

# ANALYZING THE EFFECTS OF TARIFFS AND NON-TARIFF BARRIERS ON IMPORT AND EXPORT VOLUMES BETWEEN COUNTRIES

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## Abstract

The global economy is characterized by intricate networks of trade relationships between nations, where the imposition of tariffs and non-tariff barriers significantly influences the flow of goods and services. This research delves into the multifaceted effects of both tariff and non-tariff barriers on the import and export volumes between countries, aiming to unravel the complexities inherent in international trade dynamics.

Tariffs, the more conventional form of trade barriers, involve taxes levied on imported goods, impacting the cost structure of international trade. On the other hand, non-tariff barriers encompass a diverse array of measures such as quotas, licensing requirements, and technical standards, creating additional hurdles for cross-border commerce. By comprehensively examining both types of barriers, this study seeks to provide a thorough understanding of their combined impact on the intricate web of global trade relationships.

The research methodology is designed to be robust and inclusive, employing a combination of quantitative and qualitative analyses. Quantitatively, the study scrutinizes trade statistics, tariff rates, and non-tariff measures across a spectrum of countries and industries. This quantitative approach enables the identification of overarching patterns and trends in the effects of trade barriers on import and export volumes. Complementing this, qualitative methods such as case studies and expert interviews offer nuanced insights into the contextual factors that shape the impact of these barriers.

Key focal points of the investigation include the economic ramifications of tariff and non-tariff barriers, the potential for trade diversion - where trade routes shift due to barriers - and the consequential effects on various industries and consumers. Additionally, the study considers the role of international trade agreements and negotiations in either alleviating or exacerbating the impacts of these barriers. By adopting a holistic perspective that examines the interplay between tariff and non-tariff measures, this research contributes to a more comprehensive comprehension of the intricate factors that mould global trade patterns.

The implications of the findings extend to policymakers, businesses, and other stakeholders engaged in international trade. The insights derived from this analysis can inform the development of strategic approaches to navigate and respond to trade barriers, fostering the creation of more effective trade policies and agreements. In essence, this research endeavors to enhance our collective understanding of the intricate nature of trade barriers and their profound impact on the interconnected global economy.

## Industry Overview:

This study explores the effects of tariffs and non-tariff barriers (NTBs) on import and export volumes between countries across diverse industries. The industries covered include Manufacturing (Automotive, Electronics, Textiles, and Apparel), Agriculture and Food (Agricultural Products, Processed Foods), Energy and Natural Resources (Oil and Gas, Mining and Minerals), and Technology and Services (Information Technology, Financial Services). The impact of tariffs and NTBs on these industries is multifaceted, affecting costs, competitiveness, supply chains, and consumer prices.

The impact of tariffs and non-tariff barriers (NTBs) on industries is intricate:

- **Costs:** Tariffs elevate the expense of imported goods, raising production costs for industries reliant on imported inputs.
- **Competitiveness:** Tariffs and NTBs shape the competitiveness of domestically produced goods in international markets.
- **Supply Chain Disruption:** Trade barriers can disrupt supply chains, causing delays and increased expenses for industries.
- **Consumer Prices:** Tariffs influence consumer prices for imported goods, impacting domestic consumption patterns.

## Background of Study :

The background delves into tariff history and the rise of non-tariff barriers. Recent trends, from trade tensions to sustainability, shape the contemporary international trade landscape, influenced by market forces and government policies.

- **Historical Context:** Tariffs historically taxed imports, serving revenue generation and industry protection. Efforts to reduce tariffs formed GATT and WTO, promoting free trade. Non-tariff barriers, less visible, now shape trade.
- **Contemporary Trade Dynamics:** Globalization intensified, complicating supply chains. Tariffs address domestic concerns, while NTBs gain prominence as governments regulate trade, avoiding direct economic costs.
- **Recent trends :** including trade tensions and political shifts, underscore the importance of comprehending the effects of tariffs and NTBs for policymakers, businesses, and trade stakeholders navigating the global trade environment. In recent years, global trade has been marked by:
  - **Escalation of Trade Tensions:** Notably between the United States and China, tit-for-tat tariff increases, political shifts, and geopolitical conflicts caused uncertainty, disrupting established trade patterns.
  - **Rise of Non-Tariff Barriers:** Despite significant tariffs, non-tariff barriers (NTBs) like regulatory complexity and technical standards are rising, impacting foreign market entry and challenging smaller businesses.
  - **Trade Agreements and Regional Integration:** Amid tensions, countries renegotiate agreements. Mega-pacts like the CPTPP aim to reduce barriers, and regional blocs like the EU evolve for trade facilitation. Top of Form
  - **Technological Advancements:** E-commerce transformed global trade, empowering small businesses. However, Customs challenges persist.
  - **Sustainability and Environmental Concerns:** Prominent sustainability measures include environmental standards and proposals for carbon border adjustments, encouraging global adoption of sustainable practices.

