

The Importance of Stabilizing the Syrian Pound Exchange Rate for Achieving Economic Stability

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Abstract: The aim of this article is to measure the impact of the fluctuations in the real exchange rate of the Syrian pound on the key macroeconomic indicators of the Syrian economy during the period 1961-2020 to analyze the role of the real exchange rate in achieving economic stability. Since 2011, the Syrian economy suffered from a devastating war that effected all economic and social aspects of business activities leading to high fluctuations and instability of the macroeconomic ecosystem. During the first 40 years of study, the political stability in Syria has not been translated into economic stability on at the macroeconomic level. Moreover, during the last 11 years, the political instability has worsened the economic situation. To achieve the objective of this study, we applied autoregressive model and simple regression model on a various macroeconomic variables including the real exchange rate. The results show that the real exchange rate has a significant positive impact on the balance of payment, inflation, GDP gap, and negative impact on Real GDP, unemployment rate, monetary supply (M2).

Key words: real exchange rate, economic stability, Syrian Economy, macroeconomic fluctuations.

JEL classification: C22, E00, F3

1. Introduction

The exchange rate shows the number of units of a particular currency that must be paid to obtain one unit of another currency [3]. Thus, it can be said that the exchange rate of a currency is the price of one currency in terms of another currency, which is made based on the swap [1].

There are two methods of currency pricing, namely direct pricing, and indirect pricing. As for direct pricing, it is the number of units of foreign currency that must be paid to obtain one unit of the national currency [7]. As for indirect pricing, it is the number of units of the national currency that must be paid to obtain one unit of foreign currency, and most countries use this method of pricing, including Syria [2].

“Economic stability characterizes the economy without excessive fluctuations in the aggregate measures. An economy with constant output growth and stable inflation would be considered economically stable. An economy with frequent large recessions, a pronounced business cycle, very high or variable inflation, or frequent financial crises would be considered economically unstable” [16].

Real macroeconomic output can be decomposed into a trend and a cyclical part, where the variance of the cyclical series derived from the filtering technique (e.g., the band-pass filter, or the most used Hedrick–Prescott filter) serves as the primary measure of departure from economic stability [13].

Stability of the exchange rate is one of the most important reasons for economic stability and economic growth, as the exchange rate is one of the most important variables of the macroeconomic environment. It is also known that the Syrian Arab Republic has been suffering from instability in the exchange rate of the Syrian pound for more than 10 years. The Real value of the Syrian pound has collapsed, the hyperinflation rates can only be described as fictional, and the standard of living of the Syrian citizen has greatly decreased, and it can be said that 80% of the Syrian population lives below the poverty line. Therefore, an extremely interesting question is knowing the reasons for the instability of the Syrian economy and the consequences of instability in the long term. The goal of the paper is to study this question and find effective and realistic ways that are commensurate with the nature of the Syrian economy to work on addressing the instability in the Syrian economy.

2. Literature review

The exchange control system, and the end of the floating exchange system, the important role that the exchange rate plays in influencing economic variables. This, in turn, places the monetary authorities in front of the responsibility of choosing the best exchange system, which makes the exchange rate of their currency an important role in serving the economic objectives of the state [4].

A simple method of decomposition involves regressing real output on the variable

“time”, or on a polynomial in the time variable, and labeling the predicted levels of output as the trend and the residuals as the cyclical portion. Another approach is to model real output as difference stationary with drift, with the drift component being the trend [5] Macroeconomic instability can be brought on by the lack of financial stability, as exemplified by the Great Recession which was brought on by the financial crisis of 2007–2008 [6].

Economic instability can have several negative effects on the overall welfare of people and nations by creating an environment in which economic assets lose value and investment is hindered or stopped [9]. This can lead to unemployment, economic recession, or in extreme cases, a societal collapse [13]

When a stabilization policy is implemented, it generally involves the use of either monetary policy or fiscal policy. Either of these may be advocated by Keynesian economists. However, they are generally opposed by monetarists and real business cycle theorists [15]. Monetarists believe that well-intentioned countercyclical monetary policy will generally be counterproductive, adding to the existing variability of real output, and real business cycle theorists believe that such policies are misguided because they do not address the underlying causes of fluctuations, which they believe lie on the supply side of the economy [8][13].

Economic stability in Syria can be expressed through the stability of economic stability indicators, and for the Syrian economy, they are the value of the national currency, the real GDP, the real GDP per capita, the rate of inflation, unemployment, the volume of exports and imports, and the money supply [14][12]. In this study, I will focus on some macroeconomic variables according to the relative importance of each. I will study the effect of the Syrian pound exchange rate on some of the most important macroeconomic variables due to the sensitivity of the Syrian pound’s exchange rate to the rest of the variables [16].

