INDIA'S MANUFACTURING TRADE

A Sub-national Competitiveness Analysis

Akshaya Balaji Riddhimaa Gupta Ammu George

Lee Kuan Yew School of Public Policy
Asia Competitiveness Institute

NUS National University of Singapore

India's Manufacturing Trade: A Sub-national Competitiveness Analysis

If you would like to request for an e-copy of the whole book, please drop us an email at **aci@nus.edu.sg**

Published by

Asia Competitiveness Institute, Lee Kuan Yew School of Public Policy,
National University of Singapore

469C Bukit Timah Road, Wing A, Level 3, Oei Tiong Ham Building
Singapore 259772

India's Manufacturing Trade: A Sub-national Competitiveness Analysis

ISBN 978-981-94-2805-2 (PDF)

Desk Editor: DW HQ Pte Ltd
Email: hello@dwhq.com.sg

About ACI

The Asia Competitiveness Institute (ACI) was established in August 2006 as a Research Centre at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS). It aims to build the intellectual leadership and network for understanding and developing competitiveness in the Asia region. ACI seeks to contribute to the enhancement of inclusive growth, living standards, and institutional governance through competitiveness research on sub-national economies in Asia. It identifies mitigating issues and challenges for potential public policy interventions through close collaboration with regional governments, business corporations, policy think-tanks, and academics. ACI's three key research pillars include (I) Sub-national economies level competitiveness analysis; (II) The development of digital economy and its implications in 16 Asia economies; and (III) Singapore's long-term growth strategies and public policy analysis.

ACI's value propositions may be encapsulated in its acronym:
Analytical inputs to initiate policies for policy-makers and business leaders in Asia
Capacity building to enable others through improvement in productivity and efficiency
Intellectual leadership to create pragmatic models of competitiveness and inclusive growth

Vision and Mission

- ACI's over-arching vision is to build up its research credibility with policy impact, contributing as a professional, world-class think-tank.
- ACI's mission is to establish our niche as a leading policy think-tank by identifying development trends, opportunities, and challenges among Asian economies and business corporations.
- ACI endeavours to articulate sound recommendations, promote discussion, and shape research agenda in the arena of public policy amongst Asian governments.
- ACI undertakes evidence-based analysis of public policy issues and decisions, in order to provide assessment of their effectiveness as well as economic and societal impact.

Preface

The year 2024 saw significant restructuring in global trade flows, driven not only by economic factors but also by geopolitical forces. The world's vocabulary expanded to include terms like reshoring, near-shoring, and friend-shoring. Against this backdrop of shifting supply chains and growing skepticism over the world's manufacturing dependence on China, more countries — especially those in the Global South — began preparing to become new manufacturing powerhouses. This led to a new wave of industrial policies taking centrestage, promoting domestic production and self-reliance through financial incentives, infrastructure investment, and ease-of-doing business reforms. The number of global industrial-policy interventions has surged, with their number more than doubling from 2018 to 2022 and reaching a peak of 2,500 in 2023.

Over the past decade, India's economic growth strategy has mirrored the global trends. Initiatives like the Production-Linked Incentive Scheme (PLI) under the broader Make in India framework had been introduced to drive domestic and foreign investments, develop manufacturing infrastructure, foster skills development, and streamline business processes. Since 2017, under 3 percent of global manufacturing is done in India, compared to around 24 percent in China. Beyond external vagaries, the push for broader industrialisation is grounded in its potential to boost productivity, spur technological progress, and generate employment opportunities.

The value addition of the research undertaken by Asia Competitiveness Institute (ACI) on the sub-national level competitiveness of India lies in its exclusive focus on heterogeneity across the 36 sub-national economies. This year's edition reveals a measure of Sub-national Trade Competitiveness, which sheds light on which sub-national economies are driving India's global competitiveness across all manufacturing industries, while identifying industry-specific manufacturing clusters. Besides, it also offers a case study on two coastal states, which, despite their natural advantages, face unique challenges in growing their industrial base. Policymakers can use the rich insights offered by this book to craft holistic, relevant, and well-tailored policies.

I am confident that this book will enrich the existing literature on India's competitiveness and provide a holistic understanding of the sub-national level diversity across the country.

Professor Paul Cheung
Director, Asia Competitiveness Institute
Lee Kuan Yew School of Public Policy
National University of Singapore

Contents

Executive Summary

The convergence of global disruptions — ranging from the US-China trade war and the COVID-19 pandemic to geopolitical conflicts like Russia's invasion of Ukraine — has exposed the vulnerabilities of global supply chains, compelling nations to reassess economic dependencies. This shift has fuelled a drive toward economic self-sufficiency and diversification of business interests, creating opportunities for emerging economies such as India to attract investment through targeted financial incentives and structural reforms.

Many onlookers have dubbed this as 'India's manufacturing moment'– India is well-positioned to capitalise on supply-chain diversification with its scale, skilled workforce, and large consumer base. Proactive government incentives for manufacturing like the Production-Linked Incentive (PLI) Scheme with an impressive outlay of ₹1.97 lakh crore (over USD 24 billion) are being rolled out to strengthen local manufacturers and encourage global companies to set up operations. With a focus on industry-enabling structural and economic reforms, India is poised to become a global manufacturing hub.

India's macroeconomic performance was modest in 2024. Gross Domestic Product (GDP) growth slowed to 7 percent, down from 8.2 percent in the previous year. While inflation rates declined in 2024, food prices rose, weakening urban purchasing power. The fiscal balance and Current Account Deficit (CAD) showed further signs of improvement in 2024-25. Finally, shifting to India's Foreign Direct Investment (FDI) inflows in 2023, there was a steep decline due to higher repatriation of capital and Indian firms' investments abroad.

In this book, *India's Manufacturing Trade: A Sub-national Competitiveness Analysis*, we undertake a comprehensive competitiveness analysis of the 36 sub-national economies and the five regions of India. Our results show that Maharashtra has been ranked the most competitive economy for the twelfth consecutive year due to its strengths in openness to trade and services, financial deepening, physical infrastructure, and attractiveness to foreign investors. However, we find that the state has potential to improve in technological infrastructure, productivity, and in the provision of reasonable living standards for its people. Next, Jharkhand ranks the lowest in sub-national competitiveness largely due to limited financial deepening and subpar technological infrastructure, along with a weak performance in education and social stability indicators. Notwithstanding this, the state records commendable scores in productivity, attractiveness to foreign investors, openness to trade and services, and physical infrastructure.

Our analysis shows that states that belong to the Southern and Western regions generally outperform the Eastern and Northeastern regions. The Western region leads overall, driven by strong merchandise goods exports and cargo handling capacity. However, the state must address gaps in public health spending, hospital adequacy, and education funding. In contrast, the Eastern region ranks the lowest, hindered by limited power availability, low FDI, and high student-teacher ratios at both primary and tertiary levels. Nevertheless, it demonstrates strengths in secondary industry value-add, education expenditure, and the presence of educational institutions.

This year's book explores trade competitiveness at the sub-national level. First, we develop a Sub-national Trade Competitiveness (STC) measure that accounts for both imports and exports, scaled by employment statistics, to identify the most trade-competitive sub-national economies. All data used cover the time period from 2010 to 2022. Trade data is sourced from the Base pour l'Analyse du Commerce International (BACI) version of UN Comtrade, compiled by the Centre d'Études Prospectives et d'Informations Internationales (CEPII). Employment figures are obtained from the Annual Survey of Industries (ASI), an annual survey of manufacturing units conducted by the Ministry of Statistics and Programme Implementation (MoSPI), Government of India. For a more sector-specific analysis, we determine the top five industries where India has a Revealed Comparative Advantage (RCA). Finally, we use the STC measure to identify the states that are most competitive in these industries.

Our results show that Tamil Nadu scores the highest in trade competitiveness, Telangana follows closely, followed by Gujarat's meteoric rise in 2016, leaving behind Maharashtra and Harayana, which have occupied the fourth and fifth positions respectively since 2016.

Regarding the worst performing economies, Odisha shows the lowest trade competitiveness, followed by Chhattisgarh, Jharkhand, and Kerala. Furthermore, many sub-national economies exhibit significant variation over the years, reflecting the dynamic nature of competitiveness.