### LITERATURE REVIEW

The literature provides a nuanced understanding of the intricate dynamics, geopolitical influences, and sector-specific effects of tariffs and non-tariff barriers (NTBs) on international trade. **Bown (2018)** suggests that protectionist tariffs can provide short-term benefits to domestic industries by shielding them from foreign competition. **Hufbauer and Schott (2018)** highlight the impact of the trend towards bilateral and regional trade agreements on the prevalence and consequences of tariffs and NTBs.

**Fernandes and Hallak (2019)** emphasize the significance of global value chains (GVCs) and how tariffs disrupt these intricate production networks. **Costinot et al. (2019)** bring attention to the potential negative impact of tariffs on intermediate goods, leading to higher production costs and reduced export competitiveness. **Ludema and Mayda (2019)** discuss trade diversion, where tariffs shift imports from efficient suppliers to less efficient or domestically protected sources, causing economic inefficiencies.

**Bown and Zhang (2019)** suggest that tariff increases, particularly in trade disputes, are associated with decreased import volumes. **Amiti et al. (2019)** analyze substantial reductions in bilateral trade flows due to tit-for-tat tariff escalations between the U.S. and China. **Evenett and Fritz (2019)** highlight that political considerations, such as protectionist policies or geopolitical tensions, drive tariffs and NTBs.

**Hoekman and Shepherd (2019)** indicate that NTBs can increase the cost and complexity of cross-border business transactions.

**Nicita et al. (2019)** note that while NTBs may serve legitimate purposes like public health or environmental protection, they can also create trade barriers and hinder economic growth.

**Fajgelbaum et al. (2019)** state that tariffs, as a form of taxation on imported goods, lead to higher prices and reduced purchasing power for consumers.

**Melitz et al. (2019)** underscore the diverse and complex nature of NTBs, especially technical regulations and standards, impacting export volumes, particularly for SMEs. **Mattoo et al. (2019)** explore the role of international agreements, like the WTO's Trade Facilitation Agreement, in reducing NTBs and enhancing trade volumes. Francois and

**Hoekman (2019)** examine how NTBs affect trade in services, identifying regulatory barriers in sectors like finance, telecommunications, and e-commerce.

**Bacchetta and Beverelli (2019)** investigate the influence of political factors and geopolitical tensions in shaping tariff and NTB policies.

In 2020, **Bown and Kolb** show that tariffs in trade disputes, such as those between the U.S. and China, continue to influence reductions in both import and export volumes.

**Baldwin and Tomiura (2020)** stress the importance of resilient supply chains and how tariffs, especially during the pandemic, disrupted these networks. **Grant and Boys (2020)** explore how tariffs affected specific sectors, showcasing differential impacts on different crops and shifts in export volumes.

**Melo et al. (2020)** discuss pandemic-induced NTBs, including export bans and health-related measures, disrupting global supply chains.

**Mattoo et al. (2020)** examine how digital trade NTBs, such as data localization requirements, influenced cross-border trade in the digital economy during the pandemic.

**Evenett and Fritz (2020)** explore the effects of NTBs on services trade, identifying regulatory barriers in sectors like finance, telecommunications, and healthcare.

**Bekkers and Francois (2020)** analyze the role of political factors in shaping tariff and NTB policies in the evolving geopolitical landscape.

**Schott et al. (2020)** examine the impact of trade agreements on tariff reduction and their potential to mitigate NTBs, emphasizing the importance of effective implementation. The collective literature underscores the need for a comprehensive understanding of tariffs and NTBs, taking into account their evolving nature, geopolitical influences, and sector-specific ramifications in the complex landscape of international trade agreements.

## RESEARCH METHODOLOGY

**Quantitative Approach:** Utilize quantitative data to measure the impact of tariffs and non-tariff barriers on import and export volumes.

**Comparative Study:** Conduct a comparative analysis of countries with varying tariff and non-tariff barrier regimes to assess their impact on trade flows.

