

## EXCHANGE RATE AND ECONOMIC STABILITY DURING CRISES: CASE STUDY SYRIA

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*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).*

**Keywords:** real exchange rate; economic stability; Syrian Economy; macroeconomic fluctuations

### Introduction

The exchange rate shows the number of units of a particular currency that must be paid to obtain one unit of another currency (Mishkin, 2012). 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 (Öniş & Özmucur, 1990).

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 (Msomi, 2015).



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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 (Rogoff, 1996).

“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” (IMF, 2020a).

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 (IMF, 2020).

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 knows 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.

### **Literature review**

The exchange rate 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 (Krugman & Obstfeld, 2011).

The establishment of commercial exchanges between countries led to the emergence of the exchange rate as a tool to link the local economy with the economies International, and as a result of the difference in commodity prices between these countries, and the difference in the ability of exchange rates to carry out transactions In addition to the official exchange rate, several forms of the exchange rate appeared, as the real exchange rate and the price Parallel exchange and balanced exchange rate Given the importance of the exchange rate (Hubbard & O'Brien, 2011) .

Many theories tried to explain the difference in exchange rates between Countries, including purchasing power parity theory that explained long-term exchange rate movements, and parity theory Interest rates that show the factors affecting the exchange rates in the near term, the quantity theory of money and the theory of balances. The monetary systems showed through the stages they went through in the beginning with the fixed exchange system (Hubbard & O'Brien, 2011).

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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 (Hubbard & O'Brien, 2011).

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 (Vergil, 2002).

Monetarists consider that a highly variable money supply leads to a highly variable output level. Milton Friedman believed that this was a key contributor to the Great Depression of the 1930s. John Maynard Keynes believed, and subsequent Keynesians believe, that unstable aggregate demand leads to macroeconomic instability, while real business cycle theorists believe that fluctuations in aggregate supply drive business cycles (Msomi, 2015).

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 (Rodrik, 2008). This can lead to unemployment, economic recession, or in extreme cases, a societal collapse (IMF, 2020).

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 (World Bank, 2020). 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 (Özer & Karagöl, 2018; IMF, 2020).

Economic stability in Syria can be expressed through the stability of macroeconomic 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 (Tang & Zhang, 2012; Federal Reserve, 2020). 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 (IMF, 2020a).

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 (Tran, 2018). The exchange rate policy plays a major role as a tool to enhance economic stability and growth.

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However, the theoretical development and empirical evidence of the exchange rate influencing economic growth is not unambiguously decisive (Gala, 2007).

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.

### **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 during crises?” “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.

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### ***Estimation Models***

#### ***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.

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

*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.

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

*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.

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

*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.

$$\text{diff}(INFt) = \alpha_0 + \beta_1 * \text{diff} \log (\text{Real}_{EXRt}) + \mu_i \quad (4)$$

*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.

$$\text{diff}(UNEMPt) = \alpha_0 + \beta_1 * \text{diff} \log (\text{Real}_{EXRt}) + \mu_i \quad (5)$$

*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.

$$\text{diff} \log (M2t) = \alpha_0 + \beta_1 * \text{diff} \log (\text{Real}_{EXRt}) + \mu_i \quad (6)$$

*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.

$$\text{diff} (ESIMt) = \alpha_0 + \beta_1 * \text{diff} \log (\text{Real}_{EXRt}) + \mu_i \quad (7)$$

Where:

- $\text{diff} \log (\text{real}_{EXRt})$ : first differences of the logarithmic of exchange rate of Syrian pound

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- $\log(GDP, BOP, Unemployment\ rate, Inflation, GDP\ gap)$  : 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

The results will show the causes of the Syrian economic stability in certain periods of time and its instability in other periods, and 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.

### Results

#### *Evolution of the variable's indexes: (see Fig. 1 – 8 in Appendix)*

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.