India's Revealed Comparative Advantage reveals that pharmaceuticals, textiles, leather products, rubber and plastic products, and motor vehicle industries drive India's overall trade competitiveness. Tamil Nadu, Gujarat, and Maharashtra are the top performers of three or more of these industries. While certain states do not fare well in overall trade competitiveness, they possess strengths in specific industries, such as West Bengal for textiles and Uttar Pradesh for leather.

The chapter concludes with a detailed case study on an interesting finding - while most frontrunners are coastal states, a finding that agrees with the large volume of literature that positively correlates oceanic geography to higher competitiveness, we find that two coastal states, Odisha and Kerala, do not perform at par with their coastal counterparts in trade competitiveness. In Kerala's case, the poor industrial base and manufacturing backwardness can be attributed to the presence of powerful labour unions, lack of industrial diversification, infrastructural bottlenecks, fiscal imprudence, and lacklustre policy support. The coastal state of Odisha, despite its rich mineral reserves, remains industrially backward due to counterproductive national policies like the Freight Equalisation Scheme (FES) and government mismanagement in land acquisition within a tribal agrarian ecosystem. Coupled with high levels of insurgent activity, the state has struggled to develop a high value-added industrial network downstream.

Acknowledgements

Since 2000, the Asia Competitiveness Institute (ACI) at the Lee Kuan Yew School of Public Policy (LKYSPP), National University of Singapore (NUS) has been conducting the annual analysis of competitiveness of India at the sub-national and regional levels. This year's publication titled *"India's Manufacturing Trade: A Sub-national Competitiveness Analysis"* was authored and edited by Akshaya Balaji and Riddhimaa Gupta, with Dr. Ammu George as an additional editor.

This book is the latest addition to our studies on regional and sub-national competitiveness. Our study accounts for India's regional heterogeneity in assessing the country's strengths and weaknesses. We do this by considering relevant factors that support the sustained development of the regions and sub-national economies over time. Our assessment at the sub-national level offers itself as a guide to creating informed and targeted policies. From employing Shapely Weights to drive robustness into our study to running what-if simulations that consider likely scenarios of improvements in a sub-national economy that is languishing, our analysis is holistic and comprehensive. In this edition, we also present a measure of Sub-national Trade Competitiveness with a detailed sectoral breakdown and case study of outlying underperformers.

This book would not have come to fruition without the constant support and endless dedication of our research and administrative colleagues. We extend our gratitude to ACI Director Professor Paul Cheung for his valuable contributions towards this publication. Further, we take this opportunity to thank the administrative team - Cai Jiao Tracy, Po Lai Yin Lyne, Nur Atiqah Binte Rahmat and Dewi Jelina Ayu Binte Johari, and the research staff - Dr Banh Thi Hang, Dr Liu Jingting, Dr Yi Xin, Dr. Liang Zixuan, Dr. Zhang Yuqing, Ng Wee Yang, Tan Kway Guan, Lee Juan Xin Brendan, Lian Huiyuan, Guo Meiling, Huang Yijia, Lu Miranda, Lu Weilin, Wong Ka Ying Christy, Xu Ni Scarlet, and Yan Bowen.

We also express our appreciation for the encouragement provided by Professor Danny Quah (Dean), Professor Kanti Prasad Bajpai (Vice Dean - Research and Development), Professor Suzaina Kadir (Vice Dean - Academic Affairs), Francesco Mancini (Vice Dean - Executive Education), Andrew Francis-Tan (Assistant Dean - Student Affairs), Naniek Yuliati (Deputy Director, Head of Administration) and other colleagues at LKYSPP, NUS for bringing this project to life.

List of Figures and Tables

Figures

Tables

Chapter 2

List of Abbreviations

ABR	Average Billing Rate
ACI	Asia Competitiveness Institute
ADB	Asian Development Bank
ASI	Annual Survey of Industries
ASEAN	Association of Southeast Asian Nations
BACI	Base pour l'Analyse du Commerce International
BBC	British Broadcasting Corporation
BE	Budget Estimates
BEA	Bureau of Economic Analysis
BRAP	Business Reform Action Plan
CAG	Comptroller and Auditor General
CAGR	Compound Annual Growth Rate
CAD	Current Account Deficit
CEPII	Centre d'Études Prospectives et d'Informations Internationales
CFPI	Consumer Food Price Index
CII	Confederation of Indian Industry
CMIE	Centre for Monitoring Indian Economy
CPI	Consumer Price Index
CPI-M	Communist Party of India - Marxist
DPIIT	Department for Promotion of Industry and Internal Trade
EMDA	Export Market Development Assistance Scheme
EMDE	Emerging Markets and Developing Economies
FDI	Foreign Direct Investment
FBMC	Financial, Businesses and Manpower Conditions
FES	Freight Equalisation Scheme
FRAND	Fair, Reasonable and Non-Discriminatory
FY	Fiscal Year
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GER	Gross Enrollment Ratio
GFCE	Government Final Consumption Expenditure
GFCF	Gross Fixed Capital Formation
GIS	Government and Institutional Setting
GRDP	Gross Regional Domestic Product
GSDP	Gross State Domestic Product
GST	Goods and Services Tax
GTA	Global Trade Alert
GVA	Gross Value Added
GVCs	Global Value Chains
HS	Harmonised System

IBEF	India Brand Equity Foundation
ICAT	International Center for Automotive Technology
IIP	Index of Industrial Production
IMD	International Institute for Management Development
IMF	International Monetary Fund
IQR	Interquartile Range
ISAPM	Incentive Scheme for Acquisition of Plant & Machinery
ISIC-Rev 4	International Standard Industrial Classification Revision 4
IT/ITeS	Information Technology/Information Technology-enabled Services
ITIs	Industrial Training Institutes
KIIFB	Kerala Infrastructure Investment Fund Board
KNIC	Kalinga Nagar Industrial Complex
LKYSPP	Lee Kuan Yew School of Public Policy
LWE	Left-Wing Extremism
MLC	Mega Leather Cluster
MoSPI	Ministry of Statistics and Programme Implementation
MPR	Monetary Policy Report
MS	Macroeconomic Stability
MW	Mega-watt
NCR	National Capital Region
NIC	National Industrial Classification
NITI	National Institution for Transforming India
NSO	National Statistical Office
NUS	National University of Singapore
OEMs	Original Equipment Manufacturers
PFCE	Private Final Consumption Expenditure
PLI	Production-Linked Incentives
PSUs	Public Sector Undertakings
PV	Photovoltaic
QLID	Quality of Life and Infrastructure Development
RBI	Reserve Bank of India
RCA	Revealed Comparative Advantage
RE	Revised Estimates
rGVA	regional Gross Value Added
SCS	Special Category Status
SGST	State Goods and Services Tax
START	Study of Terrorism and Responses to Terrorism
STC	Sub-national Trade Competitiveness
UN	United Nations
UNDP	United Nations Development Programme
UK	United Kingdom
US	United States
WEF	World Economic Forum

WEO	World Economic Outlook
WITS	World Integrated Trade Solution
WCY	World Competitiveness Yearbook

Chapter 1
Introduction

Akshaya Balaji and Riddhimaa Gupta

1.1 Introduction and Motivation

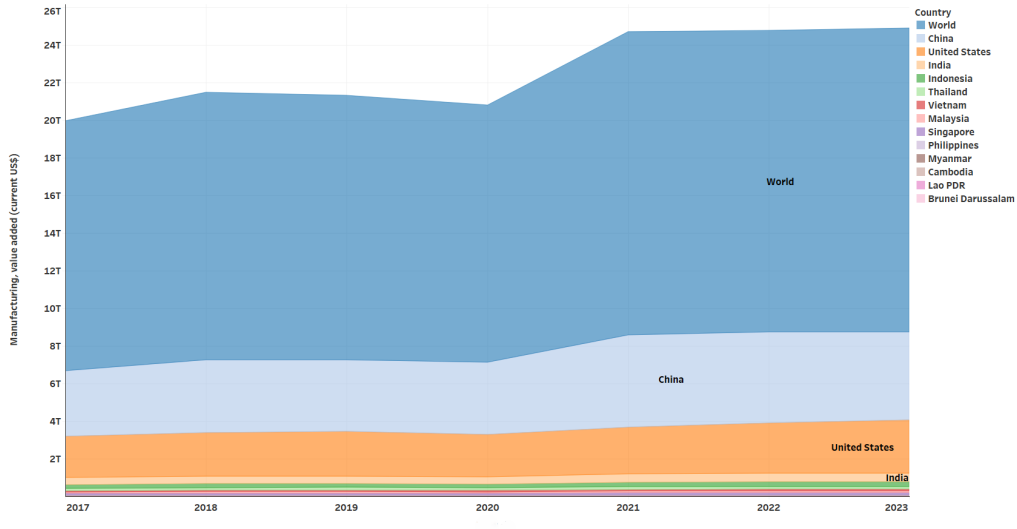
The transition of Global Value Chains (GVCs) has been a crucial subject of interest for debate and discussion worldwide. This shift finds its roots in three key developments: advancements in frontier technologies, climate change and the rising need to be environmentally cautious in trade, and the changing nature of globalisation in a fragmented world marred by geopolitical upheaval (WEF and Kearney, 2021). This has resulted in countries attempting to enhance self-reliance through industrial policies. Additionally, near-shoring and friend-shoring strategies dictate the flow of production and investments away from geopolitical enemies and toward trusted allies to protect one's country from unfavourable shocks (see Chapter 4).

