

Devaluation of Currency and Export Performance in Bangladesh

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Annex 3 Predefence Publications



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Annex 3 Pre Defense Publications

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Monetary Depreciation and Export Performance of Bangladesh

Value Does Matter

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Abstract—Currency devaluation and its impact on export performance are critical for developing countries like Bangladesh. This paper examines the relationship between currency depreciation and export performance in Bangladesh from a macroeconomic perspective, focusing on aggregate data whose main contribution comes from major export sectors such as ready-made garments, jute, jute products, fish, shrimp, leather and leather products. The study sought to determine the extent to which currency devaluation affects the export performance of these sectors and to examine why countries with similar economic situations perform better than Bangladesh. The results were derived with the conclusion that currency depreciation (DoC) resulting from exchange rate volatility (ER) is not the sole factor affecting export performance. The co-integration of many other factors, namely the interest rate (IR), inflation (IF), foreign direct investment (FDI), balance of payments (BoP), and GDP per capita, is inextricably linked. By analysing the data from 1990 to 2020, the study has identified potential strategies and lessons that Bangladesh can learn from the export success of other countries to improve its performance.

Keywords—devaluation; currency; export performance; exchange rate; interest rate; inflation; foreign direct investment; balance of payments; GDP per capita; Bangladesh;

I. INTRODUCTION

Devaluation of currency and its impact on export performance is a critical issue for developing countries like Bangladesh. This paper examines the relationship between currency devaluation and export performance in Bangladesh, focusing on aggregate macroeconomic data of which major contributors are export sectors such as ready-made garments, jute, jute products, fish, shrimp, leather, and leather products. The study sheds light on the extent to which currency devaluation affects the export performance of these sectors and explores the reasons why countries with similar economic situations perform better than Bangladesh. In addition, the study identifies possible strategies and lessons that Bangladesh can learn from the export success of other countries to improve its own performance by analysing data from 1990 to 2020.¹

Devaluation

Devaluation is the intentional lowering of the value of a currency against other currencies or a standard unit of value such as gold. It is an action often taken by central banks or governments to control the value of their currency relative to foreign currencies. An example of devaluation is the rising trend in the exchange rate seen at Table 1. In the context of the research on the devaluation of currency and export performance in Bangladesh, devaluation would involve a decrease in the value of the Bangladeshi taka compared to other international or regional currencies, such as the US dollar or the Euro.

TABLE 1 Year wise Export and Exchange Rate

Year	Export Value Index (2000 = 100)	Nominal Exchange Rate (Taka to USD)
1990	26.12	34.563
1991	26.39	36.59
1992	32.78	38.95
1993	35.60	39.57
1994	41.58	40.21
1995	54.80	40.28
1996	66.50	41.79
1997	75.63	43.89
1998	80.15	46.91
1999	86.04	49.09
2000	100.00	52.14
2001	95.16	55.81
2002	96.24	57.89
2003	109.41	58.15
2004	129.99	59.51
2005	145.52	64.33
2006	184.73	68.93
2007	194.92	68.87
2008	240.56	68.60
2009	236.07	69.04
2010	300.43	69.65
2011	382.52	74.15
2012	393.29	81.86
2013	455.68	78.10
2014	475.90	77.64
2015	506.79	77.95
2016	546.16	78.47

¹ I am grateful to Institute of South-South Cooperation, Peking University and Ministry of Commerce (MOFCOM) of the People's Republic of China for full cooperation.

2017	561.13	80.44
2018	614.37	83.47
2019	615.70	84.45
2020	525.99	84.87

Source: World Bank²

Devaluation can occur for various reasons, such as improving export competitiveness, reducing trade imbalances, or stimulating economic growth. The devaluation of a currency can affect various aspects, particularly in terms of export performance. When a currency is devalued, it effectively becomes cheaper for foreign buyers to purchase goods and services from the country that devalued its currency. This can lead to increased competitiveness of a country's exports, as they become more affordable to international buyers.

In the case of Bangladesh, devaluation may help promote its export sector by making its goods and services relatively cheaper in international markets. This can result in increased demand for Bangladeshi products, thus potentially boosting export performance. However, it is important to note that the impact of devaluation on export performance is multifaceted, as it can be influenced by factors such as the export sector's competitiveness, the country's infrastructure, trade policies, and global economic conditions.

By conducting research on the devaluation of currency and export performance in Bangladesh, one can analyze the relationship between currency devaluation and its effects on the country's export sector. This research can provide insights into the potential benefits, challenges, and implications of currency devaluation as a tool for enhancing export performance in Bangladesh, contributing to a deeper understanding of the dynamics between currency exchange rates, exports, and overall economic growth.

Devaluation and Depreciation

Devaluation refers specifically to a deliberate reduction in the value of a currency as set by the government or central bank. It is typically done through an official announcement or intervention, aiming to adjust the exchange rate downward against other currencies. Devaluation is a policy measure used to boost a country's export competitiveness and address trade imbalances.

Depreciation refers to a decrease in the value of a currency in the foreign exchange market due to supply and demand dynamics. Unlike devaluation, which is a deliberate government action, depreciation occurs naturally in response to market forces. Factors such as economic conditions, interest rates, trade imbalances, and investor sentiment can cause the value of a currency to decline in the open market. Fig.1 shows the devaluation and depreciation of Bangladeshi Taka and Indian Rupee over time.

² Official exchange rate refers to the exchange rate determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar). [Export values are the current value of exports (f.o.b.) converted to U.S. dollars and expressed as a percentage of the average for the base period (2000).]

Devaluation - Bangladesh (%) and Devaluation - India (%)

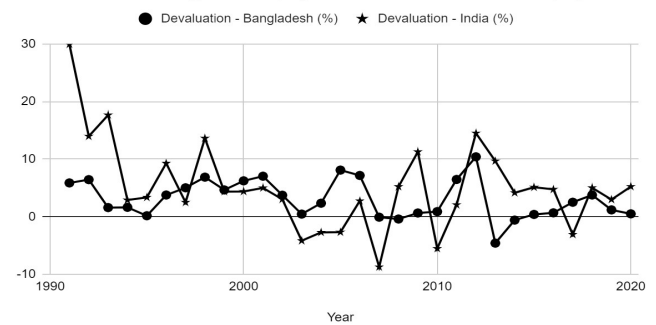


Fig.1 Devaluation of Currency (Official Exchange Rate) Bangladesh and India (Source: WB data)

In the research on the devaluation of currency and export performance in Bangladesh, it is crucial to differentiate between devaluation (a policy-driven action) and depreciation (a market-driven phenomenon). Devaluation implies that the Bangladeshi government or central bank has taken specific measures to reduce the value of the country's currency intentionally. Depreciation, on the other hand, may occur regardless of government intervention due to various market factors.

Understanding the distinction between these two concepts is essential when analysing their effects on export performance. Research in this area can investigate the impact of both devaluation and depreciation on the export sector in Bangladesh. By examining how intentional devaluation and market-driven depreciation influence export competitiveness, trade patterns, and overall economic performance, researchers can provide valuable insights for policy-makers and stakeholders in Bangladesh's economy. However as the delineation of sharp line between market force and government deliberation are eventually not declared officially devaluation and depreciation are synonymously used for estimation purpose.

Devaluation: Fixed, Floating and Managed Exchange Rate Regime

Devaluation refers to the intentional reduction in the value of a country's currency in relation to other currencies. It is a measure taken by the government or central bank to adjust the exchange rate downward. Devaluation aims to enhance a country's export competitiveness by making its products relatively cheaper in international markets, thereby potentially boosting export performance.

In a fixed exchange rate regime, the value of a country's currency is directly linked to a fixed value or a specific currency. The government or central bank typically intervenes in the foreign exchange market to maintain the exchange rate within a narrow band. Under a fixed regime, devaluation can be accomplished by official action, adjusting the fixed exchange rate downward to make the currency less valuable relative to other currencies.

In a floating exchange rate regime, the value of a country's currency is determined by market forces of supply and demand. The exchange rate fluctuates freely based on various economic factors, such as interest rates, inflation, trade imbalances, and investor sentiment. In a floating regime, devaluation happens naturally as the currency's value decreases in response to market dynamics and is not directly controlled by the government.

Managed exchange rate regimes exhibit elements of both fixed and floating regimes. In a managed regime, the central bank or government occasionally intervenes in the foreign exchange market to influence the exchange rate. They may do so by buying or selling their currency to maintain a desired value or to manage excessive fluctuations. In this case, devaluation can be achieved through official interventions where the authorities deliberately decrease the value of the currency.

For research on the devaluation of currency and export performance in Bangladesh, it is important to consider the exchange rate regime in place. Understanding the specific regime employed by Bangladesh's central bank or government can provide insights into the mechanisms through which devaluation may be carried out and its potential impact on export performance. Analyzing the relationship between exchange rate regimes, devaluation, and export outcomes can contribute to a comprehensive understanding of the interactions between currency valuation and international trade dynamics in the context of Bangladesh.

Bangladesh Manages Exchange Rate Dynamically by Fixed and Managed Exchange Rate Regime

In Bangladesh, the exchange rate is dynamically managed without a flexible market based on demand and supply. This means that the country's central bank, the Bangladesh Bank, actively intervenes in the currency market to influence the exchange rate rather than allowing it to be determined solely by market forces.

Unlike in a flexible exchange rate system, where the exchange rate is determined by the supply and demand for currencies in the foreign exchange market, Bangladesh adopts a managed exchange rate regime. The central bank monitors and adjusts the exchange rate in response to various factors, such as inflation, monetary policy objectives, and the country's external trade balance.

The objective of managing the exchange rate is to support Bangladesh's economic goals, particularly in relation to its export performance. One possible area of research in this context is the effect of currency devaluation on export performance. Fig.2 shows the management of devaluation and depreciation of Bangladeshi Taka with a comparison with Bhutan's Ngultrum which is pegged with Indian Rupee.

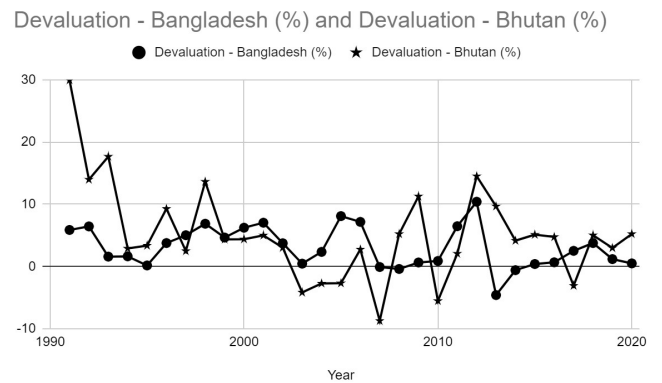


Fig.2 Devaluation of Currency (Bangladesh and Bhutan)³

By examining the relationship between currency devaluation and export performance in Bangladesh, researchers can gain insights into the impact of exchange rate policies on the country's international trade. This research can help policymakers and economists understand the effectiveness of exchange rate management strategies in promoting export growth, boosting competitiveness, and ultimately contributing to economic development in Bangladesh.

The concept emphasizes that Bangladesh manages its exchange rate dynamically, deviating from a flexible market system, to achieve specific economic objectives, such as improving export performance. Understanding the relationship between currency devaluation and export performance can assist in evaluating the effectiveness of this non-flexible exchange rate management approach.

Devaluation of Currency in Bangladesh Context

The devaluation of currency is a significant economic phenomenon that affects many countries, including Bangladesh. This research has explained some understanding on the relationship between the devaluation of currency and the export performance of Bangladesh. It sheds light on the extent of devaluation of currency related to the export performance of Bangladesh, the reasons for the out-performance of countries with similar economic situations, and how Bangladesh can learn from these better-performing countries. By delving into these issues, Analysis has been made on the intricacies of currency devaluation and its impact on Bangladesh's export sector.

The research provides insights and recommendations to enhance export competitiveness. Valuable findings for industry stakeholders, potential future researchers and academicians interested in understanding the dynamics of currency devaluation and its impact on export performance has been sought throughout the paper.

Export Performance in Bangladesh

³ Official Exchange Rate - Source: WB data

The export performance of Bangladesh holds immense significance as it contributes substantially to the country's economic growth and development. Bangladesh has gained global recognition for its major export sectors, including garments, jute, fish, and leather. This research delves into the relationship between the devaluation of currency and the export performance in the Bangladesh context, focusing on examining the dynamics of currency devaluation and its impact on the earnings of valuable foreign currency by major export sectors in Bangladesh.

Through an in-depth analysis of the relationship between currency devaluation and export performance, this study sheds light on the potential strategies that Bangladesh can adopt to improve its export competitiveness. By identifying the factors influencing export success in similar economies and studying the lessons learned from these countries, Bangladesh can strive for enhanced performance in diversified sectors and achieve sustainable economic growth.

As a nation heavily reliant on exports, Bangladesh faces a constant challenge to enhance its export performance to stimulate economic growth and alleviate poverty. The exchange rate, particularly its devaluation, plays a pivotal role in shaping the competitiveness of exporters in international markets. Understanding the relationship between currency devaluation and export performance is crucial for policymakers and economists seeking to devise effective strategies for sustainable economic development.

Currency devaluation can affect export performance in multiple ways. On one hand, it may decrease the relative price of exported goods, thereby improving competitiveness and boosting exports. On the other hand, devaluation increases the cost of imported inputs, potentially hindering export production. Assessing the magnitude and significance of this relationship is essential to formulate appropriate policies and interventions, as well as predicting the implications of currency devaluation for the nation's overall economic well-being.

Despite having similar economic situations, some countries like India and Bhutan consistently outperform Bangladesh in terms of export performance. Identifying the factors that contribute to their success can provide valuable insights into improving export performance for Bangladesh. By examining various economic, institutional, and policy factors, this research uncovers some underlying reasons behind the differential export performance outcomes among comparable countries, offering guidance to enhance its export competitiveness. Fig.3 shows the export performance of Bangladesh with a comparison to the world and India.

The following sectors contribute the major portion of export of Bangladesh.

Garments: (Around 85%)

Export of Goods and Services (% of GDP) World, India and Bangladesh

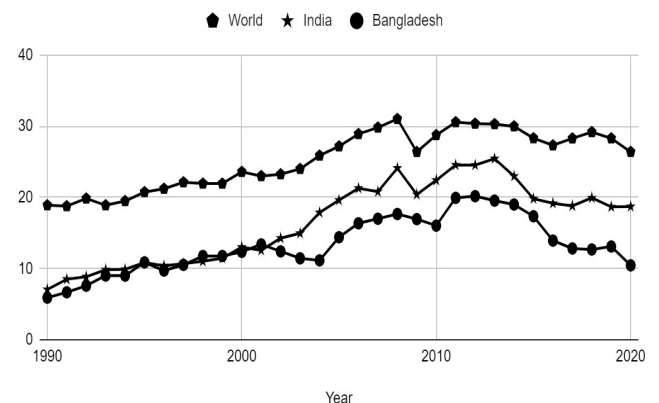


Fig.3 Export of Goods and Services (% of GDP) World, India and Bangladesh (Source: WB data)

The garments sector is one of the key drivers of Bangladesh's economy. It primarily includes the production and export of readymade garments, such as clothing, textiles, and apparel. This sector has experienced significant growth over the years, mainly due to low labor and production costs, favorable trade agreements, and increasing demand from global markets.

Jute: (Around 0.5%)

Jute is a natural fiber crop with significant historical importance in Bangladesh. Although the overall contribution to exports is relatively small, the jute sector holds potential for growth and sustainability. Jute exports primarily consist of raw jute, jute goods, and jute-based products. Efforts are being made to explore innovative uses of jute and promote its eco-friendly attributes.

Fish: (Around 2%)

Bangladesh's fish industry plays a vital role in the country's economy, contributing to both domestic consumption and exports. The sector includes both freshwater and marine fish production and exports various fishery products, including frozen fish, shrimp, and prawns. Bangladesh has significant potential for further development in fish processing and value addition to enhance its export performance.

Leather: (Around 2%)

The leather industry in Bangladesh encompasses the production and export of leather goods, footwear, and leather products. Despite challenges related to raw material availability and environmental concerns, the sector has been steadily growing. Efforts are being made to improve the quality of leather and expand marketing channels to boost export performance.

It is important to note that the devaluation of currency can affect the export performance of these sectors in different ways. While it can enhance competitiveness and potentially lead to increased exports, it may also lead to increased import

costs for raw materials and inputs, which can affect the profitability and sustainability of these sectors. Therefore, a comprehensive analysis of the devaluation effect needs to consider both the potential benefits and costs across these sectoral compositions of exports in Bangladesh. Fig.4 shows the export performance of Bangladesh with a comparison to the world and Bhutan.

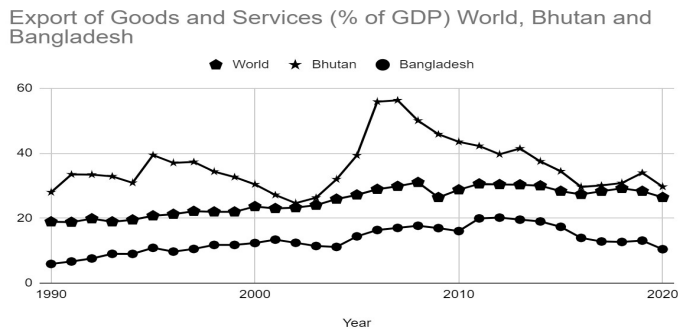


Fig.4 Export of Goods and Services (% of GDP) World, Bhutan and Bangladesh (Source: WB data)

II. LITERATURE REVIEW

A. Theoretical Framework

The devaluation of currency is often considered a tool used by countries to stimulate export performance. In the case of Bangladesh, a developing country heavily reliant on exports, understanding the relationship between devaluation and export performance is crucial. For unpacking this crucial issues some related important theories has been analysed.

1. The Mundell-Fleming Model

This model is widely used to analyze the relationship between currency devaluation and export performance. It suggests that devaluation of currency can lead to improvements in export performance by making export goods cheaper for foreign buyers, thus enhancing competitiveness. It also examines factors such as capital mobility, interest rates, and exchange rate expectations to provide insights into the extent of this relationship.

2. The Porter's Diamond Model

This model focuses on understanding the competitive advantage of nations in specific industries. It highlights factors such as factor conditions (e.g., skilled labor, infrastructure), demand conditions (e.g., domestic market size, customer preferences), related and supporting industries, and firm strategy, structure, and rivalry. Analyzing how other countries outperform Bangladesh in specific export sectors using this model can provide valuable insights and lessons for Bangladesh to improve its export performance. The research develops an understanding of related theories.

3. The Product Life Cycle Theory

This theory explores the reasons why countries with similar economic situations may perform better than Bangladesh in terms of export performance. It posits that products go through distinct stages of development, including introduction, growth, maturity, and decline. Countries that excel in certain stages due to factors like innovation, infrastructure, skilled labor, or marketing strategies can outperform others. Understanding this theory can help analyze why some countries with similar economic situations succeed in exporting certain products.

4. Exchange Rate Theory

Exchange rate theory serves as the foundation for analyzing the impact of currency devaluation on a country's export performance. This theory posits that a decrease in the value of a country's currency can boost export competitiveness by making domestic goods relatively cheaper in international markets. The study examines how changes in the exchange rate affect the export performance of Bangladesh.

5. Comparative Advantage Theory

The comparative advantage theory, developed by David Ricardo, explains why some countries perform better in exports compared to others. It suggests that a country should specialize in producing goods and services that it can produce at a lower opportunity cost than other countries. The research delves into the factors that contribute to the comparative advantage of countries with similar economic situations and explore why they outperform Bangladesh.

6. Institutional Theory

Institutional theory focuses on how formal and informal institutions shape economic behaviour and performance. The research examines the institutional factors, such as trade policies, regulations, and governance structures, that may influence export performance. By comparing the institutional frameworks of Bangladesh and countries with better export performance, the study to identifies potential areas for improvement.

7. Learning from Best Practices

The research also incorporates the concept of learning from better-performing countries. By studying the experiences and strategies of countries with successful export performance, Bangladesh can gain insights into the key drivers of their success. This aspect draws upon the theory of knowledge transfer, organizational learning, and adaptive capacity to understand how Bangladesh can adapt and implement successful strategies from other countries.

By integrating these theoretical frameworks, the research to provides a comprehensive analysis of the relationship between currency devaluation and export performance in Bangladesh. The findings may contribute to the existing body of

knowledge, helping to make informed decisions to enhance Bangladesh's export performance.

B. Empirical Studies

Some important empirical contributions to the related literature may be mentioned as follows:

1. The Relationship between Devaluation of Currency and Export Performance

(a) Exchange Rate Volatility

Studies such as Rashid, et al. (2019) and Uddin, et al. (2017) suggest that exchange rate volatility resulting from devaluation adversely affects trade and export performance in Bangladesh. However, Becker (2015) argues that short-term depreciation can initially lead to an increase in exports due to price competitiveness.

(b) Price Elasticity and Competitiveness

Bora et al. (2016) highlight that the low price elasticity of Bangladesh's exports may limit the positive impact of devaluation on export performance. Similarly, Siddiqui and Hasan (2018) argue that structural issues, such as a lack of product diversification and low technological capabilities, can hinder Bangladesh's competitiveness despite devaluation.

(c) Macroeconomic Factors

Ahmed et al. (2014) argue that the effectiveness of devaluation depends on other macroeconomic factors, such as inflation rates, interest rates, and the overall economic stability of the country.

2. Factors Influencing Better Performance in Similar Economic Situations

(a) Export Diversification

Countries with better export performance, such as Vietnam and Malaysia, have actively pursued export diversification strategies (Hakim et al., 2019). By expanding into different markets and sectors, these countries reduce their reliance on a limited number of export goods, thereby ensuring better resilience to external shocks.

(b) Productivity and Technology Upgrades

Successful countries, like China and Singapore, have focused on improving productivity and technological capabilities, enabling them to produce higher-value goods (Khan and Hossain, 2018). These advancements enhance competitiveness in global markets, regardless of exchange rate fluctuations.

(c) Institutional Support

Strong institutions, including legal frameworks, export promotion agencies, and transparent trade policies, play a crucial role in supporting export-oriented growth (Siddiqui and Islam, 2016). Sri Lanka and Thailand serve as examples where better institutional support has contributed to improved export performance.

3. Lessons Bangladesh Can Learn

(a) Diversification Strategy

Bangladesh can learn from countries like Vietnam and Malaysia and work towards diversifying its export base to reduce vulnerability to global market fluctuations.

(b) Technology Upgrades

Emulating the experiences of China and Singapore, Bangladesh can focus on investing in research and development, promoting innovation, and upgrading its technological capabilities to foster export competitiveness.

(c) Institutional Reforms

By strengthening institutional support, Bangladesh can create an enabling business environment, improve trade facilitation, and provide comprehensive support to exporters.

The literature suggests that the devaluation of currency is not the sole determinant of export performance in Bangladesh. The country faces challenges related to exchange rate volatility, low price elasticity, and structural limitations. To enhance export performance, Bangladesh can learn from countries that have successfully pursued export diversification, improved productivity and technology, and developed strong institutions. Implementing strategic reforms based on these lessons could facilitate sustainable export growth and contribute to Bangladesh's overall economic development.

III. RESEARCH METHODS

This paper investigates the relationship between the devaluation of currency and export performance in Bangladesh. By incorporating both quantitative and qualitative data, It provides a comprehensive understanding of the factors influencing Bangladesh's export performance.

A. Data Sources

A macroeconomic dataset of Bangladesh spanning the time period from 1990 to 2020 has been collected. Secondary datasets from World Bank (WB), International Monetary Fund (IMF), Bangladesh Bank (BB), Export Promotion Bureau (EPB), and Bangladesh Bureau of Statistics (BBS) has been utilized. This dataset includes variables such as currency devaluation, export performance indicators, GDP growth rate, inflation rate, trade policies, and other relevant economic indicators.

Relevant descriptive statistics has been analysed. Regression analysis has been conducted to determine the relationship between currency devaluation and export performance. Additionally, other relevant statistical tests and econometric models has been employed to identify the impact of various factors on exports.

Document analysis can provide valuable insights. To understand why countries with similar economic situations perform better than Bangladesh, I have conducted comparative case studies and examined various factors such as economic policies, trade agreements, infrastructure development, and government support. This analysis can shed light on the specific aspects where Bangladesh lags behind.

To learn from countries that are performing better, I analysed policy documents, reports, and success stories of countries with strong export performance. This can provide insights into best practises, strategies, and policies that Bangladesh can adopt to improve its export performance. Overall, applying document analysis methods helped me better understand the relationship between currency devaluation and export performance in Bangladesh and identify opportunities for improvement.

B. Sample Design

In-depth interviews has been conducted with key stakeholders in the export sector of Bangladesh, such as government officials, industry experts, exporters, and representatives from relevant trade organizations. These interviews provide insights into the challenges faced by Bangladesh and explore potential solutions.

A comparison with countries of similar economic situations but better export performance has also been conducted. Comparative analysis has been performed focusing on identifying the key factors contributing to their success, such as GDP per capita, trade policies, investment in infrastructure, innovation, and government support.

C. Description of Variables

(a) Exchange Rate

This variable refers to the rate at which one currency is exchanged for another. In the context of this study, it represents the value of the Bangladeshi currency (taka) relative to other currencies, particularly those of Bangladesh's trading partners. It is used to assess the impact of currency depreciation on export performance. Devaluation is currency is calculated from this variable.

(b) Interest Rate

This variable represents the cost of borrowing money and is an important factor in determining investment levels. In the context of this research, it is relevant to explore how changes in interest rates impact export performance in Bangladesh, as

they can influence borrowing costs for exporters and overall investment in export-related activities. Table 2 describes the statistics of lending interest rate (IR) in Bangladesh throughout the sample period.

TABLE 2 Lending Interest Rate in Bangladesh

Year	Lending Interest Rate	Year	Lending Interest Rate	Year	Lending Interest Rate
1990	14.85	2001	12.82	2011	13.32
1991	14.77	2002	12.61	2012	13.94
1992	13.92	2003	12.04	2013	13.59
1993	13.92	2004	10.40	2014	12.95
1994	13.45	2005	10.62	2015	11.71
1995	12.99	2006	11.66	2016	10.41
1996	12.99	2007	12.64	2017	9.54
1997	12.99	2008	12.89	2018	9.65
1998	12.93	2009	13.33	2019	9.56
1999	13.10	2010	12.22	2020	8.30
2000	12.76				

Source: World Bank⁴

(c) Inflation

This variable refers to the general increase in the prices of goods and services over time. In the context of the study, it is necessary to consider the impact of inflation on export performance, since price changes can affect the competitiveness of exports in international markets.

Inflation is the sustained increase in the general price level of goods and services in an economy over a period of time. In Bangladesh, inflation has been a persistent challenge, often driven by factors such as rising commodity prices, increasing wages, and supply shortages. The government has implemented various measures to control inflation, including monetary policy adjustments, fiscal policy measures, and regulatory interventions.

Bangladesh Bank, manages the exchange rate policy to stabilize the currency. The exchange rate is determined by a combination of market forces and central bank interventions. Inflation can influence currency devaluation in several ways.

Firstly, high inflation erodes the purchasing power of a currency, leading to a decrease in its value relative to other currencies. This can lead to devaluation as the central bank aims to maintain the competitiveness of exports.

Secondly, inflation can put pressure on the central bank to increase interest rates, which can attract foreign capital inflows and strengthen the currency. This, in turn, may lead to a devaluation to support export competitiveness. Table 3 describes the statistics on the inflation rate (IF) in Bangladesh throughout the study period.

⁴ Lending rate is the bank rate that usually meets the short- and medium-term financing needs of the private sector. This rate is normally differentiated according to creditworthiness of borrowers and objectives of financing. The terms and conditions attached to these rates differ by country, however, limiting their comparability.

TABLE 3 Inflation Rate in Bangladesh

Year	Inflation Rate	Year	Inflation Rate	Year	Inflation Rate
1990	6.13	2001	2.01	2011	11.40
1991	6.36	2002	3.33	2012	6.22
1992	3.63	2003	5.67	2013	7.53
1993	3.01	2004	7.59	2014	6.99
1994	5.31	2005	7.05	2015	6.19
1995	10.30	2006	6.77	2016	5.51
1996	2.38	2007	9.11	2017	5.70
1997	5.31	2008	8.90	2018	5.54
1998	8.40	2009	5.42	2019	5.59
1999	6.17	2010	8.13	2020	5.69
2000	2.21				

Source: World Bank⁵

Inflation has a significant positive effect on the devaluation of the Bangladeshi currency. It is found that currency devaluation has a positive impact on export performance (Ahmed et al. 2016). A stable exchange rate is crucial for export growth, as excessive volatility can hinder exporters' ability to plan and make long-term investment decisions. (Uddin and Alam 2015)

General measures for control of inflation are maintaining price stability by implementing effective monetary and fiscal policies to control inflation, ensuring a stable exchange rate regime to provide predictability and reduce uncertainties for exporters, diversifying export products and markets to reduce reliance on specific sectors and countries, enhancing export competitiveness through investments in infrastructure, technology, and skills development.

(d) Foreign Direct Investment (FDI)

FDI refers to international investment made by a company (or individual) to establish business operations or acquire assets in a foreign country. In the context of Bangladesh's export performance, examining the role of FDI is important, as it can contribute to technological advancements, production capacity, and access to new markets, all of which can have implications for export growth.

In Bangladesh, FDI has been promoted to attract capital, technology, and expertise in key sectors such as manufacturing, services, and infrastructure development. The government has implemented various policies to improve the investment climate and encourage FDI inflows into the country.

FDI inflows contribute to the foreign exchange reserves of a country, which can strengthen the currency value. This may reduce the need for currency devaluation. FDI can lead to an increase in export-oriented industries, which in turn can boost the demand for the country's currency. This increased demand can help to maintain the currency value without devaluation.

⁵ Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. The Laspeyres formula is generally used.

FDI can bring in new technologies, capital, and managerial expertise that can enhance the productivity and competitiveness of local firms. This can lead to an increase in export volumes and values. FDI can stimulate the growth of export-oriented industries, such as manufacturing and textiles, by creating backward linkages with domestic suppliers, thereby supporting export growth.

Rashid et al. (2018) found that FDI has a positive impact on export performance in Bangladesh. They discovered that FDI inflows stimulate increased export-oriented activities, contributing to export growth. Chowdhury et al. (2020) investigated the impact of FDI on currency devaluation in Bangladesh. They found that FDI inflows significantly affect the exchange rate, as increased foreign investment leads to higher demand for the domestic currency, potentially preventing or mitigating currency devaluation. Table 4 describes the statistics (log value) of Foreign Direct Investment (FDI) in Bangladesh throughout the sample period.

TABLE 4 Foreign Direct Investment (FDI) in Bangladesh

Year	FDI	Year	FDI	Year	FDI
1990	0.010	2001	0.145	2011	0.983
1991	0.004	2002	0.096	2012	1.188
1992	0.012	2003	0.446	2013	1.735
1993	0.042	2004	0.689	2014	1.469
1994	0.033	2005	1.171	2015	1.451
1995	0.005	2006	0.636	2016	0.879
1996	0.029	2007	0.818	2017	0.616
1997	0.289	2008	1.450	2018	0.754
1998	0.380	2009	0.879	2019	0.543
1999	0.350	2010	1.069	2020	0.408
2000	0.525				

Source: World Bank (log value)⁶

Policymakers usually deals with various measures such as encouraging and facilitating foreign direct investment in export-oriented industries, implementing policies that promote technology transfer and knowledge spillovers from foreign investors to domestic firms, strengthening institutional frameworks to protect the rights and interests of foreign investors, developing strategies to diversify FDI sources to reduce dependency on specific countries or regions.

(e) Balance of Payments (BoP)

BoP represents the record of a country's economic transactions with the rest of the world over a specific period. It includes the current account (exports, imports, and other payments) and capital and financial account (investments and loans). BoP is a useful variable in assessing how changes in currency devaluation and other factors impact the overall balance of trade, which in turn can affect export performance.

⁶ Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP.

The BoP consists of the current account, capital account, and financial account. In Bangladesh, the BoP is affected by factors such as exports, imports, remittances, foreign direct investment, and international financial transactions. The BoP provides important information about a country's external trade and financial relationships, as well as the overall balance between inflows and outflows of foreign exchange.

A persistent current account deficit (excess of imports over exports) can put pressure on the domestic currency, potentially leading to devaluation. This is because a deficit suggests that more foreign currency is being demanded for imports than earned from exports, creating downward pressure on the currency value. A surplus in the financial account (inflows of foreign investment) can strengthen the currency, potentially reducing the need for devaluation.

A favorable balance of payments, characterized by a surplus in the current account and inflows of foreign investment, can support export growth. A surplus in the current account indicates that a country is exporting more than it imports, leading to increased export revenues and a favorable trade balance. Additionally, foreign investment can contribute to the development of export-oriented industries and enhance the competitiveness of domestic firms.

Islam et al. (2019) found that a surplus in the current account positively influences export performance in Bangladesh. They concluded that maintaining a favorable current account balance is crucial for sustained export growth. Bhattacharya and Hayakawa (2019) investigated the impact of foreign direct investment on export performance in Bangladesh. They found a positive relationship between foreign investment inflows and export growth, indicating that the BoP plays a role in supporting export performance through attracting foreign investment. Table 5 describes the statistics (log value) of Balance of Payments (BoP) in Bangladesh throughout the sample period.

TABLE 5 Balance of Payments (BoP) in Bangladesh

Year	BoP	Year	BoP	Year	BoP
1990	19.23	2001	(-ve)	2011	(-ve)
1991	19.89	2002	20.02	2012	21.99
1992	20.27	2003	20.61	2013	22.39
1993	20.36	2004	20.04	2014	22.24
1994	20.35	2005	(-ve)	2015	22.41
1995	(-ve)	2006	20.58	2016	22.35
1996	(-ve)	2007	21.04	2017	20.26
1997	(-ve)	2008	21.74	2018	(-ve)
1998	19.48	2009	22.19	2019	20.27
1999	(-ve)	2010	20.74	2020	20.95
2000	(-ve)				

Source: World Bank (log value)⁷

⁷ Reserves and related items is the net change in a country's holdings of international reserves resulting from transactions on the current, capital, and financial accounts. Reserve assets are those external assets that are readily available to and controlled by monetary authorities for meeting balance of payments financing needs, and include holdings of monetary gold, special drawing rights (SDRs), reserve position in the International Monetary Fund (IMF), and other reserve assets. Also included are net credit and loans from the IMF (excluding reserve position) and total exceptional financing. Data are in current U.S. dollars.

