

# Shaping the Post-Pandemic Recovery:

Annual Sub-national Competitiveness Analysis of India

Editors

Zhang Xuyao

Sumedha Gupta

# **Shaping the Post-Pandemic Recovery: Annual Sub-national Competitiveness Analysis of India**

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## About ACI

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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:

**A**nalytical inputs to initiate policies for policy-makers and business leaders in Asia

**C**apacity building to enable others through improvement in productivity and efficiency

**I**ntellectual leadership to create pragmatic models of competitiveness and inclusive growth

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## 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 last two years have been difficult for the global economy. Aside from the uncertainties caused by repeated waves of COVID-19 outbreaks, the world economy continued to face multiple downside risks, including labour and critical input shortages as well as logistical bottlenecks. That said, based on the International Monetary Fund's (IMF) estimates, the global growth witnessed a strong growth rebound of 5.9 percent in 2021. This recovery in growth was mainly due to adequate global vaccination progress and the reopening of the regional economies. According to the IMF, India was one of the fastest-growing economies in 2021 among the emerging markets, with an annual growth rate of 9.0 percent.

The Indian economy continued to showcase resilience across most industries, despite the havoc created by the second wave of the COVID-19 pandemic. India registered positive growth in four consecutive quarters during the pandemic, starting from Q3 of FY2020-21. A rapid increase in vaccination coverage and less stringent social restrictions supported the country's growth during 2021. According to the IMF, India is expected to remain on a high-growth trajectory for the next two years. However, there are growing concerns that increasing oil prices, coal shortages and supply disruptions may drag down the country's growth. Nevertheless, policymakers can overcome these challenges by enacting targeted and coordinated measures at both the national and regional levels.

The research undertaken by the Asia Competitiveness Institute (ACI) on sub-national competitiveness in India makes a significant contribution towards understanding the existing vast heterogeneity across the 36 sub-national economies. Furthermore, the book also presents a study on the economic recovery of these sub-national economies in India amidst the COVID-19 pandemic.

I am confident that the rich insights found in the book will contribute to a greater understanding of the dynamics of competitiveness across the country at the sub-national level and offer an intellectual platform for relevant policy interventions to be developed.

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

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## Executive Summary

The spread of the coronavirus disease (COVID-19) since its origin has led to a devastating loss of life as well as severe social and economic disruption. The year 2021 was tough for many Indian households, the national healthcare system, and the government due to the second wave of the COVID -19 outbreak. The 'Delta' variant outbreak dampened the country's economic recovery. However, the impact of the second wave on economic growth was less adverse than the previous one. After contracting by 7.3 percent in 2020-21, India's economy registered an increase of 20.1 percent YoY and 8.4 percent YoY in Q1 and Q2 of FY2021-22, respectively. This economic recovery was underpinned by a strong rebound in the services sector, complete recovery in the manufacturing industry, and the rapidly increasing vaccination coverage. The economy continues to show signs of robust recovery amidst uncertainties caused by repeated infection outbreaks and supply chain disruption.

In this edition, *Shaping the Post-Pandemic Recovery: Annual Sub-national Competitiveness Analysis of India*, we conduct a comprehensive competitiveness analysis of the 36 Indian sub-national economies. Based on the analysis, Maharashtra has been the most competitive sub-national economy over the last eight years. However, there is still room for improvement across spheres such as productivity, the standard of living, and technological infrastructure. On the other hand, Assam became the bottom-most sub-national economy this year due to its poor performance across several dimensions, including economic growth, business friendliness, employment, and standard of living.

Similar to the last few years, the top-performing sub-national economies mainly belong to the Western region, while the bottom-performing ones are mostly from the North-eastern region. This offers a critical insight into the persistence of regional disparities within India. Moreover, there are no signs of any convergence in the competitiveness performance of the sub-national economies.

The Western region remains the most business-friendly and continues to pull a large chunk of investments across industries. In addition, its openness to trade and high export turnover make it an attractive destination for direct foreign investment. However, it still fails to provide an adequate health infrastructure. On the other hand, the North-eastern region performs better than other regions in terms of medical infrastructure. In addition, its expenditure on education, science, and technology remains high, but the region still lags behind its counterparts in the case of physical infrastructure. As a result, private and public limited companies' business interest in this region remains low. This lack of economic opportunities in the region has restricted its growth and development.

This book also offers an analysis on the recovery of the sub-national economies in India amidst the COVID-19 pandemic, given that the economy faced downward pressures during both the first and the second wave. Our study revealed two major findings.

Firstly, the COVID-19 pandemic brought the Indian economy to a standstill during its onset. The sharp economic contraction during Q2 2020, when the national lockdown was implemented to curb the spread of the first wave, is reflected across the indicators of

consumption and investment. However, all the sub-national economies showcased a V-shaped recovery soon after. The second wave during Q2 2021 led to another fall, although the intensity was not as severe as that of the first wave.

The second significant finding is that the regions with high intra-regional disparities, such as the Western region, grew faster than the North-eastern and Eastern regions with low intra-regional disparities. The intra-regional disparities in the Western and Northern regions remained high during the pandemic as the top-performing sub-national economies such as Gujarat and Delhi were primarily driving the economic growth in these regions. On the other hand, since the economic development of a majority of Eastern and North-eastern sub-national economies registered a declining trend, the intra-regional disparities remained low.

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This year's annual competitiveness study - "*Shaping the Post-Pandemic Recovery: Annual Sub-national Competitiveness Analysis of India*" is led by Dr Zhang Xuyao and Sumedha Gupta and supported by Dr Ammu George and Rohanshi Vaid.

In this book, we have updated previous sub-national and regional competitiveness studies with the latest available data. Our comprehensive approach to measuring competitiveness takes into account different factors that collectively shape the ability of a nation or region to achieve substantial and inclusive economic development over a sustained period of time. In addition, we apply a novel approach to assigning weights in the form of Shapley values to test the robustness of the findings. Furthermore, we study the economic recovery of India in 2021 and compare the level of consumption as well as investment with the pre-pandemic levels.

This book would not have been possible without the support of our research and administrative colleagues. In particular, we would like to extend our sincere thanks to a competent and dedicated administrative team at ACI, including Cai Jiao Tracy, Wesley Chan, Nurliyana Binte Yusoff, and Dewi Jelina Ayu Binte Johari.

