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## Effect of Agricultural Exports and Imports on Economic Growth in Bangladesh: A Study on Agribusiness Supply Chain

Mostofa Mahmud HASAN<sup>1</sup>, BM Sajjad HOSSAIN<sup>2</sup>, Md. Abu SAYEM<sup>3</sup>, Mahnaz AFSAR<sup>4</sup>

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### Abstract

**Purpose:** The purpose of this study was to determine the effect of agricultural exports and imports on economic growth in Bangladesh and propose an upgraded and customized model of the supply chain for agribusiness growth in Bangladesh to achieve plain sailing and systematic operation and financial gains at home and abroad. **Research design, data, and methodology:** All data in the research have been collected from secondary sources. Gross domestic product was used as the dependent variable and exports and imports of agricultural products were used as independent variables. Pairwise Granger causality was utilized to see the impact of the variable responsible for the economic growth in Bangladesh and the causal relationship between the variables analyzed was measured using Johansen co-integration test. **Results:** From the empirical analysis, the researchers observed that agricultural commodity imports and exports have a unidirectional impact on economic growth in Bangladesh and a long-run causal link with economic growth in Bangladesh. The suggested supply chain model of agribusiness aids in achieving smooth operations, systematic management, and monetary gains both domestically and internationally. **Conclusions:** This paper contributes to the development of a more effective and profitable agribusiness supply chain in Bangladesh systematically through their theoretical and practical implications.

**Keywords:** Agribusiness, Supply Chain Model, Imports, Exports, Economic Growth

**JEL Classification Code:** C12, C33, F43, Q13

### 1. Introduction

Since 1971, when Bangladesh gained independence, the country's economy, which is based on agriculture, has been accelerating its growth. Bangladesh is predominantly an agricultural country, and the sector that employs the majority of its workforce and generates 20 percent of the country's overall GDP is the one that drives the economy (Ghimire et al., 2021). Even though during the previous 40

years, the economy no longer receives as much support from agriculture, the sector nonetheless contributed more than 14% of the country's GDP in 2015-2016. The proportion of Bangladeshis who worked in agriculture, however, fell from 72.7% in 1980-1981 to 45.1% in 2015-2016, and the GDP decreased from 46.7% in 1980-1981 to 24.1% in 2000-2001 (Quddus & Kropp, 2020). Agriculture is the lowest contributor in a sense, considering the share of GDP contribution and the percentage of the labor force engaged

1. Corresponding Author or First Author. Associate Professor, Department of Finance, Faculty of Business Administration, EXIM Bank Agricultural University Bangladesh, Bangladesh. Email: [mmhasanku@gmail.com](mailto:mmhasanku@gmail.com)
2. Second Author. Assistant Professor, Department of Social Science, Faculty of Arts and Social Sciences, American International University Bangladesh, Bangladesh. Email: [bmsajjad@gmail.com](mailto:bmsajjad@gmail.com)
3. Third Author. Lecturer, Department of Statistics, Faculty of Agricultural Economics and Rural Development, EXIM Bank

Agricultural University Bangladesh, Bangladesh. Email: [asayem89@gmail.com](mailto:asayem89@gmail.com)

4. Fourth Author. Senior Lecturer, Department of Agricultural Economics, Faculty of Agricultural Economics and Rural Development, EXIM Bank Agricultural University Bangladesh, Bangladesh. Email: [mahnazafsar@yahoo.com](mailto:mahnazafsar@yahoo.com)

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in the farming sector is also decreasing day by day. Nonetheless, Agriculture is a backward and forward linkage for agro-based businesses in Bangladesh, as it is indirectly involved in many other sectors and provides limitless raw material sources. Financing from various banks, governments, NGOs, and private investors has motivated with support to Bangladeshi companies and entrepreneurs to develop the agribusiness aspect for the last few decades. The agribusiness supply chain has been developed in recent years too. Many national and foreign corporations entered agribusiness and imported raw materials despite the domestic potential. To secure a steady supply base for finished goods production, they began vertical integration by owning farms or funding farmers.

Bangladesh's Gross National Income (GNI) increased by 2083.33% from the period 1973 to 2021, rising from \$120 in 1973 to \$2620 in 2021 (World Bank [WB], 2021). Table 1 shows the GNI of the SAARC nations for comparison.

