



Rising Inequality or Regional Strength? Investigating Income Growth Divergence among BRICS Nations

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ABSTRACT

This paper examines income growth dynamics in BRICS economies (1991–2022) using panel data and random-effects estimation. It tests the income convergence hypothesis by analyzing GDP per capita growth and key drivers such as investment, FDI, technology, trade, and education expenditure. Contrary to β -convergence theory, findings show income divergence: higher-income BRICS countries, especially China and India, grow faster than their lower-income peers. The study quantifies divergence speed and illustrates widening income gaps, underscoring the need for structural reforms, innovation-driven investment, and regional cooperation. It also calls for further research accounting for cross-sectional dependence and country-specific heterogeneity.

Keywords: β -Convergence, BRICS Economies, Economic Growth, Income Divergence, Institutional Quality, Structural Inequality

JEL Classifications: F43, P45, O47, F63

1. INTRODUCTION

The formation of the BRICS bloc—comprising Brazil, Russia, India, China, and South Africa—was premised on the expectation that these major emerging economies would collectively drive global economic transformation through cooperation, inclusive growth, and equitable development (O'Neill, 2001; Armijo, 2007). Originally grouped for their shared status as large, fast-growing economies with significant influence in their regions and the world, BRICS has increasingly been seen as a counterweight to Western economic dominance (Stuenkel, 2016). Its members have advocated for multipolarity in global governance, reformed financial systems, and South-South cooperation (BRICS Joint Declaration, 2021). However, despite the rhetoric of solidarity and collective progress, a growing body of empirical evidence suggests that BRICS economies are not converging economically as initially anticipated, but are in fact diverging in their growth trajectories (Kowalski, 2020; Jakóbski, 2022). This divergence presents a fundamental challenge to the cohesion, strategic relevance, and long-term economic cooperation within the bloc.

Over the past three decades, China and India have emerged as the standout performers in terms of sustained economic growth, technological advancement, and global market integration (World Bank, 2023). These two economies have consistently outpaced their BRICS counterparts in GDP per capita growth, industrial expansion, and infrastructure development (IMF, 2022). China's rapid transition from an agrarian economy to a global manufacturing powerhouse, alongside India's rise as a major player in technology and services, has placed them in a different league of economic dynamism (Zhang and Wang, 2020). In contrast, Brazil, Russia, and South Africa have struggled with structural weaknesses, commodity dependency, governance challenges, and cyclical downturns (OECD, 2022; PwC, 2023). This growing asymmetry not only widens the economic gap between member states but also raises critical questions about the bloc's ability to coordinate policies and achieve shared development objectives (Bodansky and De Souza, 2021).

The economic divergence within BRICS threatens the core principle of balanced and mutual development that underpins the

bloc's strategic agenda (BRICS Policy Center, 2021). Disparities in economic performance can lead to misaligned interests, competing national priorities, and diminished incentives for meaningful cooperation (Shubin, 2013). For instance, while China and India may prioritize high-tech industries, digital transformation, and green energy, other members may remain preoccupied with managing fiscal deficits, stabilizing commodity-dependent economies, and addressing socio-political unrest (Fourie, 2014). Such divergence risks transforming BRICS from a cohesive alliance into a fragmented coalition where the more successful members dominate agenda-setting, marginalizing the interests of the weaker partners (Roberts, 2017).

Furthermore, divergent growth paths can undermine the credibility of BRICS as a unified platform for advancing alternative models of global economic governance (Hopewell, 2015). External observers and critics may question the bloc's coherence and effectiveness when its members exhibit widening developmental gaps and struggle to implement coordinated economic strategies (Duggan, 2018). This could weaken BRICS' collective bargaining power in international forums such as the G20, WTO, and United Nations, reducing its ability to influence global economic policies in favor of the Global South (Nolte, 2014).

This paper seeks to empirically examine the extent of income divergence among BRICS economies using panel data econometric techniques. By quantifying the divergence and exploring its implications, the study aims to contribute to the broader discourse on the sustainability of BRICS as an economic and political alliance. The findings hold significant implications for policymakers, as they highlight the need for renewed commitment to structural reforms, inclusive growth policies, and targeted cooperation mechanisms that can bridge the widening economic divide within the bloc.

2. THEORETICAL LITERATURE REVIEW ON INCOME CONVERGENCE AND DIVERGENCE

Income convergence and divergence are foundational concepts in growth theory and international development studies. These concepts attempt to explain why some countries catch up with richer nations in terms of per capita income, while others fall further behind. This section critically reviews the theoretical foundations of income convergence and divergence, relating them specifically to the observed growth dynamics within the BRICS economies.

2.1. Neoclassical Growth Theory and Beta-Convergence

The earliest formal articulation of income convergence originates from the neoclassical Solow-Swan growth model, which posits that, under conditions of diminishing returns to capital and constant technological progress, poorer countries should grow faster than richer ones (Solow, 1956). This phenomenon is known as "beta-convergence," where economies with lower initial income levels experience higher growth rates, eventually catching up with wealthier nations (Barro and Sala-i-Martin, 1992).

In this framework, convergence occurs because poorer countries can adopt existing technologies and practices from advanced economies without bearing the initial research and development costs. The model further assumes that capital will flow to regions with higher marginal returns, which are typically poorer regions with lower capital-to-labour ratios (Mankiw et al., 1992). Over time, this leads to a reduction in income disparities, provided that countries have similar savings rates, population growth, and technological progress.

2.2. Conditional versus Unconditional Convergence

Barro and Sala-i-Martin (1992) differentiate between "unconditional" and "conditional" convergence. Unconditional convergence suggests that all economies will converge to the same steady-state level of income per capita, regardless of their structural characteristics. In contrast, conditional convergence posits that countries converge to their own unique steady states, determined by country-specific factors such as human capital, governance quality, and institutional frameworks (Islam, 1995).

This distinction is particularly relevant for BRICS economies, which differ significantly in institutional quality, governance, resource endowments, and economic structures (Stuenkel, 2016). As such, expecting unconditional convergence among BRICS members may be unrealistic. Instead, their divergent growth patterns might reflect convergence towards different steady states, shaped by these structural differences.

2.3. New Growth Theory and Divergence

Contrary to the neoclassical model, endogenous or "new growth" theories emphasize the role of increasing returns to scale, human capital, and technological innovation in sustaining long-term growth (Romer, 1986; Lucas, 1988). These models suggest that countries with advanced technological capabilities and higher levels of human capital can sustain higher growth rates indefinitely, potentially leading to divergence rather than convergence.