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## List of Abbreviations

ACI	Asia Competitiveness Institute
ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
CAD	Current Account Deficit
CII	Confederation of Indian Industry
CMIE	Centre for Monitoring Indian Economy
COVID-19	Coronavirus Disease 2019
ESDM	Electronic System Design and Manufacturing
FBMC	Financial Businesses and Manpower Conditions
FDI	Foreign Direct Investment
FMCG	Fast-Moving Consumer Goods
FRAND	Fair Reasonable and Non-Discriminatory
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
GIS	Government and Institutional Setting
GRDP	Gross Regional Domestic Product
GSDP	Gross State Domestic Product
GVA	Gross Value-Added
ICT	Information and Communication Technology
IIP	Index of Industrial Production
IMD	International Institute for Management and Development
IMF	International Monetary Fund
IT	Information Technology
ITeS	Information Technology enabled Services
LKYSPP	Lee Kuan Yew School of Public Policy
MS	Macroeconomic Stability
NSE	National Stock Exchange
NUS	National University of Singapore
MOSPI	Ministry of Statistics and Programme Implementation
PIB	Press Information Bureau
QLID	Quality of Life and Infrastructure Development
RBI	Reserve Bank of India
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
US\$	United States Dollar
WCY	World Competitiveness Yearbook
WEF	World Economic Forum
WEO	World Economic Outlook
WHO	World Health Organization

YoY      Year on Year

# Chapter 1

## Introduction

*Rohanshi Vaid*

### 1.1 Introduction and Motivation

The second year of the coronavirus disease (COVID-19) pandemic was catastrophic for nations across the world. Many countries witnessed a devastating loss of life as well as severe social and economic disruption owing to the rapid spread of the "Delta" Variant. The number of new cases globally peaked between April – May 2021 (WHO, 2022). According to the World Health Organization (WHO), the 'Delta' variant was first discovered in India in August 2020 and was declared 'a variant of concern' on 11 May 2021 (World Health Organisation (WHO), 2022). On the other hand, the global COVID-19 vaccination drive began earlier in 2021, after the vaccines developed by Oxford University and AstraZeneca, Pfizer and BioNTech, and Moderna were clinically approved in the UK. More than 1 million vaccination doses were administered globally on 1 January 2021 (Yaqub, Farhat, 2021). However, despite the vaccine optimism and reopening of regional economies, a majority of countries went back to lockdown measures. They again enforced border closures during most of the year as the 'Delta' variant became a dominant variant globally by June 2021 (CNBC, 2021). Later in 2021, another variant of SARS-CoV2 - 'Omicron' was detected in South Africa on 24 November 2021 and was categorised as a variant of concern by WHO on November 26, 2021 (Centers for Disease Control and Prevention, 2021). Most countries had expected to witness a peak in the number of new COVID-19 cases between January and February 2022. As of January 2022, roughly 350 million people have been infected, and more than 5.5 million people have lost their lives to the novel virus (WHO, 2022).

After the first wave of COVID-19 in October 2020, India started showing signs of recovery as the country moved towards normalcy. The level of economic activity increased in the second half of FY 2020-21. However, in April 2020 the 'Delta' variant-led second wave of COVID -19 hit the country like a storm, thereby leading to a situation of crisis for the national healthcare system and the government (see Figure 1.1) (Our World in Data, 2020a).

This wave was considered twice as severe as the first one, with more than 400,000

new infections being reported per day. During the peak, more than 55 percent of the total daily cases were reported from just five states – Maharashtra, Kerala, Karnataka, Tamil Nadu, and Andhra Pradesh (WHO, India Situation Report, 2021). Besides the relaxation of lockdown measures after the first wave, super-spreader events such as the Kumbh Mela 2021 and state election campaigns contributed significantly to the increase in the number of COVID-19 cases between March and April 2021. The state of Uttarakhand hosted the Kumbh Mela mass gathering from 14 January 2021 to 29 April 2021. During this period, the total number of cases per day increased by 236 percent in Uttarakhand, and by 92 percent in India (Ellis-Petersen, 2021). The lack of effective implementation and observance of COVID-19 guidelines fueled the outbreak. Additionally, political rallies organised in states such as West Bengal, Tamil Nadu and Kerala witnessed gatherings of thousands of maskless attendees (Shukla et al., 2021). This substantially impacted the level of unprotected interactions amongst the public and subsequently wreaked havoc in these states.

India entered the deadly second wave with 8.5 hospital beds and 8 physicians per 10,000 people (Business Standard India, 2021). As a result, the steep increase in the number of daily cases took a toll on the Indian healthcare system and led to an unprecedented crisis in the country. As a result, both central and state governments undertook several measures to manage the massive surge in COVID-19 cases and related mortality.

Both centre and state governments took action to ramp up bed capacity in COVID care centres and hospitals. Many sports stadiums in big cities were converted into quarantine facilities, especially for migrant and daily wage workers. As the country faced a shortage in the supply of medical oxygen, the central government increased the states' oxygen quota. It utilised the national transport infrastructure as well as the military for transporting liquid oxygen to the affected states (Press trust of India, 2021). In addition, many state governments announced night curfews in the initial phase of the second wave. However, with a constant rise in the number of daily cases, lockdowns, which allowed only the provision of essential services, were imposed in the worst affected areas (India Briefing, 2021b).

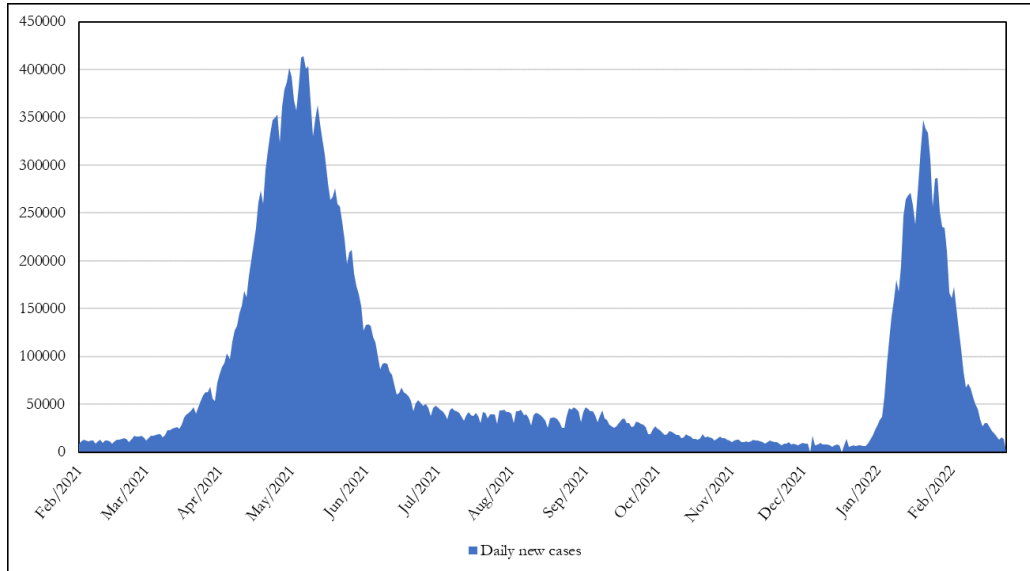
In order to support the economy's nascent recovery, the central government, along with the Reserve Bank of India (RBI) announced a slew of relief measures and reforms to deal with the economic crisis and inject liquidity (India Briefing, 2021a).