**Table 1:** Per Capita Gross National Income (GNI), Atlas Approach (In U.S. dollars)

SARRC countries	Year-2015 (\$)	Year-2020 (\$)	% Change*
Afghanistan	590	500	-15.25
Bangladesh	1220	2340	91.80
Bhutan	2520	2840	12.69
India	1600	1910	19.38
Maldives	7650	6450	-15.69
Nepal	890	1190	33.71
Pakistan	1260	1460	15.87
Sri Lanka	3760	3720	-1.06

Source: WB (2021); \*Researcher's calculations

Table 1 shows a comparison of the percentage change of the GNI among SARRC Countries, where the most crucial point for the Bangladeshi stakeholders is the growth rate in Bangladesh from the year 2015 to 2020. That period grew at 91.80%, which is the highest among the SARRC Countries. On the contrary, Maldives declined by 15.69 percent in the same period.

The purpose of agriculture has emerged with business. Different business techniques and strategies have been implemented in agribusiness later on. One of the ways to ensure the smooth operation of a business enterprise is supply chain management. A business must coordinate all facets of the supporting process, including suppliers, materials, products, inventories, warehouses, markets, transportation, and customers, to ensure stable and effective operations. This means exploiting their complicated connections as well as seeking out and chasing fresh growth opportunities.

Bangladesh is still considered a developing country. It is endowed with a wealth of natural resources. However, proper use of our natural resources is impossible due to a

lack of cash and technology. So, we rely on international trade to survive. It is the process of forming business relationships with other countries. Export can be a potent weapon for boosting Bangladesh's economy and alleviating poverty. An economy's expansion is inversely correlated with its exports. Nothing can ever stop an economy from flourishing if export growth outpaces import growth. Increased exports will support economic expansion.

Due to the significance of farming to Bangladesh's gross domestic product, lowering trade restrictions would increase the country's agricultural export revenues. A net increase in trade openness and a modern supply chain model would have multiplier effects that would aid in economic growth and reduce poverty.

Bangladesh's agriproduct export basket includes different products, ranging from fruits and vegetables to dry food confectionaries, cut flowers, spices, tobacco, and tea. The country's full potential is yet to be realized. Exporters frequently do not receive adequate policy backing or technological capabilities for their product shipments. More vegetables, fruits, and other agriproducts can be exported if the government constructs a packing house, additional packaging and processing facilities, appropriate infrastructure, a hygienic cargo town, and an improved and customized supply chain.

### 1.1. Theoretical and Practical Implications of this Research

Bangladesh's agricultural production has historically been conducted in a disorganized manner and middlemen are involved in moving agricultural goods from one place to another. Furthermore, the food processing industry in Bangladesh is still immature and unable to meet the demand for processed goods. The proposed supply chain model for agribusiness enables efficient operations, methodical management, and financial gains on a domestic and global scale. Agricultural imports and exports' effects on economic growth have only been the subject of a small number of studies. To close these gaps, we explore in this research how Bangladesh's agricultural imports and exports affect the country's economic expansion. We want to make a bridge between theory and real data to provide insight into Bangladesh agribusiness to researchers, business people, academicians, politicians, policymakers, and investors.

This paper could briefly review a few different food supply companies and how they work. Agribusiness's many concerns and challenges in this transitional economy were also explored. This study sought to highlight how agricultural exports and imports affect economic growth and to present a more accurate supply chain model that could spur economic growth by boosting agricultural export.

## 2. Literature Review

### 2.1. Review of Literature about Agribusiness Supply Chain

Gazi (2020) investigated the total logistical assistance for agricultural products in Bangladesh's supply chain management and found that a scarcity of transportation options hampers agro-product marketing in Bangladesh. According to the report, almost 75% of Bangladesh's population relies on agriculture as a source of income. The supply chain is unstable, there are several market middlemen, trading costs are rising, there is a lack of expertise, and there are numerous other social and economic issues. Agribusiness organizations may position themselves better in a competitive context and increase their efficiency with effective supply chain management. In light of this, it is necessary to improve the infrastructure for marketing agricultural products, especially in rural areas.

