



Economic Factors Affecting the Volatility of Exchange Rate in Tanzania

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ABSTRACT

The study intended to find out business issues affecting the volatility of exchange rate (iii) to investigate political influences affecting the volatility of exchange rate. A descriptive research design was adopted since the study intended to gather both qualitative and quantitative data on economic factors affecting the volatility of exchange rate in Tanzania. The principal target populations were 52 employees of CRDB and NMB head-quarters offices in Dar es Salaam, Tanzania. This study employed both primary data and secondary data methods. The IBM SPSS Statistics software aided descriptive statistics analysis such as frequency tables to present demographic statistics of respondents while means and standard deviation was used to present data on the objectives of the study. Findings revealed that there is a significant positive relationship between economic factors and exchange rate volatility in Tanzania. The study concludes that the weaknesses and strengths of exchange rate depend much on the behavior of both economic factors. It is from this point of view that makes this study to conclude that there is a strong and significant relationship between economic factors and exchange rate volatility in Tanzania.

Keywords: *Exchange Rates, Exchange rate volatility.*

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INTRODUCTION

With the post-World War II era, the Bretton Woods system was the largest experiment in a fixed-rate exchange regime. The fixed-rate exchange system was no longer needed once the Bretton Woods arrangement collapsed in 1973, and the states were left to fluctuate their own money. Exchange rate volatility has become an inescapable fact of life for countries that have adopted a changing exchange rate system. Exchange rate volatility is linked to large fluctuations around the balance value of the exchange rate or short-term fluctuations around the long-term trends of the exchange rate [1; 2]. In other words, the exchange rate volatility is a variation of the price of one currency in another currency. Volatility refers to all movements and changes that are effective in depreciation or appreciation of a currency. The profitability of foreign exchange transactions is affected by the appreciation or loss of foreign currency [3]. Exchange rate volatility is associated with unpredictable movements in relative prices in the economy. For this reason, exchange rate stability is one of the main factors affecting foreign (direct and portfolio) investments, price stability and stable economic growth [4].

Globally, the changes in the main economic factors make the exchange rates more volatile by causing unexpected changes in the exchange rate level. In addition, changes in these factors can lead to further growth of the volatility, by exceeding the target for the long-term equilibrium exchange rate in the short term [5]. Excessive exchange rate volatility leads to delays in investment decisions, causing uncertainty in the economy. The uncertainty that is caused by volatility also negatively affects economic growth by affecting investment and investor confidence, productivity, consumption and international trade and capital flows [1]. Exchange rate volatility leads to high degree of uncertainty in ensuring price stability and economic growth and in setting.

There are many factors that affect the real exchange rate volatility, even if the effect of each depends on the economic conditions of the countries of the world. These factors include output level, inflation, trade openness, interest rates, domestic and foreign money supply, exchange rate regime, central bank independence, changes in the balance of payments, international capital movements, developments in information and communication technologies and monetary and fiscal policies to be implemented. In addition, speculations, news, expectations that contribute to the exchange of these variables will indirectly affect the volatility of the exchange rate [4; 5; 6].

In East Africa, a country like Kenya volatility in exchange rates in the recent past became higher to the extent of posing challenges on macro management due to political and economic related factors [7]. Okoth [8] established that price increment and interest rates affect the KES/USD exchange rate the most. Additionally, Akwabi [9] found that the

country has faced massive blows like the terms of trade becoming worse mainly due to fluctuation in internal product prices, oil prices and fluctuation in flow of capital which have led to challenges in micro-economic management policy.

Tanzania like other developing countries have been facing currency crisis issues over the years where depreciation of Tanzania shilling (Tshs) against other currencies such as United States Dollar (USD) have been witnessed. The country has experienced the high fall in value of its currency, Tshs against the dollar and other major currencies since 1999 to date [10]. According to Bank of Tanzania (BOT) annual reports, the exchange rate of Tshs against the USD depreciated by an average of 2.3% in 2013/2014 compared to annual appreciation of 1.3% in 2012/2013. In 2014/2015 BOT Annual Report, it was revealed that Tanzania Shilling depreciated by 9.2% on annual basis compared to 2.3% prior year. In the same report, BOT reported that the Inter-Bank Foreign Exchange Market (IFEM) was characterized by high volatility in exchange rate [11].

Studies by different authors indicated general factors such as inflation, political stability, national debt, price of products and goods, income levels, Gross Domestic Product growth and government controls and expectation [4; 5; 6; 7; 8; 10]. However, since these are general factors affecting exchange rate volatility, some may not be applicable and significant in other countries. In view of that, the current study intends to determine the significant economic factors affecting the exchange rate volatility in Tanzania.

Objectives of the study:

The objective of this study is to examine economic factors affecting the volatility of exchange rate in Tanzania.

