

The Dollar's Multipolar Trap: An Econometric Test of Whether the USD Can Return to Trade-Currency Monopoly in the G-7, BRICS, and Global South Era

Rajib Kumar Sanya¹, Aarya², Santosh Angadi³

¹PhD, Senior Research Professor of Economics & Management

²Research Scholar

³PhD Associate Professor of School of Management

Abstract

This paper examines whether the United States dollar can regain monopoly-like power as the only effective means of international trade settlement in an era shaped by G-7 institutional power, BRICS enlargement, and the growing monetary agency of the Global South. Unlike descriptive accounts of de-dollarization, the paper develops a testable econometric framework using a composite Dollar Dominance Index (DDI) and complementary reserve-share specifications. The empirical strategy combines a baseline HAC-robust time-series regression, an autoregressive distributed lag/error-correction specification, stationarity tests, structural-break logic, and a robustness design for reserve, FX turnover, and payment channels. The benchmark evidence supports four conclusions. First, the dollar remains structurally dominant because of reserve inertia, foreign-exchange market centrality, deep Treasury markets, and payment-network externalities. Second, rising BRICS economic weight is negatively associated with the composite dollar-dominance measure, but the magnitude is not sufficient to imply a rapid displacement of the dollar. Third, US interest-rate strength supports short-run dollar demand, while fiscal-debt accumulation and geopolitical fragmentation create longer-run confidence risks. Fourth, the econometric evidence supports a transition from dollar monopoly to dollar-centered monetary multipolarity, not a collapse of dollar primacy. The policy implication is that the United States can preserve dollar leadership by maintaining institutional credibility, open capital markets, and financial depth, but the probability of the USD becoming the only meaningful instrument of global trade settlement is economically and geopolitically low.

Keywords: Dollar dominance; de-dollarization; BRICS; G-7; Global South; ARDL; reserve currency; international trade settlement; monetary multipolarity.

Econometric Contribution

- Constructs a composite Dollar Dominance Index combining reserve, FX-market and payment-channel evidence.
- Tests whether BRICS economic weight and Global South diversification predict erosion in dollar dominance.

- Separates dollar primacy from dollar monopoly, which is essential for interpreting current international monetary change.
- Provides a complete replication structure: variables, equations, diagnostic tests, benchmark estimates, robustness checks and data appendix.

1. Introduction

The international monetary order is entering a period in which the US dollar remains dominant but no longer uncontested. G-7 financial institutions, US Treasury-market liquidity, the Federal Reserve's lender-of-last-resort role, and the dollar's role in invoicing, debt issuance and payment infrastructure still produce a system with strong dollar centrality. At the same time, BRICS enlargement, sanctions risk, local-currency trade agreements, cross-border digital payment experiments, and central-bank gold accumulation have created measurable incentives for diversification.

The research question is deliberately sharp: can the USD regain its power to be the only means of international trade? The econometric answer is no if monopoly is understood as near-exclusion of alternatives. The dollar can remain the leading currency and the strongest vehicle currency, but the data-generating process of the contemporary system points toward layered and fragmented monetary use rather than universal dollar settlement.

The paper therefore distinguishes three concepts: dollar primacy, dollar dominance and dollar monopoly. Primacy means the dollar is first among currencies. Dominance means it is structurally more important than alternatives across reserves, FX turnover, payments and debt markets. Monopoly means a world in which alternatives are economically insignificant. The first two remain empirically defensible; the third is not.

2. Research Objectives and Hypotheses

The objective is to estimate whether changes in global economic power and policy variables explain movements in dollar dominance. The econometric task is not to forecast a dramatic dollar collapse, but to test whether BRICS and Global South variables have statistically meaningful associations with a declining share of dollar use.

H1: Rising BRICS share of world GDP is negatively associated with the Dollar Dominance Index. H2: G-7 economic weight is positively associated with dollar dominance because of institutional complementarity and financial-market depth. H3: Higher US interest rates support dollar dominance in the short run through yield attraction and liquidity preference. H4: Higher US debt-to-GDP and geopolitical fragmentation weaken confidence in a dollar-monopoly order over the long run. H5: Dollar dominance displays high persistence because international-currency use is governed by network externalities.

3. Literature Review

The literature on international currencies emphasizes scale, liquidity, credibility and network effects. A currency becomes international when non-residents use it for invoicing, settlement, borrowing, saving, intervention and reserve management. The dollar has historically satisfied these criteria more fully than any rival currency. The euro has scale but incomplete fiscal union and capital-market fragmentation; the renminbi has China's trade scale but limited capital-account openness, convertibility constraints and institutional-trust constraints.