Besides the measures mentioned above, the government also expanded its vaccination program by opening inoculation to all adults above 18. On 16 January 2021, India launched the world's largest COVID-19 vaccination drive (UNICEF, 2021). In Phase-1 of the immunization drive, two vaccines - Oxford University-AstraZeneca's Covishield vaccine, and Bharat Biotech's Covaxin - were offered to the healthcare workers and frontline workers including the police, armed forces, home guard, etc (The Hindu, 2021a).

In the subsequent phases, people in the age group of 45-60 years became eligible for the COVID-19 vaccination (Times, 2021). Furthermore, the Prime Minister of India also launched a four-day Teeka Utsav (Vaccine Festival) on 11 April 2021 to encourage people to get vaccinated and increase the speed of the vaccination drive. In addition, a sizeable

uptick in the vaccination rate was registered during the second wave when vaccines were made available to all above the age of 18. The increase in vaccination numbers contributed significantly to flattening the country's COVID curve.

**Figure 1.1: Daily COVID-19 Cases for India (2021-2022)**



Source: Asia Competitiveness Institute (ACI) based on Our World in Data database.

After witnessing a sharp decline in the number of cases in June 2021, the new infections remained low until the end of 2021 (Our World in Data, 2020a). However, the number of daily new cases again witnessed a surge in January 2022, owing to the rapid spread of the 'Omicron' variant. The first case of the 'Omicron' variant was detected on 2 December 2021 (Livemint, 2021c).

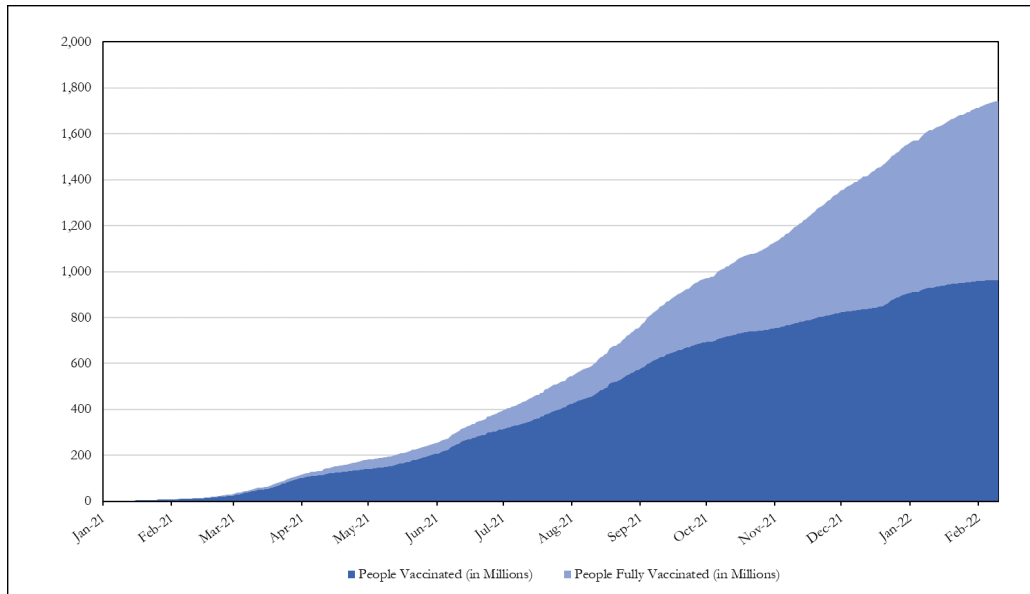
To avoid a sudden resurgence in the number of new infections, the central and state governments started taking multiple proactive measures in late December 2021. Many state governments implemented night curfews and increased the restrictions on larger gatherings, particularly during Christmas and New Year. Additionally, restrictions on international air travel were enforced, along with continuous monitoring of international passengers. The government also expanded its vaccination drive by making young adults in the age group of 15-18 years eligible for the Bharat Biotech's "Covaxin" vaccine (India Today, 2022).

Nonetheless, India witnessed a peak in the number of daily cases by the end of January 2022, but since then the daily infections have shown a downward trend (Our World in Data, 2020b). As of February 2022, around 42.8 million people have been infected. and more than 512,000 people have lost their lives to COVID-19 since its emergence in India (WHO, 2022).

On the economic front, India showed signs of solid recovery amidst the uncertainties caused by the different waves of the COVID-19 outbreak in 2021-22. Economic activity

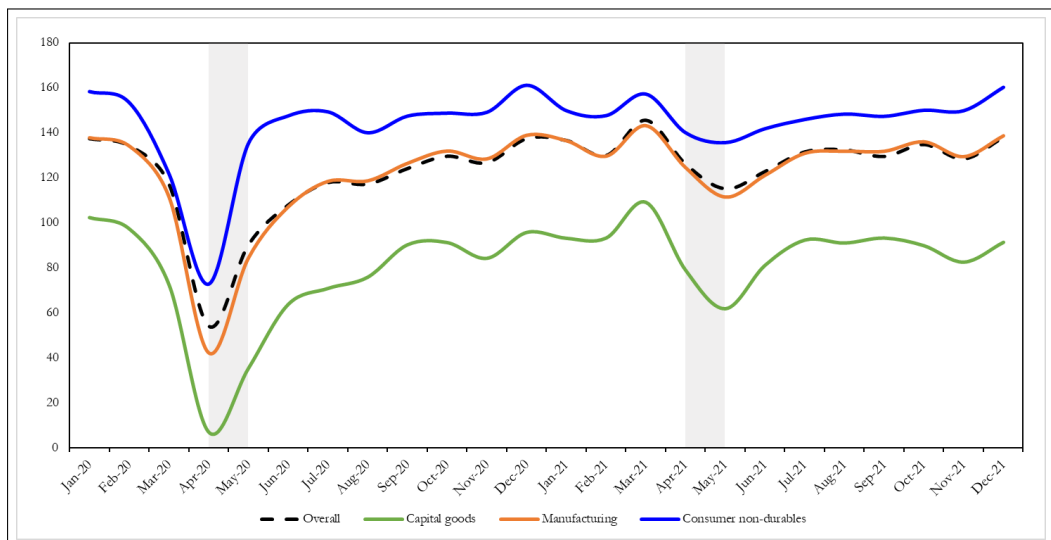
had witnessed a massive contraction in the previous year due to the pandemic-induced lockdown. This can be established by looking at the massive drop in the Index of Industrial Production (IIP) in April-May 2020 (Figure 1.3) (Ministry of Finance, Government of India, 2022).

**Figure 1.2: Daily Vaccination progress for India (in Million)**



Source: ACI based on based on Our World in Data database.

**Figure 1.3: Overall Index of Industrial Production (IIP) and Indices for Broad Sectors**



Source: ACI based on data from Ministry for Statistics and Programme Implementation (MOSPI)

The overall index registered a negative growth of 8.4 percent in FY2020-21, indicating a slowdown in the industrial sector. However, in the current fiscal year, overall IIP grew at the significant rate of 15.4 percent, despite registering a marginal drop during the second wave. As shown in Figure 1.3, this drop was not as steep as the previous year. In 2021, the index reflected a broad-based recovery across all sectors.

