

International Business Dynamics: The Influence of India's National Manufacturing Policy 2011 on Trade Relations and Global Supply Chains

¹Amitabh Gupta, ²Anurag Shakya

Institute of Business Management and Commerce, 1. 20211261_amitabh@manglayatan.edu.in
Mangalayatan University, Aligarh, Uttar Pradesh, India, Anurag.shakya@manglayatan.edu.in

How to cite this article: Amitabh Gupta, Anurag Shakya (2024) International Business Dynamics: The Influence of India's National Manufacturing Policy 2011 on Trade Relations and Global Supply Chains. *Library Progress International*, 44(3), 26354-26362

Abstract

The National Manufacturing Policy (NMP) 2011 marked a significant shift in India's approach to industrial development, with the primary aim of increasing the sector's contribution to GDP and boosting employment through enhanced manufacturing capabilities. "This paper explores the influence of the NMP 2011 on India's trade relations and its integration into global supply chains. The policy's focus on the establishment of National Investment and Manufacturing Zones (NIMZs), infrastructure development, and skill enhancement has played a pivotal role in shaping India's manufacturing ecosystem. These measures have not only improved India's global competitiveness but also attracted foreign direct investment (FDI), resulting in strengthened bilateral and multilateral trade relations. By promoting a conducive environment for large-scale manufacturing and incentivizing global companies to set up operations in India, the NMP has significantly impacted global supply chains, particularly in sectors such as automotive, electronics, and pharmaceuticals. This paper analyzes how the policy has enabled India to position itself as a crucial link in global supply chains, examining case studies from various industries. Additionally, it addresses the challenges that have emerged in the implementation of the policy, such as land acquisition issues, regulatory bottlenecks, and global economic fluctuations. While the NMP 2011 has laid the groundwork for future industrial growth, the paper also evaluates the need for further policy enhancements to ensure sustained growth in the face of evolving global dynamics. Ultimately, the study concludes that India's manufacturing policy has had a profound impact on the country's trade relations and global supply chain integration, making India a more competitive player in the international market. However, addressing ongoing challenges is crucial for maximizing the long-term benefits of the policy and positioning India as a global manufacturing hub.

Keywords: National Manufacturing Policy 2011, India, Global Supply Chains, Trade Relations, Foreign Direct Investment (FDI), Manufacturing Sector, Economic Development

Introduction

The National Manufacturing Policy (NMP) 2011 was introduced as a strategic initiative by the Government of India to transform the country's manufacturing sector and enhance its contribution to the economy. At the time, India's manufacturing sector faced several challenges, including inadequate infrastructure, regulatory bottlenecks, and insufficient investment, which hindered its ability to compete globally. Recognizing the need for a robust industrial base to drive economic growth, job creation, and technological advancement, the NMP 2011 aimed to increase the manufacturing sector's share in GDP to 25% by 2022, generating 100 million additional jobs. The policy emphasized the creation of National Investment and Manufacturing Zones (NIMZs), which were envisioned as integrated industrial townships with world-class infrastructure, aimed at attracting domestic and foreign investors. The NMP also focused on enhancing skill development, reducing the regulatory burden on businesses, and promoting innovation through public-private partnerships. India's ambitions under the NMP

aligned with global trends that were increasingly shifting towards regional supply chain diversification and manufacturing resilience, making India an attractive destination for global businesses.

The policy not only sought to boost domestic manufacturing capacity but also positioned India as a critical player in global supply chains, particularly in key sectors such as automobiles, electronics, pharmaceuticals, and textiles. This alignment with global manufacturing trends facilitated India's integration into international trade networks, resulting in enhanced trade relations with key economic partners. The introduction of the NMP coincided with significant global economic shifts, including the rise of China as a manufacturing powerhouse, and India's policy was designed to capitalize on the opportunities presented by shifting supply chains. However, the implementation of the NMP has not been without challenges. Issues such as land acquisition difficulties, regulatory delays, and inadequate infrastructure have impeded its full realization. Despite these hurdles, the NMP 2011 has had a notable impact on India's industrial growth and global supply chain integration. This paper aims to analyze the influence of NMP 2011 on India's trade relations and its evolving role in global supply chains, examining both the achievements and challenges that have shaped its outcomes, and offering insights into the future potential of India's manufacturing sector in the global economy.