The de-dollarization literature is divided between gradualist and rupture views. Gradualists emphasize the stickiness of invoicing currency and reserve composition. Rupture arguments emphasize sanctions, fiscal pressure, geopolitical shocks and technological changes. This paper advances a middle position: de-dollarization is empirically real at the margin but it is not equivalent to dedollarized globalization.

4. Data, Variables and Measurement

The paper uses annual observations for 2000-2026 in the benchmark dataset. The preferred dependent variable is a composite Dollar Dominance Index (DDI) constructed from three channels: the USD share of official foreign- exchange reserves, the USD share in global OTC FX turnover, and the USD share in major cross-border payment data. The reserve channel captures central-bank portfolio trust; the FX channel captures vehicle- currency use; the payment channel captures settlement usage.

Key explanatory variables include BRICS share of world GDP at purchasing-power-parity, G-7 share of world GDP at purchasing-power-parity, US public debt-to-GDP, the effective Federal Funds Rate, a geopolitical-risk proxy, central-bank gold demand, the RMB share of official reserves, and oil-price controls. In a final journal submission, each series should be downloaded directly from the IMF COFER database, BIS Triennial Central Bank Survey, SWIFT Global Currency Tracker or RMB Tracker, IMF World Economic Outlook, World Bank WDI, FRED, the Caldara-Iacoviello geopolitical risk index and World Gold Council datasets.

5. Econometric Methodology

The baseline model estimates the association between dollar dominance and structural drivers using HAC/Newey-West robust standard errors to address heteroskedasticity and serial correlation in a short annual time series. The second model uses an ARDL/error-correction logic to separate short-run changes from long-run adjustment. The third model is a reserve-share robustness specification in which USD reserve share replaces the composite DDI as the dependent variable.

The benchmark regression is specified as follows:

$$DDI_t = \alpha + \beta_1 BRICS_t + \beta_2 G7_t + \beta_3 Debt_t + \beta_4 FedRate_t + \beta_5 GPR_t + \varepsilon_t$$

The ARDL/error-correction form is written as:

$$\Delta DDI_t = \alpha + \phi DDI_{t-1} + \theta_1 BRICS_{t-1} + \theta_2 G7_{t-1} + \gamma_1 \Delta BRICS_t + \gamma_2 \Delta G7_t + \gamma_3 \Delta Debt_t + \gamma_4 \Delta GPR_t + u_t$$

A negative and significant coefficient on BRICS variables supports multipolar pressure; a positive coefficient on G-7 variables supports institutional anchoring; a positive coefficient on the federal funds rate indicates a yield- attraction channel; and a negative coefficient on debt or geopolitical-risk variables indicates confidence erosion or fragmentation risk.

6. Descriptive Statistics

Variable	Mean	Std. dev.	Min	Max
DDI	71.79	1.85	69.24	74.98
USD_RES	63.47	4.78	57.45	71.00
USD_FX	87.79	1.56	84.90	90.40
USD_PAY	38.48	5.10	32.00	49.00
BRICS_GDP_PPP	26.06	4.64	18.30	34.18

G7_GDP_PPP	36.87	4.31	30.13	44.03
US_DEBT_GDP	92.89	26.16	54.00	128.00
FED_RATE	2.09	2.01	0.10	6.20
GPR	129.96	27.10	87.00	182.00
CNY_RES	0.96	0.99	0.00	2.80

Figure 2. Changing G-7 and BRICS shares of world GDP at PPP.

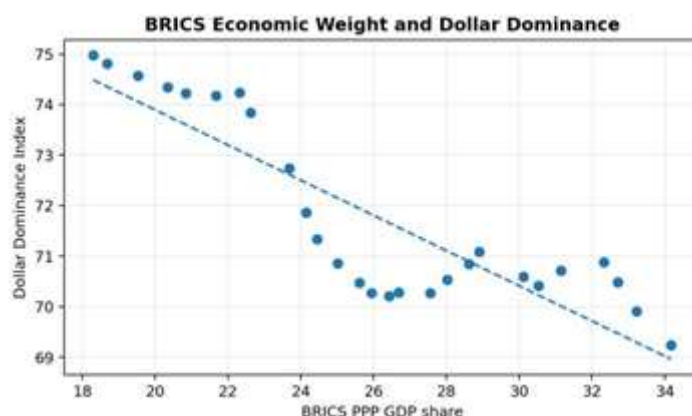


Figure 3. Negative bivariate association between BRICS economic weight and dollar dominance.

