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The Impact of Consumer Price Index on Foreign Exchange Reserves of Afghanistan

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Abstract

The Foreign Exchange Reserves (FERs) are important tool and source of financing for the state of national development used for balance of payment and maintains in foreign currencies by the central bank of Afghanistan. In addition, Inflation is measured by Consumer Price Index (CPI) is the change in price of a basket of goods and services bought by a group of households. This study investigated the impact of CPI on foreign exchange reserves of Afghanistan and used regression model. The time series data was collected from the International Monetary Fund (IMF) website and is monthly (2014-2020). Moreover, the data was normalized by using Log. The results indicate that CPI has a negative association with FERs in Afghanistan as CPI increases, FER decreases and vice versa. The government may improve FERs while boosting the country's economy and may consider different strategies to monitor inflation.

Keywords: *Consumer Price Index, Foreign Exchange Reserves, Inflation, IMF*

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Introduction

The Foreign Exchange Reserves are essential for associates in nursing an open economy. It’s a crucial guarantee to form up for the balance of payments deficit, to intervene within the exchange market, to keep up the rate of exchange of the native currency, to repay the external debt, and to keep up public confidence. However, the foreign exchange reserves aren't pretty much as good as attainable (Du, & Han, 2018). An increase in foreign exchange reserves leads to an increase in value while no relationship is observed in the wrong direction. The rate of depreciation that happens because of the buildup of foreign exchange reserves isn't inflationary as a result of it's a one-time, non-persistent shock, in contrast to the sudden depreciation of the rate that happens as a result of maintaining an overvalued rate within the long run and ends up in currency crisis. The buildup of exchange reserves doesn't result in inflation if the speed of accumulation of foreign exchange reserves doesn't exceed the speed of the economic process. Slightly higher inflation isn't essentially harmful, notably for developing economics (Borivoje & Tina 2015).Central’s foreign exchange reserves are literally not totally different than hedge fund managers or individual investors. Specifically, the United States of America dollar and inflation hedge properties of gold yet as higher rate risks and financial policy instability have resolutely influenced central banks’ gold holdings (Ghosh, 2016).

The FER is a part of international reserves and foreign currency liquidity, and it's used for funding imports and compensating for overseas obligations. Moreover, country commercialism activities area unit measured by FER and capital flows as well as FER is unit influenced by the rate of exchange regime, the openness of country’s economy, and foreign debt policy that have a link with options of

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financial policy (Rahim et al., 2019) despite hard for reserves is decided by political economy constancy and enhances metal by observation of political economy indicators (Azeem & Khurshid, 2019).

The CPI is employed for inflation measures, which is one of the most economic indicators created to measure the changes over time within the costs of goods and services acquired used or acquired by households. The CPI may be a key variable for the economic analysis of a rustic (Gjika et al., 2018). The consumer price index doesn't have any impact on each import and export whereas the opposite variables influence each import and export; this signifies that the consumer price index doesn't have to be compelled to be thought of in analyzing and predicting of each import and export (Sumantri, & Latifah, 2019). Additionally, the inflation rate measured by the consumer index number and results indicated that there was a statistically important long-and-short run negative relationship between inflation and financial development and there was a statistically important positive impact of previous financial sector's policies on money sector development. Therefore, the policymakers will scale back inflation through the utilization of acceptable business and financial policies (Almalki & Batayneh, 2015). The inflation rate is an imperative part that influences securities exchange and additionally, the rate of inflation itself may be a macroeconomic variable (Qamri et al., 2015).Novalina (2018) mentioned that the speed of economic stability is completed through inflation in the brief, medium, and long run. Policies are to regulate the poor within the short term via inflation, however within the medium term, foreign exchange reserves. In addition, results revealed that when the accumulation of foreign reserves and other macroeconomic variables change, the time for inflation to return to equilibrium in the long run is more than one year. Moreover, short-term, and long-term analysis show that accumulations of foreign reserves have an impact on inflation (Nguyen et al., 2019).

Literature Review

Maintaining adequate foreign reserves is seen as a viable resolution to foreign exchange liquidity wants throughout crisis periods. Since the top of 2011, several Asian economies, together with China and Japan, LED from the forefront in central bank-led reserves build-up. However, reserve build-up remains difficult and sensitive for little open economies. Such policies facilitate produce 'risk-neutral buffers for financial and monetary authorities to soak up temporary accounting shocks and foreign exchange stress to smoothen the balance of payment (Ariyasinghe & Cooray, 2021). Nwosa (2017) examined the relationship between external reserves and economic growth, and the results showed that external reserves had a positive and important influence on economic growth. The govt. ought to place in additional policies which will enhance the redoubled accumulation of external reserves. In addition, results revealed within the short run, foreign exchange reserve is negatively and considerably laid low with the rate of inflation. But, within the long haul, the rate of inflation affects foreign exchange reserve completely and considerably (Nuru, & Gereziher, 2021). Additionally, short-run and long-run analyses show that accumulations of foreign reserves have a bearing on inflation (Nguyen et al., 2019). As well as Shrestha (2016) argued that an increase in international reserves tends to cause higher economic growth however while the not important impact on inflation. This suggests that these countries will move any utilizing the accumulated international reserves profitably which can enhance economic growth and maintain internal and external balances.