Parwez (2013) described the challenges that Indian agriculture faced in terms of a severely underdeveloped supply chain and infrastructure. Due to a lack of a food processing sector and suitable infrastructure, around 30-35 percent of all food generated in India is lost. This study examines the key problems at every component of the supply chain in agriculture, from the input to the consumer, to integrate them effectively and efficiently. Gains in this area must be reached through investments in cold chain infrastructure, practical post-harvest technology research, the placement of food processing facilities in a variety of businesses, and the expansion of the food retailing sector. The recommendation to increase efficiency at various supply chain stages is also included in this article. To accomplish the goal of universal food security, the study believes that an effective supply chain plays a critical role in the development and contemporary agricultural issues. As a result, government action must address this issue.

A paradigm for integrated modeling by Jie et al. (2013) links management choices to supply chain operations and, ultimately, to competitive advantage. The results show a strong correlation between particular supply chain procedures and competitive advantage, with information quality and trust acting as major drivers. Regression analysis makes it simple to summarize the relationships between supply chain practices and competitive advantage. About fusing different aspects of competitive advantage and supply chain management, this study proposes a novel strategy.

Swinnen (2006) investigated the impact of transition and globalization on dairy supply chains in Eastern European Countries (EEC). Foreign Direct Investment (FDI) and retail industry growth were found to have a positive relationship. Recent developments in the agribusiness sector have impacted quality improvement and more vertical

cooperation. Swinnen (2005) discovered that the food supply networks in the Commonwealth of Independent States (CIS) function well in comparison to other geographical zones.

Even though the agribusiness supply chain is still in its infancy in terms of overall supply chain management, it has made substantial progress over the last twelve years, mainly owing to developmental, global, and personal foreign direct investments. Furthermore, ongoing investments in agribusiness and favorable government policies have resulted in significant growth.

### 2.2. Review of Literature about Agricultural Commodity Imports and Exports

According to Hussain (2014), the economy's growth and exports in Pakistan have a Granger causality connection. It was determined that the exports (EX) and Granger cause exports (GLE) are Granger causes of GDP at a 10% significant level. Development literature has long focused heavily on the connection between economic growth and exports.

Li et al. (2010) conducted co-integration analyses using data from imports, exports, and economics, and the results suggest that import increase boosted China's economic growth significantly, while export growth had the opposite effect.

Wong (2008) examined the effects of domestic demand and exports on the growth of the economy in the ASEAN-5 nations of Singapore, the Philippines, Thailand, Malaysia, and Indonesia before the Asian economic collapse in 1997–1998. The Granger causality test results indicate a bidirectional causal link between economic growth and exports. Both increasing local demand and increased exports are necessary for long-term financial success. Additionally, stronger economic growth boosts consumer spending and export demand. There is no indication that the ELG policy contributed significantly to the Asian financial crisis.

Co-integration and multivariate Granger causality studies were employed to test the export-led growth (ELG) hypothesis for five South Asian nations, including Bangladesh, Shirazi, and Manap (2005). In Bangladesh, they identified export- and import-to-GDP feedback effects. Love and Chandra (2005) analyze the export-led growth hypothesis for Bangladesh using annual data on GDP, exports, and imports in a multivariate framework, concluding that income has both short- and long-term unidirectional causation with exports.

Din (2004) investigates the export-led growth hypothesis for the five largest economies in South Asia using a multivariate time-series method. The results show no evidence of a long-term relationship between the variables in Sri Lanka, Nepal, and India, but short-run

bidirectional causality between the growth of output and exports in Bangladesh, Sri Lanka, and India. Bangladesh and Pakistan also show long-run equilibrium relationships between exports, imports, and production.

While several studies from manufacturing and western contexts have emphasized the upshot of export-import on the expansion of the economy or supply chain separately, a limited number of studies have specifically focused on agriculture and its impact on economic growth altogether. Furthermore, the present literature provides inconclusive information regarding the agribusiness supply chain, which can boost economic growth from the perspective of Bangladesh. This research may fill the gap in existing writing by calculating the upshot of agricultural exports and imports on Bangladesh's economic intensification and providing a novel supply chain model that can increase agricultural exports.

### **3. Objectives and Hypotheses**

#### **3.1. Objectives**

This study paper's goals are as follows:

- i. To provide an insight into Bangladesh agribusiness to researchers, business people, academicians, politicians, policymakers, and investors.
- ii. To ascertain how exports and imports of agricultural products affect Bangladesh's economic expansion.
- iii. To determine the causal relationship of agricultural imports and exports with Bangladesh's economic growth.
- iv. To refer to a new supply chain model of agricultural products in Bangladesh.