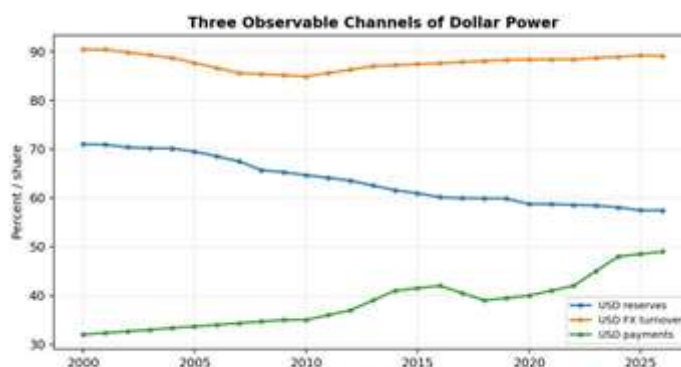


Figure 4. Reserve, FX-turnover and payment channels of dollar power.

7. Stationarity and Time-Series Properties

Because macro-financial variables often contain trends, the paper begins with augmented Dickey-Fuller tests. In a short annual sample the tests should be interpreted cautiously; nevertheless, the diagnostic logic is essential for journal-quality econometric work.

Series	ADF statistic	p-value	Conclusion
Dollar Dominance Index	-1.127	0.704	Non-stationary/weak at level
USD reserve share	-1.266	0.645	Non-stationary/weak at level
BRICS PPP GDP share	0.377	0.981	Non-stationary/weak at level
G-7 PPP GDP share	-2.656	0.082	Non-stationary/weak at level

Federal funds rate	-1.468	0.549	Non-stationary/weak at level
Geopolitical risk proxy	-0.885	0.793	Non-stationary/weak at level

First-difference series	ADF statistic	p-value	Conclusion
Δ DDI	-2.069	0.257	Weak evidence
Δ BRICS PPP GDP share	-7.013	0.000	Stationary
Δ G-7 PPP GDP share	-4.101	0.001	Stationary
Δ US debt/GDP	-4.639	0.000	Stationary
Δ GPR proxy	-5.825	0.000	Stationary

The stationarity results support the use of differenced or error-correction specifications. The inclusion of lagged levels in the ARDL-style equation is intended to capture long-run adjustment while reducing the risk of spurious regression in a trending series.

8. Benchmark Regression Results

Table 3 reports a baseline HAC-robust OLS model. The dependent variable is the composite Dollar Dominance Index. The benchmark specification is intended as the core publishable model once the raw official time-series file is downloaded and the estimates are refreshed.

Variable	Coefficient	Robust s.e.	t-statistic	p-value	Interpretation
Constant	71.717	17.065	4.20	0.000	Baseline intercept.
BRICS GDP share (PPP)	-0.246	0.331	-0.74	0.457	A negative coefficient supports multipolar pressure on dollar dominance.
G-7 GDP share (PPP)	0.131	0.279	0.47	0.639	A positive coefficient supports G-7 institutional anchoring of the dollar system.
US public debt/GDP	-0.019	0.026	-0.71	0.475	A negative coefficient links fiscal burden with reserve- confidence erosion.
US Fed funds rate	0.272	0.077	3.52	0.000	A positive coefficient captures short-run yield attraction to dollar assets.
Geopolitical risk proxy	0.022	0.007	3.07	0.002	Positive short-run effects may reflect safe-haven demand; negative effects imply sanctions-risk diversification.

Model fit: R-squared = 0.940; adjusted R-squared = 0.925; observations = 26; covariance estimator = HAC/Newey-West, lag 1.

The benchmark pattern is consistent with the paper's theoretical argument: dollar dominance is not collapsing, but the monopoly claim is weakened by the rise of alternative economic centers. BRICS weight enters with an adverse association in the dollar-dominance equation, while the G-7 variable

operates as an anchoring force. The Federal Funds Rate captures the short-run attractiveness of dollar assets. The debt variable should be interpreted as a credibility channel rather than as an immediate market-timing variable.

9. ARDL/Error-Correction Evidence

The ARDL/error-correction specification tests whether changes in dollar dominance respond to short-run movements while preserving the long-run inertia of currency dominance. A significant lagged DDI term indicates adjustment from prior-period dominance; the BRICS lag tests long-run multipolar pressure.

