of its total product purchases from other nations.

Between 2018 and 2019, the cost of iron and steel increased the most among Bangladesh's top ten import categories, rising by 4.8 percent. Manmade filaments, with a 1.8 percent gain year over year, were the other top product category to appreciate.

Cotton, with a -21.3 percent drop year over year, led the drops among the top 10 Bangladeshi imports, followed by imported electrical apparatus and equipment with a 21% drop.

Bangladesh has a huge negative trade balance as Bangladesh has small numbers of export and a large volume of imports so it is claimed that Bangladesh's trade balance is negative. Trade balance=Countries total number of export – Total number of imports, here Bangladesh situated deficit trade balance. That is increasing every year because of the number of trade volumes expanding in total were in 1990 trade balance was \$-2.26 billion in the next 13 years it had reached at \$-3.88billions in 2006 but from 2007 to 2014 had a consistent difference with overall trade. In the years 2015 and 2018 had a sudden increase in import volume that was \$- 14.46 billion and \$-23.69 billion trade deficit because of total imported \$48.28 billion and \$64.25 billion respectively in 2015 and 2018 of thesis two years, the consequence of fast went up trade difference.

Although Bangladesh has a large number of trade deficit/negative balances, Bangladesh has upward GDP growth rate from 1990 to 2019. In the year 1990 Bangladesh had a 5.62% of GDP growth rate which is significantly increasing till 2019 and the present GDP rate had 8.15% in 2019. The GDP growth rate is huge or can be remarkable among the developing country and has considerable acceptance in the whole world as though the economic growth and the overall development is globally considerable during thirty.

4. Practical part

4.1 Economic Overview of the people's republic of Bangladesh

Table 6 Macroeconomic indicators of Bangladesh

Year	Export in billion US (\$)	Import in billion US (\$)	The trade balance in billion US (\$)	GDP Growth (%)	Year	Export in billion US (\$)	Import in billion US (\$)	The trade balance in billion US (\$)	GDP Growth (%)
2019	\$46.36	64.86	-18.50	8.15	2004	7.26	10.23	-2.97	5.24
2018	40.56	64.25	-23.69	7.86	2003	6.88	9.76	-2.88	4.74
2017	37.55	50.61	-13.06	7.28	2002	6.79	9.06	-2.27	3.83
2016	36.86	47.17	-10.31	7.11	2001	7.23	10.10	-2.87	5.08
2015	33.82	48.28	-14.46	6.55	2000	6.59	9.06	-2.47	5.29
2014	32.83	44.13	-11.30	6.06	1999	6.03	8.53	-2.50	4.67
2013	29.30	40.14	-10.83	6.01	1998	5.88	8.06	-2.18	5.18
2012	26.89	37.27	-10.39	6.52	1997	5.08	7.63	-2.55	4.49
2011	25.63	35.37	-9.75	6.46	1996	4.51	7.60	-3.09	4.52
2010	18.47	25.11	-6.63	5.57	1995	4.12	6.58	-2.46	5.12
2009	17.36	23.73	-6.37	5.05	1994	3.04	4.68	-1.64	3.89
2008	16.18	22.87	-6.69	6.01	1993	2.99	4.68	-1.69	4.71
2007	13.53	18.27	-4.74	7.06	1992	2.41	3.92	-1.51	5.44
2006	11.74	15.63	-3.88	6.67	1991	2.06	3.79	-1.72	3.49
2005	9.99	13.89	-3.90	6.54	1990	1.87	4.13	-2.26	5.62

Sources: Author own elaboration based on Economic book review of Bangladesh, World Development Indicators database.

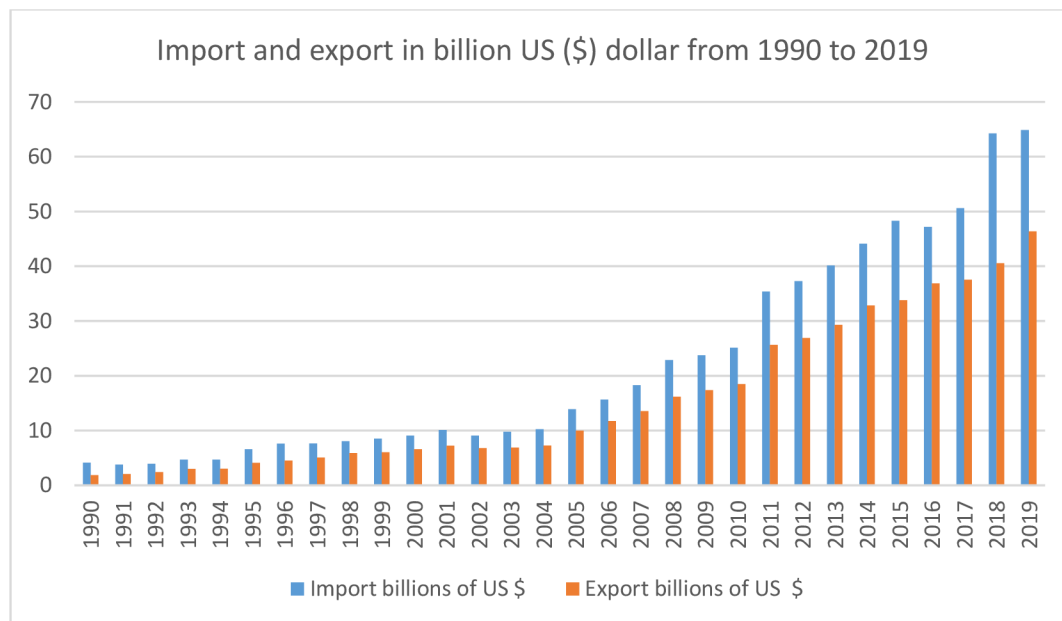
https://mof.portal.gov.bd/sites/default/files/files/mof.portal.gov.bd/page/f2d8fabb_29c1_423a_9d37_cdb500260002/15.%20Chapter-06%20Eng-21.pdf

<https://datatopics.worldbank.org/world-development-indicators/>

Bangladesh is one of the newly emerging countries in the world. Bangladesh's economy is classified as being in the early stages of development. It is the world's 33rd largest economy in nominal terms and the 31st largest in purchasing power parity. It is one of the middle-income countries developing the Next Eleven market. Bangladesh has some advantages for exporting goods and services in the foreign trade market especially due to labor and reasonable cost-intensive product the most exported product from Bangladesh to partner countries in the foreign market is Bangladesh exported 46.36 billion in 2019, making it the world's number 52 exporter. Bangladesh's exports have increased by 13.53 billion in the last five years, from 32.83 billion in 2014 to 46.36 billion in 2019. Non-Knit Men's Suits (7.06 billion), Knit T-shirts (6.92 billion), Knit Sweaters (5.71 billion), Non-Knit Women's Suits

(5.39 billion), and Non-Knit Men's Shirts (2.5 billion) are the most recent exports. The United States is Bangladesh's largest export market (6.86 billion), Germany (6.69 billion), the United Kingdom (3.92 billion), Spain (3.41 billion), and France (3.33 billion, OEC-2021). In 1990 Bangladesh had an export value of a total of 1.8 billion US dollars that gradually increased every year from 1990 to 2019. Within 30 years Bangladesh has an upward trend of exporting continuously. From the 1990s to 2001 there were regular improvements in export volume wherein 1990 total export was 1.8 billion and in 2001 it was raised to 7.23 billion but later in 2002 and 2003 had little negative growth. After that from 2004 to 2019 had a great positive growth rate of export volume in Bangladesh's foreign trade that was remarkable for the overall economic development in the country's trade balance.

Figure 1 Bangladesh Import and Export volume from 1990 to 2019



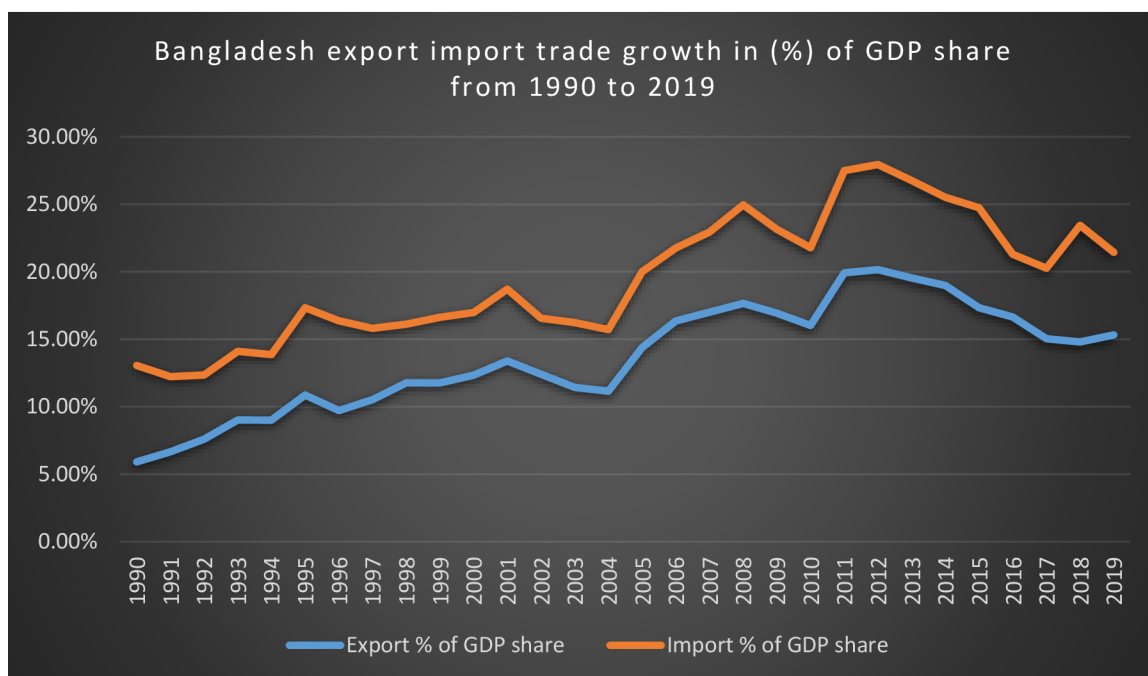
Source: Author elaboration based on World integrated trade solutions.
<https://wits.worldbank.org/CountryProfile/en/Country/BGD/Year/1990>

This graph illustrates that Bangladesh imported 4.13 billion in 1990 and also exported 1.87 billion of goods and services. From 1990 to 2001 there was the same level improvement of in trade-in imports as well as export. And the year 2002 to 2004 trade had steady growth level. In 2004 the total imported 10.23 billion and exported 7.26 billion.

The period from 2005 to 2017 had huge of imported and exported that is increased value 50.61 billion (imported) and 37.55 billion (exported). Then last two years 2018 and 2019 had an unexpected number of import value 64.25 billion and 64.86 billion US dollars

imported gradually. On the other hand, the export volume also raised with the incr in imported products and services which was at 40.56 billion in 2018 and 46.36 billion in 2019.

Figure 2 Bangladesh export and import trade growth from 1990 to 2019



Source: Source: Author elaboration based on World integrated trade solutions. <https://wits.worldbank.org/CountryProfile/en/Country/BGD/Year/1990>

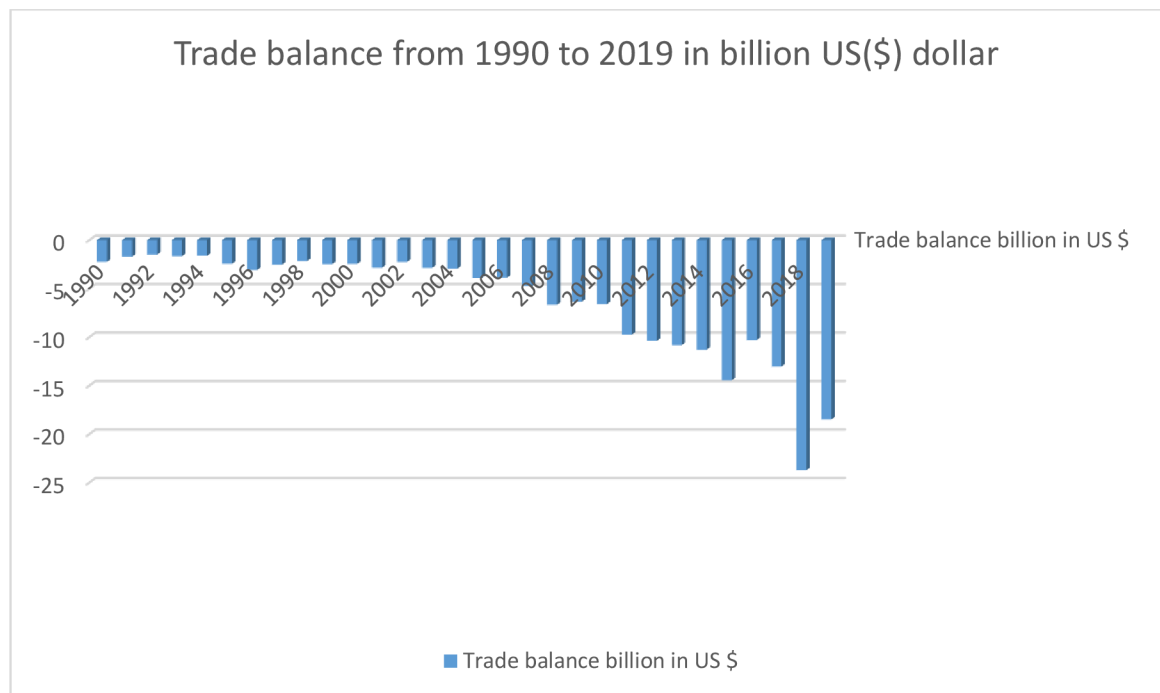
The above graph depicts the overall import and export in terms of (%) GDP share.

