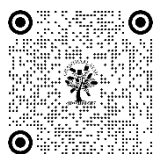


# ANALYZING EXPORT DYNAMICS AND MARKET TRENDS IN THE GLOBAL FRUITS AND VEGETABLES TRADE

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## ABSTRACT

This study examines the dynamics of global trade in fruits and vegetables, emphasising the influence of World Trade Organisation (WTO) rules on the competitiveness of exporting countries. The international market for fresh produce is evolving due to shifting customer preferences and heightened health awareness, resulting in a surge in demand for variety and high-quality fruits and vegetables. The WTO is essential in governing international trade by advocating for trade liberalisation and diminishing obstacles to market access. This research seeks to analyse the impact of adherence to WTO norms on trade flows, pricing tactics, and market entry prospects for different nations. This study uses a secondary data technique to perform an extensive literature review, establishing a theoretical framework, and analyses trade data from credible sources such as the Food and Agriculture Organisation (FAO) and the World Trade Organisation (WTO). The results demonstrate that compliance with WTO rules, especially with tariff reductions and sanitary regulations, markedly improves export volumes and market competitiveness. The findings emphasise the necessity of synchronising national policy with WTO standards to leverage trade advantages. The study emphasises the significance of technical improvements and quality assurance protocols in enhancing the global standing of fruits and vegetables. The research offers practical insights for policymakers and industry players to effectively manage the intricacies of the global trade landscape, with the objective of enhancing the status of fruits and vegetables in international markets.

**Keywords:** Fruits And Vegetables Trade, WTO Policies, Competitiveness, Trade Dynamics, Agricultural Exports, Market Trends

## 1. INTRODUCTION

### Export Dynamics and Market Trends in the Global Fruits and Vegetables Trade

#### A. Trade Dynamics

This has been a significant department within the agriculture sector that can reflect changes in consumer preferences and demand shifts in the market or trading policies across the world. This market, over the last several decades, has grown immensely with more people being aware of the importance of fresh fruits and vegetables for good health and, at the same time, the growing population of the world. It has provided significant export opportunities for countries to take advantage of rising demand for many high-quality fruits and vegetables. Nonetheless, the trade environment is sophisticated as it is affected by variance in terms of quality standards, volatile market prices, and impacts of geopolitical developments. All of this calls for a deep understanding of export dynamics and an appreciation for how such factors would come to impact trade flows and pricing strategies on a worldwide scale (Singh, 2021).

**B. Regulatory Influence**

The WTO is very instrumental in setting rules that govern global trade since it focuses on liberalization of trade and the reduction of barriers to market access. Conforming to WTO guidelines for the fruits and vegetables industry increases the prospects for exporting because it is founded on a benchmark that promotes adherence to international standards and fair competition among exportatory countries. Compliance with WTO rules could be beneficial to nations that have plans of gaining influence in other markets due to the harmony of accepted practices across international trade. It is within this regard that this research proposal attempts to analyze the impact of WTO regulations on market competitiveness of fruits and vegetables in terms of how these rules influence entry into a market, pricing, and possible access by exporters from different nations (Dass, 2015).

**C. Market Competitiveness**

The essential concept of this study is the examination of the major influencers that enhance competitiveness in the fruits and vegetables sector within the export markets of the world. It does so by taking into consideration historical trade data, emerging market trends, as well as case studies of leading exporters, which will throw light upon the successful strategies that have amplified market presence. Technological advancement in agriculture as well as quality assurance measures are also critical to strengthening the global position of fruits and vegetables. The lessons learned from this research are meant to guide policymakers and other stakeholders involved in the industry about the strategic policy that will guide them to take control of factors around international trade. The study will therefore aim at facilitating the strengthening of fruits and vegetables' position within global markets, promoting continued growth, and resilience against various trade problems (Suresh & Mathur, 2016).

**OBJECTIVE**

To examine the impact of WTO policies on the competitiveness of fruits and vegetables in international export markets.