In the context of BRICS, China and India have leveraged their large populations, technological capabilities, and strategic economic reforms to sustain high growth rates, thereby pulling ahead of Brazil, Russia, and South Africa (World Bank, 2023). This aligns with the new growth theory, which explains how knowledge spillovers, innovation, and scale economies can entrench existing disparities rather than eliminate them (Aghion and Howitt, 1992).

2.4. The Role of Institutions and Governance

Institutional economics introduces another layer of complexity to the convergence-divergence debate. According to North (1990), the quality of institutions—defined as the formal and informal rules that govern economic interactions—plays a critical role in shaping long-term economic outcomes. Countries with strong property rights, effective legal systems, and stable governance are better positioned to attract investment and sustain growth (Acemoglu et al., 2005).

Within BRICS, the varying quality of institutions is evident. For instance, China and India have implemented substantial economic reforms and governance improvements, while Brazil,

Russia, and South Africa continue to grapple with political instability, corruption, and policy uncertainty (OECD, 2022). These institutional disparities further explain why some BRICS members are experiencing sustained growth while others are stagnating or declining.

2.5. Economic Complexity and Structural Transformation

Recent theoretical contributions also highlight the role of economic complexity and structural transformation in driving convergence or divergence (Hausmann et al., 2007). Economies that diversify into more complex and knowledge-intensive industries tend to achieve higher growth rates. China's shift from low-value manufacturing to high-tech industries exemplifies this process, contributing to its sustained economic expansion (Zhang and Wang, 2020). In contrast, Brazil, Russia, and South Africa remain heavily reliant on commodity exports, making them vulnerable to external shocks and limiting their capacity for structural transformation (PwC, 2023). This lack of economic diversification perpetuates their lagging growth, contributing to divergence within the BRICS bloc.

2.6. Integration With the Theme of this Research

The empirical findings of this study, which reveal significant divergence in GDP per capita growth among BRICS economies, are consistent with the theoretical insights from new growth theory, institutional economics, and economic complexity theory. While the neoclassical model predicts convergence, the realities of technological asymmetries, institutional weaknesses, and limited structural transformation in certain BRICS countries have led to divergent growth paths. This divergence poses a strategic challenge to the BRICS bloc, undermining its collective vision of balanced development and shared prosperity. The findings underscore the need for differentiated policy responses that account for country-specific conditions while also fostering stronger cooperation in areas such as technology transfer, institutional strengthening, and economic diversification.

3. EMPIRICAL LITERATURE REVIEW ON INCOME CONVERGENCE AND DIVERGENCE

The question of whether countries are converging or diverging in their income levels has attracted considerable empirical investigation across different regional, national, and global contexts. This section critically reviews empirical studies conducted in Africa, Asia, Latin America, Europe, and within specific economic blocs, examining their methodologies, models, and findings. The review also identifies gaps in the literature that this study aims to address, particularly in relation to the divergent growth patterns observed among BRICS economies.

Several studies have explored income convergence in Africa, often with mixed results. Fosu (2010), using panel data for Sub-Saharan Africa, applied a fixed-effects model and found weak evidence of conditional convergence, largely dependent on governance quality and investment in human capital. Similarly, Barrios and Strobl (2005) used a dynamic panel data model and found that African

countries exhibit divergence rather than convergence, attributing this to political instability and weak institutions.

These findings highlight the role of structural and institutional factors in shaping growth trajectories in Africa, which is relevant to the BRICS context where South Africa faces similar institutional challenges.

In Asia, the convergence hypothesis has received stronger empirical support. Park and Shin (2012), using a generalized method of moments (GMM) estimator on a panel of Asian economies, found significant evidence of conditional convergence. The study attributed this to high rates of investment, technological adoption, and export-led growth strategies. Similarly, Felipe and Kumar (2011) found that East Asian economies converged rapidly due to effective industrial policies and human capital development. These results align with the observed growth patterns of China and India in the BRICS bloc, suggesting that similar mechanisms may be driving their superior economic performance.

Latin America presents a contrasting picture. De la Torre et al. (2013) used panel regression methods and found limited evidence of convergence within Latin American economies. The study pointed to macroeconomic volatility, low productivity growth, and limited structural transformation as key barriers. Loayza et al. (2005) similarly found that while some countries showed signs of convergence, the region as a whole exhibited persistent divergence due to institutional weaknesses and low investment in innovation. This is particularly relevant to Brazil's experience within BRICS, where structural rigidities and policy inconsistencies have constrained growth.

In the European Union (EU), convergence studies have produced more optimistic results. Monfort (2008), using sigma and beta convergence models, found strong evidence of income convergence among EU member states, driven by cohesive regional policies, structural funds, and institutional harmonization. However, the study also noted that convergence was uneven, with Eastern European countries lagging behind their Western counterparts. The European experience underscores the importance of coordinated policy frameworks and institutional alignment, elements that are notably lacking within the BRICS bloc.

Empirical studies on economic blocs like ASEAN and MERCOSUR have yielded mixed findings. Kumo (2011), studying income convergence in the Eurasian Economic Community, found limited convergence due to structural and institutional heterogeneity. In contrast, Lee and Lee (2016) found that ASEAN economies exhibited conditional convergence, facilitated by trade integration and regional cooperation. These mixed results suggest that economic bloc membership alone does not guarantee convergence; the effectiveness of institutional and policy frameworks is crucial.

From the foregoing empirical literature review, it is clear that various scholars' have employed various econometric models, including, Fixed-effects and random-effects models (Fosu, 2010; De la Torre et al., 2013), Generalized Method of Moments (GMM) (Park and Shin, 2012), Dynamic panel data models (Barrios and Strobl, 2005)

and Sigma and beta convergence models (Monfort, 2008). These models vary in their ability to address issues such as endogeneity, heterogeneity, and cross-sectional dependence. Notably, few studies have explicitly accounted for cross-sectional dependence, a gap that this study addresses by testing and acknowledging cross-sectional dependence in the BRICS panel data.

While existing studies provide valuable insights into convergence dynamics across different regions and blocs, few have focused specifically on the BRICS economies as a collective unit. Most studies also overlook the implications of divergent growth paths within economic blocs, often assuming homogeneity among member states. Furthermore, limited attention has been given to the role of cumulative growth dynamics and the speed of divergence, both of which are central to this study. By focusing on the BRICS economies and employing panel data methods that account for cross-sectional dependence, this study contributes to filling these gaps. It not only tests the convergence hypothesis but also quantifies the speed of divergence, providing a nuanced understanding of the bloc's internal economic dynamics. This approach offers valuable policy insights for fostering more balanced and inclusive growth within BRICS.