Manufacturing led this recovery in the industrial sector. Industries such as textiles, wearing apparel, motor vehicles, and electrical equipment within the manufacturing sector exhibited a strong rebound. Additionally, a significant recovery in labour-intensive industries such as textiles and wearing apparel indicates an improvement in the employment levels within the manufacturing sector.

The improvement in the industrial sector was primarily attributable to the robust policy reforms initiated by the government. The Indian policymakers emphasised on supply-side policy measures rather than relying entirely on demand management. The two broad themes of these reforms were increasing economic flexibility and resilience. Measures such as industrial deregulation, process reforms, privatisation and production-linked incentives were implemented to increase flexibility and encourage innovation. On the other hand, the government focused on building resilience by expanding the country's social infrastructure and providing support under the Atma Nirbhar Bharat scheme.

After this overview of the three waves of the COVID-19 outbreak in India and its economic recovery in 2020, the chapter provides a comprehensive view of India's recent economic development in the macroeconomic domain in Section 1.2. It concludes with a road map for the remainder of the book as well as a synopsis of the discussion of its contents in Section 1.3.

## 1.2 A Macroeconomic Overview of India's Economy

The 'Delta' variant-led second wave of the pandemic hampered the economy's nascent growth and created doubts over India's economic recovery in FY2021-22. However, a gradual reopening of the global economy along with a significant increase in the vaccination rate and a reduction in mobility restrictions in the country led to a faster than expected rebound in the domestic economy in the second half of FY2021-22.

Based on this growth momentum, both the IMF and the World Bank have projected a economic growth of around 9 percent and 7.1 percent for India in FY2021-22 and FY2022-23 respectively (Livemint, 2022). Additionally, India's economic growth is expected to be higher than its regional peers, provided the third wave of infections is efficiently managed and supply chain snarls discontinue.

To determine India's economic recovery during 2021, we evaluate various macroeconomic indicators for fiscal year 2021-21. We initiate our review by comparing India's growth trajectory with its peers.

India maintained a higher GDP growth rate than its counterparts from 2015 to 2017, owing to favourable macroeconomic dynamics on the international and domestic fronts (see Figure 1.4). Furthermore, the decrease in crude oil prices from 2015 to 2018 al-

lowed the government to efficiently manage the retail inflation rate as well as collect additional tax revenue on fuel (The Indian Express, 2021a). However, the country's economic growth rate fell to 4.2 percent in 2019 due to a decline in credit growth, weak domestic demand, and a contraction in both investments and exports (Zhang and Gupta, 2020). In 2020, the global economy witnessed an imperative decline of 3.1 percent in its growth due to COVID-19-induced, low economic activity levels (International Monetary Fund, 2022a).

But the global economy, including emerging markets and developing economies, bounced back quickly in 2021, primarily due to a reduction in mobility restrictions, re-opening of international borders and increased vaccination coverage. India was one of the fastest-growing economies in developing Asia in 2021, after witnessing a 7.3 percent contraction in its real GDP in 2020. Its real GDP increased by 9 percent in 2021 and surpassed China's growth rate of 8.1 percent during the same period (International Monetary Fund, 2022b).

A closer look at India's quarterly GDP growth (Figure 1.5) shows the impact of the first and second waves of the COVID-19 on the quarterly real GDP growth of the country. However, unlike the previous year (2020), India's economic growth in the first and second quarter of FY2021-22 showcased a positive trend as the economic growth witness a massive contraction during the corresponding period in 2020-21.

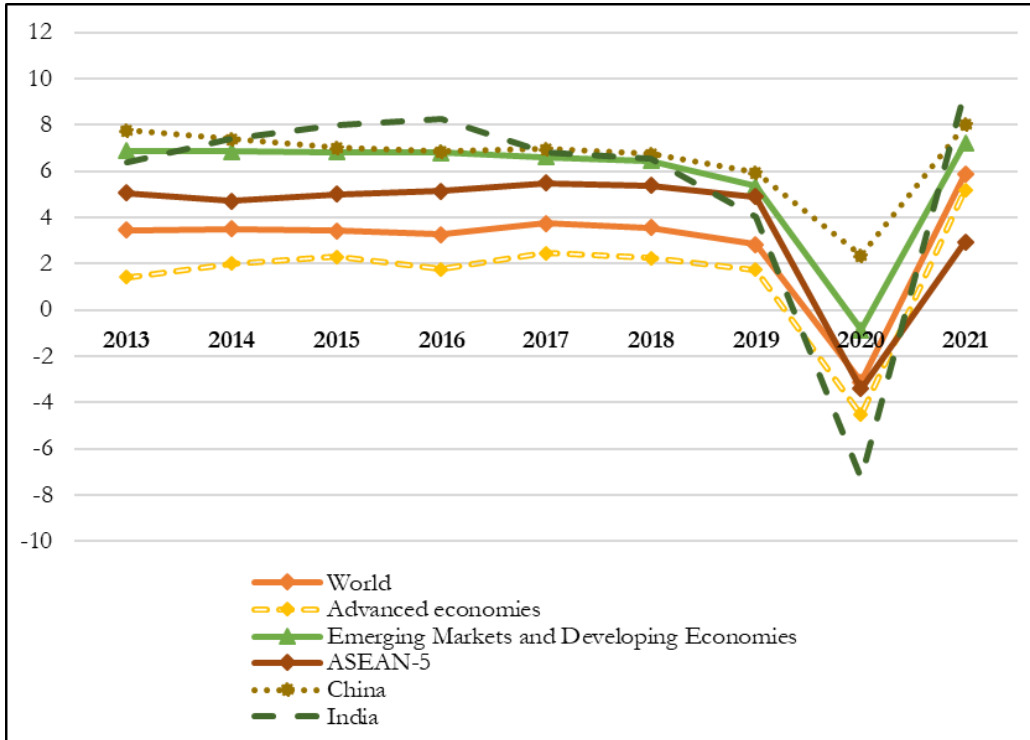
The growth rebound in the first half of FY2021-22, vis-à-vis FY2020-21, was underpinned by a strong increase in private consumption and investment, despite the delays in the production and sale of automobiles and electronic goods due to the semiconductor shortage globally. (Asian Development Bank, 2021a). However, the dip in economic growth during the second quarter of FY2021-22 was largely attributable to the outbreak of the 'Delta' variant that in turn led to a decline in economic activity levels.

Another critical macroeconomic dimension is inflation. Currently, India follows a flexible policy that aims to keep the annual inflation rate between 2 and 6 percent. Since 2014, the inflation rate has remained low until the last quarter of 2019 (Figure 1.6). RBI continued to maintain an accommodative stance during the pandemic to support the nascent economic recovery as it faced the growth-inflation dilemma.