Perceiving opportunity amid such chaos and changing trade patterns, India has made clear its objective of integrating deeper into GVCs by becoming a global manufacturing hub. However, past attempts to capitalise on the country's abundant skilled and low-cost workforce and a considerable domestic market with high consumer demand were limited and mostly unsuccessful. This can be seen in India's low share of the global manufacturing value-add (see Figure 1.1). Under 3 percent of global manufacturing is done in India, compared to around 24 percent in China. The government intends to raise this share to 5 percent by 2030 and 10 percent by 2047 (Dugal and Ahmed, 2024).

Investors, economists, industry experts, and trade unionists posit that India's restrictive labour laws, complexities around land acquisition and rigid tariffs impede India's pursuits in manufacturing. The Economic Survey of India 2024-25 calls for deregulation and enterprise-conducive reforms to boost industrialisation. Indeed, states and federal territories are expected to finalise the much-awaited Indian Labour Code rules by March 2025 and set it on track for implementation in 2025 to simplify compliance and streamline labour and industrial laws (Rao, 2024).[1] Another noteworthy move was announced by

[1]The four labour codes are: Code on Wages, 2019; Occupational Safety, Health and Working Conditions Code, 2020; Industrial Relations Code, 2020; Code on Social Security, 2020. For more information and official documentation, please refer to the website of the Ministry of Labour & Employment - Government of India

Figure 1.1: Manufacturing, value added (current USD) by select economies



Note: Values for the United States in 2022 and 2023 averaged across quarters within each year based on data from the US Bureau of Economic Analysis (BEA).
Source: Asia Competitiveness Institute (ACI) based on data from the World Bank.

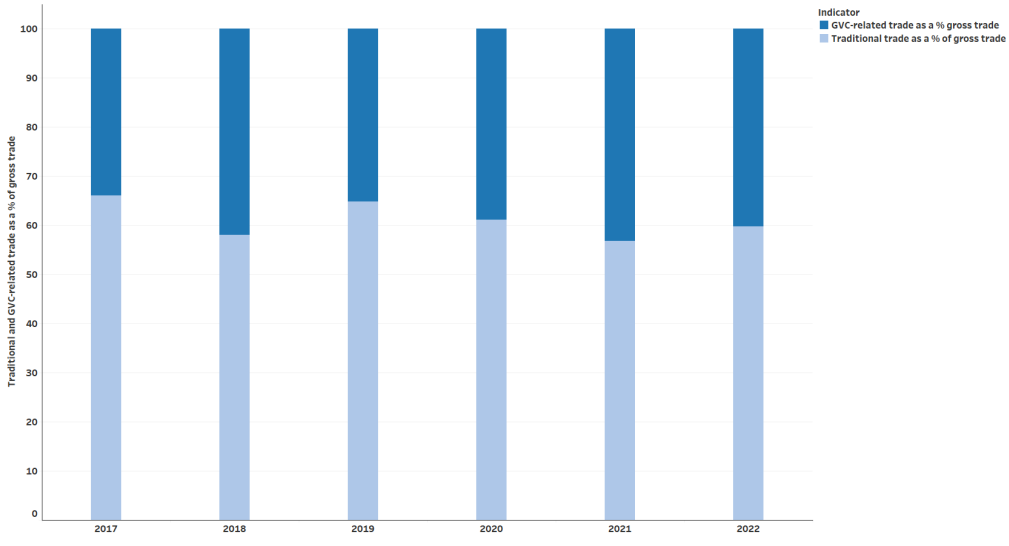
Finance Minister Nirmala Sitharaman in the 2025-26 Union Budget speech to rationalise the cumbersome tariff structure that exacerbated the difficulties producers faced in India. Seven customs tariff rates are slated to be eliminated for industrial goods, leaving only eight tariff rates, including the zero rate. This is expected to boost domestic manufacturing and facilitate greater exports and trade (Ministry of Finance, 2025).

Such reforms are welcome, and more are needed to enhance India's GVC participation. This can contribute to the country's intertwined goals of creating jobs, raising manufacturing's share in the Gross Domestic Product (GDP), increasing exports, and achieving faster, inclusive growth (Mitra, Sen Gupta, and Sanganeria, 2020). As of 2018, GVC exports comprise 70 percent of goods and services exports worldwide. This implies that if India wants to be a global player in production and exports, it must uplift its GVC-related exports, and the only way to do this is to improve its GVC participation. Literature documents that rising GVC participation is associated with an upswing in manufacturing's share in the GDP, due to productivity gains accruing to participating firms (Criscuolo and Timmis, 2017; Stöllinger, 2018; Topalova and Khandelwal, 2011). Figure 1.2 shows the shares of traditional and GVC-related trade in India's overall trade from 2017 to 2022.[2] In 2021 and 2022, the share of GVC-related trade is at least 40 percent of gross trade, a higher proportion than in previous years. Nevertheless, India's GVC export growth lags behind most Asian and East Asian economies like Vietnam, Cambodia, Thailand, Bangladesh, South Korea, and the Philippines, and GVC participation is lower

[2]GVC-related exports is the sum of backward and forward participation exports

than the average for emerging economies (which is close to 50 percent) (India Briefing, n.d.; Mitra, Sen Gupta, and Sanganeria, 2020).

Figure 1.2: India's Global Value Chain and Traditional Exports worldwide



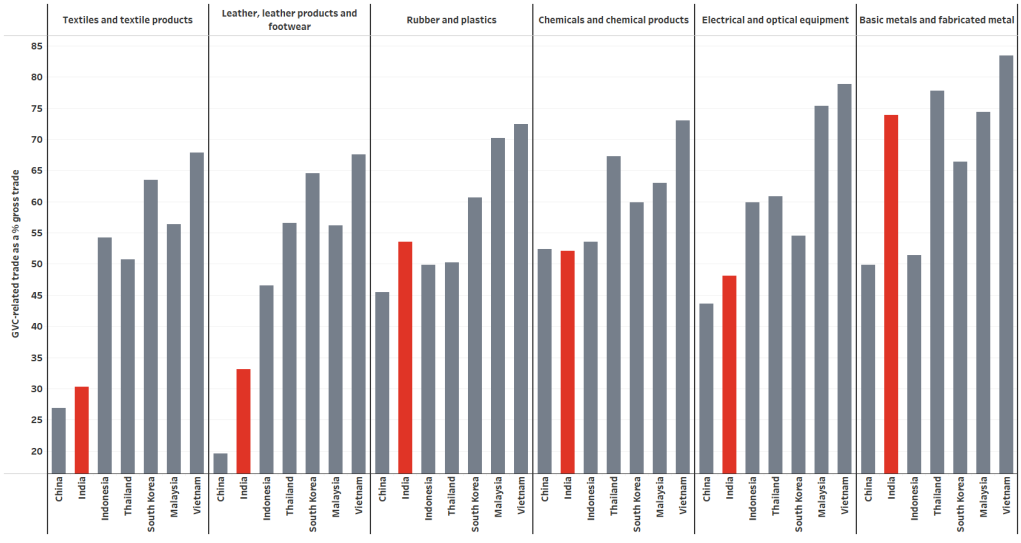
Source: ACI based on data from the World Integrated Trade Solution (WITS) GVC database as sourced from the Asian Development Bank (ADB).