Overview of International Business Dynamics

International business dynamics are constantly evolving due to globalization, technological advancements, and shifts in economic power. In today's interconnected world, businesses operate across borders, leveraging global supply chains, diverse markets, and cross-cultural collaboration. This dynamic environment is characterized by the interdependence of national economies, as countries trade goods, services, capital, and ideas, leading to economic integration. Factors such as trade agreements, geopolitical shifts, foreign direct investment (FDI), and regional alliances significantly influence international business strategies. Moreover, technological advancements, particularly in logistics, communications, and digital platforms, have transformed the way businesses operate globally, allowing even small firms to participate in international trade.

The rise of emerging markets has further shaped global business dynamics, with countries such as China, India, and Brazil becoming key players in global supply chains and trade". Additionally, the increasing focus on sustainability, ethical business practices, and social responsibility has started to shape international business policies, as companies seek to align with global standards and regulations. These dynamics also introduce challenges, including trade wars, regulatory compliance, and political instability, which can affect cross-border operations. The COVID-19 pandemic highlighted the fragility of global supply chains, prompting businesses to reassess risks and adopt strategies such as nearshoring and diversification. In this context, governments play a crucial role in shaping the international business landscape by implementing policies that encourage or restrict trade, attract FDI, and support local industries. For India, integrating into these global dynamics, particularly through strategic policies like the National Manufacturing Policy (NMP) 2011, has been essential in positioning itself as a major manufacturing hub and leveraging international trade relations for economic growth.

India's Economic Scenario Pre-2011

Before the introduction of the National Manufacturing Policy in 2011, India's economic landscape was characterized by rapid growth, yet it faced structural challenges that hindered its manufacturing potential. The Indian economy had been transitioning from a predominantly agrarian society to one driven by services, particularly information technology, which contributed significantly to GDP growth. "Despite this, the manufacturing sector's share in the economy remained stagnant, hovering around 16%, far below the global average. India struggled with an infrastructure deficit, high logistics costs, and a complex regulatory environment that deterred large-scale manufacturing investments. Additionally, labor market rigidities, inefficient land acquisition processes, and limited access to capital further constrained the sector's development. While India's economy benefitted from liberalization policies in the 1990s, which attracted foreign direct investment (FDI) and opened up new trade opportunities, the manufacturing sector lagged behind, unable to fully capitalize on these reforms. Many industries were small-scale and fragmented, lacking the scale necessary to compete globally. Furthermore, India's global trade was skewed towards service exports, with limited integration into global manufacturing supply chains. The global financial crisis of 2008 exposed vulnerabilities in India's economy, particularly its over-reliance on services and underdeveloped industrial base, necessitating a policy shift. Against this backdrop, the need to boost manufacturing was recognized as critical for long-term, sustainable economic

growth, employment generation, and poverty reduction. The National Manufacturing Policy (NMP) 2011 was conceived in this context as a strategic intervention aimed at addressing these challenges, providing a framework to revitalize India's industrial capabilities, improve its competitiveness, and foster greater integration into global supply chains, thus paving the way for India's rise as a manufacturing powerhouse.

Background and Significance of the National Manufacturing Policy (NMP) 2011

The National Manufacturing Policy (NMP) 2011 was a landmark policy initiative introduced by the Government of India with the primary objective of revitalizing the manufacturing sector, increasing its contribution to GDP, and generating employment. At the time of its introduction, India's manufacturing sector was underperforming compared to global standards, contributing only about 16% to the country's GDP. This was a matter of concern for policymakers, as manufacturing is crucial for achieving inclusive growth, employment generation, and poverty alleviation. The NMP was introduced to address these concerns and to enable India to become a global manufacturing hub. One of the key features of the policy was the establishment of National Investment and Manufacturing Zones (NIMZs), which were conceived as large industrial townships with world-class infrastructure, where industrial activity could flourish in a more business-friendly environment.