Steps regarding BoP are promoting export-oriented industries and diversifying export markets to improve the current account balance, implementing policies that attract foreign direct investment to enhance export competitiveness and support export-oriented industries, enhancing export promotion and marketing efforts to increase export volumes and values, monitoring and managing capital flows to maintain a balanced and sustainable BoP position.

(f) GDP Per Capita

This variable represents the economic output (Gross Domestic Product) per person in a country. In the context of this research, it is relevant to consider the relationship between GDP per capita and export performance, as a higher GDP per capita can indicate increased purchasing power and potentially higher demand for imports, thus impacting export opportunities.

These variables helps in investigating the extent to which currency devaluation is related to Bangladesh's export performance and identifying other factors that contribute to export performance beyond just currency devaluation. Table 6 describes the statistics of GDP per capita in Bangladesh throughout the sample period.

TABLE 6 GDP per capita in Bangladesh

Year	GDP per capita	Year	GDP per capita	Year	GDP per capita
1990	294.90	2001	410.05	2011	856.38
1991	283.38	2002	407.96	2012	876.82
1992	284.97	2003	440.71	2013	973.77
1993	292.43	2004	469.12	2014	1108.51
1994	292.08	2005	492.81	2015	1236.00
1995	322.09	2006	503.54	2016	1659.96
1996	387.38	2007	552.34	2017	1815.61
1997	395.32	2008	630.11	2018	1963.41
1998	401.97	2009	698.52	2019	2122.08
1999	404.49	2010	776.86	2020	2233.31
2000	413.10				

Source: World Bank⁸

D. Model Specifications

Both quantitative and qualitative approaches has been utilized. For the quantitative model, following equations has been developed using the proposed variables.

(a) **The Dependent Variable:** Export Performance (EP)

(b) **Independent Variable:** Exchange Rate (ER), Interest Rate (IR), Inflation (IF), Foreign Direct Investment (FDI), Balance of Payment (BoP), GDP Growth Rate, and other

⁸ (GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current U.S. dollars.)

observed variables has been described with convenient notation.

For developing equation Export Performance has been assumed to be the function of other variables.

Export Performance (EP) = f {Exchange Rate, Interest rate, Inflation, Foreign Direct Investment, Balance of Payment, GDP Per Capita}

(c) Equation for Regression Analysis:

$$\text{Export Performance (Y)} = \beta_1 + \beta_2(\text{Exchange Rate}) + \beta_3(\text{Interest rate}) + \beta_4(\text{Inflation}) \\ + \beta_5(\text{Foreign Direct Investment}) + \beta_6(\text{Balance of Payment}) + \beta_7(\text{GDP Per capita}) + \varepsilon$$

I have used the tools such as indepth interviews, expert interviews, semi-structured interviews, focused group discussion, document analysis, comparative analysis etc. for qualitative analysis.

The findings from the quantitative and qualitative data has been compared and triangulated to provide a comprehensive understanding of the relationship between currency devaluation and export performance in Bangladesh. Based on the combined findings, policy recommendations has been formulated to enhance Bangladesh's export performance. These recommendations has been drawn on best practices identified through the comparative analysis with better-performing countries.

By combining quantitative and qualitative methods, this mixed methodology research sheds light on the relationship between currency devaluation and export performance in Bangladesh. The findings not only establishes the extent of this relationship but also explore why some countries with similar economic situations performing better. Furthermore, the study provides actionable recommendations for Bangladesh to learn from these countries and improve its export performance.

IV. RESULTS AND DISCUSSION

The results have explored a general overview of intriguing multi-directional conclusions. The export performance has been found to have no significant relationship with the devaluation of currency. The export value index as percentage of GDP and percentage of devaluation was accounted for analysing the relationship. Fig.5 shows the trend of export performance against changes in devaluation.

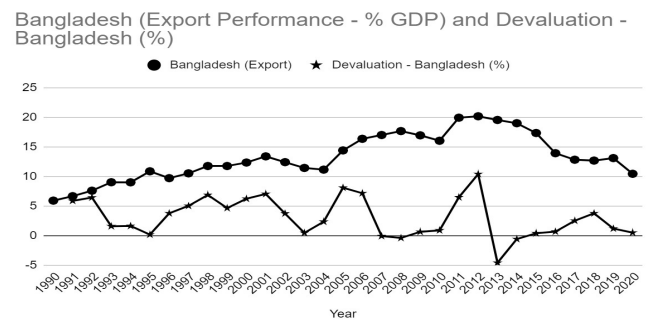


Fig.5 Devaluation and Export Performance in Bangladesh⁹.

The volatility of currency devaluation has been measured using deviation which provide a quantifiable representation of the fluctuations in the value of the Bangladeshi Taka against major international currency, US Dollar over the selected period. A correlation analysis assesses the strength and direction of the relationship and provide insights into how changes in currency value have influenced the country's export sector.

The purpose behind devaluation is often multifaceted. One primary objective is to make a country's exports more competitive in international markets. When a currency is devalued, it becomes relatively cheaper compared to other currencies. As a result, the prices of exported goods decrease, making them more attractive to foreign buyers. This can potentially lead to an increase in export volumes, boost revenue from exports, and improve the overall export performance of a country.

A. Fluctuations of Devaluation

The differential of data of devaluation provides the following graph. Log value of the percentage of devaluation were used in STATA for getting the stationary nature of the devaluation. Upto 5th difference observation has been used to get the estimation for devaluation.

The data provide insights into how fluctuations in the value of the Bangladeshi currency (Taka) have affected the country's export sector during the sample period. World Bank, International Monetary Fund (IMF), Bangladesh Bank, and Bangladesh Bureau of Statistics provide comprehensive and accurate macroeconomic data on currency exchange rates and export performance.

A time-series analysis has been performed to identify any patterns or trends. This analysis includes techniques such as trend analysis and time-series decomposition to understand the underlying patterns and dynamics. STATA has been utilized to conduct the data analysis, perform statistical tests, and visualize the results. These tools offer a wide range of functions and libraries specifically designed for data analysis and time-series modelling. Fig 6 depicts the nature of volatility of percentage of devaluation over time.

⁹ Source: Author's calculation from World Bank data. Log value of Export Value Index and log value of percentage of devaluation of taka has been used

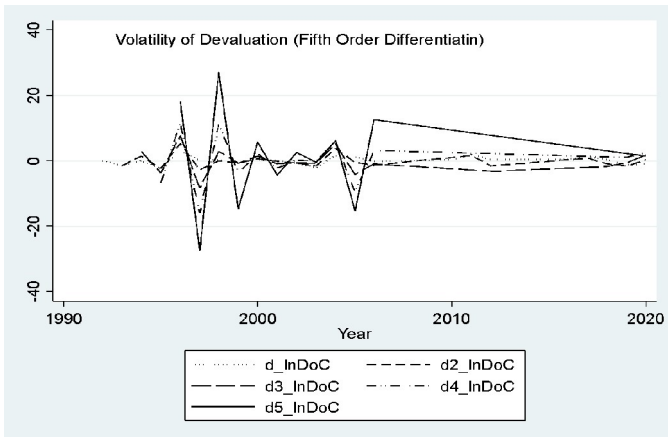


Fig.6 Stationary nature of Devaluation in Bangladesh¹⁰.

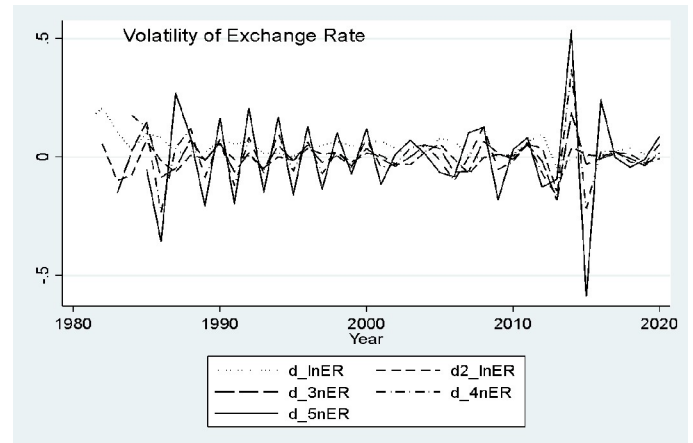


Fig.8 Stationary nature of exchange rate in Bangladesh.

B. Fluctuations of Exchange Rate

The nominal exchange rate, real exchange rate, exchange rate on PPP basis also shows the parallel trend with the export performance indicating no significant influence on it. Fig.7 shows the trend of export performance with respect to different types of exchange rate over the sample period.

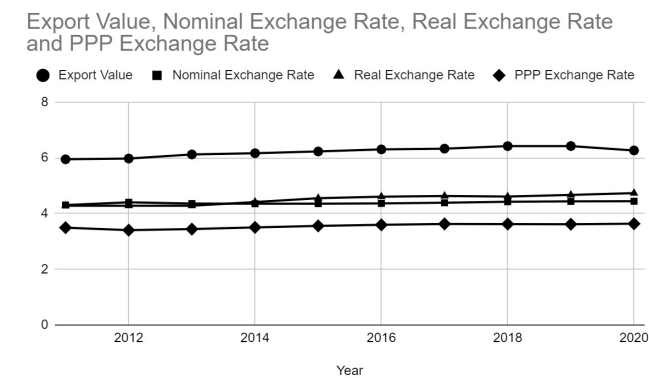


Fig.7 Export performance and types of exchange rate¹¹.

Historical data on currency devaluation events, government policies, and their effects on export performance has been analysed. Key indicators include the Official Exchange Rate Index (ERI) and Real Nominal Exchange Rate. A mixed-methods approach involving quantitative data analysis and literature review primarily focuses on examining exchange rate data, currency devaluation trends, and export performance indicators over a specific period. Additionally, academic studies, reports, and expert opinions related to the subject matter has been consulted.

Export performance indicators, such as total export value, sector-specific exports, and foreign exchange earnings, have been analysed alongside exchange rate fluctuations and currency devaluation. Fig.8 depicts the nature of volatility of log value of nominal exchange rate over time.

¹⁰ Source: Authors calculation on STATA software from World Bank Data.

¹¹ Source: Author's calculation from World Bank data. Log value of Export Value Index and log value of nominal exchange rate, real exchange rate and ppp exchange rate has been used.

C. Responses to Major Fluctuations

Statistical techniques, such as regression analysis, correlation analysis, and time series analysis, has been tried to establish relationships between exchange rate fluctuations, currency devaluation, and export performance. Through the analysis of exchange rate fluctuations, currency devaluation, and export performance data, this study has attempted to uncover the relationship between these factors in Bangladesh. By referencing academic studies, reports, and expert opinions, this analysis strives to provide insights into the dynamics influencing the country's export sector. Table 7 describes major policy response towards devaluation.

TABLE 7 Major Devaluation in Bangladesh		
Year	Devaluation (%)	Reason / Response
1991	16	as part of its economic reforms aimed at addressing the balance of payments crisis
1996	7	to reduce the trade deficit and promote export competitiveness
2001	7	to address the trade imbalance and boost exports
2003	3	to stabilize the exchange rate and support export-oriented industries
2009	4	to counterbalance the impact of the global economic recession and bolster exports
2011	1	to help boost exports and improve the competitiveness of Bangladesh's products in international markets
2013	4.7	to counteract the impact of a depreciating Indian rupee and maintain export competitiveness
2015	1.3	to stabilize the exchange rate following significant fluctuations in regional currencies
2019	2.3	to support export-oriented industries and enhance competitiveness
2020	3	response to the COVID-19 pandemic

(Devaluation as a measure of policy reform)

D. Interest Rate Responses

Devaluation of currency along with co-integration effect of interest rate, and many other macroeconomic variables are not strictly conclusive to any stationary figure. This study has also found an inverse relationship between interest rate and export performance as the entrepreneurs are mostly dependant on bank financing for export credit line as demonstrated in the following figure. (Fig.9)

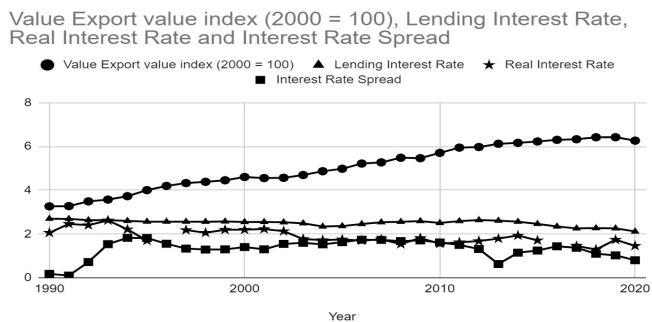


Fig.9 Export performance and interest rates in Bangladesh.

The decomposition of the lending rate vividly shows the trend of the relationship between the interest rate and export performance. The following figure shows that export performance increases when the interest rate shows a downward trend. (Fig.10)

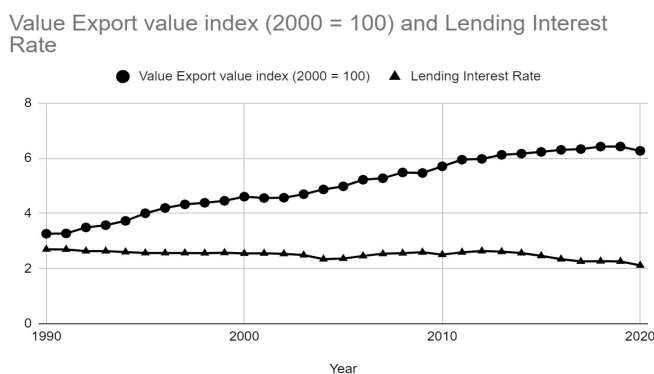


Fig.10 Export performance and lending interest rate.

E. Responses to GDP Per Capita

Some results has been found that devaluation of currency along with co-integration effect of interest rate, inflation, foreign direct investment, balance of payments and GDP per capita has found no significant impact on Bangladesh's export performance, suggesting that other factors may play a more significant role. A sample decomposition of GDP per capita is shown in Fig, 11 below.

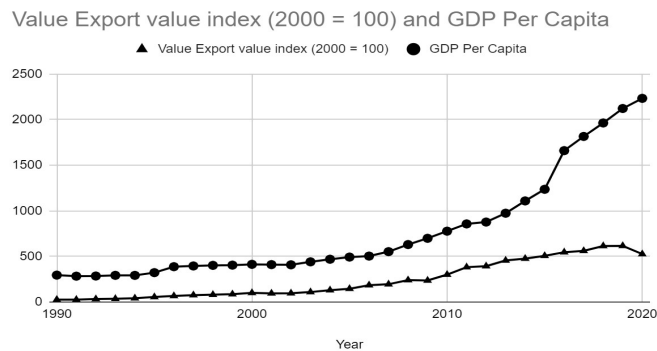


Fig.11 Export performance and GDP per capita.

F. Co-integration of Variables and Processes in Exchange Rate Pass-Through

The process of currency devaluation involves various steps and methods that are typically undertaken by the central bank or monetary authority of a country. The specific processes and methods of currency devaluation include:

The central bank or monetary authority decides to devalue the currency, typically in response to economic factors such as trade imbalances, inflation, or the need to boost exports. This decision is often made after careful analysis and consultation with relevant stakeholders. The central bank then announces the decision to the public and financial markets.

Once the decision is announced, the central bank adjusts the exchange rate of the currency against other currencies. This adjustment can be done through a fixed exchange rate system, where the central bank directly sets the new exchange rate, or through a managed float system, where the exchange rate is adjusted based on market forces within certain predetermined limits.

In some cases, the central bank may intervene in the foreign exchange market to actively buy or sell its own currency. By purchasing its currency in the market, the central bank aims to increase the demand and raise its value. Conversely, it can sell its currency to reduce its value.

The central bank may also use various monetary policy tools alongside currency devaluation to support the process. These tools can include adjusting interest rates, reserve requirements, or implementing open market operations to influence liquidity in the economy and manage the impact of devaluation on inflation and other macroeconomic variables.

Throughout the devaluation process, clear communication and transparency are crucial. The central bank often provides regular updates, guidance, and explanations to ensure stakeholders, including businesses, investors, and the public, understand the rationale, goals, and potential implications of the devaluation.

The determinants can include economic factors such as inflation rates, interest rates, and balance of payments, as well

as external factors such as global market conditions and trade policies. This study investigates the influence of both internal and external factors on exchange rate movements. Internal factors can include changes in domestic economic conditions, government policies, and political stability, while external factors can include global economic developments, commodity prices, and capital flows. (Fig.12)

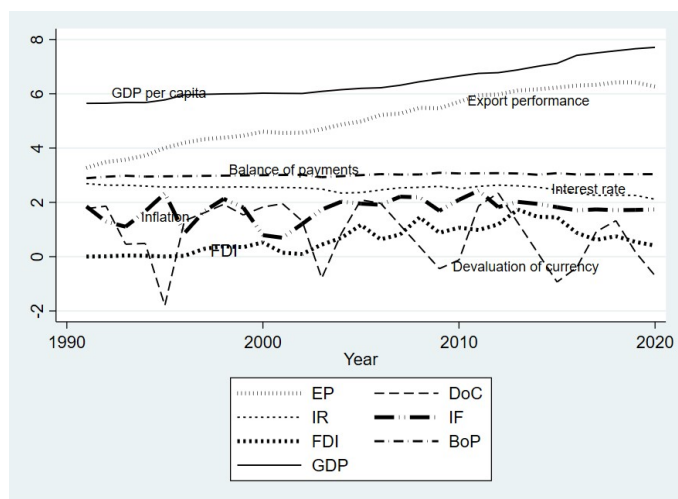


Fig.12 Export Performance and Co-integration of variables¹²

G. Countries with Similar Responses to Devaluation

The specific processes and methods of currency devaluation can vary depending on the country, its exchange rate regime, and the prevailing economic conditions. Additionally, implementing currency devaluation requires careful evaluation of potential risks and coordination with other policy measures to ensure overall stability and achieve desired outcomes.

Countries with similar economic situations such as India and Bhutan may have implemented more effective economic policies, such as diversification of exports, investment in infrastructure, or targeted support for industries, leading to better export performance.

Better-performing countries may have higher levels of productivity compared to Bangladesh, which allows them to manufacture and export goods more efficiently and competitively.

Better performing countries may have access to advantageous trade agreements or preferential trade arrangements that provide them with better market access and lower trade barriers.

H. Regression Estimations with Proposed Equation

The regression run according to the equation proposed in methodology provides the following estimation. The estimation also shows that there is no significant relationship

¹² Sample variables includes Devaluation of currency, Interest Rate, Inflation, Foreign Direct Investment, Balance of Payments (loglogvalue) GDP Per Capita (Source: Author's Calculation from World Bank Data)

between exchange rate and export performance. Fig.13 shows the Regression estimation of Export Performance with respect to Exchange Rate, Interest Rate, Inflation, Foreign Direct Investment, Balance of Payment and GDP per capita in a tabular form.

```
. reg EP ER IR IF FDI BoP GDP
```

Source	SS	df	MS	Number of obs	=	17
Model	18.1948511	6	3.03247519	F(6, 10)	=	424.10
Residual	.071503588	10	.007150359	Prob > F	=	0.0000
				R-squared	=	0.9961
				Adj R-squared	=	0.9937
Total	18.2663547	16	1.14164717	Root MSE	=	.08456

EP	Coefficient	Std. err.	t	P> t	[95% conf. interval]
ER	1.895929	.2637064	7.19	0.000	1.308355 2.483504
IR	-.2098298	.3967368	-0.53	0.608	-1.093814 .6741548
IF	-.0276561	.1054849	-0.26	0.799	-.2626911 .2073789
FDI	.3611458	.1130886	3.19	0.010	.1091688 .6131228
BoP	.0298592	.0369743	0.81	0.438	-.0525246 .1122431
GDP	.5227085	.1059269	4.93	0.001	.2866887 .7587283
_cons	-6.357583	1.860256	-3.42	0.007	-10.50249 -2.212674

Fig.13 Regression estimation of export performance with exchange rate and other variables.

From the regression estimation, the proposed equation can be rewritten as follows:

$$Export\ Performance\ (Y) = \beta_1 + \beta_2(Exchange\ Rate) + \beta_3(Interest\ rate) + \beta_4(Inflation) + \beta_5(Foreign\ Direct\ Investment) + \beta_6(Balance\ of\ Payment) + \beta_7(GDP\ Per\ capita) + \epsilon$$

$$Export\ Performance\ (EP) = -6,36 + 1.90\ Exchange\ Rate\ (ER) - 0.21\ Interest\ Rate\ (IR) - 0.03\ Inflation\ (IF) + 0.36\ Foreign\ Direct\ Investment\ (FDI) + 0.03\ Balance\ of\ Payment\ (BoP) + 0.52\ GDP\ Per\ Capita + \epsilon$$

If we run the regression with devaluation of currency instead of mere nominal exchange rate the STATA provides the following estimation. In this case the equation can be expressed as-

$$Export\ Performance\ (EP) = 3.65 + 0.06\ Devaluation\ of\ Currency\ (DoC) - 2.19\ Interest\ Rate\ (IR) - 0.02\ Inflation\ (IF) + 1.01\ Foreign\ Direct\ Investment\ (FDI) + 0.15\ Balance\ of\ Payment\ (BoP) + 0.51\ GDP\ Per\ Capita + \epsilon$$

Fig.14 shows the regression estimation of Export Performance with respect to Devaluation, Interest Rate, Inflation, Foreign Direct Investment, Balance of Payment and GDP per capita in a tabular form.

```
. reg EP DoC IR IF FDI BoP GDP
```

Source	SS	df	MS	Number of obs	=	13
Model	15.3956497	6	2.56594161	F(6, 6)	=	50.99
Residual	.301957087	6	.050326181	Prob > F	=	0.0001
				R-squared	=	0.9808
				Adj R-squared	=	0.9615
Total	15.6976067	12	1.3081339	Root MSE	=	.22433

EP	Coefficient	Std. err.	t	P> t	[95% conf. interval]
DoC	.0625454	.0723268	0.86	0.420	-.1144318 .2395226
IR	-2.188428	1.15559	-1.89	0.107	-5.016055 .6391994
IF	-.0172331	.3371475	-0.05	0.961	-.8422032 .8077371
FDI	1.012506	.4033904	2.51	0.046	.0254449 1.999566
BoP	.1458469	.103025	1.42	0.207	-.1062462 .39794
GDP	.512984	.3128735	1.64	0.152	-.2525899 1.278558
_cons	3.654884	5.417893	0.67	0.525	-9.602224 16.91199

Fig.14 Regression estimation of export performance with devaluation of current and other variables.

I. The Mundell-Fleming Model

This model is widely used to analyze the relationship between currency devaluation and export performance. It suggests that devaluation of currency can lead to improvements in export performance by making export goods cheaper for foreign buyers, thus enhancing competitiveness. It also examines factors such as capital mobility, interest rates, and exchange rate expectations to provide insights into the extent of this relationship.

The IS-LM-BP Curve

It is necessary to make distinctions between perfect and imperfect capital mobility, as well as fixed and flexible exchange rates, in the model. In each of these situations, it may be observed what happens to the economy when both an expansionary monetary and fiscal policy is implemented. It may be observed through Mundell's model, which is concerned with complete mobility. Following that, it may also be observed at Fleming's imperfect mobility model.

Investment is not continuous and is primarily determined by two factors: the volume of sales and interest rates. If a company's sales expand, it will need to invest in new manufacturing plants to enhance output; this is a positive relationship. In terms of interest rates, the higher they are, the more expensive investments become, resulting in a negative link between interest rates and investment.

The IS¹³ curve is obtained by keeping in mind the equivalence between production and demand, which establishes the equilibrium in the products market, and observing the effect of interest rates. For each interest rate, this curve reflects the value of equilibrium.

An increase in interest rates will reduce output due to the effect on investment. The link between liquidity and money is represented by the LM¹⁴ curve. The interest rate in an open economy is determined by the equilibrium of supply and demand for money: $M/P=L(i,Y)$, where M is the amount of money supplied, Y is real income, and i is the real interest rate, and L is the demand for money, which is a function of i and Y. Furthermore, the exchange rate must be examined since it influences money demand (investors may opt to purchase or sell bonds in a country based on the exchange rate).

The money market's equilibrium indicates that, given the amount of money, the interest rate is an increasing function of output level. When output rises, so does the demand for money, but as previously stated, the money supply is fixed. As a result, interest rates should climb until the opposing impacts on money demand are neutralized; people will desire more money due to higher income and less due to rising interest rates.

¹³ The IS Curve represents various combinations of interest and income along which the goods market is in equilibrium.

¹⁴ The LM curve shows the combinations of interest rates and levels of real income for which the money market is in equilibrium.

The Mundell Trilemma

The Mundell–Fleming model has been used to argue that an economy cannot simultaneously maintain a fixed exchange rate, free capital movement, and an independent monetary policy. An economy can only maintain two of the three at the same time (Fig.15).

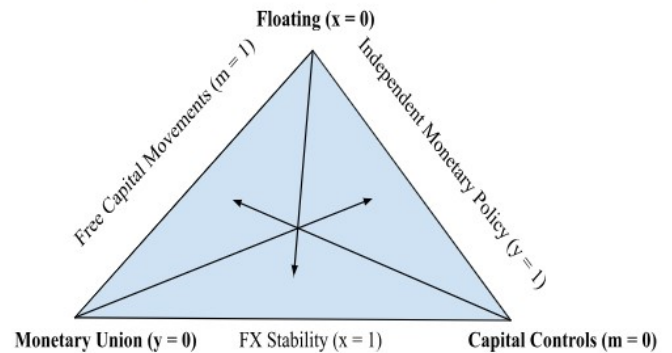


Fig.15 The trilemma triangle.

The Mundell-Fleming model is an immensely helpful tool for analyzing open economies. Many textbooks and papers argue for and against each of these models. However, there is no denying that the world is moving toward liberalizing international commerce and capital flows (mostly through WTO accords), which would lead us to concur with Mundell. Monetary policy will only operate with flexible exchange rates under perfect capital mobility, but fiscal policy will only work with fixed exchange rates.

J. The Porter's Diamond Model

This model focuses on understanding the competitive advantage of nations in specific industries. It highlights factors such as factor conditions (e.g., skilled labor, infrastructure), demand conditions (e.g., domestic market size, customer preferences), related and supporting industries, and firm strategy, structure, and rivalry. Analyzing how other countries outperform Bangladesh in specific export sectors using this model can provide valuable insights and lessons for Bangladesh to improve its export performance. Fig.16 shows the Porter's diamond model of comparative advantage.

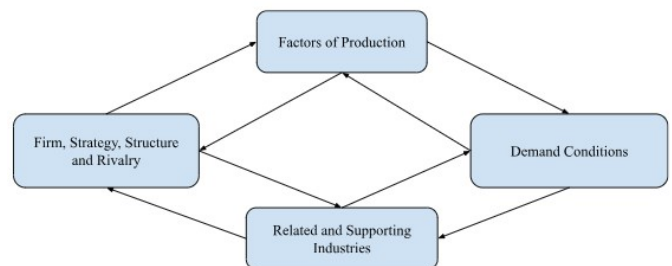


Fig.16 Determinants of the National Advantage

Michael Porter developed the diamond theory of national advantage, which claims that the characteristics of one's native country are critical for an organization's success in worldwide markets. This theory is known as the diamond hypothesis because it is shown as a diamond framework. It outlines the variables that lead to the success of global organizations. These are known as the determinants of national advantage. Table 8 describes some of the empirical studies which are multi-directional in nature.

TABLE 8: A Brief Summary of Related Studies.

Authors and date	Variable used	Country, coverage and method	Findings
Duasa, 2009	Volume of exports and imports, REER ¹⁵ (Real Effective Exchange Rate), and trade balance	Malaysia; annual data (1999–2006); TAR and M-TAR	A long-run asymmetric cointegration exists between REER and exports
Babatunde, 2009	Merchandise exports, REER, average tariff rate, exchange rate, and imports of raw materia	Sub-Saharan Africa; annual data (1980–2005); panel-fixed effect and random effect	REER stimulates exports
Njong, 2008	Real exports, real GDP, REER, import over total international trade, export over total international trade, lag exports, and lag FDI stock	Cameroon; annual data (1980–2003); AR (p)	FDI and REER significantly influence exports
Sahoo, 2006	FDI, world income growth, infrastructure index, domestic demand, exports, REER, and GDP growth	Bangladesh, India, Pakistan, Sri Lanka, and Nepal; annual data (1975–2003); panel-fixed effect	FDI positively influences exports
Arize, 1995	Log real exports, log REER, and log real foreign income	USA; monthly data (1971 : 2–1991 : 3); error correction, ARCH, and linear moment	(i) A long-run equilibrium relationship exists. (ii) Exchange rates and exports are negatively associated

Source: Bishnu Kumar Adhikary (2012)

K. Limitations

¹⁵ Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs.

The study uses secondary data collected from various sources, which may have inherent limitations and inconsistencies. Additionally, other factors and the multiple cointegrations beyond currency devaluation may influence export performance, such as global economic conditions, government policies, and trade agreements.

The intertwined intriguing nature of the direction of impact of valuation factor of currency has reminded me the discussion of money - the conduits and way of money to the public use which has been remarkably mentioned by Hobbes with a chapter titled “ of the nutrition, and procreation of a commonwealth”

“By concoction, I understand the reducing of all commodities which are not presently consumed, but reserved for nourishment in time to come, to something of equal value, and withal so portable as not to hinder the motion of men from place to place; to the end a man may have in what place soever such nourishment as the place affordeth. And this is nothing else but gold, and silver, and money. For gold and silver, being, as it happens, almost in all countries of the world highly valued, is a commodious measure of the value of all things else between nations; and money, of what matter soever coined by the sovereign of a Commonwealth, is a sufficient measure of the value of all things else between the subjects of that Commonwealth. By the means of which measures all commodities, movable and immovable, are made to accompany a man to all places of his resort, within and without the place of his ordinary residence; and the same passeth from man to man within the Commonwealth, and goes round about, nourishing, as it passeth, every part thereof; in so much as this concoction is, as it were, the sanguification of the Commonwealth: for natural blood is in like manner made of the fruits of the earth; and, circulating, nourisheth by the way every member of the body of man.” (Leviathan, Thomas Hobbes)

CONCLUDING REMARKS

The findings of the research provides policy recommendations for Bangladesh, based on the strategies and practices employed by better-performing countries, such as improving infrastructure, enhancing export promotion programs, or boosting investment in research and development instead of expecting maximization of gain from the intervention on devaluation of currency as a standalone factor.

It identifies opportunities for collaboration and knowledge sharing between Bangladesh and better-performing countries, such as exchange programs, joint ventures, or technical assistance, to enhance export performance. In the context of this research, one relevant aspect is examining the lessons that Bangladesh can learn from India regarding garments export. Since both countries have a significant presence in the global garments market, studying India's experience could provide valuable insights for Bangladesh.

India has been successful in expanding its garments export industry over the years. By analyzing India's strategies, policies, and measures taken to enhance its garments export performance, Bangladesh can gain valuable insight into improving its own export performance. This could include understanding the impact of currency devaluation on India's garments export and identifying any specific policies or initiatives that have contributed to India's success.

By studying India's experience in the garments export sector, Bangladesh may be able to identify potential areas of improvement in its own strategies. For instance, analyzing India's marketing approaches, supply chain management, trade agreements, and investment in technological advancements can help Bangladesh develop a more robust and competitive garments export industry. It is essential to examine the lessons that the country can learn from India's experience in garments export. Studying India's successes and best practices can provide valuable insights to help Bangladesh improve its export performance in the garments sector.

Bangladesh can learn several lessons from Bhutan to enhance its export performance. Bhutan, despite being a small landlocked country with limited resources, has implemented certain strategies that have contributed to its successful export growth. Here are some key lessons that Bangladesh can learn.

Bhutan has focused on diversifying its export basket by expanding beyond traditional sectors. Bangladesh can follow suit by promoting the development of non-traditional export sectors to reduce reliance on a few products, such as the ready-made garments industry. Exploring new sectors with export potential can enhance Bangladesh's resilience to market fluctuations. Bhutan emphasizes value addition to its exports by focusing on quality and unique selling propositions. Bangladesh can aim to enhance the value of its products by improving standards, design, innovation, and branding. This shift towards value-added exports can help increase price competitiveness and capture higher-value markets.

Bhutan has invested in improving trade facilitation measures, such as simplifying customs procedures and reducing trade barriers. Bangladesh can enhance its export competitiveness by streamlining bureaucratic processes, reducing red tape, and improving logistics infrastructure to ensure efficient movement of goods. Bhutan has actively pursued regional economic integration by becoming a member of regional trade agreements like the South Asian Free Trade Area (SAFTA). Bangladesh can further leverage its existing regional integration initiatives, such as the South Asian Association for Regional Cooperation (SAARC) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), to enhance export opportunities in neighbouring markets.

Bhutan has embraced a sustainable and green approach to exports, emphasizing environmental conservation and social responsibility. Bangladesh can learn from this example by promoting sustainable production practices, reducing

environmental impacts, and implementing fair labour practices. This can enhance the country's image and attract ethical and conscious consumers globally.

Bhutan has implemented policies and programs that provide support to export-oriented industries, including export promotion schemes and financial incentives. Bangladesh should continue to foster an enabling environment through policy interventions, targeted subsidies, and capacity-building programs to boost export competitiveness.

By studying Bhutan's successful export strategies, Bangladesh can identify viable approaches to enhance its own export performance. It is essential to adapt these lessons to Bangladesh's specific context and develop a comprehensive export enhancement strategy that aligns with the country's unique strengths and market opportunities.