Figure 1.3 provides an industry-focused look into India's GVC-related trade and its standing among select Asian economies in 2022. Barring basic metals and fabricated metal, India's GVC-related exports are either middling or towards the bottom compared to its Asian counterparts.

An important point to note here is that India's GVC-related exports comprise a more significant portion of forward than backward participation exports. This means the country relies on exporting intermediate goods and services more than importing intermediate goods and services to utilise in its production and exporting the higher value-added final or semi-final product (India Briefing, n.d.; Mitra, Sen Gupta, and Sanganeria, 2020; Sharma and Arora, 2023). This is a plausible explanation for India's better positions in basic metals and fabricated metal, and to a certain extent, rubber and plastics, all of which are predominantly intermediate inputs. Some of these industries are closely analysed through a manufacturing lens in Chapter 4.

Given the brief discussion of the developments surrounding India's manufacturing and the importance of the country's GVC participation to make the most of its industrial and export capabilities, the following section provides an overview of recent developments in India's macroeconomic landscape before the chapter concludes with an outline of the book's upcoming chapters.

Figure 1.3: Share of GVC-related trade as a percentage of gross trade across select exporters and industries (2022)



Source: ACI based on data from WITS GVC database as sourced from ADB.

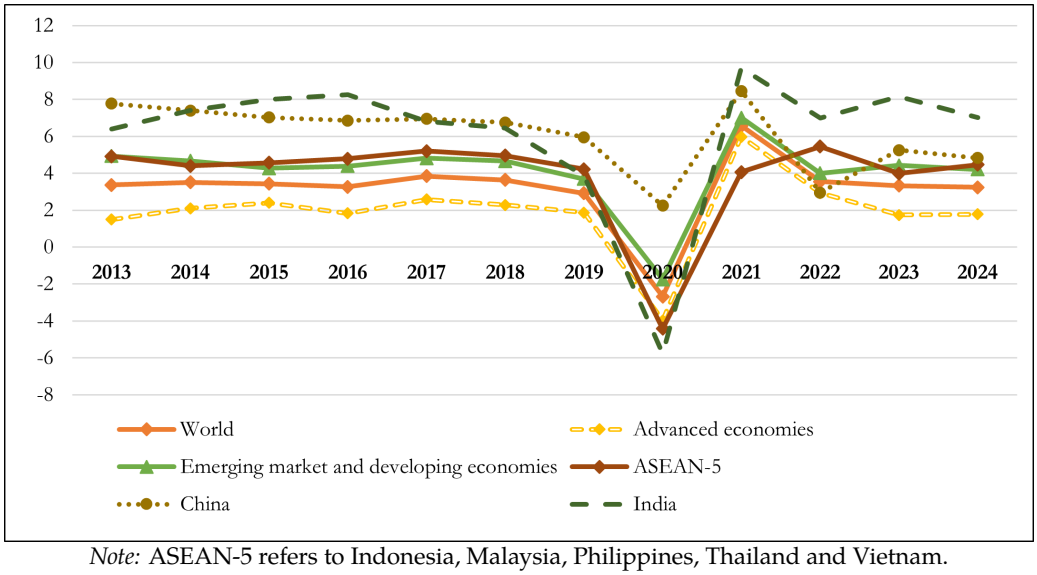
1.2 A Macroeconomic Overview of India's Economy

Figure 1.4 illustrates India's real GDP growth comparedto China and ASEAN-5, while also highlighting trends in global growth, advanced economies, and emerging market and developing economies. For India, GDP growth slowed from 8.2 percent in 2023 to 7 percent in 2024, with the outlook for 2025 and 2026 narrowing to 6.5 percent due to the plateauing of the post-pandemic demand boom, weaker-that-estimated industrial growth and uncertain geopolitical headwinds (IMF, 2024; IMF, 2025). However, despite the slowdown, private consumption and investment remain crucial drivers of India's economic growth. This is further supported by steadily improving capital expenditure on infrastructure and asset-building projects. Future government capital expenditure is expected to be supported by the stability of a streamlined, digitised tax system with low rates and a review and adjustment of the tariff structure. After surpassing the United Kingdom in 2023 to become the world's fifth-largest economy, India remains one of the fastest-growing major economies, driven by its robust democracy and strong partnerships (IBEF, 2025b).

For the global economy, growth projections for 2025 and 2026 remain steady at 3.3 percent, a 0.1 percentage point increase from the 2024 estimate. The same metric for advanced economies is estimated to record a steady state of 1.8 percent in 2024, with projections of 1.9 and 1.8 percent in 2025 and 2026, respectively. For emerging markets and developing economies, growth performance in 2025 and 2026 is expected to broadly match that in 2024. In China's case, growth has been slow and steady at 4.7 percent year-

on-year, driven by a slowdown in the real estate market and low consumer confidence, with the impact somewhat offset by improved net export growth.

Figure 1.4: India's Real GDP Growth in Perspective (Percent)



Note: ASEAN-5 refers to Indonesia, Malaysia, Philippines, Thailand and Vietnam.
Source: ACI based on data from International Monetary Fund (IMF), World Economic Outlook (WEO).

Zooming into the quarterly estimates of real GDP growth reveals that real GDP for Q1 and Q2 of FY2024-25 is estimated to grow at 6.7 and 5.4 percent, respectively (as shown in Figure 1.5). This is below the 8.2 and 8.1 percent rates for the same quarters of the previous year. This contraction is due to sluggish growth in the manufacturing sector (2.2 percent) and mining & quarrying sector (-0.1 percent) in Q2 of FY2024-25. On the other hand, the agricultural and allied sectors grew by 3.5 percent in Q2 of FY2024-25 after sub-optimal growth rates ranging from 0.4 percent to 2.0 percent in the preceding four quarters. The tertiary sector is the star performer, registering a growth rate of 7.1 percent in Q2 of FY2024-25, compared to 6.0 percent in the previous year (MoSPI, Government of India, 2024).

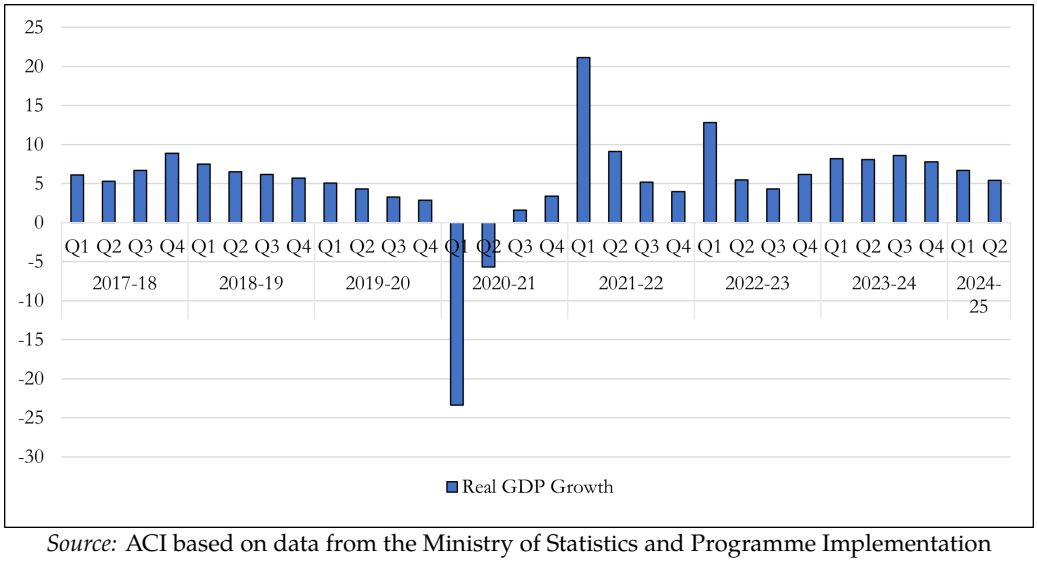
According to reports by the Reserve Bank of India, the contraction in the manufacturing sector was not broad-based but primarily concentrated in petroleum products, iron and steel, and cement. This decline was mainly driven by cyclical and seasonal factors, including weather-related disruptions that impacted overall economic activity. A temporary slowdown in government capital expenditure during the general elections further constrained growth, delaying infrastructure investment and construction activity. Similar patterns were observed in the mining and electricity sectors, where adverse weather conditions contributed to disruptions in output (Dhar, 2024).