#### **3.2. Assumed Hypotheses**

The assumed hypotheses of the study are:

- i. Imports and exports of agricultural products do not cause Bangladesh's economy to thrive.
- ii. There is no long-term correlation between Bangladesh's imports, exports, and agricultural commodity prices.

### **4. Research Methods and Materials**

#### **4.1. Source of Data**

For this analysis, secondary data was collected from the World Bank and the Bangladesh Bank for the fiscal years 2000 to 2020.

#### **4.2. Techniques for Data Analysis**

Bangladesh's agricultural commodity imports, exports, and GDP have all been examined using correlation analysis, Granger causality testing, and Johansen co-integration testing.

#### **4.3. Regressand Variable**

The researchers employed GDP as the study's regressand variable, which they obtained from the World Bank for the fiscal years 2000 to 2020.

#### **4.4. Regressor Variables**

The regressor variables were obtained from Bangladesh Bank for the fiscal years 2000 to 2020 and included import payments and export receipts of agricultural commodities and services. An approximate measure of economic growth in a country is the increase in GDP (Gross Domestic Product) based on constant prices from one year to another year. Economic growth accelerates economic development and vice versa. As a result, the two cannot be distinguished from one another. To generate a trade surplus, Bangladesh, a developing country, strives to reduce imports while increasing domestic product exports to foreign markets. Home economic growth will undoubtedly be boosted by increasing productivity by lowering imports and raising domestic output. Primary items like products, energy, forest products, and raw materials are among the imported commodities. Secondary (manufacturing) and tertiary (services) goods are also included. In this instance, it can be started by lowering agricultural imports into Bangladesh and increasing the domestic output of agriculture to meet home demand. Because of this, the researchers solely take into account the exports and imports of agricultural products when determining the factors influencing Bangladesh's economic expansion.

##### **4.4.1. Export Receipts of Agricultural Goods and Services**

Sanjuan-Lopez and Dawson (2010) calculated how much agriculture exports contributed to economic expansion in developing nations. The study's findings revealed that there was a long-standing association, and the GDP elasticity of farm exports was 0.07. Faridi (2012) demonstrates that, even though agricultural exports have an elasticity of 0.58, they have an inverse and extensive impact on economic augmentation. A causal link between agricultural exports and agricultural output can be seen in both ways, according to Gilani (2015). Siaw et al. (2018) find that economic growth is positively and significantly impacted by agricultural exports. Exports of both agricultural and non-agricultural goods are crucial for

boosting India's economy (Murugesan, 2019). Bakari and Mabrouki (2017) provide evidence of the positive effect of agricultural exports on economic growth.

#### 4.4.2. Import Payments of Agricultural Goods and Services

Bakari and Mabrouki (2017) demonstrate that imports of agricultural goods have no impact on economic expansion. In emerging nations, agricultural imports per capita have a constructive and noteworthy connection with per capita income (Kellogg et al., 1986). A short-term negative and insignificant effect of the unpredictable import of agricultural goods on economic growth. The economic growth of Indonesia was greatly and negatively impacted over the long period, from 1989 to 2019, by this (Rahmanto, 2021). A country's economic progress was significantly influenced by the importation of goods. A country's economic progress was significantly influenced by its import activity or the buying of goods from elsewhere. The importation of agricultural products has a considerable detrimental effect on the economic expansion (Ginting, 2017).