METHODOLOGY

Study Design-

The study adopted a descriptive research design since the study intended to gather both qualitative and quantitative data that describe the effects of economic factors on the volatility of exchange rate in Tanzania.

Sample Size and Sampling Technique

The study covered 44 employees from both CRDB and NMB banks. This sample size was estimated by using Sloven's formula;

$$n = \frac{N}{(1+N(e)^2)}$$

Where

n = Sample size N= Total population = 52 Standard error (1-10%) 1= Constant

Substituting the formula above n=44

Respondents were purposively selected from among the employees of the selected banks basing on their knowledge regarding the phenomenon under study.

Data collection tools and procedures

This study employed both primary data and secondary data methods. For the secondary data, the study used documentary review and for the primary data, questionnaire and interviews were used to collect data from CRDB and NMB head-quarters office in Dar es Salaam, Tanzania.

Validity and Reliability of Data Collection Instruments

The researcher ensured that only valid questions were asked. This was done by giving the questions in the interview and the questionnaire to experts in the field of business administration to crosscheck if the questions are valid (relevant and irrelevant) against the objectives of the study. There after the researcher used the Content Validity Index (CVI), to test the validity of the instruments. The number of items ticked relevant by all experts in each instrument was summed up and divided by the total number of items in each instrument. The researcher then computed the Content Validity Index using the formula below:

$$CVI = \frac{\text{Number of items regarded relevant in the questionnaire}}{\text{Total Number of items in the questionnaire}}$$

The CVI should be >0.7 according to Amin, (2005) such that it guarantees validity

Reliability is the consistency of measurement, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects. This was done by pre-testing the instrument to confirm reliability using test-retest method whereby to actualize the test-retest method a sample of fifteen respondents from different but distant time points, correlation coefficient between the two-time data was set and established.

Data analysis and presentation

The IBM SPSS Statistics software aided descriptive statistics analysis such as frequency tables to present demographic statistics of respondents while means and standard deviation was used to present data on the objectives of the study. According to Bonne and Bonne [12] means and standard deviation are the appropriate procedure in measuring central tendency and variability when analyzing Likert-scale data with the interest of combining items into a single composite score variable that represents the character. Additionally, correlation analysis was employed to assess the relationship between the IV and DV.

Table 1: To interpret the mean scores the following values and interpretation was utilized.

Mean Range	Description	Interpretation
4.30 - 5.00	Strongly Agree	Very High
3.50 - 4.20	Agree	High
2.70 - 3.40	Neutral	Moderate
1.90 - 2.60	Disagree	Low
1.00 - 1.80	Strongly Disagree	Very Low

RESULTS AND DISCUSSIONS

The economic factors affecting the volatility of exchange rate

In this section the respondents were asked to rate themselves on the given items using a scale ranging from a minimum of one - for strongly disagree to a maximum of five - for strongly agree (see Table 1). Findings revealed several economic factors affecting the exchange rate volatility in Tanzania which among them includes; inflation rate, foreign exchange rate reserves, gross domestic product, financial openness, foreign debt liabilities, lagged exchange rate, fiscal balance, financial account balance. Additionally, findings from interviews insisted that public debt, inflation rate and foreign currency management as economic related factors affecting exchange rate volatility in Tanzania. So, findings on are presented in Table 2

Table 2: Descriptive statistics on economic factors affecting the volatility of exchange rate (N=44).

Items	Mean	Std. deviation	Interpretation
Inflation rate	3.19	0.55	High
Foreign exchange rate reserves	3.19	0.60	High
Gross domestic product	3.13	0.59	High
Financial openness	3.09	0.66	High
Foreign debt liabilities	3.08	0.45	High
Lagged exchange rate	3.05	0.51	High
Fiscal balance	2.97	0.66	High
Financial account balance	2.94	0.75	High
Total	3.08	0.59625	High

Mean score from Table 2 above indicate that respondents rated high inflation rate (mean = 3.19, std. deviation = 0.55). This imply that inflation rate one of economic factors affecting exchange rate volatility in Tanzania. Findings on this study on inflation rate concur with Twarowska and Kąkol [13] who stated that the increase in interest rate contributes to the appreciation of Polish currency as it attracts many external investors to invest in Poland. On the other hand, foreign exchange rate reserves was also rated high (mean = 3.19, std. deviation = 0.60).

