

BOT RESEARCH

NEWSLETTER

April 2026, Volume 9, Issue 1

Inside this Issues:

Assessment of Marshall-Lerner Condition in Tanzania	1
Exchange Rate Pass-Through to Inflation in Tanzania	2
Effects of Real Exchange Rate Volatility on Tanzania's Exports	3
Drivers of Cash-Lite Economy Adoption in Tanzania	3
Impact of Demographic Transition on Economic Growth in Tanzania	4



The Bank of Tanzania Research Newsletter is an annual publication that disseminates findings from recent studies conducted by Bank staff and from papers presented in the seminar series by external researchers.

The views expressed in this Newsletter are solely those of the authors and do not necessarily reflect the official position of the Bank of Tanzania or its management.

Assessment of Marshall-Lerner Condition in Tanzania

S. Missango, and L. Mwankemwa

Exchange rate dynamics are central to macroeconomic management, with the trade balance serving as a principal transmission channel through which currency movements shape external sector outcomes and overall economic stability.

The findings indicate that exchange rate depreciation, in isolation, is insufficient to achieve meaningful trade balance adjustment in Tanzania, thereby underscoring the necessity of complementary structural reforms designed to expand and diversify the country's export supply capacity.

This study investigates whether exchange rate adjustment can serve as an effective policy instrument for restoring Tanzania's external balance. The issue is motivated by the persistent depreciation of the Tanzanian Shilling (TZS), coinciding with deteriorating current account position. According to the Marshall-Lerner (M-L) condition, a currency depreciation

improves the trade balance if the sum of price elasticities of demand for exports and imports exceed unity. Against this backdrop, the study pursues two main objectives. First, it examines whether the M-L condition holds in both short and long run. Second, it assess how exports and imports volumes respond to changes in exchange rate and income across contrasting trade performance regimes. The empirical analysis employs quarterly data on trade volumes, real GDP, and the real effective exchange rate (REER), sourced from the Bank of Tanzania, the National Bureau of Statistics, and the OECD. To capture potential non-linearities and regime-dependent dynamics, the study adopted a Quantile Autoregressive Distributed Lag (QARDL) framework, focusing on the 0.3 and 0.75 trade performance quantiles. This approach is well-suited to Tanzania's structurally complex

economy, where trade responses to exchange rate movements are likely to be heterogeneous across different states of external performance.

The key findings indicate that the M-L condition does not hold for Tanzania. In the long run, the estimated sum of export and import demand elasticities equals 0.441 under low trade performance and 0.417 under high trade performance—both below

the threshold of unity. Similarly, short run elasticities are estimated at 0.212 and -0.516, respectively, further confirming failure of the M-L condition across trade regimes. Export responses to exchange rate depreciation are partial and sluggish, reflecting persistent supply-side constraints and heavy reliance on imported intermediate inputs. At the same time, demand for essential imports, such as fuel and machinery remains price inelastic.

Collectively, these findings suggest that exchange rate depreciation, on its own, is an insufficient instrument for trade imbalance adjustment in Tanzania. The short-run export dynamics are consistent with the J-curve phenomenon, whereby the immediate adverse impact of higher import costs initially outweighs any nascent external competitiveness gains, underscoring the need for complementary structural reforms to enhance export supply capacity.

(Full paper available in the Bank of Tanzania website: www.bot.go.tz)

Exchange Rate Pass-Through to Inflation in Tanzania

D.Kimolo, M. Budeba, and G. Mafie

In developing economies like Tanzania, where import dependence is high and exposure to external shock is pronounced, exchange rate plays a central role in influencing macroeconomic stability.

The findings indicate a low exchange rate pass-through, except when it exceeds the critical threshold of 7.32 percent, a pattern attributable to Tanzania's managed float regime and structural factors.