Bangladesh needs to use more degree of capital for the import of goods and services rather than ort in according to the GDP share. In 1990 import shared 5.19% of value for the gross domestic product then had to use 13.06% of GDP share for imported goods and services. So, it is visible that the total expenses for import Bangladesh used 7.87% of GDP value excess then the inflow of net money from the exported goods and services in the 1990s. And from 1990 to 2001 the value of export growth rate in the share of GDP was regular increment with the same growth trend of using GDP share for importing goods and services except for they of 1995 when the export value rose at 10.86% of GDP, and GDP share value of imported rate rosed at 17.34%. Later year from 1996 to 2001 the value of export and import GDP share was slightly increased. From 2002 to 2004 that growth had inverse where both sectors GDP share had decreased at 11.15% for export and 15.71% for imported value in GDP share. Further before 2010, the share of GDP value had upward in both cases. In 2010 the use of GDP % for import and export went down from the regular movement of increased percentage. Further from 2011 to 2019, there were many numbers of fluctuation conditions

for the contribution of export in GDP share and the Used of GDP share in import. The height number of GDP used for import was 27.95% of total GDP in 2012 at the same time 20.16 % of GDP had contributed from exporting goods and services.

In 2019 Bangladesh achieved 15.32% of GDP from export and also used 21.44% of GDP value for importing the goods and services.

Figure 3 Trade balance of Bangladesh from 1990 to 2019



Source: Source: Author elaboration based on World integrated trade solutions.
<https://wits.worldbank.org/CountryProfile/en/Country/BGD/Year/1990>

Bangladesh has no record for the active ease trade balance during the last 30 years from the period of 1990 to 2019. In 1990 Bangladesh had a -2.26 billion deficit trade balance. From 1991 to 1994 the trade deficit had a lower level at -1.64 billion in 1994. Later from 1995 to 2015 next 21 years, the trade deficit was at the same rate of negative balance which reached -14.46 billion. And 2016 and 2017 were lower rates than the previous trade deficit. The highest trade deficit was in 2018 which reached -23.69 billion. In 2019 the deficit of trade balance became lower in -18.5 billion.

4.2 Country wise export earnings and import payments

Table 7 Bangladesh Major Country-wise export earnings in million US (\$) dollar from 2000 to 2019

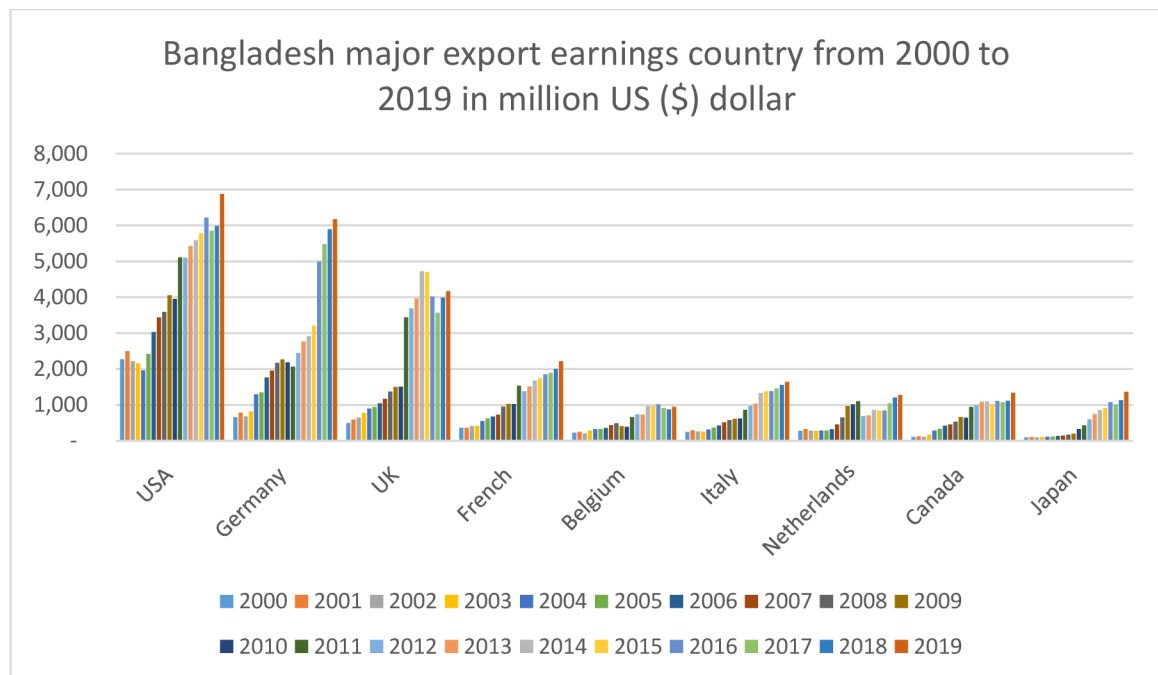
Fiscal year	USA	Germany	UK	French	Belgium	Italy	Netherl ands	Canada	Japan
2000	2,274	659	500	367	226	248	283	111	98
2001	2,500	790	594	366	254	296	328	126	108
2002	2,219	681	648	414	211	262	283	110	96
2003	2,155	821	778	419	289	259	278	170	108
2004	1,967	1,299	898	553	327	316	290	284	118
2005	2,419	1,351	944	626	328	370	291	335	123
2006	3,030	1,764	1,049	678	359	426	327	421	138
2007	3,441	1,955	1,174	732	436	516	459	457	147
2008	3,591	2,175	1,374	953	488	579	654	533	173
2009	4,052	2,270	1,501	1,031	410	616	971	663	203
2010	3,950	2,187	1,509	1,026	391	624	1,017	648	331
2011	5,108	2,065	3,439	1,538	666	866	1,107	945	434
2012	5,101	2,445	3,689	1,380	742	977	691	994	601
2013	5,420	2,765	3,963	1,514	731	1,037	712	1,090	750
2014	5,584	2,918	4,720	1,678	971	1,332	858	1,100	862
2015	5,783	3,205	4,705	1,744	975	1,382	840	1,029	915
2016	6,221	4,988	4,018	1,852	1,015	1,386	846	1,113	1,080
2017	5,847	5,476	3,569	1,893	919	1,463	1,046	1,079	1,013
2018	5,983	5,891	3,989	2,005	878	1,560	1,205	1,119	1,132
2019	6,876	6,173	4,169	2,218	947	1,643	1,279	1,340	1,366

Source: Author own elaboration based on Bangladesh economic book review,2011-2021.
<https://mof.portal.gov.bd/site/page/28ba57f5-59ff-4426-970a-bf014242179e/Bangladesh-Economic-Review-2021>

Bangladesh has regular export trade relations with the rest of the country in the world but has very dependent on some major country where Bangladesh export product and services among many more countries the USA, Germany, UK, France, Belgium, Italy, Netherlands, Canada, And Japan are the key partner of export of Bangladesh international trade. The USA is the biggest contributor to the export earnings of Bangladesh. And 2nd largest exporting country is Germany where the USA contributed 2274 million US dollars in 2000 and Germany 659 million US dollars than the UK, France and Belgium, Italy, Netherlands, Japan have significant contribution from 2000 to 2019. And USA, Germany, and the UK were the regular maximum portion of export earning countries for Bangladesh. USA had contributed 6876.3 million US dollars in 2019, Germany 6173 million US dollars and UK 4169 million

US dollars, France 2218 million US dollars, Belgium 946.9 million US dollars, Italy, Netherlands, Canada, and Japan gradually, 1643 1279, 1340, and 1366 million US dollar in 2019 respectively contributed in Bangladesh export earnings.

Figure 4 Bangladesh major export earnings country from 2000 to 2019



Source: Author own elaboration based on Bangladesh economic book review, 2011-2021. <https://mof.portal.gov.bd/site/page/28ba57f5-59ff-4426-970a-bf014242179e/Bangladesh-Economic-Review-2021>

The above graph shows Bangladesh's total export earnings among the years 2000 to 2019 based on the top export contributed country in the world. And USA, UK, Germany, Canada, Italy, Japan Netherlands, and French are the key contributor to Bangladesh's export earnings. Where USA, Germany, and UK are the top three among the above-mentioned contributor countries of export for Bangladesh international trade. The graph illustrates that the total number of export earnings was continuously increased from 2000 to till 2019 except the years 2002, 2003, and 2004 and later 2017 and 2018 had some fluctuations in the downward trends of export earnings. Otherwise, during the last 20 years, observations explained the considerable export growth and trade development among those countries with Bangladesh's foreign trade.

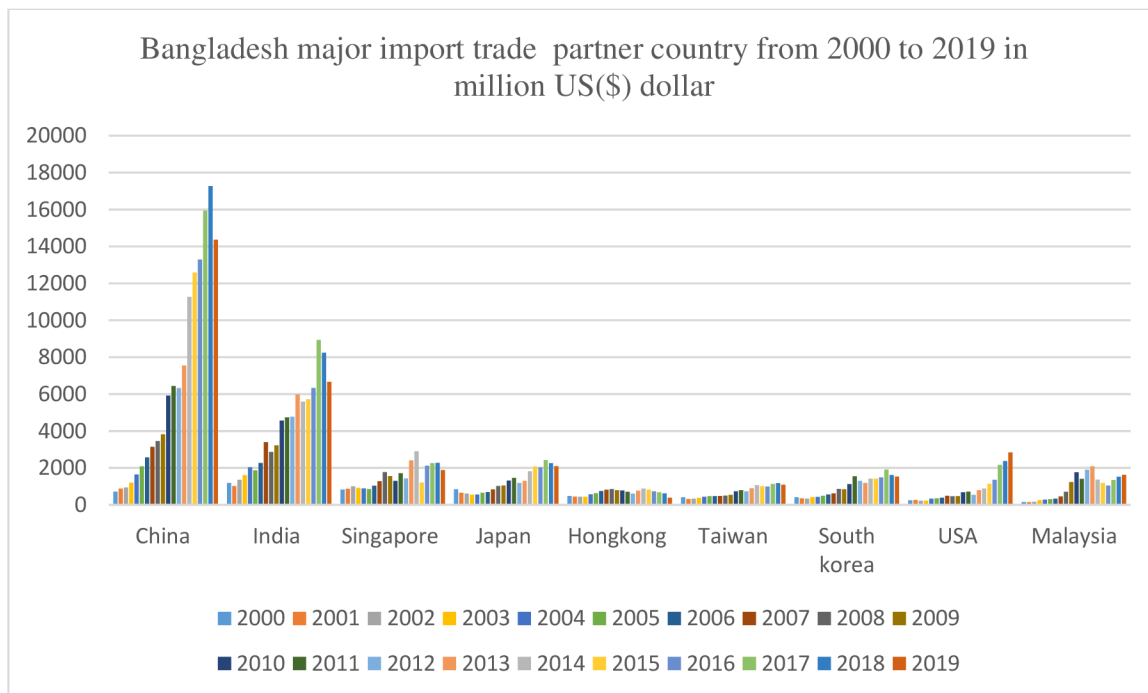
Table 8 Bangladesh major import payments country from 2000 to 2019 in million US(\$)
dollar

Fiscal year	China	India	Singapore	Japan	Hong Kong	Taiwan	South Korea	USA	Malaysia
2000	709	1184	824	846	478	412	411	248	148
2001	878	1019	871	655	441	312	346	261	145
2002	938	1358	1000	605	433	328	333	223	169
2003	1198	1602	911	552	433	377	420	226	255
2004	1642	2030	888	559	565	439	426	329	276
2005	2079	1868	849	651	626	473	489	345	302
2006	2571	2268	1035	690	747	473	553	380	334
2007	3137	3393	1273	832	821	478	620	490	451
2008	3452	2864	1768	1015	851	498	864	461	703
2009	3819	3214	1550	1046	788	542	839	469	1232
2010	5918	4569	1294	1308	777	731	1124	677	1760
2011	6440	4743	1710	1455	703	792	1544	709	1406
2012	6328	4777	1422	1180	612	733	1296	538	1903
2013	7550	5985	2407	1291	762	897	1182	792	2084
2014	11268	5588	2894	1816	881	1060	1417	880	1361
2015	12582	5722	1203	2075	827	1004	1417	1134	1184
2016	13292	6336	2113	2031	726	990	1483	1358	1040
2017	15937	8941	2255	2422	676	1129	1907	2160	1342
2018	17265	8242	2274	2254	614	1175	1618	2370	1520
2019	14360	6663	1883	2092	382	1084	1525	2839	1623

Source: Author own elaboration based on Bangladesh economic book review, 2011-2021.
<https://mof.portal.gov.bd/site/page/28ba57f5-59ff-4426-970a-bf014242179e/Bangladesh-Economic-Review-2021>

Bangladesh foreign trade in import has long relationship among India, China, Singapore, Japan, Hongkong, Taiwan, USA, Malaysia, and South Korea. Bangladesh has a negative trade balance because of the high volume of imports rather than export. Due to the high demand for goods and services especially commodity goods for the huge population Bangladesh needs to import more. Among the foreign trade partner country as import trade partners, India was the first by 1184 million US dollar value imported in 2000, and Japan, Singapore, China was the subsequent position by 846 million, 824 million, and 709 million US dollar amount of volume imported in 2000. But in 2019 china was the first position by 14360 million US dollars and then India 6663 million, USA 2839 million, Japan 2092 million US dollar value exported in Bangladesh. Hong Kong had the last position with 382 million exported in 2019 in Bangladesh

Figure 5 Bangladesh major import trade partner country from 2000 to 2019



Source: Author own elaboration based on Bangladesh economic book review, 2011-2021. <https://mof.portal.gov.bd/site/page/28ba57f5-59ff-4426-970a-bf014242179e/Bangladesh-Economic-Review-2021>

The line graph depicts that Bangladesh had height import from India from 2000 to 2004. Later from 2005 to till 2019 China had the top import country for Bangladesh. Moreover, Bangladesh had imported more than 2 times higher than India by 2019 which reached 14360 million US dollars and from India, Bangladesh imported 6663 million US dollars value. And the rest of the country had an average similar position except a few changes in 20 years. But at the end of the year of observations, the total number of import volumes had declined because of the pandemic situation but the average total number of import values was upward during the period.

