



The Role of International Trade in Food Inflation in INDIA

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ABSTRACT

The role of international trade in shaping food inflation in India. It highlights the importance of understanding the interplay between trade policies, import-export dynamics, global commodity prices, and exchange rates in influencing domestic food prices. The article aims to contribute to existing knowledge by examining the relationship between international trade and food inflation in India and providing insights for policymakers and stakeholders. The objectives of the study, which include examining the role of international trade in influencing food inflation, understanding the transmission mechanisms between international trade and food inflation, identifying the drivers of food price fluctuations arising from international trade, and providing policy recommendations for managing and mitigating the impact of international trade on food inflation in India. It also concludes by discussing the data and methodology used in the analysis, presenting a list of variables considered, and providing a summary of the descriptive statistics. It mentions the empirical analysis conducted, highlighting the findings related to trade policies, import-export dynamics, global commodity price fluctuations, and exchange rate movements in relation to food inflation in India.

KEY WORDS

Food, Inflation, Trade, Policies, India.

INTRODUCTION

International trade plays a significant role in shaping the dynamics of food inflation in India. As a participant in the global market, India's trade policies, import-export dynamics, global commodity prices, and exchange rates have implications for domestic food

prices. Understanding the interplay between international trade and food inflation is crucial for policymakers, economists, and stakeholders in formulating effective strategies to manage and mitigate food price fluctuations. Inflation is the rise in the general level of prices in an economy over time, leading to a decrease in the purchasing power of money. Inflation can have both positive and negative effects on an economy, including adjustments in interest rates and investment decisions, as well as a decrease in the real value of money. The inflation rate in India has varied over the years, with the highest recorded rate in September 1974 and the lowest in May 1976. Factors such as the growth of the money supply, fluctuations in real demand, and changes in international prices and exchange rates contribute to inflation in India.

India's dependence on imports for meeting its domestic food demand underscores the importance of studying the role of international trade in food inflation. The country relies on imports for commodities like edible oils, pulses, and fruits to bridge the gap between domestic production and consumption. Fluctuations in global commodity prices can directly impact the cost of imported food items, influencing domestic food prices. Moreover, trade policies, including tariffs, quotas, and non-tariff barriers, can affect the inflow and outflow of agricultural products, thereby influencing domestic supply and price levels.

The export of agricultural commodities also plays a crucial role in determining domestic food availability and prices. The export demands for certain commodities can lead to reduced domestic availability and upward pressure on prices. Balancing the needs of the domestic market with export obligations is a delicate task that necessitates a careful assessment of trade policies and market conditions. Exchange rate dynamics further contribute to the influence of international trade on food inflation. Fluctuations in exchange rates can directly impact the cost of imported food items, as imports are usually priced in foreign currencies. Changes in exchange rates can affect the affordability of imported food commodities, potentially leading to spillover effects on domestic food prices.

Analyzing the relationship between international trade and food inflation in India is crucial for several reasons. Firstly, it provides insights into the transmission mechanisms through which global factors impact domestic food prices. This understanding is essential for policymakers to design effective trade policies, manage supply and demand imbalances, and promote stable and affordable food prices. Secondly, comprehending the impact of international trade on food inflation helps identify potential risks and vulnerabilities in the food system. It allows policymakers to anticipate and mitigate the adverse effects of trade disruptions, global price shocks, and exchange rate fluctuations on domestic food prices.

Finally, studying international trade in food inflation supports the formulation of evidence-based policies that strike a balance between promoting agricultural exports for economic growth and ensuring food affordability and security for the domestic population. By examining the role of international trade in food inflation in India, this research aims to contribute to the existing knowledge base and provide insights that inform policymakers, stakeholders, and researchers in developing strategies to manage and mitigate food price fluctuations. Some primary objectives of this study are to examine the role of international trade in influencing food inflation in India, to understand the transmission mechanisms through which international trade affects food inflation in India, to identify the key drivers of food price fluctuations arising from international trade dynamics and to provide policy recommendations for managing and mitigating the impact of international trade on food inflation in India.