3.1. Problem Statement

The establishment of the BRICS bloc—comprising Brazil, Russia, India, China, and South Africa—was premised on the aspiration that collective action among these emerging economies would foster balanced, inclusive, and sustained economic growth, positioning the bloc as a counterweight to Western economic dominance (O'Neill, 2001; Stuenkel, 2016). However, despite over two decades of cooperation, increasing empirical evidence suggests that BRICS economies are not converging towards similar income levels, but are instead diverging significantly (Kowalski, 2020; Jakóbowski, 2022). China and India have emerged as dominant growth leaders, consistently achieving higher GDP per capita growth compared to their counterparts, leveraging technological advancement, industrial expansion, and global market integration (World Bank, 2023; IMF, 2022; Zhang and Wang, 2020). In contrast, Brazil, Russia, and South Africa have faced persistent structural challenges including weak institutional quality, commodity dependence, policy inconsistencies, and governance issues, all of which have constrained their economic growth (OECD, 2022; PwC, 2023; Bodansky and De Souza, 2021).

This divergence not only undermines the founding ideals of the BRICS bloc but also threatens its long-term coherence and strategic influence in global economic governance (Hopewell, 2015; Duggan, 2018). The widening economic gap raises critical questions about the bloc's capacity to deliver shared prosperity, harmonize policy priorities, and maintain relevance as a unified platform for advancing the interests of the Global South (Nolte, 2014; BRICS Policy Center, 2021). Current theoretical and empirical studies provide mixed evidence regarding income convergence, with some regions such as East Asia showing signs of conditional convergence (Park and Shin, 2012; Felipe and Kumar, 2011), while others such as Africa and Latin America exhibit persistent divergence due to structural and institutional weaknesses (Fosu, 2010; Barrios and Strobl, 2005; De la Torre

et al., 2013). However, limited attention has been given to the internal divergence within BRICS as a collective unit, particularly in relation to cumulative growth trajectories, cross-sectional dependence, and country-specific structural factors.

Against this backdrop, there is a critical need for a systematic and empirical assessment of income growth dynamics within BRICS economies. This study addresses this gap by employing panel data econometric methods to investigate whether income convergence or divergence characterizes the growth trajectories of BRICS countries from 1991 to 2022. Specifically, it examines the speed and direction of income growth, evaluates the influence of key economic drivers such as investment, foreign direct investment, technology, trade, and government expenditure, and explores the structural factors contributing to divergent growth outcomes. By doing so, the study aims to provide nuanced insights that can inform targeted policy interventions to foster balanced and inclusive growth within the BRICS bloc (Fourie, 2014; Roberts, 2017; Shubin, 2013).

3.2. Research Objectives

The primary objective of this study is to empirically assess income growth dynamics among BRICS economies with a particular focus on testing for income convergence or divergence. Based on the literature reviewed and the identified research gaps, the study seeks to achieve the following specific objectives:

- To examine whether income convergence exists among BRICS economies over the period 1991–2022.
- To quantify the speed and direction (convergence or divergence) of income growth across BRICS countries.
- To evaluate the role of key economic drivers—such as investment, foreign direct investment (FDI), information and communication technology (ICT), trade openness (imports and exports), and government expenditure on education—in influencing income growth in BRICS economies.
- To identify whether the growth performance of BRICS economies is characterized by structural divergence driven by institutional, technological, and policy differences.
- To provide policy recommendations for fostering balanced and inclusive growth within the BRICS bloc.

3.3. Research Hypotheses

Based on the above objectives, the following hypotheses are formulated:

3.3.1. Linked to objective 1

- H_{01} : There is no evidence of income convergence among BRICS economies over the period 1991–2022.
- H_{11} : There is evidence of income convergence among BRICS economies over the period 1991–2022.

3.3.2. Linked to objective 2

- H_{02} : The speed of income adjustment across BRICS countries is statistically insignificant, indicating no clear convergence or divergence trend.
- H_{12} : The speed of income adjustment across BRICS countries is statistically significant, indicating a clear convergence or divergence trend.

3.3.3. Linked to objective 3

- H₀₃: Investment, FDI, ICT, trade openness, and government expenditure on education have no significant impact on income growth in BRICS economies.
- H₁₃: Investment, FDI, ICT, trade openness, and government expenditure on education have a significant impact on income growth in BRICS economies.

3.3.4. Linked to objective 4

- H₀₄: The observed growth performance of BRICS economies is not influenced by structural factors such as institutional quality, technological capabilities, and policy choices.
- H₁₄: The observed growth performance of BRICS economies is influenced by structural factors such as institutional quality, technological capabilities, and policy choices.

3.4. Research Methodology

This study adopts a quantitative panel data econometric design to analyze income growth dynamics in BRICS economies over the period 1991 to 2022. The design is appropriate for capturing both the cross-sectional (country-level) and time-series (yearly) dimensions of the data. By using panel data methods, the study aims to control for unobserved heterogeneity, examine dynamic relationships, and improve estimation efficiency.

3.5. Research Design and Approach

This study adopts a quantitative panel data econometric design to assess income growth dynamics among BRICS economies over the period 1991 to 2022. Panel data methods are particularly suitable for capturing both cross-sectional (country-level) and time-series (yearly) variations, providing a more comprehensive understanding of economic processes compared to purely cross-sectional or time-series analyses (Hsiao, 2014). The advantage of this approach lies in its ability to control for unobserved heterogeneity, mitigate omitted variable bias, and improve estimation efficiency (Baltagi, 2005).

4. THEORETICAL BACKGROUND OF THE CONVERGENCE MODEL

4.1. Conceptual Framework of Income Convergence and Methodology

The neoclassical growth theory, particularly the Solow-Swan model, provides the theoretical foundation for convergence analysis (Solow, 1956). The theory predicts that poorer economies, with lower capital-to-labor ratios, should grow faster than richer ones due to diminishing returns to capital, leading to β -convergence (Barro and Sala-i-Martin, 1992). This convergence occurs if the coefficient on the lagged income variable is negative and statistically significant, indicating that economies with lower initial incomes tend to grow faster than those with higher initial incomes. Two main forms of convergence are typically tested namely, unconditional (absolute) convergence, where all economies are expected to converge to a common steady-state, regardless of structural differences. The second one is conditional convergence, where economies converge to their own steady-states, influenced by country-specific factors such as investment rates, governance, and technology (Islam, 1995).