4.3 Tariff Structure of Bangladesh from FY2000-01 to FY2018-19

Bangladesh trade structure has changed with the tariff structure changed during the fiscal year from 2000-01 to 2018-2019 wherein 2001 Bangladesh had maximum tariff rate at 37.5% that had changed by 2003, 2004 at 32.5% and 30 % respectively. And rest of the year it was maximum of 25% of tariff where the number of the operative tariff had divided by 6 at 0%, 1%,5%,10%,15%, and 25%

Table 9 Tariff Structure of Bangladesh from FY2000-01 to FY2018-19

Fiscal Year	Operative Tariff (%)	Maximum Tariff Rate (%)	Number of Operatives Tariff Slabs
2000-01	0, 5, 15, 25, 37.5	37.5	5
2001-02	0, 5, 15, 25, 37.5	37.5	5
2002-03	0, 7.5, 15, 22.5, 32.5	32.5	5
2003-04	0, 7.5, 15, 22.5, 30	30	5
2004-05	0, 7.5, 15, 25	25	4
2005-06	0, 7.5, 15, 25	25	4
2006-07	0, 5, 12, 25	25	4
2007-08	0, 10, 15, 25	25	4
2008-09	0, 3, 7, 12, 25	25	5
2009-10	0, 3, 5, 12, 25	25	5
2010-11	0, 3, 5, 12, 25	25	5
2011-12	0, 3, 5, 12, 25	25	5
2012-13	0, 3, 5, 12, 25	25	5
2013-14	0, 2, 5, 10, 25	25	5
2014-15	0, 2, 5, 10, 25	25	4
2015-16	0,1, 2, 5, 10, 25	25	4
2016-17	0,1,5,10,15,25	25	6
2017-18	0,1,5,10,15,25	25	6
2018-19	0,1,5,10,15,25	25	6

Source: Author own elaboration based on Bangladesh economic book review,2021.
<https://mof.portal.gov.bd/site/page/28ba57f5-59ff-4426-970a-bf014242179e/Bangladesh-Economic-Review-2021>

That represents Bangladesh's trade structure has changed as well tariff to adopt the international trade competition and also established the more favorable foreign trade relationship among the trade partner countries based on prioritizing the country, product necessity to impose tariffs.

4.4 Foreign direct investment of Bangladesh

Table 10 Bangladesh FDI net inflows current US (\$) dollar from 1990 to 2019

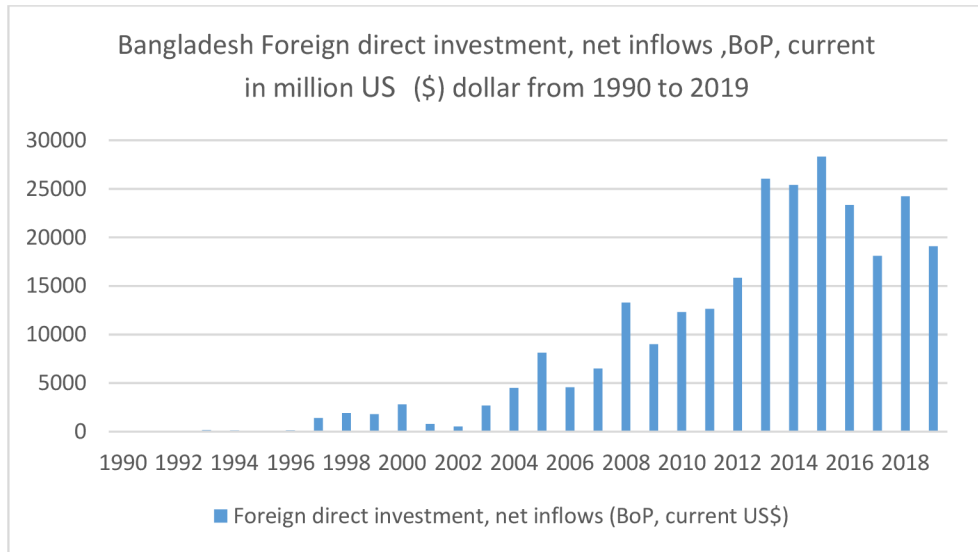
Year	Foreign direct investment, net inflows,BoP, current US(\$)	Foreign direct investment, net inflows (% of GDP	Year	Foreign direct investment, net inflows BoP, current US(\$)	Foreign direct investment, net inflows (% of GDP
2019	1 908 045 387	0.63	2004	448905400.7	0.69
2018	2 421 626 238	0.88	2003	268285231.8	0.45
2017	1 810 395 804	0.72	2002	52304931.04	0.1
2016	2332724781	1.05	2001	78527040.08	0.15
2015	2831152765	1.45	2000	280384629.7	0.53
2014	2539190940	1.47	1999	179603006.3	0.35
2013	2602962095	1.74	1998	190059373	0.38
2012	1584403460	1.19	1997	139376153.1	0.29
2011	1264725163	0.98	1996	13529831.54	0.03
2010	1232258247	1.07	1995	1896372.127	0.0049
2009	901286583.1	0.88	1994	11147788.33	0.03
2008	1328422987	1.45	1993	14049886.52	0.04
2007	651029738.1	0.82	1992	3721853.382	0.01
2006	456523167.7	0.64	1991	1390444.322	0.0049
2005	813321971.9	1.17	1990	3238781.189	0.01

Source: Author own elaboration based on World bank data.

<https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS?locations=BD>

This FDI inflow table represents the data set from 1990 to 2019. Where the lowest investment inflow was 13 million us (\$) dollars in 1992 and the height FDI inflow was around 28311 million us (\$) dollars in 2015. The percentage in according to GDP share in FDI was in 1991 at 0.0049% and 1995 at 0.0049 % the minimum during the observed period. The height percentage of FDI inflows at 1.174% of GDP in 2013.

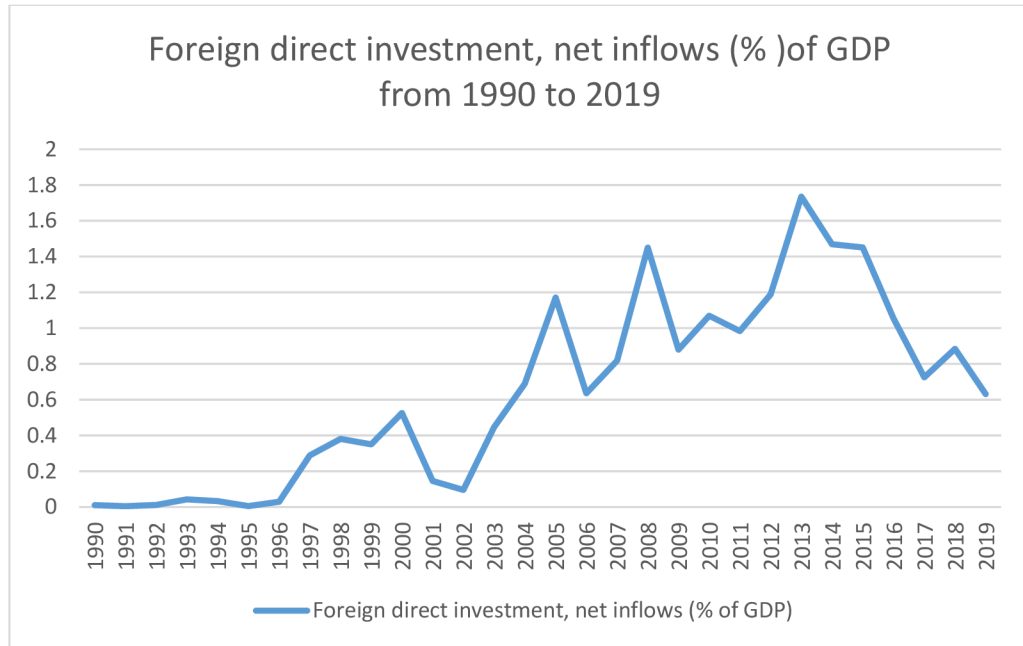
Figure 6 Bangladesh Foreign direct investment from 1990 to 2019



Source: Author own elaboration based on World Bank. <https://data.worldbank.org/>

The line graph shows that the total foreign direct investment net in the flow of us dollars in Bangladesh was in 1990 at 32 million us (\$) dollars. In the years 1990, 1991 and 1992 the foreign direct investment was 32, 13 and 37 respectively. From 1993 to 1996 the inflow of investment was below thousands of million. Further, 1997 to 2000 the investment reached 2803 million us dollars but the year 2001 and 2002 it had dropped suddenly at 523 million us dollars. The investment flow was moderately increased till 2012 except sudden again increased in 2005 and 2008. Investment had quickly raised in 2012 and 2013 then dropped to till 2017. The investment dropped to 19080 million in us dollars at the end of the year 2019. During the 30 years of the observation of data, the height inflow of foreign direct investment was 28311 million us dollars in 2019 and the inflow of total FDI investment level was very volatile and huge fluctuation.

Figure 7 Bangladesh foreign direct investment (%) of GDP from 1990 to 2019



Source: Author own elaboration based on World bank. <https://data.worldbank.org/>

The graph shows that FDI inflow rate percentage of GDP rate is below at 0.05 % of GDP, the year of 1990 to 1996, wherein 1991 and 1995 rate 0.0049 % in terms of GDP. The year 1997 to 2019 the FDI rate has very much fluctuated and ups and down where the increased level picked up at 1.17% and the level declined in 2002 at 0.10 percent of GDP. The year of the ending year in 2019 was at 0.63% percentage of FDI investment based on Bangladesh GDP inflow.

4.5 Bangladesh population from 1990 to 2019

Table 11 Bangladesh total population from 1990 to 2019

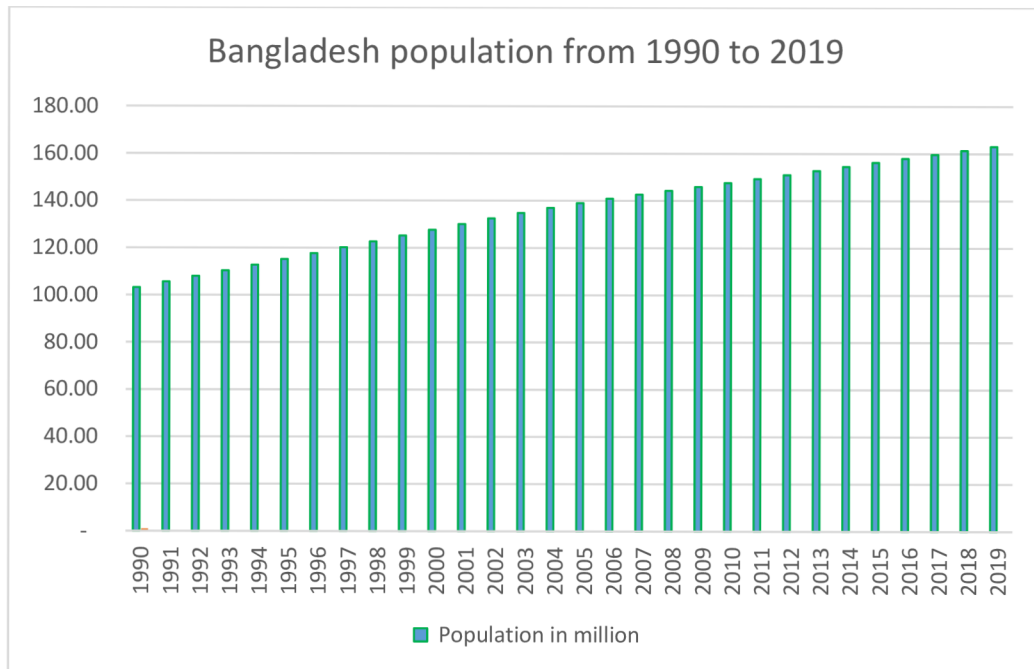
Year	Population	Growth rate (%)	Year	Population	Growth rate (%)
1990	103,171,956	2.46	2005	139,035,505	1.5
1991	105,599,127	2.35	2006	140,921,167	1.36
1992	107,983,704	2.26	2007	142,660,376	1.23
1993	110,350,639	2.19	2008	144,304,167	1.15
1994	112,737,683	2.16	2009	145,924,797	1.12
1995	115,169,930	2.16	2010	147,575,430	1.13
1996	117,649,932	2.15	2011	149,273,139	1.15
1997	120,160,564	2.13	2012	151,005,739	1.16
1998	122,682,815	2.1	2013	152,761,418	1.16
1999	125,189,651	2.04	2014	154,517,382	1.15
2000	127,657,854	1.97	2015	156,256,276	1.13
2001	130,088,702	1.9	2016	157,977,153	1.1
2002	132,478,086	1.84	2017	159,685,424	1.08
2003	134,791,603	1.75	2018	161,376,708	1.06
2004	136,986,432	1.63	2019	163,046,161	1.03

Sources: Author own elaboration based on World bank.