## 5. Insights of Agribusiness Supply Chain in Bangladesh

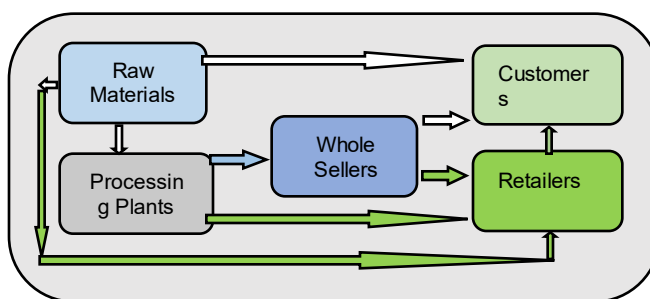
The argument suggests that the global and Bangladeshi food demand is rapidly shifting. Economic expansion, growing wages, and urbanization are causing a change in consumer demand away from traditional staples and toward high-value food commodities like vegetables, fruits, spices, livestock products, and fish, many of which need to be processed before being sold. Supply chain management has recently gained importance in a company's performance and has attracted attentive research focus (Jain et al., 2010). A network of sites and distribution choices is what is often meant by the term supply chain management (SCM). The operations used to move goods from the raw materials stage to the final consumer are all included in the supply chain (Bertodo, 2002). Having a strong supply chain management system aids in getting Bangladeshi agricultural products to consumers' doorsteps. Therefore, market expansion contributes to improving consumer pleasure while ensuring a balanced distribution. Any production company's primary objective is to boost productivity in a way that promptly responds to consumer needs (Parmar & Shah, 2016).

Crops, cattle, fisheries, and forestry were all included in agriculture's overall contribution to GDP in 2014–15, which came to over 16 percent, with the fisheries sector accounting for 3.69 percent of the total. The agriculture subsector alone accounts for 12.27 percent of GDP. Additionally, the effect of agricultural growth on rural wages is a crucial factor in the process since, for low-income households, a sizable

portion of income comes from wage labor in agricultural operations. The main crops include jute, pulses, rice, sugarcane, tea, potatoes, tobacco, and wheat. With a contribution of over 72% of total production, the crop subsector leads the agricultural industry. The relative percentages for the subsectors of forestry, livestock, and fisheries are 10.33, 10.11, and 7.33 percent (Rahman, 2017).

Currently, Supply chain management is considered a crucial tool in industrial organizations for attaining efficient supply chain challenges (Sahay et al., 2006). Being knowledgeable about and using supply chain management (SCM) is now a requirement for maintaining competitiveness in the worldwide market and growing profits (Li & Lin, 2006).

Bangladesh's present supply chain is poor and heavily reliant on agriculture and farming. Farmers occasionally deliver their goods directly to open markets (bazaars), where people can purchase them.



**Figure 1:** General agribusiness supply chain in Bangladesh  
Source: Chopra et al. (2016)

Farmers sell their produce to stores in other circumstances. Agricultural farms produce the raw material base. Cereals, vegetables, dairy products, fruits, and other things requiring further processing are delivered to processing plants, where they are turned into various final products. Wholesalers or intermediaries undertake logistics functions such as packaging, transportation, distribution, and delivery to customers and retailers.

Figure 1 shows the current chain of supply, showing how food is ultimately consumed by people. In the case of agriculture in Bangladesh, it indicates a weak link in the supply chain. This local chain showed no signs of diversification. Bangladesh's food processing sector is still underdeveloped and insufficient to supply the demand for processed foods. With a few exceptions, exports mostly consist of unprocessed essentials while the majority of imported goods are processed foods. Another significant disadvantage of the current supply chain model is that raw materials are often sent to merchants without being processed. Export worthiness is limited as a result of this system.

## 6. Economic Growth as a Result of Agricultural Commodity Imports and Exports

### 6.1. Correlation Analysis

In this case, a correlation study was conducted, and the findings are displayed (Table 4).

**Table 2:** GDP, Imports, and Exports Correlations

Variables	Pearson r	P-value
Imports	0.913	0.000
Exports	0.929	0.000

Source: Researchers' Calculation

The Pearson correlation coefficient was used to see if the regressand (GDP) and regressor variables (agricultural commodity imports and exports) have a significant relationship.

Table 2 revealed that agricultural commodity imports, exports, and GDP have a strong positive and substantial linear relationship at the 1 percent significance level.

### 6.2. Testing Granger Causality

It is tested using the Granger causality test whether one time series can predict another.

**Table 3:** Testing Granger Causality for Imports and Economic Growth

Null hypothesis	Observation	F Value	P-value
Imports do not Granger cause GDP	20	16.6887	0.0008
GDP does not Granger cause Imports		0.00360	0.9528

Source: Researchers' Calculation

Table 3 exhibit that importation of agricultural goods Granger may deduce that increased agricultural commodity imports lead to increased economic growth since the value of p is less than 0.05 and hence causes GDP, but GDP does not Granger cause agricultural commodity imports as the value of p is more than 0.05 and may conclude that economic growth does not affect the agricultural commodity imports. Again from the result, we can argue that the causality from agricultural commodity imports to GDP is unidirectional.