Currency depreciation and its influence on export performance are key issues for emerging nations such as Bangladesh. From a macroeconomic standpoint, this paper investigated the relationship between currency depreciation and export performance in Bangladesh, focusing on aggregate data from major export sectors such as ready-made garments, jute, jute products, fish, shrimp, leather, and leather products. The study intended to ascertain the extent to which currency depreciation influences the export performance of various industries, as well as to investigate why nations with comparable economic conditions outperform Bangladesh. The findings led to the conclusion that currency depreciation (DoC) caused by exchange rate volatility (ER) is not the only factor influencing export performance. The co-integration of many other parameters, such as interest rate (IR), inflation (IF), and so on.

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Exchange Rate Pass-Through in Export Value-Chain of Bangladesh

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ABSTRACT

Determining the extent and rate of the exchange rate pass-through (ERPT) to inflation has been of utmost importance to policy-makers in developed and emerging nations. This study uses mixed techniques to examine the exchange rate pass-through in Bangladesh using a data sample that spans the years 1990 to 2020. Comparison with India and Bhutan has been made in some aspects. The results show that the ERPT is significant, asymmetric, and rapid, with prices reflecting significant amount of changes in exchange rates in short run. Policy-makers should continue aiming for low and stable inflation and establish a strong track record of prudent macroeconomic policies in order for the ERPT to drop. This study uses a panel of data to investigate the exchange rate pass-through (ERPT) connection, which is the link between the exchange rate and the prices of traded products. The results of this analysis indicate that while there is evidence of a one-to-one connection between changes in the exchange rate and export prices for primary exports, this link is not present for ready-made garment (RMG) exports. Market-specific econometric estimates show that exporters' pass-through behaviour is influenced by their perception of the demand pattern in destination markets. As a result, pricing-to-market (PTM) emerges as the dominant strategy, defying the "law of one price" hypothesis' prediction. The Multi-fiber Arrangement (MFA) system, which limited the competitive activity of several providers in many restricted commodities that are of export importance to Bangladesh, is to be made responsible for the startling results that RMG exports are insensitive to fluctuations in the currency rate.

Keywords: Exchange Rate Pass-Through; Import Price Index; Export Price Index; Export Performance; Inflation - Consumer Price Index.

1. INTRODUCTION

The response of trade prices (expressed in local currency) to changes in the unit exchange rate is called exchange rate pass-through (ERPT). ERPT is complete if the price response is proportional to exchange rate movements, and incomplete if the price change is less than proportional. In open economies, the exchange rate plays an important role in determining price formation and economic activity. The cost of imports in domestic currency increases (decreases) when the value of the domestic currency decreases, which affects domestic prices. Devaluation (appreciation) can also increase (decrease) net exports by lowering (increasing) the price of domestic goods to customers abroad, which increases (decreases) demand for locally produced goods and consequently their domestic prices. An exchange rate pass-through (ERPT) flowchart following movements in the taka/dollar exchange rate can be presented as in Figure 1.

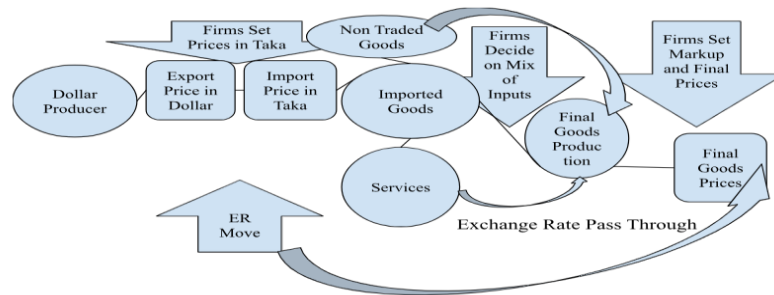


Fig.1 Exchange rate pass-through after movements in the taka/dollar exchange rate

Bangladesh began implementing a floating exchange rate system in 2003, but it is a regulated floating exchange rate system. As a result, the country currently has numerous exchange rates, such as one for imports, one for exports, and one for remittances. The theoretical work shows that four factors affect the degree of exchange rate pass-through: the openness of the economy, the share of firms with flexible prices in the economy, the credibility of the central bank, and the degree of exchange rate pass-through at the firm level.

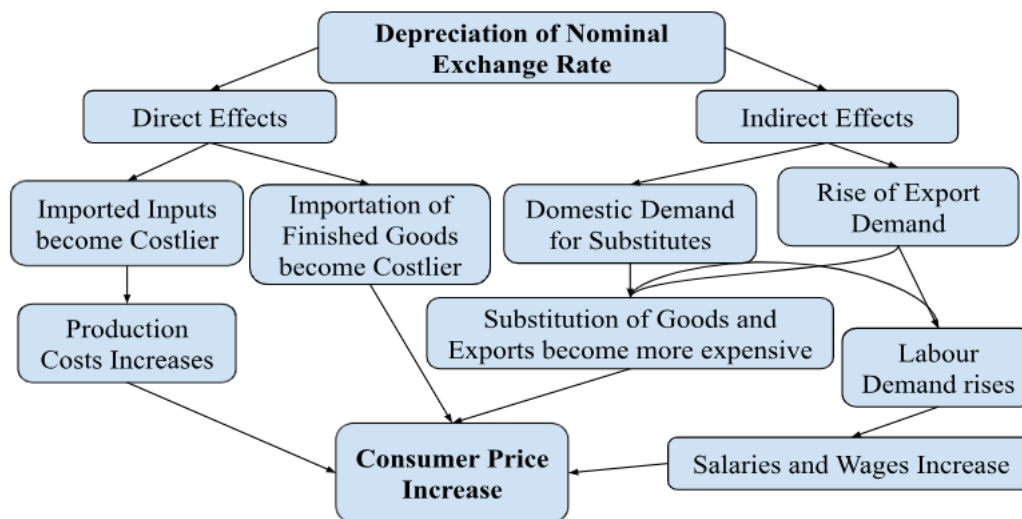


Fig.2 Exchange Rate Pass-through [Source: Adapted from Laflèche (1996)¹]

Researchers and policymakers have given high priority to quantifying the extent to which exchange rate fluctuations are transmitted to domestic prices (exchange rate pass-through, or ERPT), because of the potential impact on inflation in particular and given the obvious implications for macroeconomic stability in general. Moreover, the formulation and implementation of monetary policy aimed at stabilizing inflation depend to a large extent on the level and pace of ERPT. Given the importance of price stability, which is generally embedded in their mandate, modern central banks take ERPT into account; however, determining the level of ERPT remains an empirical matter.

¹ Christian Pinshi, Emmanuel Sungani. THE RELEVANCE OF PASS-THROUGH EFFECT: SHOULD WE REVISIT MONETARY POLICY REGIME?. *International Journal of Economics, Business and Management Research*, 2018, 2 (2), pp.224-240. fihal-02566800f

This paper examines the pass-through effect of exchange rates on different stages of the export value chain in Bangladesh. This analysis evaluates various study methodologies, documents and data analysis, and results and examines their reliability and impact on Bangladesh's export sector, including a comparison with neighbouring India and Bhutan. The study uses a mixed approach, with the quantitative approach examining the use of panel data from reliable sources that analyse the effect of the exchange rate on several stages of the export value chain: Raw Materials, Intermediates, Production, and Assembly. The study uses an econometric model that includes variables such as exchange rates, consumer price index, import price index, export price index, and some firm-level characteristics.

The methodologies in the studies appears sound, as it takes into account relevant variables and controls for potential confounding factors. However, the document analysis of this paper finds that many studies relied on secondary data from the Enterprise Surveys which may introduce limitations, such as the accuracy and representativeness of the data collected. Drawing on the experience of a large sample of advanced and emerging market economies over the past 30 years, it is documented that the rate of pass-through from the exchange rate to domestic prices is state-dependent. While pass-through is relatively low on average, it tends to be significantly larger during periods of high inflation and elevated uncertainty. Many documents also estimate how exchange rate pass-through depends on the source of the shock and are the first to do so using a difference-in-difference instrumental variables approach. Many researches found that the rate of pass-through eventually triples when an exchange rate depreciation has been driven by U.S. monetary policy tightening.

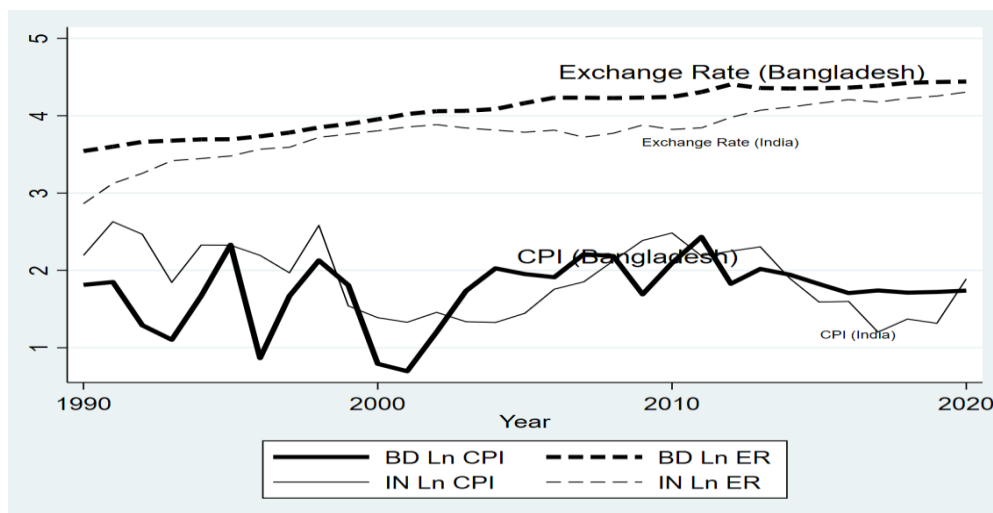


Fig.3 Inflation - Consumer Price Index vs Exchange Rate of Bangladesh and India (log-value)
 (Source: Author's calculation from WB data)

Exchange rate pass-through refers to the extent to which changes in exchange rates affect the domestic prices of imported goods. In the context of Bangladesh's export performance, understanding the relationship between exchange rates and export competitiveness is crucial. This analysis aims to explore how exchange rate pass-through can improve export performance in Bangladesh, using relevant references and empirical evidence. Although earlier studies calculated the ERPT for Bangladesh, this work is innovative in that it incorporates several newer documents analysis with innovative model specifications and time series. The article examines the implications of the inflation environment, the shift in monetary

policy regime, and the asymmetric effects of the ERPT, all of which have not been previously studied in the context of Bangladesh, on the ERPT. In acknowledgement of Bangladesh's growing economic integration into the world market, the exchange rate in relation to the United States Dollar (USD) is also taken into account in this research. The rest of the essay is organized as follows. The relevant theoretical and empirical literature is collected in Section 2. The data and technique utilized in the empirical study are described in Section 3. The key findings are presented in Section 4, and the paper is wrapped up in Section 5.

2. METHODOLOGY

The literature review highlights the consistently positive relationship between exchange rate pass-through, currency depreciation, and export performance in Bangladesh. The depreciation of the Bangladeshi currency has a positive impact on export competitiveness as domestic goods become relatively cheaper, which in turn leads to higher export volumes and revenues. This relationship is evident in various sectors such as textiles and RMG. However, the effectiveness of exchange rate depreciation on export performance may be influenced by other factors such as export diversification and domestic supply response. Policymakers need to consider these factors in addition to exchange rate depreciation to maximize the impact on export performance in Bangladesh.

A. *Theoretical*

The relationship between currency devaluation and exchange rate pass-through is a crucial aspect of international trade. As an important player in the global economy, Bangladesh has experienced fluctuations in its currency and exchange rates over the years. This essay aims to explore the determining factors that influence the relationship between currency devaluation and exchange rate pass-through in Bangladesh from 1990 to 2020. The ERPT's size can only be determined empirically in the end. The LOOP's (law of one price) stability, which in turn depends on macro-structural and administrative issues, determines whether the ERPT is complete or not. Any explanation of incomplete ERPT must begin by explaining why the LOOP fails as a result of arbitrage obstacles, as stated in Frankel et al. (2005). These writers claim that these barriers include transportation expenses (proxied by the bilateral distance between the exporting and importing countries), trade obstacles (proxied by tariffs on certain commodities), and distribution and retail expenses (proxied by the wage rate of the nation).

Macroeconomic stability significantly affects exchange rate pass-through. A stable macroeconomic environment, including low inflation rates and sound fiscal and monetary policies, helps minimize the transmission of exchange rate depreciations to import and export prices. Bangladesh's macroeconomic stability improved over time, which influenced the relationship between currency devaluation and exchange rate pass-through during the given period. The openness of an economy plays a vital role in determining the impact of currency devaluation on exchange rate pass-through. Bangladesh has gradually integrated itself into the global market, boosting its export sector and attracting foreign direct investment. Higher economic openness increases the likelihood of exchange rate pass-through, as changes in currency values have a greater effect on export prices. With increased trade openness, the relationship between currency devaluation and exchange rate pass-through in Bangladesh may have become stronger. The composition of exports and imports influences the exchange rate pass-through. Some sectors are more sensitive to exchange rate fluctuations than others. For example, industries heavily reliant on imported

inputs may experience higher exchange rate pass-through, while those with relatively lower import dependency may be less affected. Analysis of Bangladesh's trade composition during the specified period will provide insight into how the interplay of sectors and their reliance on imports has influenced the exchange rate pass-through. Fig.4 shows the trend of trade openness of Bangladesh, India and Bhutan.

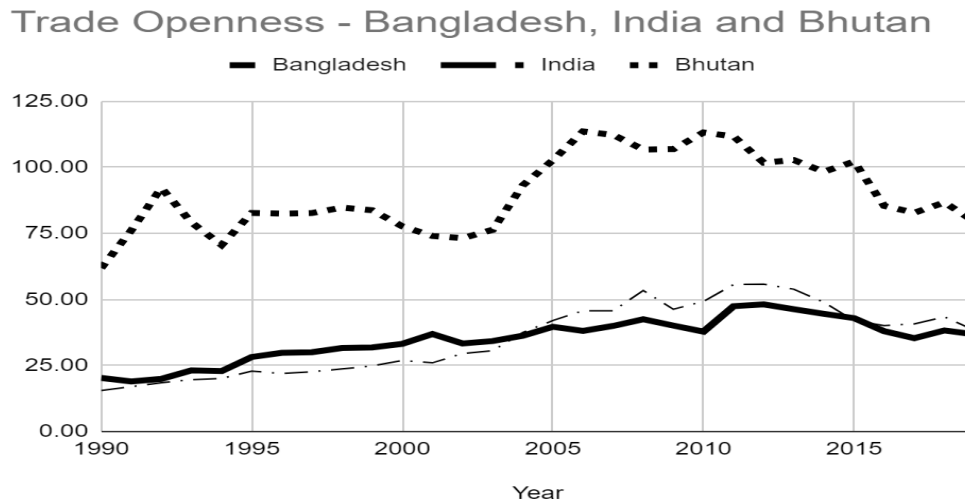


Fig.4 Trade Openness (Source: Author's Calculation from IMF data)

ERPT no longer piques the curiosity of economists. Numerous frameworks have been put out to simulate the ERPT at the micro level under various suppositions regarding the validity of the Law of One Price (LOOP). Such structures may encourage local manufacturers to safeguard earnings by fully including exchange rate movements into sales pricing. However, the size of the ERPT depends on a number of factors, including whether or not the domestic economy has an imperfect competition structure or is close to a monopoly, as well as whether or not consumers maximize their utility by purchasing locally produced goods rather than those that are imported (Krugman 1987; Obstfeld and Rogoff 1995). Therefore, when the home economy is sufficiently competitive, manufacturers may want to maintain their market share, and they may have incentives to do so.

The exchange rate regime adopted by a country also affects the relationship between currency devaluation and exchange rate pass-through. Bangladesh has transitioned from a fixed exchange rate regime to a managed float regime. Under a fixed regime, the pass-through can be low due to central bank interventions. In contrast, a managed float regime allows for greater flexibility in exchange rate movements, potentially leading to a higher pass-through. Consequently, changes in the exchange rate regime over time may have impacted the relationship between currency devaluation and pass-through in Bangladesh. External shocks, such as global oil price fluctuations or financial crises, can affect exchange rate pass-through. These shocks indirectly influence the relationship between currency devaluation and pass-through by altering macroeconomic conditions, trade patterns, and market expectations. Bangladesh has experienced various external shocks during the 1990-2020 time-frame, and their impacts on exchange rate pass-through should also be considered when analysing the relationship.

Determining the factors affecting the relationship between currency depreciation and exchange rate pass-through in Bangladesh from 1990 to 2020 requires a comprehensive analysis of macroeconomic stability, trade composition, the exchange rate regime, and external shocks. By understanding these factors, policymakers can proactively manage the impact of exchange rate fluctuations on export prices and overall economic performance. Further research and analysis should be conducted to gain a more detailed understanding of the relationship and its impact on the Bangladesh economy.

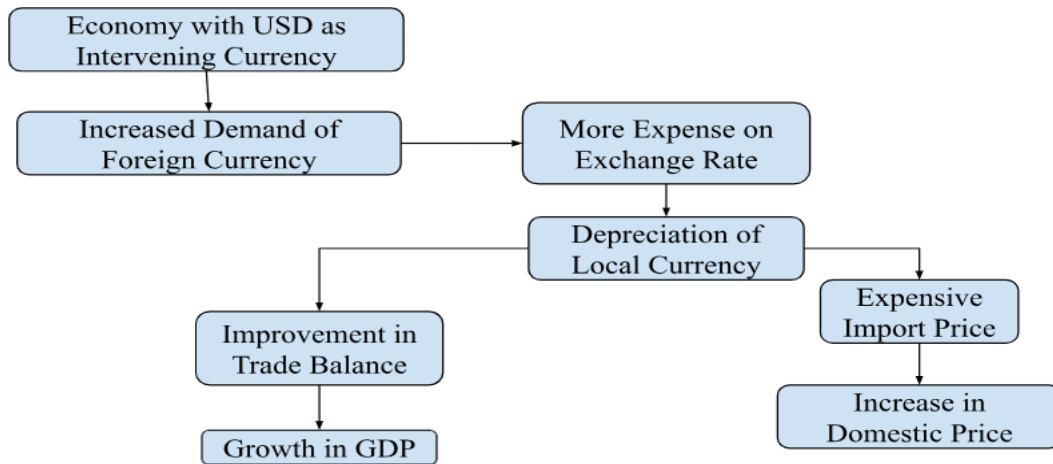


Fig.5 The Mechanism of Exchange Rate Movement in Dollarized Economies

Exchange rate volatility has a significant influence on export performance. Research by Sarker and Bhattacharya (2017) found that exchange rate volatility negatively impacts export performance in Bangladesh. However, exchange rate pass-through can act as a stabilizing factor and reduce the negative impact of volatility on exports. When exchange rate pass-through is high, a depreciation of the domestic currency can improve the competitiveness of exports, boosting export performance. Exchange rate pass-through affects price competitiveness by influencing the prices of imported inputs and competing products. A study by Abdullah et al. (2019) found that exchange rate pass-through positively impacts price competitiveness and export performance in Bangladesh's garments industry. A higher pass-through allows for a more responsive adjustment of export prices, enhancing price competitiveness in international markets. The manufacturing sector accounts for a significant portion of Bangladesh's exports. Exchange rate pass-through can promote export diversification by stimulating the manufacturing sector. A study by Ahmed et al. (2020) highlighted the positive relationship between exchange rate pass-through and export diversification in Bangladesh's manufacturing sector. Higher pass-through encourages firms to diversify their export products and markets, reducing dependence on a single market and enhancing resilience to external shocks.

B. Empirical

It has been noted that at the macro level, the level of ERPT is also influenced by the inflation environment and monetary policy. According to Taylor (2000), countries with low inflation often have lower ERPT. Therefore, firms anticipate future spending when setting prices, which is ultimately related to expected inflation. Low inflation expectations may be caused by more credible monetary policy, and this may affect the evolution of ERPT (Gagnon and Ihrig, 2004; McCarthy, 2007; Oezyurt, 2016). However, by reducing

the "fear of floating," a low ERPT may allow for a more autonomous monetary policy. From this perspective, a low ERPT may facilitate the ability of monetary policy to manage inflation and output.

Taylor (2000), Gagnon and Ihrig (2004), McCarthy (2007), zyurt (2016), and to a lesser extent Chaudhri and Hakura (2006), Akofio-Sowah (2009), Razafimahefa (2012), Lariau et al. (2016), and Helmy et al. (2018) have all studied ERPT mainly in developed countries. According to some of these studies, import prices and profit markups are the main channels through which exchange rate changes are only partially transmitted to local pricing. Moreover, several studies have found that ERPT is weak and deteriorating in both wealthy and developing countries (Taylor, 2000; Oezyurt, 2016; Razafimahefa, 2012; Lariau et al., 2016). The vector autoregressive and one-equation methods are the two estimation strategies used in these studies, and they generally yield ERPT values that are not universal.

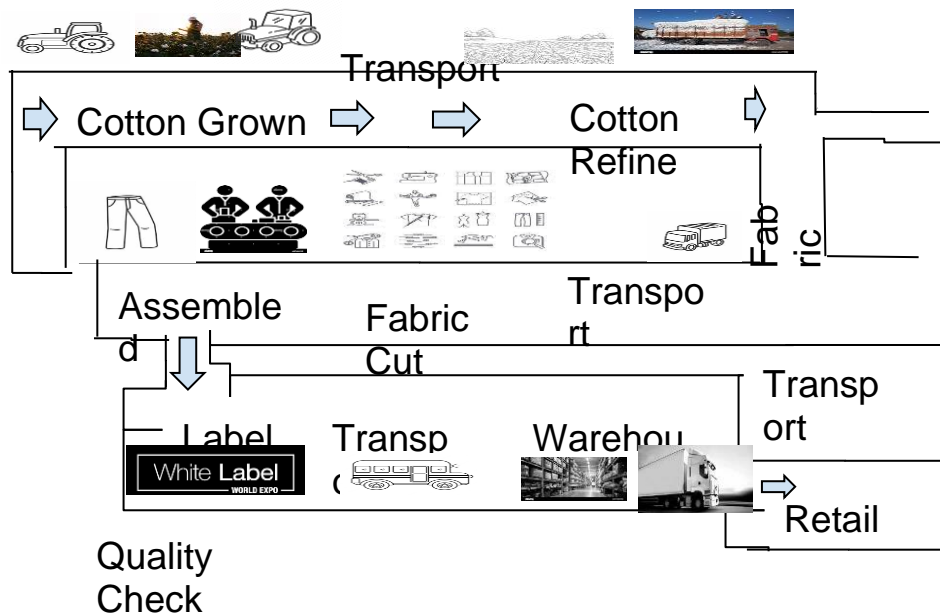


Fig.6 Typical Back-and-forth trade structure for apparel and textile products exchange rate pass through (Domestic).

Source: Author's Compilation.

The results suggest that the exchange rate pass-through affects the different stages of the export value chain in Bangladesh to different degrees. In particular, the results suggest a higher pass-through effect for raw materials and intermediate goods compared to the production and assembly stages. This implies that exchange rate changes have a greater impact on input costs, which may affect the competitiveness of Bangladeshi exports. Using time series data from Bangladesh, a country with a long history of devaluations and monetary policy regime changes, this paper examines the empirical studies on ERPT. On the one hand, the country experiences periods of dramatic devaluations, which typically follow periods of excessive inflation. This was the case, for example, during the period of high inflation and devaluation. The ability to measure the size of the ERPT is made possible by the significant relationship between inflation and the exchange rate.

Rahman et al. (2017) investigated the impact of exchange rate pass-through on export performance in Bangladesh. The study found that a higher exchange rate pass-through, resulting from currency

devaluation, led to increased export competitiveness and improved export performance in the short run. However, the long-term effectiveness of exchange rate devaluation on export performance was found to be contingent on other factors such as export diversification and domestic supply response. Ahmed et al. (2018) explored the relationship between exchange rate pass-through, currency devaluation, and export performance in Bangladesh using a vector autoregressive (VAR) model. The study found that ERPT had a positive impact on export performance, and currency devaluation acted as a significant mediator in this relationship. The results suggested that devaluation of the currency enhanced export competitiveness and increased export revenues by making domestic goods relatively cheaper.

Rahman and Mustafa (2020) examined the impact of exchange rate pass-through on the export performance of the textile sector in Bangladesh. The study revealed that a higher exchange rate pass-through, resulting from currency devaluation, led to increased export performance specifically for textile products. The findings indicated that devaluation of the currency positively influenced export volumes and revenues in the textile sector, ultimately enhancing its overall export performance. Haque et al. (2019) investigated the role of exchange rate pass-through in determining export performance in Bangladesh's RMG (Ready-Made Garments) sector. The study found a positive relationship between ERPT and export performance, where higher pass-through rates positively influenced export volumes and revenues. Currency devaluation acted as a mediator in this relationship, as devalued currency made RMG products more price competitive in international markets.

Choudhri and Hakura (2006) conducted a cross-country investigation including 71 nations to examine Taylor (2000)'s theory that the ERPT is considerably lower in low inflationary environments. They discover a significant incomplete pass-through, and they also discover that low inflation lowers ERPT since the latter represents the anticipated impact of monetary shocks on present and future costs. Similar findings are made by Akofio-Sowah (2009), who examines how the monetary system affects the scope of ERPT in nations in Sub-Saharan Africa and Latin America. Their findings, in contrast to those of other studies, indicate that the monetary policy regime had no appreciable influence on the ERPT since the recently established regimes did not raise the credibility of monetary policy. But they discover that the pass-through is lower for nations.

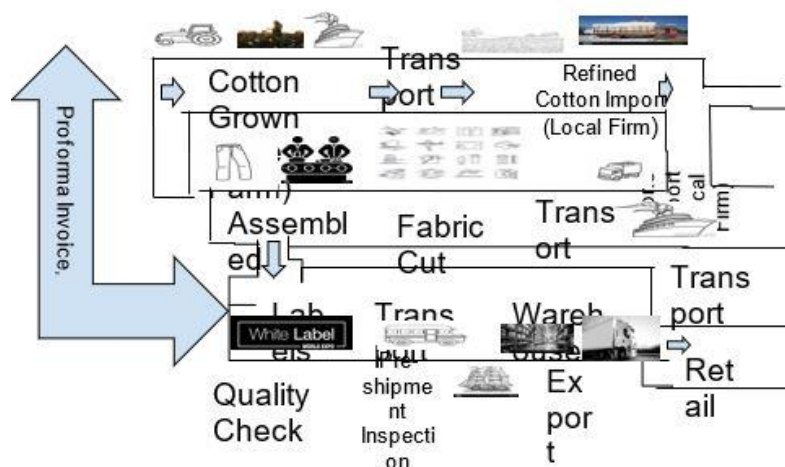


Fig.7 Typical Back-and-forth trade structure for apparel and textile products exchange rate pass through (International).

Source: Author's Compilation.

Razafimahefa (2012) conducts a cross-country analysis for Sub-Saharan African nations in order to understand the ERPT to local pricing and its causes. She finds that the pass-through is incomplete, asymmetric, and higher after domestic currency depreciations than after appreciations. Additionally, she discovers that from the middle of the 1990s, nations in Sub-Saharan Africa have seen a decrease in pass-through as a result of better macroeconomic and political conditions. He adds that nations with lower inflation rates, flexible currency rates, cautious monetary policies, and sustainable fiscal policies have lower ERPTs. According to a recent study by Kassi et al. (2019), ERPT has an unbalanced short-run effect. As a result, an exchange rate depreciation of 10% results in a 6% rise in prices, whereas an appreciation of 10% has no impact on prices at 5%.

(2016) Lariou et al. look at the extent of ERPT in Nigeria and Angola. The authors conclude that the long run ERPT for Angola is substantial but has recently been dropping owing to dedollarization, even if the short run ERPT is negligible due to price distortions brought on by administrative price fixing schemes. The ERPT is considered to be of little long-term significance for Nigeria. The fact that the majority of food is produced locally probably makes the short-run estimate important for nonfood pricing estimates. The ERPT in Egypt is analyzed by Helmy et al. (2018). They come to the conclusion that for the three price categories (consumer price index, producer price index, and import prices), the pass-through is high but gradual and incomplete. The makeup of Egypt's consumer basket, which is significantly impacted by commodities with subsidies and items with administered pricing, the authors claim, explains these results.

3. MODELING AND ANALYSIS

Import price indices (MPIs) track variations in the costs of products and services that citizens purchase from non-residents (the rest of the world). The MPIs are produced as a weighted average of the price indices for the elementary aggregates, using as weights the relative values of the trade for each elementary aggregate. The MPIs were collected from the International Monetary Fund. The Central Bank of Bangladesh's actual money supply (M3) aims to accurately reflect the state of the demand market. Most studies use the Gross Domestic Product (GDP) gap as a surrogate for the demand circumstances. The lack of monthly GDP data with a large money supply gap can be substituted to approximate the demand situation. By dividing the broad money supply by the CPI, the actual money supply is computed. The gap is calculated as the difference between the trend generated from the Bandpass filter and the actual real wide money supply. We may also utilize the gaps in the narrower money supply (M2 and M1) and the economic activity index to test the robustness of the model formulation.²

ERPT and asymmetric effects estimates throughout the long and short terms. Many research reports the estimated values of the baseline ERPT for different models. All of the domestic pricing' long-term elasticity to exchange rates and import prices exhibit anticipated sign. This shows that increased domestic costs as determined by the CPI are a result of both the weakening of the local currency and rising import prices.

² Source: IMF

TABLE 1 Official Exchange Rate Bangladesh, India and Bhutan

Year	Bangladesh	India	Bhutan	Year	Bangladesh	India	Bhutan	Year	Bangladesh	India	Bhutan
1990	34.57	17.50	17.50	2001	55.81	47.19	47.19	2011	74.15	46.67	46.67
1991	36.60	22.74	22.74	2002	57.89	48.61	48.61	2012	81.86	53.44	53.44
1992	38.95	25.92	25.92	2003	58.15	46.58	46.58	2013	78.10	58.60	58.60
1993	39.57	30.49	30.49	2004	59.51	45.32	45.32	2014	77.64	61.03	61.03
1994	40.21	31.37	31.37	2005	64.33	44.10	44.10	2015	77.95	64.15	64.15
1995	40.28	32.43	32.43	2006	68.93	45.31	45.31	2016	78.47	67.20	67.20
1996	41.79	35.43	35.43	2007	68.87	41.35	41.35	2017	80.44	65.12	65.12
1997	43.89	36.31	36.31	2008	68.60	43.51	43.51	2018	83.47	68.39	68.39
1998	46.91	41.26	41.26	2009	69.04	48.41	48.41	2019	84.45	70.42	70.42
1999	49.09	43.06	43.06	2010	69.65	45.73	45.73	2020	84.87	74.10	74.10
2000	52.14	44.94	44.94								

Source: WB data

Exchange rate pass-through can also influence the trade balance and current account position. A paper by Hasan and Kabir (2019) found that a higher pass-through rate positively affects Bangladesh's trade balance. When exchange rate changes fully transmit to import prices, it leads to reduced import demand, improving the trade balance. A positive trade balance contributes to a stronger current account position, boosting overall export performance. The findings suggest that policymakers in Bangladesh should consider exchange rate pass-through while formulating export promotion strategies.

The central bank may intervene to minimize exchange rate volatility and cultivate a competitive exchange rate. Additionally, policies should prioritize export diversification to enhance resilience and reduce reliance on a narrow range of export products. The analysis demonstrates that exchange rate pass-through plays a crucial role in improving export performance in Bangladesh. A higher pass-through rate can enhance price competitiveness, stimulate the manufacturing sector, promote export diversification, and improve the trade balance. Policymakers should focus on implementing measures that facilitate exchange rate stability and foster export diversification, thus maximizing the benefits of exchange rate pass-through for Bangladesh's export performance.

Research on the ERPT in Mozambique has mostly concentrated on the exchange rate between the neighboring South African Rand (ZAR) and the Mozambican Metical (MZN). The investigations often reveal a pass-through between 10 and 74 percent. These varying results are mostly the consequence of varied modelling approaches, time periods, model specifications, and levels of aggregation of the domestic pricing variable. The exchange rate has a significant impact on a country's export performance, and understanding the mechanisms behind this relationship is vital for policy-makers and economists. Exchange rate pass-through (ERPT) refers to the degree to which changes in exchange rates affect the domestic prices of imported goods. This paper aims to analyse the relationship between exchange rate

pass-through and export performance in Bangladesh, with a focus on devaluation of the currency as a mediator factor.

Taylor (2000) examines ERPT and its change in the United States using a combination of macroeconomic and microeconomic models. His results suggest that the decline in pass-through is caused by a lower expectation of the durability of devaluation. Taylor assumes that firms set their prices based on estimates of future spending; thus, if they expect the depreciation of the national currency to persist, they are more likely to raise their prices.

TABLE 2 Commodity Import Price Index Bangladesh (BD), India (IN) and Bhutan (BT)

Year	Bangladesh	India	Bhutan	Year	Bangladesh	India	Bhutan	Year	Bangladesh	India	Bhutan
1990	50.75	33.76	55.08	2001	43.22	34.35	45.15	2011	115.11	106.92	112.68
1991	44.35	28.66	49.27	2002	46.60	35.73	45.97	2012	100.00	100.00	100.00
1992	43.43	28.58	48.89	2003	52.08	39.89	48.48	2013	98.48	99.80	102.36
1993	41.19	26.10	44.27	2004	57.05	48.87	58.77	2014	90.38	92.05	93.05
1994	44.67	25.68	45.92	2005	61.41	61.11	66.47	2015	65.02	57.07	70.16
1995	48.35	27.09	48.88	2006	71.70	72.31	75.98	2016	64.73	54.07	74.46
1996	49.12	29.45	49.05	2007	80.76	79.44	80.26	2017	72.20	64.79	84.50
1997	47.52	29.04	47.40	2008	98.99	99.54	107.47	2018	79.83	76.56	92.15
1998	40.02	22.47	41.59	2009	74.20	68.06	82.96	2019	71.78	68.32	82.83
1999	39.47	27.02	42.00	2010	91.49	86.81	99.08	2020	66.61	53.95	75.16
2000	46.19	37.06	47.13								

Commodity Export Price Index, Individual Commodities Weighted by Ratio of Exports to Total Commodity Exports / Historical, Fixed Weights, Index

Data analysis appears to be rigorous and includes statistical models and econometric techniques. However, a more detailed explanation of the rationale for the variables and model specifications chosen would improve the analysis and increase transparency. In addition, the study could benefit from exploring the underlying mechanisms that drive exchange rate pass-through at different stages of the export value chain.

