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The Bank of Tanzania Research Newsletter is an annual publication aimed at disseminating research results of recent studies conducted by staff of the Bank and those presented at BOT seminar series by non-BOT staff.

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.

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Effectiveness of Monetary Policy Transmission Mechanism Through Interest Rate Channel in Tanzania

D. Kimolo, H. Naumanga, A. Mhoja, E. Makoye and L. Salapion

This study investigates the effectiveness of monetary policy transmission through interest rates in Tanzania. The study utilizes quarterly data from 2002 to 2022 and employs the ARDL and SVAR models to examine interest rate pass-through and the efficacy of the transmission mechanism, respectively. More specifically, the study examined the relationship between the repo rate and interbank rates, lending and deposit rates, and their impact on the general price level and the overall economy.

> There is a complete pass-through of monetary policy rates to interbank rates, with the 7-day rate showing greater responsiveness, along with a significant improvement in the pass-through to short-term deposit rates.

The findings suggest that there is a complete pass-through of monetary policy rates to interbank market interest rates, with the 7-day interbank rate showing greater responsiveness to changes in policy rates than the overnight interbank rate. The pass-through to short-term deposit rates is statistically significant, but low in the short run, with a higher degree than in previous studies indicating improvement in transmission. Furthermore, there is an incomplete pass-through of the policy rate to both short-term and long-term lending rates. The transmission of monetary policy from policy rate to output and prices is weak.

The implications are that the 7-day interbank rate could be used as an

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operational target, supporting the adoption of an interest rate-based monetary policy framework. In addition, there in a need to address challenges in relation to lending rate sensitivity to monetary policy actions.

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

Assessment of the Economic Effects of Regional Integration: Multi-sectoral Approach for Tanzania

E. Mgangaluma, M. Benedicto, M. Fimbo N. Siriwa, V. Tesha and H. Mpango

This study uses the latest sectoral and commodity level data to examine the economic effects of regional integration focusing on Tanzania participation in free trade arrangements with the member states of EAC and SADC. The study was motivated by the fact that Tanzania's intra-EAC/SADC trade more than tripled from USD 0.9 billion in 2004 to around USD 3.0 billion in 2020, but the magnitude of payoffs from the registered performance was not well understood.

Generalized Method of Moments (GMM) and Fixed Effect (FE) regression models were employed to estimate factors influencing exports between Tanzania and EAC, SADC as well as the rest of the world. Panel data for 16 years from 2004 – 2019, across 25 countries (4 EAC, 13 SADC and 8 non-EAC & SADC trade partners) were used in the estimations. To complement the GMM and FE estimations, simulation analysis was undertaken based on the World Bank's World Integrated Trade Solution–Single Market Partial Equilibrium Simulation Tool (WITS-SMART). A firm level survey of selected exporters and importers was conducted to gather experiences on regional trade agreements.

Findings from the FE and GMM models reveal that Tanzania's involvement in regional trade leads to both trade creation and trade diversion. Decomposed analysis by the WITS-SMART model found a persistent increase in trade creation over the period 2015 to 2020, driven by imports of manufactured intermediate goods, transport and logistic facilities. The upward trend in trade creation reflects Tanzania's increasing contribution to intra-regional trade with EAC and SADC. Trade diversion was found to be modest, averaging 0.5 percent of Tanzania's import bill over the period 2015-2020. The relatively low level of trade diversion was associated with non-tariff barriers (NTBs) and supply shortfalls in the region. The Welfare effect was positive and equivalent to 0.04 percent of Tanzania's real GDP for 2020. The Revenue effect was a loss averaging 0.2 percent of the value of annual imports over the period 2015 to 2020.

The study recommends the need for the Government in collaboration with the private sector to scale up investment in industrialization, agriculture, transportation, and logistics, while expediting business environment reforms to attract more FDIs. While revenue loss cannot be avoided, it could be minimized by restricting the importation of goods by exploiting the country's comparative and competitive advantage. Meanwhile, Regional Member States could work to resolve existing NTBs, refrain from imposing new ones, and improve connectivity for more intra-trade and fostering firms' participation in the integration agenda.

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

Assessment of Leather Industry in Tanzania: Opportunities for Increasing Export Earnings

D. Macha, A. Mhoja, J. Kivamba, S. Mrema, I. Pagali and L. Kahwili

The study assesses the performance of leather sub-sector in Tanzania and unveil opportunities for increasing its exports. The study was motivated by the low contribution of livestock sub-sector, at 2.0 percent of GDP, compared to other African countries such as Ethiopia where leather sub-sector alone accounted for 6.0 percent of GDP and 10.9 percent of foreign exchange earnings in 2014. The analysis was based on desk review, complemented by primary data gathered from various stakeholders using structured questionnaires and guide questions.