<https://data.worldbank.org/indicator/SP.POP.TOTL?locations=BD>

Bangladesh is one of the most densely populated countries among the highly populated countries in the world. In Bangladesh population live at 1.27 thousand per square kilometer. Bangladesh is in the 8th position in terms of population in the world. If I see it is very clear that in 1990 Bangladesh had 103 million populations and the growth rate was 2.46%. Further, if I see in 2000 after years the number of population is 127 million and population growth rate is 1.97%. Although the total population growth rate is continuously decreasing total cumulative number of the population increases in total. However, the rate of increase has slowed to 1.03 % and the overall population reached 163 million if the growth rate keeps remaining the same the total population will not be a huge difference after a decade.

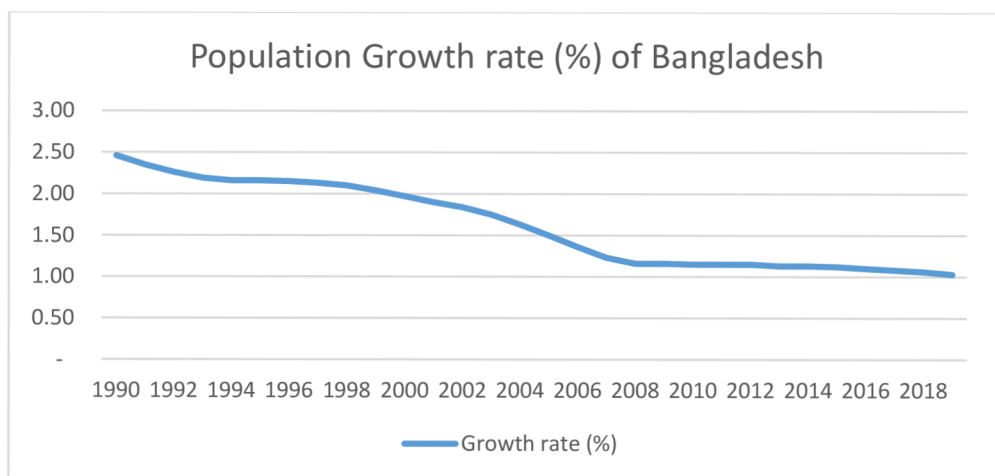
Figure 8 Total population of Bangladesh from 1990 to 2019



Sources: Author own elaboration based on World bank.
<https://data.worldbank.org/indicator/SP.POP.TOTL?locations=BD>

The total population gradually increased over the last 30 years from 1990 to 2019. In 1990 the population had 103 million which reached 163 million in 2019. During thirty years 60 million total numbers of the population of Bangladesh has been increased.

Figure 9 Bangladesh population growth rate (%) from 1990 to 2019



Sources: Author own elaboration based on World bank.
<https://data.worldbank.org/indicator/SP.POP.TOTL?locations=BD>

The line graph illustrates the population growth rate of Bangladesh from 1990 to 2019. Over the 30 years, Bangladesh has had a continuous downward trend of total population growth.

In 1990 Bangladesh's population growth rate had 2.46% which had been decreasing regularly till 2019, which reduced to 1.03% in 2019. However, the year 2011 to 2014 the growth rate had a small increase of 0.01% but rest of the years it has been declined till 2019.

4.6 Bangladesh GDP current from 1990 to 2019

Table 12 Bangladesh GDP current, per capita income, GDP growth rate from 1990 to 2019

Year	GDP in billion US(\$)	Per Capita Income in the US (\$)	GDP growth rate (%)	Year	GDP in billion US(\$)	Per Capita Income in the US (\$)	GDP growth rate (%)
2019	302.56	1,856	8.15	2004	65.11	475	5.24
2018	274.04	1,698	7.86	2003	60.16	446	4.74
2017	249.71	1,564	7.28	2002	54.72	413	3.83
2016	221.42	1,402	7.11	2001	53.99	415	5.08
2015	195.08	1,248	6.55	2000	53.37	418	5.29
2014	172.89	1,119	6.06	1999	51.27	410	4.67
2013	149.99	982	6.01	1998	49.98	407	5.18
2012	133.36	883	6.52	1997	48.24	401	4.49
2011	128.64	862	6.46	1996	46.44	395	4.52
2010	115.28	781	5.57	1995	37.94	329	5.12
2009	102.48	702	5.05	1994	33.77	300	3.89
2008	91.63	635	6.01	1993	33.17	301	4.71
2007	79.61	558	7.06	1992	31.71	294	5.44
2006	71.82	510	6.67	1991	30.96	293	3.49
2005	69.44	499	6.54	1990	31.6	306	5.62

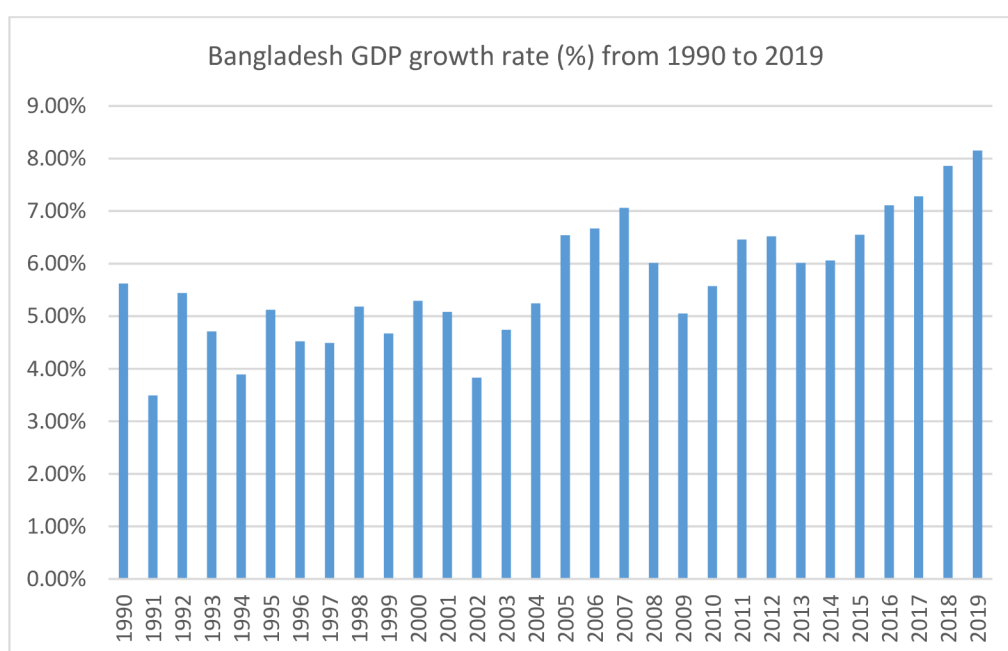
Source: Author own elaboration based on world bank.

<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=BD>

Bangladesh's economy has not significantly developed last fifty years of independence in 1971. Although Bangladesh could not reach the commitment of economic freedom but have the position to be remarkable among the south Asian countries as well as the developing country list to improve the economic condition with constant improvement of GDP during the last decade. Bangladesh is now considered one of the countries among fast-growing world economic countries. In 1990 Bangladesh had 31.60 billion of GDP and only 306 per capita income, and the GDP growth rate was 5.62%. From 1991 to 2008 Bangladesh had Total GDP of 91 billion that bellows 100 billion and per capita income (PCI) was 635, GDP growth rate 6.01%. During this period Bangladesh has reached 7.06% of GDP in 2007. From 2009 to 2015 Bangladesh achieved a huge number of economic development in 2015 had

195.08 billion of total GDP which was more than 103.45 billion higher than in 2008. With the total GDP value, the per capita income also increased by 1248 which was 635 in 2008. That represents the double during the last seven years. From 2016 to 2019 was the most notable development of economic growth of Bangladesh where total GDP value reached 302.56 billion and per capita income 1856, GDP growth rate was 8.15% by 2019. So, the economic prosperity of Bangladesh had a significant level of development during the period of observed data last thirty years.

Figure 10 GDP growth rate of Bangladesh from 1990 to 2019



Source: Author own elaboration based on world bank.

<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=BD>

From 1990 to 2004 Bangladesh had GDP fluctuated in different years. In 1990 GDP had 5.62% ,in 1991 went down at 3.49%, 1992 at 5.44% GDP growth rate. And in 2004 had 5.24%. Moreover, in 2005 GDP growth rate had increased at 6.54%, further increasing at 7.06% in 2007. The GDP rate decreased till 2010 at 5.57%. By 2011 and 2012 the GDP had gone up again by 6.46% and 6.52% respectively. Latin 2013 GDP growth dropped at 6.01% 2013. From 2013 to 2019 the GDP growth rate continuously increased at 8.15% 2019

Table 13 Bangladesh Trade to GDP Ratio and Annual change from 1990 to 2019

Year	Trade (%) of GDP	Annual Change	Year	Trade (%) of GDP	Annual Change
2019	36.76	-1.49	2004	26.86	-0.8
2018	38.24	2.94	2003	27.66	-1.31
2017	35.3	-2.65	2002	28.97	-3.13
2016	37.95	-4.13	2001	32.1	2.78
2015	42.09	-2.43	2000	29.32	0.93
2014	44.51	-1.78	1999	28.39	0.51
2013	46.3	-1.81	1998	27.88	1.55
2012	48.11	0.69	1997	26.33	0.25
2011	47.42	9.62	1996	26.08	-2.13
2010	37.8	-2.29	1995	28.21	5.34
2009	40.09	-2.53	1994	22.87	-0.26
2008	42.62	2.68	1993	23.12	3.19
2007	39.94	1.83	1992	19.93	1.04
2006	38.11	3.72	1991	18.89	-0.08
2005	34.4	7.54	1990	18.97	0.64

Source: Author own elaboration based on world bank.

<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=BD>

Bangladesh had huge activities of foreign trade in terms of the total GDP ratio shared in foreign trade. If we look to the year 1990 Bangladesh had 18.97% of the total GDP share for foreign trade. From 1990 to 2000 Bangladesh had shared 29.32% of GDP for international trade which is the 0.93% of annual changes then the year of 1999. During this period from 1990 to 1999 had also negative growth change of -0.08%, -0.26%, -2.13% in 1991, 1994 and 1996 respectively. And the height growth changed to 5.34% in 1995. Further, the period of 2001 to 2019 next twenty years had many adverse changes of share of GDP in international trade. Where the maximum change of GDP was shared at 7.54% in 2005 compared to the consecutive year. In 2012, Bangladesh had the highest share of GDP at 48.11 percent, accounting for half of the total GDP. In 2019 Bangladesh has shared -36.76% of total GDP for import-export which was -1.49% of the last period.

4.7 Bangladesh inflation rate (%) from 1990 to 2019

Table 14 Bangladesh Inflation Rate (%) from 1990 to 2019

Year	Inflation Rate (%)	Annual Change(%)	Year	Inflation Rate (%)	Annual Change(%)
2019	5.59	0.05	2004	7.59	1.92
2018	5.54	-0.16	2003	5.67	2.34
2017	5.7	0.19	2002	3.33	1.33
2016	5.51	-0.68	2001	2.01	-0.2
2015	6.19	-0.8	2000	2.21	-3.9
2014	6.99	-0.54	1999	6.11	-2.3
2013	7.53	1.31	1998	8.4	3.1
2012	6.22	-5.18	1997	5.31	2.93
2011	11.4	3.27	1996	2.38	-7.92
2010	8.13	2.7	1995	10.3	4.98
2009	5.42	-3.48	1994	5.31	2.3
2008	8.9	-0.21	1993	3.01	-0.62
2007	9.11	2.34	1992	3.63	-2.72
2006	6.77	-0.28	1991	6.36	0.23
2005	7.05	-0.54	1990	6.13	0.08

Source: Author own elaboration based on World Bank data
<https://www.macrotrends.net/countries/BGD/bangladesh/inflation-rate-cpi>

Bangladesh had a long history of inflation rate from the period of 1990 to 2019 last thirty years. The inflation rate had a significant level during these thirty years of the study period of my diploma thesis. In 1990 and 1991 Bangladesh had 6.13%, 6.36% sequentially. The next two years in 1992 and 1993 the inflation rate had reduced to 3.63% and at 3.01% that was -2.72%, -0.62% of the inflation rate. Inflation had raised at 5.31% in the year of 1994 but the next year in 1995 the rate of inflation had risto to 10.30% which was double in comparison to last year. During the thirty years of inflation analysis, the maximum rate of inflation had 11.40% which was 3.27% of annual change in 2011. And the lowest rate of inflation was 2.01% in 2001 which changed at -0.20% of the annual inflation rate. At the end of that period in 2019 Bangladesh had to keep the inflation rate at 5.59%, whereas the last six years had a continued downward trend of the inflation rate and the annual change reached 0.05%.