**Longitudinal Study:** Analyze trade data over a period of time to identify trends and patterns in import and export volumes in response to changes in tariff and non-tariff barriers.

### Data Collection:

**Trade Data:** Gather data on import and export volumes between countries from reliable sources such as national statistical agencies, international organizations (e.g., World Bank, IMF), and trade databases (e.g., UN Comtrade).

**Tariff Data:** Collect information on tariff rates applied by countries from sources such as the World Trade Organization (WTO), national customs authorities, and trade policy databases.

**Non-Tariff Barrier Data:** Obtain data on non-tariff measures (e.g., quotas, licensing requirements, technical standards) from official sources and databases like the World Integrated Trade Solution (WITS) and the United Nations Conference on Trade and Development (UNCTAD).

### Variables:

**Dependent Variables:** Import and export volumes between countries.

**Independent Variables:** Tariff rates, non-tariff barriers, GDP of trading partners, exchange rates, trade agreements, economic policies, etc.

### Analysis Techniques:

**Regression Analysis:** Use econometric models such as multiple regression analysis to quantify the relationship between tariffs, non-tariff barriers, and trade volumes while controlling for other relevant factors.

**Panel Data Analysis:** Employ panel data techniques to account for time-series and cross-sectional variations in trade data across countries.

**Significance of the study:** Analysing tariffs and non-tariff barriers' effects on import-export volumes is crucial for international trade, economics, and policymaking, offering varied perspectives.

- **Economic Impact:** Tariffs and NTBs impact import/export costs, industries, consumers, and governments. Research explores effects on trade volumes, prices, and economic growth.
- **Trade Policy:** Policymakers rely on studies for trade policy decisions, shaping tariff rates, trade agreements, and NTB regulations, influencing a country's strategy and international relations.
- **Global Trade Dynamics:** Analyzing effects provides crucial insights into global trade dynamics, impacting industries and countries over time.
- **Consumer Welfare:** Tariffs and NTBs affect import prices, shaping consumer choices and welfare.
- **Business Strategy:** Research guides businesses on risks associated with tariffs and NTBs.
- **Competitiveness:** Trade barriers assessment reveals competitiveness of domestic industries, identifying protected or disadvantaged sectors.
- **Top of Form**
- **Welfare and Inequality:** Trade policies impact income distribution, employment patterns, and contribute to inequality discussions.
- **Bilateral and Multilateral Relations:** Trade tensions arise from tariff and NTB policies, crucial in diplomatic negotiations.
- **Future Trade Scenarios:** Historical data and scenarios inform policymakers about potential future trade impacts.
- **Academic and Policy Contribution:** The study contributes to international trade literature, guides future research, and informs policy design and evaluation, offering a comprehensive understanding of complex trade factors.

