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FOREIGN EXCHANGE RESERVE ADEQUACY IN BRICS ECONOMIES: A MULTI-INDICATOR COMPARATIVE ANALYSIS (1997–2023)

By

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Abstract

The adoption Foreign exchange reserves constitute a crucial buffer for emerging economies facing volatile capital flows, trade shocks, and external financial disturbances. This study provides a comparative assessment of foreign exchange reserve trends and adequacy in BRICS economies, Brazil, Russia, India, China, and South Africa, over the period 1997–2023. Using a multi-indicator framework, reserve adequacy is evaluated through macroeconomic, trade-based, solvency, and liquidity indicators, including reserves-to-GDP ratio, import cover, reserves as a percentage of total external debt, and short-term external debt relative to reserves. The results reveal a sustained accumulation of foreign exchange reserves across all BRICS economies since the early 2000s, reflecting an increasing emphasis on precautionary reserve management. China consistently exhibits the strongest reserve adequacy across all indicators, while India shows a stable and significant improvement following post-liberalisation reforms. Russia and Brazil occupy an intermediate position, characterised by adequate but relatively volatile reserve buffers, whereas South Africa continues to display comparatively weaker reserve adequacy despite gradual improvement. Countries with stronger import and short-term debt coverage demonstrate greater resilience during periods of global financial stress, including the Global Financial Crisis and the COVID-19 pandemic. The study highlights the importance of employing multiple indicators to assess reserve adequacy and offers policy-relevant insights for strengthening external sector resilience in emerging economies.

Keywords: *foreign exchange reserves, reserve adequacy, BRICS economies, external vulnerability, and emerging markets.*

Introduction

Foreign exchange reserves play a critical role in ensuring external sector stability, particularly for emerging and developing economies exposed to volatile capital flows, trade shocks, and global financial disturbances. Adequate reserves enable countries to finance imports, service external debt, stabilize exchange rates, and mitigate the adverse effects of sudden stops in capital flows. In the aftermath of recurrent global crises, including the Asian Financial Crisis of 1997–98, the Global Financial Crisis of 2008–09, and the COVID-19 pandemic, the importance of maintaining adequate foreign exchange reserves has gained renewed policy relevance.

The BRICS economies, Brazil, Russia, India, China, and South Africa, represent a significant share of global output, trade, and financial flows. Despite their growing integration into the global economy, these countries exhibit substantial heterogeneity in terms of economic structure, trade openness, external debt profiles, and financial depth. Consequently, their approaches to foreign exchange reserve accumulation and management also differ, raising important questions regarding reserve adequacy and external vulnerability within the group.

Against this backdrop, the present study undertakes a comprehensive comparative analysis of foreign exchange reserves in BRICS economies over the period 1997–2023. Unlike studies that focus solely on the size or growth of reserves, this paper evaluates reserve adequacy using a multidimensional framework encompassing macroeconomic, trade-based, solvency-based, and liquidity-based indicators. By examining long-term trends and cross-country differences, the study provides insights into the evolution of external resilience in BRICS economies and their capacity to withstand external shocks.

The specific objectives of the study are to analyze trends in foreign exchange reserves, assess reserve adequacy using standard international indicators, compare cross-country differences in reserve management, and evaluate the impact of global financial crises on reserve accumulation and adequacy. The paper contributes by offering a long-term, comparative, and policy-relevant assessment of reserve adequacy in major emerging economies.

Review of Literature

The literature on foreign exchange reserves has expanded significantly over the past three decades, particularly in the context of emerging and developing economies. Early theoretical contributions viewed reserves primarily as instruments to facilitate international trade and manage exchange rate stability (Heller, 1966). Subsequent balance of payments crises shifted attention toward reserves as buffers against external shocks.

A major strand of literature emphasizes the precautionary motive for reserve accumulation. Frenkel and Jovanovic (1981) and Aizenman and Marion (2003) argue that countries accumulate reserves to insure against volatility in capital flows and external trade. This perspective gained prominence after the Asian Financial Crisis, when inadequate reserve holdings were identified as a key source of vulnerability.

Another body of research focuses on reserve adequacy measurement. The International Monetary Fund (IMF, 2011; 2013) stresses that reserve adequacy should be assessed using a combination of indicators rather than a single benchmark. Traditional measures include import cover, reserves-to-GDP ratio, reserves relative to external debt, and coverage of short-term external debt under the Greenspan–Guidotti rule (IMF, 2011).