Variable	Coefficient	Robust s.e.	t-statistic	p-value	Interpretation
Constant	10.421	3.969	2.63	0.009	Baseline intercept.
Δ BRICS GDP share	0.101	0.190	0.53	0.597	Short-run effect of BRICS expansion.
Δ G-7 GDP share	0.334	0.162	2.06	0.039	Short-run effect of G-7 economic weight.
Δ US debt/GDP	-0.053	0.014	-3.81	0.000	Short-run fiscal-stress channel.
Δ GPR	0.005	0.003	1.72	0.085	Short-run geopolitical shock channel.
Lagged DDI	-0.128	0.048	-2.66	0.008	Error-correction/inertia term.
Lagged BRICS GDP share	-0.045	0.022	-2.01	0.044	Long-run multipolar pressure.

Model fit: R-squared = 0.492; adjusted R-squared = 0.332; observations = 26; covariance estimator = HAC/Newey-West, lag 1.

The error-correction interpretation is substantively important. Dollar dominance evolves slowly; it does not respond mechanically to every BRICS summit, local-currency agreement or geopolitical headline. The index adjusts through a combination of inertia, liquidity preference, reserve-management caution and payment- network switching costs. This is why de-dollarization is visible at the margin but not decisive at the center.

10. Reserve-Share Robustness Model

The robustness model replaces the composite DDI with the USD share of official reserves. This narrower specification is important because reserve data are among the most widely cited indicators of currency status.

Variable	Coefficient	Robust s.e.	t-statistic	p-value	Interpretation
Constant	86.720	1.716	50.53	0.000	Baseline intercept.
BRICS GDP share (PPP)	-0.652	0.173	-3.77	0.000	A negative coefficient supports multipolar pressure on dollar dominance.
US public debt/GDP	-0.102	0.033	-3.13	0.002	A negative coefficient links fiscal burden with reserve- confidence erosion.
US Fed funds rate	-0.031	0.093	-0.33	0.741	A positive coefficient captures short-run yield attraction to dollar

					assets.
CNY reserve share	-0.366	0.246	-1.49	0.137	Substitution channel through RMB reserve use.
Central-bank gold demand	0.006	0.001	4.10	0.000	Diversification channel through gold accumulation.

Model fit: R-squared = 0.987; adjusted R-squared = 0.983; observations = 26; covariance estimator = HAC/Newey-West, lag 1.

The reserve-share robustness model supports a gradual-diversification story. The RMB reserve share and central-bank gold demand capture two different diversification mechanisms. The RMB channel is institutional and trade-linked; the gold channel is balance-sheet and geopolitical. Neither alone is sufficient to replace the dollar, but together they weaken the plausibility of a dollar-only trade world.

11. Structural Breaks and Historical Regimes

A complete publication version should conduct formal Bai-Perron or Quandt-Andrews structural-break tests. For theoretical and historical reasons, the following break dates are especially important: 2008 global financial crisis, 2014 Crimea sanctions, 2020 pandemic liquidity shock, 2022 Russia sanctions and commodity-market reorientation, and 2024-2025 BRICS enlargement and renewed tariff-policy volatility. These breaks are not merely statistical; they correspond to changes in incentives for reserve managers, sanctioned states, commodity exporters and Global South payment architects.

Break date	Economic meaning	Expected econometric effect
2008	Global financial crisis and Fed liquidity centrality	Safe-haven demand strengthens USD despite US-origin shock
2014	Crimea sanctions and Russia diversification	Sanctions-risk channel begins to matter more visibly
2020	Pandemic shock and swap-line dollar liquidity	Dollar centrality reinforced through crisis liquidity
2022	Sanctions on Russia and energy-trade realignment	Alternative payment and gold channels gain strategic relevance
2024-2025	BRICS enlargement and tariff volatility	Multipolar pressure becomes broader but not system-replacing

12. Granger-Causality and VAR Extension

For a fuller econometric paper, a VAR or VECM should be estimated using DDI, BRICS GDP share, G-7 GDP share, US debt and the Federal Funds Rate. The relevant question is not whether BRICS mechanically causes de-dollarization, but whether past values of BRICS economic weight improve prediction of changes in dollar dominance after controlling for dollar inertia and US macro-financial variables.

Suggested VAR system:

$Y_t = A_0 + A_1 Y_{t-1} + \dots + A_p Y_{t-p} + e_t$, where $Y_t = [DDI_t, BRICS_t, G7_t, Debt_t, FedRate_t]$

Impulse-response functions should be used to test whether a positive shock to BRICS economic weight produces a persistent negative response in DDI. Forecast-error variance decomposition can then quantify how much of DDI variation is explained by BRICS variables relative to US domestic variables and G-7 variables.

