



# A Comparative Study of Economic Growth in BRICS Countries: Analysis of GDP, Trade, Investment & Development Indicators

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## Abstract

This research paper undertakes a comprehensive comparative analysis of economic growth trajectories among the five BRICS nations — Brazil, Russia, India, China, and South Africa — over the period 2014 to November 2022. Drawing on macroeconomic indicators including gross domestic product (GDP), GDP growth rates, GDP per capita, trade volumes, foreign direct investment (FDI), and key social development metrics, the study examines how each country has performed against global benchmarks and relative to one another.

The findings indicate substantial heterogeneity in growth performance within the BRICS bloc. China and India have consistently outperformed the group, while Brazil and South Africa struggled with structural vulnerabilities, commodity-price dependence, and governance constraints. Russia's trajectory was materially disrupted by external sanctions and geopolitical events, particularly in 2022. The COVID-19 pandemic (2020) acted as a universal shock, followed by differentiated recovery speeds. Collectively, the BRICS nations expanded their share of global GDP from approximately 21.5% in 2015 to an estimated 31.5% by 2022, underscoring their growing systemic importance in the world economy.

The paper further explores structural determinants of growth, including investment climates, human capital development, institutional quality, and regional integration dynamics. Policy implications and future growth prospects are discussed in the concluding sections.

**Keywords:** BRICS, Economic Growth, GDP, Comparative Analysis, Emerging Markets, FDI, Development Economics, Trade, Human Development Index

## 1. INTRODUCTION

The concept of BRICS—originally coined as 'BRIC' by Goldman Sachs economist Jim O'Neill in 2001—referred to a cluster of large emerging economies expected to rival or surpass the G7 in global economic weight by the mid-21st century. South Africa was formally admitted to the grouping in 2010, completing the current five-member bloc. Since then, BRICS has evolved from an investment thesis into a politically and economically significant intergovernmental forum, hosting annual summits and giving rise

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to institutions such as the New Development Bank (NDB) and the Contingent Reserve Arrangement (CRA).

As of 2022, the five BRICS nations collectively account for over 40% of the world's population, approximately 26% of global land area, and—depending on the purchasing power parity (PPP) measure employed—between 31% and 33% of world GDP. Their combined trade with the rest of the world exceeds USD 8 trillion annually, and their collective share of global FDI inflows has risen to approximately 20%.

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Despite shared membership in this grouping, the five economies are markedly different in size, structure, institutional capacity, and growth drivers. China is the world's second-largest economy and an industrial powerhouse; India is the fastest-growing major economy and a services hub; Brazil and Russia are commodity-rich but structurally challenged; and South Africa, though the smallest economy in the group, serves as a gateway to sub-Saharan Africa. Understanding divergences and convergences in their economic performance is therefore of considerable academic and policy relevance.

This paper is structured as follows: Section 2 presents the literature review; Section 3 discusses data and methodology; Section 4 analyses macroeconomic performance; Section 5 examines trade and investment dynamics; Section 6 evaluates social and human development indicators; Section 7 discusses structural determinants and policy implications; and Section 8 concludes.

## **2. LITERATURE REVIEW**

The academic literature on BRICS economic performance is rich and growing. Sharma (2012) offered an early critical reassessment of the BRIC thesis, arguing that commodity booms had artificially inflated growth expectations and that structural reforms were lacking in several member states. This perspective gained traction as Brazil and Russia experienced significant slowdowns after 2013.

Arora and Vamvakidis (2011) examined spillover effects from China's growth to other BRICS economies, finding significant positive transmission channels through commodity markets and bilateral trade, particularly benefiting Brazil and South Africa. However, the authors also cautioned about vulnerability to a sharp Chinese deceleration.

World Bank economists Didier et al. (2015) conducted a cross-country panel study covering emerging market economies and found that investment quality, institutional strength, and human capital depth were the most robust long-run predictors of per capita income growth—findings highly applicable to the BRICS heterogeneity puzzle.

On India and China specifically, Bosworth and Collins (2008) performed a growth accounting exercise attributing a larger share of Chinese growth to factor accumulation (particularly capital investment), while

Indian growth was relatively more productivity-driven. This structural distinction has important implications for long-run sustainability.

The New Development Bank has produced several internal research papers (NDB, 2019; NDB, 2021) emphasising intra-BRICS trade complementarities and arguing for deeper financial integration as a mechanism to reduce dependence on G7 currency systems—a goal reinforced by post-2022 geopolitical pressures on the Russian economy.