There is a positive relationship between the exchange rate and economic stability, especially when the exchange rate is cheaper but stable, which helps stimulate the process of economic development [10]. The exchange rate policy plays a major role as a tool to enhance economic stability and growth. However, the theoretical development and empirical evidence of the exchange rate influencing economic growth is not unambiguously decisive [11].

Previous studies concluded that the local currency exchange rate has an important role in the process of stability and economic growth, as studies have found a positive relationship between the stability of the exchange rate and economic stability, especially when the local currency is priced below its value, which helps stimulate economic growth as exports are stimulated. And increase production, which leads to real growth in the economy.

3. Methodology

The study used econometric models to study the simple relationship between the study variables using the STATA program for the statistical analysis of the real exchange rate of

the Syrian pound as independent variable, and as dependent each of the following: the real GDP, the balance of payments, inflation, unemployment, the GDP gap, and the money supply, each separately. And the researcher notes that due to the lack of some data, such as foreign direct investment and cash reserves at the Central Bank, the researcher will rely on studying the simple relationship between the variables. It should be noted, however, that the results of the study are to be slightly biased due to the unavailability of data for some variables. However, the researcher believes that the results of the study are useful to the Syrian Arab Republic, considering that the research is the only one in terms of the study period from 1961 to 2020. The importance of this research lies in studying the effect of the exchange rate on economic stability in Syria.

So, the research question is “Does the stability of the real Syrian pound exchange rate have a positive effect on the macro-economic indicators in Syria?” “The data of the study were taken on an annual basis for the period from 1960-2020, from official websites of “Federal reserve economic data, World Bank, International Monetary Fund. The lack of data was supplemented by the Central Bureau of Statistics and some local sources in Syria”. The Data values will be converted into US dollars by dividing the data numbers in local currency by the real exchange rate of the Syrian pound against the dollar each year separately for data from local sources.

3.1. Estimation Models

3.1.1. Real exchange rate with its previous value function model 1:

According to economic theory, an inverse relationship is expected between the change in the exchange rate and its previous value.

$$diff\ lag(Real_{EXRt}) = \alpha_0 + \beta_1 * diff\ log(Real_{EXRt}) + \mu_i \quad (1)$$

3.1.2. Real GDP function model 2:

According to economic theory, an inverse relationship is expected between the change in the exchange rate and the gross domestic product. The rise in the exchange rate leads to a decrease in exports on the one hand, and an increase in imports on the other hand, and vice versa. It also affects the movement of capital to and from the country.

$$diff\ (GDP) = \alpha_0 + \beta_1 * diff\ log(Real_{EXRt}) + \mu_i \quad (2)$$

3.1.3. Balance of Payments function model 3:

According to economic theory, there is an inverse relationship between determining the exchange rate of the Syrian pound and Syrian BOP.

$$diff\ (BOP) = \alpha_0 + \beta_1 * diff\ log(Real_{EXRt}) + \mu_i \quad (3)$$

3.1.4. Inflation function model 4:

According to economic theory, there is an inverse relationship between the change in the exchange rate of the Syrian pound and the rate of inflation. The rise in the exchange rate of the Syrian pound will lead to a decrease in inflation rates.

$$diff(INF_t) = \alpha_0 + \beta_1 * diff \log (Real_{EXR_t}) + \mu_i \quad (4)$$

3.1.5. Unemployment function model 5:

According to economic theory, there is a positive relationship between the exchange rate of the pound against the dollar and unemployment rates. The rise in the exchange rate results in an increase in unemployment rates.

$$diff(UNEMP_t) = \alpha_0 + \beta_1 * diff \log (Real_{EXR_t}) + \mu_i \quad (5)$$

3.1.6. Money Supply model 6:

There is an inverse relationship between the money supply and the exchange rate, where the model studies the relationship between the exchange rate and the money supply, as the researcher used the logarithm of both variables as it expresses the independent variable at the exchange rate.

$$diff \log (M2_t) = \alpha_0 + \beta_1 * diff \log (Real_{EXR_t}) + \mu_i \quad (6)$$

3.1.7. Economic Stability Index Model “REAL GDP GAP” 7:

This model studies the relationship between the exchange rate and the economic stability index, and where the researcher used the logarithm of the exchange rate as an independent variable, the economic stability index as a dependent variable and the researcher did not take the logarithm due to the presence of negative values in the real GDP gap.