The economic slowdown for the quarter was also influenced by weak consumption on the part of city dwellers. Stagnant real wage growth, rising food inflation, and ele-

vated borrowing rates have strained urban incomes in India (Business Today, 2024). For instance, food inflation based on the Consumer Food Price Index (CFPI) increased from 3.8 percent in FY2021-22 to 6.6 percent in FY2022-23 and 7.5 percent in FY2023-24 and then soared to 8.4 percent in FY2024-25 (April-December) (Press Information Bureau, 2024). This decline in demand, in turn, discouraged manufacturing firms from expanding capacity, thereby further dampening economic growth (Dhar, 2024).

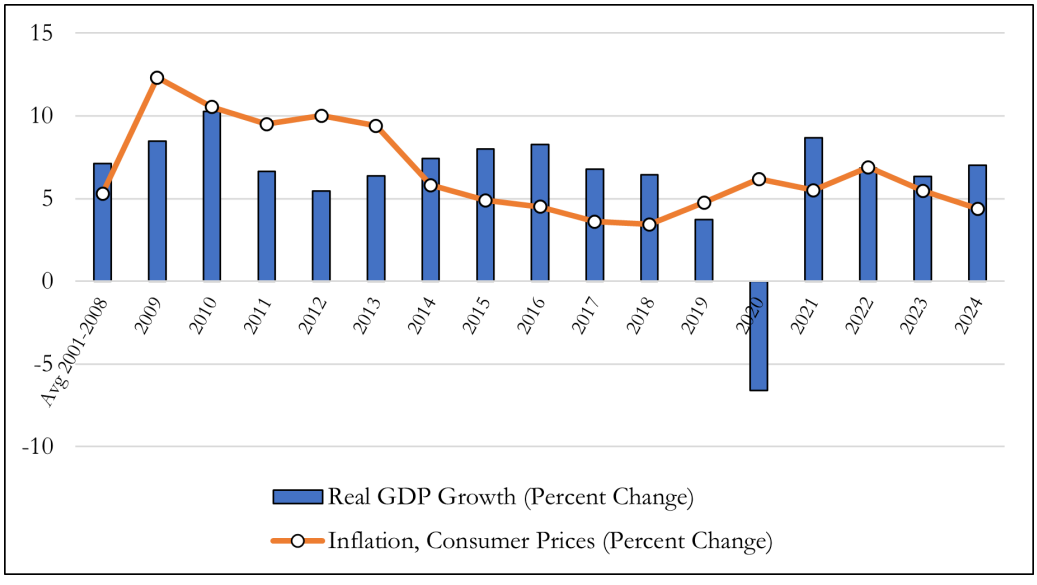
Despite higher food prices — primarily for vegetables and pulses, which faced supply disruptions and poor harvests due to erratic weather patterns — headline inflation declined to 4.4 percent in 2024. This marks a 2.2 and 1.0 percentage point decrease from 2022 and 2023 respectively, as shown in Figure 1.6. Core inflation, measured by excluding food and energy from headline inflation, has continuously declined since cost pressures on goods and services have eased (IBEF, 2025a). This aligns with global disinflation trends since the abatement of inflationary pressures caused by supply disruptions starting in 2021.

Figure 1.5: Quarterly Real GDP Growth (Change over Same Quarter Previous Year) (Percent)



Source: ACI based on data from the Ministry of Statistics and Programme Implementation (MoSPI).

Figure 1.6: Annual Real GDP Growth and Inflation (Percent)



Source: ACI based on data from IMF, WEO.

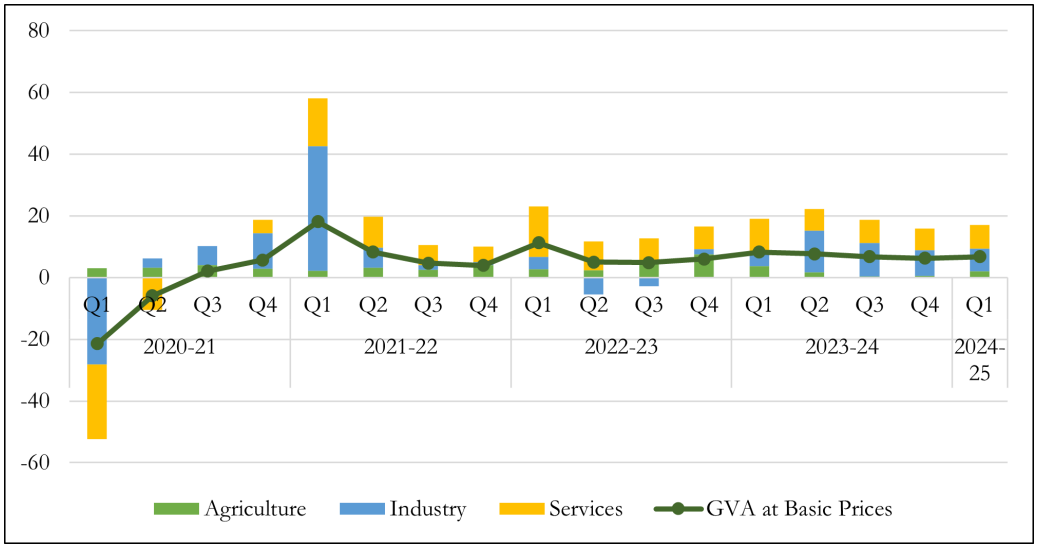
Next, we examine supply-side and demand-side factors to ascertain the key drivers of growth outcomes.

Regarding the supply side (see Figure 1.7), the real gross value added (to measure aggregate supply) rose marginally by 6.9 percent in 2023-24 compared to 6.7 percent in 2022-23. The industry and services sectors contributed to this growth, while agriculture lagged in 2023-24. The momentum was maintained in Q2 and Q3 of 2023-24. In Q1 2024-25, real Gross Value Added (GVA) expanded by 6.8 percent year-on-year, again mainly through industry and services.

For much of 2023-24, uneven and inadequate southwest monsoon rains, augmented by strong El Niño conditions, led to delays and a general decline in kharif sowing. Both the southwest and northeast monsoon rains were below normal, resulting in a rainfall deficit that drained reservoirs (RBI, 2024a). From the second half of 2024, monsoon conditions improved significantly, with kharif sowing increasing by 1.9 percent over the previous year. The higher rainfall helped replenish reservoir levels to 87 percent of the total capacity as of September 2024. Beside this optimistic rainfall and kharif outlook, the expected start of La Niña later in the year bodes well for the rabi season. This is expected to overturn the depressed foodgrain production in rabi and other crops that pulled down agriculture's real GVA in Q1 2024-25 (RBI, 2024c).

Next, the industrial sector recorded modest growth in 2023-24, thanks to the easing of input costs, contributing to elevated levels of corporate profits. The Index of Industrial Production (IIP) grew by 5.8 percent as opposed to 5.2 percent in the preceding year. Out of 23 industry groups in the manufacturing sector, 13 registered a year-on-year expansion,

Figure 1.7: Supply-Side Contributions to GVA Growth (Percent)



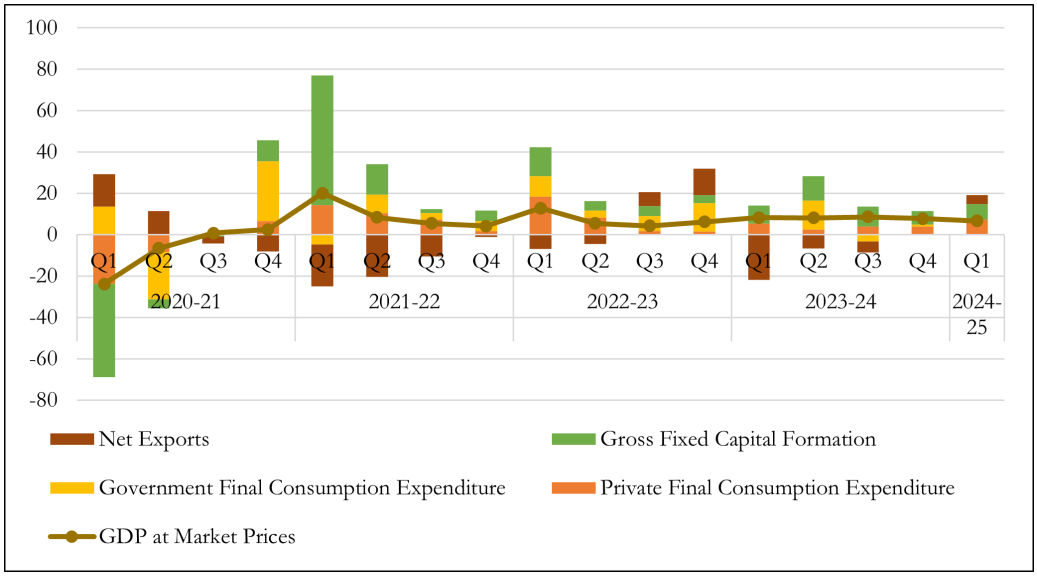
Source: ACI based on data from the Reserve Bank of India (RBI).

with transport equipment, motor vehicles and basic metals leading the pack (RBI, 2024a). In Q1 2024-25, the sector's GVA grew by 7.4 percent despite the global hike in freight and container costs exerting pressure on supply chains (RBI, 2024c).