Despite growing empirical work on emerging economies and BRICS nations, existing studies often rely on limited indicators or shorter time horizons. Relatively few provide a long-term, multi-indicator comparative assessment encompassing major global crises. This study addresses this gap by offering a unified, long-term evaluation of reserve adequacy across BRICS economies.

Data and Methodology

Data Sources

The study uses annual data from 1997–2023 for Brazil, Russia, India, China, and South Africa. Data are sourced from the International Monetary Fund, World Bank, and BRICS Joint Statistical Publications. All values are expressed in US dollars for comparability.

Reserve Adequacy Indicators

The analysis employs the following indicators:

- Total foreign exchange reserves
- Reserves-to-GDP ratio
- Reserves as a percentage of total external debt
- Reserves in months of imports
- Short-term external debt as a percentage of reserves

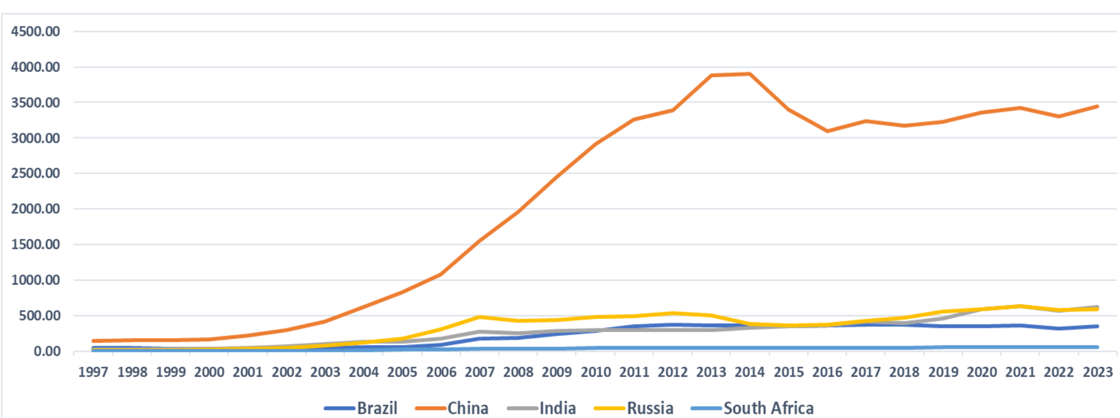
Methodology

A descriptive and comparative approach is adopted, using trend analysis, descriptive statistics, and cross-country comparison. No econometric estimation is undertaken, as the objective is to provide a long-term comparative assessment rather than establish causal relationships.

Results and Discussion

Trends in Total Foreign Exchange Reserves

Figure 1. Trends in Total Foreign Exchange Reserves in BRICS Economies (1997–2023) (in US $ Billion)



Source: World Bank and IMF (compiled by authors)

Figure 1 illustrates the trends in total foreign exchange reserves of BRICS economies over the period 1997–2023. A pronounced upward trend in reserve accumulation is observed across all five countries, though with significant cross-country variation in magnitude and growth dynamics. China consistently dominates reserve holdings throughout the study period, with reserves rising sharply from USD 146.45 billion in 1997 to USD 3,449.54 billion in 2023. The most rapid accumulation occurred during the early 2000s, particularly between 2002 and 2008, reflecting a phase of aggressive reserve build-up, after which reserves stabilised at a high level with moderate fluctuations.

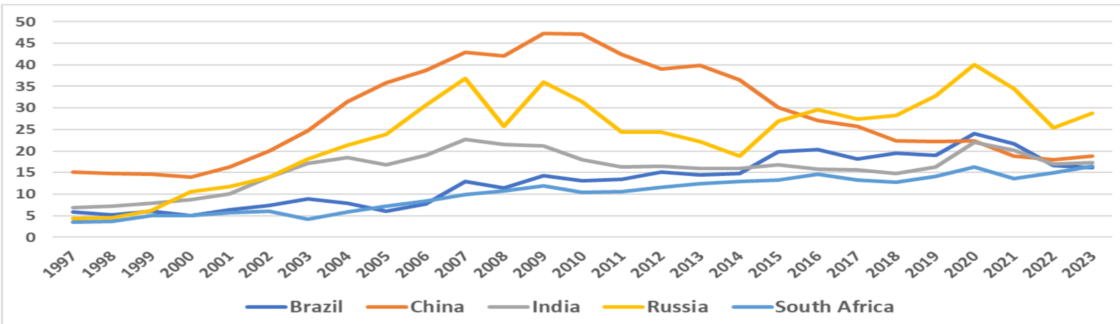
India exhibits a steady and sustained increase in foreign exchange reserves, rising from USD 28.39 billion in 1997 to USD 627.79 billion in 2023. Reserve accumulation accelerates notably after 2002, with brief slowdowns during the Global Financial Crisis and the COVID-19 pandemic, followed by strong recoveries. Russia also records substantial growth in reserves, increasing from USD 17.62 billion in 1997 to USD 597.22 billion in 2023. Despite sharp declines during periods of external stress, particularly after 2014 and in 2022, Russia's reserves remain at elevated levels in the later years, indicating resilience in reserve management.