The inflationary pressure in India during 2020 was aggravated by the global and regional supply chain disruptions that inflated the domestic retail food prices substantially (Quartz, 2022). Even during 2021, the inflationary surge continued as both retail and wholesale inflation rose owing to input cost increases as well as rising global energy prices (The Indian Express, 2021b). Additionally, food inflation increased to 4.48 percent in October 2021, and wholesale prices rose to a nearly 30-year high of 14.23 percent (The Economics Times, 2022b). RBI and the central government are expected to take measures to ease the inflationary pressure before it seeps into core inflation, which is sticky in nature. Additionally, it is likely that an increase in semiconductor prices due to chip shortages may drive up the cost of automobiles and electronic goods (Asian Development Bank, 2021a).

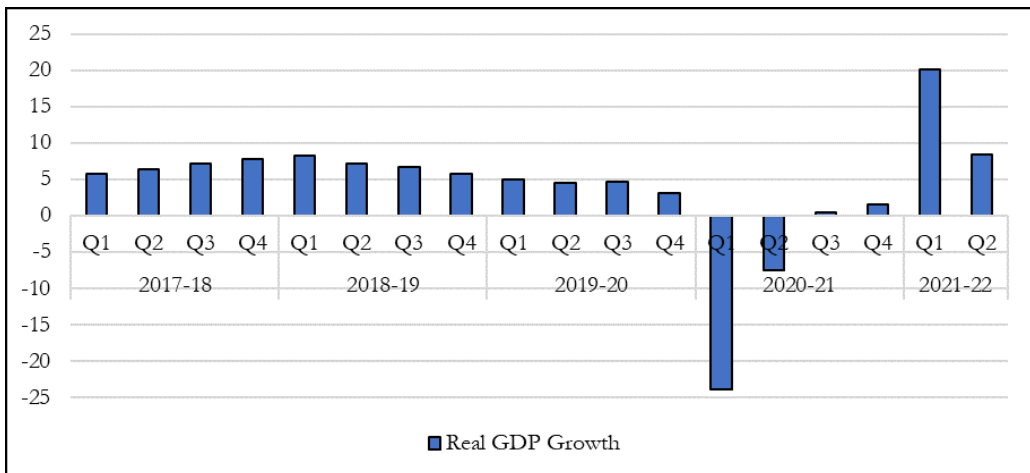


Figure 1.4: India's Real GDP Growth in Perspective (Percent)



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

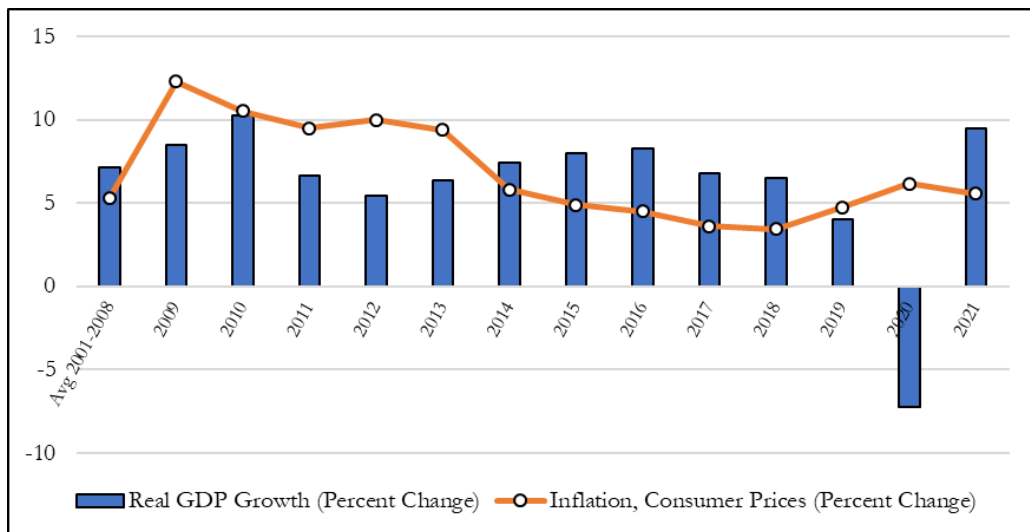
Figure 1.5: Quarterly Real GDP Growth (Change over Same Quarter Previous Year) (Percent)



Source: ACI based on data from Ministry for Statistics and Programme Implementation (MOSPI)

To understand India's economic recovery post COVID-19 in 2020, we zoom in on the supply-side and demand-side breakdowns of the GDP. As shown in Figure 1.7, the expansion of GVA during FY2020-21 was supported by resilient growth in agriculture along with a recovery in manufacturing and non-contact intensive services from the second to the fourth quarters of FY2020-21 (Reserve Bank of India, 2021). The agriculture sector showcased consistent growth as the real GVA in agriculture continued rise above its pre-pandemic level. Additionally, the industry sector, driven mainly by the manufacturing and construction sectors, surpassed its pre-pandemic levels and emerged as a key driver of growth (Asian Development Bank, 2021b). However, the sale of motor vehicles fell by double digits in October 2021 due to supply chain disruptions caused by semiconductor shortages. Lastly, the GVA in the services sector expanded due to a rapid escalation in trade, hotel, and communication services as contact-based services resumed and mobility restrictions eased in 2021.

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



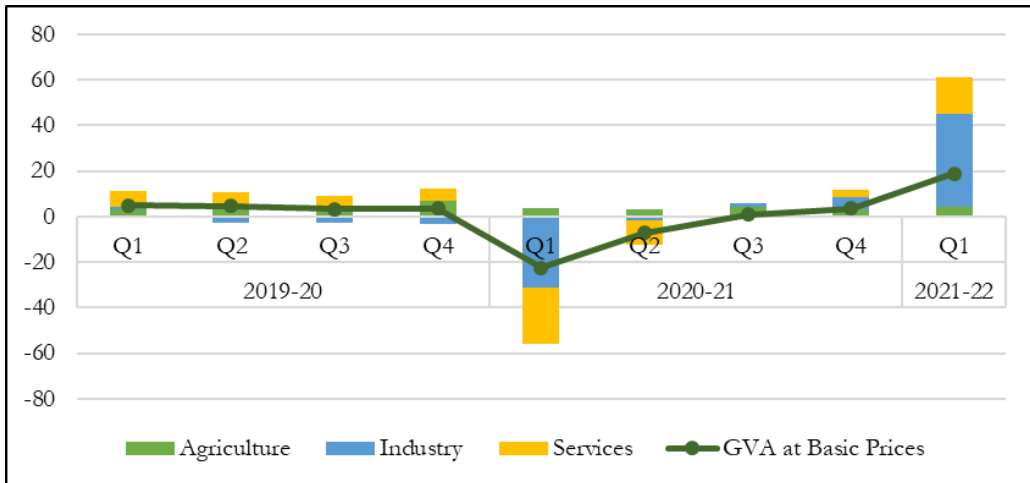
Source: ACI based on data from IMF, WEO.