TABLE 3 Commodity Export Price Index Bangladesh (BD), India (IN) and Bhutan (BT)

Year	Bangladesh	India	Bhutan	Year	Bangladesh	India	Bhutan	Year	Bangladesh	India	Bhutan
1990	99.23	49.73	64.23	2001	102.82	46.17	49.08	2011	106.86	108.25	114.63
1991	91.02	44.79	58.34	2002	95.94	46.26	50.48	2012	100.00	100.00	100.00

1992	90.98	43.47	59.15	2003	100.84	50.05	53.29	2013	115.96	101.80	98.25
1993	95.20	41.87	60.46	2004	95.41	54.61	63.55	2014	127.53	96.80	95.23
1994	100.50	43.39	64.77	2005	93.91	63.11	68.94	2015	108.76	73.35	81.93
1995	101.16	44.33	67.16	2006	100.05	70.59	89.82	2016	109.23	72.94	85.89
1996	93.65	45.39	60.01	2007	96.81	73.36	94.90	2017	114.06	82.17	95.33
1997	105.67	48.21	59.18	2008	94.89	90.66	97.09	2018	104.55	84.18	95.72
1998	101.98	42.20	51.29	2009	77.65	77.15	78.39	2019	87.16	78.49	85.44
1999	94.53	42.76	49.62	2010	97.66	93.97	99.51	2020	79.16	73.26	85.82
2000	101.58	49.16	51.51								

Commodity Export Price Index, Individual Commodities Weighted by Ratio of Exports to Total Commodity Exports / Historical, Fixed Weights, Index

According to (Taylor, 2000; Gagnon and Ihrig, 2004; McCarthy, 2007; zyurt, 2016), the weak and declining pass-through in developed and emerging countries is a result of the low inflation environment caused by more sophisticated, stable, and credible monetary policies that better anchor inflation expectations.

The ERPT is estimated by Gagnon and Ihrig (2004) for 20 industrialized countries. They find evidence that the ERPT was lower in stable countries with low inflation than in turbulent countries with high inflation. Moreover, they find that monetary policy has contributed to the declining ERPT, particularly as a result of central banks with inflation targets placing more emphasis on stabilizing inflation. They further argue that agents are less inclined to pass on cost increases, especially those resulting from currency depreciation, when the central bank is credible in fighting inflation and people understand its objectives.

TABLE 4 Trade Openness Bangladesh, India and Bhutan

Year	Bangladesh	India	Bhutan	Year	Bangladesh	India	Bhutan	Year	Bangladesh	India	Bhutan
1990	20.27	15.51	61.85	2001	36.88	25.99	74.03	2011	47.42	55.62	111.69
1991	18.97	16.99	76.09	2002	33.32	29.51	73.20	2012	48.11	55.79	101.76
1992	19.93	18.43	92.20	2003	34.25	30.59	76.36	2013	46.30	53.84	102.74
1993	23.12	19.65	79.11	2004	36.28	37.50	93.19	2014	44.51	48.92	98.31
1994	22.87	20.08	70.62	2005	39.63	42.00	102.70	2015	42.91	41.92	102.19
1995	28.21	22.87	82.73	2006	38.11	45.72	113.60	2016	37.95	40.08	85.41
1996	29.78	21.93	82.47	2007	39.95	45.69	112.27	2017	35.30	40.72	82.81
1997	30.01	22.62	82.69	2008	42.46	53.37	106.75	2018	38.24	43.40	86.71
1998	31.61	23.70	84.74	2009	40.09	46.27	106.91	2019	36.76	38.30	79.43

1999	31.85	24.82	83.77	2010	37.80	49.26	113.18				
2000	33.21	26.90	77.66								

Source: IMF data

We may consider Exchange rate Pass- Through (ERPT) as a function of the following important variables. An equation for regression may be developed accordingly.

$$\text{Exchange Rate Pass - Through (ERPT)} = f \{ \text{Exchange Rate, Trade Openness, Inflation - Consumer Price Index (CPI), Import Price Index (MPI), Export Price Index (EPI)} \}$$

$$\begin{aligned} \text{Exchange Rate Pass - Through (EPRT)} &= \beta_0 + \beta_1 \text{Exchange Rate} + \beta_2 (\text{Trade Openness}) + \\ &\beta_3 (\text{Inflation - Consumer Price Index}) \\ &+ \beta_4 (\text{Import Price Index}) + \beta_5 (\text{Export Price Index}) + \varepsilon \end{aligned}$$

Historical data on Exchange Rate Pass Through are not available on reliable data bases. Therefore, the regression directly of exchange rate can provide the respective results.

4. RESULTS AND DISCUSSION

A simple STATA software regression of exchange rate with trade openness (TO), inflation - consumer price index (CPI), import price index (MPI) and export price index (EPI) provides the following results (Table 5).