Brazil demonstrates moderate but consistent reserve accumulation, with reserves rising from USD 52.21 billion in 1997 to USD 355.02 billion in 2023. A significant build-up is evident between 2006 and 2012, after which reserves stabilise within a relatively narrow range. South Africa maintains comparatively lower reserve levels throughout the period, increasing gradually from USD 5.96 billion in 1997 to USD 62.49 billion in 2023, reflecting its smaller economic size and external financing capacity.

Overall, the figure highlights a common trend of long-term reserve accumulation among BRICS economies, particularly in the post-2000 period, underscoring the growing emphasis on foreign exchange reserves as a buffer against external shocks and global financial volatility.

Trends in Foreign Exchange Reserves to GDP Ratio

Figure 2.Trends in Foreign Exchange Reserves to GDP Ratio in BRICS Economies (1997–2023)



Source: World Bank and IMF (compiled by authors)

Figure 2 presents the trends in the foreign exchange reserves to GDP ratio of BRICS economies during 1997–2023, reflecting the relative adequacy of reserves in relation to the size of the economy. China records the highest reserves-to-GDP ratio throughout most of the study period, rising sharply from 15.13 per cent in 1997 to a peak of over 47 per cent during 2009–2010. Although the ratio moderates in the subsequent years, it remains relatively high, stabilising around 18–23 per cent in the post-2015 period, indicating sustained reserve adequacy.

India exhibits a steady improvement in its reserves-to-GDP ratio from 6.83 per cent in 1997 to over 22 per cent by 2007. Following the Global Financial Crisis, the ratio moderates but remains broadly stable in the range of 15–17 per cent for much of the post-2012 period, with a temporary rise during 2020 reflecting precautionary reserve accumulation amid the COVID-19 shock. This trend suggests a gradual strengthening of India's external buffer over time.

Russia demonstrates a rapid increase in reserve adequacy during the pre-2008 period, with the ratio rising from 4.35 per cent in 1997 to 36.84 per cent in 2007. Sharp fluctuations are observed thereafter, particularly

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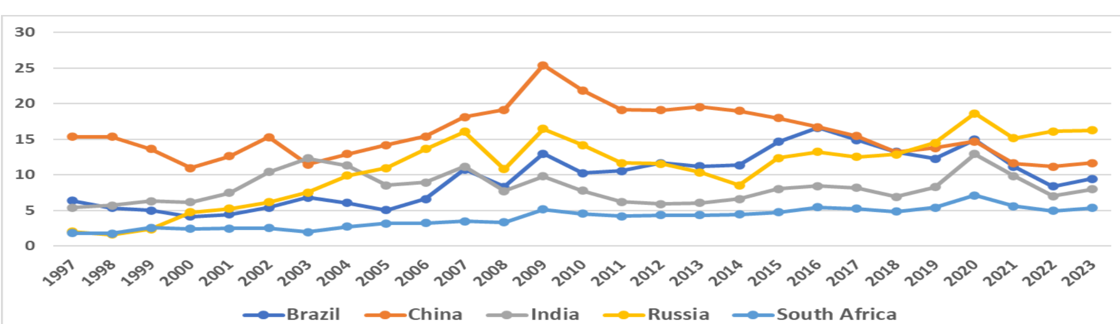
around periods of external stress, yet the ratio remains elevated in recent years, reaching nearly 29 per cent in 2023. This indicates a relatively strong reserve position despite volatility.