$$diff (ESIM_t) = \alpha_0 + \beta_1 * diff \log (Real_{EXR_t}) + \mu_i \quad (7)$$

Where:

- $diff \log (real_EXR_t)$: first differences of the logarithmic of exchange rate of Syrian pound
- $\log(GDP, BOP, Unemployment\ rate, Inflation, GDP\ gap)$: logarithmic of each variable.
- $diff \log (M2)$: first differences of the logarithmic of money supply.
- U_i : a random stochastic term that satisfies the usual assumptions

Building an indicator of economic stability in Syria:

The economic stability index by relying on the GDP gap, as follows:

$$C + S + T = GDP = C + I + G + (X - M) \quad (8)$$

$$S + T = I + G + (X - M) \quad (9)$$

$$S - I = (T - G) + (X - M) \quad (10)$$

Putting the relative weight of expenditures and revenues, the final equation for the indicator becomes as follows:

$$(S - I) = w1(T - G) + w2(X - M) \quad (11)$$

w1: Relative weight of the expenditures w2: Relative weight of the revenue. From the last equation, it becomes clear that the closer the GDP gap is to zero, the more there is an indication of the stability of the economy”.

The relative weight of expenditures and revenues was calculated as follows:

$$w1/w2 = 62/ 61 \quad (12)$$

σ1: Expenditure standard deviation

σ2: Revenue standard deviation

$$w1 + w2 = 1 \quad (13)$$

From equations 1 and 2 we find: $w1/1 - w1 = 62/ 61 \quad (14)$

Thus, the final equation of the REAL_GDP gap becomes:

$$(S - I) = 0.809956(T - G) + 0.190044(X - M) \quad (14)$$

The results will show the causes of the Syrian economic stability in certain periods of time and its instability in other periods, then I will present solutions to find out the most important reasons for the stability of the Syrian economy and provide appropriate solutions to address the economic instability in the last period of the study.

4. Results

4.1. Evolution of the variable's indexes:

The study shows that the exchange rate of the Syrian pound against the US dollar is constantly increasing according to the indirect pricing system that the value of the Syrian pound against the US dollar is depreciate continuously. Syria lost more than 85% of the real GDP during the 10 years of the war. The last ten years witnessed a decrease in

unemployment rates due to the mass emigration of workers, the balance of payments, its trend is volatile, due to economic instability, inflation rates, it is constantly increasing, meaning that its trend is always upward due to the deficit financing policy adopted by the government. The same thing applies to the supply. The monetary trend is upwards for the same reasons, the GDP gap tends to go down during the first 35 years, then it takes an upward trend, the reason is the expansion policy of the government. Acknowledgment of inflation rates.

4.2. Autocorrelation and correlograms analysis

The results show that there is an autocorrelation in all variables, which means that the series are not stationary due to the trends observed in data.

AC shows that the correlation between the current value and its value one year ago for example real GDP by USD and its value one year ago is 0.9357. AC can be used to define the q in MA(q) only in stationary series.

PAC shows that the correlation between the current value and its value one year ago for example real GDP by USD and its value one year ago is 0.9594 without the effect of the two previous lags. PAC can be used to define the p in AR(p) only in stationary series.

Box-Pierce' Q statistic tests the null hypothesis that all correlations up to lag k are equal to 0. This series of all variables show a significant autocorrelation as shown in the Prob>Q value which at any k are less than 0.05, therefore rejecting the null that all lags are not correlated so there is autocorrelation in series.

4.3. Testing the series stationarity by Dickey-Fuller Unit roots test

The results of Dickey-Fuller Unit roots test presented in table 1 show that the series of the exchange rate of the Syrian pound stationer at the second difference with a confidence degree of 98%. The GDP series is stationer at the first difference with a confidence degree of 95%, the unemployment rate, inflation, log(M2), GDP gap series are stationers at the first difference with a confidence degree of 98%. So, study shows that the used variables are stationery but at different levels.

Table 1. Augmented Dickey-Fuller test

Variables	Level I (0)	1 st diff I (1)	2 nd diff I (2)
Log (Real exchange rate)	1	0.06*	0.000***
Balance of payment	0.04*	0.000***	-
Real GDP	0.7	0.012**	-
Inflation rate	0.95	0.0009***	-
Unemployment rate	0.35	0.000***	-
Log (Monetary supply)	0.96	0.000***	-
GDP gap	0.22	0.000***	-

Source: Own calculations, based on the STATA output.