Gross domestic product was rated high (mean = 3.13, std. deviation = 0.59). Financial openness was rated high (mean = 3.09, std. deviation = 0.66). Foreign debt liabilities was rated high (mean = 3.08, std. deviation = 0.45) whereby these findings agree with Uddin et al. [14] who revealed that the rise of government debt was one of the economic factors highlighted as affecting exchange rates. Lagged exchange rate was rated high (mean = 3.05, std. deviation = 0.51). Fiscal

balance was rated high (mean = 2.97, std. deviation = 0.66) and financial account balance was rated high (mean = 2.94, std. deviation = 0.75). These findings agree with Oaikhenan and Aigheyisi [1] who observed the lagged exchange rate as one of the economic factors affecting volatility rate. Cumulatively, the average mean score was high (3.08) implying that most of respondents agreed on the above economic factors affecting the volatility of exchange rate in Tanzania.

Interview findings on economic factors affecting the volatility of exchange rate

In this section interviewees were asked to identify economic factors affecting the volatility of exchange rate. The following are the summary of interview findings;

'...to me public debt is the main factor that affects the exchange rate in this country. You see when the country is full of debt, the exchange rate will automatically drop because debt in most cases is the result of borrowing foreign currency... when the government borrows then too much debt undermine the local currency...'(Participants from NMB)

'... inflation rate is a serious factor... when its high, it tends to cause uncertainty and confusion leading to less investment... also it is important to note that higher inflation leads to lower international competitiveness, leading to fewer exports and a deterioration in the current account balance of payments...'(Participants from CRDB)

'.... foreign currency management is an important factor to consider when talking about the exchange rate in Tanzania...if the government proves weakness or total failure in managing foreign currencies in the country then the exchange rate is at serious jeopardy....'(Participant from NMB)

'....I think domestic investment should be considered because it is key to economy. From economic point of view, it is better to encourage more local industries than considering investors from outside the country...'(Participant from CRDB)

The above interview findings agree with Patosa and Cruz [15] who identified interest rate and inflation as factors affecting exchange rate in countries such China, Malaysia, Thailand and Singapore where industrial production is significant. The study findings also concur with consensus economics (2010 to 2011) findings which were observed after surveying 90 currencies against USD and discovered relative growth, inflation differential, trade or current account balance, equity flows, short-term interest rate differential and long-term interest rate differential as economic factors affecting the exchange rate. However, the study revealed other factors as risk aversion, intervention policy, commodity prices and currency or foreign exchange management as other factors affecting the exchange rate.

Correlation between economic factors and the exchange rate volatility in Tanzania

Findings on correlation between economic factors, and the exchange rate volatility in Tanzania are presented in Table 3

Table 3: Correlation between economic factors and the exchange rate volatility in Tanzania

Items		Economic factors	Exchange rate volatility
Economic factors	Pearson Correlation	1	.797**
	Sig. (2-tailed)		.000
	N	44	44
Exchange rate volatility	Pearson Correlation	.797**	1
	Sig. (2-tailed)	.000	
	N	44	44

** . Correlation is significant at the 0.01 level (2-tailed).

From Table 3 above, the relationship between economic factors and exchange rate volatility was tested. From the test, the Pearson Correlation result was 0.797 which meant the relationship between economic factors and exchange rate volatility was strong, and any change that would be made in economic factors would strongly change exchange rate volatility.

Secondly, apart from the Pearson Correlation in Table 3 to be close to one but also shown in positive (0.797) which meant any increase in value of economic factors would lead to the increase of the same value to the exchange rate volatility. Online to that, the result of Sig (2-tailed) value was 0.000 which was less than 0.05 (<0.05), hence, concluded

that there was a statistically significant correlation between economic factors and exchange rate volatility which meant any increase or decrease in economic factors would significantly increase or decrease exchange rate volatility.

Therefore, the results simply indicated that there were a strong relationship between economic factors and exchange rate volatility.

CONCLUSION

Based on the findings of the study, economic factors have a direct impact on exchange rate volatility in Tanzania. Hence, the weaknesses and strengths of exchange rate depend much on the behavior of both economic factors. It is from this point of view that makes this study to conclude that there is a strong and significant relationship between economic factors and exchange rate volatility in Tanzania.

RECOMMENDATIONS

- a. There is an urgent need for the government to strongly regulate the use of foreign currencies such as Euro and US dollars. This is because the excessive use of such currencies overpowers the local currency and as the result the exchange rate is affected. So, official ban of foreign currencies in both private and public sector should be done to rescue the situation.
- b. The government should promote domestic investment instead of focusing on the foreign investment. This will help to rise government income through tax and encourage employment to many citizens. As a result, this may be a way to fight inflation and other external forces that affect exchange rate volatility.
- c. The government should put more effort to tax collection and come up with alternative ways to collect more taxes so as to avoid excessive borrowing which has negative impact on the exchange rate volatility.
- d. The government should continue to encourage industrialization in order to create a strong and stable economic base that will automatically help to stabilize the exchange rate.
- e. The government should concentrate on replacing the foreign currency reserves with gold reserves because with the availability of enough stock of gold, foreign currencies can be obtained easily.

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