Finally, heightened construction activity and promising growth in financial, real estate and professional services boosted growth in the services sector. Furthermore, air traffic, automobile sales, and buoyant foreign tourist arrivals added to the sector's GVA. This promising performance extended to Q1 2024-25 as the GVA accelerated to 7.7 percent from 7 percent in 2023-24. Services GVA constituted over 70 percent of GVA growth in Q1 2024-25 (ibid.).

Regarding the demand side (see Figure 1.8), private final consumption expenditure (PFCE), a major component of aggregate demand, tapered in Q2 2023-24 before recovering in Q3 (RBI, 2024a). Rising income in the informal sector and stable urban consumption bolstered private consumption. Urban demand expanded faster than rural demand, with high passenger vehicle sales, household credit and domestic air passenger traffic(RBI, 2024b). In Q1 2024-25, the PFCE rebounded considerably, growing at 7.4 percent, again on the back of heightened domestic air passenger traffic. Rural demand was helped by record growth in motorcycle sales in 2023-24 and Q1 2024-25 (RBI, 2024c). As mentioned previously, the favourable forecast for the southwest monsoon, elevated reservoir levels, and the extent of kharif and rabi sowing augur well for sustained rural demand in the near future.

Figure 1.8: Demand-Side Contribution to GDP Growth (Percent)



Source: ACI based on data from RBI.

Next, gross fixed capital formation (GFCF) exhibited healthy growth in 2023-24 compared to 2022-23. It was driven by a revival in private capital expenditure and sustained government emphasis on capital expenditure. High capacity utilisation, favourable balance sheets of corporates and banks, and sizeable public investment accelerated the private sector investment cycle (RBI, 2024b). In Q1 2024-25, although government capital expenditure contracted, GFCF grew by 7.5 percent, revealing strong private sector investment. Resilient demand in the housing sector also propelled construction activity (RBI, 2024c).

The government's push for fiscal prudence and goal of keeping the gross fiscal deficit below 4.5 percent of GDP by 2025-26 have taken the form of continued fiscal consolidation and expenditure rationalisation. This has decelerated government final consumption expenditure (GFCE) in 2023-24 and Q1 2024-25, dragging down overall GDP growth (ibid.).

Finally, net exports showed signs of recovery in the second half of 2023-24, despite geopolitical tensions. This was led by an upswing in exports of engineering goods, electronic goods, drugs and pharmaceuticals, iron ore and cotton yarn. On the import side, gold, silver, and electronic goods witnessed a jump, while oil imports dipped due to softening prices. Mirroring slowing global demand, services trade was sluggish, with export growth constituted by software and travel services while imports fell due to reduced transport and business services (RBI, 2024b). Q1 2024-25 saw a revival in external demand on the back of similar behaviour in exports of both goods and services. Compared to the previous year, merchandise imports expanded due to higher petroleum and oil im-

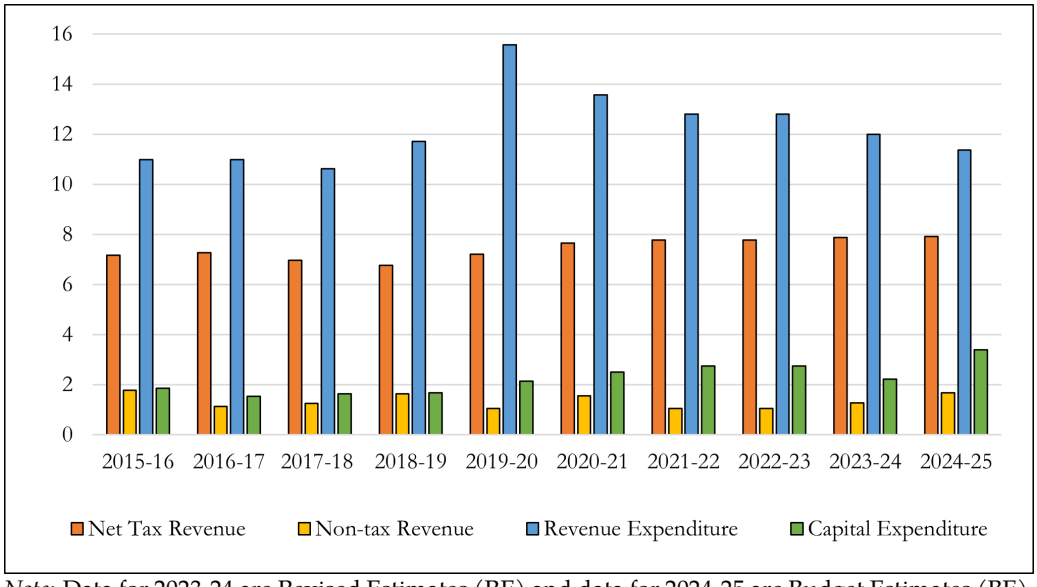
ports, and services imports also moved out of their contractionary phase – attributed to buoyant domestic demand (RBI, 2024c).

Figure 1.9: Fiscal Balance (Percent of GDP)

Note: Data for 2023-24 are Revised Estimates (RE) and data for 2024-25 are Budget Estimates (BE).
Source: ACI based on data from RBI.

We now turn to examining the financial soundness of the Indian government by providing an overview of the country's performance across various fiscal indicators. In line with Finance Minister Nirmala Sitharaman's fiscal consolidation path, which was announced in 2021, to bring down the fiscal deficit to below 4.5% of GDP, the gross fiscal deficit has reduced from about 9% in 2020-21 to 5.8% (RE) in 2023-24 and is further expected to decrease to 4.9% (BE) in 2024-25 (see Figure 1.9). The RE for 2024-25 is 4.8%, and the BE for 2025-26 is pegged at 4.4% of GDP, indicating that the numbers agree with the steadfast commitment to fiscal consolidation since 2021 (Ministry of Finance, 2025). Figure 1.10 offers a breakdown of the fiscal deficit. The chart shows a gradual fall in revenue expenditure and a simultaneous, although marginal, rise in net tax revenue – a primary reason for the low gross fiscal deficit in Figure 1.9. Robust tax collection and the upswing in interest payments on loans given by the Central Government, and a hike in the collection of dividends, tolls and license fees, have combined to uplift the net tax and non-tax revenues, respectively (RBI, 2024a). Also significant is the increase in capital expenditure (RE) for 2024-25, the greatest expansion in the period under study. Such expansion reflects a higher quality of government spending since capital expenditure creates productive assets with long term value add for the economy (such as building infrastructure), while revenue expenditure constitutes day-to-day operational spending that does not result in asset creation (such as salaries, pensions and subsidies).