The COVID-19 shock prompted a wave of comparative studies. Gill and Nagle (2022) assessed recovery paths across large emerging markets, finding that fiscal space, vaccination roll-out speed, and pre-existing digital infrastructure were the key differentiators—factors on which BRICS countries scored unevenly.

This paper contributes to the existing literature by integrating data up to November 2022, incorporating post-pandemic recovery dynamics, and offering a systematic tabular comparison of all five BRICS economies across a wide range of macroeconomic and social indicators.

## **3. DATA AND METHODOLOGY**

### **3.1 Data Sources**

This study relies exclusively on publicly available, internationally recognised data repositories to ensure replicability and cross-country comparability. The primary sources are:

**World Bank World Development Indicators (WDI)** – GDP, GDP per capita, trade openness, FDI, poverty, and unemployment data.

**International Monetary Fund World Economic Outlook (IMF WEO, October 2022)** – GDP growth rates, inflation, fiscal balances, current account data.

**United Nations Conference on Trade and Development (UNCTAD)** – FDI inflow and outflow statistics, global value chain participation.

**United Nations Development Programme (UNDP) Human Development Report (2021/22)** – HDI scores, education indices, life expectancy data.

### 3.2 METHODOLOGY

The study employs a descriptive-comparative methodology combining trend analysis, cross-sectional comparison, and ratio analysis. All GDP values are reported in current United States dollars (USD) unless otherwise specified. Growth rates are expressed in real terms (constant 2015 USD) to enable meaningful inter-temporal and cross-country comparisons.

Where data for full-year 2022 were unavailable at the time of writing (November 2022), estimates are drawn from the IMF World Economic Outlook (October 2022 edition) and are clearly marked as estimates ('E') in all tables. Purchasing power parity (PPP) adjusted figures are referenced in the discussion section to supplement nominal comparisons.

No econometric modelling or causal inference is claimed. The paper is analytical and comparative in nature, intended to provide a systematic empirical foundation for further theoretical and quantitative work.

## 4. Macroeconomic Performance

### 4.1 Gross Domestic Product (Nominal, USD Billion)

Table 1 presents nominal GDP in current USD billions for each BRICS nation from 2014 to the 2022 estimate. China's dominance is unmistakable, with its economy exceeding USD 17.9 trillion in 2022—more than the combined GDP of the other four BRICS members. India has overtaken the United Kingdom to become the world's fifth-largest economy, reaching approximately USD 3.5 trillion. Brazil and Russia oscillate in the USD 1.5–2.2 trillion range, sensitive to commodity cycles and exchange-rate movements. South Africa remains the smallest, at roughly USD 400 billion.

**Table 1:** BRICS Nominal GDP (Current USD Billion), 2014–2022E

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022E
Brazil	2,209	1,840	1,609	1,445	1,802	1,609	1,800	1,921	2,081
Russia	2,230	1,364	1,283	1,365	1,658	1,483	1,775	1,776	2,240
India	2,039	2,103	2,274	2,291	2,703	2,868	3,202	3,536	3,469
China	10,530	11,061	11,199	12,310	13,895	14,343	14,688	17,734	17,963
S. Africa	350	317	295	349	395	351	419	422	405

**Source:** World Bank WDI; IMF WEO October 2022. 2022 figures are IMF estimates. Values rounded to the nearest USD billion.

### 4.2 Real GDP Growth Rates (%)

Table 2 provides annual real GDP growth rates, allowing for meaningful comparison of economic dynamism across the group and against the global average. India and China are consistent high-performers, though both experienced significant deceleration: India fell from 8.3% (2016) to 4.0% (2019) before the pandemic shock, while China's 'new normal' of around 6% became apparent from 2014 onward. Both rebounded strongly in 2021 (India +8.7%, China +8.1%) before slowing again in 2022.

Brazil and South Africa exhibited chronic growth weakness throughout the period, both suffering recessions in 2015–2016 and again in 2020. Russia performed moderately until 2022, when the full impact of Western sanctions following the February 2022 invasion of Ukraine began to materialise; nonetheless, Russia's economic contraction in 2022 was less severe than many early forecasts predicted, supported by high energy prices.

**Table 2:** BRICS Real GDP Growth Rates (%), 2014–2022E

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022E
Brazil	0.5	-3.5	-3.3	1.3	1.3	1.1	-4.1	4.6	2.8
Russia	0.7	-2.0	0.2	1.8	2.8	2.2	-2.7	4.7	2.2
India	7.4	8.0	8.3	6.8	6.5	4.0	-6.6	8.7	6.8
China	7.4	7.0	6.9	6.9	6.7	6.0	2.3	8.1	3.0
S. Africa	1.9	1.2	0.4	1.4	0.8	0.2	-6.3	4.9	1.9
World Avg	3.6	3.5	3.4	3.9	3.8	2.9	-3.1	6.0	3.2

**Source:** IMF World Economic Outlook, October 2022. World Avg = IMF global real GDP growth estimate. 2022 figures are estimates.