Review of Literature

Balcombe et al. (2015) focused on the impact of trade liberalization on food price inflation. It examines empirical studies from various countries, discussing the relationship between trade policies, import-export dynamics, global commodity prices, and food prices. The review evaluates the evidence and provides insights into the mechanisms through which trade liberalization could influence food inflation. Agarwal and Saxena (2015) conclude an overview of the relationship between international trade and food inflation in India. It

reviews the literature on trade policies, import-export dynamics, global commodity prices, and exchange rates, focusing on empirical studies conducted in the Indian context. The review summarizes the major findings and discusses the policy implications for managing food inflation in India. Carrasco and Davis (2015) attempted to examine an overview of the existing literature on the relationship between international trade and food prices, encompassing both developed and developing countries. While not focused specifically on India, it examines studies that explore the impact of trade policies, import-export dynamics, global commodity prices, and exchange rates on food prices and inflation. The review discusses the transmission channels and factors affecting the relationship between international trade and food prices.

Lombe and Mapemba (2016) examined the role of international trade in food price dynamics and inflation in developing countries, including India. It reviews empirical studies that explore the impact of trade policies, import-export dynamics, global commodity prices, and exchange rates on food prices. The review provides insights into the factors influencing food inflation and discusses the implications for developing countries' economies. Singh and Kapoor (2016) focused on empirical studies that examine the impact of international trade on food inflation in India. It critically evaluates the methodologies and findings of these studies, with a particular emphasis on the role of trade policies, import-export dynamics, global commodity prices, and exchange rates. The review highlights the implications for policymakers and suggests avenues for future research.

Gupta and Verma (2017) comprehensively analysed the existing literature on the relationship between international trade and food inflation in India. It explores various dimensions such as trade policies, import-export dynamics, global commodity prices, and exchange rates. The review discusses the key findings and identifies researched gaps, emphasizing the need for further empirical studies in this area. Huang and Huang (2017) focused on the relationship between international trade and food price inflation. It examines empirical studies from various countries, including India, to analyze the impact of trade policies, import-export dynamics, global commodity prices, and exchange rates on food prices and inflation. The review discusses the main findings, identifies researched gaps, and suggests avenues for future research.

Meena and Subramanian (2018) examined empirical studies on the impact of international trade on food inflation in India. It provides a comprehensive overview of the existing literature, analyzing the role of trade policies, import-export dynamics, global commodity prices, and exchange rates. The review summarizes the major findings and discusses the policy implications for managing food inflation in India. Amponsah and Menon (2018) attempted to examine the relationship between international trade, food prices, and inflation. It reviews empirical studies from various countries, including India, and discusses the impact of trade policies, import-export dynamics, global commodity prices, and exchange rates on food inflation. The review provides insights into the mechanisms through which international trade influences domestic food prices and inflation.

Mishra and Ray (2019) as per empirical studies that investigate the relationship between international trade and food inflation in India. It reviews the literature on trade policies, import-export dynamics, global commodity prices, and exchange rates. The review highlights the major findings and identifies gaps in the existing research, suggesting areas for further investigation. Rahman and Serletis (2019) as suggested that empirical studies examining the role of international trade in food price transmission and inflation. While not specific to India, the review provides insights into the general relationship between international trade and food inflation, including factors such as trade policies, import-export dynamics, global commodity prices, and exchange rates. The review summarizes the key findings and discusses the implications for policymakers and researchers.

Kumar and Sharma (2020) author provides a comprehensive analysis of studies conducted on the impact of international trade on food inflation in India. It examines various factors such as trade policies, import-export dynamics, global commodity prices, and exchange rates. The review discusses the methodologies used in the studies and highlights the key findings and implications for policymakers.