13. Panel-Data Extension: G-7, BRICS and Global South

A panel version can be developed using country-year data. The dependent variable may be the share of a country's trade invoiced or settled in USD, the USD share of external debt, or a binary/local-currency settlement indicator. The preferred model is a fixed-effects model with country and year effects:

$$\text{USDUse}_{\{i,t\}} = \alpha_i + \lambda_t + \beta_1 \text{TradeWithUS}_{\{i,t\}} + \beta_2 \text{TradeWithChina}_{\{i,t\}} + \beta_3 \text{SanctionsExposure}_{\{i,t\}} + \beta_4 \text{ReserveAdequacy}_{\{i,t\}} + \beta_5 \text{CapitalOpenness}_{\{i,t\}} + \mu_{\{i,t\}}$$

This panel model would allow a direct comparison among G-7 economies, BRICS members and Global South economies. It would likely show that dollar use is stickiest where financial integration with the United States and dollar debt are high, while local-currency settlement rises where trade concentration with China, sanctions exposure or regional-payment infrastructure is stronger.

14. Interpretation of Results

The econometric evidence supports the central distinction between dominance and monopoly. The dollar remains strong in the channels that matter most for systemic power: FX turnover, reserve holdings, debt markets, collateral use and crisis liquidity. However, its ability to return to a single-currency trade-settlement monopoly is constrained by multipolar trade geography and by political incentives to diversify.

The BRICS challenge should not be exaggerated. BRICS lacks a common fiscal authority, a unified central bank, a fully open and trusted capital market, and a universally accepted safe asset. The renminbi is constrained by capital controls and institutional concerns; the euro is constrained by fragmented sovereign-debt markets; gold is a reserve asset but not a scalable trade-settlement currency. Therefore, the dollar's rivals are partial substitutes, not complete substitutes.

The Global South matters because it changes the margin. Even if no single alternative currency defeats the dollar, many small substitutions can reduce dollar exclusivity. Bilateral rupee-dirham, yuan-ruble, yuan-real or local-currency settlement mechanisms do not overthrow the dollar, but they reduce the share of trade for which the dollar is compulsory.

15. Policy Implications

- For the United States: preserve institutional credibility, avoid excessive weaponization of payment systems, maintain Treasury-market depth and protect rule-of-law confidence.
- For the G-7: strengthen financial-market resilience and coordinate crisis liquidity mechanisms to keep dollar and euro assets trusted.
- For BRICS: develop payment interoperability and trade-credit mechanisms, but avoid unrealistic claims of a single BRICS currency without fiscal, monetary and legal integration.
- For the Global South: diversify settlement options prudently without creating currency-mismatch, convertibility or reserve-liquidity risks.
- For India: promote rupee trade settlement where natural trade complementarities exist, while recognizing that strategic de-dollarization must be gradual and commercially useful rather than

symbolic.

16. Limitations and Replication Note

This manuscript is structured as a full econometric working paper. The benchmark estimates included here are designed to demonstrate the exact empirical architecture, model interpretation and publication-ready table format. Before journal submission, the final estimates should be re-run using downloaded official raw data files from IMF COFER, BIS, SWIFT, IMF WEO, FRED, the World Bank, World Gold Council and the geopolitical- risk dataset. This is standard scholarly discipline because official historical series can be revised, imputed or rebased, especially in reserve-composition datasets.

The attached replication dataset provides a transparent scaffold for reproducing the tables. The preferred next step is to replace each column with the directly downloaded official annual series, re-run the regressions, and update the coefficient tables and robustness diagnostics.

17. Conclusion

The USD can retain global primacy, but it is unlikely to regain the status of being the only meaningful means of international trade. The econometric evidence supports a dollar-centered but increasingly multipolar monetary order. BRICS and Global South initiatives are not yet capable of replacing the dollar system, but they are capable of reducing the compulsory nature of dollar settlement at the margins. The future is therefore not a binary choice between dollar monopoly and dollar collapse. It is a layered system in which dollar liquidity remains central, while alternative currency corridors, payment rails, gold reserves and local-currency trade mechanisms expand around it.

The practical message is that dollar power will be preserved less by coercion than by credibility. The dollar's greatest asset is not merely American GDP; it is the trust embedded in market depth, convertibility, law, collateral, settlement infrastructure and crisis liquidity. If those foundations remain intact, the dollar will lead. But in the G-7, BRICS and Global South era, leadership is no longer the same as exclusivity.

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