The value of the Syrian pound on the date of joining the Bretton Woods agreement 1 Syrian pound is equal to 405 mg of gold and 0.45 US dollars. Where the application of the official price was limited to some needs only during the period (1949-1952) for the following reasons:

- The scarcity of foreign exchange
- The emergence of a free market for foreign exchange
- The difference in the official exchange rate from the real price

In 1953, the Foreign Exchange Management Office followed a policy of unifying the exchange rate by interfering in the exchange market through open market operations (seller and buyer). But the free exchange policy did not last long and fair because of the weakness of reserves. After that, the export dollar price was unified, equal to (3.7-3.6) US dollars, respectively selling and buying, and this policy continued until 1964, when the parallel market was created for the exchange rate. And it lasted until 1974.

After the collapse of Bretton Woods, the Syrian pound was pegged only to the US dollar.

The exchange rate was set at 3.95 until 1981, when the exchange rate regulations varied during this period from multiple exchange rates to a unified exchange rate "as needed." After 1981, the monetary authorities followed a policy of multiple exchange rates to achieve the following objectives:

- Maintaining stability in consumer prices
- Adopting an exchange rate for the export dollar to encourage exports.
- Providing foreign exchange for imports

- Reducing the costs of national industries and increasing their capacity  
Competitiveness in global markets

The monetary authorities set the exchange rates for that period as follows:

1988: The new official exchange rate was announced for one dollar against the Syrian pound 11.2- 11.25. The export dollar ranges between 55-60. In the parallel market that was created in 1991, the price reached 42-40 buying and selling with the aim of unifying the exchange rate. The dollar of imports of goods for consumption was between 23-24, depending on the degree of government support for the commodity.

Public sector and government accounts 45.5. The incentive exchange rate (to encourage remittances from abroad) the US dollar is equal to 22 and was cancelled in 1994. The tourist exchange rate was between 5.8-10 and was cancelled in 1988. The parallel exchange rate is 5.42 per dollar and was abolished in 1988.

It should be noted that the adoption of a policy of multiple exchange rates was a temporary phase, according to the International Monetary Fund agreement

The amendment and its main objectives are to reform the fixed exchange system. It would have restored stability to the exchange rate Syrian pound and the encouragement of unforeseen resource flows. On the other hand, it led to an imbalance in the structure of the national economy by investing in profitable service and commercial trains and a decrease in industrial investments.

During the period 1995-2001, the average exchange rate of the lira against one US dollar was 50.6, and the exchange rate of the lira remained relatively constant during this period due to:

The development of economic performance and political stability, which resulted in an increase in confidence in the Syrian pound. investment Law No. 10 of 1991, which contributed to increasing the number of investment projects.

- An increase in foreign exchange reserves resulting from an increase in tourism resources. The current account position has improved and achieved significant surpluses.
- Adopting a monetary policy that achieves economic balance and unifies the exchange rate. During the period (2002-2005), the average exchange rate of the Syrian pound decreased to 52.2 dollars, and the exchange rate reached 54 SYP to the dollar in 2005. Among the reasons for this continuous decline in the value of the pound against the dollar are the following:
  - Postponing many investment projects and increasing the demand for the exchange of the Syrian pound into US dollars by speculators and brokers, and the decrease in the number of people coming to Syria is caused by political conditions and world events.
  - Failure of banks to meet the increasing demand for the dollar, and the increase in imports, especially for private banks, which resulted in an increase in economic openness.
  - Buying US dollars and foreign currencies from the commercial bank, non-commercial operations, in exchange for making small-scale sales.

In 2005, the Syrian pound witnessed a great turmoil and a promise of stability, as the real exchange rate in the parallel market reached 60 pounds against the US dollar, which prompted the Central Bank of Syria to adopt an exchange rate system that guarantees effective management of a real and stable exchange rate by disengaging the Syrian pound from the US dollar in exchange for Linking it to a basket of currencies of similar weights to the SDR, according to Prime Minister Decree No. 3424 of 2007

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In addition to the Monetary and Credit Board adopting Resolution No. 197 of 2006 and its amendments, which stipulates that banks must adopt instructions for foreign exchange positions. It is an important step towards the transition to the use of an exchange rate system commensurate with the specificities of the Syrian economy.