This study examines how fluctuations in Tanzania's exchange rate translate into domestic inflation, using quarterly data spanning 2002 to 2024 and employing Threshold Autoregressive (TAR) models. To more accurately isolate the effects of exchange rate pass through (ERPT), the analysis incorporated variables such as rainfall, oil prices, and output gap. Consistent with structural and economic developments over the sample period, the study aimed to update ERPT estimates, evaluate the presence of asymmetric responses, and identify potential threshold effects, specifically, critical levels of currency depreciation that can trigger disproportionately large inflationary pressures.

The findings indicate a low average ERPT to inflation with a 1 percent depreciation of exchange rate raising

inflation by around 0.046 percent. This muted pass-through is partly attributable to Tanzania's managed float regime as well as structural features of the economy, including the significant weight on non-tradable goods in the consumer basket. The results further reveal clear asymmetries: currency depreciation exerts a significant inflationary effect, estimated at 0.053 percent per 1 percent depreciation, whereas appreciation has negligible and statistically insignificant effects on inflation. A critical threshold of 7.32 percent annual depreciation was identified, beyond which inflationary pressures intensify markedly. In addition, supply-side factors, particularly rainfall variability, and energy prices strongly influence inflation. These results underscore the importance of proactive exchange rate management to contain volatility, especially during episodes of depreciation. Such efforts should be complemented by policies aimed at increasing agricultural productivity and stabilizing energy pricing.

The study ultimately concludes with a call for strong coordination between fiscal and monetary frameworks to enhance the economy's resilience to external shocks and safeguard price stability—an objective that is central to Tanzania's ambition of consolidating and sustaining its middle-income status.

(Full paper available in the Bank of Tanzania website: www.bot.go.tz)

Effects of Real Exchange Rate Volatility on Tanzania's Exports

W. Mbowe and H. Mpango

Since independence, Tanzania has witnessed significant transformation in its exchange rate determination regimes, largely shaped by domestic developmental goals of the day, and global economic pressures.

Exports exhibit asymmetric responses to exchange rate fluctuations, underscoring the importance of coupling exchange rate flexibility with strategic export diversification initiatives.

This study examines how movements in the real exchange rate shape Tanzania's export performance, using quarterly data from 1997–2023. The analysis applied Autoregressive Distributed Lag (ARDL) to capture both short- and long run dynamics, and Exponential GARCH (EGARCH) model for volatility tests. Specifically, the study evaluates the effects of real exchange rate changes and volatility on export performance, investigates the presence of asymmetric export responses to exchange rate movements, and identifies export product categories that drive the overall responsiveness of Tanzania's exports to exchange rate fluctuations.

The findings indicate that depreciation of the Tanzanian shilling boosts export performance, with estimated

(Full paper available in the Bank of Tanzania website: www.bot.go.tz)

Drivers of Cash-Lite Economy Adoption in Tanzania

E. Mung'ong'o, S. Mwalongo, D. Mwita and I. Mwakisambwe

Globally, non-cash payment methods have grown rapidly, driven by advances in digital financial technology, widespread smartphone usage, and improved internet access.

Cash remains deeply entrenched within Tanzania's value chains, while the uptake of digital financial services is hindered by high transaction costs and other structural barriers, underscoring the imperative for policy interventions that enhance the attractiveness and accessibility of digital payment systems.

elasticities of 1.47 in the short run and 1.40 in the long run, implying that a 1 percent depreciation increases exports by roughly 1.5 percent. The responses were notably asymmetric, such that depreciation had much larger effect (2.3 percent) than appreciation (0.47 percent). Sectoral results revealed important heterogeneity: whereas horticulture benefited in the short run (2.09 percent per 1 percent depreciation), manufactured goods showed the largest long run gains (3.04 percent). Exchange rate volatility, by contrast, exerted small but negative short run drag on total exports (0.10 percent), concentrated in horticulture and transport services.