Brazil shows a gradual but consistent improvement in its reserves-to-GDP ratio, increasing from around 6 per cent in the late 1990s to above 20 per cent during 2016–2020. Although the ratio declines moderately after 2020, it remains well above its pre-2008 levels, reflecting enhanced reserve adequacy. South Africa maintains the lowest reserves-to-GDP ratio among BRICS, though a steady upward trend is evident from 3.53 per cent in 1997 to over 16 per cent in 2023, signalling a gradual strengthening of its external position.

Overall, the figure highlights considerable heterogeneity in reserve adequacy across BRICS economies, with China and Russia exhibiting relatively higher buffers, while India and Brazil demonstrate steady convergence toward internationally acceptable adequacy levels. The general post-2000 upward trend underscores the growing emphasis on foreign exchange reserves as a key instrument of macroeconomic stability and external shock absorption.

Trends in Total Foreign Exchange Reserves in Months of Imports

Figure 3. Trends in Total Foreign Exchange Reserves in Months of Imports in BRICS Economies (1997–2023)



Source: World Bank and IMF (compiled by authors)

Figure 3 depicts the trends in total foreign exchange reserves measured in months of imports for BRICS economies over the period 1997–2023, providing an assessment of reserve adequacy from a trade-coverage perspective. China consistently maintains the highest level of import cover throughout the study period, with reserves sufficient to finance more than 10 months of imports in all years and exceeding 20 months during 2009–2012. Although the import cover moderates gradually in the later years, it remains well above conventional adequacy benchmarks, indicating a strong external buffer.

Brazil shows a substantial improvement in import cover over time. From levels of around 4–6 months in the late 1990s and early 2000s, Brazil's import cover rose sharply after 2006, reaching double-digit levels and peaking at over 16 months in 2016. Despite some moderation in recent years, Brazil continues to maintain reserves comfortably above the minimum adequacy threshold, reflecting enhanced trade-related external resilience.

India exhibits a marked strengthening of import cover during the early 2000s, increasing from about 5 months in 1997 to over 12 months by 2003. However, the ratio declines moderately in the post-Global Financial Crisis period and stabilises in the range of 6–9 months for most of the subsequent years, with a temporary spike during 2020. Overall, India consistently maintains import cover above internationally accepted norms, signalling adequate trade-based reserve protection.

Russia records a rapid increase in import cover from just over 2 months in 1997 to more than 16 months by 2007, followed by noticeable volatility during periods of external stress. Nevertheless, import cover remains elevated in the post-2014 period and strengthens further after 2020, reaching over 16 months by 2023, underscoring a robust reserve position from a trade-coverage standpoint.

South Africa maintains comparatively lower import cover among BRICS

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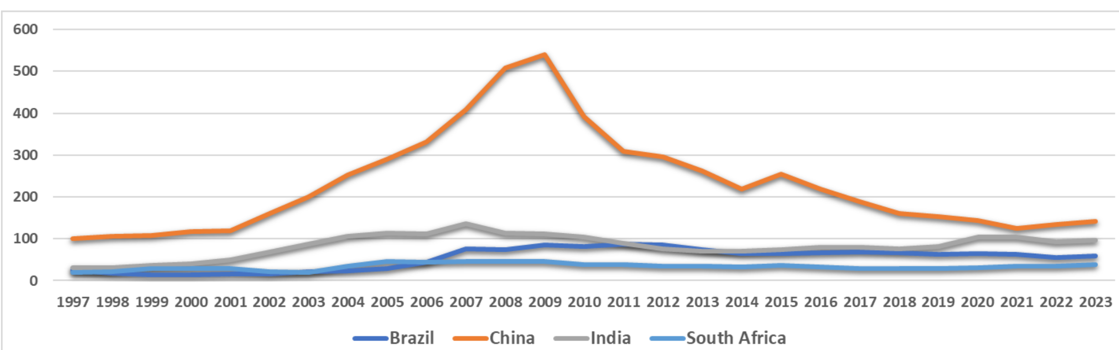
economies, particularly during the late 1990s and early 2000s when reserves were insufficient to cover three months of imports. However, a gradual and sustained improvement is observed after 2008, with import cover stabilising above 4 months in most recent years and reaching over 5 months by 2023, indicating an improvement in external liquidity. Overall, the figure demonstrates that all BRICS economies have achieved and sustained import cover levels above the conventional three-month benchmark in the post-2000 period, reflecting a shared emphasis on strengthening external buffers and reducing vulnerability to trade-related external shocks.