### Scope of the study:

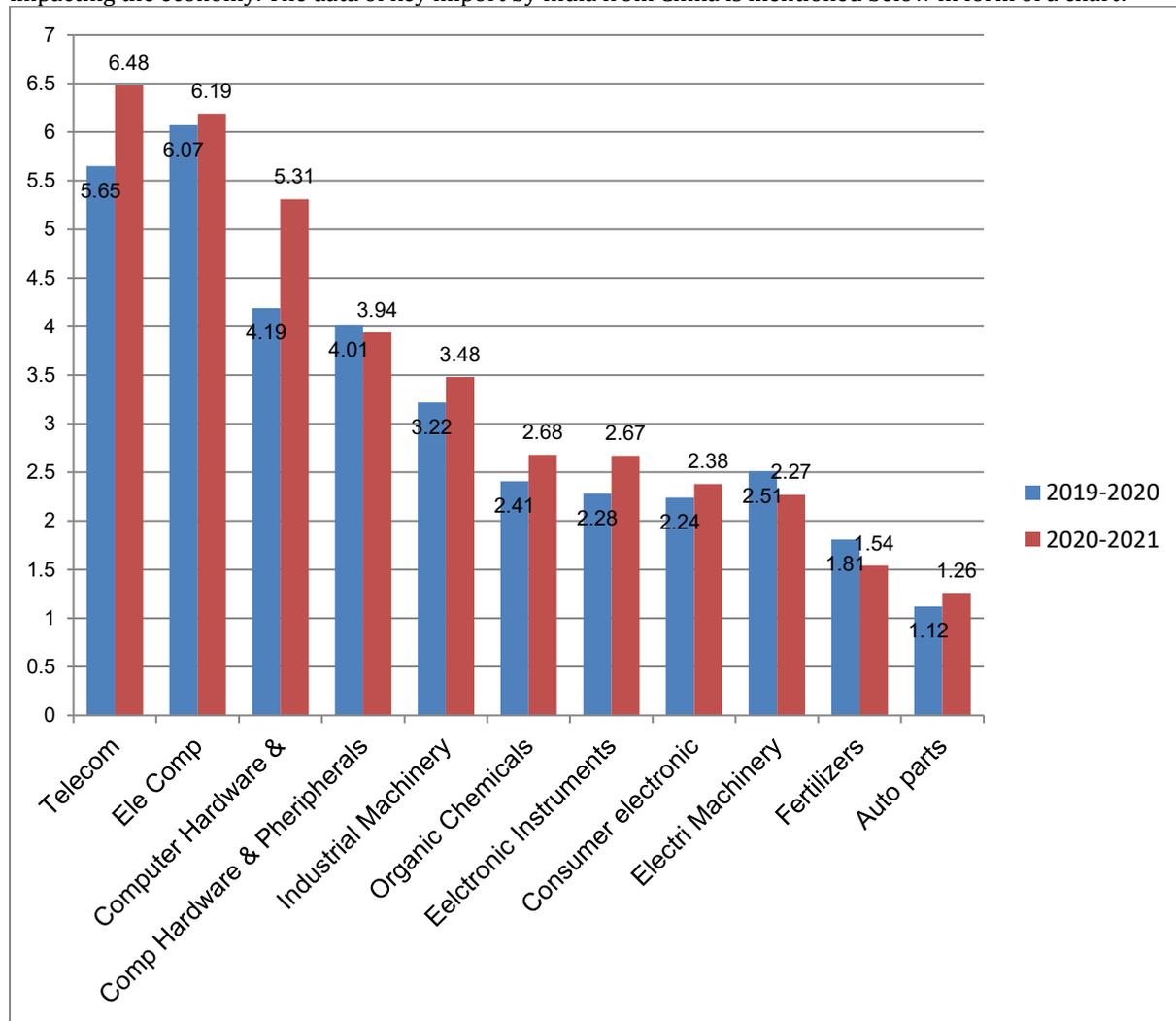
the scope of the study involves analyzing the impact of tariffs and non-tariff barriers on import and export volumes between countries. This includes focusing on a specific region or global perspective, examining trade

flows over a defined time frame, considering various types of tariffs and non-tariff barriers, employing quantitative and qualitative research methods, and providing policy implications. Limitations such as data availability and resource constraints should also be acknowledged.

**Statement of Problem:** The imposition of tariffs and the implementation of non-tariff barriers have significant implications for international trade dynamics. However, understanding the precise effects of these measures on import and export volumes between countries remains a complex and critical issue. Therefore, the primary problem this study aims to address is to systematically analyse and quantify the impact of tariffs and non-tariff barriers on import and export volumes, considering various factors such as economic policies, trade agreements, and regional contexts. Specifically, the study seeks to investigate how changes in tariff rates and the introduction of non-tariff measures influence trade flows, and to what extent these effects vary across different countries, industries, and time periods. By addressing this problem, the study aims to contribute to a deeper understanding of the relationship between trade policies and international trade dynamics, informing policymakers and stakeholders about the potential benefits and challenges associated with trade barriers.