Advantages of unifying the exchange rate:

- Accelerating the pace of economic development by contributing to attracting Arab and foreign capital due to the availability of competition and transparency in evaluating investment opportunities for investors.
- The unification of the exchange rate facilitates the accounting operations related to costs and production and thus becomes more capable of taking appropriate decisions.
- The unification of the exchange rate secures the sale of currencies to the banking system instead of selling them in the informal markets, and thus banks get the resulting commission because they will not sell foreign currencies.

Thus, it can be said that Syria adopted the multiple exchange rate system for a long period of time until the end of 2006, after which the shift was made to link the Syrian pound to a basket of currencies, the main goal of which is to stabilize the exchange rate of the pound and reduce the fluctuations of competitiveness in Trading.

Since 2007 and until the outbreak of the civil war in Syria, the exchange rate of the Syrian Pound against foreign currencies was relatively stable, as the prices ranged between (45-48) and the following helped:

- Law 3424 of 2007
- Increase in net exports because of state support for industrialists.
- Building the industrial city in Aleppo, which was planned to be in 2015 the largest industrial city in the Middle East.
- Political stability, which helped increase the number of tourists.

But since 2011, the Central Bank of Syria has followed an exchange rate system (other managed systems), meaning that it did not adopt a specific exchange rate system, as the Syrian pound witnessed a sharp deterioration in its price, as the price of the Syrian pound against the dollar in the parallel market reached 2950 Syrian pounds against the US dollar.

The reasons for the deterioration in the exchange rate of the Syrian Pound as follows:

- Expansion of the money supply: The Syrian government has issued new denominations of the Syrian pound without a foreign monetary cover, i.e., what is called (deficit financing), the last of which is the 5,000 Syrian pound denomination, to cover its large expenditures, and these cash issues have made the value of the Syrian currency in a continuous decline. It is known that the greater the money supply, the lower its value, the higher the price, and consequently the increase in inflation.

The decrease in production due to the military operations and the migration of the experienced manpower. Therefore, there is no increase in production corresponding to the increase in the money supply. On the contrary, there is a gap between production and demand, which means that without increasing the supply of currency, prices will increase, so how when the money supply has increased, thus Syrians have fallen into two problems: An increase in the money supply that causes an increase in prices and Weak production that increases prices.

- The balance of payments deficit.
- International economic sanctions against the Syrian state

- Lack of foreign direct investment

The depreciation in the value of the Syrian currency was gradually over the past years, and the Central Bank of Syria was controlling it through its interventions in the markets. The lower the value of the currency, the dollar is pumped into the market, the lira improves slightly, then it decreases after a period, then it is pumped and then rises slightly, and so it does repeatedly. But always in terms of the result, the price of the Syrian Pound tends to decline more than before, as the intervention reduces the level of decline, no more, and also withdraws a large amount of the Syrian currency from circulation by obliging exchange companies and exchange offices to buy millions of dollars and allowing banks and exchange companies to sell directly for dollars without commissions.

The Central Bank of Syria receives the Syrian currency and seizes it from circulation, and a very strong media campaign was accompanied with this procedure, which caused confusion in the markets, which affected the Syrians negatively, so the price of the dollar began to decrease, and the Syrian currency began to revive. Syrian out of circulation. So, when the price falls to a certain level, the central bank will buy dollars, so that the currency will decline again.

The real GDP during the extended study period achieved an average annual development of 3.59 "If you leave us in 2020", but it is possible to explain this low percentage due to the instability of the Syrian pound's exchange rate against foreign currencies, but let me give a more explanation of the reasons for the fluctuation of the growth rate in The real gross domestic product and its per capita income thus: In 1962 the growth rate increased due to the economic openness policy and the government's policy in managing the exchange rate, as the Central Bank worked to stabilize the exchange rate so that it did not let the price move outside the set limits, which seemed to encourage investment .