**2. REVIEW OF LITERATURE**

In a study that is very similar to this one, according to **Gale et al. (2015)** analyse China's recent rise to prominence as a major agricultural importer and the effects that this shift has had on international markets. It examines trade patterns with the help of statistics on trade between the United States and China, outlines alternate forecasts of future imports, and talks about how Chinese officials are modifying their strategic approach to agricultural trade as imports expand. Rapid economic expansion is the most important and necessary goal of emerging countries, according to the findings of another study that reached a similar conclusion, according to **Atif et al. (2017)**, and exports are often thought to be the engine of economic progress. This study's objective is to identify the key variables influencing Pakistan's agricultural exports using a stochastic frontier gravity model on a population of 63 nations over the years 1995 to 2014. According to, **Bojnec & Fert (2015)** investigated the viability of "agri-food exports of European Union (EU-27) countries" on global markets over the years 2000–11 by using the "revealed comparative advantage (B) index." This index compares countries based on how much of an advantage people have in a particular market.

**3. METHODOLOGY****(i) Data Sources**

This study will source secondary data from a variety of reliable and authoritative sources to examine the dynamics of import performance and trends in the international fruits and vegetables trade, with an emphasis on the impact of WTO policies on competitiveness. These sources are:

**Agricultural Statistics at a Glance** (Various Issues, Ministry of Agriculture, Government of India)

**Economic Surveys Various issues**) Ministry of Finance, Government of India

**FAO and WTO databases** for international trade statistics and policies.

**Reports from WTO agreements**, policy briefs, and member states' reports will be analyzed for their impact on global trade.

**Trade organizations' reports, market research firms, and agricultural extension services** will be used to further analyze market trends and competitiveness factors in the fruits and vegetables sector.

**Books, journals, and publications** on international trade, WTO policies, and the competitiveness of the agricultural sector will also contribute in developing the theoretical framework.

## (ii) Statistical Techniques

Statistical analysis of the quantitative data collected will identify key trends and patterns in export dynamics of fruits and vegetables, with a focus on growth rates, market share, and price competitiveness. This can help in understanding the impact of WTO policies on global trade. Statistical techniques:

### 1. Compound Annual Growth Rate (CAGR):

The Compound Annual Growth Rate (CAGR) will be calculated to determine the growth rate of exports and market performance over a period of time. The formula used will be:

$$Y = AB^t$$

Where:

- $Y$  is the growth rate of the given variable (e.g., production or exports)
- $t$  represents the time period
- $A$  and  $B$  are coefficients

The CAGR formula is:

$$CAGR = \left( \frac{b - 1}{100} \right)$$

Where:

- $A$  is the intercept
- $b$  is the antilog of log 'B'

### 2. Comparative Analysis:

The analysis will employ a comparative approach assessing WTO policies effects on competitiveness across various nations and regions, helping in the identification of subtle impacts of WTO regulations and generating actionable insights for competitiveness enhancement.

Results from the statistical tests will be synthesized to draw conclusions on how WTO policies relate to the competitiveness of fruits and vegetables exports into the international market. Recommendations will be proposed to policymakers and stakeholders in the industry about the need to align strategies with WTO guidelines.

## 3. DATA ANALYSIS

- The data analysis for the export of fruits and vegetables in the global agricultural trade during both pre-WTO and post-WTO regimes highlights significant trends and shifts in India's performance in the market.
- Pre-WTO Regime-India's fruit exports during the period 1975 to 1994 have on average accounted for 1.03% of the world's exports. On average, the value of India's fruit exports amounted to \$2.42 billion. The CGR for India's fruit exports from 1975 to 1994 was 2.98%, which indicated that the growth was moderate. However, compared to the world, India's portion was still at below 2% during these years, thus quite minuscule on the world scenario. India's share of world imports was also limited, averaging 0.61%, with its highest share at 1.35% in 1975. This period demonstrated that while India's fruit export value grew at a steady pace, the rate was considerably slower than that of the global market, which had a robust growth rate of 5.29%.
- Over the period from 1995 to 2015, India's fruit exporting industry has seen a vast change. On average, the share rose to 1.67% of world exports. The value of exports averaged \$15.33 billion. During this time, the CGR of 12.60% indicates a significant jump in competitiveness. This growth indicated that India's strategic adaptation to the WTO's trade regulations had a positive effect, boosting its share of the global fruit export market. The peak export value was observed in 2012, at \$38.17 billion, showing that India was starting to make stronger inroads into major markets. In

contrast, the world export market increased during the same period at a 7.55% average growth rate, which was relatively slower than India's performance in the global trading landscape.