Figure 1.10: Key Fiscal Indicators (Percent of GDP)

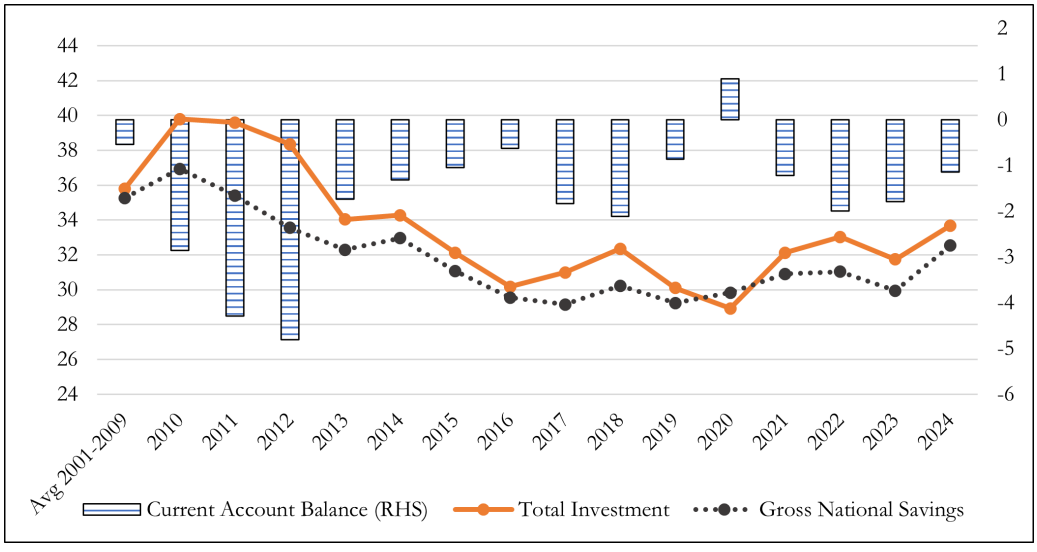


Note: Data for 2023-24 are Revised Estimates (RE) and data for 2024-25 are Budget Estimates (BE).
Source: ACI based on data from RBI.

Now we consider India's investments, savings and Current Account Deficit (CAD) as illustrated in Figure 1.11. The government's continued thrust on infrastructure and the public's sizeable investments in real estate have resulted in an uptick in gross domestic investment (ibid.). Notably, the housing sector is forecast to grow into a USD 1 trillion market by 2030. Hot spots in Tier 2 and 3 cities are expected to contribute over 40% of new housing developments by 2025 (IBT Business, 2025). Similarly, a downtrend in savings since 2021 seems to have been reversed in 2024, with rating agency Crisil ascribing this development to faster growth in household savings, as evidenced bank deposits rising from 9.6% in FY2023 to 13.5% in FY2024 (Kundu, 2024). Next, buoyant services exports and healthy growth in private transfer receipts (mostly remittances) have bolstered India's CAD. According to RBI's Annual Report (May 2024), India is the highest remittance-receiving country, with inward remittances amounting to USD 86.7 billion in 2023-24 (April-December) (RBI, 2024a). Figure 1.12 shows India's trade balance, which supplements the discussion on CAD.

The country's external sector grew strongly amid a steep drop in global trade volumes and volatility in the global financial market, driven by aggressive monetary tightening measures by central banks. Fragility in external demand has been reflected in a reduction of merchandise exports and imports. The decline in the latter is steeper than in the former, which explains the narrowing of the trade deficit in 2023-24 (see Figure 1.12) (ibid.). India's trade deficit was primarily driven by merchandise trade, whose exports dipped by USD 14 billion while imports fell by USD 38.73 billion, compared to the previous fiscal year. At the same time, services exports were estimated to have risen by USD 14 billion

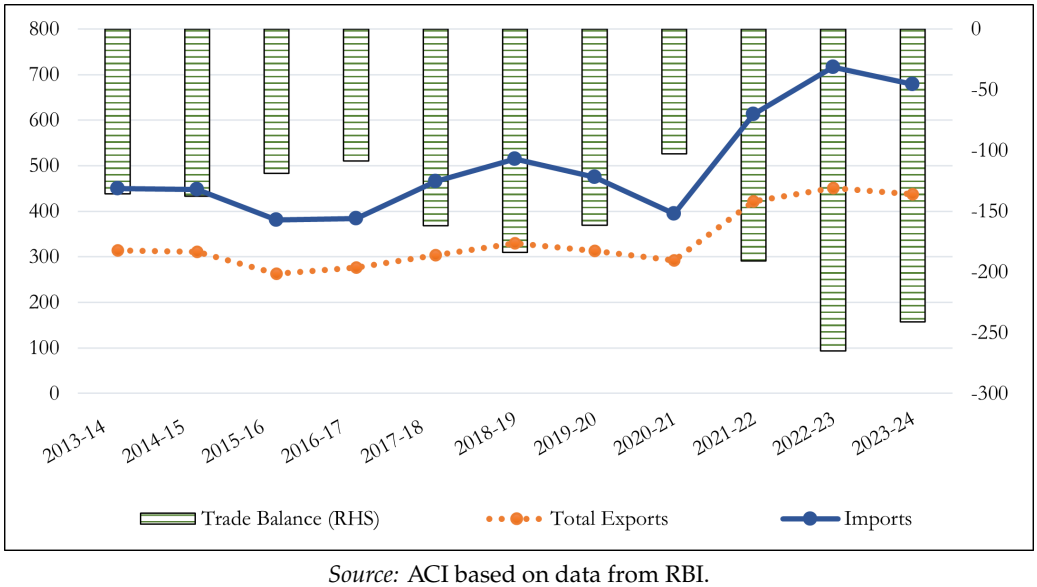
Figure 1.11: National Savings, Investment and Current Account Deficit (Percent of GDP)



Source: ACI based on data from IMF, WEO.

while services imports contracted by USD 4.5 billion (Rahim, 2024).

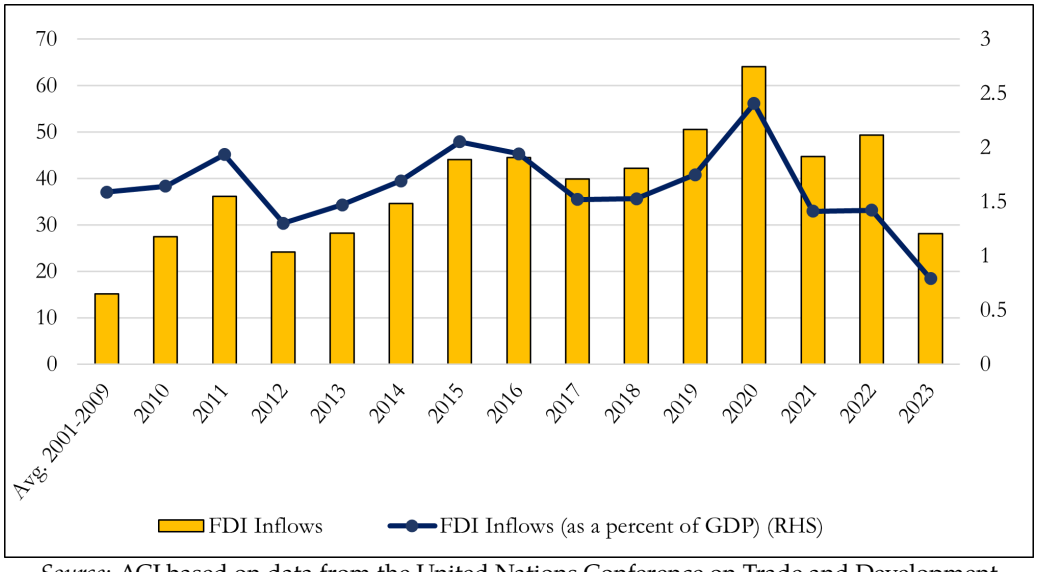
Figure 1.12: Export and Import of Merchandise Trade and Trade Balance (US$ Billion)



Source: ACI based on data from RBI.

Finally, we shift to India's Foreign Direct Investment (FDI) inflows, whichwitnessed a relatively steep dip in 2023 (see Figure 1.13). Net FDI inflows have been lower due to the increase in FDI repatriation from India, for example, by foreign subsidiaries in

Figure 1.13: FDI Inflows to India (US$ Billion and Percent of GDP)



Source: ACI based on data from the United Nations Conference on Trade and Development (UNCTAD).

India to parent companies in their respective home countries. Such repatriation is not just limited to profits and dividends flowing out of India but also includes capital gains and disinvestment proceeds. The top sources of inward FDI are Singapore, Mauritius, the US, the Netherlands, and Japan. Regarding a sector-level breakdown, services (across computer, communications, financial and business) comprised a significant portion of FDI equity inflows, with manufacturing, electricity and other energy, retail and wholesale trade and transport closely behind (RBI, 2024a).