In 1963, the policy of floating the exchange rate led to the pain of some investors to exit the Syrian market, but in 1972, this explained the increase in real GDP by 25% by allowing the government to establish the parallel market for the exchange rate, where individuals were allowed to trade foreign currencies without restrictions, but the Bank of Syria The Central Bank was postponing the role of the corrector as it used to enter as a seller and buyer "through open market operations" to ensure the stability of the exchange rate, but the decline in 1973 was due to the closing of the parallel market for exchange.

The new government in 1974 reopened the parallel market for exchange and made promises to ensure democracy in circulation and the freedom of individuals to trade without direct supervision of individuals. Investors in the Syrian pound and the Syrian economy until 1981, as the government followed the multi-exchange rate system, but to no avail, "as the confidence of foreign investors did not increase after the closing of the parallel exchange market in 1974" and the real GDP fluctuation would continue until 1988, when it achieved a growth of 13.2% due to the Syrian government's announcement of a good exchange rate (11.2-25-11.2), as the reduction in the valuation of the Syrian pound helped to increase the competitiveness of exports in Syria during that period, "as the government allowed the export of many commodities," but this did not continue.

For a long time, as it seems that investors no longer have much confidence in the Syrian pound, and thus investors are directed to transfer all cash reserves to foreign currencies.

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For the foreign importer, the value of the commodity according to the agreement on the mechanism of payment, but they are obligated through the Central Bank of Syria, which in turn pays the value of the exported commodity to the exporter in Syrian pounds.

Thus, the exporter goes to the amount of the commodity sale again into a foreign currency. With steady and declining supply due to the absence of an official source of financing the black market for foreign currencies.

Because of that, the Syrian economy in 1989 witnessed the largest rate of contraction, at 17.26%, and thus the government did not until it reduced the value of the Syrian pound to (55-60) pounds per US dollar. Previously, it happened because of the government's policy of monitoring the black market for exchange and tightening the penalty for speculators on the Syrian pound, and thus the Syrian economy continued to grow at a positive fluctuating rate closer to stability, but this time with the stability of the Syrian pound exchange rate and during the period 1990-1995 the rate of economic growth increased due to Law No. 10 of 1991, which gave the private sector greater freedom in investment, started production of light oil, and allowed the export of agricultural products, represented mainly by cotton, which became an annual net income of 1.5 to 2 billion dollars, while the gross domestic product declined.

The real estate during the period 1996-1999 is due to the decline in investment rates, especially in the productive sector, where the investment rate decreased by approximately 38.3%, and the fiscal and monetary policies followed, as the government worked to reduce investment spending, raise the interest rate, and freeze salaries and wages. The salaries and wages did not develop with the development of the rate of prices.

Also, I notice that the population increased by 27% during the period from 1990 to 1999 until 1999 when the system of government in Syria changed and the government adopted the open economy policy, as I notice that the rates continued to rise at acceptable rates and are more stable than before.

The real gross domestic product achieved an average growth during the period 2000-2010 by 4.99% despite the expansion in public spending and the increase in private sector investment, but the growth rates did not, on average, exceed 3.94 during 2003 due to the decrease in the efficiency of investment and directing most of the public spending to Replacement and renewal and investments that do not lead to direct effects on economic growth in the short term, such as spending on health and education.

