

Supply Dynamics in Bangladesh: A Study of Definitions, Functions, and Market Effects

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Abstract

Economics, as a social science, studies human behavior concerning the production, distribution, and consumption of goods and services in the context of limited resources. It analyzes factors such as supply, market dynamics, labor, and consumer behavior and elements like price, time, weather, and taxes influence market conditions and consumer choices. This research paper examines the dynamics of supply in Bangladesh, focusing on its definitions, functions, and effects on market behavior. This study employs a qualitative research method using secondary data from various sources such as academic databases, newspapers, books, and Reports. Utilizing a qualitative research methodology, the study explores the determinants of supply such as price, time, climate, tax, and technical efficiency, and their influence on both the open market and consumer behavior. The findings highlight the critical relationship between supply and market fluctuations in Bangladesh's economic landscape. The law of supply is emphasized, illustrating the direct correlation between price changes and supply levels, while exceptions to this law are also discussed. The paper further identifies barriers to effective supply, including natural disasters, political instability, and inadequate transport systems, contributing to market inefficiencies and consumer dissatisfaction. Recommendations for improving supply dynamics are proposed, such as enhancing transportation, ensuring political stability, and fostering international relations. Overall, this study underscores the significance of understanding supply determinants to foster a more structured and efficient economic environment in Bangladesh.

Keywords: supply, market dynamics, law of supply, consumer behavior

1. Introduction

Economics is a branch of social science that focuses on the production, distribution, demand, supply, and consumption of goods and services. It is also the study of scarce means and alternative uses of resources. According to Robbins (1932), "Economics is a science which studies human behavior as the relationship between ends and scarce means which have alternative uses". The major attributes of economics are — unlimited want, scarce resources, and alternative use of limited resources. The reason for limited resources, three basic problems have arisen in economics. These are What to Produce? For Whom to Produce and in What Quantity? and How to Produce?

The field of economics is huge. It discusses market, production, labor, consumer behavior, demand, and supply. Supply is one of the major concepts of economics. Supply means the quantity of a product that a seller is willing to sell at a given price and at a given time. The relationship between product price and supply is called the law of supply. Other things remain the same when the price increases, supply increases, and when the price decreases supply decreases (Marshall, 1890). Supply depends on some factors which are called the determinates of supply. These are price, time, weather, climate, tax, subsidy, and technical efficiency. Also, political influence, the international world, and transport systems play a significant role in this system. These determinants of supply

greatly influence the market system as well as consumer behavior in the Economics of Bangladesh. This paper examines how the determinants of supply influence the open market and the individuals in the Economics of Bangladesh.

2. Objective of the Study

The study has three specific objectives as follows:

- To describe the definition of supply along with describing supply function, hypothetical table, and corresponding graph.
- To analyze factors affecting supply function in the context of Bangladesh.
- To analyze determinants of supply that influence the market system as well as consumer behavior in the Economics of Bangladesh.

3. Methodology of the Study

To collect information about the supply, the study applied the qualitative research method. This term paper is based on a qualitative type of research method. Secondary data is primarily used including online databases as follows:

- Academic Database:** Academic databases such as Google Scholar, Research Gate, and Google have been used to collect articles and case studies relevant to supply.
- Newspaper:** Both online and offline newspapers have been used for real-time information.
- Books:** The term paper also uses various prominent writers' famous books.
- International Organizations' Reports:** International organizations such as UNDP, and UNICEF are used for the data of their report.

4. Analysis of the Study

The amount of a good that sellers bring to the market for sale at a given time and price is called supply in Economics. According to Meyers, "We may define supply as a schedule of the number of goods that would be offered for sale at all possible prices at any one instant of time or during any one period of time". Reagan and Thomas said, "The quantity of a good that a farm is willing to sell at a given price is called supply". In light of the above definition, the supply characteristics stand as follows:

- A certain time is considered
- A certain price
- At that price, the producer is willing to sell as much of his stock

Supply Schedule:

Price(unit)	Quantity Supplied
1	12
2	14
3	16

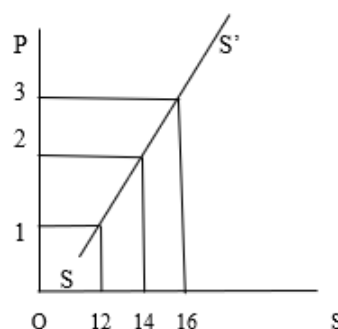


Figure 1. Supply Curve

Determinants of Supply:

Factors on which quantity supplied depends are called determinants of supply.