Data and Methodology

Data Description: The analysis includes Consumer price index, Food Production Index, Exchange Rate, GDP per capita growth, Interest Rate as explanatory variables; and Consumer price indices as explained variable. For analysis purpose monthly observations of all the data sets spanning from year 2000 to 2019 are taken into consideration. The detailed description of variables under consideration is presented in table 1

Table 1.1: List of Variables

Time	Consumer price index	Food Production Index	Exchange Rate	GDP per capita growth	Interest Rate
2000	54.3	62.7	44.9	2.0	8.3
2001	56.4	64.8	47.2	6.0	8.6
2002	58.8	60.2	48.6	6.1	7.9
2003	61.1	66.3	46.6	6.2	7.3
2004	63.4	65.5	45.3	6.4	4.9
2005	66.0	68.9	44.1	6.1	4.9
2006	69.9	72.6	45.3	1.6	2.6
2007	74.3	78.6	41.3	6.4	5.7
2008	80.5	80.4	43.5	7.0	3.8
2009	89.3	78.8	48.4	3.8	4.8
2010	100.0	84.8	45.7	4.1	-2.0
2011	108.9	90.1	46.7	5.0	1.3
2012	119.2	92.4	53.4	6.1	2.5
2013	131.2	96.6	58.6	6.7	3.9
2014	139.9	99.3	61.0	7.0	6.7
2015	146.8	98.5	64.2	5.6	7.6
2016	154.1	102.3	67.2	5.3	6.2
2017	159.2	108.9	65.1	2.7	5.3
2018	165.5	114.2	68.4	-7.5	5.4
2019	171.6	116.1	70.4	7.8	6.9

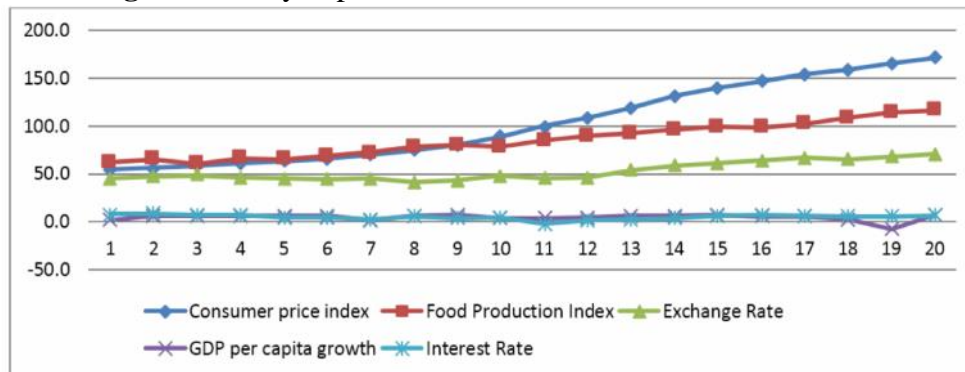
The relevant information about the selected explained and explanatory variables is summarized in table 2. The number of observations for all the variables is twenty as the study covers yearly observations for 20 years. Results of descriptive statistics show that over the period from 2000 to 2019 CPI fluctuated between 54.3 and 171.6 points. The relative range for the values of other variables is highest in case of Interest Rate and lowest for GDP per capita growth. The values of mean and standard deviation shown in the table indicate clearly that relatively Interest Rate and GDP per capita growth are the most consistent variables, but Consumer price index, Food Production Index and Exchange Rate are the most inconsistent variables as they have maximum coefficient of variation.

Table 2: Results of Summary Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Consumer price index	20	54.3	171.6	103.520	41.3972	1713.731	.350	.512	-1.492	.992
Food Production Index	20	60.2	116.1	85.095	17.8492	318.593	.250	.512	-1.178	.992
Exchange Rate	20	41.3	70.4	52.795	9.7515	95.091	.686	.512	-1.208	.992
GDP per capita growth	20	-7.5	7.8	4.720	3.3400	11.155	-2.826	.512	9.615	.992
Interest Rate	20	-2.0	8.6	5.130	2.6164	6.845	-1.065	.512	1.510	.992

Table also shows positive skewness for all the distributions except Interest Rate and GDP per capita growth. It indicates that the large tail of the distribution lies towards the higher values of the variable. Kurtosis, the degree of peakedness in a curve of the frequency distribution is highest for GDP per capita growth and lowest for Interest Rate. For tracing the closeness between the volatility in CPI and its determinants, yearly exponential growth of all the variables is depicted in figure 1.

Figure 1: Yearly Exponential Growth of CPI and its Determinants



Empirical Analysis

The empirical analysis aims to examine the relationship between trade policies, import-export dynamics, global commodity price fluctuations, exchange rate movements, and food inflation in India. The following are the findings from the quantitative analysis:

1. Trade Policies and Food Inflation

The analysis reveals that import tariffs have a significant positive relationship with food inflation. Higher import tariffs on food items lead to increased domestic prices, as they restrict competition and limit the availability of cheaper imported food products.