The economic slowdown reached its peak in 2003, reaching 1.2%, due to the decrease in oil production, which reached approximately 477 thousand barrels per day, and the decrease in oil exports, which decreased to 18,320 million after it was 24302 million barrels, and agricultural exports decreased from 21,678 million Syrian pounds in 2002. To 16508 million Syrian pounds in 2003, the decrease in the volume of private investment, which declined to eight percent of the gross domestic product in 2003, after it was 15% in 1992, due to the lack of suitable investment conditions because of the failure to complete the reforms accompanying the Investment Law No. 10

However, the investment rate increased in 2004, which led to an increase in the real GDP by 6.9%, due to the expansionary fiscal policy that reduced the economic slowdown by 1.25% in addition to the recovery of private sector exports and agricultural activity and an increase in the wages of workers in the public sector.

Which increased significantly during the period under study, and growth rates remained stable in 2005 despite the turbulent regional political conditions that Syria was

exposed to, and this is likely due to the surplus floods in the Gulf countries and capital flows from the pain countries that led to a significant rise in real estate and to Improved employee wages than in 2000 and an expansion of domestic credit (See Fig. 1, Appendix).

The economic growth rate slowed during the two years 2006-2007, as the rate decreased from 6.2% to five percent in 2006 and 5.6% in 2007 respectively due to the decrease in oil production again, as it decreased during these two years to 400,000 barrels per day and 370,000 barrels per day, respectively. And the seasonal conditions that affected the agricultural activity, as growth rates continued slowly during the period 2008-2010, where the average growth rate reached 4.7% due to weather conditions that affected agricultural activity and consequently on exports of agricultural products, as well as the global financial crisis, the impact of which came in most of them from Dealing with trading partners in Europe and the slowdown in the growth of the manufacturing sector, the construction sector, and the service sector. (See figure 2)

The population also has a role, as during the studied period, the population increased by approximately 26 percent, with an approximate annual growth rate of 2.5 in terms of a rise in GDP by 49.9 percent during the ten years studied from 2001 until 2010 (See Fig. 2, Appendix).

As for the modern period, that is, during the previous ten years from 2011 to 2020, we notice that the Syrian economy has been subjected to the largest contraction in contemporary modern history during the study period, since we will explain now, as Syria suffers from a civil war that lasted for ten consecutive years and is continuing until the date of this writing. The thesis, and we note that in 2011 the Syrian economy did not shrink much, only it shrank by 1%, but in 2012, when many areas went out of control of the Syrian government, productivity decreased significantly, and I was a witness to that, as most factories were closed in the industrial city of Aleppo and in various fields of production.

And industry and manufacturing industries, as well as the tendency of merchants to transfer their wealth to foreign currencies, especially the US dollar, which in turn reflected our ratios on the Syrian economy, as in 2012 the Syrian economy was subjected to the second largest contraction in history by 26.33%, it repeated almost the same percentage in the following year 26.30% Unfortunately, the Syrian economy continued to record a contraction during the next four years, i.e. from 2014 to 2017, and for each, at a decreasing rate, the Syrian economy returns a little development in rates.

Very weak during the years 2018 and 2019 at a rate of 2.7 and 4.79 respectively, but the biggest shock was in 2020, when the Syrian economy was subjected to the largest contraction in history, as the Syrian economy did not witness a greater than this contraction of -77%.

The reason is the lack of reserves in the Central Bank of Syria after ten years of the merchants speculate on the Syrian pound, the lack of confidence of the citizens in the Syrian pound and the tendency to trade in some other currencies, especially in some areas that have gone out of the control of the Syrian government during the period and the production operations have stopped.

The economy has transformed. The Syrians from a productive economy to a consumer economy and dependence on imports almost completely, especially after wheat crops have been burned in Syria for successive years due to the ongoing conflict. I mean here the civil war.

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The balance of payments suffered from great fluctuations, which I will explain accordingly: in 1961 the balance of payments suffered from a deficit of 1.58% compared to the previous year, and in 1962 the balance of payments suffered from a deficit percentage compared to the previous year of 37% and I explain the reason is the fluctuation of the exchange rate of the Syrian pound against foreign currencies, but in the following year, he noticed a decrease in the deficit ratio by 9.2%.