Findings indicate that there are improvements in leather sub-sector, notably in tanning and shoes making, but

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below the levels registered prior to 1985. The major factors associated with low performance include: low readiness of farmers to change from rudimentary to modern animal-keeping practices; high cost of hides and skins processing and effluent management—leading to low competitiveness of locally processed leather; low domestic absorption capacity of tanneries' output; competition from less expensive imported hides, shoes and other 'leather' related materials, most of which are synthetic; and low level of skills in leather production.

> Improvements have been recorded in the leather industry, but more need to be done to scale up leather products exports

To improve export earnings from the sub-sector, the study recommends reviewing and/or streamlining taxes on hides and skins trading (both in domestic and external markets). It is also important to enhance investment in the production of high quality hides/skins, partly tapping from the existing national ranches; develop internal capacity to produce leather products that can easily penetrate domestic and regional markets—focusing on products with high demand; provide incentives for investment in leather industries including establishing leather industrial parks to facilitate among others, delivery of requisite services such as effluent management, power, and water; and enhance Research and Development capacity in leather sector.

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

Re-Estimating Inflation Threshold Level for Tanzania

Dr. W. Mbowe and H. Mpango

The study seeks to determine the relationship between inflation and growth in Tanzania, and estimate the appropriate inflation threshold level that would allow monetary policy to continue supporting economic growth while containing inflation. The Ordinary Least Squares (OLS) and Two-Stage Least Squares (2SLS) based on quarterly data were used in estimation, while assuming an inverse relationship between inflation and economic growth.

> Inflation beyond 7 percent is detrimental to growth in Tanzania.

It was found that the coefficient of the inflation variable is statistically significant and positive—indicating that low inflation supports growth—in which a one percent increase in inflation would lead to an increase in growth by 0.352 percent. The inflation threshold level was found to be 7 percent, with the total effect of inflation on growth estimated at 0.3494 percent. This suggests that inflation in the country is pro-growth. The study further established that the optimal inflation levels of 1 to 3 percent do not have an impact on growth, as reflected by unchanging adjusted R^2. This infers that inflation targets in this range could safely be ignored.

The study thus recommends that inflation target of below 7 percent, but above 3 percent could be considered in the monetary policy planning for stimulating growth in the country. Since the country has largely depended on inflation behavior in informing inflation targets to choose, which culminated in setting targets far below the optimal inflation, it is recommended to also benefit from empirically estimated optimal targets.

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

Assessment of Dynamics in Cement Supply and Prices in Tanzania

W. Mbowe, M. Selemani, A. Kinyondo, L. Madete, H. Naumanga, D. Mwita, E. Makoye, B. Wilfred and C. Kahwili

The study investigates the factors affecting cement supply and prices in Tanzania, using interview-based approach supplemented by secondary data analysis. Both purposive and snowball sampling techniques were

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employed in primary data collection. The findings indicate that domestic production constraints are the main cause of cement supply challenges in the country, with cement export and import playing a very small role.

The constraints related to domestic cement production include availability of raw materials, including clinker, energy supply, technology gap, transport and logistics, spare parts availability, and skills availability. The factors that drive cement prices in Tanzania include supply-side factors such as the cost of raw materials, power supply, transport costs, and seasonality; policy and regulatory factors such as taxes, levies, and charges; and industry-wide factors such as incomplete information about demand, dishonest traders, and competition aspects.

Cement supply challenges in Tanzania are to a large extent due to domestic production constraints

The study recommends to encourage cement producers to build depots along the new Standard Gauge Railway (SGR) upon its completion, to facilitate the distribution of cement at a lower cost; fast-track the connection and supply of natural gas to cement plants to reduce the cost of production and attract new investments in the industry; fasten the implementation of measures proposed in the blueprint to reduce the cost of compliance with government regulations and streamline revenue collection to avoid double-taxation. In addition, the responsible ministry should closely monitor developments in cement prices and intervene where necessary using market-based measures; and the Fair Competition Commission (FCC) should follow up on developments in the cement industry to deter the possibility of collusion or cartel formation, or any other anti-competitive conduct to avoid unfounded shortages and price hikes.

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

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