4.8 Territorial structure of foreign trade in Bangladesh

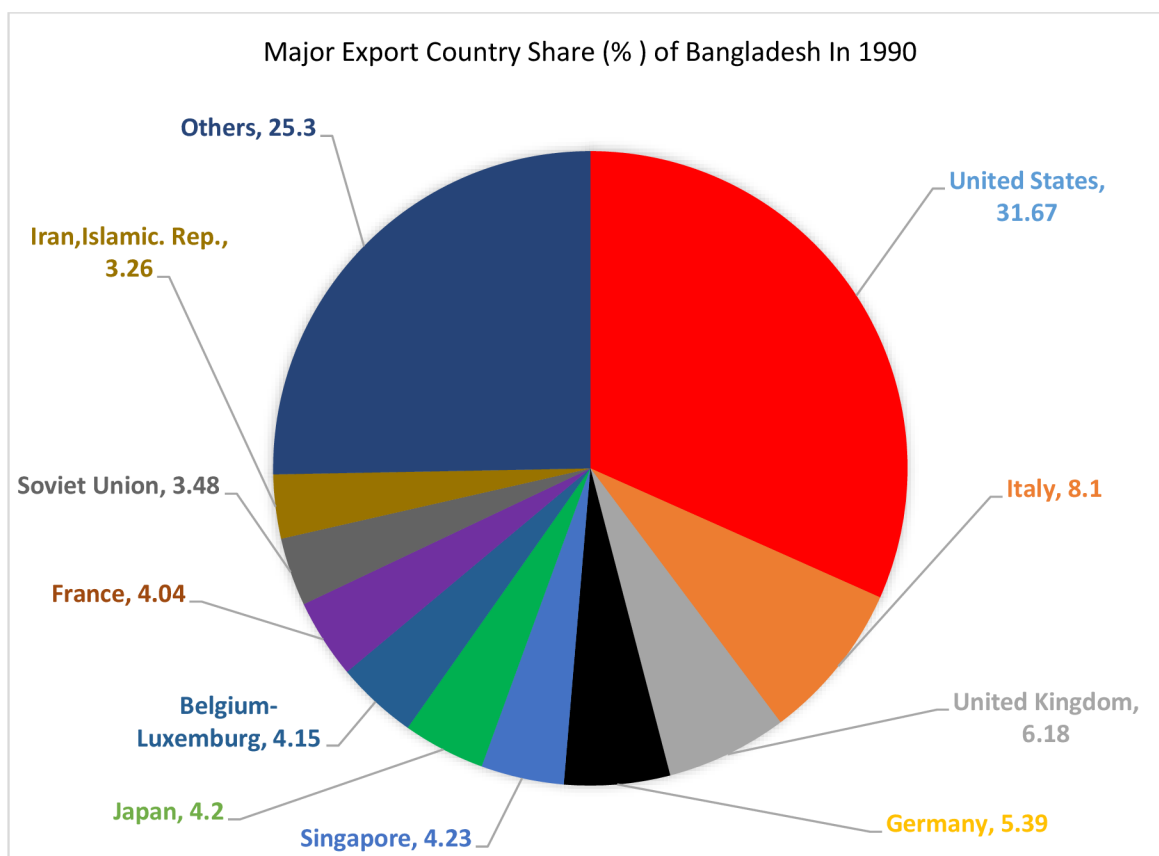
Table 15 Bangladesh top ten exporting countries in 1990

Country	Export in billion US(\$)	Export share in (%)
United States	0.493	31.67
Italy	0.126	8.1
United Kingdom	0.096	6.18
Germany	0.083	5.39
Singapore	0.065	4.23
Japan	0.065	4.2
Belgium-Luxemburg	0.064	4.15
France	0.062	4.04
Soviet Union	0.054	3.48
Iran, Islamic. Rep.	0.050	3.26

Source: Author's elaboration based on the ministry of commerce of Bangladesh.
<https://mincom.gov.bd/>

Bangladesh has a strong trade relationship with the United States. Bangladesh earned optimum trade balance from the United States by exporting goods and services esp, especially for Bangladeshi readymade garments products are more exported items in the United States. Bangladesh had exported 0.493 billion in the year 1990 beginning of this study period where I have found that as a single market Bangladesh had received 31.67% of the total export value from the United States. That is the largest amount of exported value among the first top ten exported countries of Bangladesh. And the second-largest contributor of total export shared from Italy was 0.126 billion which covered 6.18% of total export value. Moreover, the United Kingdom, Germany, Singapore, Jaan, Belgium-Luxemburg, France, Soviet Union, and Iran, Islamic. Republic gradually shared 0.096 billion, 0.083 billion, 0.065 billion, 0.065 billion, 0.064billions, 0.062 billion, 0.054 billion, and 0.050 billion of total exported goods and services from Bangladesh in 1990. Where the United Kingdom was the 3rd largest with 6.18% of export and Germany had 4th with sharing 5.39% and the last top ten was Iran, the Islamic Republic with sharing 3.26% of total export partner countries of Bangladesh.

Figure 11 Top ten exporting countries of Bangladesh in 1990



Source: Author's elaboration based on the ministry of commerce of Bangladesh.
<https://mincom.gov.bd/>

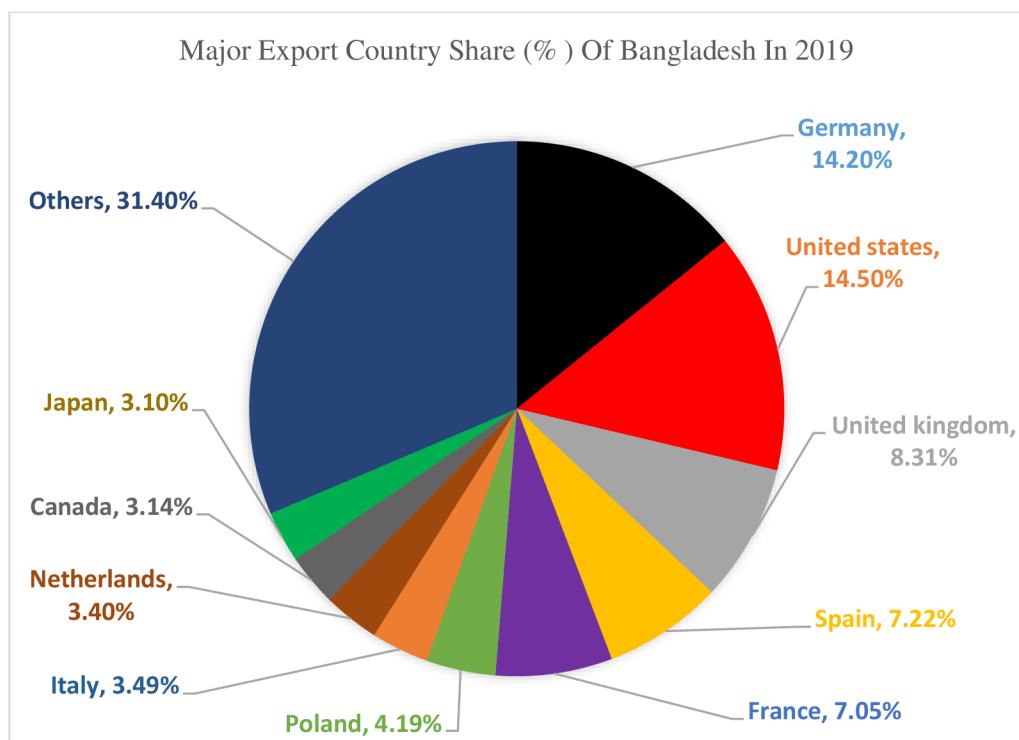
Table 16 Top ten exporting countries of Bangladesh in 2019

Exporting countries	Export Value billion in the US (\$)	Percentage(%)
Germany	6.69	14.20
United States	6.86	14.50
United kingdom	3.92	8.31
Spain	3.41	7.22
France	3.33	7.05
Poland	1.98	4.19
Italy	1.65	3.49
Netherlands	1.6	3.40
Canada	1.48	3.14
Japan	1.46	3.10

Source: Author own elaboration based on the ministry of commerce of Bangladesh
<https://mincom.gov.bd/>

With the top ten exporting trade countries of Bangladesh, relationships have significant changes during the last thirty years if I observe the trade relationship for exporting market of Bangladesh. In 1990 United States was the 1st position in the list where Germany had the 4th shared country of Bangladesh export. But in 2019 the scenario has changed. In 2019, Germany covered 14.20% of the total export of Bangladesh with a value of 6.59 billion which is the highest value as a single country. And the United States stayed at 2nd position with a share of 14.50% of total export. And the United Kingdom remained in the same position with contributed 3.92 billion of export value. Spain, France, Poland, Italy, Netherlands, Canada, and Japan covered, 7.22%, 7.05%, 4.19%, 3.49%, 3.40%, 3.14%, and 3.10% with the export value of 3.41 billion, 3.33 billion, 1.98 billion, 1.65 billion, 1.60 billion, 1.48 billion and 1.46 billion in order. Within that thirty years Bangladesh has changed the international trade business partner relationship based on top priority list like Spain, Poland, Netherlands, Canada had changed in the place of Singapore, Belgium-Luxemburg, Soviet- Union, and Iran, the Islamic Republic with the thirty years time frame. Around 40% of the top ten major exporting countries had changed which indicates the foreign trade diversification and international trade dynamism of Bangladesh's foreign trade relations.

Figure 12 Top ten exporting countries of Bangladesh in 2019



Source: Author's elaboration based on the ministry of commerce of Bangladesh. <https://mincom.gov.bd>

The pie chart shows Bangladesh's major ten countries exporting in foreign trade in 2019. Which represent that the USA, Germany, UK, Spain, France, Poland, Italy, Netherlands, Canada, and Japan contributed 14.5%, 14.20%, 8.31%, 7.22%, 7.05%, 4.19%, 3.49%, 3.40%, 3.14%, and 3.10% shared the export earnings of Bangladesh among the total number of export shared in foreign trade in Bangladesh.

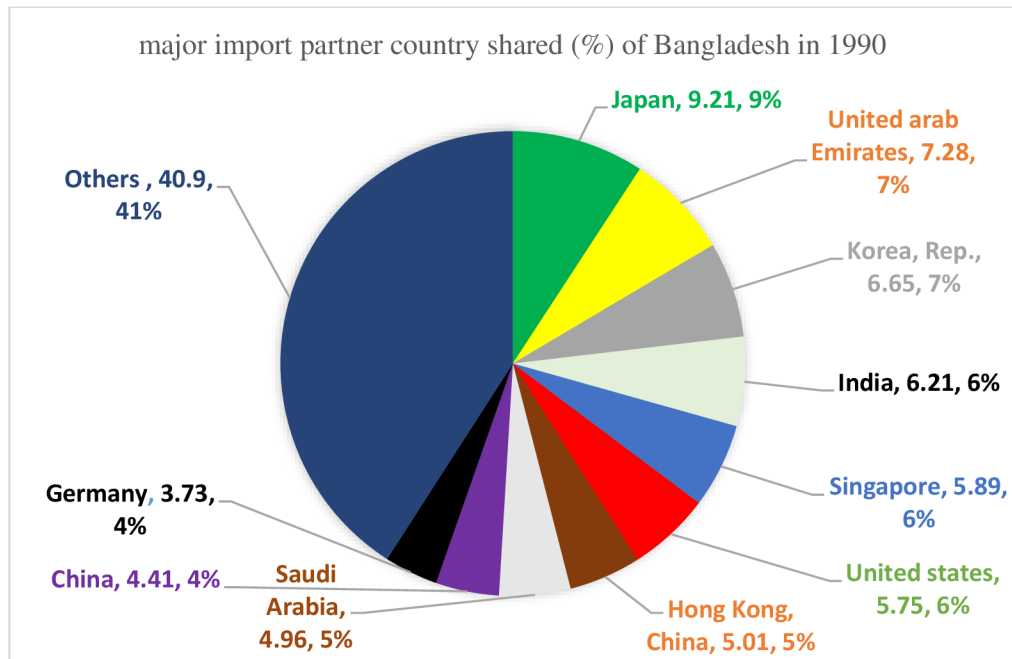
Table 17 Bangladesh top ten import trade partner country in 1990

Country	Import in Billion US (\$)	Import share in total (%)
Japan	0.316	9.21
United Arab Emirates	0.249	7.28
Korea, Rep.	0.228	6.65
India	0.213	6.21
Singapore	0.202	5.89
United States	0.187	5.75
Hong Kong, China	0.172	5.01
Saudi Arabia	0.170	4.96
China	0.151	4.41
Germany	0.128	3.73

Source: Author's elaboration based on the ministry of commerce of Bangladesh.
<https://mincom.gov.bd/>

Bangladesh is highly dependent on imported goods and services, especially for capital goods and consumer goods from abroad. Bangladesh imported more than that of exported ratio. Bangladesh imported 0.31 billion of importable products and services from Japan which covered 9,21 % of total imports. Japan was the first imported country for Bangladesh import partner in 1990. Bangladesh also bought from the United Arab Emirates, Korea, India, Singapore, Hong Kong, China, Saudi Arabia, China, and Germany with sharing of 0.249 billion, 0.228 billion, 0.213 billion, 0.202 billion, 0.187 billion, 0.172 billion, 0.170 billion, 0.151 billion and 0.128 billion with respect of 7.28%, 6.65%, 6.21%, 5.89%, 5.75%, 5.01%, 4.96%, 4.41% and 3.73% of total imported in 1990 in Bangladesh from top ten partner countries.