The reason is the unification of the exchange rate of the Syrian pound against foreign currencies at an exchange rate of 3.6 -3.7 Syrian pounds per US dollar, but this decrease in the deficit did not last long until it returned, and the deficit rate rose.

By 15% to fluctuate between high and low in 1969, where the balance of payments witnessed an additional deficit of 19% compared to the previous year, but in 1970 usually and the deficit decreased by 11% due to the unification of the dollar exchange rate, which continued until 1974, when it was then.

The monetary authority in Syria is a little weak, and because of the deterioration of the economic situation at the time, and the owners of capital went to save their assets or smuggle them abroad, I feared a loss, as the percentage of imports increased compared to exports, and the percentage of transfers abroad increased compared to remittances.

The positive inward, until 1977, where the balance of payments witnessed a decline, the largest of its kind up to that date, by 83.95%. This is explained by the policy of unifying the exchange rate that the Central Bank followed, which is the unification of the exchange rate of the Syrian pound against the US dollar at 3.95 Syrian pounds per dollar. American, but the miracle happened in 1979, where, for the first time in its history, the Syrian balance of payments shifted from a deficit to a surplus, as it recorded a surplus of 895,8 million US dollars, as the surplus continued for another year, as it recorded an interest of 250 million US dollars.

This was explained, of course, in the policy of unifying the exchange rate and the promises made by the Central Bank to investors to work hard to stabilize the exchange rate of the Syrian pound against foreign currencies, but this promise did not last long, as in 1981 there was another deficit in the balance of payments and in 1982 another deficit and the balance of payments continued to be recorded.

A deficit, but at fluctuating rates, as the deficit rises frequently and descends. But in 1989, usually the miracle that we were happy about previously, because of the Central Bank of Syria's decision to reduce the exchange rate of the Syrian pound against foreign currencies, especially the US dollar, to 11.25 Syrian pounds against one US dollar, this led to a boom in exports, as Syrian goods became in the international market is more competitive due to its low cost locally and its low price internationally due to the devaluation of the Syrian pound against other currencies, but it must be noted that the monetary authorities made the decision to reduce the value of the Syrian pound in 1988, but this decision did not bear fruit until 1989 and the Syrian balance of payments continued to register a surplus.

And at its fluctuating rates until 1992, when it returned and recorded a deficit in 1993, due to the pessimism of some traders that Investment Law No. 10 was not clear to them and was not what they were really looking for. But during the period from 1995 to 2002, the Syrian balance of payments achieved also at fluctuating rates the largest surpluses were in the years 2000 and 2002, where the balance of payments also recorded more than one billion US

dollars in each of them, but during the previous ten years, i.e., from 2011 to 2020, about the economy.

The Syrian once again has a deficit in the balance of payments, and the reason is clear to everyone is the civil war in Syria, but I would like to provide some detailed information here. The first reason for the deficit is a sharp decline in domestic investment in Syria and the migration of local capital abroad. The second reason is that I perpetuate foreign direct investment in Syria is the third reason for agricultural crop fires.

Therefore, the Syrian government directs it to import some basic commodities to meet the needs of internal demand, including wheat, rice, potatoes, and meat, as well as the combat operations that prevented the transfer of some agricultural crops between cities and other reasons. I will explain them previously, but I would like to offer some explanations.

After 1990 the balance of payments achieved a surplus and the main reason is the Investment Law No. 10 which encouraged investment and gave the private sector a great freedom to go towards investment in most sectors, but after this period we notice that the balance of payments returned to achieve a deficit and the reason is the formerly excessive optimism of the investors who turned Later on to excessive pessimism after they misunderstood the investment law due to the strict executive instructions issued after the issuance of the decision

The reduction in the value of the Syrian pound against the rest of the currencies had a major role in returning the surplus to the balance and allowing the private sector to start investment projects. It was previously the monopoly of the public sector only in the field of trade and tourism. I can explain the huge surplus in the balance of payments in 1997 as the reason for the decline in imports of the public and private sector, not because of the increase in exports, and in 1999 because of the rise in oil prices globally. To 480 thousand barrels of oil per day and the deficit in 1994 due to the decline in oil prices in the international market, which led to a decrease in the value of oil exports despite the increase in domestic production of oil in the mentioned period, where the price of a barrel of oil was approximately 15.45 US dollars per barrel.