These zones were designed to attract both domestic and foreign investment by offering fiscal incentives, regulatory relaxations, and streamlined approval processes. In addition to creating NIMZs, the policy emphasized skill development to create a workforce that could meet the demands of modern manufacturing industries. The NMP also sought to foster innovation and technological advancement by encouraging public-private partnerships (PPP) and research and development (R&D) initiatives. Furthermore, the policy aimed to reduce the regulatory burden on businesses through initiatives aimed at simplifying labor laws, improving land acquisition processes, and reducing logistical bottlenecks. The significance of NMP 2011 lies in its role in positioning India as a competitive player in global supply chains and manufacturing networks. It also aligned with global trends of regional manufacturing hubs and supply chain diversification, offering India an opportunity to leverage its large labor pool and growing domestic market. Through this policy, India aimed to significantly enhance its trade relations and integrate more deeply into the global economy.

India's National Manufacturing Policy 2011

India's National Manufacturing Policy (NMP) 2011 was introduced as a comprehensive framework aimed at revitalizing the country's manufacturing sector and positioning India as a global manufacturing hub. The policy sought to increase the share of manufacturing in India's GDP from around 16% to 25% by 2022, with the ambitious goal of creating 100 million jobs in the process. The NMP was designed to address the structural deficiencies that had plagued the sector for years, such as inadequate infrastructure, complex regulations, and a lack of large-scale investments. One of the key elements of the policy was the establishment of National Investment and Manufacturing Zones (NIMZs), which were large industrial zones with world-class infrastructure, designed to attract both domestic and foreign investment. These zones were envisioned as self-sustaining industrial townships with necessary utilities, logistics, and social infrastructure, making it easier for manufacturers to set up and operate large-scale production facilities. The policy also emphasized reducing the regulatory burden on businesses through reforms in labor laws, faster clearances, and streamlined approval processes, thereby improving the ease of doing business in India.

In addition to infrastructure and regulatory reforms, the NMP placed significant emphasis on skill development, recognizing that a skilled workforce is crucial for the growth of the manufacturing sector". The policy aimed to bridge the gap between the demand and supply of skilled labor by creating specialized training institutes and vocational education programs aligned with the needs of modern industries. Furthermore, the NMP encouraged the promotion of green technologies and sustainable practices in manufacturing, reflecting a growing global emphasis on environmental sustainability. Public-private partnerships (PPP) were a core strategy under the policy, intended to foster innovation and technological advancement by facilitating collaboration between government bodies, private enterprises, and academic institutions. "The NMP also aimed to attract foreign direct investment (FDI) by providing fiscal incentives and a more conducive business environment, thereby integrating India more deeply into global supply chains. Key sectors such as automobiles, electronics, textiles, and pharmaceuticals were identified as focus areas under the policy, given their potential for growth and global competitiveness. Although the NMP laid a strong foundation for the growth of the manufacturing sector, challenges such as land acquisition

issues, infrastructure bottlenecks, and regulatory hurdles continued to affect its full implementation. Nonetheless, the policy marked a significant step towards enhancing India's manufacturing capabilities and increasing its presence in international trade and global supply chains.

Impact on India's Domestic and Global Trade Relations

NMP's Influence on India's Manufacturing Sector

The National Manufacturing Policy (NMP) of 2011 has had a notable impact on India's manufacturing sector, especially through the establishment of National Investment and Manufacturing Zones (NIMZs), which aimed to boost the sector's contribution to GDP and create 100 million jobs by 2022. By introducing initiatives like public-private partnerships (PPP) and promoting sustainable practices, the policy helped attract investment, particularly in sectors like automotive, electronics, and textiles. Significant growth was observed in these areas due to the availability of world-class infrastructure and simplified regulatory processes in the NIMZs.

The policy's emphasis on skill development also contributed to building a more capable workforce, addressing a historical weakness of low labor productivity in the manufacturing sector. This focus on upskilling helped align India's labor force with the demands of modern industries. However, challenges such as infrastructure bottlenecks, especially in transport and power, and land acquisition delays have hindered the full realization of NMP's goals. Statistically, manufacturing's share in GDP was projected to increase to 25% by 2022, but it remained lower due to slower-than-expected reforms and external challenges such as cheap imports and rising input costs. Employment in the sector has gradually increased, with over 6 million new jobs created between 2011 and 2020. However, further growth will require addressing lingering challenges in policy implementation and infrastructure improvements.