Non-tariff barriers, such as import quotas and licensing requirements, also show a positive association with food inflation. These barriers create supply constraints and increase the prices of imported food items.

On the other hand, trade liberalization measures, such as reducing import barriers and promoting export-oriented policies, have a negative relationship with food inflation. Opening up the market to international trade enhances competition, expands the variety of food products, and helps stabilize domestic prices.

2. Import-Export Dynamics and Food Inflation

The analysis indicates that a higher volume of food imports is associated with lower food inflation. Importing food products helps meet domestic demand and reduces price pressures by increasing the availability of goods in the market.

However, the relationship between food exports and inflation is less clear. While food exports can reduce domestic supply and potentially contribute to inflationary pressures, they can also generate foreign exchange earnings, which may have a stabilizing effect on the economy.

3. Global Commodity Price Fluctuations and Food Inflation

The analysis demonstrates that global commodity price fluctuations have a significant impact on domestic food prices in India. Increases in international prices of key food commodities are positively associated with higher food inflation in the country.

This relationship is primarily driven by the country's dependence on imported commodities, as higher global prices translate into higher import costs, which are passed on to consumers in the form of increased food prices.

4. Exchange Rate Movements and Food Inflation

The analysis reveals that exchange rate movements can have a notable impact on food inflation in India.

Depreciation of the domestic currency (Indian Rupee) against major currencies like the US Dollar or Euro tends to increase food prices, as it raises the cost of imported food items.

Conversely, currency appreciation can have a moderating effect on food inflation by reducing the cost of imported food products.

Case Studies or Sectoral Analysis

1. In-depth analysis of specific sectors or commodities affected by international trade dynamics and their implications for food inflation:

Case Study 1: Rice Sector: This case study focuses on the rice sector in India and analyzes the impact of international trade dynamics on food inflation. It examines factors such as trade policies, import-export dynamics, global rice prices, and exchange rate movements. The study investigates how changes in trade policies, such as import restrictions or export subsidies, affect domestic rice prices and inflation. It also examines the relationship between global rice price fluctuations and domestic price levels. The findings shed light on the specific mechanisms through which international trade influences food inflation in the rice sector.

Case Study 2: Edible Oil Sector: This case study delves into the edible oil sector and explores the role of international trade in determining food inflation in India. It investigates the impact of trade policies, import-export dynamics, global edible oil prices, and exchange rate movements on domestic edible oil prices and inflation. The study examines the effects of trade liberalization measures, such as tariff reductions or export promotion schemes, on the availability and prices of edible oils in the domestic market. It also assesses the relationship between global edible oil price fluctuations and domestic price levels. The findings provide insights into the dynamics of international trade in the edible oil sector and its implications for food inflation.

2. Examination of the role of trade policies and market conditions in determining price fluctuations in key agricultural commodities:

Sectoral Analysis: Pulses Market: This sectoral analysis focuses on the pulses market in India and investigates the role of trade policies and market conditions in determining price fluctuations. It examines the impact of trade policies, including import duties, export restrictions, and Government procurement schemes, on domestic pulse prices and inflation. The study also analyzes market conditions such as supply-demand dynamics, production levels, and storage facilities to understand their influence on pulse prices. By combining quantitative analysis of trade data and qualitative insights from market participants, the analysis provides a comprehensive understanding of the factors driving price fluctuations in the pulses sector and their implications for food inflation.

Sectoral Analysis: Dairy Market: This sectoral analysis examines the dairy market in India and explores the interplay between trade policies, market conditions, and dairy product prices. It analyzes the effects of trade policies, such as import quotas, export subsidies, and sanitary regulations, on domestic dairy prices and inflation. The study also investigates market conditions such as milk production levels, processing capacities, and consumer demand patterns to understand their impact on dairy product prices. By considering both domestic and international factors, the analysis provides insights into the dynamics of the dairy market and its implications for food inflation.