4.2. Econometric Specification

Following Barro and Sala-i-Martin (1992), the empirical convergence equation is specified as:

$$\Delta \ln Y_{it} = \alpha + \beta \ln Y_{it}(-1) + \gamma' X_{it} + \mu_i + \varepsilon_{it} \quad (1)$$

Where:

1. $\Delta \ln Y_{it}$ is the growth rate of GDP per capita for country i at time t .
2. $\ln Y_{it}(-1)$ is the lagged log of GDP per capita.
3. X_{it} represents a vector of control variables (e.g., investment, FDI, trade, ICT, government expenditure).
4. μ_i captures unobserved country-specific effects.
5. ε_{it} is the error term.
6. β is the convergence coefficient; a negative and significant β indicates convergence, while a positive and significant β suggests divergence. The speed of convergence can be derived from the estimated β using the formula:

$$\text{Speed of Convergence} = -\ln(1 + \beta) \times 100 \quad (2)$$

A positive speed indicates convergence, while a negative speed suggests divergence (Islam, 1995).

4.3. Econometric Estimation Techniques

4.3.1. Random effects model

This study employs the Random Effects (RE) Generalized Least Squares (GLS) estimator. The RE model assumes that unobserved country-specific effects are uncorrelated with the explanatory variables, allowing for the inclusion of time-invariant variables and more efficient estimators compared to Fixed Effects (FE) when this assumption holds (Baltagi, 2005). The Breusch-Pagan Lagrange Multiplier (LM) test is used to justify the application of the Random Effects model over simple OLS by testing the significance of cross-sectional variance (Breusch and Pagan, 1980).

4.3.2. Model diagnostics

Several diagnostic tests were conducted to validate the model. To test whether random effects or fixed effects is more appropriate, a Hausman test was utilised. A statistically insignificant result favors random effects (Hausman, 1978). To detect cross-sectional variance, Breusch-Pagan LM Test was used. Pesaran Cross-Sectional Dependence (CD) Test was used to check for cross-sectional dependence, which, if present, may indicate spillover effects or global shocks influencing BRICS economies simultaneously (Pesaran, 2004).

4.3.3. Panel unit root (stationarity) test

Panel data analysis requires variables to be stationary, meaning that their statistical properties such as mean, variance, and autocorrelation structure remain constant over time (Baltagi, 2005). Non-stationary data can lead to spurious regression results, producing misleading inference (Gujarati and Porter, 2009). The Levin et al. (2002) panel unit root test is among the most commonly used techniques to check for stationarity in panel datasets. The LLC test extends the Augmented Dickey-Fuller (ADF) test to panel data by assuming a common autoregressive parameter across all cross-sectional units while allowing for individual-specific fixed

effects and heterogeneous error variances. The general form of the LLC model is expressed as:

$$y_{it} = \rho y_{it-1} + \sum_{j=1}^{p_i} \theta_{ij} \Delta y_{it} - j + \alpha_i + \varepsilon_{it} \quad (3)$$

Where:

- y_{it} is the variable of interest for country i at time t .
- Δ is the first-difference operator.
- ρ is the common autoregressive coefficient across all panels.
- θ_{ij} are the lag coefficients to control for serial correlation.
- α_i represents individual fixed effects.
- ε_{it} is the error term.

The null hypothesis of the LLC test is that all panels contain a unit root:

$$H_0: \rho = 0 \text{ (Unit root exists; the series is non-stationary).}$$

The alternative hypothesis is that all panels are stationary:

$$H_1: \rho < 0 \text{ (The series is stationary).}$$

A statistically significant negative estimate of ρ rejects the null hypothesis, suggesting stationarity across the panel.

LLC Test assumes homogeneity of ρ across all cross-sections, meaning all units share the same rate of mean reversion (Levin et al., 2002). Heterogeneous fixed effects (α_i) and lagged difference terms (θ_{ij}) account for country-specific dynamics and cross-sectional independence, although extensions of the test have been proposed to accommodate cross-sectional dependence. The strength of LLC is its increased statistical power due to pooling of information across cross-sections. However, its limitation is the assumption of a common autoregressive coefficient which may not hold if structural heterogeneity is significant (Breitung, 2000). The LLC test was applied to all variables in levels and first differences. The test statistics confirmed stationarity after differencing, validating the use of these variables in the panel regression model. This ensures that the results of the income convergence and divergence analysis are not affected by non-stationarity, improving the robustness of the econometric estimates (Baltagi, 2005; Hsiao, 2014).

4.3.4. Functional econometric model applied in the study

This study employs a dynamic panel data econometric framework to investigate the income growth dynamics of BRICS economies over the period 1991–2022. The central methodological approach is grounded in the neoclassical convergence hypothesis, operationalized through a β -convergence model. The model assesses whether lower-income BRICS economies are catching up with higher-income members in terms of per capita GDP growth. The functional form of the econometric model is specified as:

$$\ln Y_{it} = \alpha + \beta \ln Y_{it(-1)} + \gamma_1 \text{GFCF}_{it} + \gamma_2 \text{FDI}_{it} + \gamma_3 \text{ICT}_{it} + \gamma_4 \text{Imports}_{it} + \gamma_5 \text{Exports}_{it} + \gamma_6 \text{GovExpEd}_{it} + \mu_i + \varepsilon_{it} \quad (4)$$

- $\ln Y_{it}$ represents the growth rate of GDP per capita for country i at time t .

- $\ln Y_{it(-1)}$ is the lagged logarithm of GDP per capita, capturing the convergence effect.
- GFCF_{it} is Gross Fixed Capital Formation (proxy for investment).
- FDI_{it} is Foreign Direct Investment net inflows.
- ICT_{it} is the Information and Communication Technology adoption indicator.
- Imports_{it} and Exports_{it} represent trade openness, reflecting the role of international trade.
- GovExpEd_{it} is government expenditure on education, used as a proxy for human capital investment.
- μ_i represents country-specific unobserved effects.
- ε_{it} is the idiosyncratic error term.

The β -coefficient on the lagged log of GDP per capita is of primary interest:

A negative and statistically significant β supports the convergence hypothesis, suggesting that lower-income countries are growing faster than higher-income countries. However, a positive and significant β implies divergence, indicating that richer countries are growing faster, widening the income gap.

The methodological framework presented in the foregoing paragraphs enables us to quantify not only the speed and direction of income growth convergence or divergence but also to identify the economic, technological, and policy drivers influencing these dynamics across the BRICS economies. The use of dynamic panel methods strengthens the reliability of the findings by addressing unobserved heterogeneity and potential endogeneity issues.