1.3 Roadmap of the Book

This book, *India's Manufacturing Trade: A Sub-national Competitiveness Analysis*, is the twelfth addition to ACI's competitiveness analysis of India's sub-national economies. Chapters 2 and 3 deeply analyse competitiveness at the sub-national and regional levels across various indicators distributed under four overarching environments – Macroeconomic Stability; Government and Institutional Setting; Financial, Business and Manpower Conditions; and Quality of Life and Infrastructure Development. The ACI competitiveness framework methodology that governs such analysis is also detailed at the beginning of the chapters.

In Chapter 2, we eliminate subjectivity from weight assignment by relaxing the assumption of equal weights and employing Shapley values, a key concept in cooperative game theory. Due to its solid theoretical and mathematical foundations, this approach ensures the robustness and objectivity of our research findings. Chapter 2 also discusses

the results of a novel analytical tool called the *What-if* simulation analysis. The *What-if* simulation goes over and above the ranking exercise and offers constructive insights about the strengths and weaknesses of each sub-national economy and region by identifying how the sub-national economies can improve their standings if 20 percent of their weakest indicators were elevated to the national average, *ceteris paribus*.

In Chapter 3, besides the competitiveness ranking and score analysis, a discussion of the top 20 percent of each region's strong and weak indicators is also included.

Lastly, in Chapter 4, we examine India's manufacturing trade competitiveness at the sub-national level, a crucial undertaking given the government's pro-growth and self-reliance plans at a time when world economies are largely looking inward to bolster their manufacturing capabilities through a rising number of industrial policies. We calculate the Sub-national Trade Competitiveness (STC) measure for each of the 36 states, derived from India's Revealed Comparative Advantage (RCA) across industries and the employment share of each state in the industry in question. The latter measure gives the study its sub-national focus. We also explore the cases of Kerala and Odisha, two states whose manufacturing trade competitiveness was found wanting, when compared to their coastal counterparts.

References

Business Today (Nov. 2024). *GDP growth slows down to 5.4% in Q2 from 6.7% in April-Jun quarter - GDP growth slows down to 5.4% in Q2 from 6.7% in April Jun quarter BusinessToday*. URL: https://www.businesstoday.in/latest/economy/story/gdp-growth-slows-down-to-54-in-q2-from-67-in-april-jun-quarter-455638-2024-11-29.

Criscuolo, Chiara and Jonathan Timmis (2017). "The Relationship Between Global Value Chains and Productivity". EN. In: *International Productivity Monitor* 32. Publisher: Centre for the Study of Living Standards, pp. 61–83. URL: https://ideas.repec.org//a/sls/ipmsls/v32y20174.html.

Dhar, Karan (Dec. 2024). *RBI explains why GDP growth slowed in Q2*. en. URL: https://www.fortuneindia.com/macro/rbi-explains-why-gdp-growth-slowed-in-q2/119448.

Dugal, Ira and Aftab Ahmed (June 2024). *India's Modi plans post-election reforms to rival Chinese manufacturing | Reuters*. URL: https://www.reuters.com/world/india/indias-modi-plans-post-election-reforms-rival-chinese-manufacturing-2024-06-03/.

IBEF (Jan. 2025a). *Economic Survey 2024-25*. en. URL: https://www.ibef.org/economy/economic-survey-2024-25 (visited on 03/17/2025).

— (2025b). *Indian Economy Growth Rate, GDP & Economic Structure Insights | IBEF*. en. URL: https://www.ibef.org/economy/indian-economy-overview.

IBT Business (Jan. 2025). *Indian housing sector to contribute 13 pc to national GDP by 2025: Report*. en. Section: Markets. URL: https://www.ibtimes.co.in/indian-housing-

sector-contribute-13-pc-national-gdp-by-2025-report-877479 (visited on 03/17/2025).

IMF (Oct. 2024). *World Economic Outlook, October 2024: Policy Pivot, Rising Threats*. ENG. URL: https://www.imf.org/en/Publications/WEO/Issues/2024/10/22/world-economic-outlook-october-2024.

— (Jan. 2025). *World Economic Outlook Update, January 2025: Global Growth: Divergent and Uncertain*. URL: https://www.imf.org/en/Publications/WEO/Issues/2025/01/17/world-economic-outlook-update-january-2025.

India Briefing (n.d.). *Integrating with Global Value Chains: Sector Opportunities and Challenges in India - India Guide | Doing Business in India*. en. URL: https://www.india-briefing.com/news/how-india-can-integrate-with-global-value-chains-sector-opportunities-foreign-investment-27130.html/.

Kundu, Rhik (May 2024). *Indian household savings may have rebounded in FY24, says Crisil*. en. Section: Economy. URL: https://www.livemint.com/economy/indian-household-savings-may-have-rebounded-in-fy24-says-crisil-11716294805584.html (visited on 03/17/2025).

Ministry of Finance (Feb. 2025). *Budget 2025-26 Speech of Nirmala Sitharaman, Minister of Finance*. URL: https://www.indiabudget.gov.in/doc/budget_speech.pdf.

Mitra, Sabyasachi, Abhijit Sen Gupta, and Atul Sanganeria (Dec. 2020). *Drivers and Benefits of Enhancing Participation in Global Value Chains: Lessons for India*. en. Tech. rep. Asian Development Bank. DOI: 10.22617/WPS200430-2. URL: https://www.adb.org/publications/enhancing-participation-gvcs-lessons-india (visited on 03/17/2025).

MoSPI, Government of India (Nov. 2024). *PRESS NOTE ON ESTIMATES OF GROSS DOMESTIC PRODUCT FOR THE SECOND QUARTER (JULY-SEPTEMBER) OF 2024-25*. URL: https://static.pib.gov.in/WriteReadData/specificdocs/documents/2024/nov/doc20241129461201.pdf.

Press Information Bureau (July 2024). *GOVERNMENT'S PRUDENT MONETARY & TRADE POLICY SUPPORTED BY STRONG OUTPUT GROWTH REDUCES RETAIL INFLATION TO A FOUR-YEAR LOW OF 5.4% IN FY24*. URL: https://pib.gov.in/pib.gov.in/Pressreleaseshare.aspx?PRID=2034947.

Rahim, Fazal (Apr. 2024). *With A Record $776.68 Billion Worth Of Exports In FY24, India's Trade Deficit Narrows To $78 Billion*. en. URL: https://www.forbesindia.com/article/news/with-a-record-77668-billion-worth-of-exports-in-fy24-indias-trade-deficit-narrows-to-78-billion/92597/1 (visited on 03/17/2025).

Rao, Archana (Dec. 2024). *Indian States, UTs to Finalize Labor Codes Rules by March 2025*. en-US. URL: https://www.india-briefing.com/news/indian-states-uts-to-finalize-labor-codes-rules-by-march-2025-35588.html/.

RBI (May 2024a). *Annual Report*. URL: https://rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1402 (visited on 03/17/2025).

— (Apr. 2024b). *Monetary Policy Report – April 2024*. URL: https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=22435#III1 (visited on 03/17/2025).

RBI (Oct. 2024c). *Monetary Policy Report – October 2024*. URL: https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=22725#32 (visited on 03/17/2025).

Sharma, Sharadendu and Rahul Arora (Apr. 2023). "Macroeconomic Determinants of India's Participation in Global Value Chains: An Empirical Evidence". EN. In: *Journal of Asian Economic Integration* 5.1. Publisher: SAGE Publications India, pp. 7–28. ISSN: 2631-6846. DOI: 10.1177/26316846221147577. URL: https://doi.org/10.1177/26316846221147577 (visited on 03/17/2025).

Stöllinger, Roman (2018). *Asian Experiences with Global and Regional Value Chain Integration and Structural Change*. EN. Research Report. Research Report. The Vienna Institute for International Economic Studies. URL: https://www.econstor.eu/bitstream/10419/204208/1/wiiw-research-rep-436.pdf.

Topalova, Petia and Amit Khandelwal (2011). "Trade Liberalization and Firm Productivity: The Case of India". EN. In: *The Review of Economics and Statistics* 93.3, pp. 995–1009. ISSN: 0034-6535. DOI: 10.1162/REST_a_00095. URL: https://doi.org/10.1162/REST_a_00095.

WEF and Kearney (June 2021). *Shifting Global Value Chains: The India Opportunity*. ENG. URL: https://www3.weforum.org/docs/WEF_Shifting_Global_Value_Chains_2021.pdf.