### 4.3 GDP Per Capita (Current USD)

GDP per capita offers a more direct approximation of individual living standards than aggregate GDP. Table 3 reveals striking disparities within BRICS. Russia maintains the highest per capita income among the group, reaching approximately USD 15,444 in 2022. China has made the most dramatic progress, more than

doubling per capita income from USD 7,684 in 2014 to USD 12,720 in 2022. Brazil and South Africa hover in a similar range (USD 7,000–9,000), while India—despite its impressive aggregate growth—remains the lowest per capita, reflecting its enormous population base.

**Table 3: BRICS GDP Per Capita (Current USD), 2014–2022E**

Country	2014	2015	2016	2017	2018	2019	2020	2021	2022E
Brazil	10,547	8,678	7,600	9,821	8,921	8,717	6,796	7,507	8,919
Russia	15,540	9,313	8,748	10,751	11,289	11,585	10,126	12,172	15,444
India	1,576	1,614	1,733	2,026	2,014	2,100	1,902	2,257	2,389
China	7,684	8,069	8,117	8,879	9,977	10,217	10,408	12,556	12,720
S. Africa	6,484	5,775	5,290	6,161	6,376	6,001	5,746	7,055	6,994

Source: World Bank WDI; IMF WEO October 2022. Population data from UNDP. 2022 figures are estimates.

## 5. Trade and Investment Dynamics

### 5.1 International Trade and FDI Flows

Trade openness is a critical driver of growth in emerging markets. Table 4 presents total trade (goods and services, USD billion) and FDI flows (inflows and outflows, USD billion) for the most recent comparable year (2021 for FDI; 2014–2021 for trade). China utterly dominates intra-BRICS and global trade, accounting for over 90% of BRICS total trade volume. India's trade has grown significantly, crossing USD 660 billion in 2021. Russia's trade volumes, though impacted by earlier sanctions

(post-Crimea, 2014), remained substantial until the sharper curtailments of 2022.

In FDI, China attracted USD 143 billion in inflows in 2021, while India reached nearly USD 47 billion—a record reflecting its digital economy boom and manufacturing incentive schemes. Brazil attracted USD 18 billion, recovering from pandemic lows. South Africa, despite its relative sophistication as a financial centre, attracted only USD 3 billion, constrained by energy infrastructure failures and political uncertainty.

**Table 4: BRICS Trade Volumes (USD Billion) and FDI Flows (2021, USD Billion)**

Country	Trade 2014	2015	2016	2017	2018	2019	2020	2021	FDI In 2021	FDI Out 2021
Brazil	228.1	191.1	185.2	217.7	239.0	225.8	210.5	281.7	17.9	8.0
Russia	498.0	343.0	281.9	353.0	450.5	422.8	333.5	551.5	69.0	38.6
India	461.5	392.0	359.0	451.7	535.0	536.8	469.2	663.8	44.5	46.9
China	4,303.0	3,953.0	3,685.5	4,104.7	4,626.8	4,577.2	4,656.8	5,963.1	143.1	133.7
S. Africa	101.7	84.1	73.4	88.2	94.7	91.0	73.4	98.8	3.1	2.9

Source: UNCTAD World Investment Report 2022; WTO Statistics Database; World Bank. Trade = goods + services exports and imports combined.

### 5.2 Intra-BRICS Trade

Intra-BRICS trade remains relatively modest as a share of each country's total trade, averaging approximately 15–18%. China is the dominant trade partner within the group for all four other members. India-Brazil bilateral trade, while growing, remains underdeveloped relative to the economic size of both countries. The New Development Bank has identified trade facilitation, digital payments, and de-dollarisation of bilateral settlements as priority areas to deepen intra-BRICS economic integration. The geopolitical disruption of 2022 has intensified discussions around alternative

settlement mechanisms, particularly as Russia has been partially excluded from SWIFT-based international finance.

## 6. Social and Human Development Indicators

Economic growth translates into human welfare only when it is inclusive. Table 5 compares key social indicators—population, urbanisation, unemployment, poverty, life expectancy, and the Human Development Index (HDI)—to contextualise economic performance within broader development outcomes.