There was a causative relationship between the market index and CPI (Barakat et al., 2016). The exchange rate includes a positive and vital impact on consumer price inflation additionally the findings also showed that the import price index and trade openness index had positive and vital effects on consumer price inflation (Usman& Musa, 2018). While Grace et al., (2019) mentioned that inflation rate discovered a negative and insignificant impact on economic growth; the study any prompt that government and the financial authorities ought to style policies and programs that may curtail the rising inflation rate thereby encouraging investors to speculate in Federal Republic of Nigeria. Ghumro and Memon (2015) argued that the one percent rise within the end of the day total reserve and the gross national expenditure change inflation by, 0.36, and 1.78 points. Moreover, the exchange rate and the growth in money supply had vital impacts on the inflation rate whereas the real gross domestic product has no significant effect on the inflation rate (Abonazel & Elnabawy, 2020).

Tahir et al. (2016) explained that foreign exchange reserves and are square measure necessary determinants for the economy. Moreover, the inflation rate had a big negative impact on state foreign exchange reserves (Pramita, & Budhi, 2020).There was a long-run stable relationship between the foreign exchange reserves and therefore the consumer price index and foreign exchange reserves were a unidirectional relationship, additionally, results indicated that price changes by the impact of changes in foreign exchange reserves whereas the impact isn't huge (Hu, & Zhao, 2017).The empirical result indicated that the connection between the amendment in foreign exchange reserves and the rate of inflation was positive and the rise in foreign exchange reserves ends up in increase the speed of inflation. The study instructed that government might use sterilization or different policy instruments to scale back foreign exchange reserves to stabilize the domestic economy (Hervé, 2016). The relationship between amendment in foreign exchange reserves and the rate of inflation was positive. The impact of foreign exchange reserve briefly run estimation was insignificant. The study counseled the rising sterilization policy of the country (Kassahun, 2019). Aghsilni et al. (2019) determined that inflation had an important impact on the visible balance whereas foreign exchange reserves had no significant impact on the visible balance.

Research Objectives

The main objective of this research is to investigate the impact of consumer price index on foreign exchange reserves in Afghanistan. This is obtained through investigating inflation and reserves of a country. This research aims to gain the following objective;

To investigate the impact of Consumer Price Index on Foreign Exchange Reserves of Afghanistan.

Hypothesis of the Study

H_0: There is effect of Consumer Price Index on Foreign Exchange Reserves of Afghanistan.

H_a: There is no effect of Consumer Price Index on Foreign Exchange Reserves of Afghanistan

Research Questions

What is the impact of consumer price index on foreign exchange reserves of Afghanistan?

Research Methodology

The study uses deductive approach and positivism. The purpose of this study is to investigate the impact of consumer price index on foreign exchange reserves in Afghanistan. Building on the published literatures, both consumer price index and inflation were considered same in this study and used time series data for CPI and foreign exchange reserves in Afghanistan. The study checked some tests for the significance of the model and variables like F-test and T-test. The monthly basis data of consumer price index and foreign exchange reserves are obtained from International Monterey Fund website (2014-2019).

Figure 1 indicates that the foreign exchange reserve is a dependent variable, and the consumer price index is an independent variable in this study.

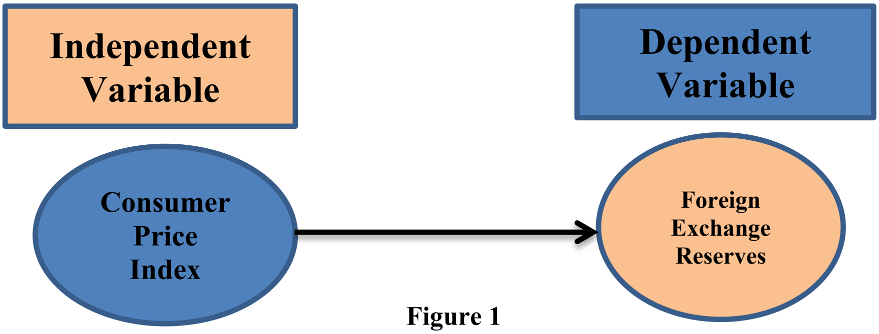

Figure 1

The OLS model that's the ordinary least square and it's straightforward to implement and apply to issues. Once the distributions of random variables have the same variance and zero mean then the smallest amount squares technique is that the best unbiased linear estimator of the model coefficients (Gauss-Markov Theorem). This study applied a log to normalize the data and analyzed the impact of CPI on FER of Afghanistan. This study has applied statistical methods through the OLS model for the equation to work out the impact of CPI on FER of Afghanistan. The literature review supported the choice of the ordinary least square model.