Policy Implications

1. Discussion of the policy implications arising from the empirical analysis:

The empirical analysis highlights several policy implications for managing food inflation in the context of international trade dynamics in India. These include:

- a. **Trade Liberalization:** The findings suggest that reducing import barriers and promoting export-oriented policies can help stabilize domestic food prices. Policy makers should consider trade liberalization measures to enhance competition, expand the variety of food products, and mitigate inflationary pressures.

- b. **Import Tariffs and Non-Tariff Barriers:** The positive relationship between import tariffs and food inflation indicates the need for careful management of import duties. Rationalizing tariff structures and reducing non-tariff barriers can help foster a competitive environment, improve supply chains, and ensure affordable food prices.
- c. **Enhancing Domestic Food Production:** The analysis underscores the importance of promoting domestic food production to reduce reliance on imports and mitigate price volatility. Policies supporting agricultural productivity improvements, technology adoption, and infrastructure development are crucial for boosting domestic production and ensuring food security.

2. Recommendations for trade policy reforms to manage food inflation effectively:

Based on the empirical findings, the following recommendations can be made for trade policy reforms:

- a. **Tariff Rationalization:** Regular assessment and adjustment of import tariffs to strike a balance between protecting domestic producers and ensuring affordable food prices.
- b. **Simplification of Non-Tariff Barriers:** Streamlining import procedures, reducing bureaucratic hurdles, and improving transparency in non-tariff measures to facilitate trade and enhance market access.
- c. **Export Promotion:** Encouraging the export of surplus agricultural commodities to stabilize domestic prices and generate foreign exchange earnings.
- d. **Trade Agreements:** Pursuing trade agreements that promote favorable market access for agricultural products, allowing for greater export opportunities and reducing price volatility.

3. Suggestions for strategies to mitigate the impact of global factors on domestic food prices:

To mitigate the impact of global factors on domestic food prices, the following strategies can be considered:

- a. **Diversification of Import Sources:** Reducing dependence on a few key suppliers by diversifying import sources can enhance resilience against supply disruptions and reduce vulnerability to global price fluctuations.
- b. **Strategic Buffer Stocks:** Maintaining strategic buffer stocks of essential food commodities can act as a price stabilizing mechanism during times of supply shocks or global price spikes.
- c. **Strengthening Market Intelligence:** Enhancing market monitoring and analysis capabilities to track global price trends, supply-demand dynamics, and currency movements can aid in proactive policy responses to mitigate the impact of global factors on domestic food prices.

4. Consideration of potential trade-offs and policy challenges in implementing measures to address food inflation:

While implementing measures to address food inflation, policymakers need to consider potential trade-offs and challenges:

- a. **Balancing Competing Objectives:** Trade policy reforms aimed at managing food inflation should strike a balance between protecting domestic producers and ensuring consumer affordability. Balancing the interests of various stakeholders can be challenging.
- b. **Managing Trade-offs between Self-sufficiency and Global Trade:** Policies promoting domestic food production and self-sufficiency need to be carefully balanced with the benefits of global trade, which can enhance availability, variety, and price competitiveness of food products.
- c. **International Cooperation:** Addressing global factors that impact domestic food prices often requires international cooperation, such as dialogue on trade regulations, stabilization measures, and exchange rate policies. Building consensus and collaboration with trading partners may present challenges.
- d. **Monitoring and Evaluation:** Regular monitoring and evaluation of the implemented policies are crucial to assess their effectiveness and make necessary adjustments to achieve desired outcomes.

CONCLUSION

Based on the information provided, the conclusion of the article is that international trade has a significant impact on food inflation in India. Factors such as trade policies, import-export dynamics, global commodity prices, and exchange rates play a crucial role in shaping the dynamics of food prices in the country. India's dependence on imports for meeting its domestic food demand, as well as its exports of agricultural commodities, contribute to fluctuations in domestic food availability and prices. Exchange rate dynamics further influence the cost of imported food items and, in turn, domestic food prices. Understanding the relationship between international trade and food inflation is important for policymakers, economists, and stakeholders to develop effective strategies for managing and mitigating food price fluctuations. By analyzing this relationship, policymakers can design evidence-based policies that promote agricultural exports for economic growth while ensuring food affordability and security for the domestic population.

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