Trends in Total Foreign Exchange Reserves as a Percentage of Total External Debt

Figure 4. Trends in Total Foreign Exchange Reserves as a Percentage of Total External Debt in BRICS Economies (1997–2023)



Source: World Bank and IMF (compiled by authors)
Note: Data is not available for Russia

Figure 4 presents the trends in total foreign exchange reserves as a percentage of total external debt for BRICS economies over the period 1997–2023, capturing the capacity of reserves to service external debt obligations. China exhibits an exceptionally strong reserve–debt position throughout the study period. The ratio rose sharply from around 100 per cent in the late 1990s to a peak exceeding 500 per cent during 2008–2009, indicating that reserves were more than five times the size of external debt. Although the ratio moderates gradually thereafter, it remains well above 100 per cent in the later years, reaching about 143 per cent in 2023, reflecting continued robustness in China's external solvency position.

India shows a marked and sustained improvement in its reserve–debt ratio over time. The ratio increased steadily from around 30 per cent in 1997 to over 100 per cent by 2004, indicating a transition from a relatively vulnerable external position to one of greater resilience. While the ratio declines moderately in the post-Global Financial Crisis period, it remains broadly stable and improves again during 2020–2021, exceeding 100 per cent, before settling at around 97 per cent in 2023. This pattern suggests a significant strengthening of India's debt-servicing capacity over the long run.

Brazil demonstrates a gradual enhancement in reserve coverage of external debt, particularly after the mid-2000s. The ratio rose from below 30 per cent in the late 1990s to above 70 per cent by 2007–2008 and stabilized in the range of 60–70 per cent for much of the post-2010 period. Although Brazil does not achieve full reserve coverage of external debt, the sustained improvement relative to the pre-2000 period indicates reduced external vulnerability.

South Africa maintains comparatively lower reserve–debt ratios throughout the study period, fluctuating mostly between 20 and 45 per cent. Despite modest improvements after 2005 and a gradual upward trend in recent years, the ratio remains well below 100 per cent, suggesting continued dependence on external financing and a relatively weaker reserve buffer against external debt obligations.

Overall, the figure reveals substantial heterogeneity in debt-related reserve adequacy among BRICS economies. While China and, in recent years, India exhibit strong reserve positions capable of fully covering external debt,

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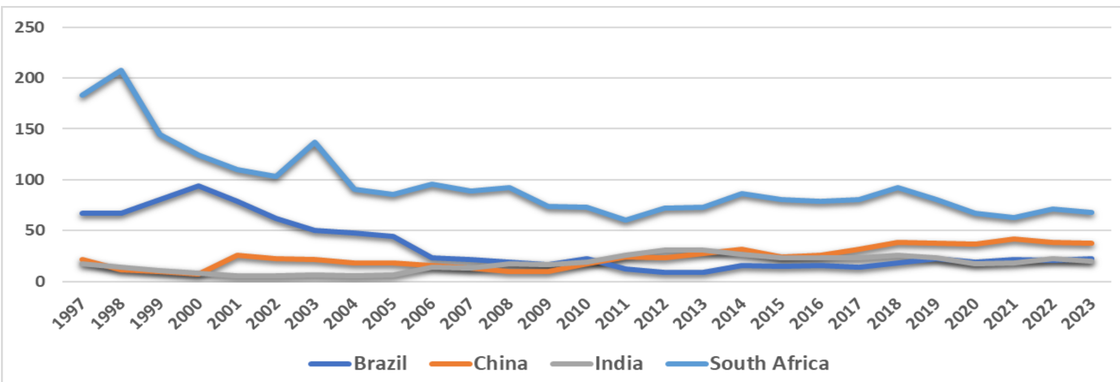
Brazil and South Africa display partial coverage, underscoring differences in external vulnerability and reserve management strategies across the BRICS bloc.

Trends in Short-Term External Debt as a Percentage of Total Reserves

Figure 5. Short-Term External Debt as a Percentage of Total Reserves in BRICS Economies (1997–2023)



Source: World Bank and IMF (compiled by authors)

Note: Data is not available for Russia

Figure 5 examines the ratio of short-term external debt to total foreign exchange reserves across BRICS economies, a key indicator of external vulnerability and reserve adequacy. A lower ratio implies stronger liquidity buffers and compliance with the Greenspan–Guidotti rule, which recommends that reserves should at least cover short-term external obligations.