**Table 1: Comparison of India's Export Performance in Fruits Before and After the WTO Regime (1975-2015)**

Year (Pre WTO)	India Export (Fruits)	World Export (Fruits)	% Share of India in World Export (fruits)	Year (Post WTO)	India Export (Fruits)	World Export (Fruits)	% Share of India in World Export (vegetables)
1975	1.68	123.93	1.35%	1995	2.15	134.87	1.60%
1976	1.72	133.15	1.30%	1996	2.25	142.56	1.58%
1977	1.93	152.96	1.27%	1997	2.46	153.27	1.60%
1978	1.76	172.72	1.02%	1998	2.75	160.45	1.71%
1979	2.18	204.22	1.07%	1999	2.98	167.03	1.78%
1980	2.47	233.82	1.06%	2000	3.12	172.12	1.81%
1981	2.69	233.14	1.16%	2001	3.45	176.88	1.95%
1982	2.30	213.08	1.08%	2002	3.78	182.50	2.07%
1983	2.32	208.82	1.11%	2003	4.23	191.40	2.21%
1984	2.25	220.94	1.02%	2004	4.56	200.35	2.28%
1985	2.26	208.66	1.09%	2005	5.10	210.78	2.42%
1986	2.37	228.98	1.04%	2006	5.80	225.64	2.57%
1987	2.33	252.64	0.92%	2007	6.90	246.32	2.80%
1988	2.17	286.51	0.76%	2008	8.10	265.17	3.05%
1989	2.65	302.03	0.88%	2009	7.85	258.12	3.04%
1990	3.07	325.57	0.94%	2010	8.95	274.21	3.26%
1991	2.79	328.65	0.85%	2011	11.20	303.45	3.69%
1992	2.94	357.34	0.82%	2012	13.70	340.89	4.02%
1993	3.35	338.73	0.99%	2013	14.85	367.11	4.04%
1994	3.23	388.44	0.83%	2014	15.40	397.59	3.88%
Average	2.46	233.68	1.05%	Average	7.20	245.94	3.04%
CAGR (%)	12.60%	7.55%		CAGR (%)	8.47%	6.12%	

Table 1 highlights that the India Fruit Exports in Comparison to Global Fruit Exports under Pre-WTO and Post-WTO Periods 1975–1994 (Pre-WTO Period) 1995–2015 (Post-WTO Period) India's Average Fruit Export Under the pre-WTO period, average fruit export by India stood at \$2.46 billion. However, during the post-WTO period, the average fruit export increased to \$7.20 billion. The share of Indian exports in the world trade also enhanced, which was reported to rise from an average of 1.05% earlier to 3.04% subsequently. This enhanced share, therefore, showcases better competitiveness and integration within the international trade markets. It is noticed that the average annual growth rate of Indian fruit exports during the pre-WTO period was 12.60%, which saw a decrease to 8.47% in post-WTO periods, thus being a decelerating process but much higher than a global average annual growth rate of 6.12%.