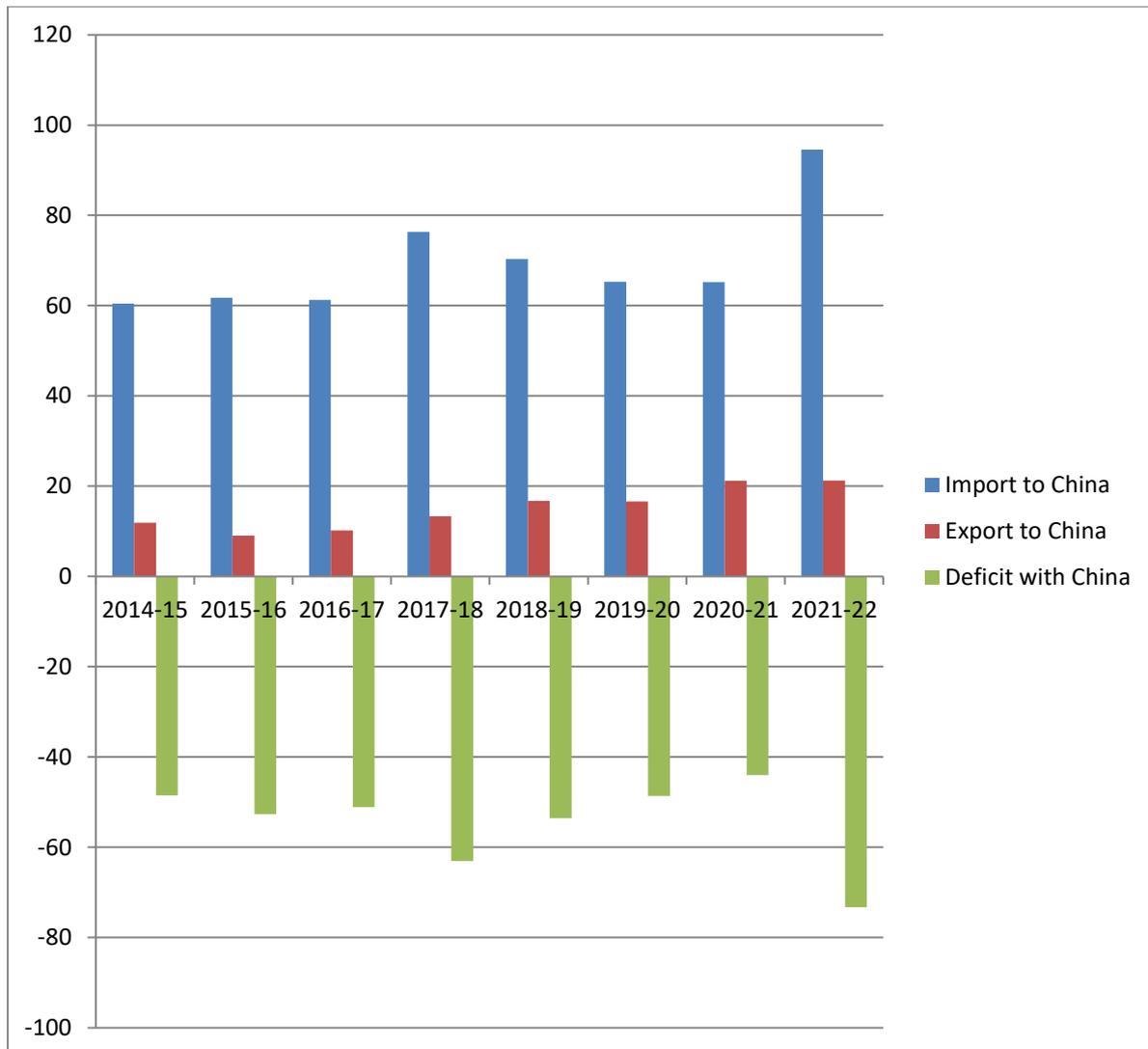
## DATA ANALYSIS AND INTERPRETATION

India-China trade valued at US\$100 billion grows, but India faces a trade imbalance, relying on Chinese imports, impacting the economy. The data of key import by India from China is mentioned below in form of a chart:



Source : System on Foreign Trade Performance Analysis, Dept of Commerce (Fig in \$ billion)

India-China total trade chart illustrates the trade deficit, reflecting India's heavy reliance on Chinese imports, impacting the economic balance.