5. EMPIRICAL RESULTS

To ensure the robustness of the econometric estimation, the stationarity properties of the panel dataset were examined using the Levin, Lin, and Chu (LLC) test for unit roots. The LLC test is particularly suitable for balanced panel data and assumes a common unit root process across the panel members. This test helps to confirm whether the series are stationary or require differencing

The LLC test results presented in Table 1 indicate that all the variables are stationary at level, as evidenced by the negative coefficients and statistically significant P-values ($P < 0.05$). Specifically, GDP per capita growth (GDPpc_Growth), Gross Fixed Capital Formation growth (GFCF_Growth), the logged

Table 1: Levin, Lin, and Chu (LLC)

Variable	Coefficient	t-ratio	Z-score	Significance (P-value)
GDPpc_Growth	-0.71179	-9.454	-7.3451	0.0000***
GFCF_Growth	-0.81614	-10.423	-8.5724	0.0000***
log_FDI	-0.2747	-6.859	-4.19062	0.0000***
log_ICT	-0.13428	-21.246	-22.1593	0.0000***
log_Imports	-0.16294	-4.822	-3.03052	0.0012***
log_Exports	-0.12755	-4.029	-2.11682	0.0171***
d_log_GovExpEd	-0.99569	-12.455	-10.8206	0.0000***

Level of significance: *(10%), **(5%), ***(1%)

values of Foreign Direct Investment (log_FDI), Information and Communication Technology (log_ICT), Imports (log_Imports), Exports (log_Exports), and the differenced logged Government Expenditure on Education (d_log_GovExpEd) all reject the null hypothesis of a unit root at the 1% level of significance.

These results imply that the variables are suitable for further econometric analysis without the need for additional differencing, thus validating the integrity of the data for panel regression modelling.

In the next section of this paper we present the random effects panel data analysis.

The panel data results presented here represent the output of a regression model designed to examine the income growth dynamics among BRICS countries (Table 2). The model assesses how several key economic drivers (investment, FDI, ICT, trade openness, and government expenditure on education) influence GDP per capita growth over time. The interpretation of each coefficient, its statistical significance, and validation against similar studies are provided below.

At the core of this research lies an investigation into the phenomenon of income convergence or divergence among the BRICS economies, with the coefficient of primary interest being the lagged GDP per capita growth (log_GDPpc_Growth_L1), a variable that directly assesses the β -convergence hypothesis. The positive and highly significant coefficient observed for log_GDPpc_Growth_L1 ($\beta = 2.90920$, $P < 0.01$) points towards income divergence rather than convergence within the bloc; contrary to the convergence theory (Barro and Sala-i-Martin, 1992), which posits that a negative β coefficient would signify poorer countries closing the income gap with richer ones, the positive sign identified in this study suggests that BRICS economies with higher incomes are expanding at a faster rate than their lower-income counterparts, consequently exacerbating the income disparities within the group. This finding is consistent with recent empirical observations (Kowalski, 2020; Jakóbski, 2022) indicating a divergence in the growth trajectories of BRICS economies, with China and India demonstrating stronger sustained economic growth compared to Brazil, Russia, and South Africa, thus challenging earlier expectations of a balanced and synchronized economic convergence across the bloc. Furthermore, in contrast to the conditional convergence witnessed in East Asia (Park and Shin, 2012; Felipe and Kumar, 2011), where economies with

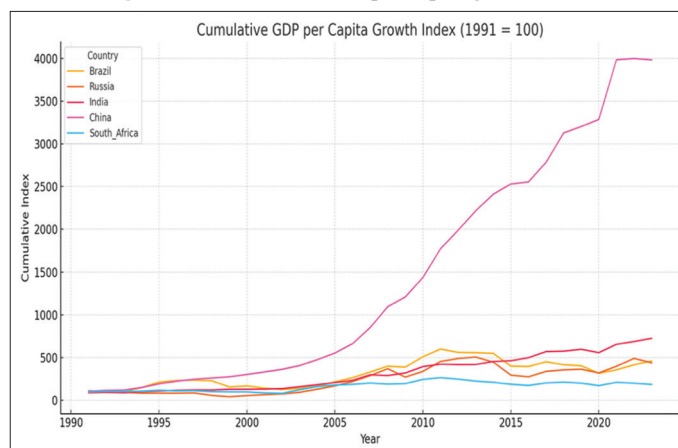
varying structural characteristics achieved convergence through proactive industrial policies and investments in technology, the BRICS bloc appears to lack the necessary policy coherence and structural alignment to realize similar convergent outcomes. Additional Variable-Specific Insights Supporting Divergence are discussed below.

The lagged GDP per capita growth (log_GDPpc_Growth_L1) serves as an indicator of the extent to which prior growth patterns shape current economic expansion; a positive and statistically significant coefficient here implies that past growth positively fuels future growth, a relationship that resonates with convergence theory by suggesting that economies experiencing higher growth in the past are inclined to maintain a similar growth trajectory. This empirical result finds validation in the β -convergence hypothesis within growth theory, as articulated by Barro and Sala-i-Martin (1992), which posits that historical income growth influences present growth dynamics, particularly in the context of lower-income economies tending to catch up with their higher-income counterparts; the significance of this variable underscores its importance in elucidating the persistence of growth across the BRICS economies. Further evidence of divergent growth paths in BRICS is portrayed in Figure 1 below:

A prominent observation from the Figure 1 is China's remarkable and exponential growth trajectory, evidenced by its cumulative index soaring to exceed 4000 by the year 2022; this substantial increase signifies that China's per capita income has multiplied more than fortyfold since 1991, a testament to its enduring high growth rates propelled by industrialization, a focus on export-led expansion, advancements in technology, and well-considered strategic economic reforms. China's commanding presence in the graphical representation underscores its role as the principal growth leader within the BRICS economic grouping, distinguishing it significantly from its fellow member nations.

India emerges as the second strongest performer in terms of growth, exhibiting a consistent upward trend, albeit at a considerably more moderate pace when juxtaposed with China's rapid ascent; this steady increase reflects the expansion of India's service sector, its favorable demographic profile, and the

Figure 1: Cumulative GDP per capita growth index



Source: Author's own design using World Bank data (2023)

Table 2: Random-effects (GLS), using 160 observations

Variables	Coefficient	Std. Error	Z	P-value
const	16.4795	13.7799	1.196	0.2317
log_GDPpc_Growth_L1	2.90920	1.08433	2.683	0.0073***
GFCF_Growth	0.380265	0.185440	2.051	0.0403**
log_FDI	0.698144	1.31069	0.5327	0.5943
log_ICT	0.0209143	0.648596	0.03225	0.9743
log_Imports	-35.0179	10.1088	-3.464	0.0005***
log_Exports	28.8126	10.2874	2.801	0.0051***
d_log_GovExpEd	26.3060	15.4198	1.706	0.0880*

Level of significance: *(10%), **(5%), ***(1%)

market reforms implemented, all of which have contributed to its economic growth, although this growth has experienced some degree of fluctuation over time.