Figure 13 Bangladesh top ten import trade partner country in 1990



Source: Author's elaboration based on the ministry of commerce of Bangladesh. <https://mincom.gov.bd/>

The above pie graph summarizes the major ten import trade partners of Bangladesh in 1990. Japan was the first import country of Bangladesh which shared 9.21% of the total imported value of Bangladesh. Sequentially, the United Arab Emirates at 7.28%, Korea, rep. at 6.65%, India at 6.21%, Singapore at 5.89%, the UK at 5.75%, Hong Kong, China at 5.01%, Saudi Arabia at 4.96%, China at 4.41%, and Germany at 3.73% of imported volume for Bangladesh in 2019.

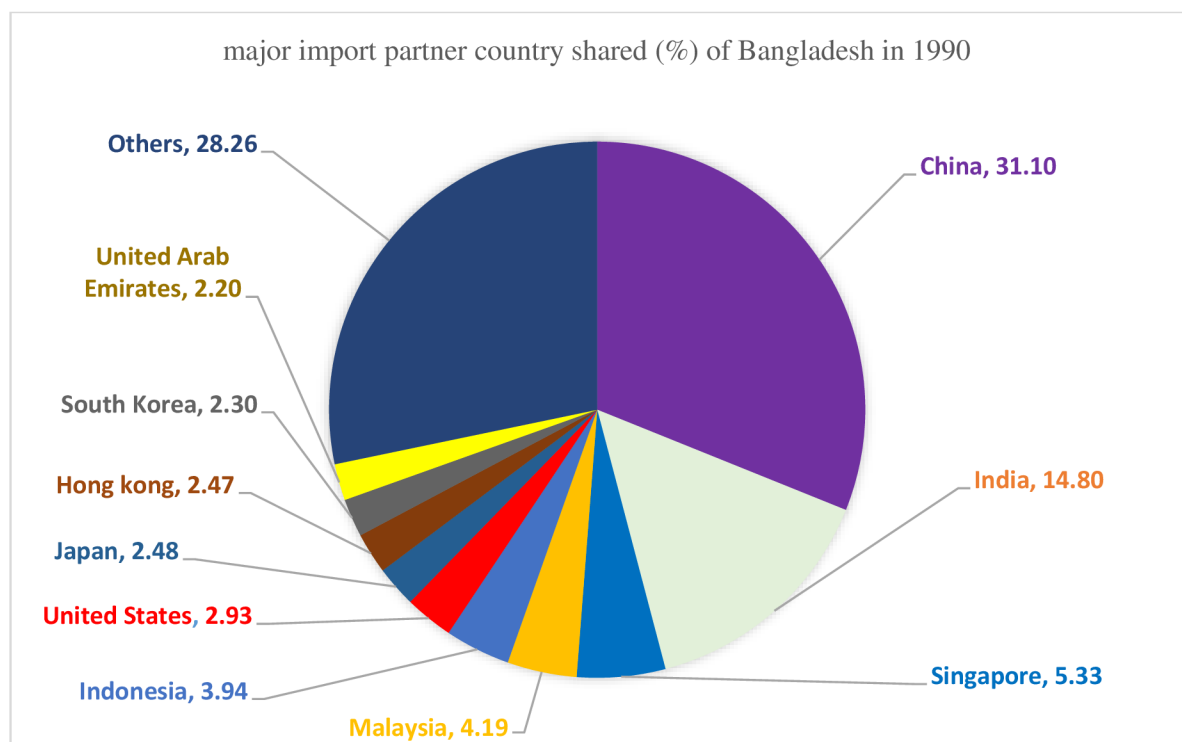
Table 18 Major ten importing countries of Bangladesh in 2019

Importing countries	Import Value Billion in the US(\$)	Percentage(%)
China	17.3	31.10
India	8.24	14.80
Singapore	2.96	5.33
Malaysia	2.33	4.19
Indonesia	1.91	3.94
United States	1.63	2.93
Japan	1.38	2.48
Hong kong	1.38	2.47
South Korea	1.28	2.30
United Arab Emirates	1.23	2.20

Source: Author own elaboration based on the ministry of commerce of Bangladesh <https://mincom.gov.bd/>

Although in 1990 Bangladesh imported from Japan the majority of total export ratio but the last thirty years the trade relation of importing country has changed the priority based on foreign trade agreements, bilateral relations, comparative advantages and trade opportunities with partners countries. In 2019 China had an export value of 17.3 billion which shared 31.10 % of the total imported volume of Bangladesh. India had 2nd position with exporting 8.24 billion which calculate 14.80% of the total export value of Bangladesh. China and India covered 45.9% of total imported goods and services in Bangladesh. These two countries had strong trade relations with Bangladesh which was not a significant position in 1990. Bangladesh had changed the import partner country as a priority of major imported country last thirty years where Malaysia, Indonesia, and South Korea took place instead of Germany, Saudi Arabia, and South Korea of the republic with sharing of 2.33 billion, 1.91 billion, 1.38 billion of the Import value of Bangladesh.

Figure 14 Major Importing country of Bangladesh in 2019



Source: Author's elaboration based on the ministry of commerce of Bangladesh. <https://mincom.gov.bd/>

Bangladesh has the great changes of foreign trade relationship in terms of volume imported among the foreign partner country. During the 30 years trade observed data had many more chances to choose the country to export or imported number as well of volume. Bangladesh

was highly dependent on import volume in China. China shared 31.10% of the imported value and the position is many times higher than others import trade partner countries. And India was in the 2nd position with shared at 14.80% of imported value in 2019. Singapore, Malaysia, Indonesia, UK, Japan, Hong Kong, South Korea, Emirates, and United Arab shared at 5.33%, 4.19%, 3.94%, 2.93%, 2.48%, 2.47%, 2.30%, 2.20% respectively in 2019. Where China and India were the major and imported partner country to import value for Bangladesh's foreign trade in 2019.

4.9 Econometric analysis

The main goal of using econometric analysis in this paper is to determine whether there is an interrelation of causality that exist among the Bangladesh GDP, real exchange rate, total exports, total import, total population, inflation rate to justify the model that these variables affect the Bangladesh GDP as well as economic growth.

4.9.1 Economic model:

This objective can be translated to algebraic model as below:

$$y_{1t} = f(x_{1t}, x_{2t}, x_{3t},) \quad (12)$$

Where,

Y_{1t}= GDP(current) in billion US dollar

X_{1t}= Inflation rate (consumer price index)

X_{2t}= Foreign direct investment, net inflows (%) of GDP of Bangladesh

X_{3t}= Net export (export-import) in million US (\$) dollar

This model explained that endogenous(dependent) variable Y_{1t} Bangladesh GDP in billion US dollar is directly affected by the exogenous(independent) variables from X_{1t} to X_{3t} where X_{1t} denotes the Inflation rate (consumer price index) of GDP. And X_{2t} Foreign direct investment, net inflows (% of GDP) of Bangladesh. X_{3t} exogenous variable represent the Net export (export-import) in million US (\$) dollar in a year from 1990 to 2019.

As stated in the following assertions, all exogenous variables have a direct link with the endogenous variable.

4.9.2 Econometric model

$$y_{1t} = \gamma_0 * x_{0t} + \gamma_1 * x_{1t} + \gamma_2 * x_{2t} + \gamma_3 * x_{3t} + \varepsilon * u_t \quad (13)$$

4.9.3 Data set

Table 19 Data set for the OLS

Variable	GDP in billion US(\$)	Inflation rate in (%)	Foreign direct investment, net inflows Current US (\$) in million	Balance of trade (Export-import) in million US (\$)	Variable	GDP in billion US(\$)	Inflation rate in (%)	Foreign direct investment, net inflows of GDP (%)	Balance of trade (Export-import) in million US (\$)
Year	Y1	X1	X2	X3	Year	Y1	X1	X2	X3
1990	31.6	6.13	3.24	-2.26	2005	69.44	7.05	813.32	-3.9
1991	30.96	6.36	1.39	-1.73	2006	71.82	6.77	456.52	-3.89
1992	31.71	3.63	3.72	-1.51	2007	79.61	9.11	651.03	-4.74
1993	33.17	3.01	14.05	-1.69	2008	91.63	8.9	1,328.42	-6.69
1994	33.77	5.31	11.15	-1.64	2009	102.48	5.42	901.29	-6.37
1995	37.94	10.3	1.90	-2.46	2010	115.28	8.13	1,232.26	-6.64
1996	46.44	2.38	13.53	-3.09	2011	128.64	11.4	1,264.73	-9.74
1997	48.24	5.31	139.38	-2.55	2012	133.36	6.22	1,584.40	-10.38
1998	49.98	8.4	190.06	-2.18	2013	149.99	7.53	2,602.96	-10.84
1999	51.27	6.11	179.60	-2.5	2014	172.89	6.99	2,539.19	-11.3
2000	53.37	2.21	280.38	-2.47	2015	195.08	6.19	2,831.15	-14.46
2001	53.99	2.01	78.53	-2.87	2016	221.42	5.51	2,332.72	-10.31
2002	54.72	3.33	52.30	-2.27	2017	249.71	5.7	1,810.40	-13.06
2003	60.16	5.67	268.29	-2.88	2018	274.04	5.54	2,421.63	-23.69
2004	65.11	7.59	448.91	-2.97	2019	302.56	5.59	1,908.05	-18.5

Multicollinearity of an original data set

Table 20 Multicollinearity of the data set

Inf	d_FDI	NetEXP	
1.0000	0.2525	-0.1537	Inf
	1.0000	-0.8794	d_FDI
		1.0000	NetEXP

Source: Author own findings based on Gretl's result

Multicollinearity with the first difference of FDI

Table 21 Multicollinearity test with the first difference of FDI

Inf	d_FDI	NetEX	
1.0000	0.2690	-0.1552	Inf
	1.0000	-0.0911	d_FDI
		1.0000	NetEXP

Source: Author own findings based on Gretl's result

The table shows that there is no multicollinearity problem among the independent variables so the econometric analysis will be performed successfully.

So, I can conclude the model that there is no multicollinearity among the independent variable and dependent variable as well.

4.9.4 Estimated Parameters

Table 22 Estimated parameters

parameters	Value of estimated parameters
γ_0	15.4759
γ_1 Inflation rate (current) in (%)	0.711027
γ_2 Foreign direct investment, net inflows Current US (\$) in million	-0.0448317
γ_3 Balance of trade (Export-import) in million US (\$)	-13.4478

Source: Author own elaboration based on gretl results.

Substituting the prior results into the one-equation econometric model yields the final equation.

$$GDP_t = 15.4759 + 0.711027Inf_t - 0.0448317FDI_t - 13.4478NetEX_t \quad (14)$$

4.9.5 Economic verification:

Economic verification estimates the result based on gretl result

- The result shows that if the inflation rate of Bangladesh increases by 1 percentage point, then the GDP of Bangladesh increases by 0.7% because Bangladesh has a trade deficit where export is less than import.
- If Foreign direct investment, net inflows of GDP, in Bangladesh increases by 1 million US (\$) dollars, then the GDP of Bangladesh also decreases by 0.05 %.
- If Bangladesh's net export (Export-import) increases by 1 million US (\$) dollars, then Bangladesh's GDP decreases by 13.45 %.

To sum up, it can be concluded that net exports have the height effects on Bangladesh GDP as the height intensity of net export and FDI is 13.45% and 0.05% among all the above parameters.

4.9.6 Statistical verification:

The R² value of the gretl coefficient of determination 0.950754 illustrated that the exogenous variables (independent) exposed endogenous(dependent) variables by 95.50754%. In constraints, the adjusted R squared value is 0.944844 which represent that 94.4844% of changes of an endogenous(dependent) variable can be explained by exogenous(independent) variables

Statistically significant of estimated parameters: t-test

The t-test is used to ensure that the estimated parameters are statistically significant. The p-values of the calculated parameters in Gretl are shown in the table below.

Table 23 Estimated T-test

Parameters	Value of estimated parameters	T-ratio	Significant at 5 percent
γ_1	0.711027	0.453	<1.708; not significant
γ_2	-0.0448317	-4.371	>1.708; significant
γ_3	-13.4478	-21.56	>1.708; significant

Source: Author own elaboration based on gretl results

The critical value of t-ratio at 5 % significant level is 1.708 and the hypothesis has been discussed given below.