The amount of supply depends on the -

- 1) Price of the product itself (**P**)
- 2) The price of other related products (**P1**)
- 3) The cost of materials (**C**)
- 4) Technical skills (**T**)
- 5) Natural weather (**W**)
- 6) Time (**t**)
- 7) Tax (**tax**)
- 8) The subsidy policy of the government (**s**)

Law of Supply:

The law of supply is a microeconomic law. It states that all other factors being equal, as the price of a good or service increases, the quantity of that good or service that suppliers offer will increase, and vice versa (Investopedia, n.d.). If all other factors such as time, cost of materials, cost of other goods, technical efficiency, natural conditions, etc. remain the same, then as the price of a good rises, the supply of that good also increases. Conversely, if the price of the goods goes down, then the supply of that good decreases. This positive relationship between price and supply is known as the law of supply. According to Alfred Marshall “Other things remaining the same as the price of a commodity rises its supply is extended, as the price falls its supply contracted”.

Exceptions:

Commodities with limited supply

- 1) The possibility of a price rise
- 2) Resource constraints
- 3) Seasonality
- 4) Unfavorable natural conditions
- 5) Underdeveloped communication system
- 6) Recession
- 7) Labor cost and labor supply

An open market is a market with no government restrictions or regulations. Prices for goods and services fluctuate based on supply and demand (Corporate Finance Institute, n.d.). An open market is a type of market where the government imposes no restrictions or regulations such as taxes, licenses, or subsidies. This means that buyers and sellers are free to engage in trade without any interference from external factors. Prices for goods and services in an open market are determined by the forces of supply and demand. This means that they fluctuate based on the level of supply available and the level of demand from consumers.

Supply is a dynamic force that shapes the open market, influencing individual consumers, market efficiency, producer and consumer welfare, and overall economic health. Understanding how natural phenomena, transportation issues, political policies, and international relations impact supply is crucial for navigating the complexities of the market. By analyzing shifts in supply and its role in achieving market equilibrium, we can gain valuable insights into the economic landscape. This paper examines how the determinants of supply influence the open market and the individuals in the Economics of Bangladesh.

Natural Climate and Supply:

Natural phenomena can significantly influence supply:

- ❖ **Weather and Disasters:** Droughts, floods, and other natural disasters can disrupt production and transportation, leading to supply shortages and price hikes. Bangladesh is a densely populated country with a tropical climate and over 200 rivers, including major systems like the Brahmaputra, the Padma, and the Meghna. Its economy is highly vulnerable to climate change impacts due to its reliance on agriculture. Bangladesh is vulnerable to both disasters and climate change and ranked the seventh extreme disaster risk-prone country in the world as per the report from the Global Climate Risk Index 2021 (United Nations Development Programme, n.d.). Bangladesh suffers from floods, cyclones, storm surges, river bank erosion,

earthquakes, drought, salinity intrusion, fire, and tsunamis. Cyclones and floods particularly caused massive damage. Cyclones occurred in 1970, 1991, 2007, and 2009 and killed 364,000, 136,000, 3,363, and 190 respectively (Asian Disaster Reduction Center, n.d.). So, for these disasters, the production of the goods is hampered, and the demanded supply cannot be delivered in the market. As a result, we can see supply shortages and price hikes in the market of Bangladesh.

- ❖ **Seasonal Variations:** Agricultural products experience seasonal variations in supply, affecting prices and consumer behavior. It is interesting to note that the temperatures during the wet and dry seasons have shown a somewhat surprising upward and downward trend, respectively. These two temperatures are a crucial factor for the success of the summer cropping season (**Kharif**) and winter cropping season (**Rabi**), respectively. Therefore, it is important to monitor and analyze these trends to ensure the success of the agricultural sector (Hossain et al., 2019). This variation of product influences the supply and consumer behavior. When there are products of the summer season in the market the consumers can get them at a reasonable price. But when the season ends, the price of that product will be raised, and then the behavior of the consumer will be changed.