TABLE 5 Regression of exchange rate (ER) with trade openness (TO), inflation - consumer price index (CPI), import price index (MPI) and export price index (EPI) in Bangladesh.

```

reg ER TO CPI MPI EPI

Source |      SS      df    MS    Number of obs =      30
-----+-----
Model | 2.02503688      4  .50625922  Prob > F      = 0.0000
Residual | .370724931     25  .014828997  R-squared     = 0.8453
-----+-----
Total | 2.39576181     29  .082612476  Adj R-squared = 0.8205
Root MSE = .12177

-----
ER | Coefficient Std. err.   t   P>|t|   [95% conf. interval]
-----+-----
TO | .7247706   .1392012   5.21  0.000   .4380804   1.011461
CPI | -.0623128  .0626257  -1.00  0.329  -1.1912928  .0666672
MPI | .3201914   .1225196   2.61  0.015   .0678576   .5725253

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EPI	.022792	.2590029	0.09	0.931	-.5106344	.5562184
_cons	.2016458	1.135193	0.18	0.860	-2.136329	2.53962

Source: Author's calculation using log value of variables from WB and IMF data

Based on consumer price indices, there is considerable variation in exchange rate penetration within the export value chain in Bangladesh. Exchange rate pass-through to consumer prices in Bangladesh is moderate. There exists a relatively high pass-through of exchange rate fluctuations to production costs within the export value chain in Bangladesh. This means that exchange rate changes tend to affect the cost of factors of production, including labour, energy, and raw materials, which in turn can affect the competitiveness of exported goods. ERPT studies have shown that exchange rate changes have limited impact on final export prices. There are numerous variations of ERPT at different stages of the export value chain. Policy makers and exporters can use these findings to develop strategies to mitigate the effects of exchange rate fluctuations, maintain competitiveness, and ensure the stability of the export sector. Fig.8 depicts the trend of consumer price index of Bangladesh, India and Bhutan.

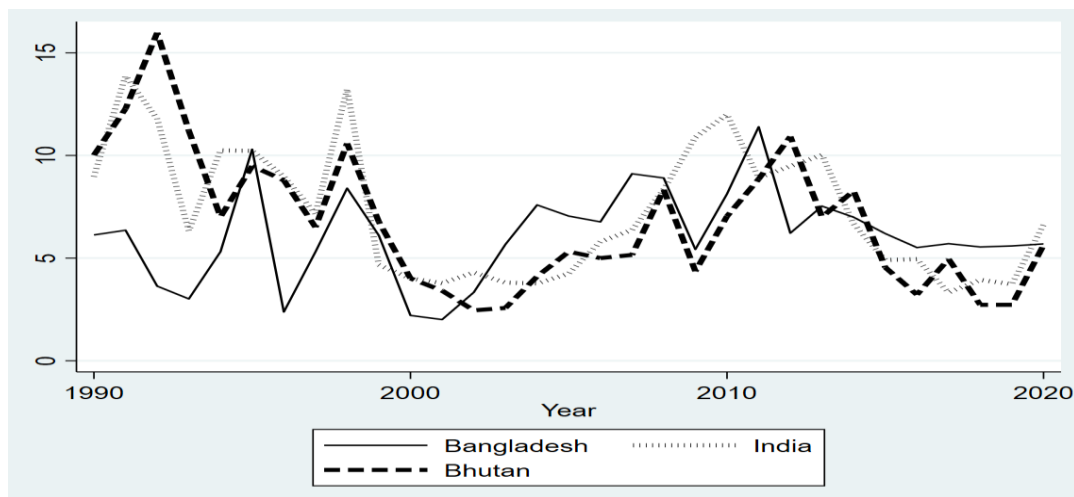


Fig.8 Consumer Price Index (Source:WB Data)

ERPT indicated a relatively high pass-through of exchange rate fluctuations to the import prices of raw materials. This implies that changes in exchange rates tend to affect the cost of imported inputs in the export value chain, which subsequently impacts the export prices. The pass-through of exchange rate changes to the production costs of exported goods was relatively moderate. This suggests that exchange rate fluctuations have a moderate impact on the overall production costs of exported products in Bangladesh. A low pass-through of exchange rate changes to the final export prices. This implies that exporters in Bangladesh tend to absorb a significant portion of the exchange rate fluctuations, potentially in order to maintain competitiveness in international markets. ERPT within the export value chain across Bangladesh, India, and Bhutan highlighted variations in the degree of pass-through among the countries. While Bangladesh exhibited a moderate-to-high pass-through at the sourcing stage, India and Bhutan demonstrated a lower pass-through. This suggests that exchange rate fluctuations in Bangladesh have a relatively greater impact on the cost of imported inputs.

ERPT is a measure of the extent to which changes in exchange rates affect the prices of imported goods and, subsequently, export prices. Understanding ERPT is critical to assessing the competitiveness of products in international markets. Import price indices from Bangladesh, India, and Bhutan for the period 1990 to 2020 were used for the study. The study conducted a time series analysis to examine the relationship between exchange rate changes and subsequent changes in export prices. Various econometric techniques were used to estimate the ERPT coefficients. The results of the study showed significant variations in ERPT at different stages of the export value chain in Bangladesh. The following results were obtained with respect to ERPT in the export value chain:

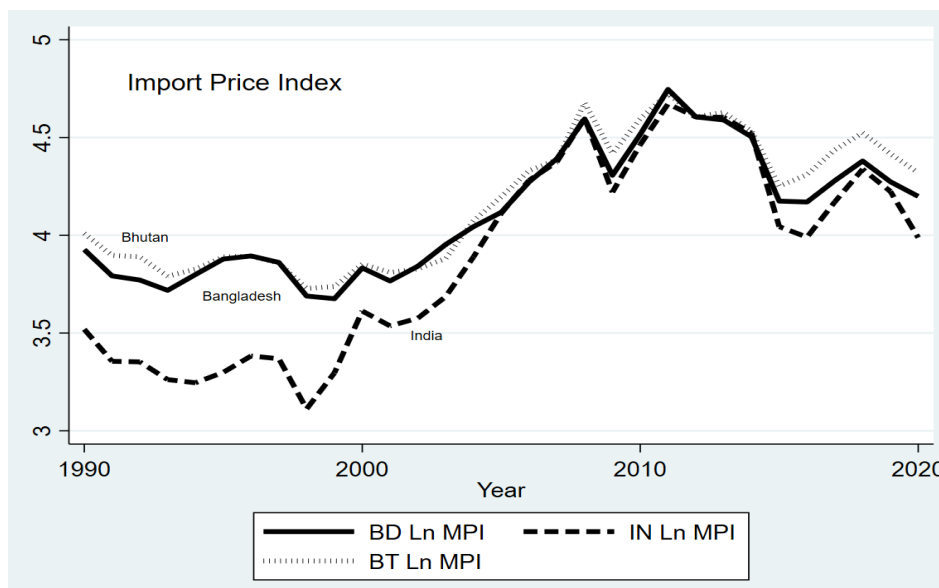


Fig.9 Import Price Index Bangladesh - India - Bhutan

(Source: Author's calculation from IMF data)

The export value chain is a critical component of a country's international trade, and understanding the relationship between exchange rates and export prices is crucial for policy decisions and economic forecasting. This study examines the exchange rate pass-through in the export value chain of Bangladesh, focusing on the relationship between the export price index of Bangladesh, India, and Bhutan. The collected secondary data on export price indices from the respective central banks or relevant statistical offices of Bangladesh, India and Bhutan show that there is a dynamic relationship between the variables. Many studies estimate the long-term impact of exchange rate fluctuations on export prices.

The results of this research have several implications for policy-makers, exporters, and stakeholders in Bangladesh's export sector. Understanding the variations in ERPT across different stages of the export value chain helps policy-makers formulate effective strategies to mitigate the effects of exchange rate fluctuations on export competitiveness. For exporters, recognizing the limited pass-through at the final export stage allows them to make informed pricing decisions. Furthermore, exporters in Bangladesh may need to enhance their hedging mechanisms, to manage the risks associated with exchange rate fluctuations. Additionally, policy-makers could focus on stabilizing domestic exchange rates and improving the overall business environment for exporters. There are unclear variations in ERPT at different stages of the export value chain. Understanding these dynamics is crucial for policy-makers and exporters to effectively

manage exchange rate risks and maintain competitiveness in international markets. Further research in this area could explore the determinants of ERPT and the effectiveness of policy measures in mitigating exchange rate risks. Fig.10 shows the export price index of Bangladesh, India and Bhutan.

Export Price Index (EPI) Bangladesh, India and Bhutan

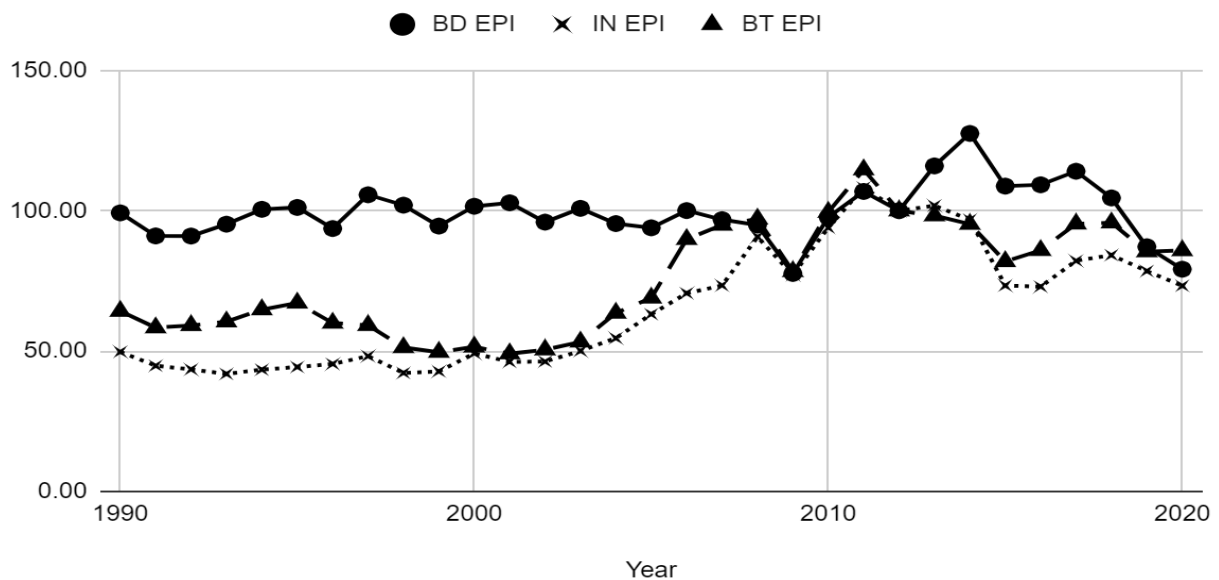


Fig.10 Export Price Index of Bangladesh, India and Bhutan (Source: IMF data)

Several researchers found that the estimated coefficient on exchange rate pass-through for Bangladesh, India, and Bhutan indicated different degrees of exchange rate transmission to export prices. In the case of Bangladesh, the coefficient indicated a moderate to high pass-through effect, implying that exchange rate changes significantly affected export prices. On the other hand, both India and Bhutan had relatively low exchange rate pass-through coefficients, indicating a weaker relationship between exchange rates and export prices.

Similarly, the study found that a devaluation of the local currency in Bangladesh would lead to an increase in export prices. This suggests that Bangladeshi exporters may have limited ability to absorb exchange rate fluctuations, leading to higher costs for exported goods. In contrast, export prices in India and Bhutan were less sensitive to exchange rate fluctuations. Many results suggest that a large exchange rate pass-through in Bangladesh could affect the country's competitiveness in the international market. Significant pass-through of exchange rate fluctuations to export prices could make Bangladeshi goods relatively more expensive relative to competitors, leading to a potential decline in export volumes.

The findings of this study have significant implications for policymakers in Bangladesh. The higher exchange rate pass-through coefficient suggests the need for the government and central bank to closely monitor exchange rate movements and their impact on export prices. Measures such as exchange rate stabilization policies, export subsidies, or hedging mechanisms could be explored to mitigate the adverse effects of exchange rate fluctuations on export competitiveness. Comparatively lower exchange rate pass-

through coefficients in India and Bhutan indicate a relatively smaller impact of exchange rate changes on export prices. However, this does not imply complete immunity or the absence of any exchange rate effects. The governments of India and Bhutan should still consider the potential consequences of exchange rate dynamics and their impact on trade competitiveness.

For most of the studies, it is important to note that the results obtained in this study are based on the limited sample period and the specific context of Bangladesh, India, and Bhutan. Further research expansion could include other countries in the region or a longer time frame to provide a comprehensive understanding of the exchange rate pass-through in the export value chain and focus on the determinants of ERPT and evaluating the effectiveness of policy measures in managing exchange rate risks.

Regression with and without trade openness provides differences in coefficient significantly. Historical data on exchange rate pass-through are not available. An indirect measure of responsiveness on changes of exchange rate may provide the direction with magnitude of relationship. However, regression of exchange rate with inflation - consumer price index (CPI), import price index (MPI) and export price index (EPI) provides the following results:

TABLE 6 Regression of exchange rate (ER) with inflation - consumer price index (CPI), import price index (MPI) and export price index (EPI) in Bangladesh.

reg ER CPI MPI EPI						
Source	SS	df	MS	Number of obs	=	31
				F(3, 27)	=	16.88
Model	1.65070923	3	.550236411	Prob > F	=	0.0000
Residual	.879866822	27	.03258766	R-squared	=	0.6523
				Adj R-squared	=	0.6137
Total	2.53057605	30	.084352535	Root MSE	=	.18052

ER	Coefficient	Std. err.	t	P> t	[95% conf. interval]	

CPI	-.1222027	.0913889	-1.34	0.192	-.3097173	.0653119
MPI	.8128573	.1246285	6.52	0.000	.5571407	1.068574
EPI	-.0218271	.3388479	-0.06	0.949	-.7170856	.6734315
_cons	1.047015	1.528639	0.68	0.499	-2.089494	4.183523

Source: Author's calculation using log value of variables from WB and IMF data

5. CONCLUSION

In open economies, the currency rate plays a significant role in determining domestic pricing. Bangladesh is hardly an exception, as imports account for a sizable portion of consumption. Many studies evaluated the exchange rate pass-through, or the degree to which changes in the currency rate are reflected in domestic pricing. The nominal exchange rate —the US dollar (USD/Taka) shows considerable pass-through effects. The pass-through accounting for the inflation environment, the global financial crisis of 2007–2009, asymmetric pricing impacts, and the change in monetary policy are all examined by many researchers. In keeping with Taylor's 2000 theory and the majority of empirical investigations, researchers find considerable and increased pass-through during the high-volatility inflationary phase. Regarding the global financial crisis of 2007–2009, researches discover that it caused a brief rise in the pass-through coefficient before it returned to its long-term trend. Additionally, they discover evidence of asymmetric effects in the short-term pass-through, which suggests that depreciations are communicated to domestic prices more strongly than appreciations.

Many investigation results have implications for macroeconomic strategy. The rapid rate of adjustment and overall large size of the ERPT provide a substantial policy problem that is challenging to address in the near future. Targeting the level of the exchange rate or its volatility in an effort to contain the ERPT to inflation might be a dangerous move that is unachievable given the existing level of foreign reserves. This is especially true when financial restraint is not necessary. Instead, a system with a floating exchange rate that is compatible with a credible interest rate-based, forward-looking monetary policy regime may succeed in stabilizing inflation expectations. In this regard, Bangladesh's recent switch to a monetary policy system based on interest rates has the potential to gradually lower the ERPT. Further issues about the ERPT's dynamics might benefit from clarity as Bangladesh's transition to the new monetary policy regime go forward: What (if anything) explains why the ERPT is greater during times of significant macroeconomic volatility? (ii) In times of extreme macroeconomic volatility, does the asymmetric ERPT seen in the short term still hold true? Will the predicted decrease in ERPT be the result of the new monetary policy regime? It is necessary to do more study to provide answers to these queries.

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Applying the Growth Identification & Facilitation Framework for Bangladesh

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Abstract:- The growth identification and facilitation framework is a comprehensive approach that aims to identify and promote sectors with high growth potential in developing countries. In the case of Bangladesh, an integral aspect of this framework is the evaluation of the impact of currency devaluation on export performance. This paper aims to explore the potential benefits and challenges associated with currency devaluation as a strategy to enhance export performance within the context of Bangladesh. Currency devaluation can lead to increased competitiveness, as a depreciated domestic currency makes exports relatively cheaper for international buyers. This can result in a boost to export volumes and increased foreign exchange earnings for the country. An improvement in export performance due to currency devaluation can have a positive impact on the overall economic growth of the country. It can spur industrial development, create employment opportunities, and attract foreign direct investment. Currency devaluation can lead to increased import costs, as imported goods become more expensive in domestic markets. This can result in inflationary pressures, potentially impacting the purchasing power of the population and eroding the gains from export-led growth. Bangladesh relies on imported raw materials and intermediate goods for many export-oriented industries. A devalued currency may increase the cost of these inputs, potentially reducing profit margins and hindering export competitiveness. Currency devaluation alone may not be sufficient to address underlying structural challenges such as inadequate infrastructure, a lack of skilled labor, and bureaucratic hurdles. These bottlenecks could limit the potential benefits of devaluation on export performance. Focusing on product diversification and exploring new markets can help mitigate the risks associated with currency devaluation. By broadening the range of export goods and customer bases, Bangladesh can reduce its dependence on a few key industries or markets. Alongside currency devaluation, policymakers should prioritize promoting export-oriented industries by providing targeted incentives, improving infrastructure, and streamlining bureaucratic processes. This approach will strengthen the overall competitiveness of these industries and enhance their capacity to capitalize on a devalued currency. Small and medium-sized enterprises (SMEs) play a crucial role in export growth. Governments should focus on providing tailored support

to SMEs, including access to finance, business development services, and technology upgrades. This will help them adapt to changes in the currency value more effectively and enhance their export competitiveness. The growth identification and facilitation framework provides a comprehensive approach for Bangladesh to enhance its export performance. While currency devaluation can be a valuable tool, policymakers must carefully consider its potential impact on inflation, import costs, and structural bottlenecks. By implementing strategic policies and supporting the diversification and growth of export-oriented industries, Bangladesh can utilize currency devaluation effectively to drive sustainable economic growth and development.

Keywords:- Bangladesh; China; Human Resource Development; Readymade Garments; ICT, Finance.

I. INTRODUCTION

Bangladesh, located in South Asia, holds a significant geo-economic and political position within the region. It is strategically located between South and Southeast Asia, providing it with access to regional markets. It shares borders with India and Myanmar, allowing for trade and connectivity opportunities. Bangladesh has two major ports, Chittagong and Mongla, which serve as vital gateways for international trade. These ports enable the country to connect with global markets and facilitate trade flows. Bangladesh boasts a substantial labor force, which plays a crucial role in its economic development. With a large population and relatively low labor costs, the country has become a prominent player in the global textile and garment industry.

Bangladesh operates under a democratic parliamentary system with stable governance. This political stability provides an enabling environment for economic growth and investment. The government of Bangladesh has implemented various policies and initiatives aimed at promoting economic growth, including infrastructure development, investment incentives, and export promotion schemes. Bangladesh actively participates in regional forums such as the South Asian Association for Regional Cooperation (SAARC) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC). These partnerships facilitate regional

integration and cooperation, benefiting the country's economic prospects.

Bangladesh has experienced periods of currency devaluation, which can have both positive and negative effects on the economy. A devalued currency makes exports more competitive in international markets, potentially boosting export performance. Bangladesh heavily relies on exports, with the textile and garment industry accounting for a significant portion of its export earnings. Therefore, currency devaluation can play a crucial role in determining the export performance of the country. Devaluation of currency may lead to an improvement in the trade balance by reducing imports and increasing the competitiveness of exports. This, in turn, can strengthen the overall economy by increasing foreign exchange reserves and promoting economic growth. Currency devaluation can also result in increased costs for imported goods and raw materials, potentially impacting the overall cost of production. This could have both positive and negative implications for export-oriented industries.

The growth identification and facilitation framework is a useful tool for analyzing and promoting economic growth in Bangladesh. This paper will analyze the relationship between currency depreciation, changes in export volumes, trade balance, and the overall economic growth of the country. The study will draw on both quantitative data analysis and qualitative assessments to provide a comprehensive understanding of the dynamics at play. The findings will contribute to policy discussions and inform strategies for effectively utilizing currency devaluation as a tool for promoting export-led growth in Bangladesh.

The growth identification and facilitation framework offers a thorough analytical framework for comprehending the dynamics of economic growth and creating successful policy solutions. Bangladesh, a developing nation with a concentration on export-oriented growth, has had issues with its ability to compete internationally and the effectiveness of its exports. The effects of currency depreciation on a nation's export industry may be both favorable and unfavorable. On the one hand, a decline in the value of the currency might result in a relative decrease in the price of the nation's goods and services on foreign markets, improving export competitiveness. Devaluation, on the other side, may also drive up the price of imported inputs, thereby hurting total export performance.

We intend to give insights into the efficacy of currency devaluation as a strategy for encouraging export-led growth in Bangladesh by taking into account numerous aspects such as trade policy, productivity growth, and global market circumstances. Additionally, this study will throw light on Bangladesh's policy implications and offer suggestions that might improve the nation's export performance and competitiveness on the world market. The results of this study will not only add to the body of knowledge on growth identification and facilitation, but will also be helpful to policymakers, practitioners, and researchers who are trying

to figure out how currency devaluation affects export performance in developing nations like Bangladesh.

Arayawuth et al. (2021) claim that Bangladesh is still developing, especially in terms of its economy and population. The same organization asserts that the country's successive governments have overcome long-standing obstacles to peace and stability, such as terrorism and extremism, intra-state conflicts, ethnic and religious hostility, confrontational political rivalries, violent crime, and problems with neighbors. Bangladesh's greatest comparative advantage is its labor force, which is currently underutilized. Bangladesh's per capita income in 2021 was \$2,503, according to World Bank data. According to a 2021 World Bank forecast, Bangladesh will no longer be a least developed country (LDC) by 2026. According to Hussain (2013), a recent World Bank study shows that Bangladesh could increase its trade by about 38% if it could raise the standard of its business climate to that of India. This shows that Bangladesh has tremendous potential that needs to be harnessed to move the country forward. Bangladesh also has an unemployment problem.

Bangladesh's natural resources, including forests, water, fisheries, mineral resources, land, marine resources, climate, energy and power resources from oil and gas, natural gas and oil, coal, rock and sand, and other resources, can be used to promote economic growth and development. Agriculture, fisheries, industry, finance, trade and transportation are some of the major economic sectors of Bangladesh. Bangladesh's major exports include ready-made garments, knitwear, frozen fish, jute, pharmaceuticals, tea, chemicals, and leather goods.

According to a forecast by the International Trade Ministry, ready-made garments (RMG) exports worth \$31.5 billion and workers' remittances from abroad, which reached a record \$24.8 billion in fiscal year 2020–21, will continue to be the main drivers of Bangladesh's economic growth in 2022. According to the International Monetary Fund (IMF), Bangladesh's GDP grew 6.94 percent annually to \$354.24 billion in fiscal year 2020–21. This alone shows the enormous development potential of our country.

While past theories promoted resource allocation based on market dynamics, we think a paradigm change is necessary. By fixing some governance issues, the Bangladeshi government must play a crucial role in modernizing the nation. Bangladesh has enjoyed a consistent development of its economy outside the petroleum industry since gaining independence (on March 26, 1971). All economic sectors have been impacted by the increase, but particularly the apparel sector. The International Trade Administration 2022 study states that from 2005 to 2019, Bangladesh's GDP grew steadily each year by more than 6%. Due to the COVID-19 pandemic in 2020, the economy slowed down. Bangladesh is endowed with both natural and human resources, thus a plan must be developed for the nation to get the most out of both.

II. LITERATURE REVIEW

- *Theoretical Framework*
- *Recent Economic Development in Bangladesh*
- *Economic growth in the past decade:*

In its first 50 years of independence, Bangladesh has come a long way. Bangladesh has received accolades for its good economic performance over the last ten years, which has been made possible by careful macroeconomic management. Bangladesh's real GDP has increased at an annual pace of roughly 6.8% since FY 2011/12, reaching 8.2% in FY 2018/19 (WTO, 2019). An annual real GDP per capita growth rate of 5% has resulted in a sustained drop in poverty and increased access to healthcare and education. Several programs, including Vision 2021 and Vision 2041, the 7th and 8th Five-Year Plans, the National Industrial Policy 2016 and the Export Policy 2018–2021, have been implemented throughout Bangladesh (Bangladesh Planning Commission, 2020).

Bangladesh's economy has changed from being primarily agricultural to being more manufacturing-based, supported by a large pool of cheap labor. The ready-made garment (RMG) business has fostered economic growth. Additionally, a significant factor is the robust domestic

demand. Approximately two thirds of Bangladesh's growth is attributable to private consumption. These all contributed on average to the GDP in the following ways: 28.42% for business, 22.42% for industry, and 49.33% for services. As a result, the service industries are mostly to blame for the expansion of the country's economy.

Bangladesh's 2015 passage over the World Bank's lower-middle-income country threshold was made possible by Bangladesh's robust GDP growth, which has also enabled the country to reduce poverty and improve other social indices.

More recently, in FY2020/21, Bangladesh's GDP increased by 3.5 percent due to a dramatic decline in exports, remittances, and imports caused by the COVID-19 epidemic as well as a nationwide lockdown that reduced domestic activity. A comeback in exports, which reflects the recovery of external demand from key trade partners and the strengthening RMG industry following the lockdowns caused by the pandemic, is expected to have helped growth boost up to 5 percent in FY2021/22 (World Bank,2022). Chart 1 presents historical sector-specific statistics, while Table 1 of the appendix provides a full analysis of sectoral contribution.

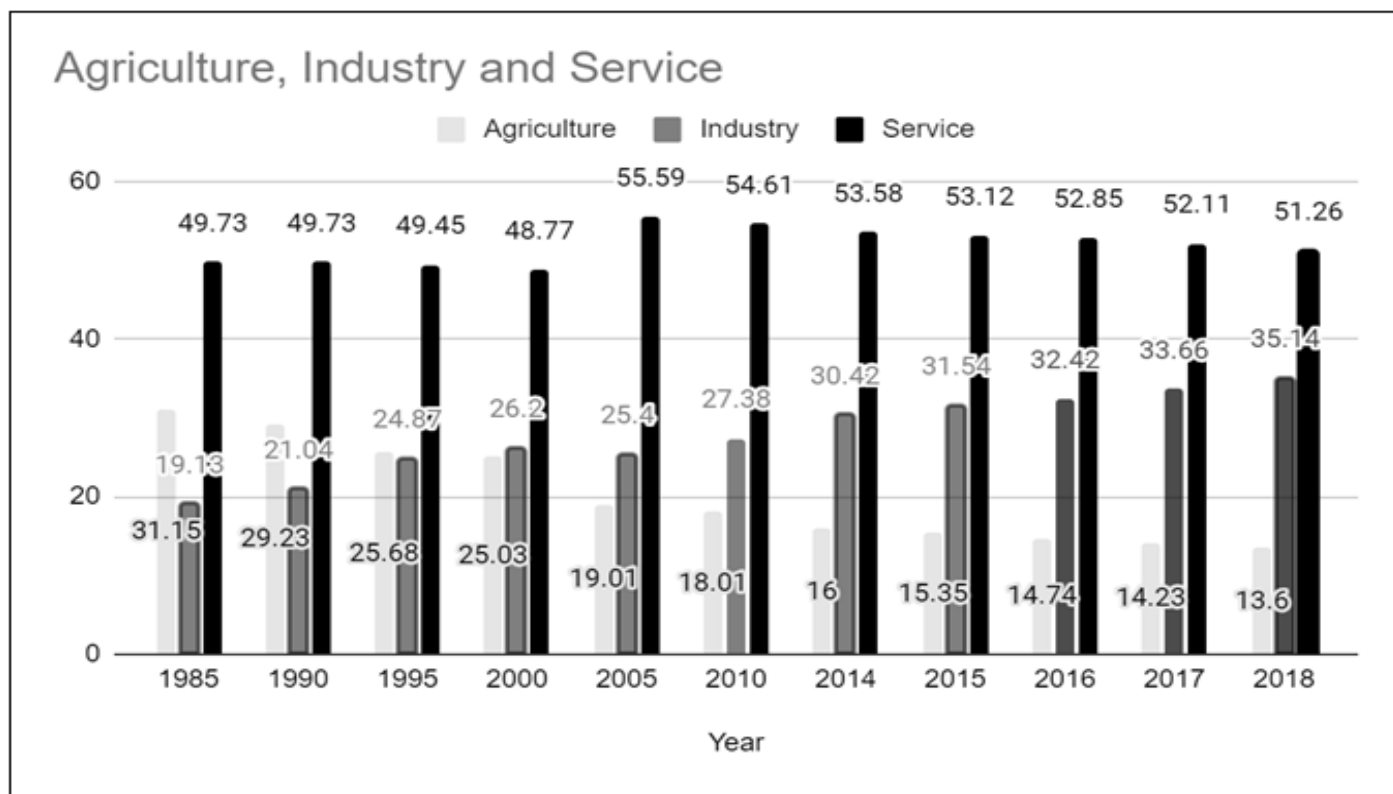


Chart - 1 Share of three Major Sectors in the Last More than three Decades
Source: Bangladesh Economic Review, 2019

In terms of GDP structure, according to statistics from the World Bank, in 2020, Bangladesh's consumption, investment, and net exports accounted for 74.87%, 31.54%, and -6.40% of GDP, respectively. Agriculture, industry, and service industries accounted for 12.65%, 28.79%, and 54.63% of GDP, respectively.202 (World Bank). Table 2 displays the structural makeup as a proportion of GDP.

Table 1 Structure of GDP of Bangladesh (As Percentage of GDP, %)

Sector	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
Agriculture	17.38	16.77	16.5	16	15.35	14.74	14.23	13.6
Industry	28.08	29	29.55	30.42	31.54	32.42	33.66	35.14
Service	54.54	54.23	53.95	53.58	53.12	52.85	52.11	51.26

Source: Bangladesh Economic Review, 2019

Production requires a variety of productive resources, including capital, as well as other productive resources. They are made up of both financial capital and physical capital, the latter of which is made up of both infrastructure and equipment (often utilized at the business or agricultural level) as well as machines. According to the decision of the UN General Assembly, which was held in November 2021, Bangladesh is planned to graduate from the group of least developed countries (LDCs) on November 24, 2026, around

50 years after it first entered this cohort of poor countries in December 1975.

Entrepreneurial competences are the skills, knowledge, and information that companies have. Technology, entrepreneurship, and entrepreneurial traits are among them. They include the vital skills required for production, investing, and establishing linkages at the firm/farm level. Chart 2 displays graduation-related indicators.

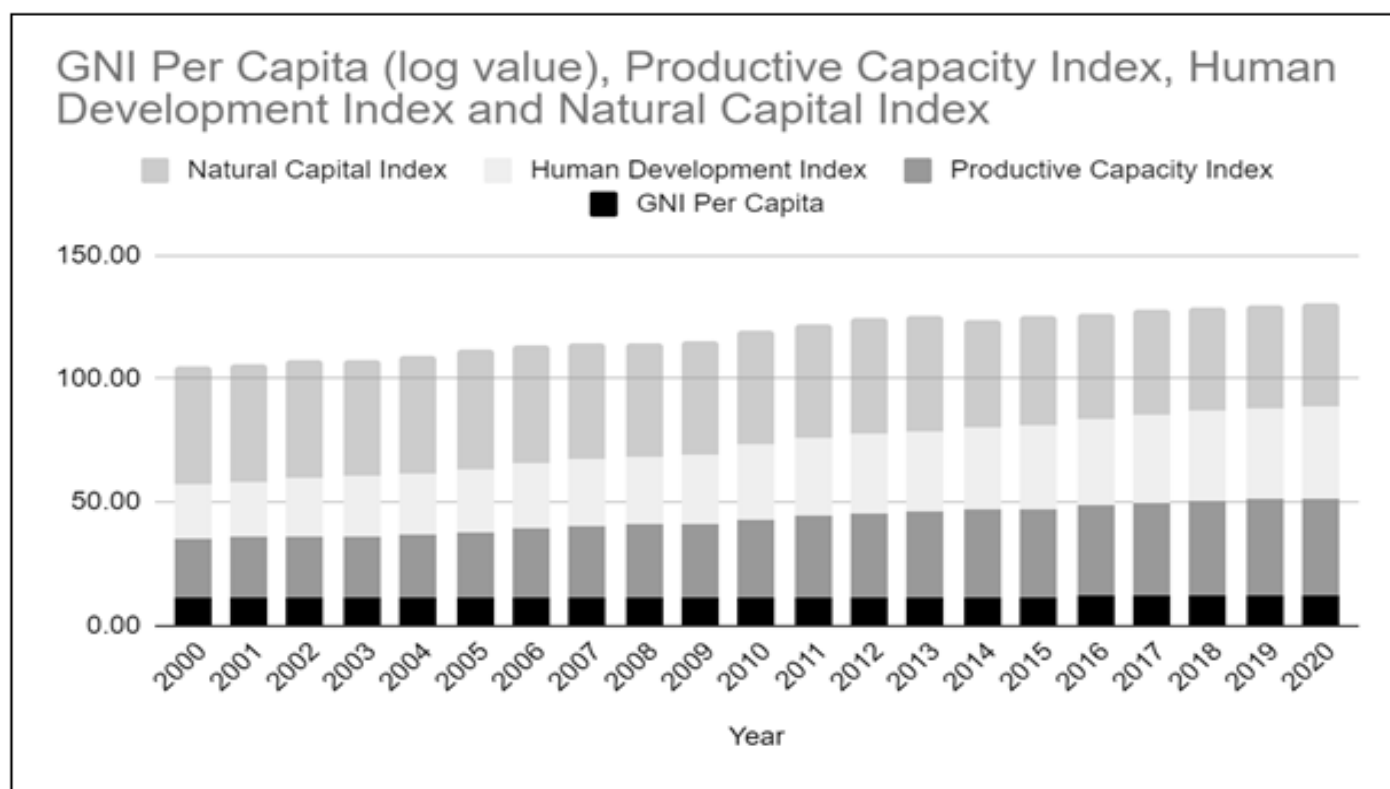


Chart - 2 Bangladesh’s Graduation from LDC Status
Source: Authors Calculation from UNCTAD Data

Productive resources, entrepreneurial capabilities, and production links are what UNCTAD has long referred to as "the productive resources, entrepreneurial capabilities, and production linkages, which together determine the capacity of a country to produce goods and services and enable it to grow and develop." Bangladesh's EVI score in 2021 was 33.6, which was below than the 39.1 points average for LDCs. These criteria assess a country's ability to sustain development and the associated aid needed to accomplish so. The index scores are displayed in table 1(a).

Table - 1(a) Score status for Graduation

Criteria	Threshold	Bangladesh Score
GNI per capita (USD)	1,230 or above	1,274
Economic Vulnerability Index (EVI)	32 or below	25.2
Human Asset Index (HAI)	66 or above	73.2

Source: Department of Economic and Social Affairs Economic Analysis, the UN.

In Bangladesh, agriculture has traditionally served as a driver of the nation's expansion and sustained progress. It is Bangladesh's main source of employment. The results of the first quarter of the Labour Force Survey 2023 show that there are now 73.69 million people working in Bangladesh, of which 48.25 million are men and 25.44 million are women. Broadly speaking, the sectors of agriculture, industry, and services held respective sectoral shares of 11.50 percent, 37.07 percent, and 51.44 percent in FY 2021–22, down from 12.07 percent, 36.01 percent, and 51.92 percent in the prior fiscal year. The sectoral makeup of the labor force is shown in Table 2.

Table 2 Share of Employed Labour Force above 15 Years by Sector

Sector	LFS 1995-96	LFS 1999-00	LFS 2002-03	LFS 2005-06	LFS 2010	LFS 2013	LFS 2015-16	LFS 2016-17
Agriculture, forestry and fishery	48.85	50.77	51.69	48.1	47.33	45.1	42.7	40.62
Mining & quarrying	-	0.51	0.23	0.21	0.18	0.4	0.2	0.2
Manufacturing	10.06	9.49	9.71	10.97	12.34	16.4	14.4	14.43
Power, gas & water	0.29	0.26	0.23	0.21	0.18	0.2	0.3	0.2
Construction	2.87	2.82	3.39	3.16	4.79	3.7	5.6	5.58
Trade, hotel & restaurant	17.24	15.64	15.34	16.45	15.47	14.5	13.4	14.34
Transport, maintenance & communication	6.32	6.41	6.77	8.44	7.37	6.4	9.4	10.5
Finance, business & services	0.57	1.03	0.68	1.48	1.84	1.3	1.6	1.97
Commodities & personal services	13.8	13.07	5.64	5.49	6.26	6.2	6.2	6.08
Public administration and defense	-	-	6.32	5.49	4.24	5.8	6.2	6.08
Total	100	100	100	100	100	100	100	100

Source :BBS , Labour Force Survey , 1995-96,1999-00,2002-03,2005-06,2010,2013, 2015-16 & 2016-17.

According to ILO figures about labor and workforce, the unemployment rate increased from 4.2 percent in FY2018/19 to 5.3 percent in FY2019/20. The ILO estimates that in 2018, 26% of youth were not in employment, education, or training. Females are more affected than males, with a 44 percent to 9 percent difference. Bangladesh's foreign currency reserves peaked at 37.3 billion US dollars at the end of FY2019–20, placing it second only to India among South Asian nations (MOFCOM, 2021). In 2021, the agriculture sector employed 37.09 percent of Bangladeshi employees, followed by industry (21.71) and services (41.2).

➤ Major Industries:

• Ready-Made Garment Products:

The cornerstone of Bangladeshi manufacturing is the garment sector. This industry employs around 5 million individuals, more than 80% of them are women. The largest sector in Bangladesh that generates foreign cash is the apparel sector. Ready-made clothing exports totaled US\$27.94 billion in 2020, or 83% of the total export volume. Textile and apparel exports total 14.04 billion US dollars. More than 85% of these ready-made clothing items are sent to North America and Europe.

• Jute and Jute Products:

With an annual production of more than 1 million tons, Bangladesh is the second-largest jute producer in the world. Of this amount, 65.0% is utilized for local manufacture and consumption and the remaining portion is exported. Bangladesh's second-largest export is jute and jute products. The jute sector has seen excellent growth in FY 2019/20. Jute and jute-related goods saw an 8.1% rise in export volume, going from US\$820 million in 2018-2019 to US\$880 million in FY2019/20.

• Pharmaceutical Industry:

According to information provided by Bangladesh's Ministry of Finance, the pharmaceutical sector has grown quickly and the nation now produces 98% of the prescription pharmaceuticals it needs. There are 267 pharmaceutical plants in the country that create 26,910 different types of medications. At present, Bangladesh's drugs and pharmaceutical raw materials have been exported to 147 countries and regions, including the United States, the United Kingdom and other developed countries. Data from the Bangladesh Export Promotion Bureau show that the export of drugs brought in US \$136 million in fiscal year 2018–19, a rise of 4.49%.

- *Other Industries:*

Bangladesh's industrial growth is often behind schedule, with a focus on labor-intensive light industries. Imports are a major source of revenue for the production of steel, non-ferrous metals, building supplies, cars, ships, and other goods. In Bangladesh, there are over 40,000 tiny light enterprises that produce almost 10,000 different items with an annual output value of roughly US\$120 million, including imported bicycles, small tools, toys, consumer goods, and consumer durables.

- *Foreign Direct Investment:*

Bangladesh received \$2.564 billion in foreign direct investment in 2020, according to the United Nations Conference on Trade and Development's World Investment Report 2021. Bangladesh had drawn \$19.395 billion in FDI by the end of 2020. By the end of 2020, the United States (\$3.93 billion), the United Kingdom (\$2.52 billion), the Netherlands (\$1.61 billion), Singapore (\$1.52 billion), South Korea (\$1.18 billion), mainland China (\$990 million), and Hong Kong (\$940 million) were the top investment destinations.

Multinational companies actively invest in Bangladesh, including Unilever, Nestle, Chevron, Siemens, and British American Tobacco. China consistently encouraged the building of significant highway and power plant projects in Bangladesh in 2020. To make it easier for their businesses to invest in Bangladesh, China, Japan, and India have established industrial parks there. Foreign investors have taken notice of Bangladesh's strong promotion of the PPP model and introduction of international funding for infrastructure projects. The Manufacturing Sector's Volume and Growth Rate are displayed in Table 4 of the appendix.

- *Bottleneck Problems:*

Despite major advancements, inequality has increased, employment growth has slowed, and poverty reduction has been slower than in the preceding ten years. The biggest barrier to entering the formal workforce continues to be a lack of education and skills. Growth is being hampered by supply constraints, particularly in the transportation infrastructure.

- *The RCA Metrics*

Revealed comparative advantage (RCA) is a notion built on the premise that trade patterns between countries are influenced by their relative productivity differences. Despite the difficulties of seeing such production fluctuations, an RCA metric that can "reveal" such disparities can be simply constructed from trade data. It should be noted that the RCA metric does not account for implemented national measures that have an impact on competitiveness, such as tariffs, non-tariff measures, subsidies, and other factors, despite the fact

that it can be used to provide a broad overview and initial approximation of a country's export competitiveness.

A country is considered to have a disclosed comparative advantage in a certain good if its exports of that commodity are a significant portion of its overall exports of all commodities.

That is,

$$RCA_{Ai} = \frac{\frac{X_{Ai}}{\sum_{j \in P} X_{Aj}}}{\frac{X_{wi}}{\sum_{i \in P} X_{wi}}} \geq 1$$

Where

P is the set of all products (with $i \in P$),

X_{Ai} is the country A's exports of product i ,

X_{wi} is the world's exports of product i ,

$\sum_{j \in P} X_{Aj}$ is the country A's total exports (of all products j in P), and

$\sum_{i \in P} X_{wi}$ is the world's total exports (of all products j in P).

When a nation has a revealed comparative advantage (RCA) for a specific good ($RCA > 1$), it is assumed that it is a competitive producer and exporter of that good in comparison to a nation doing so at or below the global average. A nation is said to have a strong export position in a certain product if it has a significant comparative advantage in it. A country's export strength in product i is inversely correlated with the value of its RCA for that product.

Modern Bangladesh started economic reforms in the late 1970s to favor open markets and foreign direct investment. By the 1990s, the country's ready-made garment industry is prospering. Remittances from the huge Bangladeshi diaspora become a major source of foreign exchange reserves. Bangladesh's competitiveness index ranged from 14.77 points on average from 2007 to 2019, reaching a record high of 52.12 points in 2019 and a record low of 3.50 points in 2009. The ready-made garment (RMG) industry has been one of the main engines of the country's economy. It is the main source of export revenue and accounts for 84.21% of all export revenue generated by the country (BGMEA, 2020). In comparison to other manufacturing locations, Bangladesh provides inexpensive production costs, including reasonable labor expenses and competitive pay. Bangladesh has become a popular sourcing location as a result of the global garment companies and purchasers drawn by this cost advantage. Chart - 3 displays an example radar map of some items of readymade garments.

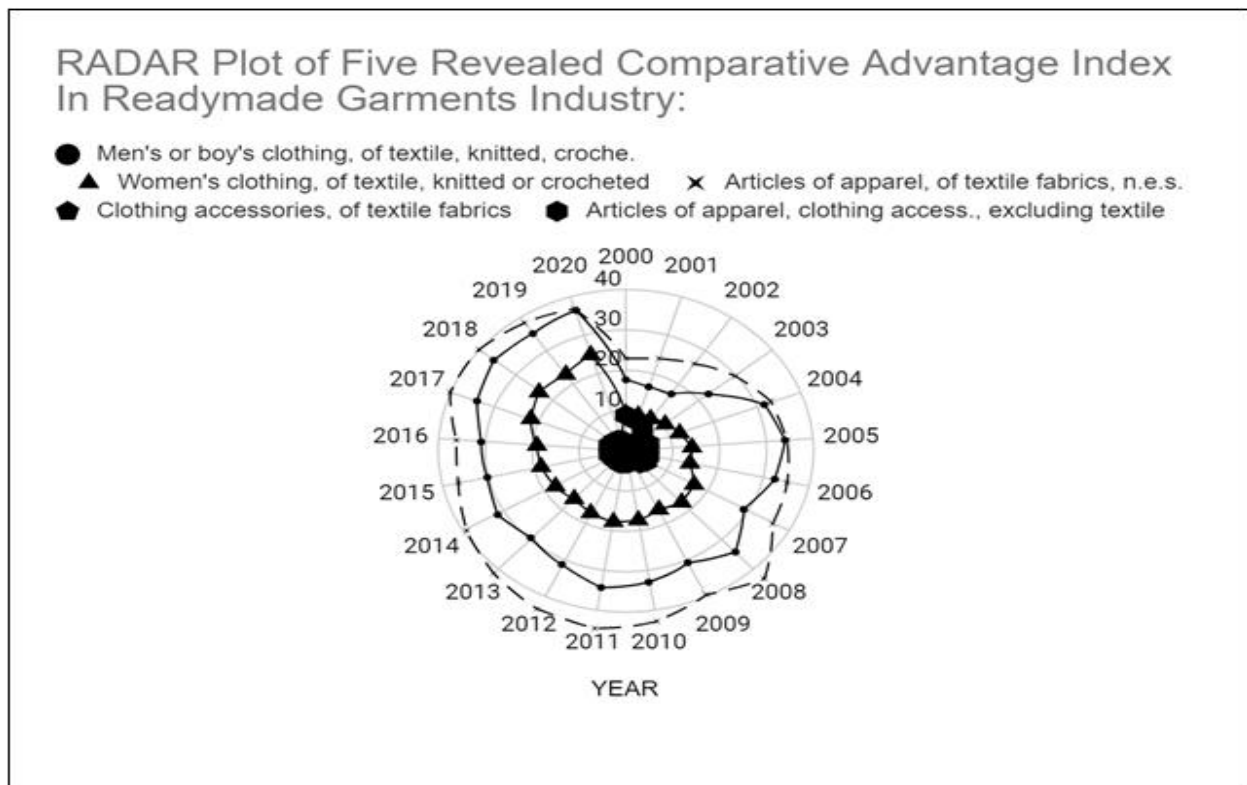


Chart - 3 Competitiveness

Source: Authors Calculation from UNCTADStat

- *Lack of Skilled Workforce:*

Bangladesh has a large demographic dividend and access to inexpensive labor. However, Bangladesh has a poor level of labor productivity. Given that a sizeable portion of Bangladesh's labor population is poorly skilled, skill mismatches provide a significant barrier to entry into the formal economy. For instance, in July 2017, the Bangladesh Labor Market and Technology Gap Report revealed that there would be a significant shortage of trained people in Bangladesh as the country's population would increase to 157 million by 2040 from 93 million in 2030. Bangladesh's biggest comparative advantage is its labor force, which is currently underutilized while being vast and growing. In order to accommodate the growing labor force and make better use of the pool of potential underemployed people, labor-intensive industries must be expanded.

- *Power & Water :*

Another barrier preventing Bangladesh's economic and social progress is a lack of water and power. About 5% of the population remains without access to power. Bangladesh suffers from severe water and electricity shortages, and power outages are frequent. In order to maintain their own power supply and to secure water supply, many foreign businesses in Bangladesh frequently opt to buy fuel oil and natural gas-powered generators.

- *Other Pressing Issues:*

The government of Bangladesh must address issues like the vulnerability to climate change, efforts to improve worker safety, diversification of the economy, policies to encourage privatization, expansion of special economic

zones, development of transportation infrastructure, regulatory guidelines for pharmaceuticals and medical devices, support for the textiles sector, development of the ICT sector, liberalization of trade in services, and difficulties facing the banking sector. In the interim, Bangladesh would need to continue with ongoing reforms that would strengthen the diversification of its economy and the competitiveness of its industries, as well as improve its business environment and fiscal conditions, in order to maintain the growth momentum and address post-LDC graduation challenges.

- *Empirical Studies with Economic Development Outlook:*

This dynamic has been the subject of several studies, particularly when it comes to rising economies like Bangladesh. Khan (2015) is a significant research that covers this subject. With an emphasis on the depreciation of the currency and its effects on export performance, this extensive study analyses growth patterns and policy implications for Bangladesh. The author stresses the significance of a framework for identifying and facilitating growth, which enables a methodical examination of the elements affecting growth and the creation of useful policy recommendations.

Another study by Ahmed and Mahmood (2017) looks at the connection between Bangladesh's export performance and the depreciation of the currency. The authors examine the long-run and short-run relationships between these variables using a Vector Error Correction Model (VECM). The results demonstrate that currency depreciation has a beneficial impact on export growth, showing that it can

improve a country's competitiveness in global markets. To achieve sustained export performance, the research also emphasizes the significance of overcoming supply-side restrictions and raising productivity.

The effect of currency depreciation on the ready-made garments (RMG) export performance of Bangladesh is examined by Chowdhury (2019). To examine the impact of exchange rate variations on RMG exports, the study uses a gravity model and data on national exports. The results show that a currency depreciation benefits RMG exports, indicating that devaluation may be a useful tool to increase the sector's export competitiveness.