Growth in Exports and Imports Post-2011

Following the implementation of the National Manufacturing Policy (NMP) in 2011, India's export and import trends experienced notable shifts. The policy, which focused on building robust infrastructure and simplifying regulatory processes, led to a surge in India's manufacturing capacity, fostering higher exports. By 2011-12, India's merchandise exports stood at \$448.29 billion, and they continued to grow, reaching \$538.08 billion by 2018-19. This growth was driven by key sectors such as automobiles, electronics, pharmaceuticals, and textiles, where India saw an increasing global presence. For example, India became one of the largest exporters of automobiles in Asia, and the export of electronic goods grew by 23.64% between 2022-23 and 2023-24. On the import side, while the NMP helped reduce dependency on imports for finished goods, it increased imports of raw materials and capital goods, essential for boosting domestic manufacturing. Imports grew from \$567.55 billion in 2011-12 to \$640.14 billion by 2018-19. However, this trend also saw challenges from global economic fluctuations and protectionist measures, which impacted overall trade volumes. Despite this, the NMP played a key role in improving India's trade competitiveness by boosting export capacity and reducing reliance on imported finished products.

Review of literature

Authors	Study Title	Focus/Key Points
Culot et al., 2020	Behind the definition of Industry 4.0: Analysis and open questions	Industry 4.0 researchers face challenges in generating new ideas due to lack of consensus, interchangeable terms like 'smart manufacturing' and 'digital transformation'.
Dau et al., 2020	The impact of market based institutional reforms on firm strategy and performance: Review and extension	Market-based institutional reforms have increased trade and investment but need further research on systemic ramifications.
De Marchi et al., 2020	Nurturing International Business research through Global Value Chains literature: A review and discussion of future research opportunities	Literature assessment on global value chains, highlighting four GVC model pillars for future collaboration and research.
Kahiya, 2020	Context in international business: Entrepreneurial internationalization from a distant small open economy	Emphasizes the importance of context in the internationalisation of New Zealand firms in global business operations.

Leigh et al., 2020	Robots, skill demand and manufacturing in US regional labour markets	Examines New Zealand's internationalisation challenges and local context's impact on methods and subjects.
Machado et al., 2020	Sustainable manufacturing in Industry 4.0: an emerging research agenda	Highlights the need for sustainable manufacturing and context in multinational business operations.
McWilliam et al., 2020	Global value chain governance: Intersections with international business	Reviews GVC governance literature to organize future research in International Business.
Hotta et al., 2021	Expansion of Policy Domain of Sustainable Consumption and Production (SCP): Challenges and Opportunities for Policy Design	SCP policy has gained momentum since the Paris Agreement, focusing on decarbonization and plastic-free societies.
James & Ebin, 2021	Modular Production Systems in Automobile Industry: A Conceptual Review	Automobile industry's role in economic growth through modular production systems and technological advancement.
Milsom et al., 2021	Corporate power and the international trade regime preventing progressive policy action on non-communicable diseases: a realist review	Investigates non-decisions in non-communicable diseases policy by THCCs and suggests overcoming these power dynamics.
Moshood et al., 2021	Expanding Policy for Biodegradable Plastic Products and Market Dynamics of Bio-Based Plastics: Challenges and Opportunities	Bio-plastics role in renewable resource utilization and sustainable development with political interest and economic projections.
Wei et al., 2021	A strategic framework for commercialization of carbon capture, geological utilization, and storage technology in China	Analyses the status and challenges of carbon capture utilization and storage (CCUS) in China, suggesting commercialization strategies.
Patterson et al., 2022	The current state of the industrial energy assessment and its impacts on the manufacturing industry	US manufacturing faces energy challenges, influenced by renewable energy and cost savings through the DOE program.
Andersen, 2023	Challenges faced by the USA in matching Germany in advanced manufacturing for green growth	Compares US and Germany's advanced manufacturing strategies, highlighting Germany's technological leadership.
Naseemullah, 2023	The political economy of national development: A research agenda after neoliberal reform	Revisits Cardoso and Faletto's national development model analysis, focusing on governmental and business dynamics.

Methodology

The methodology for this study involved collecting quantitative data from a diverse group of respondents, representing different age groups, gender, industry sectors, and levels of experience. A structured questionnaire was used to gather insights into perceptions of the international business environment in India before 2011, focusing on aspects such as ease of doing business, access to markets, government support, manufacturing competitiveness, and infrastructure support for export activities. The survey was administered to 400 participants across various industry sectors, including manufacturing, technology, retail, and transportation, ensuring a broad representation of opinions. The data was analyzed using frequency distributions and percentages to assess overall perceptions and trends.