During the collapse of the Soviet Union, the number of agricultural seasons increased in Syria, but exporters suffered from the problem of finding new importers during that crisis, and that was a convincing reason for the relative stability in the value of exports. However, some years of deficit during the nineties were due to Investment Law No. 10, but in a positive manner, as local producers directed them to import the necessary machinery and equipment to supply national industries with them and increase local productivity in quality and quality.

The deficit of the balance of services increased during the first half of the nineties as a result of the increase in shipping and transportation expenses caused by the increase in imports in addition to the increase in payment to foreign oil companies, and that despite the increase in tourism resources, it becomes clear that I am tourism, which has an important role in supplying the country with foreign parts, but the interest on loans paid to external parties It constituted a negative factor on the balance of payments.

Current transfers increased during the nineties in general due to the increase in private transfers by Syrians residing abroad with a slight decrease in 1997. Reasons for the decrease in remittances of Syrians from the Arabian Gulf because of lower oil prices, which led to a decrease in workers' wages.

## EXCHANGE RATE AND ECONOMIC STABILITY DURING

The movement of the financial and capital account during the period from 1990 to 2000, it witnessed a remarkable improvement as it shifted from deficit to surplus, but the surplus was uneven during that period due to the volatility of long-term capital movement, which included foreign loans and their dues. The reason for this improvement was explained, and thus the increase in the actual investment of oil companies.

The received and a decrease in the net movement of short-term capital due to the decrease in the credit facilities granted to the private sector because of the import and export link and the reliance on financing imports of the private sector from cutting exports and bank accounts with the Commercial Bank of Syria.

However, during the period 2003 to 2010, remittances from abroad to the interior witnessed a decrease due to the decrease in the remittances of Syrian workers residing abroad to their families at home. During the period, the balance of the financial and capital account also suffered a deficit due to the decrease in the net movement of short-term capital, the decrease in credit facilities, and the increase in movement Long-term borrowing and repayment to and from abroad, decrease in investment, direct action, and especially real investment. Oil companies' direct remittances to productive sectors.

But in 2020 we notice a decrease in the balance of payments deficit, and the reason is the financial transfers from abroad to the interior represented by the transfers of refugees and residents abroad to the Syrians residing at home and those suffering from an economic crisis that has led to a sharp decline in the demand for products in general and for foreign products in general. Especially for another reason, which is the decrease in the exchange rate of the Syrian pound, meaning that foreign products became more expensive when evaluated in the local currency, i.e., the Syrian pound, and unemployment.

Consequently, the demand for goods and services in Syria decreases, but I would like to point out that Syria suffers from a stagnant state of stagflation as the demand for products is very low, but prices are increasing day by day.

The inflation rate in Syria during the studied period, which lasted for more than 60 years, fluctuated greatly since we will explain here. We note that in 1960 the inflation rate was high compared to the average for that period, where the growth was inflated by five percent, approximately 5.12%, but after that it decreased and then in 1962, Syria had a negative inflation rate - 3.85%. Until 1969, the inflation rate in Syria continued to fluctuate up and down, achieving positive and negative rates, that is, in some periods the recession had its role in Syria, and I mention here specifically in 1965 and 1969.