The findings underscore the need to leverage exchange rate flexibility to reinforce competitiveness in the most responsive sectors (manufactured goods and horticulture), while containing excess volatility by curbing speculative behaviour and maintaining adequate reserves. Complementary measures, including export diversification toward higher value-added manufacturing and services, targeted investments in transport and ICT infrastructure, and continued improvements in market access, would strengthen resilience to global shocks and lock in the trade gains identified by the analysis.

This study examines the limited adoption of non-cash payment instruments in Tanzania's high-value value chains. Specifically, it seeks to analyze the structural features of selected value chains and their implications for the uptake of non-cash payments; assess behavioral, social, and economic barriers that sustain a preference for cash among demand-side actors; evaluate supply-side and broader enabling factors that influence the provision and use of digital payment solutions; and examine the feasibility of introducing cash transaction limits as a policy tool to

encourage electronic payments. The study adopts a mixed-methods approach, combining a desk review with both physical and online survey questionnaires, as well as key informant interviews with stakeholders including banks, mobile money operators, and fintech companies.

The study found that cash remains deeply embedded in Tanzania's value chains, particularly in livestock, fisheries, mining, and food crop sectors, where traders, middlemen, and farmers often prefer immediate cash transactions. The findings also revealed that the adoption of digital financial services is constrained by high transaction costs (such as levies, account maintenance fees, withdrawal charges, and high minimum balances), unreliable connectivity dominated by 2G and 3G networks, low digital literacy that limits understanding of digital tools and pricing structures, and mistrust caused by hidden charges, fraud, and system downtime,

(Full paper available in the Bank of Tanzania website: www.bot.go.tz)

Impact of Demographic Transition on Economic Growth in Tanzania

D. Msafiri and V. Kakengi

Demographic transition plays a critical role in shaping economic growth trajectories, especially in economies experiencing rapid population change.

In the long run, the old-age dependency ratio exerts a negative impact on economic growth, while in the short run, the youth dependency ratio produces similar adverse effects, highlighting the imperative of strengthening pension and old-age support systems in tandem

This study examines the impact of demographic transition on economic growth in Tanzania using annual time series data from 1988 to 2023. Specifically, it analyses how under-five mortality rate, old-age dependency ratio, and young-age dependency ratio influence GDP growth, while controlling for population growth, trade openness, and inflation. The study applied the Autoregressive Distributed Lag (ARDL) modelling approach to capture both short-run and long-run dynamics, given

leading many users to perceive cash as safer and more controllable.

The study concludes that breaking the self-reinforcing cycle of cash preference and promoting the use of formal digital financial instruments across both large- and small-value transactions requires gradual and a 'soft-landing approaches'. Rather than relying on coercive enforcement, this strategy emphasizes making digital payments inherently more attractive than cash by enhancing their reliability, affordability, and perceived trustworthiness. Accordingly, policy priorities should center on improving the functionality and cost-effectiveness of digital payment infrastructure, strengthening user confidence in non-cash instruments, and better aligning value chain operations with the practical requirements of digital transactions. Only once these foundational conditions are firmly established should the introduction of cash transaction limits be considered as a complementary policy measure.

the mixed order of integration among variables. The ARDL bounds test confirms the existence of a long-run relationship between demographic variables and economic growth. The estimated long-run coefficients reveal that the old age dependency ratio negatively and significantly influences economic growth. In the short run, young dependency ratio was negative and significant, while old age dependency ratio was positive.

The finding suggests strengthening of pension and old-age support schemes while incentivizing longer workforce participation, investing in youth human capital by aligning education and vocational training with labor market demands, turning the short-term youth dividend into sustained growth, and lastly, boosting the generation of jobs in labour-absorbing sectors such as SMEs, services, simple manufacturing to absorb the expanding workforce.

(Full paper available in the Bank of Tanzania website: www.bot.go.tz)



For enquiries please contact:
Bank of Tanzania, 16 Jakaya Kikwete Road
P.O Box 2303
40184 Dodoma, Tanzania
Tel: +255 22 223 2501/3022