An examination of the demand side indicates (see figure 1.8) a strong recovery in investment as it surpassed its pre-pandemic level in the first quarter of FY2021-22. Investment has emerged as a robust macroeconomic growth driver mainly due to increased public sector expenditure on infrastructure and the provision of funds by the financial sector through multiple channels (Ministry of Finance, Government of India, 2021a).

Additionally, private consumption has witnessed a significant recovery as its share in GDP growth reached 19.3 percent in the first quarter of FY2021-22 from 2.7 percent in the last quarter of FY2020-21 (ibid.). The recovery has led this jump in private consumption in the services sector. Lastly, the contraction in the aggregate demand during the second wave of COVID-19, i.e. during the first quarter of FY2021-22, was substantially less severe compared to the first quarter of FY2020-21 because households and businesses were better at adapting to the COVID-19 protocols, and there was a steep decline in the

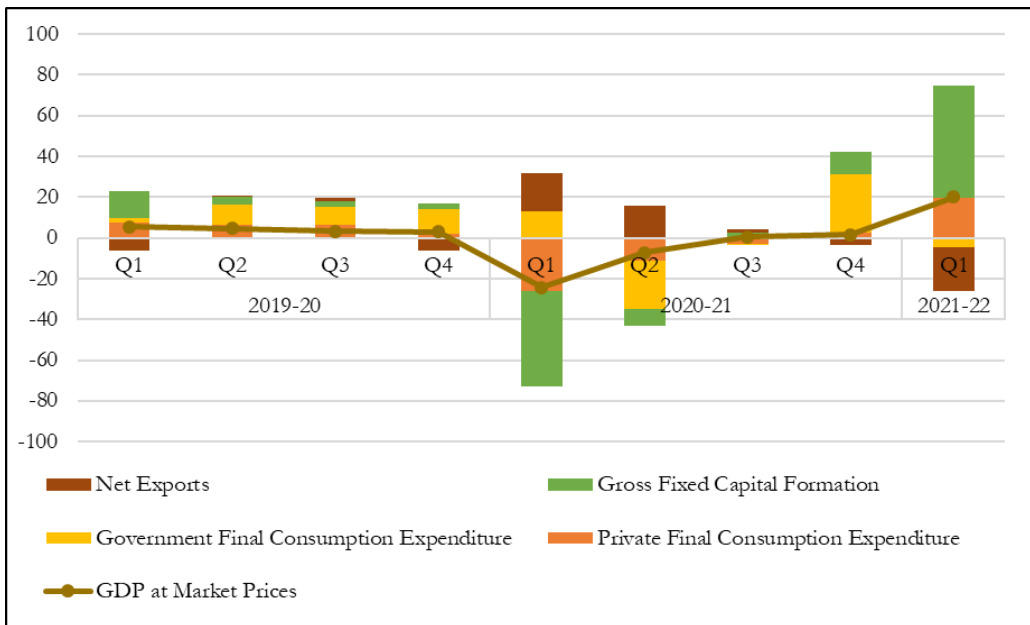
number of new infections after May 2021 (Reserve Bank of India, 2021).

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



Note: 2018-19 figures are first revised estimates and 2019-20 and 2020-21 are provisional estimates.  
 Source: ACI based on data from Reserve Bank of India (RBI).

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



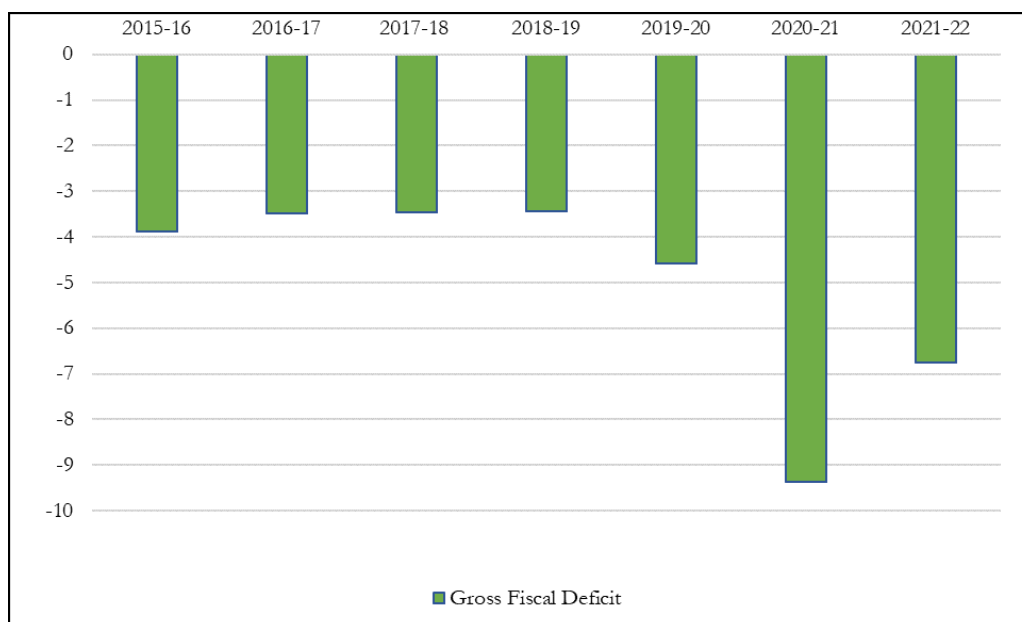
Note: 2018-19 figures are first revised estimates and 2019-20 and 2020-21 are provisional estimates.  
 Source: ACI based on data from RBI.

We now discuss the fiscal landscape of India, including its fiscal balance and the performance of critical fiscal indicators. The fiscal indicators help us to get a better understanding of the government’s financial performance. The central government success-

fully maintained the fiscal deficit below 4 percent until FY2019-20 (see figure 1.9). However, the fiscal deficit in FY2020-21 was estimated to be around 9.3 percent owing to an increase in the government expenditure on fiscal stimulus packages, reductions in tax and non-tax receipts, and a fall in disinvestment receipts (The Hindu, 2021b).

In 2021, the central government announced another relief and stimulus package worth ₹ 6.28 lakh crore (US\$ 84.9 billion) to support the economic recovery following the 'Delta' variant outbreak (India Briefing, 2021a). This stimulus package was the fourth edition of the relief measures introduced by the government to boost the economy by enhancing healthcare facilities, extending inexpensive credit loans to small firms in the agriculture, exports and tourism sectors, and temporarily waiving tourist visa fees. The package also included an additional subsidy for DAP (Diammonium Phosphate) and PK (Phosphatic and Potassic) fertilisers, as well as an extension of the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) until November 2021 (IBEF, 2021). The central government also took measures to reduce the business tax burden by announcing temporary relief measures for GST taxpayers, extending the tax filing deadlines and introducing new Tax Deducted at Source/ Tax Collected by seller (TDS/TCS) provisions to ease compliance norms for businesses. As of September 2021, the central government had provided fiscal support worth ₹ 8,084 billion (US\$ 109 billion), which is roughly 4.1 percent of GDP, since the onset of the pandemic (International Monetary Fund, 2021b). The fiscal deficit for FY2021-22 is projected to be 6.8 percent (The Economics Times, 2022a).