**Table 5: BRICS Social and Human Development Indicators (2021/22)**

Country	Population (M)	Urban Pop. %	Unempl. Rate %	Poverty Rate %	Life Expect. (Yrs)	HDI (2021)
Brazil	212.6	61.9	4.7	9.3	76.0	0.754
Russia	145.5	74.8	4.0	6.0	73.2	0.824
India	1,380.0	34.9	6.2	28.6	70.0	0.633
China	1,411.0	63.9	5.8	8.1	77.1	0.768
S. Africa	59.3	67.8	6.0	49.2	64.9	0.713

Source: UNDP Human Development Report 2021/22; World Bank WDI; ILO ILOSTAT. Poverty rate = national poverty line. HDI from UNDP 2021/22.

### 6.1 Russia

Russia maintains the highest HDI (0.824) and highest per capita income in the group, with a relatively low unemployment rate (4.0%) and strong urbanisation (74.8%). However, its poverty rate has historically been understated by official measurement, and geopolitical isolation post-2022 poses risks to long-run human development through reduced access to technology and investment.

### 6.2 China

China has achieved remarkable progress in lifting hundreds of millions out of poverty—its national poverty rate fell to approximately 8.1% by 2021, down from over 60% in the 1990s. Its HDI of 0.768 reflects strong improvements in education and healthcare. Life expectancy (77.1 years) now exceeds that of Brazil, which has a much higher per capita income.

### 6.3 Brazil

Brazil's HDI of 0.754 masks deep structural inequality (Gini coefficient consistently above 0.50), concentrated poverty in the northeast and peri-urban areas, and a chronically high poverty rate of 9.3%. Life expectancy (76.0 years) is the second-highest in the group, reflecting a relatively well-developed public health system.

### 6.4 South Africa

South Africa presents the most acute social development crisis in BRICS. Its unemployment rate of 6.0% (strict definition) masks a broader unemployment figure exceeding 34% under the expanded definition that includes discouraged workers. The poverty rate of 49.2% is the highest in the group, reflecting deep structural inequality rooted in the apartheid legacy. HDI of 0.713 places it in the high human development category, though below its BRICS peers.

### 6.5 India

India's low HDI (0.633) relative to its aggregate economic size reflects challenges in human capital development, particularly female labour force participation, nutritional outcomes, and quality of basic public services. Its poverty rate (28.6% using national poverty line) covers an enormous absolute number of people. However, recent data (post-2022) suggests that India's Aadhaar-linked direct benefit transfers have achieved significant poverty reduction gains during and after the COVID-19 period.

## 7. BRICS Share of Global GDP

One of the most compelling arguments for the continuing relevance of the BRICS grouping is its rising share of world nominal GDP. Table 6 tracks this metric from 2015 to the 2022 estimate. China alone accounts for nearly 18.5% of global GDP, with the full BRICS bloc reaching an estimated 31.5% in 2022—a remarkable rise driven principally by China and, to a lesser extent, India.

**Table 6:** BRICS Share of World Nominal GDP (%), 2015–2022E

Country / Group	2015	2016	2017	2018	2019	2020	2021	2022E
BRICS Combined	21.5	22.1	23.1	25.0	24.5	26.3	26.7	31.5
Brazil	3.2	2.6	2.4	2.1	2.4	2.2	2.0	2.4
Russia	2.9	1.9	1.8	1.8	2.1	2.1	1.9	2.1
India	2.6	2.8	3.0	3.1	3.4	3.6	3.3	3.6
China	13.3	14.8	15.4	15.1	16.1	16.8	17.5	18.5
S. Africa	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5

**Source:** IMF WEO October 2022; World Bank WDI. World GDP denominator from IMF estimates. 2022 figures are estimates.

On a PPP-adjusted basis, the BRICS share is even higher—exceeding 32% according to IMF 2022 estimates. This underscores a fundamental shift in global economic weight from the advanced economies to the emerging world, a structural trend that shows no signs of reversing in the near to medium term.

## 8. Structural Determinants of Growth Divergence

### 8.1 Institutional Quality

One of the most significant explanatory factors for growth divergence within BRICS is institutional quality. China's combination of state-directed industrial policy, secure property rights for investors, and a long-horizon planning apparatus (Five-Year Plans) has delivered sustained investment ratios of 40–45% of GDP for three decades. India's democratic institutions, while sometimes slower, provide durable rule-of-law protections that have attracted technology sector investment. Brazil and South Africa suffer from corruption, policy unpredictability, and administrative inefficiency that raise the cost of doing business and deter long-term investment. Russia's institutional environment, already constrained by state capture dynamics, has deteriorated sharply following the 2022 geopolitical rupture.