Furthermore, Raihan et al. (2014) investigate how Bangladesh's currency rate policy might support export-oriented growth. The authors underline the necessity for consistent and stable policy in this area while discussing the need of a competitive exchange rate to facilitate export development. The report also emphasizes how infrastructure upgrades and changes in trade policy work in tandem to increase export performance.

The body of research shows how important currency devaluation is in affecting export performance, particularly in developing nations like Bangladesh. The growth identification and facilitation framework, as used in several research, offers a thorough method for comprehending the relationship between currency depreciation and export performance. Overall, the study emphasizes the necessity for encouraging policies, dealing with supply-side restrictions, and improving productivity to achieve sustained export-led growth in Bangladesh.

Bangladesh Given the easing of pandemic-related economic disruptions and the continuance of supporting macroeconomic measures, GDP growth is anticipated to be resilient in the medium run. The forecasted inflation rate

will stay higher than the desired level of 5.3%. Increasing global commodity prices and heightened uncertainty as a result of the hostilities in Ukraine will put a strain on the external and fiscal sustainability. Continued high commodity prices, which might aggravate inflation dynamics and affect the external balance, a decline in global demand for Bangladesh's exports, and the possibility of future COVID-19 waves necessitating additional containment measures are all negative concerns. (IMF, 2022)

The economic growth is anticipated to increase to 6.6 percent in FY2021/22, backed by a strong recovery in exports, continuing implementation of the stimulus packages, and accommodating monetary and fiscal policy, according to the IMF's 2021 Article IV Consultation Report of Bangladesh. The lockdown and limitations, moderate growth in private credit, and a low vaccination rate, however, all point to a sluggish rebound. Growth is anticipated to reach 7.1 percent in FY2022/23 as both the domestic immunization program and the external environment improve. In comparison to pre-pandemic forecasts, the output level is predicted to decline in the medium term as a result of the pandemic's effects.

The Gross Domestic Product (GDP) provides an economic snapshot of a country and may be used to estimate the size and growth rate of an economy. When computing GDP using the expenditure method, the sum of all final goods and services bought in an economy during a certain time period is taken into account. As of 2022, Bangladesh's nominal (current) Gross Domestic Product (GDP) is \$460,201,000,000 (USD). In 2022, Bangladesh's real GDP (constant, inflation-adjusted) amounted to \$222,726,000,000. 2022's GDP Growth Rate was 7.10%, an increase of 20,254,000,000 US Dollars from 2021's Real GDP of \$285,269,000,000. A graph of the GDP from 2000 to 2020 may be seen in Chat - 4.

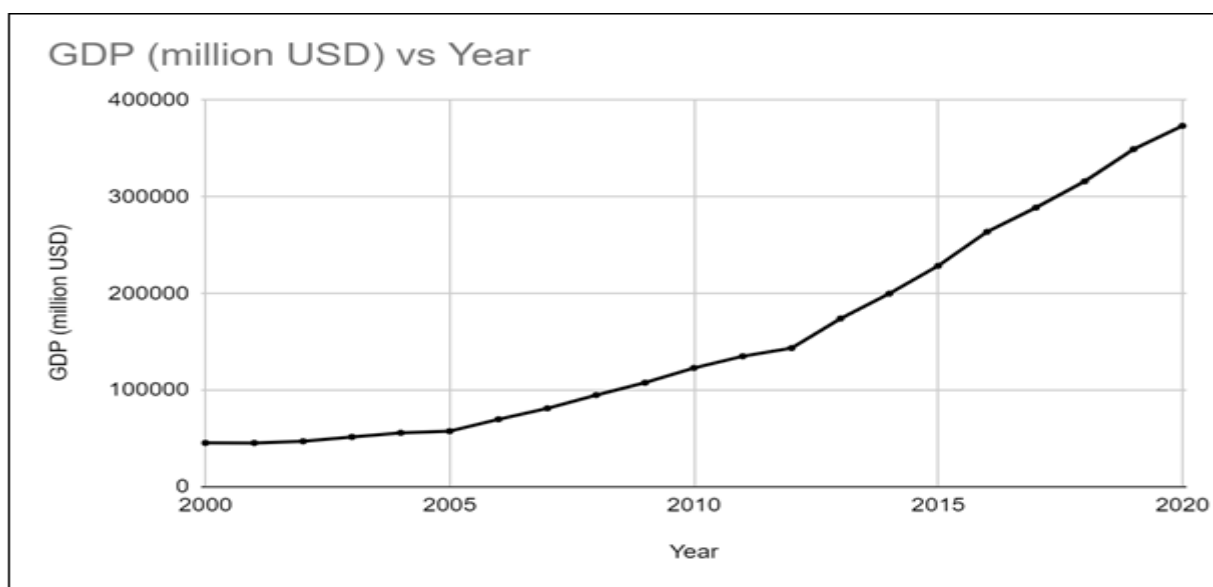


Chart - 4 Gross domestic product: GDP by type of expenditure, VA by kind of economic activity, total and shares, annual (US dollars at current prices in millions)
Source: Authors calculation from UNCTADStat

III. RESEARCH METHODS

This study uses the Growth Identification and Facilitation Framework (GIFF) as its theoretical underpinning to examine the link between currency depreciation and export performance in Bangladesh. The research design, data collection, data analysis, and references used in this study are described in this methodology. To acquire a thorough understanding of the influence of currency depreciation on Bangladesh's export performance, this study takes a qualitative method. This study uses an exploratory research approach to look at the connection between export performance and currency devaluation.

The theoretical framework for this study is the Growth Identification and Facilitation Framework (GIF) suggested by Hausmann, Rodrik, and Sabel (2004). GIF offers a thorough framework for understanding and analyzing the variables influencing economic development, with an emphasis on the identification and facilitation of economic activities.

The research largely uses secondary data sources, such as articles from scholarly journals, publications from renowned organizations like the World Bank and the International Monetary Fund, the Bangladesh Bureau of Statistics, and central bank papers, as well as statistical data.

By analyzing historical exchange rate data and concentrating on changes in the value of the Bangladeshi Taka relative to major currencies, the variable Currency Devaluation will be evaluated. Data on exports, including total export value, export destinations, and sector-specific exports, will be gathered. To account for additional factors impacting export performance, some macroeconomic data will be incorporated, such as GDP growth, inflation rate, interest rates, and trade balance. The presentation of trends and patterns in currency depreciation, export performance, and macroeconomic indicators will be done using descriptive statistics. To investigate the connection between currency depreciation and export performance, correlation analysis will be used. Thematic analysis and other qualitative data analysis approaches will be used to examine and understand the qualitative data gathered from interviews with pertinent industry stakeholders, decision-makers, and specialists. The qualitative research will shed further light on how important players perceive and interact with the effects of currency depreciation on export performance.

➤ *The Growth Identification and Facilitation Framework*

A specific recommendation of New Structural Economics is that modern economic growth entails a number of technology-driven innovations, industry diversification and upgrading, infrastructure development, and the establishment of various institutions whose primary duties are business maximization and profit generation. The unique structure of the country's endowments controls the factor price and the finer structure of the industries during the process of economic evolution. It consists of a good deal of everything that a nation produces in plenty throughout

time. In this regard, Bangladesh, a middle-income nation, is blessed with an abundance of human capital and natural resources. Aparico and Muzzini (2013)

In addition, 69% of Bangladesh's total population of 167 million people are in the productive age range of 15 to 64 years, which represents significant potential for the country's human capital. (UNFPA, 2022) This is a crucial element that may provide a comparative advantage and develop into a competitive advantage in labor-intensive industries both domestically and overseas. Economic development in labor-rich, resource-rich economies, Lin, 2011. As a result, achieving the optimum industrial structure would make Bangladesh a highly competitive state, which is appropriately determined by the structure of endowments, i.e., human capital in the form of labor resources.

The rate of technological advancement has a significant impact on the dynamic nature of the nation's endowment-structure. Any little change in the relative pricing may have an impact on the choice of industries since the type and category of industrial structure must be consistent with the country's underlying comparative advantage. The comparative advantage can only then be transformed into a national competitive advantage. Therefore, the wage level is crucial for directing a country's comparative advantage.

It is a reality that if the right circumstances and conditions exist, developing nations may manufacture the same good at a lower cost than wealthy nations. Bangladesh will have to adopt or learn technology-based intervention approaches as a result, which will cost money. For established new industries with their own endowment structures, this will undoubtedly help the nation as a latecomer. The benchmark would be the role model nation, whose example would be followed in the manner of the flying-geese strategy used by numerous countries to attain the aim of a successful economic behemoth over the course of many decades.

Estimates from the Bangladesh Bureau of Statistics (BBS) place the broad industrial sector's share of GDP at 34.74 percent in FY 2019–20 and 34.99 percent in FY 2020–21. The wide industrial sector of the GDP consists of four of the fifteen GDP sectors: mining and quarrying, manufacturing, electricity, gas, and water supply, and construction. The manufacturing industry makes up the largest portion of the GDP. The manufacturing sector's share of GDP grew from 23.59 percent in FY 2019–20 to 23.66 percent in FY 2020–21.

This new initiative of faster industrial growth is not entirely dependent on process regulation by the market. Despite operating in a sector of the economy where comparative advantage exists, the nation may face significant obstacles due to a lack of required infrastructure and input components. Because private businesses would not be able to make such investment decisions in the true spirit of intended efforts for industrial upgradation and diversification, the involvement of government becomes

even more important for the sake of regulation and coordination in the involved areas.

Additionally, the method used to innovate and diversify the sectors is risk-oriented, which immediately puts the first-movers at risk in the aftermath of externalities. If the leading firms don't succeed in getting the desired outcome, it serves as a model for other businesses. However, if the early enterprises are successful, they serve as an example for others to follow when making decisions about the types and groups of industries that may be profitable in a given nation under a certain set of circumstances.

However, if other businesses take this endeavor, they could eliminate the potential of renting out space that a first-mover firm would typically have. In industrialized nations, prime moving companies may typically get patents and benefit from the rents accumulated following a successful industrial setup. However, no patent is available because a comparable system is already in use abroad in another industrialized nation. In this situation, the enterprises leading the industrial diversification initiative will benefit directly from government control and cooperation.

The GIFF proposes a new method whereby a certain industry is recognized as having a comparative advantage in that particular economy, and then assistance is given to the industrial enterprises of that nation in order to help them advance quickly by removing the underlying obstacles. Since private businesses are unable to handle the sector-specific difficulties on their own, government must choose the winners. This is an inevitable process. The main danger in this situation is that the nation may choose an industry that is far more advanced and established than the nation's own prospective comparison. Another potential of choosing incorrectly is choosing an industry in which the concerned country no longer has a comparative advantage.

These policy ideas provide a collection of 6 methods for detecting and promoting the growth process. Selecting certain sectors is one of the three steps. Once the target industries have been identified, the value-chain analysis can provide light on the obstacles that are anticipated to arise when private sector companies enter and advance within these particular sectors.

The first stage in this approach is to identify specific items and services whose production and trade have grown over the previous three decades in the rapidly developing economies. Additionally, these nations must be endowed with a similar endowment structure and a per capita GDP that is between 100 and 300 percent higher than that of the host nation. In most cases, the quickly expanding economy that has produced products and services for around 20 years may start losing its comparative advantage in this specific sector since wage levels are likely to rise throughout the growth-related initiative. In this situation, Bangladesh's textile manufacturing industry is the best business endeavor since it allows for cautious interventions in a few carefully chosen regions through investments and government

backing. The nation already has a large natural endowment of labor to assist the process. Long-term economic growth of the nation will result from the creation of successful new businesses as a result.

Second, it is the responsibility of the government to provide priority to the chosen industrial sectors, particularly those in which there aren't many independent private sector businesses. The obstacles faced by these businesses that prevent them from raising the bar and enhancing the value of their goods must be identified by the government. The government need to work to remove the barriers that keep new businesses from entering the manufacturing industry. The manufacturing industry also affords the government the flexibility to establish fair conditions for luring high-income nations' foreign direct investment.

Thirdly, after key industrial areas have been determined, the government must develop a plan to concentrate on and take into account the experiences of private companies that have been successful. The government need to provide them with assistance so they may modernize their manufacturing facilities.

In the parts that follow, this framework's specific applicability to Bangladesh is discussed.

➤ *Applying the GIFF: Comparative Value-Chain Analysis:*

The World Bank's "The Textile-Clothing Value Chain in India and Bangladesh" report offers a value chain analysis of the Bangladeshi textile industry as well as policy recommendations for the government to help it identify the sector's bottlenecks and encourage investment, which will eventually help it trade its goods internationally to become even more competitive. The two nations covered by the report are Bangladesh and India. However, Bangladesh is the particular emphasis at this time since it is seen as a unique circumstance.

Some analysis highlights the policy issues by comparing India and Pakistan to the textile industry's primary obstacles and possibilities (Hossain & Baars, 2022). The goal of this comparison is to evaluate other comparable nations that are also significant exporters of goods connected to textiles on the global market in terms of competitiveness. While China has been selected as a benchmark country for comparison in order to suggest a framework for sector growth facilitation.

In one investigation, 40 different businesses participated in a firm-based survey. According to the findings, Bangladesh must create Special Economic Zones and Industrial Parks. Since the nation has a comparative edge in producing ready-made clothing during the previous few decades, there is plenty of room for it to see future expansion in this industry. To turn its comparative advantage in the textile and cotton-related sectors into a competitive advantage, the GIFF-based intervention in the chosen industry will provide outstanding outcomes. The proposed SEZs are not connected to the road or rail networks, which creates a bottleneck and poses a significant

policy difficulty. Therefore, the regions mentioned require significant government engagement and investment.

IV. RESULTS AND DISCUSSION

➤ *Identifying Sectors for Growth:*

Selecting Sector(s) for Prioritization: Selected Country with a Per Capita Income 100 - 300 Percent above Bangladesh's : China - Randomized Search at First Glimpse

Bangladesh, one of Asia's youngest nations, is well-positioned to benefit from the long-awaited "demographic dividend" since a larger proportion of its population is of working age. Bangladesh's largest comparative advantage is labor, and the country currently underutilizes its large and expanding labor force. The increase of labor-intensive activities is necessary to absorb the expanding labor force and effectively utilize the current pool of underemployed individuals. And since domestic demand has few chances for specializing in labor-intensive industries, that implies increasing exports.

What opportunities exist to increase exports? Competitors of Bangladesh are becoming more costly locations to conduct business. It is anticipated that China would export less produced items that need a lot of work in the future years. It won't hold a third of the global market share for items including clothing, textiles, footwear, furniture, toys, electrical products, auto components, plastic, and kitchenware. Bangladesh's exports of manufactured goods would nearly quadruple if it were to capture only 1% of China's manufacturing export markets. Bangladesh is well into the third phase of demographic transition, having switched from a high mortality-high fertility regime to a low mortality-low fertility one, according to population trends. The population is split, with around 6% of people over 65 and about 29% of people under the age of 15. Due to the demographic dividend, which began in 2007 and is anticipated to last through 2040, this favorable age structure offers great potential for boosting our economy. Chart No. 5 compares the trend of the working-age population.

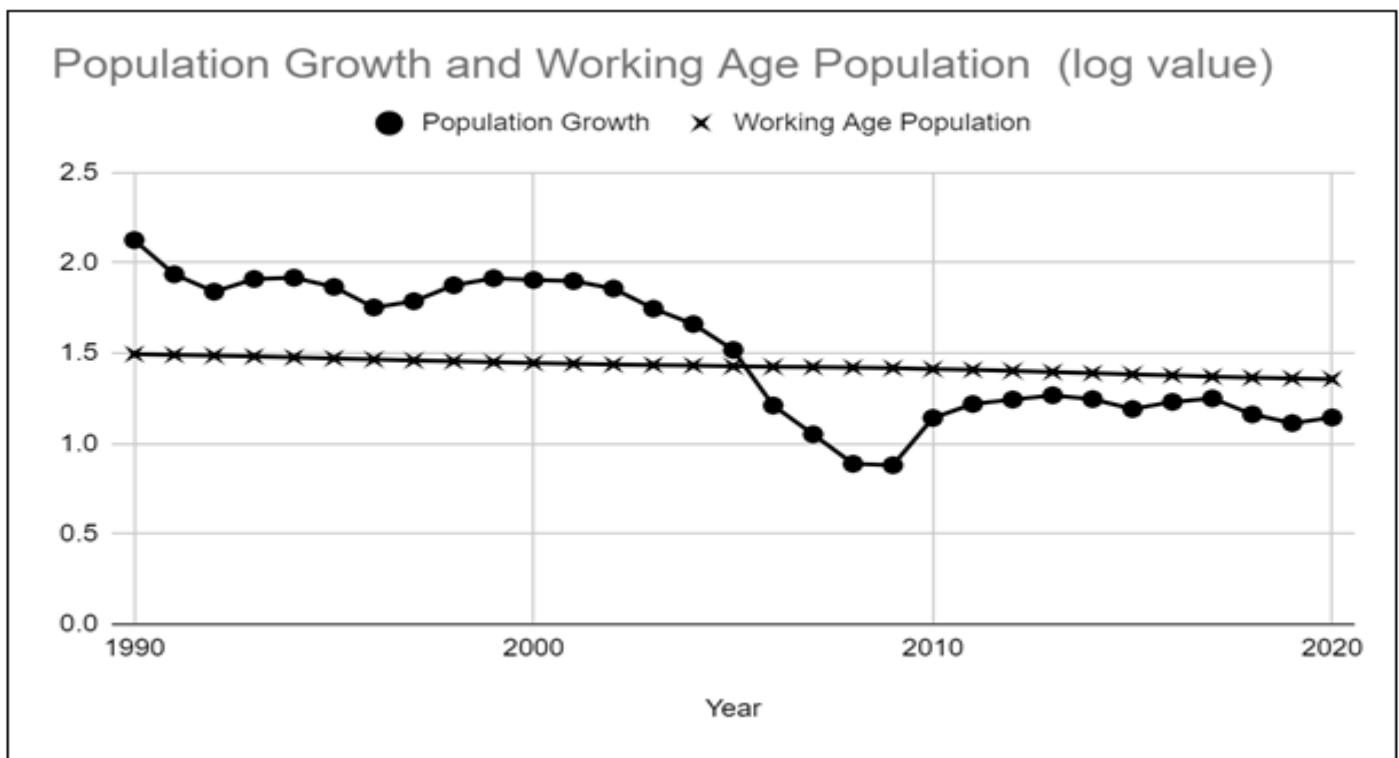


Chart - 5: Bangladesh Demographic Window

The pay in Bangladesh is only one-third of that in China or Indonesia and only half that in India. Other nations exporting clothing that are taking advantage of the exceptionally cheap labor costs include Cambodia, Pakistan, and Vietnam. Bangladesh can benefit from this inexpensive advantage over its rivals. If Bangladesh can overcome the infrastructural barrier and use its sizable labor pool of underemployed workers, it can become the "next China," with its labor-intensive manufactured exports expanding at double-digit rates each year. According to a recent World Bank research, Bangladesh could expand its commerce by roughly 38% if it could raise the standard of its business

climate to that of India. Bangladesh must take action right away or else others will seize the markets that China is leaving.

To protect the economy from external shocks like the current global financial crisis and recession in the US and EU economies, export-product and market diversity is essential. Diversification of exports is seen to be linked to generally high economic performance, according on experience from other nations. There has been some development in this area. Bangladesh sold goods of \$1.2 billion, \$720 million, and \$634 million to members of the

Asian Clearing Union, the South Asia Association for Regional Cooperation, and the Organization of Islamic Countries, respectively, in fiscal year 2012. Japan continues to be a vast unexplored market with tremendous potential. The United States, Canada, the United Arab Emirates, and South Korea are among further developing import markets that Bangladesh may consider.

Bangladesh's development trajectory has to be improved with a fresh round of reforms. The country of Bangladesh may transition from a rural, agro-based economy to an urban, manufacturing one by deepening and diversifying its labor-embedded exports. At 2011, McKinsey & Company conducted an interview-based study of chief buying officers at European and American apparel firms. The results revealed a number of issues that, if not resolved, might prevent Bangladesh from luring away garment buyers who are leaving China. These include the following in regards to transportation: clogged highways, few options for interior transportation, a lack of deep-sea ports, utility supply, adherence to labor and social norms, Soaring risks and lengthy lead times, a productivity gap reflecting skill and technological shortcomings, corruption and political unrest.

Bangladesh may grab the chance to enter the vacuum created by China's transformation by confronting these challenges head-on. In contrast to many other nations, Bangladesh's private sector played a significant role in advancing the nation's growth. The private sector in Bangladesh has contributed significantly by providing basic banking services through microcredit and mobile financial services, or by employing over four million women throughout the 4,000 textile factories in Bangladesh.

This function will need to grow in importance over the next several years as the globe experiences an unprecedented transformation brought on by digital interconnection and the emergence of new technologies like blockchain, artificial intelligence (AI), and the Internet of

Things (IoT). Countries, industries, organizations, and even people are changing in previously unheard-of ways as a result of the fourth industrial revolution. As platform business models like Uber gained popularity, others like Pathao in Bangladesh and Oyo Rooms in India developed. A growing entrepreneurial movement is supported by easy access to cash and cheap capital needs, which make it possible for any gifted person to start a business.

The use of social media is at an all-time high. However, technology is also bringing about a number of unexpected consequences, and if they are exploited incorrectly by the wrong parties or by the general public, they might have a destabilizing influence on the economy. The economies of many nations are dependent on a small number of sectors and, in certain circumstances, businesses. More and more nations are actively reshaping their policies to make them applicable to the brand-new world at the nexus of technology and society. Many nations are beginning to understand how crucial it is to adjust to this new environment. To position itself for hypergrowth and long-term success, the private sector in Bangladesh has to reevaluate its role in the country.

Many nations are progressively relocating their activities domestically as a result of the development of new technology like robots and the need to create domestic employment. Adidas recently revealed that starting in the next year, it would begin mass producing running shoes at a German plant that is mostly controlled by robots. Companies can cut their operational costs thanks to these new technologies, thus nations that engage in cost arbitrage need to be prepared to adapt to these developments. The solution to these types of developments is to look for methods to add more value, whether through high value-added services or by using technology to increase productivity. The answer is not to lower employee compensation in order to maintain low costs. The structural makeup of the services sector as a share of the GDP is displayed in Table - 3.

Table 3 The Structure of Service Sector (% GDP) at Current Price

Activity	FY1980	FY1980	FY1990	FY2010	FY2019
Trade	12.92	12.28	13.3	14	13.34
Transport	10.42	9.53	7.49	9.01	8.24
Tele communication	0.23	0.4	0.68	1.56	1.1
Financial Services	1.31	1.38	1.75	3.08	3.89
Real Estate	8.7	8.54	9.48	7.15	7.87
Public Administration	1.4	2.05	2.85	3.34	4.09
Education	1.98	1.88	2.43	2.4	3.02
Health	2.33	2.29	2.12	2.01	2.15
Hotels and Restaurants	0.57	0.59	0.6	0.92	1.04
Personal and Community Services	7.95	9.35	12.22	12.57	10.78
Total Services	47.81	48.28	52.91	56.05	55

Source: Bangladesh Bureau of Statistics

Poland just became the first nation from the former Soviet Union to be classified as a "developed market," with its GDP having doubled in the previous 25 years. Regarding business development, it may serve as an intriguing example. In order to facilitate the development and successful execution of state policies linked to business, innovation, and staff adaptation in their goal to become an innovation-driven economy, Poland established the Polish Agency for Enterprise Development (PARP).

One of the things the Indian IT sector achieved was to make outcomes more predictable through effective procedures. An IT services provider is deemed to be capable of delivering a risk-free performance for the duration of a project if it has achieved SEI CMM Level 5 certification (Software Engineering Institute Capability Maturity Model). Gaining project owners' confidence in how risks are handled builds trust and positions the sector for long-term success.

With a test-and-learn mentality, the private sector needs to build confidence in implementing new technology. With full knowledge that this may succeed or fail, an Indian supplier to the automobile sector recently incorporated 3D printing for a minor portion of their manufacturing process. This kind of experimentation aids in the development of new organizational capacities and, more crucially, molds adaptable organizational attitudes.

Technologies like artificial intelligence (AI) have the potential to significantly enhance quality in Bangladesh's well-known readymade garments (RMG) industry. To assess textile grades, weed out recurring flaws, and even assess color, algorithms might be trained. Amazon and other shops already use AI to learn customer preferences. The RMG industry will not only develop new skills but also assist in moving up into high-value-added, technological services if it can assist its clients in translating these preferences. Due to its enormous population, the nation may be able to generate and use the massive datasets necessary for AI success. Only when the fundamental pillars are solid can all of the aforementioned occur.

The private sector may also make a contribution in the area of responsible use of digital and social media. Every citizen must act like a responsible statesman in the digital age. We all recall how, after watching a football game during the World Cup, videos of Japanese supporters cleaning the stadium went viral all over the world. It

improved Japan's reputation and earned it respect across the world. Kindness and ethical behavior even in little doses may have a hugely good impact on our respective organizations, communities, and nations.

In addition to community development initiatives already started by the business sector, some CSR initiatives may focus on promoting ethical social media use, educating responsible online conduct, and eradicating fake news. Leaders from the business sector must also thoroughly document their ideas and activities related to responsibility. Most significantly, they must be disseminated on regional and international platforms in order to effectively establish brands in the eyes of both the general public and international decision-makers.

The argument for Bangladesh cannot be made globally by the public sector alone. It needs the assistance and backing of business. The nation expanded by 7.28 percent. GDP has increased by more than 6% for the eighth year running. The private sector was essential to this expansion, and in order to go to the next stage of growth, it must go outside its own organizations and work to spark systemic change. They must encourage ecosystem growth, broaden the scope of their CSR initiatives, embrace an experimental attitude to develop new skills based on emerging technologies, and, most significantly, influence local as well as global industry and national agendas.

Bangladesh, a nation the size of Iowa that borders both India and Burma and is located in the northeastern part of the Indian subcontinent, is expected to have 165 million people living there by the year 2021, according to the World Bank. The seventh most populous and most densely inhabited nation outside of city states is Bangladesh. Bangladesh is a fantastic prospective market for American products. The net migration rate in Bangladesh fell by 2.18% from 2021 to 2022, to -2.113 per 1000 people. The net migration rate in Bangladesh fell by 2.17% from 2020 to 2021, to -2.160 per 1000 persons. Bangladesh's net migration rate fell by 2.08% from 2019 to 2020, to -2.208 per 1000 persons. According to the World Bank categorization, Bangladesh became a lower middle-income country (LMIC) in 2015, and the sector of labor migration has also contributed to the fast expansion of per capita GDP and gross national income (GNI) [GED, 2020, p. 28]. Chart - 6 shows the annual outflow of migration from Bangladesh.

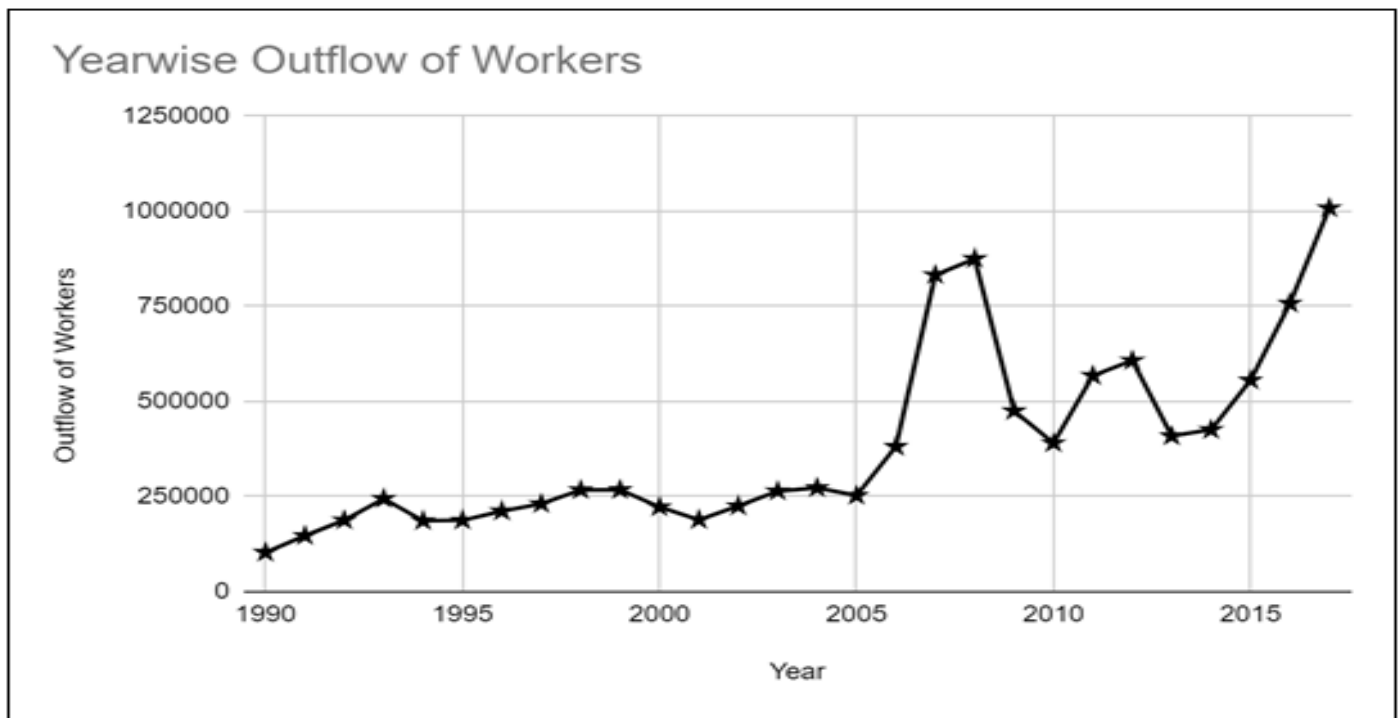


Chart -6 Annual Outflow of Migrant Workers
 Source: Bureau of Manpower, Employment and Training (BMET)

According to a World Bank estimate, Bangladesh's Gross Domestic Product (GDP) per capita was \$2,503 in 2021, and the country announced in 2021 that it will leave the category of Least Developed Country (LDC) in 2026. Since 2005, Bangladesh has consistently seen yearly GDP growth of over 6%, with the exception of 2020, when the economy slowed due to the COVID-19 epidemic. The \$31.5 billion ready-made garment (RMG) sector and ongoing remittance inflows from foreign workers, which reached a record \$24.8 billion in fiscal year (FY) 2020–21, continue to be major drivers of Bangladesh's economic growth. (Remember that the fiscal year in Bangladesh runs from July 1 to June 30.) The International Monetary Fund (IMF) estimates that Bangladesh's GDP was \$354.24 billion. Despite this expansion, domestic resource mobilization will be a fiscal policy priority because, according to the Bangladesh Ministry of Finance, tax collections in the fiscal year 2020–21 were just 7.7 percent of GDP. The high ratio of non-performing loans (NPL) in state-controlled banks is a recurrent issue that the financial industry must address. The Government of Bangladesh (GoB) aggressively pursues foreign investment, especially in the infrastructure, agribusiness, light manufacturing, energy, and clothing industries. The government's industrial policy and export-oriented growth plan include a variety of investment incentives. Bangladesh experienced net inflows of \$2.9 billion in foreign direct investment (FDI) in 2021, according to the UNCTAD. The projected foreign exchange reserves of Bangladesh declined from \$44.96 billion in May 2021 to \$42.2 billion in June, according to the central bank.

RMG manufacturing dominates Bangladesh's export economy, while the majority of the population only lives in urban areas 38.2 percent of the time. Despite employing

40.6% of the workforce, the agriculture industry contributed just 13.6% of GDP in 2017 (BBS). 20.4 percent of the population is employed in the industrial sector, which makes up 35.1% of GDP and is mostly made up of RMG and light manufacturing. 39 percent of the population is employed by the services sector, which contributes 51.3 percent of the GDP.

• *Comparison Table: Key Exports of China, India, Vietnam, and Indonesia:*

The process of picking areas for growth is thoroughly explained in Table 6 in the appendix. We achieved parity with the major exporters from China, Vietnam, India, and Indonesia.

➤ *Sectoral Priority Setting Search:*

• *Prioritization of Value Chains*

More over 80% of Bangladesh's entire export revenue comes from the apparel and textile industry, making it the second-largest exporter in the world. There is a research vacuum on the impact of involvement and position of the garment and textile sector in the Global Value Chain (GVC), despite it having a crucial influence in policymaking in developing nations like Bangladesh.

Numerous articles use multiregional Input-Output to empirically analyze the involvement and position of Bangladesh's garment and textile sector in the GVC. They discovered that although this nation contributes significantly to the global apparel sector and has a competitive advantage in terms of low-cost manufacturing and specialization, it has not been able to completely integrate into the global production network. Additionally, they discovered that

Bangladesh's garment and textile industries are downstream in the GVC and have higher backward involvement than forward participation.

However, a sizable portion of commerce in this nation comes from the downstream stages. The results of those studies indicate that increasing Bangladesh's textile and apparel sector's GVC involvement might have a significant positive effect on the local industry. Local prerequisites, such as proper backward linkage for the manufacturing process, R&D for innovation, less regulatory limitations, a mature money market in international operation, and a welcoming climate for foreign investors, are necessary to increase capability. Despite global COVID-related worries, Bangladesh's export profits reached an all-time high of USD 52.08 billion in FY22. As usual, Readymade Garments

(RMG) garnered the lion's share, garnering USD 42.61 billion. Exports of woven and knitted garments, clothing accessories, and home textiles collectively made for 86.55 percent of Bangladesh's \$41.721 billion in total exports from July through March of FY23. Bangladesh is the second-largest exporter of garments as a whole, with \$45 billion in apparel exports in 2022, according to the WTO's World Statistical Review 2023. China continues to hold the top spot. Bangladesh ranked 56th in the world in terms of exports in 2021 with a total of \$51.8B. China made investments totaling 644.30 million USD (13.5% of all foreign direct investment in Bangladesh), Hong Kong made investments totaling 179.22 million USD (5.2%) during the period of July through June of FY22, and China made investments totaling 465.17 million USD (13.5%). Table 4 compares the data for the percentage of garment exports.

Table 4 Comparative Statement on Export of RMG and Total Export of Bangladesh

Year	Export of RMG (in million US\$)	Total export of Bangladesh (in million US\$)	% of RMG's to total export
2005-06	7900.80	10526.16	75.06
2006-07	9211.23	12177.86	75.64
2007-08	10699.80	14110.80	75.83
2008-09	12347.77	15565.19	79.33
2009-10	12496.72	16204.65	77.12
2010-11	17914.46	22924.38	78.15
2011-112	19089.69	24287.66	78.60
2012-2013	21515.73	27027.36	79.61
2013-2014	24491.88	30186.62	81.13
2014-2015	25491.40	31208.94	81.68

● *Potential Business Sectors for Investment in Bangladesh:*

The Economist has praised the nation as the next Asian Tiger. And this is reflected in investment interest. According to the United Nations Conference on Trade and Development, it got \$3.61 billion in FDI last year, which is the greatest amount it has ever received. This rapid increase demonstrates the local market's untapped potential and the few FDI that Bangladesh has previously attracted. Bangladesh is undergoing growth changes like to those India underwent in recent years, and as a result, we think it may become one of the region's most powerful economies.

Bangladesh, which has the eighth-largest population in the world (nearly 165 million) and a territory the size of Iowa, is the most densely inhabited non-city-state nation in the world. Bangladesh shares a 247 km border with Burma and a 4,100 km border with India. It is located in the northeastern part of the Indian subcontinent. Despite the significant economic headwinds brought on by the global COVID-19 outbreak, Bangladesh is likely to continue to

draw growing amounts of investment thanks to its long history of steady economic growth, a sizable, young, and hardworking labor force, strategic location between the sizable South and Southeast Asian markets, and a thriving private sector.

Over the past 10 years, Bangladesh has consistently had annual GDP growth of more than six percent, fueled by a young labor population and an expanding consumer base.

● *Agri-business Sector:*

The Bangladesh Investment Development Authority (BIDA) estimates that domestic market sales would reach \$8 billion by 2025, making Bangladesh's agribusiness, which includes food processing and associated machinery manufacture, the country's most promising of eight developing industries. The majority of Bangladesh's agricultural output is classified as traditional subsistence farming. Bangladesh produces a wide range of agricultural goods, including dairy products, rice, wheat, corn, legumes,

fruits, vegetables, meat, fish, and other seafood. The primary dietary component of Bangladeshis is rice.

- *Investment Areas:*

From the 1970s through the 1990s, annual growth in agriculture was less than 2%; during the past two decades, it has climbed to 3.5%. Similar to this, the agriculture sector has been a significant contributor to the decline in poverty in Bangladesh, where it was responsible for 69% of all poverty reduction between 2005 and 2010. The sector with the fastest growth in Bangladesh is e-commerce. Rapid advancement is being made. Each day, on average, 50 new businesses launch their e-commerce operations. Only 1-3 percent of the companies in this category survive.

- *Garments & Textile Sector*

With over 80% of all exports coming from the readymade garment sector, it is the largest and most important part of the Bangladesh textile industry. T-shirts, jeans, and skirts are just a few of the numerous clothes that Bangladesh is renowned for creating. The Readymade garment (RMG) industry. RMGs, which are the final textile products from apparel manufacturers, have seen one of the Bangladeshi economy's quickest development rates, with a growth rate of 55% between 2002 and 2012. Because of their continued brilliance since 1960, our export commerce and clothing industry have become major players in the global economy. In Bangladesh, there are nearly 5000 ready-made clothing industries.

- *ICT Sector*

It is evident that Bangladesh's total economic progress will only be achievable if the nation makes the most of its enormous human and intellectual resources and cultivates "qualified labor" as opposed to the "cheap labor" for which it is known. Without this, it is our well-considered opinion that no amount of funding for economic growth initiatives will have a significant impact in this nation with a population of 135 million, a density of 900 people per square kilometer, and more than half of that population under the age of 30. With greater alternatives for e-HRD, Bangladesh has the ability to not only "staff" local sector development, boosting exports and adding employment, but also to export skilled labor in and of itself. A comprehensive ICT-focused educational program will allow Bangladesh to become a source of highly valued, talented ICT professionals, increasing remittance levels and opening up prospects for countless numbers of its population.

A focus on the development of a skilled, ICT workforce would allow Bangladesh to literally bank on one of its underutilized resources -- its enormous population -- given the local barriers to traditional industrial development at a level capable of supporting such a large population (135 million). IT directors in all sectors believe that there is a shortage of IT skills.

- *South Asia's IT Hub*

In the fiscal year 2021–2022, according to recent statistics from the Export Promotion Bureau, Bangladesh earned \$592 million from exports of IT and information

technology enabled services (ITES), including software, consulting, and equipment maintenance. Up till now, the ICT industry has generated about 300,000 job prospects. By 2025, it is anticipated that the nation's ICT exports would amount to \$5 billion USD. The government anticipates that the IT industry will contribute 7.28 percent to GDP growth by 2021 as Internet usage rises.

- *Current Tech Scenario:*

Over 750,000 ICT specialists are employed by over 4,500 IT/ITES businesses in Bangladesh. Since 2013, export revenue has increased by 21% annually, surpassing USD 1 billion in 2019. There is a sizable pool of online employees, which further boosts the wages. Bangladesh is quickly emerging as a vibrant market. A sizable domestic consumer market, a fast growing middle and wealthy class, and an exceptional rate of digital adoption are the main drivers of this expansion.

- *Future Possibilities:*

By 2025, Bangladesh's startup ecosystem might provide more than 1.5 million employment, significantly boosting the economy of the nation. The number of tech businesses in Bangladesh has increased dramatically over the past ten years, making the nation a hub for tech startups. Over the following five years, the Bangladesh ICT Market is anticipated to expand at a CAGR of 1.83%. The market is expanding rapidly as a result of Bangladesh's increasing focus on information technology, robotics, healthcare, artificial intelligence, and cyber security.

- *Electric & Electronic Sector:*

Numerous consumer and commercial electronic devices make up the electronic and electrical equipment sector. The industry is made up of over 3,000 companies and employs about 1 million people. Mobile phones, household appliances such refrigerators, air conditioners, televisions, electric fans, radios, DVD and CD players, ovens, blenders, and other consumer goods are among the products that Bangladesh's electronics sector mostly manufactures. Accumulators, transformers, and diodes are only a few examples of electrical equipment that is produced and exported.

At the end of 2019, it was predicted that the market for electronics, which includes both industrial and consumer electronics, will be about USD 5.29 billion. By 2025, the sector is projected to develop at a 15% annual pace and reach around USD 12 billion. The consumer electronics industry is predicted to grow to a value of USD 10 billion by 2030, from an estimated USD 2.4 billion in 2020. The cell phone is the most popular consumer electronics item, followed by the refrigerator, television, and air conditioner. Additionally, the market for batteries and accumulators is expanding quickly.

- *Frozen Foods:*

Frozen shrimp was the main export of the nation in 2020–2021. Frozen food export earnings reached USD 477.37 million in the fiscal year 2020–21, an increase of 4.65% over the USD 456.15 million realized in the prior