Several previous studies have followed a similar technique, and the ordinary least square (OLS) model was conjointly applied by Aghsilni et al. (2019). For the purpose of empirical analysis through OLS methodology the following equation was estimated;

Equation:

$$Log(FER_t) = \beta_0 + \beta_1 log(CPI_t) + e_t$$

β_0 = (constant)

$\beta 1$ = Coefficient of CPI

FER = foreign exchange reserves

CPI = consumer price index

e = Error term

Findings and Discussion

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.942[a]	.887	.886	.0549379

a. Predictors: (Constant), LogCPI

Table 2: ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	1.737	1	1.737	575.407	.000[b]
Residual	.220	73	.003		
Total	1.957	74			

a. Dependent Variable: LogFER
b. Predictors: (Constant), LogCPI

Table 3: Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	17.146	.632		27.128	.000
	LogCPI	-7.048	.294	-.942	-23.988	.000

a. Dependent Variable: LogFER

Discussion

The results are shown in the above tables using of OLS model in SPSS software. In table1, R-square shows that CPI explains 0. 887 percent variation in the FER and they have strong relationship with each other. Therefore, the results suggest that CPI significantly affects FER at a 95% confidence level. The Adjusted R-square is 0.886 which is used to correct R square to reflect the goodness of fit more closely in the model. The ANOVA value is 0.0000 in table 2, which is less than 5%, so the overall model is good fit. The coefficient (-0.942) in the regression table 3 shows that CPI has negative relationship with FER and CPI is statistically significant at less than 0.05. Moreover, the P-value is 0.000 less than 5%, and it means that CPI affects the FER. As the coefficient is -94.2 percent, so it means that FER is explained by CPI and when CPI increases, so the FER decreases also at a 95 percent confidence level. T-value is -23.988 more than 1.96 theoretically value, so it means that there is a relationship between FER and CPI. If CPI is increased by one percent, so FER is decreased by -94.2 percent on average monthly, therefore, the results suggest that CPI significantly affects FER at a 95 percent confidence level. The coefficient shows that CPI has negative relationship with FER, and it is statistically significant at less than

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0.05, and also confirmed by (Kassahun, 2019;Nuru & Gereziher 2021) that inflation and FER was not significant at short run.

FER is significant for an open economy. It’s a major guarantee to create up for the balance of payments deficit and to interfere within the foreign exchange market. Additionally, sustain the exchange rate of the native currency, and repay the external debt, and take care of public confidence. However, the FER isn't nearly as good as potential (Du, & Han, 2018). Growth in foreign exchange reserves causes the expansion of GDP. The buildup of foreign exchange reserves doesn't cause inflation if the speed of accumulation of foreign exchange reserves doesn't exceed the speed of economic growth. Moreover, slightly higher inflation isn't essentially harmful, significantly for rising economics (Borivoje & Tina, 2015).

Shrestha (2016) mentioned that a rise in world reserves tends to cause higher economic growth but while the not necessarily impact inflation. This implies that these nations will move a lot of developing the accumulated universal reserves fruitfully which is able to improve economic growth and sustain internal and external balances. Therefore, the govt. and policymakers might focus a lot on FER for the economic process. A CPI measures changes within the prices of products and services that households consume. Such changes influence the real buying power of consumers ’incomes and their welfare. because the prices of various product and services don’t all change at a constant rate, a price index will solely replicate their average movement (Sumantri & Latifah, 2019) therefore CPI has a negative association with FER, additionally, the policymakers may management the inflation due to increase in FER and influence the power of consumers.

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Conclusion

Consumer Price Index tracks changes in prices and measured by inflation. Foreign Exchange Reserves are cash and other assets maintain by a central bank even other monetary authority. The study applied time series data and OLS model by quantitative research and deductive approach. The regression results indicated that CPI coefficient is -94.2 percent, so it means that CPI and FER has significant indirect relationship as well as when CPI increases by one percent while FER decreases by 94.2 percent in Afghanistan. CPI is important measure of goods and services prices, and FER can boost the economy of a country, as the findings revealed that CPI had negative relationship with FER, so it is shown that CPI increases, but FER decreases. Furthermore, the CPI was significantly associated FER at 5% level of significance. In addition, according to P-value, the hypothesis is accepted that CPI has effect on FER.

Recommendations

This study states the recommendations so that it is easily and quick for the audience and reader to read and use based on the needs and requirements that they could know the importance of CPI and FER, this might also be a great help for policymakers in Afghanistan. The government may enhance FER because to boost the economic growth and the government may apply various policies for controlling inflation. Moreover, efforts at enhancing international reserves will have a positive impact on stock market growth (Akinlo, & Awolowo, 2015) and recommended improving sterilization policy of the country (Kassahun, 2019).

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