In contrast, Brazil, Russia, and South Africa exhibit growth trajectories that are notably flatter and more prone to volatility, with their cumulative indices remaining below 600 throughout the same period; this suggests a comparatively limited long-term increase in per capita income when contrasted with the growth experienced by China and India. Brazil demonstrates moderate growth up until approximately 2015, after which its growth flattens, likely mirroring its economic challenges stemming from structural rigidities, political instability, and external economic shocks. Russia's growth path displays significant volatility, probably influenced by factors such as economic sanctions, fluctuations in oil prices, and geopolitical tensions. Meanwhile, South Africa maintains the lowest and most stagnant growth trajectory among the BRICS nations, reflecting persistent issues such as structural unemployment, policy uncertainty, and significant inequality.

The substantial disparity in growth performance between China and India on one hand, and the remaining BRICS members on the other, starkly illustrates a clear pattern of divergence; rather than exhibiting a trend towards economic convergence as a unified bloc, the graphical representation reveals that the BRICS economies are, in fact, increasingly diverging, with China and India significantly outpacing Brazil, Russia, and South Africa. This divergence consequently raises pertinent questions regarding the overall cohesion and collective growth potential of the BRICS alliance in the future.

The observed divergence in growth trajectories carries significant implications for the BRICS bloc and its aspirations; firstly, the internal asymmetries arising from these varied performances present a notable challenge to the bloc's ambition of projecting a unified stance in global economic governance, as the differing growth rates can lead to misaligned policy priorities and divergent bargaining positions. Secondly, the slower growth experienced by some members may create difficulties in keeping pace with the development agendas spearheaded by China and India, potentially weakening collective action on crucial areas such as trade, investment, and geopolitical strategies. Consequently, the graphical evidence underscores the imperative for targeted policies aimed at addressing the underlying structural and institutional challenges prevalent in Brazil, Russia, and South Africa, with the goal of fostering more balanced and inclusive growth across the entire BRICS economic alliance.

Having analysed the main variable of interest in this study, namely, income divergence, the following section of this paper presents the impact of the control variables on the dependant variable.

Gross Fixed Capital Formation (GFCF) stands as a pivotal variable within economic growth models, embodying investment in tangible assets; a positive and statistically significant coefficient for GFCF indicates that heightened capital investment exerts a positive influence on GDP growth. This empirical observation aligns with established investment theories that posit investment in physical

capital, encompassing infrastructure, machinery, and buildings, as a fundamental driver of economic expansion, a notion underscored by seminal works such as Solow's (1956) growth model. Further bolstering this finding are studies like that of Mankiw et al. (1992), which emphasize the crucial role of capital accumulation in fostering sustained economic growth, and research by Calderón and Servén (2004), highlighting the particular importance of capital formation in developing economies, especially within the context of emerging economies such as the BRICS nations.

Foreign Direct Investment (FDI) is widely recognized as a crucial catalyst for economic growth, facilitating the inflow of capital, technological advancements, and specialized knowledge; however, the lack of statistical significance for this variable within the current model implies that FDI did not exert a substantial direct influence on GDP per capita growth within the BRICS nations throughout the examined period. This unexpected result, given FDI's generally acknowledged importance in growth literature, echoes findings from studies such as Aitken and Harrison (1999), which demonstrated that the impact of FDI on growth can vary depending on specific contextual factors; while FDI has been associated with accelerated growth in numerous economies, its effectiveness is often contingent upon elements such as the recipient economy's absorptive capacity and the existence of supportive complementary policies.

The adoption of Information and Communication Technology (ICT) is commonly considered a vital engine for growth in contemporary economies; however, the exceptionally high P-value observed in this model indicates that, within this specific framework, ICT adoption did not demonstrate a statistically significant impact on GDP per capita growth across the BRICS economies. This finding stands in contrast to research such as that by Waverman et al. (2005), which posits that ICT can generate substantial enhancements in productivity; nevertheless, the result obtained here might reflect variations across the BRICS region in terms of technological adoption rates, the quality of existing infrastructure, and the level of investment in human capital required to effectively leverage ICT (Chong et al., 2010), suggesting that in certain BRICS nations, the integration of ICT into the broader growth mechanisms may still be in its nascent stages.

Imports, serving as a measure of trade openness, exhibit a result in this analysis that suggests a negative association between higher levels of imports and GDP per capita growth; this negative relationship is somewhat counterintuitive, given the conventional understanding of trade as an activity that typically fosters economic growth. This finding stands in contrast to prevalent trade theories, such as those put forth by Frankel and Romer (1999), which posit that greater trade openness stimulates growth by expanding access to markets; however, the observed negative correlation could potentially reflect the reliance of BRICS economies on imports of goods that offer limited benefits to domestic productive capabilities, such as consumer goods. Furthermore, this result might also be indicative of adverse consequences arising from trade imbalances or external economic shocks that amplify economic instability within these nations (Gabriele, 2015).

Exports, as a crucial element of trade, demonstrate a positive and statistically significant influence on GDP per capita growth; this outcome suggests that heightened export activity contributes to economic expansion, likely driven by external demand for domestically produced goods and services. This empirical finding is consistent with the export-led growth hypothesis (Krugman, 1994), which posits that exports serve as a direct catalyst for economic growth. Moreover, additional research, such as the work by Kormendi and Meguire (1985), corroborates the notion that exports stimulate growth through the expansion of markets, the realization of economies of scale, and an increased availability of foreign exchange.

Government expenditure on education is widely considered a vital factor in the development of human capital; although the positive coefficient in this analysis indicates that increased government spending on education tends to support economic growth, the statistical significance observed at the 10% level suggests a relatively weaker body of evidence for this effect. This positive finding aligns with human capital theory, as championed by researchers such as Schultz (1961), who underscore the significance of education in boosting productivity and fostering long-term economic expansion; however, the marginal statistical significance implies that the impact of educational expenditure on growth may differ across countries, potentially influenced by variables such as the quality of the education system, governance structures, and the extent of investment in other crucial domains of development (Patrinos et al., 2011).