Brazil exhibited very high short-term debt exposure in the late 1990s and early 2000s, with the ratio peaking at nearly 94 per cent in 2000, reflecting significant vulnerability during periods of external instability. However, a sharp and sustained decline is observed after 2005, with the ratio falling below 25 per cent by 2006 and remaining largely contained thereafter. This improvement indicates strengthened reserve management and reduced rollover risk in the post-global financial crisis period.

China maintained a consistently low short-term debt burden relative to reserves throughout most of the study period. The ratio declined from about 21 per cent in 1997 to single-digit levels by 2008–2009, reflecting massive reserve accumulation. Although the ratio increased moderately after 2011, reaching around 38–42 per cent during 2019–2022, it remained well within safe limits, underscoring China's strong external liquidity position.

India shows a marked improvement in reserve adequacy over time. The ratio declined sharply from about 18 per cent in 1997 to nearly 5 per cent by the early 2000s, indicating enhanced resilience following post-liberalization reforms. A gradual increase is observed after 2010, with the ratio rising to around 31 per cent in 2012–2013, before stabilizing at moderate levels (around 20–26 per cent) in the later years. Overall, India's reserves remained sufficient to comfortably cover short-term external liabilities.

South Africa recorded the highest short-term external debt burden among BRICS, with ratios exceeding 200 per cent in 1998 and remaining above 100 per cent until the mid-2000s, indicating serious reserve inadequacy and heightened crisis vulnerability. Although the ratio declined significantly after 2009, it continued to fluctuate between 60 and 90 per cent, suggesting persistent exposure to external shocks relative to peers.

Overall, Figure 5 highlights substantial cross-country heterogeneity in short-term external vulnerability within BRICS. While China and India exhibit strong compliance with reserve adequacy norms, Brazil shows notable post-2005 improvement, and South Africa remains relatively vulnerable, emphasizing the importance of sustained reserve accumulation and prudent external debt management

Comparative Assessment of Reserve Adequacy

This section provides a comparative evaluation of foreign exchange reserve adequacy in BRICS economies by integrating multiple indicators, including reserves-to-GDP ratio, import cover, reserves as a percentage of total external debt, and short-term external debt relative to reserves. The combined use of these indicators allows for a comprehensive assessment of macroeconomic buffers, trade security, solvency, and liquidity risk.

China consistently emerges as the strongest performer across all reserve adequacy measures. It maintains the highest reserves-to-GDP ratio for much of the study period and exhibits exceptionally high import cover, often exceeding internationally accepted benchmarks by a wide margin. Moreover, China's reserves significantly exceed its total external debt for most years, while short-term external debt remains well covered by reserves, in line with the Greenspan–Guidotti rule. Although some moderation in these indicators is observed after 2010, China's overall reserve position remains robust, reflecting a strategy of precautionary accumulation aimed at insulating the economy from external shocks.

India demonstrates a marked improvement in reserve adequacy over time, particularly after the early 2000s. Across all indicators, India transitions from a relatively vulnerable external position in the late 1990s to a substantially stronger one in the post-global financial crisis period. Reserves consistently cover more than six months of imports, the reserves-to-GDP ratio stabilises at moderate levels, and reserve coverage of external debt improves significantly, even exceeding 100 per cent during select years. Short-term external debt remains well within safe limits relative to reserves, indicating enhanced liquidity resilience.

Russia exhibits strong but comparatively volatile reserve adequacy indicators. Rapid reserve accumulation prior to the global financial crisis leads to high import cover and favourable reserves-to-GDP ratios. However, subsequent periods are characterised by noticeable fluctuations, particularly in response to geopolitical and external shocks. Despite this volatility, Russia maintains relatively strong coverage of both imports and short-term external debt in recent years, suggesting that reserve buffers remain adequate despite heightened uncertainty.

Brazil shows a clear improvement in reserve adequacy following the mid-2000s. While reserves do not fully cover total external debt, Brazil maintains comfortable levels of import cover and demonstrates a significant reduction in short-term external debt relative to reserves over time. The post-2008 period, in particular, reflects improved external liquidity and reduced rollover risk, indicating a shift toward more prudent reserve management.

South Africa consistently records the weakest reserve adequacy position among BRICS economies. Although gradual improvements are evident across all indicators, reserves remain relatively low in relation to GDP, imports, and external debt. Short-term external debt exceeds reserves during several years, indicating persistent vulnerability to external shocks. While recent improvements suggest a strengthening trend, South Africa's reserve buffers remain comparatively thin.