Data analysis

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 25	104	26.0	26.0	26.0
	25-34	52	13.0	13.0	39.0
	35-44	52	13.0	13.0	52.0
	45-54	54	13.5	13.5	65.5
	55-64	82	20.5	20.5	86.0
	65 and above	56	14.0	14.0	100.0
Gender					
Valid	Male	292	73.0	73.0	73.0
	Female	108	27.0	27.0	100.0
Industry Sector					
Valid	Manufacturing	130	32.5	32.5	32.5
	Technology	52	13.0	13.0	45.5
	Retail	82	20.5	20.5	66.0
	Transportation	55	13.8	13.8	79.8
	Other	81	20.3	20.3	100.0
Years of Experience in Industry					
Valid	Less than 1 year	52	13.0	13.0	13.0
	1-3 years	106	26.5	26.5	39.5
	4-6 years	55	13.8	13.8	53.3
	7-10 years	81	20.3	20.3	73.5
	More than 10 years	106	26.5	26.5	100.0

The demographic data presents a diverse distribution across age, gender, industry sector, and years of experience in the industry. In terms of age, the majority of respondents fall under the "Under 25" group, representing 26% of the sample, followed by those aged 55-64 at 20.5%, while the smallest group is "35-44" and "25-34" each with 13%. Gender distribution is skewed towards males, who constitute 73% of the respondents, with females accounting for the remaining 27%. Regarding industry sectors, manufacturing is the dominant sector, engaging 32.5% of respondents, followed by retail (20.5%), and technology (13%). The transportation sector comprises 13.8% of the sample, while 20.3% fall into the "Other" category. As for years of experience, 26.5% of respondents have between 1-3 years and more than 10 years of experience, indicating a balanced representation of experience levels, while 13% are relatively new to the industry with less than 1 year of experience. "Overall, the data reflects a broad cross-section of participants, offering insights into diverse perspectives across multiple demographic factors.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The ease of doing business internationally was satisfactory before 2011.	69	46	69	159	57
Access to international markets was facilitated adequately before 2011.	69	82	69	144	36
Government support for international business was sufficient before 2011.	36	77	17	184	86

The competitiveness of Indian manufacturing was strong before 2011.	41	77	69	138	75
Infrastructure support for export activities was robust before 2011.	69	46	69	159	57

The data presented provides an overview of perceptions regarding the business environment in India before 2011. It shows that a significant portion of respondents had varied opinions on key aspects of international business operations, such as ease of doing business, access to markets, government support, manufacturing competitiveness, and export infrastructure. For example, 39.8% of respondents agreed that doing business internationally was satisfactory before 2011, though 17.3% strongly disagreed. Similarly, while 36% agreed that access to international markets was adequately facilitated, 20.5% disagreed. Government support for international business saw the highest approval, with 46% agreeing and 21.5% strongly agreeing. In terms of manufacturing competitiveness, 34.5% agreed that Indian manufacturing was strong before 2011, although 19.3% disagreed. Lastly, perceptions of infrastructure support for export activities were relatively positive, with 39.8% agreeing it was robust, while 17.3% strongly disagreed”. Overall, the data suggests a mixed but slightly favorable perception of India's international business environment prior to 2011, with notable areas for improvement in access to markets and infrastructure.

Bilateral and Multilateral Trade Relations

The National Manufacturing Policy (NMP) 2011 had a measurable impact on India’s bilateral and multilateral trade relations by enhancing its manufacturing capabilities. This boost in manufacturing resulted in increased exports, particularly to key trading partners such as the United States, Japan, and Germany. For instance, bilateral trade with the United States surged to over \$119 billion in 2021, up from \$57.8 billion in 2011, largely driven by increased exports of pharmaceuticals, textiles, and engineering goods. Similarly, Japan’s foreign direct investment (FDI) in India rose significantly, from \$1.8 billion in 2011 to \$4.7 billion in 2020, largely supporting India's automotive and electronics manufacturing

On the multilateral front, India's participation in regional trade agreements like the ASEAN-India Free Trade Area (AIFTA) led to a steady increase in trade volumes. India’s exports to ASEAN countries grew from \$25.7 billion in 2011-12 to \$39.2 billion by 2020. In the context of multilateral organizations like the WTO, India’s active involvement in advocating for fair trade practices was strengthened by the increased competitiveness of its domestic manufacturing sector, which benefited from the NMP’s reforms.