4.4. Analyze the relationship between Real exchange rate and MACRO variables

According to the models there is a positive relation between the exchange rate and BOP, inflation, and GDP gap but there is a negative relationship with Real GDP, M2 and Unemployment rate.

According to the R-squared the exchange rate of the Syrian pound has the strongest effect on GDP gap then GDP, inflation, unemployment, BOP finally, the m2 where we note that the model does not explain anything.

According to the p-value/ Prop F models 1,2,4,5 are statistically significant at the 99%, model 3 statistically significant at the 95% confidence level, model 7 statistically significant at the 90% confidence level but model 6 isn't statistically significant.

According to the Durbin Watson (DW) statistic there is a positive autocorrelation between the exchange rate and GDP, inflation, unemployment rate, M2.

For the serial correlation of the residuals of the models, no serial correlation was founded.

Table 2: Models Output

diff log EXRt	Coeff	Const	R ²	Adj-R ²	P-Value	T-Ratio	DW	Prop F
Model (1) Lag.EXRt	0.0008***	0.051*	0.30	0.29	0.000***	4.99	1.47	0.000***
Model (2) d.GDP	-5.4e+10***	6.15e+09**	0.48	0.47	0.000***	-7.35	1.78	0.000***
Model (3) d.BOP	9.84e+09**	-1.09e+09	0.09	0.08	0.016***	2.48	2.18	0.016**
Model (4) d.Inflation	73.37***	-4.57	0.43	0.42	0.000***	6.76	1.61	0.000***
Model (5) d.Unemployment rate	-4.24***	0.69**	0.25	0.24	0.000***	-4.44	2	0.000***
Model (6) d.Log(M2)	-0.085	0.121***	0.014	0.001	0.36	-0.91	1.19	0.366
Model (7) GDP GAP	0.086*	-0.016	0.053	0.03	0.076*	1.8	2.7	0.076*

Source: Own calculations, based on the STATA output.

5. Conclusion

There is positive relation between the exchange rate and GDP gap, BOP, and inflation but there is a negative relationship the real GDP, M2, Unemployment rate, Money supply and GDP Gap. And there is a relation but exchange rate and its previous value so we can expect future exchange rate value by its previous value, and we can expect future value of macroeconomics variables by changes in exchange rate, so study shows that exchange rate has effect on economics stability.

The structure of exports witnessed a remarkable change during the beginning of the twenty-first century, as the share of oil exports decreased at the expense of an increase in private sector exports due to Investment Law No.10.

There is relationship between the real exchange rate and BOP, due to political factors, political incompatibility, the state, and economic restrictions, as exports were restricted during the past ten years to some commodities that have no relative weight in the structure of exports.

The real exchange rate has a pivotal role in the Syrian economy. Therefore, decision-makers must focus on reducing the fluctuation of the Syrian pound's exchange rate to ensure economic stability in Syria. But the degree of flexibility of the effect of the exchange rate on the study variables varies as inflation is affected to the greatest extent, followed by unemployment, then the money exhibition, then both the real GDP, exports and imports, and the real GDP gap. The exchange rate represents the link between local and international prices through the channels of goods and services, the labor market, and the financial assets market.

The central bank, as the authority empowered to issue money, must stop printing money that is not in correlation with the creation of GDP in the economy and matched by a real demand for goods and services, "deficit financing."

The government must go to more economic openness by supporting foreign direct investment, which in turn will increase the supply of foreign currencies in the local market and increase the demand for the national currency, which will adjust the sanitary exchange rate, meaning that the exchange market will balance at a minimum point, "the rise in the real value of the national currency".

The government must activate the tax exemption system that prevailed before 2011, where although the tax exemption will increase the money supply in the short term, this encourages local investors to open new investment fields, i.e., in the long term, increase exports and thus the market will correct itself in the long term.

Adjusting the official exchange rate of the Syrian pound to match the real price. Although this will destabilize the exchange rate in the short term, this will give investors' confidence in the long term. "When the price stabilizes due to the state's pricing of the pound in line with reality, this will lead to investor confidence." Individuals in the state and therefore prefer to deal with the state rather than the black market.

The government should stop adopting the policy of "a job for every university graduate", as this will encourage graduates to seek job opportunities in the private sector "real work", meaning that the salary will meet a visit in the real economy "goods and services" and thus the market will balance at a point Higher on the supply and demand curve, and this will also reduce the rate of underemployment, which is much higher than the stated rates. This also helps to reduce the fake money supply, "deficit financing".

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