Political Influence on Supply:

Government policies can significantly influence the supply of goods and services:

- ❖ **Political Instability:** Road blockade, hartal, political movement, and instability in politics make a great impact on supply and consumer behavior. The supply chain is an important part of the economics of a country. All the produced products and goods are delivered through the supply chain. If the supply chain cannot work, then the internal and international markets cannot find the supply. Due to the supply chain disruption, the vehicles of the raw materials could not deliver the raw materials to the company as a result the production decreased. On 31 October 2023, the Bangladesh Nationalist Party (BNP) & Jamaat-e-Islami enforced a three-day road blockade which caused the economy a loss of more than Tk 6,000 crore a day when hartals and blockades were observed (Mirdha & Parvez, 2023). Accordingly, Mahbubul Alam, president of the Federation of Bangladesh Chambers of Commerce and Industry, said, “If raw materials can’t be transported to factories, production will be hampered. Then, factories will not run smoothly. This will ultimately affect the economy.” As a result of it, we can see supply shortages and price hikes in the market.
- ❖ **Trade Restrictions:** Restrictions on imports and tariffs can limit the supply of foreign goods, affecting domestic prices and consumer options. When the government of a country implements taxes & tariffs on imported goods from foreign countries the price of that product rises in an upward style. The consumers’ behavior also changed as they could not get that product at the previous price. On 30 Jan 2024, the government of Bangladesh increased the tax on dates before Ramadan. Including all, the tax burden on importing a kilogram of date ranged from Tk 66 to 265. As a result, the government collected more revenue from dates import. Consumers have been forced to bear the brunt of revenue collection as traders have increased the price of dates in the market due to tax pressure. The behavior of the consumers also changed and they criticized the decision of the government (Chowdhury, 2024).

Supply Changes and Consumer Behavior:

Consumer behavior in the last 25 years has changed for several reasons like climate change, global warming, the COVID-19 pandemic, etc. (Ukken, 2022). Changes in supply directly affect individual consumers’ behavior and decision-making. Here’s how:

- ❖ **Price Fluctuations:** Manufacturers and distributors face many problems in this post-pandemic world. When supply decreases, prices tend to rise. This can lead consumers to:
 - ✓ **Reduce Consumption:** Consumers might choose to buy less of a good or service, opting for substitutes or delaying purchases. There are ways of reducing consumption like thinking about every purchase you make, visiting the thrift store more often, doing big cleaning, refurbished, etc. (Vermeulen, 2021).
 - ✓ **Search for Alternatives:** Consumers might seek out cheaper alternatives or switch brands to find better value.
 - ✓ **Stockpiling:** In anticipation of further price increases, some consumers might engage in panic buying or stockpiling, further affecting the supply and demand balance.
 - ✓ **Availability:** Reduced supply can lead to shortages, making it difficult for consumers to find desired goods. This can cause frustration and inconvenience, impacting their buying experience and satisfaction. Product availability is a crucial factor in consumer behavior. The availability of a product can impact a consumer’s decision-making process and ultimately influence buying patterns. When a product is readily available, it can lead to increased demand, while limited availability can drive consumers to seek alternative products.

This section will explore the effect of product availability on consumer behavior from different points of view.

Shifts in Supply and Market Effects:

- **Production Costs Affect the Supply:**

The supply curve shows how much of a good or service producers are willing to supply at different prices, assuming that all other factors influencing supply remain constant. If any of these factors change, such as input costs or technology, the entire supply curve will shift. This shift indicates a change in the quantity of the good or service that producers are willing to supply at every price level.

Rising costs: If costs increase, less can be produced at any given price, causing the supply curve to shift to the left.

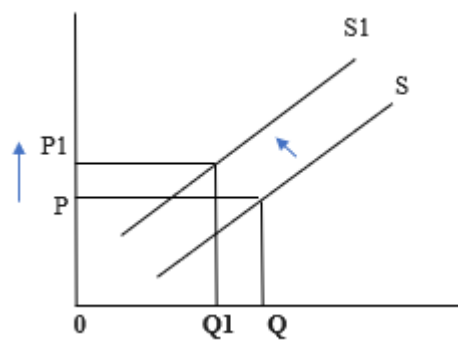


Figure 2. Shifting of supply to the left

Falling costs: If costs decrease, more can be produced, causing the supply curve to shift right.