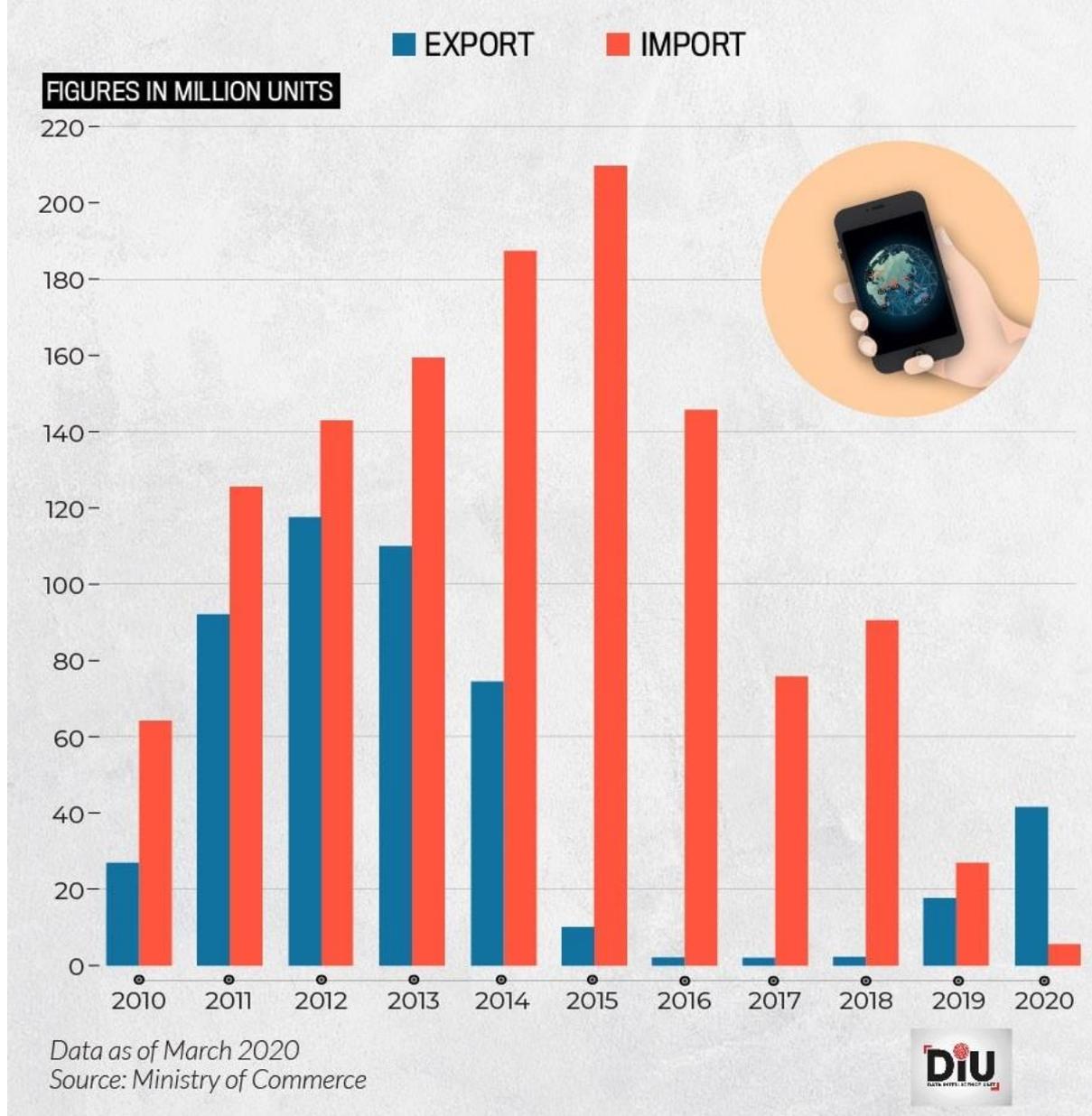
The COVID pandemic caused a marginal decrease in India's imports from China, widening the trade deficit. Despite government measures, addressing the deficit remains challenging due to China's role as a key and cost-effective supplier. Bilateral tensions haven't stemmed the trade imbalance, prompting the need for effective tariff and non-tariff barrier strategies.

**Tariff Barrier :**

India has implemented tariff barriers like Anti-dumping Duties, Countervailing Duties, and Safeguard Duties on about 80 Chinese products. Over 50 products are under investigation for potential dumping. While these barriers reduced inflow, their temporary nature requires periodic review. India faced WTO challenges, notably for violating its zero-tariff commitment on mobile phones. The dispute panel ruled against India, leading to an appeal. Despite dysfunction in the WTO appellate body, India's measures, including a 20% tariff on mobile

<https://www.gapjibs.org/>

phones, impacted Chinese imports significantly, dropping from 200 million in 2014 to 3.77 million in 2022.



### Non Tariff Barrier :

Non-tariff barriers (NTBs) have emerged as a more permanent and compliant method to regulate imports, ensuring adherence to quality standards. The Food Safety and Standards of India (FSSAI) Act and Plant Protection and Quarantine (PPQ) Act have been amended and rigorously enforced, preventing the import of substandard and adulterated goods. Non-tariff measures like Quality Control Orders, enforced strictly for the past three years, require registration with the Bureau of Indian Standards, ensuring compliance with stipulated quality standards. This has significantly reduced imports, particularly in the steel sector.