**Table 4:** Testing Granger Causality for Exports and Economic Growth

Null hypothesis	Observation	F Value	P-value
Exports do not Granger cause GDP	20	16.3741	0.0008
GDP does not Granger cause Exports		0.05750	0.8134

Source: Researchers' Calculation

Table 4 demonstrates that agricultural commodity exports cause GDP as soon as their p-value falls below 0.05. From this, it can be inferred that as agricultural commodity exports rise, so does economic growth. As soon as their p-value exceeds 0.05, however, it can be inferred that agricultural commodity exports are unaffected by economic growth. Once more, based on the results, we can conclude that exports of agricultural commodities positively impact GDP.

### 6.3. Johansen Co-integration Test

Using a maximum likelihood estimates (MLE) approach, Johansen's test evaluates the coherence of a co-integrating relationship's validity. The number of associations is determined and their estimates are performed using Johansen's test. There are two variations of Johansen's test: the maximum eigenvalue method and the trace method. Co-integration will be detected using either of the two test types.

**Table 5:** Testing Unrestricted Co-Integration Rank (Trace)

Hypothesized number of CE(s)	Eigen value	Trace statistic	Critical value (0.05)	P-value
None*	0.794183	50.99115	35.01090	0.0005
At most 1*	0.599142	22.53734	18.39771	0.0124
At most 2*	0.286752	6.082664	3.841466	0.0136

The null hypothesis is rejected at the level of 0.05.

Table 5 shows three co-integrating equations at the 0.05 level, indicating that the null hypothesis that the agricultural commodity factors analyzed have no long-term relationship is rejected. This suggests that they have a long-term relationship.

**Table 6:** Testing Unrestricted Co-Integration Rank (Maximum Eigenvalue)

Hypothesized number of CE(s)	Eigen value	Max-Eigen statistic	Critical value (0.05)	P-value
None*	0.794183	28.45381	24.25202	0.0131
At most 1	0.599142	16.45468	17.14769	0.0628
At most 2*	0.286752	6.082664	3.841466	0.0136

The null hypothesis is rejected at the level of 0.05.

Table 6 demonstrates one co-integrating equation at the 0.05 significance level, indicating that the null hypothesis of no long-run link between the variables (agricultural commodity imports and exports) studied is rejected. That means they have a long-term relationship.

### 6.4. Results of Hypotheses

For the variable, agricultural commodity imports and GDP, the researchers assumed the following hypothesis.

**H<sub>0</sub>:** Imports of agricultural products do not cause Bangladesh's economy to thrive.

**H<sub>1</sub>:** Imports of agricultural products cause Bangladesh's economy to thrive.

Table 3 demonstrates that the probability value of agricultural commodity imports is less than 0.05, indicating that we reject the null hypothesis and infer that agricultural commodity imports have a force on the economic escalation in Bangladesh.

For the variable, agricultural commodity exports and GDP, the researchers assumed the following hypothesis.

**H<sub>0</sub>:** Exports of agricultural products do not cause Bangladesh's economy to thrive.

**H<sub>1</sub>:** Exports of agricultural products cause Bangladesh's economy to thrive.

Table 4 indicates that the probability value of agricultural commodity exports is less than 0.05, indicating that we reject the null hypothesis and infer that agricultural commodity exports influence economic intensification in Bangladesh.

The researchers adopted the following hypothesis for the variables exports, imports, and GDP.