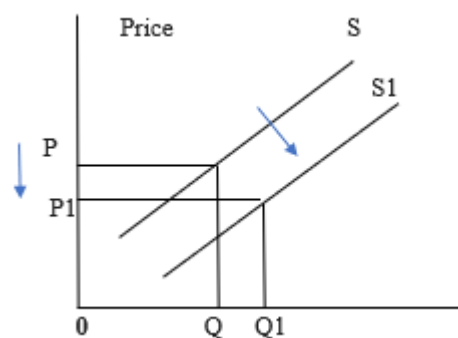


Figure 3. Shifting of supply to the right

The economy of Bangladesh is currently facing challenges such as high inflation, rising interest rates, and a significant drop in the value of the local currency. These difficulties are impacting the country. These factors are the main reasons for increasing production costs in the Economy. Higher production costs are challenging the building material industry. Due to a shortage of US dollars, it has become difficult to open letters of credit for importing necessary raw materials, especially in the energy sector. This has led to a 15.7% increase in electricity prices, with three separate 5% increases occurring during the fiscal year 2023. Additionally, the prices of diesel increased by 37% and furnace oil by 41.4% during the same period. Furthermore, the retail price of gas for industries saw a significant increase, ranging from 150 percent to 178 percent throughout the previous fiscal year (Habib, 2024). These factors are increasing production costs and as a result industries cannot produce more than before. As a result, the supply is affected by it, and the supply curve shifts to the left. Again, if the production cost decreases then the supply curve will shift to the right.

- **Natural Conditions Affect Supply:**

Natural conditions such as drought, floods, and tornadoes can make a significant change in the supply and its

shift. For example, Drought reduces the amount of agricultural products available, leading to a lower supply at any given price. As a result, the supply curve shifts to the left. Conversely, particularly good weather conditions would increase the supply of agricultural products, shifting the supply curve to the right.

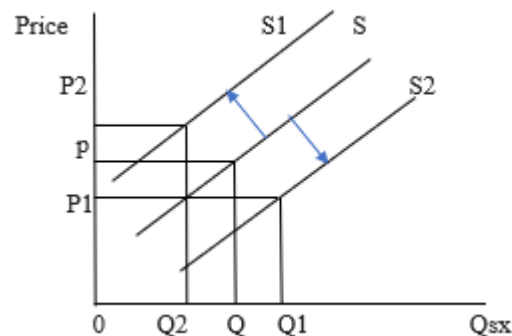


Figure 4. Shifting of supply for natural conditions

Bangladesh suffers from different types of natural disasters every year. As Bangladesh is an agricultural country nature has a great impact on it. Supply is also influenced by natural conditions. Bangladesh is popular for its jute production in the world. In 2022, a significant amount of jute material decayed or spoiled due to drought, as there was insufficient water available to soak the jute for fiber extraction. In July, when farmers began to collect the main crop grown for profit, the country experienced a rainfall that was 57.6 percent lower than the average amount of rainfall recorded for that month over the past 30 years. This level of rainfall was the lowest seen in the country in the past 41 years (Das, 2022). For that natural condition, the production was in poor amount and the supply was also influenced by it. So, in this condition, the supply curve shifts to the left. Again in 2023 onion seed growers of Faridpur expected bumper production of onion because the natural condition was very good for that onion seeds. In that condition, the supply is also influenced and as a result, the supply curve tends to shift to the right.

- **Subsidy in Agriculture Affects Supply:**

When the government subsidizes a good, the price of that good falls. When the price falls, demand increases, and also the supply increases. In this case, the supply curve shifts to the right side.