Moreover, including over 250 products in Quality Control Orders, such as laptops, has proven effective in curbing imports and supporting the domestic industry. The ongoing process of adding more products to the order by 2024 indicates a sustained effort to regulate imports.

The impact of non-tariff barriers on exports is exemplified by the Russian-Ukraine conflict, causing a halt in wheat exports from the Baltic region. This triggered a surge in global wheat prices, leading countries like India to consider exporting wheat. To prevent inflation and domestic price hikes, the Indian government swiftly imposed licensing conditions on wheat and wheat flour exports. This strategic move ensured the stability of domestic prices for essential food grains, preventing undue hardship for consumers and farmers.

In the case of rice, the government allowed Basmati rice exports with the imposition of a Minimum Export Price, preventing economic feasibility for buyers and controlling quantities exported. These non-tariff measures have acted as safeguards, enabling market control, protecting farmers, and curbing inflation.

The above instances highlight the effectiveness of non-tariff barriers in safeguarding domestic markets, ensuring compliance with quality standards, and responding to global challenges in a dynamic manner. Non-tariff measures have become essential tools for governments to protect their economies, regulate trade, and maintain stability in the face of unforeseen global events.

## MAJOR FINDINGS

Analyzing the findings and their implications for trade policy between India and China would involve a detailed assessment of how tariffs and non-tariff barriers (NTBs) affect their trade relationship. While I cannot provide real-time data or specific findings beyond my last knowledge update in September 2021, I can offer a general framework for interpreting research findings and deriving trade policy implications:

Findings:

- **Impact of Tariffs:** Analyze how changes in tariff rates between India and China have affected import and export volumes for specific goods and industries. Identify which industries are particularly sensitive to tariff changes.
- **Non-Tariff Barriers:** Examine the types and prevalence of NTBs that hinder trade between the two countries. Assess the industries and sectors most affected by these barriers.
- **Trade Balance:** Determine whether changes in trade barriers have had a significant impact on the trade balance between India and China. Identify whether the balance has been in favor of one country and if this has been influenced by trade barriers.
- **Industry-Specific Effects:** Understand the specific industries or sectors within India and China that have been most affected by trade barriers. Identify industries that may benefit from reduced trade barriers.
- **Market Access:** Investigate the ease of market access for Indian and Chinese exporters in each other's markets. Determine if any specific NTBs have disproportionately restricted market access.
- **Trade Diversification:** Explore whether Indian and Chinese firms have diversified their trade partners in response to trade barriers. Assess the countries or regions where trade diversification has occurred.

## CONCLUSIONS & RECOMMENDATIONS

**Implications for Trade Policy:** Based on the research findings, the following trade policy implications may be considered:

**Tariff Negotiations:** If tariffs have been found to significantly impact trade volumes, India and China may consider negotiations to reduce tariff rates or eliminate tariffs for certain goods. Bilateral trade agreements can address tariff concerns.

**Addressing Non-Tariff Barriers:** Both countries can work toward reducing NTBs, such as streamlining customs procedures, harmonizing technical standards, and addressing regulatory barriers. This could lead to more predictable trade conditions.

**Industry-Specific Strategies:** Tailor trade policies to support industries that have been adversely affected by barriers. This might include export promotion measures or targeted regulatory reforms.

- **Bilateral Trade Agreements:** Explore the possibility of bilateral trade agreements that focus on addressing specific trade barriers and promoting greater economic cooperation.
- **Market Access Improvements:** Identify sectors where market access is hindered by NTBs and work on improving transparency, compliance, and access for exporters from both countries.
- **Trade Facilitation:** Enhance trade facilitation measures to simplify customs procedures, reduce delays, and lower transaction costs, thereby encouraging trade growth.
- **Conflict Resolution:** Establish dispute resolution mechanisms to address trade conflicts promptly and fairly, minimizing disruptions in trade relations.
- **Diversification Strategies:** Encourage businesses to diversify their export destinations to reduce reliance on a single market. Government support and incentives can play a role in this diversification.
- **Monitoring and Evaluation:** Continuously monitor the trade policy measures' effectiveness and adjust policies as needed to adapt to changing trade dynamics.
- **Engagement in Regional Trade Blocs:** Participate actively in regional trade organizations and agreements that promote trade facilitation and economic integration.

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