While previous studies have documented mixed results on convergence globally, this study provides specific evidence of divergence within BRICS, reinforcing findings by Kowalski (2020) and Jakóbski (2022). However, it also contributes new insights by quantifying the divergence and linking it to asymmetrical benefits from investment and trade dynamics. This is a departure from older convergence studies that either did not differentiate between BRICS members or assumed homogeneity in their growth patterns. Moreover, the negative role of imports and the weak role of FDI and ICT highlight areas that are underexplored in BRICS-focused convergence literature, pointing to structural weaknesses that could be addressed through better trade policies, industrial diversification, and institutional reforms.

Having presented the panel data analysis results, the following section presents diagnostic tests (Table 3).

Diagnostic testing plays a crucial role in validating econometric models, ensuring that the statistical inferences drawn are both robust and reliable. While model estimation provides numerical results, these results can be misleading if the underlying assumptions of the model are violated. Diagnostic tests help to assess key properties such as the relevance of included variables, the presence of unobserved heterogeneity, the consistency and efficiency of estimators, and the independence or interdependence of cross-sectional units. For instance, tests like the Joint Test on Regressors confirm whether the chosen explanatory variables meaningfully contribute to explaining the dependent variable, while the Hausman and Breusch-Pagan tests guide the appropriate

Table 3: Diagnostic test

Diagnostic test	Test statistic	P-value	Additional information
Joint Test on Named Regressors	Chi-square (7) = 25.4097	0.000641776	
Breusch-Pagan Test	Chi-square (1) = 0.188304	0.664332	Null: Variance of the unit-specific error=0
Hausman Test	Chi-square (4) = 3.34234	0.502252	Null: GLS estimates are consistent
Pesaran CD Test for Cross-Sectional Dependence	$z=7.092419$	$1.32e-12$	Average absolute correlation=0.390

choice between random and fixed effects estimators. Additionally, the Pesaran Cross-Sectional Dependence Test checks for interconnections across panel units, which, if ignored, can lead to biased standard errors and misleading policy recommendations. Thus, diagnostic testing is not merely a technical formality but a foundational step in ensuring the credibility, interpretability, and policy relevance of econometric findings.

The joint test on regressors evaluates whether the set of independent variables included in the model collectively provides explanatory power over the dependent variable. A significant P-value ($P < 0.01$) strongly indicates that the variables included—such as lagged GDP per capita, investment, FDI, ICT, trade openness, and government expenditure on education—jointly explain variations in GDP per capita growth across the BRICS countries. This validates the relevance of the model specification and suggests that omitting these variables would reduce the model's explanatory strength.

The Breusch-Pagan test evaluates whether random effects are present in the panel structure. The high P-value ($P > 0.05$) indicates a failure to reject the null hypothesis, suggesting that the variance of the unit-specific error is not significantly different from zero. This result implies that using simple pooled OLS could have been adequate, but in practice, random effects are often retained when other diagnostic tests (like Hausman) confirm their consistency. Nonetheless, this result cautions that the between-country variance may not be substantial.

The Hausman test compares the consistency of the random effects (RE) and fixed effects (FE) estimators. A high P-value ($P > 0.05$) suggests failure to reject the null hypothesis, meaning that random effects estimation is appropriate for this model. This supports the choice of the RE estimator, implying that the unobserved heterogeneity across BRICS countries is uncorrelated with the included regressors, satisfying the RE model assumption.

The Pesaran CD test evaluates whether cross-sectional dependence exists in the panel data. The extremely significant P-value ($P < 0.01$) indicates strong evidence of cross-sectional dependence, meaning that the growth processes in BRICS economies are not independent of each other. This is expected, given the high levels of economic interdependence, trade linkages, and shared

exposure to global economic conditions among these countries. The average absolute correlation of 0.390 confirms a moderate level of connectedness.

6. IMPLICATIONS OF THE FINDINGS FOR BRICS COUNTRIES

The findings of this study reveal widening income divergence among BRICS countries, with China and India continuing to outpace Brazil, Russia, and South Africa in GDP per capita growth. This divergence challenges the foundational expectation that BRICS, as a bloc of large emerging markets, would move toward balanced and inclusive economic convergence (Stuenkel, 2016; BRICS Policy Center, 2021). The observed income divergence suggests that internal structural asymmetries, such as differences in investment performance, export capacity, and institutional quality, are amplifying growth inequalities within the bloc (Kowalski, 2020; Jakóbski, 2022).

The results imply that BRICS policymakers must move beyond political rhetoric and address the structural and policy misalignments that hinder collective economic progress. While China and India have successfully leveraged investment and export-led growth strategies, other members appear to lag due to commodity dependency, governance weaknesses, and limited industrial diversification (OECD, 2022; PwC, 2023). Without targeted cooperation mechanisms to close these gaps, the bloc risks becoming increasingly fragmented, undermining its strategic relevance in global economic governance (Roberts, 2017; Hopewell, 2015).

The strong positive effects of gross fixed capital formation and export performance on GDP growth suggest that these two drivers remain critical levers for economic development. BRICS countries that have not fully capitalized on these drivers—such as South Africa and Brazil—should prioritize enhancing their investment climates and diversifying their export bases to move beyond primary commodity dependence (Hausmann et al., 2007). Drawing lessons from China's industrial upgrading and India's digital economy expansion (Zhang and Wang, 2020) could inform localized strategies aimed at boosting competitiveness and growth.

The finding that imports have a negative effect on GDP growth raises concerns about structural import dependencies that may undermine local production and drain foreign reserves. BRICS members with large trade deficits should consider rebalancing their trade policies by promoting import substitution where feasible, while simultaneously expanding high-value exports (Gabriele, 2015). This may require investment in domestic industries, technological upgrading, and regional value chain integration.

Although government expenditure on education showed only marginal significance, its positive impact suggests that long-term investments in human capital remain essential for sustained and inclusive growth. Countries like Brazil and South Africa, facing challenges of inequality and unemployment, should prioritize educational reforms and skills development to unlock latent

economic potential (Patrinos et al., 2011). Investing in human capital not only enhances productivity but also strengthens the absorptive capacity for foreign direct investment and technology adoption.

The significant cross-sectional dependence identified by the Pesaran CD test indicates that BRICS economies are interconnected through trade, financial flows, and global market exposure. This interdependence underscores the need for coordinated policy responses, particularly in times of global economic shocks. Strengthening intra-BRICS cooperation, including trade agreements, infrastructure projects, and knowledge-sharing platforms, could mitigate vulnerabilities and foster collective resilience (Nolte, 2014; BRICS Joint Declaration, 2021).