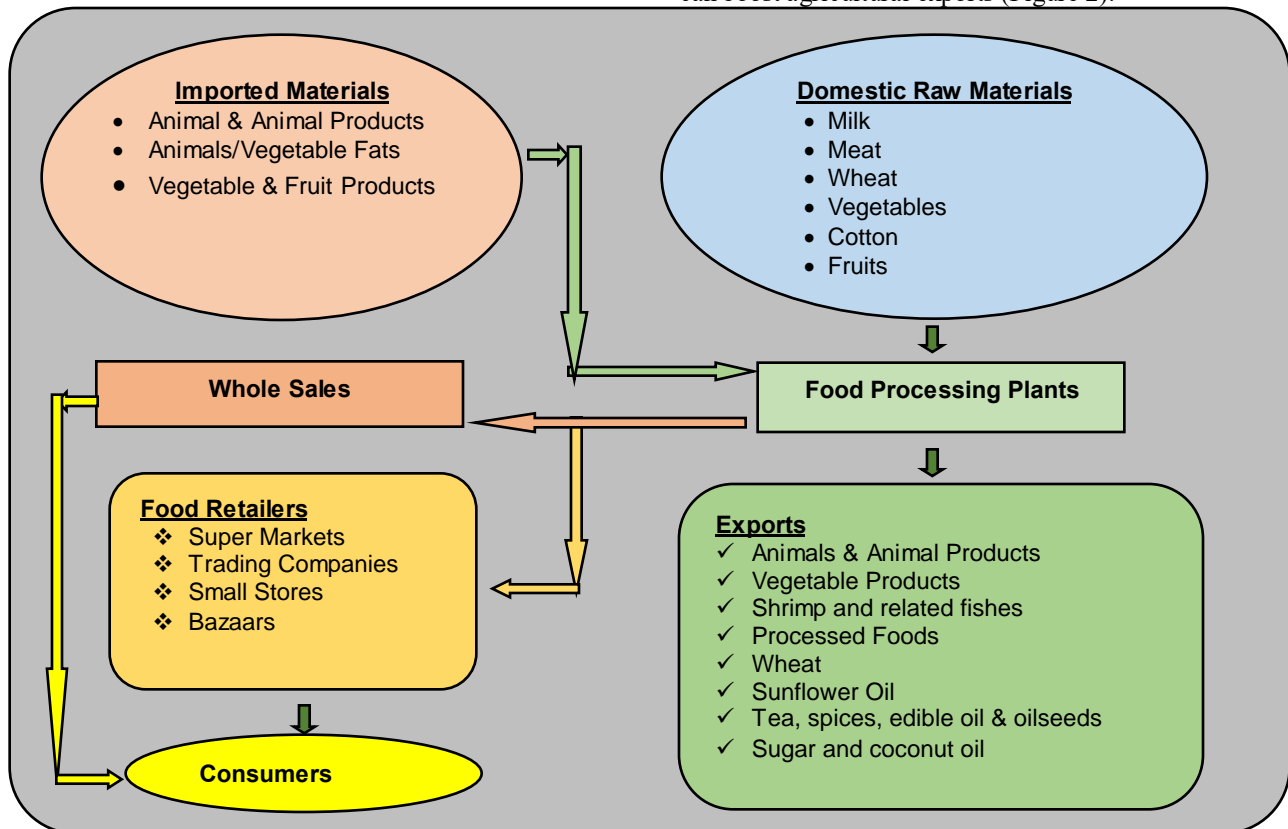
**H<sub>0</sub>:** There is no long-term correlation between Bangladesh's imports, exports, and agricultural commodity prices.

**H<sub>1</sub>:** There is a long-term correlation between Bangladesh's imports, exports, and agricultural commodity prices.

Table 5 and Table 6 proclaim that the calculated probability value of agricultural commodity imports and exports is not more than 0.05, so the adopted null hypothesis is rejected, and therefore we infer that agricultural commodity imports and exports have a long-term link with economic growth in Bangladesh.

### 6.5. Proposed Agribusiness Supply Chain Model

The aforementioned empirical research makes it very clear that agricultural exports are crucial to fostering economic growth. However, Bangladesh's current supply chain paradigm (Figure 1), where export worthiness is regulated and has a variety of challenges, is relatively immature. Therefore, an export-led agribusiness strategy is essential as agricultural exports have a sturdy affirmative correlation to economic expansion. To incorporate this, researchers propose a modernized supply chain model that can boost agricultural exports (Figure 2).



**Figure 2:** Proposed agribusiness supply chain model for Bangladesh

Few companies had come into the agribusiness sector after 2000, intending to export. In the case of animal husbandry, the same story has been found in Bangladesh. Bengal Meat started the first process and shipping business in this country in 2006. An important Australian company that specializes in food processing automation built and outfitted the processing plant, which is located in Santhia Thana, Pabna District.