Despite these successes, challenges such as rising protectionism and regulatory hurdles in global markets, particularly post-2018, posed obstacles to further expanding trade relations.

Influence on Global Supply Chains

The National Manufacturing Policy (NMP) 2011 significantly enhanced India's integration into global supply chains by addressing long-standing challenges such as fragmented manufacturing ecosystems, poor infrastructure, and complex regulations. One of the key strategies was the establishment of National Investment and Manufacturing Zones (NIMZs), which provided world-class infrastructure and regulatory simplifications. This helped attract foreign companies and integrate Indian manufacturers into global production networks, particularly in sectors like automobiles, electronics, and pharmaceuticals, which saw robust growth. For instance, the export intensity in sectors like pharmaceuticals grew steadily, reaching about 40% of sales by 2019, underscoring India's increasing role in global value chains.

Additionally, infrastructure development, such as improvements in transport and logistics, helped reduce supply chain costs. For example, dedicated freight corridors and the expansion of highways and ports enabled faster and more cost-effective movement of goods, making India a more attractive destination for global companies seeking to diversify their supply chains away from hubs like China. These infrastructure improvements were critical in positioning India as a vital player in just-in-time production networks, a key feature of modern global supply chains.

The policy's emphasis on skill development and technological innovation, through public-private partnerships, further boosted India's manufacturing capabilities, allowing the country to meet global production standards. By 2021, India had become a key outsourcing destination for manufacturing, particularly for industries like

automotive and electronics assembly, benefiting from its large, skilled labor force and favorable geographic position in the Asia-Pacific region.

While the NMP facilitated deeper integration into global supply chains, challenges such as outdated infrastructure in rural areas and regulatory bottlenecks persisted, limiting the full potential of India's manufacturing sector. Nonetheless, the NMP laid a solid foundation for India's emergence as a critical player in global supply chains, especially for high-value industries like electronics and pharmaceuticals.

Examples from Key Sectors (Automobile, Pharmaceuticals, Electronics, etc.)

The influence of India's National Manufacturing Policy (NMP) 2011 is particularly evident in key sectors such as automobiles, pharmaceuticals, and electronics, where it has driven significant growth and integration into global supply chains. In the automobile sector, companies like Ford, Hyundai, and Maruti Suzuki leveraged the benefits of NIMZs to set up large-scale manufacturing plants, making India a major hub for automobile production and exports. India's automotive exports surged post-2011, especially in the small car segment, with Indian-produced vehicles being exported to markets in Europe, Africa, and Latin America. The policy's emphasis on infrastructure development and labor skill enhancement further bolstered the sector's global competitiveness. In the pharmaceutical industry, India solidified its position as the "pharmacy of the world," with the NMP facilitating the expansion of manufacturing capabilities for generic drugs and active pharmaceutical ingredients (APIs). Indian pharmaceutical companies like Sun Pharma, Dr. Reddy's Laboratories, and Cipla benefitted from increased FDI, leading to expanded production and export to markets such as the United States and Europe. In the electronics sector, India's rise as a manufacturing hub was driven by companies like Samsung, Foxconn, and Xiaomi, which set up manufacturing and assembly units to cater to both domestic and international markets". The NMP's incentives and infrastructure improvements made it easier for these companies to produce electronics locally, reducing dependency on imports and enhancing India's role in global electronics supply chains. These examples illustrate how the NMP transformed India's manufacturing landscape, enabling key sectors to integrate more deeply into global supply chains, boost exports, and attract significant foreign investment.

Conclusion

In conclusion, the National Manufacturing Policy 2011 significantly shaped India's manufacturing landscape, improving its integration into global supply chains and enhancing trade relations. The policy's emphasis on infrastructure development, regulatory reforms, and skill enhancement facilitated growth in key sectors like automobiles, pharmaceuticals, and electronics. While the policy addressed several structural challenges, issues such as land acquisition and regulatory bottlenecks persisted, preventing the full realization of its goals. Nevertheless, the NMP 2011 positioned India as a competitive global manufacturing hub, and continued efforts to address these challenges will be crucial for sustained growth and global market competitiveness.

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