The divergence revealed in this study calls into question the coherence of BRICS as a single economic bloc. Policymakers may need to redefine the bloc's strategic priorities to reflect the heterogeneous development paths of its members. Rather than pursuing one-size-fits-all initiatives, BRICS could benefit from differentiated cooperation frameworks that recognize the unique challenges and opportunities facing each member (Shubin, 2013; Duggan, 2018).

Several global and regional groupings have already applied such flexible models with success. BRICS can draw practical lessons from these approaches. For example the Association of Southeast Asian Nations (ASEAN) employs a "Variable Geometry" framework, most notably the ASEAN Minus X formula, allowing a subset of countries to move ahead with deeper integration or sectoral initiatives while others join later (Chia, 2010). This has been used in trade liberalization and economic integration agreements where countries like Singapore and Malaysia advanced earlier than others. This approach could allow China and India to lead on digital economy initiatives, while other members join later as they build digital readiness.

The European Union (EU) uses Enhanced Cooperation to permit certain members to integrate more deeply in specific areas, such as the Schengen Zone or the Eurozone, without forcing uniform participation (European Commission, 2017). In this regard BRICS could adopt this model for differentiated monetary cooperation, financial technology platforms, or climate action commitments, enabling countries to participate based on readiness and strategic interest. Another example is AfCFTA. The AfCFTA provides flexibility by allowing countries to implement tariff reductions and service liberalization at different speeds, based on domestic economic preparedness (UNECA, 2019).

This flexibility could apply to green economy transitions, where members like South Africa may need longer transition periods or technical support compared to more industrially advanced members like China. Needless to mention the G20 countries which operate through voluntary participation in thematic working groups, allowing countries to engage selectively based on capacity or national interest (G20, 2021). BRICS could establish sector-specific working groups on areas such as renewable energy,

artificial intelligence governance, or inclusive finance, allowing differentiated participation without undermining overall bloc cohesion.

It is incumbent therefore that the BRICS New Development Bank (NDB) strengthens its differentiated priorities, where member countries access finance for different sectoral projects based on their national development strategies (NDB, 2022). Expanding this model could allow differentiated policy and technical cooperation, for example, with India and China advancing manufacturing and AI, while Brazil and South Africa focus on agriculture, energy, and social infrastructure.

Given the above examples, it is clear that adopting differentiated cooperation frameworks will offer BRICS a realistic pathway to sustain relevance and collective strength while respecting internal diversity. Such models ensure that no member is left behind while still allowing ambitious members to advance, ultimately fostering inclusive and flexible regionalism that is better aligned with real-world disparities.

7. CONCLUSION

This study provides empirical evidence that income growth within BRICS economies is diverging rather than converging, with China and India consistently outperforming Brazil, Russia, and South Africa. The results highlight that while investment and export expansion are effective growth drivers, FDI inflows, ICT adoption, and import expansion have not yielded significant or consistent growth benefits across all members. The presence of strong cross-sectional dependence further suggests that BRICS economies are economically interconnected, amplifying shared vulnerabilities to global shocks.

Without targeted and differentiated policy actions, BRICS risks becoming a fragmented bloc where only a few members benefit disproportionately from global economic integration. Existing policy frameworks that emphasize generalized South-South cooperation without addressing internal asymmetries appear increasingly obsolete. There is a pressing need for pragmatic, country-specific, and bloc-wide policy realignments to foster balanced and inclusive growth.

To address the challenges posed by the diverging growth trajectories within the BRICS economic bloc, several strategic policy recommendations emerge. Firstly, a crucial shift involves prioritizing investment towards productive infrastructure and fostering industrial diversification. This entails a move away from an over-reliance on commodity exports and basic, low-value-added infrastructure projects, towards embracing industrial policies that actively promote diversification into high-value manufacturing and services, underpinned by investments in essential productive infrastructure such as renewable energy, efficient logistics networks, and robust digital connectivity. This strategic reorientation aligns with the successful growth models observed in China and India and holds the potential to significantly boost domestic production and overall competitiveness within the lagging BRICS members.

Secondly, a critical adjustment in trade policies is necessary to mitigate structural import dependencies. This requires a departure from indiscriminate trade liberalization that can lead to an increased reliance on low-value or consumer goods imports. Instead, a strategic approach should be adopted, incorporating import substitution policies for key sectors and initiatives aimed at upgrading export capabilities, particularly focusing on technology-intensive industries. Such a recalibration of trade policy can help to counteract the negative growth impacts associated with excessive imports and facilitate the development of robust domestic value chains, thereby strengthening economic sovereignty.

Thirdly, the approach to Foreign Direct Investment (FDI) needs to evolve from a focus on mere quantity to an emphasis on quality. This implies moving beyond passive strategies that solely aim to attract higher volumes of FDI. Instead, BRICS nations should adopt selective FDI policies that prioritize investments that bring about tangible benefits such as technology transfer, the development of local content, and the upgrading of domestic skills. This strategic selectivity ensures that FDI contributes to long-term productivity enhancements rather than simply providing short-term capital inflows without fostering sustainable domestic capacity-building.

Fourthly, enhancing human capital development with a strong focus on future skills is paramount. This necessitates a shift away from traditional education spending that may not adequately align with the demands of future job markets, particularly in areas like digital skills and green technologies. Instead, targeted education and training programs should be implemented, specifically linked to emerging sectors such as the digital economy, green energy industries, and advanced manufacturing. Such a focused approach can unlock the potential of the domestic labor market and significantly enhance the absorptive capacity for new technologies and investments.

Fifthly, the institutionalization of intra-BRICS economic policy coordination is essential. This requires moving beyond non-binding political declarations with limited practical follow-through towards establishing formal policy coordination platforms. These platforms should focus on key areas such as trade facilitation, the harmonization of investment regulations, the transfer of technology, and the alignment of macroeconomic policies. By fostering stronger cross-sectional dependence in a positive manner, enhanced policy coordination can enable the BRICS nations to collectively respond more effectively to global economic shocks and reduce the negative impacts of policy fragmentation.

Finally, to maintain its strategic relevance in a changing global landscape, BRICS needs to reposition itself as a flexible development platform. This involves moving away from uniform policy narratives that tend to overlook the inherent heterogeneity among its members. Instead, adopting flexible, tiered cooperation frameworks would allow member states to engage at varying levels of ambition, tailored to their specific developmental stage and capacity. By acknowledging and effectively managing the

divergent growth paths within the bloc, rather than attempting to enforce artificial convergence, BRICS can sustain its strategic importance and foster more realistic and achievable cooperation among its diverse members.

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