Null hypothesis (H0): A studied parameter is not statistically significant ($\gamma_i \approx 0$).

Alternative hypothesis (H1): A studied parameter is statistically significant ($\gamma_i \neq 0$).

Based on the t-test the following conclusion can be explained below:

γ_1 is less than the critical value = 1.708, therefore not to reject (H0), there is no sufficient evidence of the correlation between this variable and the endogenous variable.

γ_2 is greater than the critical value = 1.708, therefore reject (H0), here is sufficient evidence of a correlation between this variable and the endogenous variable that the variable has effects on GDP.

γ_3 is greater than the critical value = 1.708, therefore reject (H_0), here is sufficient evidence of a correlation between this variable and the endogenous variable that the variable has effects on GDP.

Statistical significance of estimated parameters: Confidence interval

The confidence interval value can also be used to verify the statistical significance of computed values. The confidence interval computed in Gretl at a significance level of 0.05 is displayed in the previous table.

Confidence interval

Table 24 Estimated confidence interval

Parameters	Value of parameters	Confidence interval	Significance at 0.05
γ_1	0.711027	-2.51818 to 3.94023	Significance
γ_2	-0.0448317	-0.0659536 to -0.0237098	Significance
γ_3	-13.4478	-14.7322 to -12.1635	Significance

Source: Author own elaboration based on gretl result

Statistical significance of entire model: F test:

The resulting F-value $F(3,25)$ in Gretl is 160.8847. This value is greater than the F critical value at given degrees of freedom ($n-p; \alpha$) of 2.99124.

Considering the hypotheses:

Null hypothesis (H_0): all explanatory variables taken jointly are not relevant

Alternative hypothesis (H_1): H_0 is not true

Since F 160.8847 > F^* (26-3; 0.05) 2.99124: the model is statistically significant and H_0 is rejected.

4.9.7 Econometric verification of the model:

White's test for heteroskedasticity

The resulting p-value from White Test is **0.032403**, at a significance level α of **0.05**. the

The p-value is less than the significance level and therefore there is constant variance on each

the conditional distribution of the error term, hence, the null hypothesis is accepted.

Null hypothesis (H0): Null hypothesis denotes that Heteroskedasticity is not present

Alternative hypothesis (H1): Heteroskedasticity is present

Durbin Watson test for the non-autocorrelation assumption

The Durbin-Watson test is used to determine whether or not there is autocorrelation. The Durbin-Watson value generated by Gretl software is **2.26543**. As the value is between 1.5 to 2.5, it can be said that the correlation is still normal and should not be a cause of concern.

Normality test:

Null hypothesis (H0): Null hypothesis illustrates that normality presence of random variable

Alternative hypothesis (H1): Alternative hypothesis explained that there is no normality presence of random variable

With the significant level $\alpha = 0.05$

Here the p-value of Gretl result from the table data with p-value = 0.55747, thus the null Hypothesis of normality presence of random variable is accepted

5 Results and discussion

Bangladesh's foreign trade development indicators are inflation rate (consumer price index), the total population, the exchange rate of foreign currency against BDT. foreign direct investment, net inflows (%) of GDP of Bangladesh, most favored nations, tariff advantages, etc are the major foreign trade determinants of Bangladesh.

Bangladesh's economic growth has a significant impact on the foreign trade development of the people's republic of Bangladesh. In the practical OLS model find out, the result of regression analysis where the inflation rate has no significant impact on Bangladesh's economic growth in this model. Foreign direct investment and net export have a significant level impact on Bangladesh's economic growth. Foreign direct investment has an adverse impact that result shows if the investment increased by 1 million US (\$) dollar then the Bangladesh economic growth also decreased by 0.05%.

Furthermore, net export hurts Bangladesh's economic growth. If Bangladesh's net export increased by 1 million US (\$) dollars, then the Bangladesh GDP decreases by 13.45 %.

So, the net export of Bangladesh has an impact on economic growth negatively that indicates due to net export (Import > Export) of Bangladesh has a downward trend of overall economic growth.

Bangladesh export to United states (31.76%), Italy(8.1%), United Kingdom(6.18%), Germany(5.39%), Singapore(4.23%), Japan(4.2%), Belgium-Luxemburgue(4.15%), France(4.04%), Soviet union(3.48%), Iran, islamic rep. (3.26%) of total number of export percentage in 1990.

And Bangladesh imported from Japan(9.21%), United arab Emirates(7.28%), Korea Rep.(6.65%), India(6.21%), Singapore(5.89%), United states (5.75%), Hong kong (5.01%), Saudi Arabia(4.96%), China (4.41%), Germany (3.73%) in 1990.

Bangladesh exported to United states (14.50%), Germany (14.20%), United kingdom (8.31%), Spain (7.22%), France (7.05%), Poland (4.19%), Italy (3.49%), Netherlands(3.40%), Canada (3.14%), Japan (3.10%) in 2019.

Bangladesh imported from China(31.10%), India(14.80%), Singapore(5.33%), Malaysia(4.19%), Indonesia (3.94%), United states(2.93%), Japan(2.48%), Hong Kong (2.47%), South korea (2.30%), United Arab Emirates(2020%) in 2019.

Bangladesh's territorial structure of foreign trade has had a significant level of changes over the last 30 years from 1990 to 2019. Bangladesh exported trade partner countries remained constant country over the last 30 years United States, Italy, United Kingdom, Germany, Japan, and France remained same trade export partner country among last thirty years. On other hand, Singapore, Belgium-Luxemburg, the Soviet Union, and Iran have changed from the top major ten country in 1990.

Moreover, Spain, Poland, the Netherlands, And Iran has become the first major country in 2019.

Foreign trade of import partner territorial structural has changed as well with changes of volume during the study period over 30 years.

Bangladesh has reduced to import from Germany and Saudi Arab as major import partner which was in 1990 and increase the volume of import from Malaysia and Indonesia in 2019. although Bangladesh's major import trade partner country has not had many more structural changes but has huge trade volume changes among the major countries list, especially China and India. Bangladesh Imported from China(4.41%) and India (6.21%) in 1990. But Bangladesh imported from China(31.10%) and India (14.80%) of total imported volume in 2019 is the major change in terms of structural import changes among the existing country of Bangladesh import trade partner country over the last 30 years from 1990 to 2019.

Bangladesh trade content had been changed during the last thirty years. Bangladesh had taken various measures for trade development. To expand the trade relationship and foreign trade development Bangladesh had joined and signed contracts with different countries as well different international trade blocks and organizations over the last thirty years like WTO, SAARC, ASEM, SAFTA, BIMSTEC, etc. Bangladesh trade policy has reformed for the development of foreign trade along with the changing the tariff structure. Bangladesh's government has adopted the free trade policy congruent with global market economy

tendencies, the Uruguay Round Accord, and the World Trade Organizations agreement since the early 1990s.

During the 1990s Bangladesh reduced tariff rates and also rationalized its tariff structure. To prioritize the Bangladesh foreign trade especially export, Bangladesh has been established many more economic zones under the Bangladesh Export processing zone(EPZ).

6 Conclusion

Bangladesh is one of the fastest economic emerging countries among the overall world economic developing nations. The outcome of the diploma thesis with regarding the objectives I can say the major determinants of Bangladesh foreign trade depends on various factors are the total number of population of Bangladesh. The inflation rate, foreign direct investment, exchange rate, most favored nations, tariff advantages, etc are the key indicators for foreign trade development.

Bangladesh's economic growth indicators represent the positive relationship with foreign trade development and the adverse significant relationship with the net export of Bangladesh. Bangladesh has had strong foreign trade relations with specific countries in terms of export as well as import over the thirty years with some small changes during the observed period that represents the Bangladesh territorial structure of foreign trade.

Moreover, Bangladesh has a significant level of trade policy and trade structure reformed during the last 30 years.

To support the further improvement of Bangladesh's foreign trade and economic growth development the following discussion can be recommended:

Bangladesh government should expand the total number of export volumes and create a new market over the competition and increased export volume among the existing country since 2019.

Bangladesh's government should take into consideration and reduce the high dependency on imports for goods and services. To improve the trade balance and minimize trade deficit need keen consideration of import. Should improve the production level so that population demand can be fulfilled domestically and reduced trade deficit.

To establish economic growth stability and develop a positive impact on foreign trade Bangladesh government must have to export more than Imports so that foreign trade can be the one major indicator of economic growth.

And also Bangladesh should take action for structural changes of import and look for new trade partners especially for import because of monotonous dependency on China and India that would help of create more favorable foreign trade relations among new country for improving export as Bangladesh do not export in China and India.

Bangladesh has to balance in ext and import for economic growth esp, especially among the major country of importing trade partners that would help to reduce the trade deficit among individual countries that will positive impact on the overall economic growth of the people's republic of Bangladesh.

7 References

- Alam, M. M., Uddin, M. G. S., & Taufique, K. M. R. (2009). Import Inflows of Bangladesh: The Gravity Model Approach. *International Journal of Economics and Finance*, 1(1), 131–139.
- B. Griffith, A., Salguero-Gomez, R., Merow, C., & McMahon, S. (2016). Demography beyond the population. *Journal of Ecology*, 104, 271–280.
<https://doi.org/10.1111/1365-2745.12547>
- BALL, R. J., & BURNS, T. (1974). *Econometric Analysis and Managerial Decision Making*. London Graduate School of Business Studies, London, 2(3).
- Bangladesh Bank. (n.d.). [Www.Bb.Org.Bd](http://www.bb.org.bd). Retrieved June 14, 2021, from <https://www.bb.org.bd/en/index.php>
- Bangladesh economic book review, 2021. (2021, August). [Www.Mof.Gov.Bd](http://www.mof.gov.bd). Retrieved November 15, 2021, from <https://mof.portal.gov.bd/site/page/28ba57f5-59ff-4426-970a-bf014242179e/Bangladesh-Economic-Review>
- Center for prospective studies and international information Region. (2021, April 26). [Http://Www.Cepii.Fr/](http://www.cepii.fr/). Retrieved June 14, 2021, from http://www.cepii.fr/CEPII/fr/bdd_modele/presentation.asp?id=17
- Chevillon, G., Hecq, A., & Laurent, S. (2018). Generating univariate fractional integration within a large VAR(1). *Journal of Econometrics*, 54–65.
- Cornwell, C., & N. Trumbull, W. (1994). Estimating the Economic Model of Crime with Panel Data. *The Review of Economics and Statistics*, 76(2), 360–366.
<https://www.jstor.org/stable/2109893>
- D., & Suits, B. (1962). Forecasting and Analysis with an Econometric Model. *The American Economic Review*, 52(1), 104–132.
<https://www.jstor.org/stable/1823479>

- DAS, & P. (2019). *Econometrics in theory and practice; Analysis of Cross-section, Time Series and Panel Data with Stata*. Springer Nature, 15(1).
- E. Lorensen, W., A. Jolesz, F., & Kikinis, R. (2021). *The Exploration of Cross-Sectional Data with a Virtual Endoscope (Vol. 18) [E-book]*. *Studies in Health Technology and Informatics*. <https://doi.org/10.3233/978-1-60750-862-5-221>
- Export Receipts of Goods and Services. (n.d.). *Www.Bb.Org.Bd*. Retrieved September 28, 2021, from <https://www.bb.org.bd/en/index.php/publication/publicitn/0/15>
- FORTUNE, J. NEILL (1987). The Inflation Rate of the Price of Gold, Expected Prices, and Interest Rates. *Journal of Macroeconomic*, 9(1), 71–82.
- Gevorkyan, A. V. (2020). EXCHANGE RATES. *Encyclopedia of Post-Keynesian Economics*. Edward Elgar. <https://www.researchgate.net/publication/336149978>
- GRANGER, C. W. J. (1981). SOME PROPERTIES OF TIME SERIES DATA AND THEIR USE IN ECONOMETRIC MODEL SPECIFICATION. *Journal of Econometrics*, 16, 121–130.
- G.V.VIJA, YASRI. (2013). THE IMPORTANCE OF INTERNATIONAL TRADE IN THE WORLD. *International Journal of Marketing, Financial Services & Management Research*, 2(9).
- HAYASHI, & F. (2011). *Econometrics*. Princeton University Press.
- Helpman, E. (1999). The Structure of Foreign Trade. *Journal of Economic Perspectives*, Volume 13(Number 2), 121–144. <https://doi.org/10.1257/jep.13.2.121>
- Import Payments of Goods and Services. (2021). *Www.Bb.Org.Bd*. Retrieved December 17, 2021, from <https://www.bb.org.bd/en/index.php/publication/publicitn/0/9>
- J. Stigler, G. (1962). Henry L. Moore and Statistical Economics. *The Econometric Society*, 30(1), 1–21. <https://www.jstor.org/stable/1911284>

- J.Trebilcock, M., & Howse, R. (2005). *The Regulation of International Trade* (3rd ed.) [E-book]. Routledge 2 Park Square, Milton Park, Abingdon, Oxon OX 14 4RN.
- Klug, A. (2006, May 4). *Theories of International Trade* [E-book]. In M. Bordo (Ed.), *Theories of International Trade* (1st ed., p. 2). London Routledge.
<https://doi.org/10.4324/9780203340042>
- Kwok, V., & Leland, H. (1982). An Economic Model of the Brain Drain. *American Economic Association*, 72(1), 91–100. <https://www.jstor.org/stable/1808577>
- Lahiri, S., & Ono, Y. (1995). The Role of Free Entry in an Oligopolistic Heckscher-Ohlin Model. *International Economic Review*, 36(03), 609–624.
- Lam, T.-D. (2016). A Review of Modern International Trade Theories. *American Journal of Economics, Finance, and Management*, 1(6), 604–614.
<http://creativecommons.org/licenses/by-nc/4.0/>
- L.C.R., & Watagoda, P. (2019). A Sub-Model Theorem for Ordinary Least Squares. *International Journal of Statistics and Probability*, 8(1).
<https://doi.org/10.5539/ijsp.v8n1p40>
- Magnusson, L. (2003). *The shaping of an economic language*. Taylor & Francis E-Library.
- Majumder, S. C., & Rana, M. M. (2016). Trade Liberalization and Its Effects on the Economic Growth of Bangladesh: An Empirical Analysis. *American Journal of Trade and Policy*, 3(2), 61–70.
- Misra, P. (2018). An Investigation of the Macroeconomic Factors Affecting the Indian Stock Market. *Australasian Accounting, Business, and Finance*, 12(2), 71–86.
<https://doi.org/10.14453/aabfj.v12i2.5>
- MJRAMJ & RAMKEAKW. (1995). International trade: theory and evidence. In MPRA Munich Personal RePEc Archive (pp. 15–17). University of Colorado, Boulder.