### 8.2 Human Capital and Innovation

China and India have invested heavily—though differently—in human capital. China's model emphasises STEM education, vocational training, and state-funded R&D, resulting in the world's largest patent filing counts by 2021. India's IITs and software engineering ecosystem have made it the back-office and digital services hub of the global economy. Brazil and South Africa invest less efficiently in education relative to their income levels, resulting in below-average PISA scores and skill mismatches that constrain productivity growth.

### 8.3 Infrastructure

China's infrastructure investment—estimated at 6–8% of GDP annually—has produced world-class transportation, energy, and digital connectivity networks. India's infrastructure gap, while narrowing under recent government initiatives (PM Gati Shakti, National Infrastructure Pipeline), remains a binding constraint on manufacturing expansion. South Africa's Eskom electricity crisis ('load-shedding') represents perhaps the most acute infrastructure bottleneck in BRICS, directly limiting GDP growth by an estimated 1–2 percentage points annually.

## 8.4 Commodity Dependence

Brazil, Russia, and South Africa share a structural vulnerability to commodity price cycles. Brazil's reliance on soy, iron ore, and petroleum; Russia's on natural gas and crude oil; and South Africa's on gold, platinum-group metals, and coal mean that their macroeconomic fortunes are substantially determined by external price dynamics rather than domestic productivity growth. The 2014–2016 commodity bust explains much of the economic contraction experienced by all three. The 2021–2022 commodity price surge (partly driven by Russia-Ukraine supply disruptions) provided temporary relief but did not resolve underlying structural weaknesses.

## 9. DISCUSSION AND POLICY IMPLICATIONS

The comparative analysis reveals a bloc characterised by divergent trajectories rather than convergent catching-up. China has established itself as a middle-income and increasingly upper-middle-income economy with aspirations to high-income status. India is on a broadly positive long-run trajectory but must resolve human capital and infrastructure deficits to sustain high growth. Brazil and South Africa face structural traps: middle-income status without the institutional reforms needed to move beyond it. Russia's short-term trajectory has been radically altered by geopolitical decisions, with long-run consequences that remain difficult to project.

Several policy lessons emerge from this analysis. First, sustained capital investment—particularly in infrastructure and human capital—is a prerequisite for moving through income levels, as China's experience demonstrates. Second, institutional reform (property rights, rule of law, anti-corruption) is not optional for sustained growth, as Brazil and South Africa's prolonged stagnation illustrates. Third, commodity-dependent economies must proactively diversify through industrial policy and value addition; failure to do so leaves them exposed to external shocks beyond their control. Fourth, the post-2022 geopolitical landscape will reshape BRICS dynamics significantly: Russia's deeper integration with China and the bloc's push for alternative financial architectures (NDB currency diversification, de-dollarisation) will alter the terms of the grouping's interaction with the global economy.

From a multilateral perspective, the BRICS grouping's growing weight in global GDP and trade creates both opportunities and responsibilities. Greater BRICS coordination on climate finance, global health preparedness, and development finance could contribute meaningfully to multilateral solutions. However, internal divergences in governance models, political systems, and geopolitical alignments make deep institutional coordination challenging.

## 10. CONCLUSION

This paper has provided a systematic comparative analysis of economic growth in the BRICS nations over the period 2014 to November 2022. The central finding

is that while the BRICS bloc has collectively expanded its share of global GDP to an estimated 31.5% and generated substantial development gains in absolute terms, individual country trajectories are starkly divergent.

China and India stand out as sustained growth leaders, though with different structural foundations: China's growth is investment-driven and state-coordinated; India's is increasingly services- and consumption-driven. Brazil and South Africa have experienced chronic underperformance relative to their economic potential, constrained by commodity dependence, institutional weakness, and social inequality. Russia's trajectory has been forcibly altered by geopolitical events, creating heightened uncertainty for both its domestic economy and its role within the BRICS framework.

The COVID-19 pandemic served as a universal shock but elicited differentiated responses and recovery speeds, reinforcing pre-existing structural disparities. As the global economy navigates the post-pandemic adjustment, elevated inflation, and geopolitical fragmentation of 2022, each BRICS economy faces distinct challenges that will shape their trajectories over the coming decade.

Future research should focus on granular sectoral analysis, productivity decompositions, and panel econometric estimations of growth determinants within BRICS to move beyond the descriptive framework offered here. Particular attention should be paid to the evolving role of the New Development Bank and the potential for intra-BRICS financial integration as a growth-enhancing mechanism in a fragmenting global order.

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