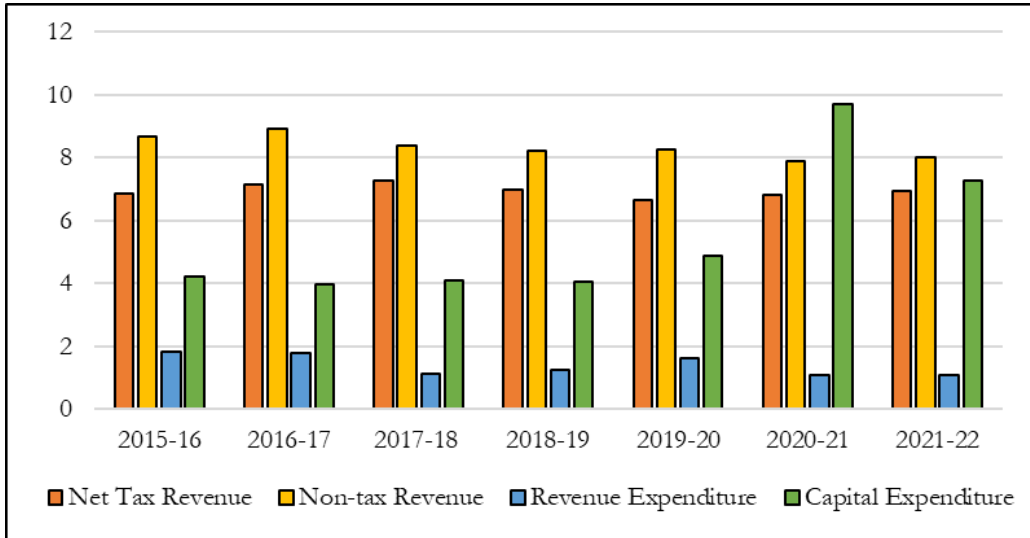
**Figure 1.9: Fiscal Balance (Percent of GDP)**



Source: ACI based on data from RBI.

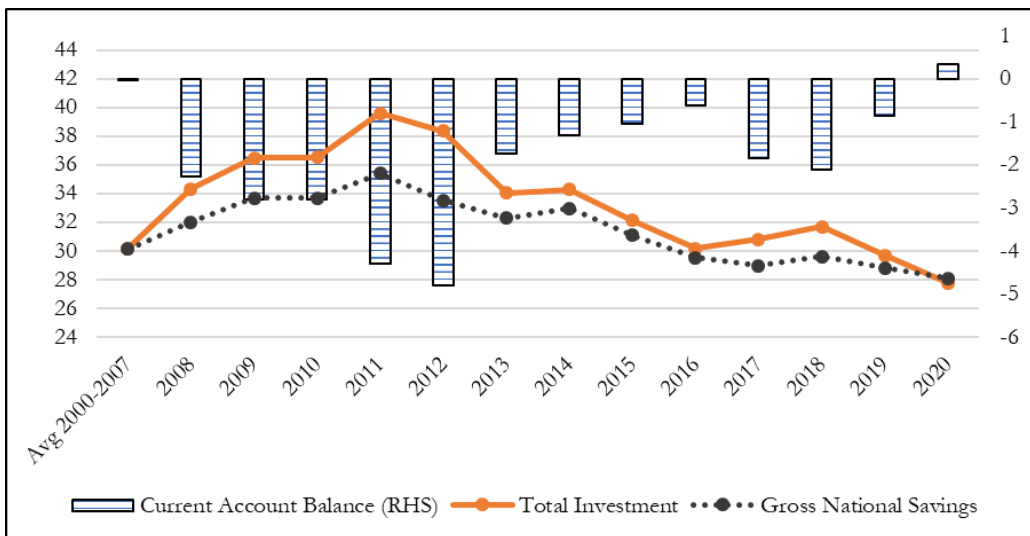
A discussion of fiscal deficit sans a review of government revenue and expenditure is incomplete. Figure 1.10 provides a breakdown of the various components of the fiscal deficit. Since 2015-16, the revenue expenditure incurred by the central government has been consistently high.

Figure 1.10: Key Fiscal Indicators (Percent of GDP)



Source: ACI based on data from RBI.

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



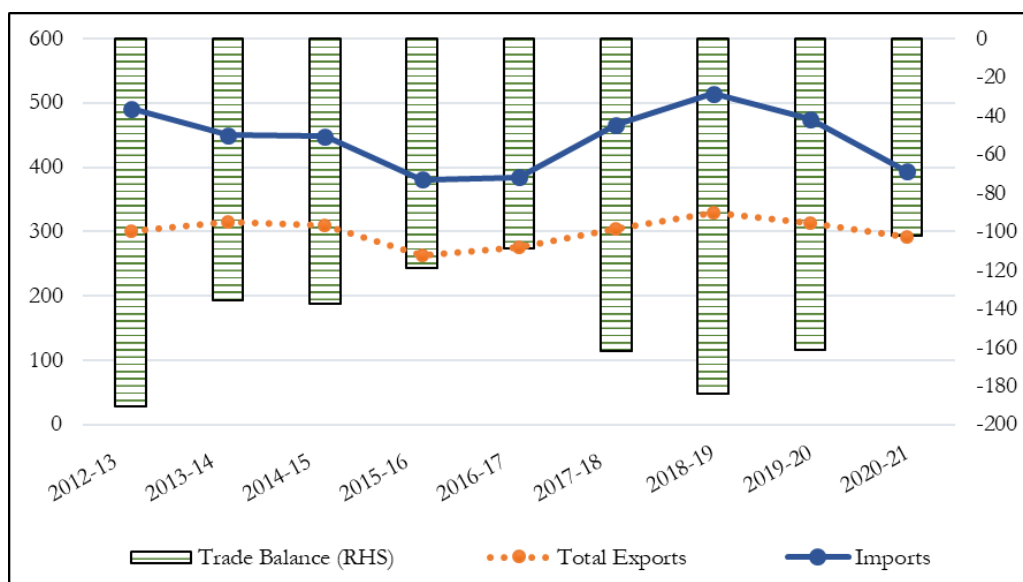
Source: ACI based on data from IMF, WEO.

Moreover, the non-tax revenue and the tax revenue have been falling short of the central government’s total expenditure. Due to a nationwide lockdown in 2020, economic

activity came to a standstill, leading to a slump in tax revenue collection (The Hindu, 2020b). The tax and non-tax revenue declined by 29.5 and 50 percent respectively during the first four months of 2020-21 as compared to the corresponding period in 2019-20 (Asian Development Bank, 2020).

However, the central government's finances improved between April and October 2021 because of significant YoY growth in both direct and indirect taxes. This improvement in tax revenue is attributable to higher excise duties and measures to ensure tax compliance, particularly the Vivaad se Vishwas (no dispute but trust) scheme (Asian Development Bank, 2021c).