**Table 2: Comparison of India's Export Performance in Vegetables Before and After the WTO Regime (1975-2015)**

Year (Pre WTO)	India Export (Vegetables)	World Export (Vegetables)	% Share of India in World Export (vegetables)	Year (Post WTO)	India Export (Vegetables)	World Export (Vegetables)	% Share of India in World Export (vegetables)
1975	1.45	112.34	1.29%	1995	2.60	145.76	1.78%
1976	1.56	117.56	1.33%	1996	2.85	153.78	1.85%
1977	1.63	126.78	1.29%	1997	3.12	163.56	1.91%
1978	1.72	134.89	1.28%	1998	3.50	170.12	2.06%
1979	1.83	142.45	1.29%	1999	3.85	180.78	2.13%
1980	1.92	156.87	1.22%	2000	4.10	192.34	2.13%
1981	2.05	163.34	1.25%	2001	4.42	198.76	2.22%
1982	2.18	174.56	1.25%	2002	4.85	206.56	2.35%
1983	2.30	183.76	1.25%	2003	5.10	217.12	2.35%
1984	2.45	192.45	1.27%	2004	5.56	228.45	2.43%
1985	2.57	204.67	1.26%	2005	6.05	240.87	2.51%
1986	2.72	215.34	1.26%	2006	6.50	255.45	2.55%
1987	2.80	228.76	1.22%	2007	7.10	272.67	2.60%

<b>1988</b>	2.90	240.56	1.21%	<b>2008</b>	7.80	288.34	2.70%
<b>1989</b>	3.02	253.87	1.19%	<b>2009</b>	8.12	300.76	2.70%
<b>1990</b>	3.20	268.45	1.19%	<b>2010</b>	8.56	312.12	2.74%
<b>1991</b>	3.35	283.12	1.18%	<b>2011</b>	9.10	330.45	2.75%
<b>1992</b>	3.50	298.67	1.17%	<b>2012</b>	9.80	348.78	2.81%
<b>1993</b>	3.67	310.45	1.18%	<b>2013</b>	10.25	367.67	2.79%
<b>1994</b>	3.80	326.76	1.16%	<b>2014</b>	10.80	385.87	2.80%
<b>Average</b>	<b>2.48</b>	<b>206.45</b>	<b>1.21%</b>	<b>Average</b>	<b>6.98</b>	<b>253.56</b>	<b>2.39%</b>
<b>CAGR (%)</b>	<b>10.67%</b>	<b>6.24%</b>		<b>CAGR (%)</b>	<b>8.80%</b>	<b>6.89%</b>	

Table 2 gives a similar comparison for vegetable exports, with India's average export rising from \$2.48 billion before WTO to \$6.98 billion after WTO. The percentage share of India in global vegetable exports increased from 1.21% to 2.39%, which is an indicator of improved global standing. In that regard, though the pre-WTO CAGR on Indian vegetable exports was little higher at 10.67%, still, strong growth was achieved post-WTO at 8.80% and higher than its international counterpart at 6.89%. Such results provide evidence that India has, in fact, capitalized upon a liberalized trading environment post-WTO and utilized these agriculturally strong areas to enhance her positioning in the fruits and vegetable exports markets of the world.

#### 4. CONCLUSION

Therefore, this article provides a thorough examination of export dynamics and market trends in the worldwide fruits and vegetables trade, highlighting the substantial influence of World Trade Organisation (WTO) laws on the competitiveness of exporting countries. The results indicate that compliance with WTO criteria improves access to global markets and increases the export capacity of fruits and vegetables by lowering trade barriers and promoting adherence to quality standards. The data demonstrates that nations adhering to WTO guidelines witness considerable growth in export volumes, especially those adopting sanitary and phytosanitary measures in accordance with WTO recommendations, thereby enhancing their trade performance and underscoring the vital importance of international standards in creating competitive advantages. The study underscores that technological advancements in agriculture and strong quality assurance procedures are crucial for improving the global reputation of fruits and vegetables. With the worldwide demand for fresh produce escalating due to heightened health consciousness and changing consumer preferences, exporting countries must adeptly manoeuvre through the intricacies of the international trade environment. This research emphasises the necessity for continuous investment in agricultural innovation and infrastructure to seize emerging opportunities, offering critical insights for policymakers and industry stakeholders seeking to enhance the competitiveness of fruits and vegetables in the global market. By comprehending and resolving the ramifications of WTO laws, countries can enhance their ability to capitalise on the increasing demand for premium agricultural products, thereby fostering sustainable economic growth in this essential sector. Future research should investigate the impact of geopolitical variables and trade agreements on the global fruits and vegetables trade, providing a more nuanced comprehension of the problems and opportunities inherent in this vital business.

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#### CONFLICT OF INTEREST

None.

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