fiscal year. In 2020–21, shipments of frozen food made up 1.23% of the nation's total export earnings. The government is promoting semi-intensive shrimp farming. According to the Bangladesh Bureau of Statistics' Economic Census, there were 246 medium-sized food processing businesses in Bangladesh, which employed 19% of the country's industrial manufacturing workforce and 8% of all manufacturing workers.

- *Health Care Sector:*

The private sector dominates the healthcare sector, and tertiary hospitals and diagnostic facilities are expanding quickly. By the end of 2019, the Directorate General of Health Services (DGHS) has registered 255 public hospitals, 5,054 private hospitals and clinics, and 9,529 diagnostic centers. The delivery of healthcare is a difficult problem for Bangladesh's healthcare systems. The key issues affecting Bangladesh's health care delivery are examined using real data, including absenteeism, corruption, a lack of physicians and nurses, inefficiency, and poor management.

- *Medical Equipment Sector:*

The market for medical devices and equipment is still in its infancy, with 85 percent of the items coming from outside. The Bangladeshi market was predicted to be worth USD 442 million in June 2020 and is anticipated to develop at a CAGR of 13% to reach over USD 820 million in 2025. Due to low bed density and changes in illness profiles, there is an unmet demand for tertiary & secondary hospital establishment. One of the key industries in the National Industrial Policy 2016 is "Healthcare & Clinic." Medical technology services Telehealthcare has a significant potential to reach the vast majority of people in both cities and small communities thanks to the over 93 million internet users worldwide. Local production of medical devices and equipment, such as consumables and surgical tools, ICU and OT equipment, diagnostic imaging equipment, and In Vitro Diagnostics (IVD) devices, has enormous potential. Bangladesh's privileged access to 52 nations can benefit device and equipment manufacturers.

- *Automobile Sector:*

One of the most promising markets for the growth of four-wheeled vehicles is Bangladesh. Since 2013, there has been a more than doubling in the number of cars registered each year; in 2019, there will be roughly 26,000 passenger vehicles and 37,000 commercial vehicles (excluding auto-rickshaws and people haulers).

- *Power Sector:*

As of June 2022, Bangladesh's utilities electrical industry has one nationwide grid with an installed capacity of 25,700 MW. Bangladesh's energy industry falls short of expectations. However, Bangladesh's per-capita energy consumption is thought to be larger than its output. Bangladesh has a lot of potential for deploying renewable energy. If suitable financial structures, such as green bonds, are set up, it is predicted that about 7,500MW of solar power may be quickly added to the energy mix.

- *Pharmaceutical Industry:*

Branded generic medications dominate the Bangladeshi medicine industry, making up over 80% of all domestically produced medications, with patented medications making up the remainder. Currently, the nation has enterprises manufacturing 271 allopathic, 205 ayurvedic, 271 unani, 32 herbal, and 79 homeopathic drugs. About 257 licensed pharmaceutical factories are active in Bangladesh, of which 150 are functioning, according to the Bangladesh Association of Pharmaceutical Industries (BAPI) and Directorate General of Drug Administration (DGDA). Nearly 98% of the local demand is satisfied by these manufacturers.

- *Tourism Sector:*

With more visitors visiting the nation, the tourism industry's significance is currently growing. The government would spend Tk 3,400 crore (more than twice as much as the previous fiscal year) on Biman Bangladesh and the Ministry of Tourism during the 2019–20 fiscal year.

The longest natural beach in the world, historical mosques and monuments, gorgeous landscapes, mountainous forests and fauna, rolling tea plantations, and many tribes are just a few of the tourism attractions Bangladesh has to offer. The diverse wildlife, lush vegetation, and vibrant tribal culture all captivate visitors. Bangladesh has always been a popular travel destination. But in terms of global tourism, her position is now insignificant. A nation may directly benefit from tourism by constructing the infrastructure required to support both the local population and visitors.

- *Ceramics Industry :*

The ceramics industry was founded in 1958 and now employs around 65 people in the production of classic ceramics such as heavy clay, tiles, sanitary ware, tableware, and insulators. In the fiscal year 2017–18, domestic demand for ceramic items totaled USD 660 million, and 96% of tableware, 77% of tiles, and 89% of sanitary ware are satisfied by local manufacture. The ceramics sector in Bangladesh has had multifaceted expansion during the past ten years, including increases in local and export markets (26% over the last three years), as well as a 200% increase in production capacity over the previous five years. Over 500,000 people are thought to be employed indirectly by the industry, in addition to the 48,000 persons employed directly.

- *Export-Import Status:*

With total exports of 31,734,162.42 and total imports of 48,058,710.04, Bangladesh had a negative trade balance of -16,324,547.62 in US dollars. The Most Favored Nation (MFN) Weighted Average Tariff for Bangladesh is 12.32%, while the Effectively Applied Tariff Weighted Average (customs duty) is 11.82%. In contrast to a global growth rate of -6.30%, trade growth is just 2.98%. In current US dollars, Bangladesh's GDP is 416,264,802,185.17. In BoP, current US dollars, Bangladesh exports services worth \$7,474,532,386.43 while importing services worth \$10,866,010,472.68. The GDP share of Bangladesh's exports

of goods and services is 10.66%, while the GDP share of its imports of goods and services is 17.06%.

According to Bangladesh Bank, the overall value of products exported by Bangladesh in 2020–21 was \$33.9 billion, while the value of services was \$6.1 billion. Bangladesh, on the other hand, imported products and services totaling \$54.4 billion and \$7.2 billion, respectively.

Over the past ten years, Bangladesh's economy has expanded steadily. Due to the COVID-19, Bangladesh's GDP growth fell to 3.4% in 2020 from an average annual growth rate of 6.9% between 2011 and 2019. The country's GDP recovered in 2021 by 6.9%, and the IMF anticipated 7.2% growth in 2022. It has made strides in eliminating poverty and achieved lower-middle income status according to the World Bank in 2015.

- *Bangladesh's Top Imports:*

Petroleum and oil make up the majority of Bangladesh's imports (11%) followed by textiles (10%) and food (9%) products. Other items include: yarn, plastic and rubber products, chemicals, edible oil, and iron and steel (7%) among others.

- *Bangladesh's Top 10 Imports:*

The following product categories will account for the bulk of Bangladesh's import spending in 2022. The proportion of total imports into Bangladesh that each product category accounts for is also displayed.

Oil and other mineral fuels: \$11.5 billion (or 17.6% of all imports), Computers and related machinery: \$6.2 billion (9.4%), \$4.9 billion (7.5%) in cotton, Electrical equipment and machinery: \$4.3 billion (6.5%), Steel and iron: \$3.9 billion (6%), Fats, oils, and waxes from animals and plants: \$2.7 billion (4.2%), Materials made of plastic: \$2.5 billion (3.8%), Feed: \$2.2 billion (3.3%), Fabric made of yarn or hooks: \$2.14 billion (3.3%), \$2.09 billion (3.2%) in synthetic staple fibers

The top 10 imports into Bangladesh account for over two-thirds (64.7% of the total value of its product purchases from foreign nations).

Oil and other mineral fuels imported by Bangladesh, including gasoline, were the product category with the quickest growth.

- *Bangladesh's Imports of Cotton and Related Products:*

Bangladesh became the third-largest raw cotton importer in the world in 2021, bringing in \$2.8 billion. Raw cotton was Bangladesh's second-most imported item that year. India (\$1.38B), Brazil (\$430M), Benin (\$425M), the United States (\$311M), and Greece (\$74.4M) are the main countries from which Bangladesh receives raw cotton. In terms of raw cotton imports for Bangladesh between 2020 and 2021, India (\$678M), Brazil (\$116M), and Benin (\$107M) saw the strongest growth rates.

- *Bangladesh's Imports of Mineral Fuels and Related Products:*

As the 46th largest importer of mineral fuels, mineral oils, and products of their distillation worldwide in 2021, Bangladesh brought in \$8.21 billion in mineral fuels, mineral oils, and products of their distillation. Mineral fuels, mineral oils, and products of their distillation were Bangladesh's second-most-imported goods in the same year. Mineral fuels, mineral oils, and products of their distillation are principally imported by Bangladesh from Singapore (\$1.65 billion), Malaysia (\$1.31 billion), China (\$1.28 billion), India (\$1.23 billion), and Qatar (\$1.18 billion). Qatar (\$1.18B), Malaysia (\$905M), and Singapore (\$748M) had the highest expanding import markets for mineral fuels, mineral oils, and products of their distillation for Bangladesh between 2020 and 2021.

- *Bangladesh's Imports of Machinery Including Computers:*

Bangladesh became the 52nd-largest machine importer in the world in 2021, bringing in \$11.9 billion. Machines were Bangladesh's second-most imported product that year. Bangladesh sources its machine imports mostly from China (\$4.95 billion), India (\$1.05 billion), Russia (\$944 million), Hong Kong (\$861 million), and Singapore (\$704 million). Between 2020 and 2021, China (\$1.6B), Japan (\$387M), and Hong Kong (\$260M) had the fastest growing import markets for machines for Bangladesh.

- *Bangladesh's Imports of Electrical Items:*

The following 10 subcategories of electronic equipment, including consumer electronics, saw the most spending by Bangladeshi imports in 2021. Smartphones and other phone gadgets cost US\$1.4 billion, up 13.8% from 2020. Electrical/optical circuit boards and panels increased by 229.1% to \$356 million. Electrical converters/power units increased by 21.5% to \$329.1 million. Insulated wire and cable increased by 51.0% to \$232.2 million. Unrecorded sound media increased by 9.8% to \$193.2 million. Electric generating sets and converters increased by 11.2% to \$184.8 million. Integrated circuits and microassemblies increased by 535.5% to \$179 million. From 2020 to 2021, Bangladesh's purchases of insulated wire or cable (up 51%), electrical and optical circuit boards and panels (up 229.1%), and integrated circuits or microassemblies (up 535.5%) expanded at the quickest rate. These figures, along with the percentage growth in brackets, make it evident where Bangladeshi consumers and enterprises have the most demand for various types of imported electronics.

- *Bangladesh PESTLE Analysis 2021: Challenges and Potential:*

(Political, Economic, Sociological, Technological, Legal and Environmental)

Bangladesh is a nation in Southeast Asia that is situated on the Bay of Bengal. We'll talk about Bangladesh's business prospects and whether or not there are good investment possibilities there. A fuller understanding of Bangladesh's general environment is provided in the following PESTLE study of the nation.

- *Political Factors:*

A useful tool for examining the elements that contribute to economic progress is the Progress Identification and Facilitation Framework (PIFF). Understanding the influence of political issues in the instance of Bangladesh, such as the depreciation of the currency and its impact on export performance, might offer useful information for policymakers. The effects of real effective exchange rate and export performance on economic growth of Bangladesh are the focus of a primary research on this topic by Akhtaruzzaman, Islam, and Siddique (2020). This study looks at the connections between changes in the value of the Bangladeshi Taka, export success, and general economic growth. The Taka's depreciation can affect export performance in both good and negative ways, according to Akhtaruzzaman et al. (2020).

By cutting prices, a depreciated currency may increase exporters' ability to compete on global markets. A boom in export volume results from this greater competitiveness, which eventually supports economic development. A discounted currency can also entice foreign investment, boost businesses that depend on exports, and improve the trade balance, supporting economic growth.

The researchers did add, though, that currency depreciation might not always be advantageous for export performance. They discovered that in some circumstances, devaluation may result in a drop in export revenues, particularly if the nation is highly dependent on imported inputs or if the export industry is not sufficiently diversified. This scenario may lead to higher production costs, interruptions in the supply chain, and decreased competitiveness, eventually impeding export growth and overall economic development. The paper suggests a number of policy recommendations to reduce the possible adverse impacts of currency depreciation on export performance. These include measures to encourage export diversification, lessen reliance on imported inputs, grow domestic industries, upgrade infrastructure, improve the business climate, and offer exporters support mechanisms. Policymakers may more effectively capitalize on the advantages of currency depreciation and assure long-term export development by putting these measures into place. Policymakers in Bangladesh can comprehend how political variables affect economic growth by using the Growth Identification and Facilitation Framework (GIFF).

According to study by Akhtaruzzaman et al. (2020), currency devaluation has a significant impact on export performance. The paper underscores the significance of currency depreciation and illustrates the possible benefits and difficulties connected with it.

- *Trade with India:*

A thorough strategy for economic development, the Growth Identification and Facilitation (GIF) framework focuses on locating and supporting industries that have the potential to lead to sustainable growth. Policymakers may make wise choices to promote growth and improve Bangladesh's economic performance by having a thorough grasp of the variables affecting trade dynamics. A key factor in fostering an environment for economic growth is political stability. In the case of Bangladesh, diplomatic efforts and collaboration are needed to preserve a healthy trading relationship with India. Trade can be hampered by political unrest, which lowers export performance.

- *Economic Factors:*

- *GDP and Covid-19:*

Currency depreciation can improve export performance by lowering the cost of the nation's goods for overseas consumers, increasing competitiveness. A calculated weakening of the Bangladeshi currency in relation to the Indian rupee can encourage exports to that country. To lessen reliance on a single market, export diversification must be encouraged. Bangladesh should look towards industries with a competitive edge where it can benefit from its inexpensive labor and resources, such as textiles, medicines, and information technology. Ecologically sound techniques and adherence to environmental laws might improve the reputation and marketability of Bangladeshi goods in India. In order to boost export performance and adhere to international sustainability norms, Bangladesh should invest in eco-friendly technology, support renewable energy sources, and promote sustainable industrial methods.

In sectors focused on exports, adopting and integrating technology breakthroughs may considerably improve productivity, efficiency, and quality. To remain competitive in the Indian market, Bangladesh needs engage in R&D, innovation, and technical collaboration. Chart 7 displays an illustration of poverty decrease.

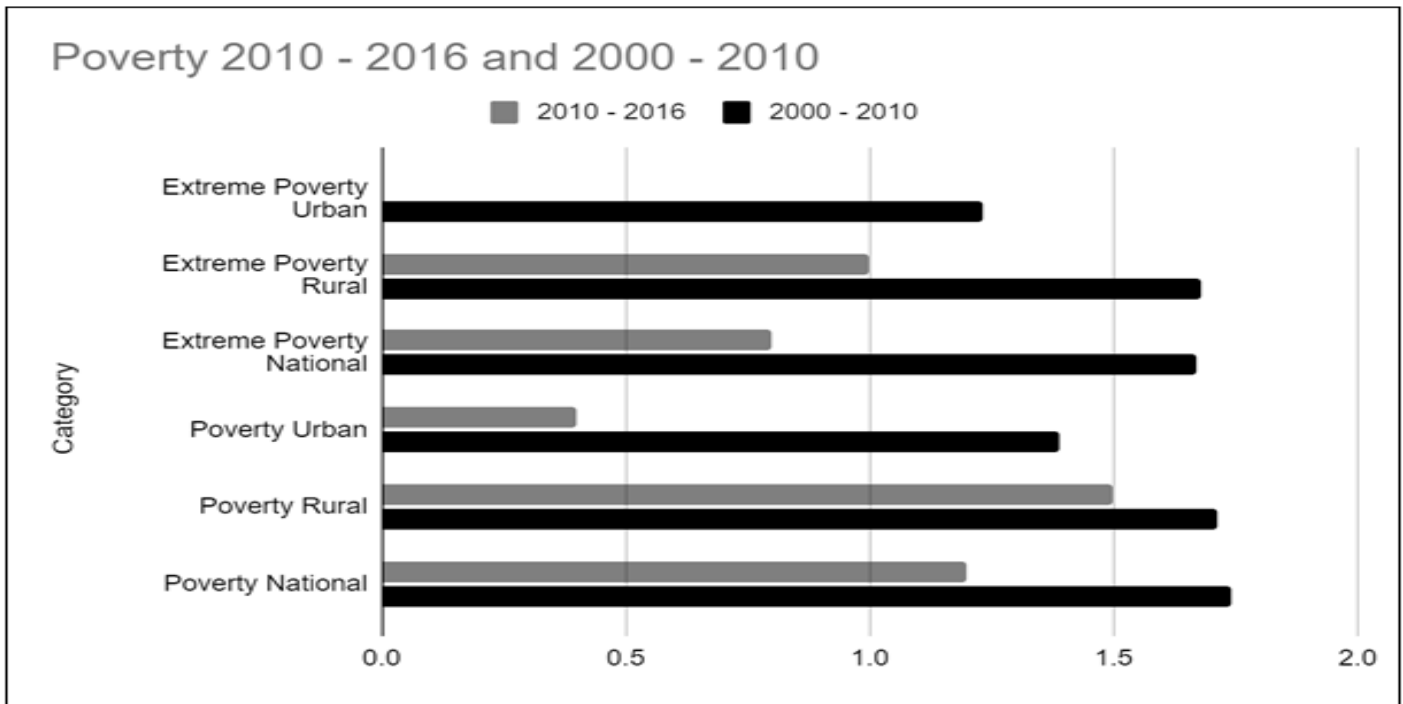


Chart - 7 Annual Percentage Point Decline in Poverty
Source: GED Estimates Using HIES Data

• *Revenue Streams:*

Remittances (5% of GDP \$16.4 billion in FY 19) and the export of clothing to foreign nations both provide significant income for Bangladesh. The majority of the foreign employees who send money home to Bangladesh are located in the Gulf States, which have been negatively impacted by the decline in oil prices. Despite the second wave of the terrible epidemic having a positive impact on remittances, the USA has canceled purchases worth billions of dollars.

• *Sectors Contributing to the Economy:*

Bangladesh is the fourth-largest producer of rice, however due to frequent natural catastrophes, they occasionally have to import rice. Tea, jute, wheat, sugarcane, tobacco, spices, and fruits are examples of additional production. 13.1% of the GDP is attributed to agriculture. The largest industry in the nation is textile, which contributes 28.5% of the GDP to the industry. Even though the business contributes significantly to the economy, one of the biggest problems it faces is the enormous gap between client demand and real cotton availability. However, services (53.5%) are the sector that contributes the most to the GDP. Amazingly, Bangladesh is a major technology exporter.

• *Social Factors:*

For businesses that are export-oriented, skilled labor is essential for boosting productivity and competitiveness. To enhance its workforce quality and boost export performance, Bangladesh must invest in education and skill development initiatives. Tailoring Bangladeshi products to Indian consumers' needs requires an understanding of the preferences, tastes, and cultural quirks of the Indian market.

A higher potential for exports may result from this societal understanding.

✓ *Legal Factors:*

Preferential trade agreements and global trade agreements may have an impact on export performance. In order to promote better access to the Indian market by lowering trade obstacles, Bangladesh should actively participate in discussions and leverage accords like the South Asian Free Trade Area (SAFTA).

✓ *Legal System:*

The nation's legal system is the same one that the British utilized when they ruled the subcontinent. It started out as a combination of Mughal and English customs but has since developed. Both Hindus and Muslims are represented in their governance.

✓ *Foreign Investment:*

Although welcomed, foreign investment is not permitted in specific sectors, particularly those that are involved in mining, forestry plantations, and national defense. In reality, the government promotes foreign investment in local businesses to strengthen the infrastructure and economy.

• *Tax Exemption:*

Bangladesh has been actively using the Growth Identification and Facilitation (GIF) framework to accelerate its economic growth as a result of its expanding economy and efforts toward sustainable development. The depreciation of the currency and its effects on export performance should be taken into account as part of the PESTLE study. Investigation of the connection between currency depreciation, export success, and tax exemptions in

the context of Bangladesh's economic expansion is required. Currency devaluation is the purposeful decline in the value of a nation's currency relative to other currencies. Making local goods and services more accessible and competitive on global markets can have a favorable influence on export success. But it's important to look at the key factors that contribute to the effectiveness of devaluation in promoting export growth.

First, by increasing price competitiveness, devaluation can improve export performance. According to a research by Kathuria and Rangarajan (2016), devaluation significantly increased export volumes in nations including South Korea, India, and Vietnam. A more competitive exchange rate increases export growth and boosts export demand by enabling international customers to acquire goods and services at comparatively cheaper rates.

Devaluation also aids in addressing the problem of trade imbalances. Bangladesh has been dealing with a trade

deficit, where imports are worth more than exports. Export-oriented industries may raise output as a result of devaluation in order to enhance their competitiveness. This promotes economic expansion and directly helps close the trade imbalance.

The decline in remittances has now established a regular trend due to more persons using hundi, an illegal channel, despite the fact that more Bangladeshis are travelling abroad for work. Overall remittances received from July through March of FY'23 totaled USD 16035.08 million, an increase of USD 15298.26 million over the corresponding period of FY'22. The average percentage of remittances to Bangladesh is 4.59 percent, ranging from a minimum of 0.19 percent in 1976 to a maximum of 10.59 percent in 2012. As of 2021, the latest recent percentage is 5.33 percent. The yearly trend of remittance inflow is seen in Chart 8.

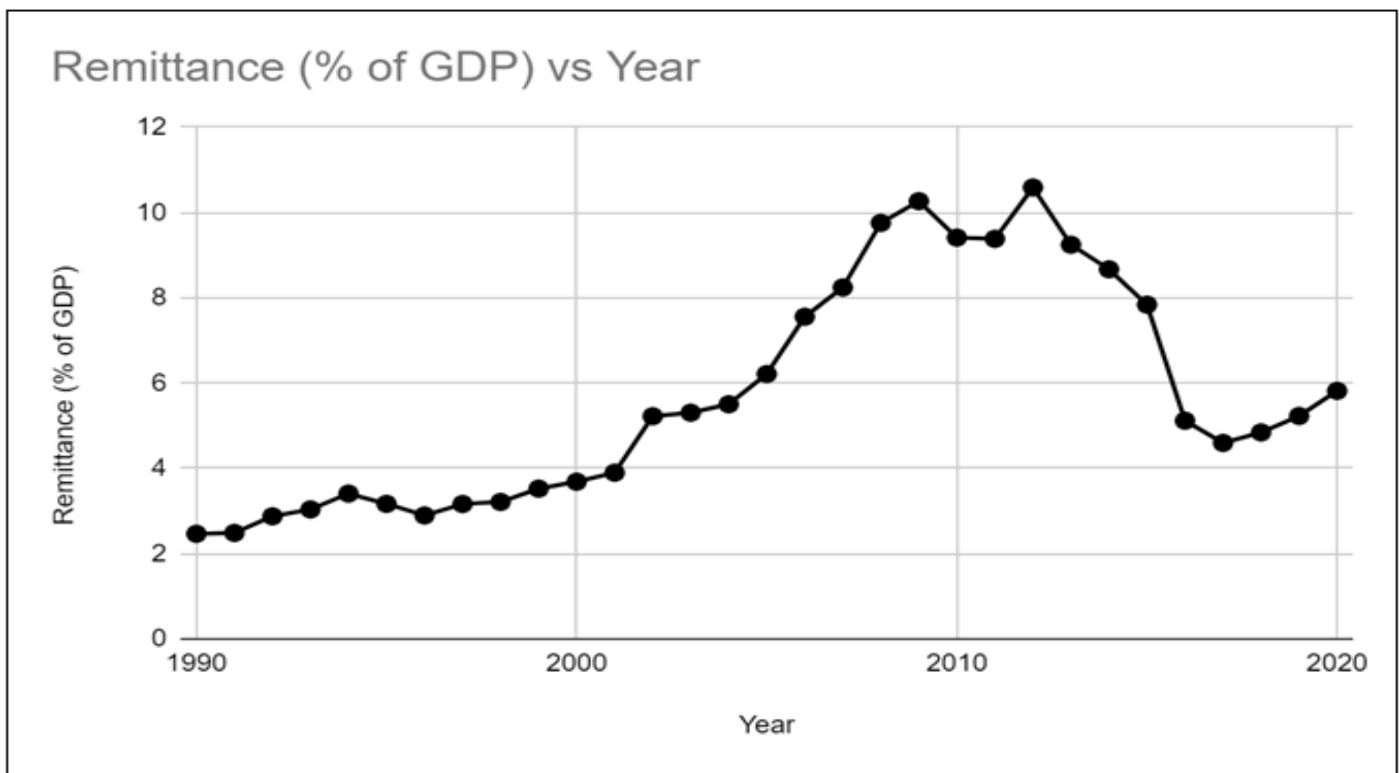


Chart - 8 Inflow of Remittances 1990 - 2020 (% of GDP)
 Source: Author's Calculation from World Bank data

In order to support export-oriented industries and maintain their competitiveness on the global market, tax exemptions are essential. The government may encourage enterprises to invest in industries with the potential to generate export revenue by lowering the tax burden. Tax exemptions come in many different forms, such as tariff drawbacks, fiscal incentives, and export subsidies. By lowering manufacturing costs, raising profitability, and promoting innovation and market growth, these policies help exporters.

In the case of Bangladesh, tax exemptions have been crucial in developing the ready-made garments (RMG) sector, which makes a sizable contribution to the nation's export revenues. To aid in the expansion of this industry, the government has provided a number of tax breaks, including exemption from value-added tax (VAT), decreased corporation tax rates, and duty-free imports of machinery. To ensure the efficiency of tax exemptions, it is crucial to maintain a balanced perspective. Overly generous exemptions may result in revenue loss and limit the government's ability to spend money on other crucial areas like social welfare and infrastructure improvement.

Currency depreciation can improve export competitiveness and support Bangladesh's economic expansion. It becomes a potent export performance driver when coupled with sensible tax exemption rules. Policymakers may carefully coordinate devaluation measures and tax exemptions to promote sustainable economic development, minimize trade imbalances, and establish a climate that is advantageous for export-oriented sectors by utilizing the development Identification and Facilitation framework.

- *Climate and Weather:*

For developing nations like Bangladesh, the Growth Identification and Facilitation Framework (GIF) is a useful tool for identifying and prioritizing sectors with a high potential for long-term economic growth. The framework includes a thorough PESTLE study that enables policymakers to comprehend the numerous external forces influencing the nation's economy. A focus on the impact of climatic and meteorological elements is important. PESTLE analysis is a technique for assessing the political, economic, social, technical, legal, and environmental aspects that are present in a certain nation or area. Bangladesh's environment and weather have a huge impact on how the country's economy performs in terms of exports.

Bangladesh is situated in an area that is particularly vulnerable to climatic change and severe weather phenomena. The nation is faced with difficulties including cyclones, floods, and increasing sea levels, which pose serious hazards to its infrastructure, agricultural sector, and general economic stability. Exports are directly impacted by these climate-related issues, particularly in industries that primarily rely on agriculture and natural resources. Exports of agricultural goods, including rice, jute, and tea, make up a sizeable portion of Bangladesh's export profits. However, changes in the temperature and weather might affect agricultural productivity and export quantities. For instance, cyclones and regular floods can harm crops, resulting in decreased yields and a disruption of supply systems. These weather-related variables may lead to lower export rates and lower foreign exchange revenues.

Another important area in Bangladesh's export-based economy is the clothing and textile sector. Climate changes have a variety of effects on this business. First, lengthy rainy seasons or excessive heat might impede manufacturing, delaying the timely delivery of orders. Second, fluctuations in weather patterns may alter consumer demand for particular garment categories, which might have an effect on export quantities. Last but not least, a change in production procedures may be required as a result of rising temperatures, raising costs and reducing price competitiveness.

Export Performance and Currency depreciation: Export performance can be affected in two different ways by currency depreciation. On the one hand, it can increase exports' competitiveness by bringing down their prices on international marketplaces. Bangladeshi goods may become more competitive and hence significantly less expensive

than those of their international competitors if their currency depreciates.

On the other side, currency depreciation can also raise the cost of imports, including raw materials for sectors that rely on exports. In the near run, this may result in greater manufacturing costs, thus offsetting the benefits of a lower currency. As a result, the effects of currency devaluation on export performance are complicated and dependent on a number of variables, such as the industries affected, the state of the market, and general macroeconomic stability.

Bangladesh has to carefully assess the possible effects of these factors on export performance, particularly in the agricultural and textile industries, given its vulnerability to climate change and extreme weather occurrences. Policymakers may benefit from the insights offered by the Growth Identification and Facilitation Framework and a thorough PESTLE study in order to manage difficulties and set priorities for sustainable economic growth initiatives. Although currency depreciation may improve export competitiveness, authorities must take wider macroeconomic implications and sector-specific vulnerabilities into account. In order to improve export performance and guarantee long-term economic resilience, Bangladesh must address climate-related issues and enact the necessary legislation.

- *Pollution:*

Bangladesh suffers from pollution, much as other developing nations. The nation was named the most polluted nation in the world in 2019 while Dhaka was named the second-most polluted city globally. Due to the lockdown enforced by the Covid-19 virus's advent, the air pollution did decrease to some extent. This in no way lessens the grave fact that air pollution poses a severe hazard to the nation. Despite the fact that the majority of people in Bangladesh have access to water, the quality of the water is not always suitable for drinking.

- *Remarks on Bangladesh PESTLE Analysis*

The GIF framework offers Bangladesh a comprehensive viewpoint to address the possibilities and problems in its trading relations with India. Bangladesh may evaluate its export performance and plan for sustainable growth by taking into account variables including currency depreciation, export diversification, skilled labor, technology improvements, legal agreements, and sustainable practices. The results of this PESTLE study should be used by decision-makers to guide their actions and adopt specific policies and programs that will allow Bangladesh to fully realize its economic potential in trade.

- *TVET (Technical and Vocational Education and Training):*

Bangladesh is one of the better-performing nations in South Asia and is placed 129th out of 191 countries on the UNDP's 2022 Human Development Index (HDI) (Liller, 2022). Skills development has to be connected to growing industries in order to accelerate economic growth. It is encouraged for traditional apprenticeships to create and

accept training standards through trade groups, with the Bangladesh Standards and Testing Institute (BSTI) and Bangladesh Technical Education Board (BTEB) serving as facilitators.

- *Challenges:*

- *Key Constraints for Each Sector*

In the pursuit of sustained economic growth, countries often face various constraints within their sectors that hinder progress. Bangladesh, a developing nation, has embarked on a growth identification and facilitation framework to address these constraints. One of the key binding constraints in Bangladesh's agriculture sector is the lack of modernization and technology adoption. There are many papers that highlight the importance of improving agricultural productivity through the introduction of advanced farming techniques, mechanization, and better irrigation systems. However, inadequate access to credit, limited knowledge transfer, and fragmented landholdings pose significant challenges to the sector's growth. The manufacturing sector in Bangladesh faces binding constraints such as limited access to finance, high energy costs, and inadequate infrastructure. Some papers emphasize the need for efficient regulatory policies, greater investment in infrastructure development, and skill enhancement programs to boost manufacturing productivity and competitiveness. Additionally, the devaluation of currency can directly impact the export performance of the manufacturing sector.

Devaluation of currency refers to a deliberate reduction in the value of a country's currency against other currencies. This can potentially impact a nation's export performance, as it influences the competitiveness of its goods and services in international markets. When a country's currency is devalued, its products become relatively cheaper in comparison to goods produced in countries with stronger currencies. This price advantage can potentially increase the demand for Bangladesh's exports, leading to enhanced export performance. Devaluation can enhance the competitiveness of export-oriented industries, such as ready-made garments and textiles, which play a crucial role in the country's economy. Devaluation also presents certain challenges. Increased import costs, inflationary pressures, and concerns over the stability of the domestic economy can arise due to devaluation. Furthermore, devaluation alone may not be sufficient to improve export performance if other binding constraints, such as infrastructure deficiencies or ineffective trade policies, remain unaddressed.

This paper suggests that while devaluation may provide temporary relief, sustainable export performance requires a comprehensive approach. Strategies such as diversification of products, expanding market access, improved trade facilitation, and investment in research and development are vital to long-term export growth. Bangladesh faces key binding constraints in its agriculture and manufacturing sectors, which hinder economic growth. Many research papers on the growth identification and facilitation framework sheds light on these constraints and provides valuable insights. This paper emphasizes the

importance of addressing these constraints, along with considering the impact of currency devaluation on export performance. While devaluation can have positive implications for export-oriented industries, it must be accompanied by other measures to ensure sustained and inclusive growth in Bangladesh.

Finding barriers to the expansion of economic sectors is a difficulty for the government, particularly in emerging nations. Transportation is a limitation that affects all sectors. As the primary strategy for tackling the transportation issues, it is crucial for the Bangladeshi government to invest in transportation infrastructure in industrial zones. With a few exceptions, such as issues obtaining finance, low productivity, dwindling land, etc., the food processing industry—which includes the production of rice, potatoes, oil seeds, pulses, maize, vegetables, and jute—has experienced rapid growth in recent years. By providing small farmers with access to financing and diversifying agricultural output with high-value crops, the government, through the regular "Five Year Plan", ensures assistance for farmers (General Economics Division, Bangladesh Planning Commission, 2020).

One of Bangladesh's largest and fastest-growing businesses, construction has the potential to generate job opportunities (Saba, 2019). Inadequate access to financing is the major challenge the construction sector must overcome. Other restrictions include a lack of skilled labor and sharp increases in land costs (Rahman, 2015). The government should allocate more money to the education sector and match skill-development initiatives with market demands. The assembly of domestic electronics (refrigerator, washing machine, TV, etc.), motorcycles, tractors, mobile phone sets, and other items is predicted to increase quickly. The key barrier is that a significant amount of components are imported as a result of local manufacturers' lack of backward linkage industry (Faruque, 2022; LightCastle Analytics Wing; & Islam, 2022). For instance, 70% of the component parts used in the motorbike assembly sector are imported (LightCastle).

The computer assembly sector has expanded quickly in recent years. To help close the skills gap and cut costs, Lin (2012) suggests a cooperation between the public and commercial sectors. In addition, LightCastle Analytics Wing (2022) suggests that the government should work with the business sector to (i) support reforms in high-tech manufacturing, (ii) create sustainable supply chains, and (iii) keep up with technological advancements. In recent years, the garment sector has also expanded quickly. It is the foundation of Bangladesh's economic expansion, accounting for 84% of exports between 2009 and 2019, growing at a 7% annual pace (Berg, Chhaparia, Hedrich & Magnus, 2021). The primary challenges this industry has include a severe lack of energy that has an impact on output, greater input costs from imports, and a reduction in worldwide demand (RMG Bangladesh, 2022). The physical infrastructure (especially the transportation system and power) must be strengthened, and technical innovation must be encouraged, for the garment sector to grow in the future.

Since the country's independence in 1971, agriculture has dominated Bangladesh's economy and served as the major source of income for its citizens. But Bangladesh may now legitimately assert that she has moved from being primarily an aid-receiving and agro-based nation to a trading nation. The Readymade Garment (RMG) industry, which focuses on exports, has significantly contributed to this shift. The largest exporting sector in Bangladesh today is the RMG sector, which has grown rapidly over the past 25 years. It has quickly gained a prominent prominence in terms of exports, foreign exchange profits, industrialisation, and GDP contribution. The sector is crucial for creating jobs, giving the underprivileged access to money, and advancing socio economic development.

Bangladesh has utilized its plentiful and inexpensive workforce to boost economic growth and draw both local and foreign investment, similar to other rising and developing nations. The nation has put itself in a good position to seize control of a significant portion of international commerce, particularly the ready-made garment (RMG) sector, where it is second only to China in terms of exports to consumers in Europe and the United States. Bangladesh, like its predecessors in the developing markets, must overcome obstacles to its economy. Through the diversification of industry sectors, it must continue to grow and modernize the economy. In addition, it must create a highly trained workforce—its human capital—to keep up with this diversity. Unskilled and semi-skilled workers will become capable workers via training and education. Some other key constraints may be listed as follows:

- Lack of power sources and other infrastructure
- Political instability
- Regulatory uncertainty, a lack of transparency, weak institutional capacity
- Insufficient access to capital for businesses
- Insufficient skilled labor
- Table - 8 in the appendix, however, lists several approaches to the binding restrictions.

The government will need to strengthen its infrastructure, transparency, political stability, regulatory certainty, and technical skills-based training in order to draw in more foreign direct investment (FDI). RMG industry's low fixed costs and focus on labor-intensive production serve as a springboard for Bangladesh's national growth. The sector has traditionally served as a driver of sustainable growth and development in the nation. Despite the RMG industry's phenomenal expansion and promising future, there are still difficulties. These are a few of these challenges:

The long-lasting political upheaval in Bangladesh is one of the industry's main obstacles and gravely jeopardizes both production and marketing. Bangladesh's exports to the USA decreased by 7.16 percent in January 2015 compared to January 2014 exports. The reflection included both value and volume. Bangladesh shipped 15,200,000 square meters of clothing in January 2015, 8.38% fewer than in the same month the year before. Exports are the primary focus of the

majority of Bangladesh's RMG enterprises. The EU and North American nations are the primary customers for RMG goods from Bangladesh. Despite the fact that Bangladesh has hundreds of RMG enterprises producing RMG goods, China, India, and Sri Lanka have been formidable competitors. To compete with the rivals, structural development is desperately needed. However, the RMG industry in Bangladesh has been dealing with various structural issues, such as insufficient and inconsistent energy sources, low gas pressure, inadequate road and transport infrastructure, etc. If the effects of wage costs are isolated, Bangladesh's per unit manufacturing cost is greater than most of its rivals because Bangladesh's successive governments have failed to provide the necessary infrastructure and reliable electricity supply. The RMG industry has been dealing with a number of implications and issues connected to compliance. Following the tragedies at Tazrin Garments and Rana Plaza, foreign consumers of Bangladesh's ready-made clothing, particularly those from the EU and the USA, have been urging the government to adhere to certain criteria. GSP facilities for Bangladesh have been suspended in the meantime. Another obstacle facing Bangladesh's RMG sector is getting the GSP facilities restored.

Due to the heated discussion around wage rises in Bangladesh's ready made garments (RMG) sector, the business may experience challenges. This is happening at a time when China, the world's largest exporter of apparel and one of Bangladesh's primary competitors, is going through rapid changes in its industrial structure. Even though the China shift may be advantageous for the industry in the medium to long term, the RMG sector in Bangladesh now faces certain short-term challenges, mostly because of the economic problems in the advanced countries. While the outlook for the advanced economies is still grim, developing markets have resumed their rapid growth rates following the Great Recession of 2008–2009. The chance of economic recovery is hampered by the continuing loss of employment in the US and the problem with national debt on both sides of the Atlantic. A number of European countries have also announced a variety of austerity measures that may significantly lessen their dependence on imported goods and services. However, recent austerity measures and a pessimistic outlook for advanced nations may hurt Bangladesh's clothing sector. Recent studies by a variety of analysts and researchers demonstrate that Bangladesh's RMG industry struggles with a shortage of skilled and seasoned marketing workers and is compelled to rely on expensive international specialists for hire.

- *Trade Policy Reform:*

Increased export and its diversification are significantly hampered by import restrictions and tariff protection structures (Sattar, 2022). Therefore, modernizing the tariff structure is necessary to diversify the economy, increase export competitiveness, and support the expansion of industries with strong growth potential. According to Kathuria, Malouche, Kusek, and Rizwan (2016), there are gaps between policies and practice, as well as protracted and arbitrary administrative processes, shoddy conflict

resolution procedures, and limited access to information about land.

- *Access to Finance:*

Bangladesh must make improvements. Small and medium-sized businesses (SMEs) have less access to financing than in many developing nations, partly because of ineffective interagency cooperation (United Nations, 2021). The approach suggested by Lin (2012) is to increase mortgage availability through land allocation system reform, introduce directed credit schemes at low interest rates, and mobilise mortgage-based funding. This strategy would guarantee that all SMEs have access to financing.

- *How Should Bangladesh Address Issues of Governance?*