**Figure 1.12: Exports and Import of Merchandise Trade and Trade Balance (US\$ Billion)**



Source: ACI based on data from RBI.

The government also increased the public capital expenditure in infrastructure by 28.3 percent during the first seven months of 2021-22 (Ministry of Finance, Government of India, 2021b). Lastly, the revenue expenditure incurred by the government during the same period grew by only 7.5 percent (YoY), implying an apparent shift towards considerably improved quality of total expenditure.

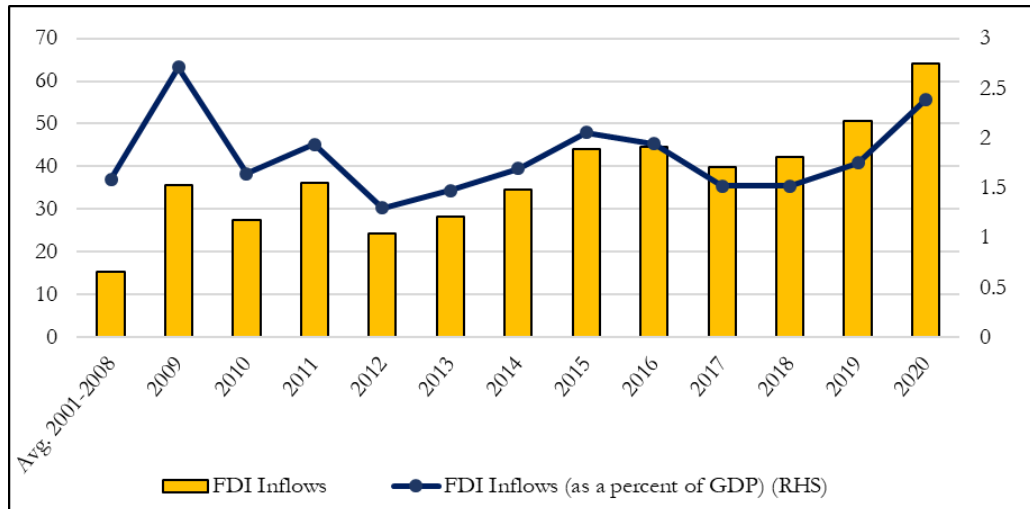
Figure 1.11 presents India's national savings, investment and current account deficit (CAD) as a percentage of GDP. After the 2008 global financial crisis, both national savings and investments witnessed positive growth, with investments growing faster than savings. However, since 2012 both indicators have been experiencing a downward trend, and in 2020 total investment fell to an all-time low. In the following year, total investments increased marginally, owing to economic recovery, a surge in vaccination coverage and efficient economic management - indicating a kick-start of the investment cycle. After remaining in surplus in 2020, the current account balance was in deficit in 2021 due to a rebound in domestic demand and an increase in the oil import bill (Asian Development

Bank, 2021c).

Discussion on CAD leads us to discuss India's trade balance, exports and imports. As seen in Figure 1.12, the upward trend in exports and imports since 2016-17 ended in 2019-20 due to shocks to the global economy, including the COVID-19 pandemic, which has disrupted the global supply chain networks (Zhang and Gupta, 2020). The trade deficit in 2020 fell as imports shrank more than exports in 2020-21 (Asian Development Bank, 2021c). However, there has been a rebound in the export of merchandise in the first three quarters of 2021-22. In April-December 2021, the export of merchandise increased by 26.49 percent over the same period in 2019 - reaching US\$ 301.38 billion (Ministry of Commerce and Industry, Government of India, 2022).

The export commodity groups that witnessed a positive growth in December 2021 over the corresponding month in the preceding year, included engineering goods, petroleum goods, FMCG goods, gems and jewellery, drugs and pharmaceuticals and electronic goods. On the other hand, imports of merchandise for the same period were valued at US\$ 443.82 billion, registering a 21.87 percent increase over the corresponding period in 2019. The import commodities that showed positive growth were petroleum, crude & products, electronic goods, gold, machinery, electrical & non-electrical, and FMCG goods.

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



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

To conclude our discussion on the macroeconomic landscape of the Indian economy, we look at the impact of COVID-19 on foreign direct investment (FDI) and its recovery post-2020. FDI inflows for India have been showing an upward trend since 2017, but there had been no significant increase in the FDI inflows as a percentage of GDP until 2020 (Zhang and Gupta, 2020). However, in 2020-21, FDI inflows as a percentage of GDP increased by up to 2.3 percent. In the same period, the total FDI inflow was 22 percent higher than for the first eight months of 2019-2020, which is the pre-pandemic period

(Invest India, 2021). Additionally, during the first four months of 2021-22, the total FDI inflow was 62 percent higher than in the corresponding period of the previous fiscal year.

The total FDI equity inflow increased by 168 percent in the first three months of 2021-22 compared to the corresponding period in 2020-21 (Press Information Bureau, Government of India, 2021). The majority of FDI equity inflow was reported to be in the automobile sector (27 percent), followed by computer software & hardware (17 percent) and the service sector (11 percent). This increase in the FDI inflows is attributable to the measures taken by the government, including FDI policy reforms, investment facilitation, and ease of doing business.

### 1.3 Roadmap of the Book

This book, *Shaping the Post-Pandemic Recovery: A Competitiveness Analysis of India* is the ninth edition of ACI's competitiveness analysis of the sub-national economies of India. The following two chapters, Chapters 2 and 3, present the competitiveness analysis at the sub-national and regional levels. The chapters set the ground by providing the rationale behind this analysis and defining ACI's competitiveness framework methodology, which forms the basis of the study.

In Chapter 2, subjectivity from weight assignment is eliminated by relaxing the assumption of equal weights and by assigning Shapley values. Shapley values is an important concept used in cooperative game theory. This approach contributes robustness and objectivity to the research findings, given that this method is based on solid mathematical and theoretical foundations.

Chapter 2 also discusses the results of a novel tool called the *What-if* simulation analysis. The *What-if* simulation offers constructive insights regarding the strengths and weaknesses of each sub-national economy as well as of the region. It identifies the path for improving these sub-national economies if 20 percent of their weakest indicators were raised to the national average, ceteris paribus. This simulation also acts as a reminder to the top sub-national economies to be mindful of the competition as the other sub-national economies can enhance their performance by implementing relevant policy recommendations.

Chapter 3, not only presents the competitiveness ranking and score analysis, but also provides a discussion on the top 20 percent of each region's strongest and weakest indicators.

In Chapter 4, the recovery of the sub-national economies of India during the COVID-19 pandemic has been analysed. A set of 10 indicators has been used to measure the impact of the first and second waves of COVID-19 on investment and consumption across the 36 sub-national economies of India. Lastly, the chapter analyses the sub-national scores and rankings over time and the impact of the COVID-19 pandemic on preexisting regional disparities.



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