It has already reputed and has enough goodwill for exporting to developed nations by meeting the world export standard levels and other crucial standards like HACCP, HALAL, and ISO. It was a new era to start up the meat processing industry as well as traditional ways and export from Bangladesh.

Now is the time to construct the infrastructure for numerous contemporary transportation and logistics systems that connect all supply chain stakeholders. For agribusiness and related commodities, the market focus would be on the global rather than the local. Despite this, there is a growing interest in privatizing agricultural extension services worldwide. Bangladesh is considering privatizing extension service delivery to save government spending, enhance service delivery efficiency, and improve comprehensive service quality in light of changing farmer situations. The willingness of farmers in Bangladesh to pay for extension services is unknown. The world review's lesson is that some industrialized countries have gone backward, but others have progressed.

The supply chain of agribusiness in Bangladesh has devolved significantly over the previous twenty years due to good natural resource endowments and conditions and increasingly highly demanded customer choices that eventually create the need for notorious products. Many foreign and local enterprises have entered this industry due to international finance for agribusiness development and persistent government backing. Some of them began vertical integration for buying financing or farms and working with farmers to ensure a consistent supply channel for the creation of finished products, despite the potential of their native nation. Few foreign corporations have made significant investments in the dairy and poultry industries.

Over the past ten years, Bangladesh's economy is thought to have experienced one of the fastest growth rates worldwide. As a result, to maintain a quicker growth rate, it is critical to establish good agricultural practices (GAP) to gain more immense proportions of export markets. Thus, export worthiness has been incorporated into the new supply chain model's suggested model (Figure 2).

Future research will focus on understanding the interaction and gesture among supply chain participants and how they might work for the coordination for making the supply chain of agriculture more effective, allowing consumers to buy food at a lower cost if the proposed model

is implemented. Furthermore, the Bangladeshi market can become more consistent and functional by incorporating American and European technology and managerial approaches into the conventional supply chain paradigm.

## 7. Discussion

Exports have been shown to have a favorable impact on economic growth whereas imports have a negative impact (Akhter, 2015). Due to their co-integration, exports and economic development in Bangladesh had a long-term unidirectional causal relationship (Mamun & Nath, 2005). According to statistical studies, exports, imports, and growth do not have a one-way causal relationship. Exports and imports significantly impact a country's development (Ramos, 2001). According to the co-integration results, export, import, and economic growth are all closely related over the long run.

The findings suggest bidirectional causation between economic growth and imports and non-directional causation between economic growth and exports for short-run causality (Alaoui, 2015). GDP has a bidirectional relationship with investment goods and raw materials imports, whereas GDP has a unidirectional connection with consumption goods and other commodities imports (Uğur, 2008). According to a time series study, exports and imports promote GDP growth in the short-term but have little effect in the long term (Ahmed & Uddin, 2009). GDP and exports had a bidirectional causal relationship. Even more intriguing, there was no discernible link between imports and exports increases (Hussain, 2014). The classic test of Granger causality suggests that economic growth, exports, and imports are all unidirectionally related (Ullah & Asif, 2009). Imports, exports, and GDP are positively correlated (Hasan et al., 2022). Exports, imports, and GDP have a bidirectional causal relationship that is significant and positive in both the long and short runs (Mohsen, 2015). Imports and exports have high bidirectional causality with GDP (Bakari & Mabrouki, 2017). A long-term unidirectional causal relationship between exports, imports, and economic growth was found by our research. We also learned that while imports negatively correlate with economic growth, exports have a substantial positive correlation.

## 8. Conclusion

Bangladesh's economy is built on four pillars: agricultural production, national revenue, export revenues, and migrant worker remittances. Agriculture is Bangladesh's most important economic sector, providing the primary source of income in rural areas. From the empirical analysis,



agricultural imports and exports have a unidirectional and positive causal relationship with GDP, and they exhibit a long-run relationship. To have seamless and effective working and financial benefits, the study proposes an upgraded and tailored supply chain model for agricultural development in Bangladesh. It is highly expected that if the proposed model is followed, the economy will experience more export value in the future, which will help ensure more economic growth. These insights will aid scholars, the government, policymakers, and development organizations in making informed judgments about the country's economic performance. Further research may be conducted on the impact of the supply chain model of agribusiness in different countries.

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