Overall, the comparative analysis reveals substantial heterogeneity in reserve adequacy across BRICS economies. China and India exhibit strong and broadly consistent reserve adequacy across indicators, Russia and Brazil occupy an intermediate position with adequate but uneven buffers, and South Africa remains relatively vulnerable. These differences underscore the role of country-specific external exposure, macroeconomic structure, and reserve management strategies in shaping reserve adequacy outcomes within the BRICS bloc.

Table 1. Descriptive Statistics of Reserves-to-GDP Ratio in BRICS Economies (1997–2023)

Country	Mean (%)	Standard Deviation	Coefficient of Variation
Brazil	13.02	5.75	0.44
China	28.46	11.07	0.39
India	15.92	4.39	0.28
Russia	23.67	9.86	0.42
South Africa	10.16	4.10	0.4

Source: *Authors calculations based on compiled data (1997–2023)*

Note: *Coefficient of Variation = Standard Deviation / Mean.*

The descriptive statistics reveal notable cross-country differences in the level and stability of reserve adequacy among BRICS economies. China records the highest mean reserves-to-GDP ratio (28.46 per cent), reflecting its consistently strong external buffer over the study period. However, the relatively high standard deviation indicates periods of rapid accumulation followed by gradual moderation, particularly after 2010.

India exhibits a moderate mean ratio (15.92 per cent) combined with the lowest coefficient of variation (0.28) among BRICS countries, suggesting a relatively stable and sustained reserve adequacy position over time. This indicates a balanced approach to reserve accumulation with limited volatility.

Russia shows a high average reserves-to-GDP ratio (23.67 per cent) but also a high degree of variability, reflecting sensitivity to external shocks and geopolitical developments. Brazil's mean ratio is lower than that of China and Russia, while its higher coefficient of variation suggests greater fluctuations in reserve adequacy across periods.

South Africa records the lowest average reserves-to-GDP ratio (10.16 per cent), accompanied by relatively high variability, highlighting persistent constraints in reserve accumulation and comparatively weaker external buffers.

Overall, the descriptive statistics corroborate the trend analysis, indicating that while all BRICS economies improved reserve adequacy over time, China and India display greater consistency, whereas Russia, Brazil, and South Africa exhibit higher volatility in their reserve positions.

Conclusion and Policy Implications

This study provides a comprehensive assessment of foreign exchange reserve adequacy in BRICS economies over 1997–2023. The findings confirm that reserve adequacy varies substantially across countries despite a shared trend of reserve accumulation. China and India exhibit strong and relatively consistent reserve adequacy, Russia and Brazil show adequate but volatile buffers, and South Africa remains comparatively vulnerable.

The results underscore the importance of a multi-indicator approach to reserve adequacy assessment and highlight the need for country-specific reserve management strategies. Strengthening short-term debt coverage, improving trade competitiveness, and aligning reserve accumulation with macroeconomic conditions remain key policy priorities for emerging economies.

References

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Aizenman, J., & Marion, N. (2003). The high demand for international reserves in the Far East: What is going on? *Journal of the Japanese and International Economies, 17*(3), 370-400.

Aizenman, J., Lee, Y., & Rhee, Y. (2007). International reserves management and capital mobility in a volatile world: Policy considerations and a case study of Korea. *Journal of the Japanese and International Economies, 21*(1), 1-15.

Frenkel, J. A., & Jovanovic, B. (1981). Optimal international reserves: a stochastic framework. *The Economic Journal, 91*(362), 507-514.

Heller, H. R. (1966). Optimal international reserves. *The Economic Journal, 76*(302), 296-311.

International Monetary Fund. (2011). *Assessing reserve adequacy. IMF Policy Paper.* Washington, DC: IMF.

International Monetary Fund. (2013). *Guidance note on assessing reserve adequacy.* Washington, DC: IMF.

International Monetary Fund. (2022). *International financial statistics.* Washington, DC: IMF.

Rodrik, D. (2006). The social cost of foreign exchange reserves. *International economic journal, 20*(3), 253-266.

World Bank. (2022). *World development indicators.* Washington, DC: World Bank.

World Bank. (2023). *International debt statistics.* Washington, DC: World Bank.

BRICS Joint Statistical Publication. (2024). *BRICS joint statistical publication.* Brasília: IBGE.

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