The possibility of elite capture of the interventions, which might substantially impair the efficacy of any policy intervention, is one of the most serious concerns of industrial policy, according to Lin (2012). In Bangladesh, problems with governance are particularly difficult when it comes to corruption. Bangladesh is ranked 147th on the most recent Corruption Perceptions Index published by Transparency International. The following actions may be taken into consideration in order for Bangladesh to improve governance-related concerns, including corruption. We believe that these steps could significantly improve the corruption perception index based on experience from other nations.

Bangladesh must increase its level of accountability and transparency. Every programme run by the public or commercial sector ought to be available for public review. Every government or private sector programme requires follow-up. At every level, there must be mechanisms in place to encourage openness and responsibility. According to Lin (2012), the first step is to hold a jobs summit where representatives from the private and public sectors for important sectors can gather, discuss, and come to an agreement on critical interventions aimed at boosting growth in each sector, including eligibility requirements and suitable implementation mechanisms. In order to track performance, performance reviews must be conducted on a regular basis and published in the media.

The government and private sector may also intensify the use of Results based management system. The government and private sector may spell out the type of results they are expecting before implementing on initiatives or programme. According to Lin(2012) The system must say clearly what should be done say that if the results are not achieved, the intervention should be retracted.

Also to promote transparency and accountability the number of interventions must be minimised. According to Lin(2012) Smaller interventions stand a greater chance of transparency than large schemes. He said there is potential for elite capture during the process therefore smaller interventions stand a better chance. Finally the selection of industries could be delegated to a consulting firm, rather than be handled by the government (as has been the case in

Chile). The consulting firms are independent and they are not subject to biases.

A competitive business environment, increased human capital and the development of a skilled labor force, the construction of efficient infrastructure, the establishment of policy environments that encourage private investment—all of these are necessary for Bangladesh to realize its vision of reaching upper middle-income status by 2031.

Improving governmental institutions, particularly fiscal changes to produce more domestic money for development, diversifying exports beyond the RMG sector, developing the financial sector, making urbanization more sustainable, and diversifying exports beyond the RMG sector are development objectives. Growth would be accelerated if infrastructural deficiencies were filled. By addressing its susceptibility to natural disasters and climate change, Bangladesh can continue to develop its resistance to shocks in the future. Making the switch to green growth would help ensure the long-term viability of development results for future generations.

In its first 50 years of independence, Bangladesh has achieved significant strides. The nation has received a lot of praise for its impressive economic growth over the last ten years, which was made possible by careful macroeconomic management. The real GDP of Bangladesh has increased at an average yearly rate of about 6.8% from FY2011/12, reaching 8.2% in FY2018/19. The pharmaceutical industry, ready-made clothing and textiles, ICT, and other industries all played a role in the nation's economic development.

Because of its low fixed costs and focus on labor-intensive manufacturing, the ready-made garment sector in particular serves as a springboard for Bangladesh's national growth. The sector has historically served as a driving force behind long-term growth and development in the nation. In addition, Bangladesh has a very successful ready-made clothing and textile sector because to cheap labor costs, tax exemptions, electricity subsidies, and a significant salary gap from comparable nations that manufacture in big quantities. As a result, one of the industries in which Bangladesh has a competitive advantage is the production of ready-to-wear clothing and textiles.

With one of the lowest labor rates in the world, Bangladesh has been able to build its industrial base, which is being led by the RMG sector. However, it is in a good position to increase its value chain position and diversify its exports. Large industries for footwear, pharmaceuticals, and agricultural processing are also present in the nation. Other crucial industries include shipbuilding, light engineering, leather, jute, and ceramics manufacturing, as well as information and communication technology (ICT) and business process outsourcing. Foreign businesses have a lot of room to enter the market and invest in these growth areas. The software and IT services sector is predicted to contribute 1% of the nation's GDP during the next five years. Currently, this industry employs around 100000 people.

Bangladesh is one of the better-performing nations in South Asia and is placed 129th out of 191 countries on the UNDP's 2022 Human Development Index (HDI) (Liller, 2022). Skills development has to be connected to growing industries in order to accelerate economic growth. Bangladesh must have a competitive business environment, a competent labor force, effective infrastructure, and a regulatory framework that encourages private investment in order to provide jobs and employment possibilities. Being a middle-income nation, Bangladesh is blessed with an abundance of human capital and natural resources. (2013) Aparico and Muzzini Bangladesh's human capital, which makes up 69% of the country's 167 million people and is mostly comprised of people between the ages of 15 and 64, has tremendous potential. (UNFPA, 2022).

The most crucial area for the nation's future economic development is thought to be its human resources. In terms of comparative advantage in this industry, the nation has recently been in a very advantageous position. The 167 million people who make up its human capital are 69% of the total population and are between the ages of 15 and 64. This is a key element that has the potential to be both a comparative advantage and a competitive advantage in the labor-intensive manufacturing sector both domestically and internationally. Bangladesh presently underutilizes its labor force. The growth of labor-intensive activities is necessary to accommodate the expanding work force and more effectively use the current pool of underemployed individuals. And since domestic demand has few chances for specializing in labor-intensive industries, that implies increasing exports. A growing industrial base, anchored by the ready-made clothing sector, has been spurred by the nation's among the lowest pay rates in the world.

What options exist for increasing exports? Competitors of Bangladesh are becoming more costly locations to conduct business. For instance, it is anticipated that China would export less produced items that need a lot of work in the next few years. It won't hold a third of the global market share for items including clothing, textiles, footwear, furniture, toys, electrical products, auto components, plastic, and kitchenware. Bangladesh's exports of manufactured goods would nearly quadruple if it were to capture only 1% of China's manufacturing export markets.

Forests, water resources, fisheries, minerals, land, marine resources, climate, oil and natural gas energy and power resources, and sand are just a few of the natural resources that Bangladesh has that may be utilised for growth and development. Agriculture, fishing, manufacturing, finance, commerce, and transportation are Bangladesh's key economic activities. Bangladesh's top exports include ready-to-wear clothing and knitwear, frozen seafood, jute-based pharmaceuticals, tea, chemicals, and leather goods, among others.

Through the diversification of industry sectors, it must continue to grow and modernize the economy. In addition, it must create a highly trained workforce—its human capital—to keep up with this diversity. Unskilled and semi-skilled

workers will become capable of supporting rising industries like information technology, pharmaceuticals, shipbuilding, etc. through training and education.

The history of garments in Bangladesh began with the narrative of a joint venture between a local business called Dosh and a Korean corporation called chaebol Daewoo, with the intention of avoiding US export limitations on Korean clothing. As a result of the first investment's great success, imitation spread quickly. Out of the original 130 employees, 115 departed Dosh to create rival businesses. The number of factories increased from a handful in 1979 to over 700 in 1985. Still, Bangladesh has more than 4500 enterprises engaged in the lucrative ready-made garment sector. In the very near future, the ICT industry is anticipated to achieve a similar revolutionary success, following in the footsteps of China through technical innovation and advancement in the human resource development sector.

V. CONCLUDING REMARKS

Increased export competitiveness may result from currency depreciation. A depreciated currency boosts international demand and increases export volumes by making local goods substantially less expensive. As a result, Bangladesh's export performance may improve, leading to sustained economic growth.

Devaluation of the currency also makes it possible to diversify export goods and markets. It is simpler for firms to look into new export options outside of typical markets when the exchange rate is more competitive. By decreasing reliance on a single market and broadening the selection of items supplied, this diversification helps strengthen the export sector's resilience. It is important to remember that currency depreciation by itself does not guarantee an increase in export performance. For maintaining long-term export growth, additional elements including expanding trade facilitation measures, boosting innovation, and making investments in human capital development are also crucial. Furthermore, while a weakened currency may offer exporters short-term respite, it may also result in increased import input prices, which should be carefully handled. The promotion of export competitiveness through currency depreciation must be balanced with reducing the possible negative impacts on industries that depend on imports.

Our study shows the value of currency depreciation as a strategy for improving Bangladesh's export performance. However, it stresses the necessity for a thorough strategy, taking into account other crucial elements that support export development. By utilizing a comprehensive approach that includes both currency management and structural reforms, Bangladesh can effectively harness its export potential and drive sustainable economic development.

A number of cooperative and coordinated activities should be started in order to overcome the issues facing the RMG industry in Bangladesh. Improved market access, market diversification, skilled labor, and increased productivity must be prioritized together with the

development of strong infrastructure. Another urgent necessity is the creation of secured special industrial zones and access to financing at competitive bank interest rates. Favorable branding should be maintained in order to bring the delicious fruits of RMG. This analysis also found key binding restrictions in the chosen value chains.

They can be divided into five categories: physical infrastructure, such as having access to effective water, sanitation, and transportation systems; business environment (burdensome procedures); constrained access to finance (e.g., SMEs); a dearth of technical and vocational education systems that are in line with the market; and restrictive trade policy. The analysis recommended a workable solution for each of the restrictions. Our opinion is that Bangladesh will soon overtake China as the world's second-largest economy after it avoids the aforementioned restrictions and the government takes on a facilitating role.

Key binding constraints in the chosen value chains were found by the prior study. They can be divided into five categories: physical infrastructure (access to effective water, sanitation, and transportation systems); business environment (burdensome procedures); restricted access to finance (e.g., SMEs); absence of a technical and vocational education system that is in line with the market; and restrictive trade policy. Binding constraints and potential solutions to them in a few particular value chains are compiled in the appendix table. The options and discussion of these limitations are covered in the section that follows. For each type of growth limitation, the following specific actions might be taken:

Regarding access to energy, significant advancements have been made. Taking into account both public and independent power supply plants (IPP), the electricity coverage improved to 92.23% in 2019 from a baseline of 72% in 2015 (General Economics Division, Bangladesh Planning Commission, 2020). On the other hand, Bangladesh is having problems with PPP projects and urban transportation. building more independent power plants (IPPs) in regions with strong development potential and a concentration of prospective value chains, such as the apparel sector. For efficient economic activity, decentralization of infrastructure development projects may also be required (Khaled, 2019).

In terms of business easiness, Bangladesh was placed 168th out of 190 nations in Doing Business 2020 (World Bank Group, 2019). Although this is an increase over the ranking from the previous year, there are still significant startup expenses and a number of challenging processes. Selective capacity building should take place in important government organizations that uphold standards, and commercial conflicts and property transactions should be reformed. Additionally, regulatory reform initiatives to speed up the transfer of property titles and the adjudication of business disputes may need to be improved.

The Metaheuristic Theory of Growth is a concept that explores innovative ways to promote economic growth by addressing various constraints. It may be wise to discuss the application of the Metaheuristic Theory of Growth, specifically focusing on the study of "Applying the Growth Identification and Facilitation Framework for Bangladesh." In this context, we may highlight on the relationship between the devaluation of currency and export performance in Bangladesh. The study proposes a Growth Identification and Facilitation Framework (GIFF) that combines economic theory with policy interventions to optimize the country's growth potential. The research study on the Growth Identification and Facilitation Framework for Bangladesh explores how currency devaluation can impact export performance and contribute to overall economic growth. The devaluation of the Bangladesh Taka (BDT) can effectively enhance export competitiveness. When the domestic currency is devalued, Bangladeshi goods become comparatively cheaper in international markets. This, in turn, stimulates export demand and increases export revenue. Moreover, devaluation can also incentivize the domestic production of goods and reduce the reliance on imports, thereby boosting local industries and employment opportunities.

The research study highlights that while devaluation can generate short-term gains for exports, sustained export growth requires a broader, more holistic approach. The study emphasizes the importance of reforms in sectors such as infrastructure development, trade facilitation, technology adoption, and skill development to enhance export competitiveness. It argues that devaluation alone may not be sufficient to promote long-term export growth. Thus, policy interventions based on the GIFF framework should concentrate on multiple areas to drive sustainable export performance. The Metaheuristic Theory of Growth, may provide valuable insights into the relationship between currency devaluation and export performance. While devaluation can play a role in boosting short-term export growth, sustainable and inclusive growth requires a comprehensive approach that addresses various constraints. The study highlights the need for policy interventions that go beyond currency devaluation. Targeted reforms in infrastructure, technology adoption, trade facilitation, and skill development are critical for nurturing export industries and securing long-term economic growth. By applying the Metaheuristic Theory of Growth, policymakers can develop strategies that holistically foster export competitiveness and unlock Bangladesh's growth potential.

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APPENDIX

Table 5 Sectoral Growth Rate of GDP (Base Year: 2005-06, %)

Sector /Sub -sector	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1.Agriculture and Forestry	3.89	2.41	1.47	3.81	2.45	1.79	1.96	3.47	2.58
a) Crops & horticulture	3.85	1.75	0.59	3.78	1.83	0.88	0.96	3.06	1.75
b) Animal Farming	2.59	2.68	2.74	2.83	3.08	3.19	3.31	3.4	3.47
c) Forest and related services	5.56	5.96	5.04	5.01	5.08	5.12	5.6	5.51	5.58
2.Fishing	6.69	5.32	6.18	6.36	6.38	6.11	6.23	6.37	6.29
3.Mining and Quarrying	3.62	6.93	9.35	4.68	9.6	12.84	8.89	7	7.39
a) Natural gas and crude petroleum	0.68	3.78	7.55	2.47	8.73	11.77	0.34	2.25	3.11
b) Other mining & coal	9.34	12.58	12.34	8.2	10.9	14.42	21.19	12.66	12.02
4.Manufacturing	10.01	9.96	10.31	8.77	10.31	11.69	10.97	13.4	14.73
a) Large & medium scale	11.11	10.76	10.65	9.32	10.7	12.26	11.2	14.26	15.61
b) Small scale	5.67	6.58	8.81	6.33	8.54	9.06	9.82	9.25	10.26
5.Electricity ,Gas and Water Supply	13.36	10.58	8.99	4.54	6.22	13.33	8.46	9.19	10.57
a) Electricity	15.82	10.97	9.69	1.69	6.09	14.2	9.22	10.19	11.57
b) Gas	0.07	7.45	5.91	10.93	5.16	9.91	0.28	2.2	2.85

c) Water	8.23	10.91	4.75	8.08	9.62	7.4	11.09	5.66	7.17
6.Construction	6.95	8.42	8.04	8.08	8.6	8.56	8.77	9.92	9.63
7.Wholesale and Retail Trade	6.69	6.7	6.18	6.73	6.35	6.5	7.37	7.45	7.7
8.Hotel and Restaurants	6.2	6.39	6.49	6.7	6.83	6.98	7.13	7.28	7.43
9.Transport ,Storage &Communication	8.44	9.15	6.27	6.05	5.96	6.08	6.76	6.58	6.88
a) Land Transport	7.18	6.83	5.91	5.56	6.18	6.28	7.06	6.72	6.93
b) Water transport	2.92	3.1	3.21	3.15	3.62	3.2	4.1	3.5	3.72
c) Air transport	15.23	5.76	-1.64	0.61	8.71	1.48	2.79	2.74	6.04
d) Support transport services , storage	11.97	17.6	3.36	2.59	5.37	5.19	6.4	9.58	7.2
e)Post and Tele communications	13.77	16.92	9.67	9.56	6.11	6.81	6.98	6.53	7.56
10.Financial Intermediations	10.44	14.76	9.11	7.27	7.78	7.74	9.12	7.9	8.32
a) Monetary intermediation (Banks)	12.98	17.61	10.87	8.33	8.49	8.85	9.95	8.51	9.42
b) Insurance	3.69	4.41	0.61	1.55	3.95	0.54	2.05	1.63	-2.51
c) Other financial auxiliaries	-2.54	2.33	3.14	3.63	4.68	4.54	9.06	9.05	8.29
11.Real Estate .Renting and Business Activities	3.88	3.92	4.04	4.25	4.4	4.47	4.8	4.98	5.15
12.Public Administration and Defence	8.84	7.53	6.53	6.89	9.82	11.43	9.15	8.47	6.45
13.Education	5.63	7.75	6.3	7.26	8.01	11.71	11.35	7.01	6.5
14.Health and Social Works	6.34	3.81	4.76	5.06	5.18	7.54	7.63	7.02	9.15
15.Community ,Social and Personal Services	3.23	3.25	3.25	3.27	3.28	3.3	3.62	3.65	3.69
At Constant Price GDP Growth Rate	6.46	6.52	6.01	6.06	6.55	7.11	7.28	7.86	8.13

Source: Bangladesh Economic Review

Table 6 Volume and Growth Rate of Manufacturing Sector

Type of Industry	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Small and cottage	24557.9 (8.81)	26113.1 (6.33)	28342.6 (8.54)	30909.4 (9.06)	33945.8 (11.20)	37086.4 (9.25)	41148.0 (10.95)	42778.1 (3.96)	43519.1 (1.73)
Medium Large	108436.2 (10.65)	118540.3 (9.32)	131225.4 (10.70)	147313.5 (12.26)	163819.5 (9.82)	187183.7 (14.26)	214969.9 (14.84)	217949.4 (1.39)	232245.1 (6.56)
Total	132994.1 (10.31)	144653.4 (8.77)	159568.0 (10.31)	178222.8 (11.69)	197765.3 (10.97)	224270.1 (13.40)	256117.9 (14.20)	260727.6 (1.80)	275764.2 (5.77)

Source : Bangladesh Economic Review 2021

Table 7 Identifying Sectors for Growth: Key Exports of China, Vietnam, India, and Indonesia

China	India	Vietnam	Indonesia	Bangladesh Potential
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<p>Apparel & clothing accessories; textile yarn, fabrics etc.; dyeing & tanning</p> <p>The textile and apparel industry is the most market-oriented in China, experiences the most competition, and is closest to the market and end-users. As a pillar of the national economy, it is labor-intensive with comparative advantages in the world market</p>	<p>The textiles and apparel industry in India is the 2nd largest employer in the country providing direct employment to 45 million people and 100 million people in allied industries. India has also become the second-largest manufacturer of PPE in the world.</p>	<p>Vietnam textile and garment industry consists of two major parts: textile and garment. The textile sector includes fiber spinning, shuttle weaving, dyeing and finishing. The garment sector uses the main material as fabric and some machine to make the final garment.</p>	<p>The textile and apparel industry in Indonesia is one of the top economy contributors and largest employment sources. This labour intensive and export oriented industry has helped Indonesia making its way to the world's top ten largest textile and garment producing countries, accounting for 2% of global textile and apparel market.</p>	<p>Ready Made Garments (RMG) & Textiles is a highly successful industry primarily because competitiveness with imports is undermined by very cheap labor costs & tax exemption, subsidised power in Bangladesh, as well as a big wage differential to comparator countries which produce at large volumes. It is ranked number second after China.</p>
<p>Fish, crustaceans prepared</p> <p>China imports Inedible Fish and Crustaceans primarily from: Uzbekistan (\$6.45M), United States (\$3.03M), Russia (\$1.67M), South Korea (\$1.54M), and Vietnam (\$1.31M). The fastest growing import markets in Inedible Fish and Crustaceans for China between 2019 and 2020 were Uzbekistan (\$4.99M), Costa Rica (\$125k), and United States (\$94.6k).</p>	<p>Imports of Fish & Crustaceans in India is expected to reach - 2.33 USD Million by the end of 2021, according to Trading Economics global macro models and analysts expectations. In the long-term, the India Imports of Fish & Crustaceans is projected to trend around -1.87 USD Million in 2022 and -0.88 USD Million in 2023,</p>	<p>In 2019 Vietnam sold 334 tonnes of crustaceans. For the year 2019 alone, the interest in Vietnam crustaceans (seafood category) has decreased, with a change of - 33.861 percent compared to the year 2018. Between 2017 and 2019, crustaceans' exports decreased by -47.98 percent bringing the country US\$4.13m for the year 2019.</p>	<p>Indonesia Exports of fish, crustaceans, molluscs, aquatics invertebrates was US\$3.71 Billion during 2021, according to the United Nations COMTRADE database on international trade. Indonesia Exports of fish, crustaceans, molluscs, aquatics invertebrates</p>	<p>Shrimp & Frozen Fish: booming sector oriented to the international market; Shrimp are 2nd largest export; frozen fish & crustaceans 5th largest export</p>

<p>ICT Business Sector China's information and communication technology (ICT) market is among the most dynamic sectors in the economy. By 2021, the market is projected to reach \$8.1 trillion, representing 55% of China's GDP, according to information technology (IT) consulting firm IDC.</p>	<p>The ICT market in India is estimated at \$180 billion and is projected to grow to \$350 billion by 2025. The ICT hardware market is estimated at \$20 billion. The ICT sector growth rate is over 9 percent per year and it contributes about 9 percent of India's GDP.</p>	<p>The government has pledged to invest approximately US\$ 415 million from the State Budget in the ICT sector by 2020 (Source: BMI Vietnam Information Technology Report 2016) . There are four major ICT focus areas, addressing supply as well as demand:</p>	<p>The market potential for providing with ICT services in Indonesia is expected to reach US\$78 billion from 2019 through 2022. According to APIJJ 2017 survey, there is a growth demand for digital content applications and business solutions.</p>	<p>ICT and its related business services in Bangladesh are a vibrant sector supported by an enthusiastic culture and a government committed to providing a pro-business climate for all investors. Over 400 IT companies are now thriving in the country supplying to local and international markets worldwide . Over 800 IT companies are now thriving in the country and capturing a significant share in the international markets worldwide . Total estimated IT Industry Size is US\$ 120 Million (including export). Software contributes around 44% to the overall industry revenue, whereas ITES contributes around 56% to the overall industry revenue. Approx 30000 professionals, majority IT and other graduates, are employed in the industry.</p>
<p>Leather and Leather Goods In 2020, imported leather goods constituted mainly shoes (\$55.6 billion), luggage and bags (\$44 billion), and raw materials (\$10.1 billion). China imported those leather goods mainly from the EU (34.7%) and ASEAN (39.6%) and the USA (4.8%) which accounts for \$152.4 billion in total in 2020.</p>	<p>India has four main leather sectors: Tanning, Footwear, Leather Garments and Leather accessories and Accessories. The country accounts for 13% of the world's total leather production. It is also the second largest producer and consumer of leather footwear.</p>	<p>Vietnam's leather shoe industry has developed very quickly and is considered one of the driving forces of the Vietnamese economy. With about 240 operating businesses, Vietnam's leather and footwear industry is a key export industry, attracting about 500,000 employees.</p>	<p>Indonesia has excellent growth economically in the leather industry as the people consume a lot of meat which results in an adequately steady raw leather supply. The fairly enormous populations of animals like cows, goats, and snakes make it easy to produce leather footwear and leather goods in Indonesia.</p>	<p>Bangladesh has a long established tanning industry which produces around 3-4% of the world's leather from a ready supply of raw materials. The country is therefore an established and attractive location to source and outsource the manufacture of finished leather products. The leather industry is ideally suited to Bangladesh with its abundance of labor and natural resources at internationally competitive rates .</p>
<p>Pharmaceutical Sector The pharmaceutical industry is one of the leading industries in the People's Republic of China, covering synthetic chemicals and drugs, prepared Chinese medicines, medical devices, apparatus and instruments, hygiene materials, packing materials, and pharmaceutical</p>	<p>In the global pharmaceuticals sector, India is a significant and rising player. India is the world's largest supplier of generic medications, accounting for 20% of the worldwide supply by volume and supplying about 60% of the global vaccination demand. The Indian pharmaceutical sector is worth US\$</p>	<p>According to some reports, the pharmaceutical industry in Vietnam has reached an intermediate level of international integration resulting in the development of a domestic pharmaceutical industry that is specialized in manufacturing generics and</p>	<p>Indonesia is home to 260 million people and one of the fastest growing pharmaceutical markets in Asia. In a survey done by Global Data, Indonesia's pharmaceutical market is ranked the largest market in the ASEAN regions, with the market value expected to hit</p>	<p>The pharma industry of Bangladesh is now on the verge of entering highly regulated overseas markets like USA and Europe. In this connection, several pharma manufacturers have already made huge investments in their new state of art manufacturing facilities. A number of companies have already obtained or in the process of obtaining UKMHRA, EU, TGA, AUSTRALIA and GCC certifications. Export earnings reached USD 82.109 million in 2015-16</p>

<p>machinery.</p>	<p>42 billion worldwide.</p>	<p>exporting non sophisticated pharmaceutical products to other countries.</p>	<p>IDR 141.6 billion (USD 10.11 billion) by 2021.</p>	
<p>Power Sector Background of the Energy Sector in China The distribution of China’s electricity is managed by two mammoth state-owned enterprises, namely the State Grid Corporation of China and China Southern Power Grid Co. This distribution network relies on a mix of coal, natural gas, hydropower, wind energy and solar energy.</p>	<p>India’s power sector is one of the most diversified in the world. Sources of power generation range from conventional sources such as coal, lignite, natural gas, oil, hydro and nuclear power, to viable non-conventional sources such as wind, solar, agricultural and domestic waste.</p>	<p>Vietnam expects power consumption to grow from 10% annually until 2030. Vietnam is experiencing significant economic growth and is rising as one of Asia’s fastest-growing energy markets. The Government of Vietnam expects power consumption to grow from 10% to 12% annually until 2030.</p>	<p>Consultancy firm Frost and Sullivan has highlighted the key short term opportunities within Indonesia’s electricity sector as geothermal energy and biomass followed by hydropower over the medium term and solar, wind as well as other sources offering potential for the long term</p>	<p>Bangladesh is progressing through a phase of development where automation is the key to its economy and business. As the country continues to industrialize the importance of power generation and electricity supply becomes a key government priority . The government has given top priority to the sector considering its importance in the overall development of the country .</p>
<p>Human Resource Sector Facts about the Population The concept of human resource management (HRM) in China was only adopted beginning in the 1990s as a foreign import. Many domestic firms still operate in a traditional personnel management mode with limited strategic planning or HR capability, although there is a general trend by which firms are increasingly becoming more strategic in their HRM.</p>	<p>The India human resource (HR) technology market reached a value of US\$ 850 Million in 2021. Looking forward, IMARC Group expects the market to reach US\$ 1,510 Million by 2027, exhibiting a CAGR of 9.9% during 2022-2027.</p>	<p>Despite large quantity, the quality of human resources in Vietnam is at a low level. The number of skilled workers is only 24.1 million workers (figures in 2021). Workers who have been trained and have certificates and diplomas at all levels from primary vocational, intermediate, college to university and postgraduate account for 20.92%.</p>	<p>Human Capital, Indonesia, 2045. Indonesia and Japan are highly committed to maintaining human resources development to support economic growth, in line with the development in the political and social dimensions. They are focusing intensively on the use of digital technology throughout many aspects of people’s lives.</p>	<p>The population of the country makes up about 2.11% of the world’s total population. The current population of Bangladesh is 165,424,778 as of Sunday, December 13, 2020. The average age of the country is approximately 27 years which shows that it has a huge population of youth, good news in terms of potential innovation for the future. 39.4% of the total population settled in Bangladesh is urban whereas the rest is in rural areas. Languages: 98% or nearly all of the population speaks Bangla, however, most people are also able to communicate in Urdu, Hindi, and English.</p>

<p>Ship Building Sector Established in July 1999, the China Shipbuilding Industry Corporation (CSIC) is a leading state-owned business and one of China's largest shipbuilding and shiprepair groups. Its marine sector covers both naval and merchant ships and equipment manufacturing. It also designs, develops and manufactures a wide-range of non-marine products.</p>	<p>At present, there are four main centres of ship building industry at Vishakhapatnam, Kolkata, Kochi and Mumbai, all in public sector. 1. Hindustan Shipyard Ltd., Vishakhapatnam: It was set up by M/s Scindia Steam Navigation Company in 1941 and the first ship was launched on 14th March, 1948. It was taken over by Government on 21st Jan., 1952 and was renamed as Hindustan Shipyard Ltd. In 1962, the shipyard became a central public sector enterprise.</p>	<p>Since 2002, Vietnam's shipbuilding industry has been heavily invested. However, it is only in the process of receiving transfer from major shipbuilding centers in Asia. The overall picture of the shipbuilding industry is drawn as follows: Vinashin, which was established in 2006, is now the Shipbuilding Industry Corporation - SBIC is playing a key role.</p>	<p>In Indonesia, there are around 250 shipyards with an annual production capacity of 1 million DWT for new shipbuilding and 12 million DWT for ship repair. While the downturn in investment and consumption in 2013 had an impact on maritime cargo, the industry is expected to rebound once the general economy improves, boosted by strong freight demand in the ASEAN region.</p>	<p>Number of Companies: 130. Ships made in Bangladesh are 15% cheaper than even Chinese ships and are of the same quality The productivity of labors is good; average hourly labor charge in is only US\$ 1.00 Global shipbuilding market size is US\$ 1,600 billion. 1% of the global order for only small ships market the amount will be worth US\$ 4 billion for Bangladesh. Present capacity is 0.84% of global shipbuilding production. Declared as "Thrust Sector" in a different policy . 5 %t incentive on export.</p>
<p>Light Engineering Sector Exports of light engineering products have reflected a spiraling growth momentum until 2017. The products are mainly exported to European Union, Japan, China, India, Australia, Africa etc.</p>	<p>In the recent past, there have been many major investments and developments in the Indian engineering and design sector: In June 2022, exports of engineering goods from India stood at US\$ 9.58 billion, a 3.02% YoY growth.</p>	<p>With Vietnam blessed with one of the highest number of sunshine hours in the world, an increase in solar will form an important part of the energy mix with wind, hydropower as well as bioenergy. Looking at the local skills scene, clearly there is a huge demand for engineers from all disciplines.</p>	<p>Government has declared light engineering products as "the product of the year 2020". The fact that the product has been in the limelight for quite a period of time, has been mirrored in the activities and policies of our government.</p>	<p>The burgeoning domestic market and the prospect of significant cost reductions for companies sourcing components and finished goods for international markets makes Bangladesh a compelling choice for investors . Annual turnover is US\$ 1600 million of which Import substitute products is around US\$ 200 million</p>
<p>Renewable Energy Sector The state-level plan has given a strong impetus to China's renewable energy. The country's cumulative installed capacity of wind power and photovoltaic power increased</p>	<p>The installed Renewable energy capacity (including large hydro) has increased from 76.37 GW in March 2014 to 159.95 GW in May 2022, i.e. an increase of around 109.4%.</p>	<p>Vietnam is committed to reducing GHG emissions by 9% and 27% with domestic capacities and international support respectively.</p>	<p>Solar energy potential is well spread throughout Indonesia with the highest potential is in West Kalimantan (20GW), South Sumatera (17GW) and East Kalimantan (13GW) In 2017.</p>	<p>Economic growth of 7% calls for the scalability of its power infrastructure to keep up with the demands of industry and increased urbanization . Currently, renewable energy makes up 2.5% of the total electricity generation, The importance of an alternative source of energy in Bangladesh .</p>

<p>Ceramics Industry China is a world leading ceramic producer accounting for 50% to 70% of the total production volume in terms of ceramics for daily use, display art and building. China is a big ceramic producer with the largest output volume in the world, but it is not a powerful ceramic country.</p>	<p>The India Ceramic Tiles Market is Segmented by Product (Glazed, Porcelain, Scratch-free, and Other Products), Application (Floor Tiles, Wall Tiles, and Other Applications), Construction and End User. The report offers Market size and forecasts for India Ceramic Tiles Market in value (USD Million) for all the above segments.</p>	<p>Vietnam is one of the largest producers of pottery and ceramics consumer goods in the world. Vietnamese products are exported worldwide, but the biggest markets are the US, Europe, and East Asia. When Vietnamese suppliers import materials for ceramics production, they mostly import them from China.</p>	<p>Indonesia has huge capital in the ceramic tile industry, with sufficient technologies and factories, which are capable of producing ceramic tiles to meet demands both at domestic and international level. Manufacturers are producing made-to-order ceramic tiles, based on orders from foreign buyers, so the tiles have unique designs.</p>	<p>Traditionally, the tableware industry is labor-intensive and companies in developed countries experience difficulties in remaining competitive. Investment interests in this sector are strongly welcome. The global ceramics industry is worth more than \$10bn .</p>
<p>Tourism Sector China’s tourism industry consists of domestic and international tourism. Around six billion domestic trips had been made pre-pandemic, in 2019. Beijing, Shanghai, and Guangzhou were among the most popular domestic destinations among Chinese tourists.</p>	<p>India is estimated to contribute 250 Bn USD GDP from Tourism, 137 mn jobs in the Tourism sector, 56 bn USD in Foreign Exchange Earnings and 25 mn foreign arrivals are expected to be achieved by 2030. By 2028, Indian tourism and hospitality is expected to earn \$ 50.9 bn as visitor exports compared with \$ 28.9 bn in 2018.</p>	<p>Vietnam’s tourism sector is an important pillar of the country’s economic development, contributing six percent to Vietnam’s GDP. It expects to attract approximately 17 to 20 million tourists in 2020. To make the sector attractive, the government is working on several reforms including infrastructure projects and the night economy.</p>	<p>Tourism is a key sector for Indonesia’s economy. The World Travel & Tourism Council (WTTC) reported that Indonesia’s tourism sector contributed for ~6% of Indonesia’s GDP and employed ~13 million jobs (10.3% of employment in Indonesia) in 2018.</p>	<p>Bangladesh is a unique tourist destination where one can find the scopes for all kinds of tourist interest as well as investment. Government of Bangladesh has recognised tourism as an industry and framed a new National Tourism Policy in 2010 for the development of domestic and international tourism in the country.</p>

Table 8 Addressing the Binding Constraints

No.	Binding constraints	Recommended Solutions
1	Human Capital	<p>Identify skill gaps for the industries mentioned in this article by conducting research.</p> <p>Encourage academic institutions to develop the appropriate curricula and teach students in the skills that are lacking, with a focus on technical and vocational education and training. (TVET),</p> <p>To increase employees' potential for performance, the government should enable experience sharing both domestically and overseas.</p>

2	Access to Finance (A2F)	<p>Government should facilitate access to finance at competitive bank interest rate, Policies, laws and regulations should be enacted to make easy finance access of industries identified in this paper</p> <p>Particularly, government facilitates SME business financing system to capacitate them to overcome financial problem.</p> <p>Government should facilitate collateral-free loan-screening mechanisms for identified sectors in this paper</p>
3	Land	<p>Government should promote industrial parks construction for identified sectors by availing free land</p>
4	Corruption	<p>The Bangladeshi government should enact or implement laws and regulations that will help the nation fight corruption.</p> <p>The people should be made aware of the negative impact that corruption has on economic growth.</p> <p>The government should take action against corrupt employees and officials.</p>
5	Political instability	<p>The government of Bangladesh should work to stabilize its internal political situation in order to attract foreign direct investment.</p> <p>Additionally, it should raise public awareness of the harm that political instability causes to the country's efforts to reduce poverty and promote economic growth.</p>
6	Electricity	<p>Government should encourage private companies in generating more powers by creating them conducive environments</p> <p>In particular, the government should provide a dedicated and uninterrupted power supply for businesses engaged in the manufacture of the industries listed by this study.</p> <p>The government should build new power plants and expand the capacity of current ones.</p> <p>It is important to focus on using renewable energy sources.</p>