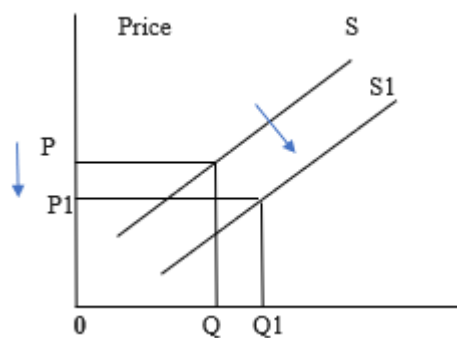


Figure 5. Shifting of supply for subsidy

In 1972, food production was 10 million metric tons, in 2017 it was 39.9 million tons in Bangladesh. Here subsidies play a great role. The production material's cost in agriculture is very high which discourages the farmers as it continues low growth of agriculture. Prices of gas have increased and as a result, the price of electricity has increased by per unit Tk 0.35. So, agriculture is becoming very costly, and farmers are dropping out. Fertilizers subsidy in Bangladesh agriculture impacts the buying capacity of the farmers and boost the agricultural supply system. (The Financial Express, 2017).

Transportation Problems and Supply Chains:

The transportation problem is used in supply chain management to optimize the movement of items between

many suppliers and multiple locations, including warehouses, distribution centers, and retail stores. Reducing transportation costs while guaranteeing that each destination's demand is satisfied is the aim.

Transportation issues can disrupt supply chains, impacting market dynamics:

- ❖ **Infrastructure Bottlenecks:** Congestion, limited infrastructure, or labor disputes in transportation can create bottlenecks, hindering the efficient movement of goods and causing shortages. Supply constraints have increased inflation and become a major obstacle to economic recovery, posing significant policy questions. In 2021, manufacturing output declined in certain nations, supplier delivery times reached all-time highs, and non-energy goods prices were surprised by the upside. All of these developments coincided with a change in global consumer spending toward goods. If at all, how should macroeconomic policy change in response to these developments? The answer primarily hinges on whether the bottlenecks are caused by altered supply or increased demand, as well as how long-lasting those changes may be. The economic recovery was hampered by supply restrictions, which increased inflation in 2021. We discover that supply bottlenecks, manufacturing production, GDP, and the euro area would have increased by roughly 6% and 2%, respectively, and half of the increase in manufacturing producer price inflation would not have happened. Autos and other industries that depend heavily on differentiated inputs were particularly hard hit. Shutdowns might account for as much as 40% of supply shocks worldwide. Industry insiders predicted late in the year that car supply constraints would mostly go by mid-2022 and wider bottlenecks by end-2022. However, with the Omicron wave, disruptions are projected to persist longer, potentially until 2023 (Celasun et al., 2022).
- ❖ **Fuel Prices:** Fluctuations in fuel prices can increase transportation costs for producers, leading to higher prices for consumers. Rising fuel costs can lead to increased costs for transporting raw materials and finished goods. Like in many other nations, Sweden's supply of heat and electricity is influenced by political changes in the government and the liberalization of the electricity market. This study examines the effects of fuel and power prices, as well as subsidies, on a typical district heating system in Sweden. To optimize investments and operations for heat and power production plants, the energy system model MODEST (model for optimization of dynamic energy systems with time-dependent components and boundary conditions) was employed. Combining heat and power introduction may be beneficial in the system under study at increased electricity rates. A mixed cycle powered by natural gas would be more advantageous at the moment of high fuel prices. Cogeneration using a biomass-fueled steam cycle would be more advantageous with reduced woodchip costs and government funding (Sundberg & Henning, 2002).

5. Conclusion

Supply is one of the major discussion points of economics. This paper showed how the determinants of supply play a significant role in the market system, especially in an open market system where all buyers and sellers are free for trading without any restrictions as well as the behaviors of consumers. Natural calamities, the transport system, political influence, and international relations are the major determinants that affect the economy of Bangladesh. Weather and natural disasters can reduce supply and raise the price of products. Additionally, political instability like hartal, movements, road blockage, and trade restrictions make a great impact. Some issues block the smoothness of product supply in the market, which means shortage. Supply affects consumer behavior when there is a shortage of product supply. This may cause dissatisfaction among them. Price hikes compelled them to search for cheaper alternatives or stock of many products for a long period of time. All of the incidents are not satisfactory for a developing country like Bangladesh. This situation needs to be solved by adopting some pragmatic steps as the whole economic situation of the country is highly affected by it. Some recommendations may include — transportation system development, ensuring political stability, educating consumers, identifying alternative supply chains, friendly relationships with international organizations, proper policy making, and more. After all this, we can hope to have a structured supply system.

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