- Mumit, A., & Goswami, G. G. (2011). The Empirical Economics Letters. An Empirical Test of the Heckscher-Ohlin Model in OECD Countries: A Data Envelopment Analysis Approach, 10(4).
- Musarat, M. A., Salah Alaloul, W., & Liew, M. S. (2020). Impact of inflation rate on construction projects budget: A review. *Ain Shams Engineering Journal*, 12, 407–414. <https://doi.org/10.1016/j.asej.2020.04.009>
- N., S., & D.X. (2017). Econometric analysis of multivariate realized QML: Estimation of the covariation of equity prices under asynchronous trading. *Journal of Econometrics*, 201, 19–42. <https://doi.org/10.1016/j.jeconom.2017.04.003>
- Nelson, D. C. A. (2009). *IMPORT/EXPORT How to Take Your Business Across Borders* (4th ed.). Mc Graw Hill.
- The observatory of economic complexity. (n.d.). OEC.WORLD. Retrieved June 14, 2021, from <https://oec.world/en/resources/about>
- Om, S., & Bhandari, R. (2005). Foreign Trade and Its Effects on Nepalese Economic Development. *The Journal of Nepalese Business Studies*, 2(1).
- Ray, C. F., & J. Shiller, R. (1990). Comparing Information in Forecasts from Econometric Models. *The American Economic Review*, 80(3), 375–389. <https://www.jstor.org/stable/2006672>
- SAMUELSON, A. P., KOOPMANS, T. C., & STONE, J. R. N. (1954). Report of the Evaluative Committee for Econometrica. *Econometrica*, 141–146.
- SAWYER, RICHARD. (1986). USING DEMOGRAPHIC SUBGROUP AND DUMMY VARIABLE EQUATIONS TO PREDICT COLLEGE FRESHMAN GRADE AVERAGE. *Journal of Educational Measurement*, 23(2), 131–145. <https://doi.org/10.1111/j.1745-3984.1986.tb00239.x>

- Schmidt, P., & C. Sickles, R. (1984). production frontiers and panel data. *Journal of Business & Economic Statistics*, 2(4).
- Seyoum, Ph.D., B. (2008). *Export-Import Theory, Practices, and Procedures* (2nd ed.) [E-book]. Routledge Taylor & Francis. <https://doi.org/10.4324/9781003020509>
- Skoruks, D. (2014). A complex econometric model of monopolization process evaluation. *Procedia - Social and Behavioral Sciences*, 110, 202–214. <https://doi.org/10.1016/j.sbspro.2013.12.863>
- Tarsi, K., & Tuff, T. (2012). Introduction to Population Demographics. *Nature Education Knowledge*, 3(11). <https://www.nature.com/scitable/knowledge/library/introduction>.
- Temiz Dinç, D., Gökmen, A., Nakip, M., & Madadkhah Azari, N. (2017). The impact of foreign trade issues on economic growth in some developing countries including Iran and Turkey. *Journal of Transnational Management*, 22(3), 171–202. <https://doi.org/10.1080/15475778.2017.1346455>
- van den Bergh, J. C. J. M. (2007, February). *Abolishing GDP*. Vrije Universiteit Amsterdam, and Tinbergen Institute. <http://www.tinbergen.nl>.
- V.J.č., & V.K. (2009). Role zahraničního obchodu a jeho efekty. Supported by the Ministry of Education, Youth and Sports of the Czech Republic, 55(5), 211–220.
- Windrum, P., & Birchenhall, C. (1998). Structural change and economic dynamics. Is Product Life Cycle Theory a Special Case? *Dominant Designs and the Emergence of Market Niches through Coevolutionary-Learning*, 109–134.

8 Appendix

Table 1A: Multicollinearity of the data set

gretl: correlation matrix

Correlation Coefficients, using the observations 1990 - 2019
5% critical value (two-tailed) = 0.3610 for n = 30

Inf	FDI	NetEXP	
1.0000	0.2525	-0.1537	Inf
	1.0000	-0.8794	FDI
		1.0000	NetEXP

Source: Author own elaboration based on gretl result,2022

Table 2A: Estimated confidence interval

gretl: correlation matrix

Correlation Coefficients, using the observations 1991 - 2019
5% critical value (two-tailed) = 0.3673 for n = 29

Inf	d_FDI	NetEXP	
1.0000	0.2690	-0.1552	Inf
	1.0000	-0.0911	d_FDI
		1.0000	NetEXP

Table 3A: F-test

gretl: critical values

F(3, 25)
right-tail probability = 0.05
complementary probability = 0.95

Critical value = 2.99124

Table 4A: Ordinary least squares gretl result

gretl: model 10

File Edit Tests Save Graphs Analysis LaTeX

Model 10: OLS, using observations 1991-2019 (T = 29)
Dependent variable: GDP

	coefficient	std. error	t-ratio	p-value
const	15.4759	10.3144	1.500	0.1460
Inf	0.711027	1.56793	0.4535	0.6541
d_FDI	-0.0448317	0.0102557	-4.371	0.0002 ***
NetEXP	-13.4478	0.623603	-21.56	1.14e-017 ***

Mean dependent var	103.7510	S.D. dependent var	78.15089
Sum squared resid	8421.667	S.E. of regression	18.35393
R-squared	0.950754	Adjusted R-squared	0.944844
F(3, 25)	160.8847	P-value (F)	1.81e-16
Log-likelihood	-123.3826	Akaike criterion	254.7652
Schwarz criterion	260.2344	Hannan-Quinn	256.4781
rho	-0.151705	Durbin-Watson	2.265432

Excluding the constant, p-value was highest for variable 2 (Inf)

Source: Author own elaboration based on gretl result,2022

Table 5A: White's test for heteroskedasticity

gretl: LM test (heteroskedasticity)

White's test for heteroskedasticity
OLS, using observations 1991-2019 (T = 29)
Dependent variable: uhat^2

	coefficient	std. error	t-ratio	p-value
const	47.5572	363.464	0.1308	0.8973
Inf	-74.9758	128.301	-0.5844	0.5658
d_FDI	-0.233463	1.52009	-0.1536	0.8796
NetEXP	-85.9397	117.858	-0.7292	0.4748
sq_Inf	10.7141	12.1643	0.8808	0.3894
X2_X3	-0.160627	0.210258	-0.7639	0.4543
X2_X4	7.27620	13.2457	0.5493	0.5892
sq_d_FDI	0.00135568	0.000513319	2.641	0.0161 **
X3_X4	-0.0744011	0.0373097	-1.994	0.0607 *
sq_NetEXP	-1.47374	2.49345	-0.5910	0.5615

Unadjusted R-squared = 0.629240

Test statistic: $TR^2 = 18.247965$,
with p-value = $P(\text{Chi-square}(9) > 18.247965) = 0.032403$

Source: Author own elaboration based on gretl result,2022

Table 6A: Estimated confidence interval

VARIABLE	COEFFICIENT	95% CONFIDENCE INTERVAL	
const	15.4759	-5.76694	36.7188
Inf	0.711027	-2.51818	3.94023
d_FDI	-0.0448317	-0.0659536	-0.0237098
NetEXP	-13.4478	-14.7322	-12.1635

Source: Author own elaboration based on gretl result,2022

Table 7A: Normality test

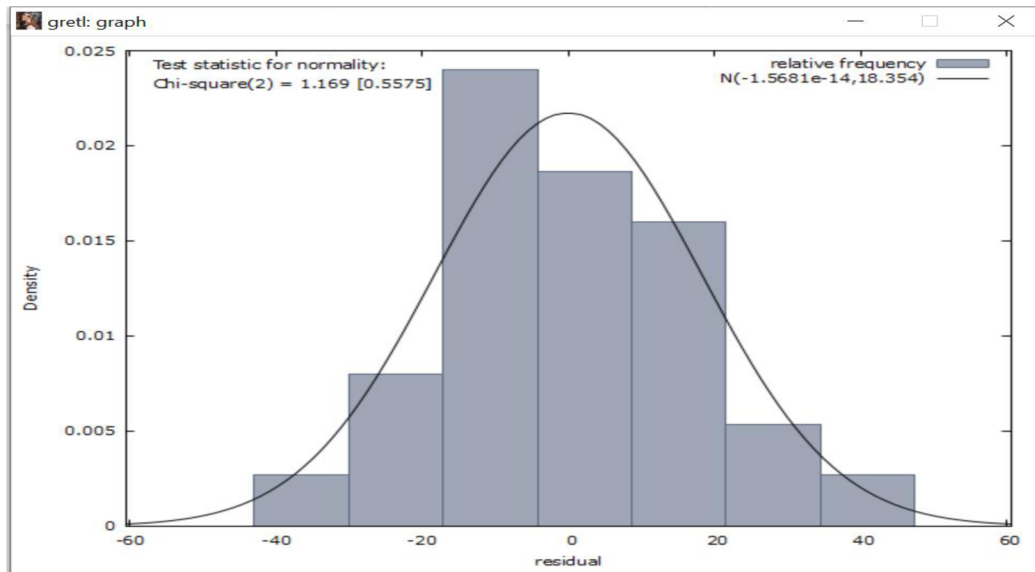
Frequency distribution for residual, obs 2-30
number of bins = 7, mean = -1.56809e-014, sd = 18.3539

interval	midpt	frequency	rel.	cum.
< -30.086	-36.551	1	3.45%	3.45% *
-30.086 - -17.155	-23.620	3	10.34%	13.79% ***
-17.155 - -4.2241	-10.690	9	31.03%	44.83% *****
-4.2241 - 8.7067	2.2413	7	24.14%	68.97% *****
8.7067 - 21.638	15.172	6	20.69%	89.66% *****
21.638 - 34.568	28.103	2	6.90%	96.55% **
>= 34.568	41.034	1	3.45%	100.00% *

Test for null hypothesis of normal distribution:
Chi-square(2) = 1.169 with p-value 0.55747

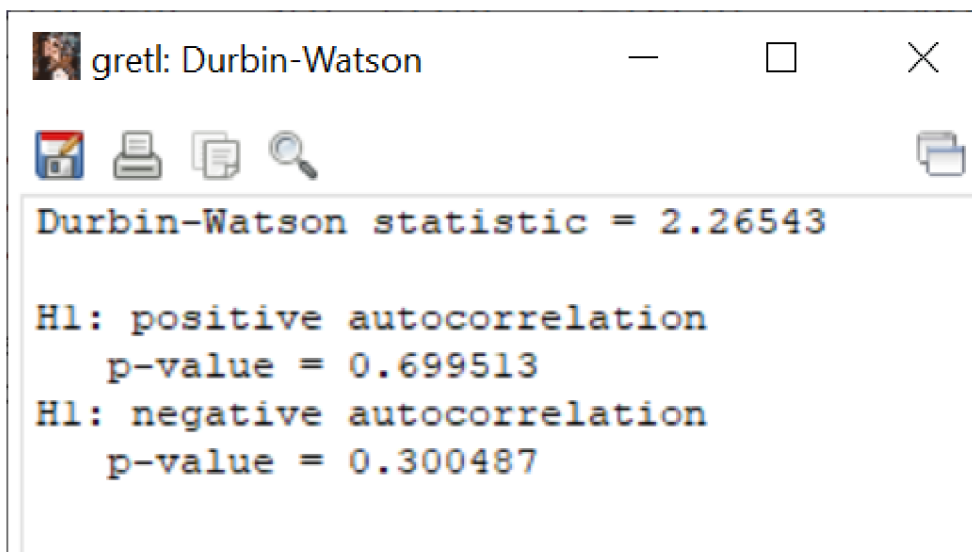
Source: Author own elaboration based on gretl result,2022

Table 8A: Normality test



Source: Author own elaboration based on gretl result,2022

Table 9A: Durbin Watson test for the non-autocorrelation assumption



Source: Author own elaboration based on gretl result,2022