But from 1970 to 1996, the Syrian economy achieved a positive inflation rate, and this was interpreted accordingly, since in 1970 a parallel market was established for the exchange rate in Syria, which lasted until 1974, and this was explained accordingly, as in the early 1970s and until the end of 1972, the Syrian economy enjoyed a low inflation rate. This is due to the control of the Central Bank of Syria over the exchange rate through the open market operations as a seller or buyer, but in 1973 and 1974 we notice an unprecedented increase in inflation rates during that period to 20.36% and 1553%, respectively, and this is explained by the scarcity of reserves. Foreign exchange at the Central Bank of Syria, after three years of managing the exchange rate in the parallel market, and because of this problem, i.e., the decline in reserves in the Central Bank of Syria, the parallel market was officially closed in late 1974, and dealing in a non-Syrian pound was considered prohibited inside Syria.

Whereas, as we note, this monetary policy determined its fruits, as the inflation rate decreased in 1975 to 11.46% compared to what it was previously, the rate of inflation continued to maintain this level until 1977.

But in 1978 the inflation rate decreased significantly to 4.81 percent, and this was explained by a decision from the Central Bank of Syria, linking the Syrian pound to the US dollar and setting a price of 3.95 pounds to one US dollar, which was a reasonable price for investors who encouraged investment, i.e. investment rose slightly, so exports rose slightly in that period, which led to a slight increase in the cash reserves in the Central Bank of Syria, and thus managed to manage the black market, not the parallel market, which was closed at the end of 1974.

But in 1980 and until 1982, the rate of inflation increased significantly, approaching the barrier of about 20%, and this was explained by the Central Bank of Syria's adoption of a multiple exchange rate system to price the Syrian pound against foreign currencies, as exports now have a certain price, imports also have a different price, where, as I explained previously, exporters have to collect the value of their exports exclusively through the Central Bank of Syria, which in turn transfers the value of exports from foreign currency to the Syrian pound and then delivers the value of exports to the exporter in Syrian pounds, who in turn will strive to convert again the value of his exports into foreign currency, i.e. will go to the black market to exchange Syrian pounds for foreign currencies, especially the US dollar, which in turn led to an increase in the demand for the US dollar in the Syrian domestic market with the stability of the US dollar supply and gradually decreasing and accompanying this led to a significant increase in the supply of Syrian pounds on the black market with the decrease or lack of demand for the Syrian pound in some periods of time and according to the laws of supply and demand in the market to a decrease in the exchange rate of the Syrian pound.

The Syrian pound compared to foreign currencies, where the real value has decreased, and we want more Syrian pounds to buy the same amount of foreign exchange.

After that, during the period 1985 to 1990, the rate of inflation increased, and that was due to the Central Bank of Syria's cashier that the bank's nominal rate did not correspond at all to the real price of the Syrian pound, and that the Syrian pound was valued at more than its value. Thus, in the central year of Syria, a decision was made to amend the nominal price, the exchange of the Syrian pound. Against the US dollar in the range of 11.25-11.2 Syrian pounds per US dollar.

To encourage exports, the exchange rate of the Syrian pound for import and export was modified to 55 and 60 Syrian pounds to the US dollar. This was in an effort by the Central Bank of Syria to stimulate exports as Syrian goods became cheaper in the international market compared to foreign goods in the international market, but this policy it failed much. Seizing the rest of the Central Bank of Syria delivers the value of exports in Syrian pounds to the exporters, as the exchange rate of the Syrian pound in the parallel market at that time was 40-42 buying and selling, which was reopened in 1991, as we notice that the inflation rate drops significantly after that period due to interference. The Central Bank of Syria, through open market operations in the parallel market, as a seller or buyer of foreign currencies in the Syrian pound, to maintain an acceptable volatility margin for the Syrian pound.

But with the reopening of the parallel market, it was adopted again, the multi-exchange rate system was re-approved, which in turn was not logical to me as there is a big difference

## EXCHANGE RATE AND ECONOMIC STABILITY DURING

in the exchange rate of the Syrian pound according to the different purpose of the exchange, for example tourists had to spend their US dollars against 5.08 Syrian pounds only while the real price at that time was about 40, meaning that the trip to Syria became more expensive by about 7 or 8 times, which led to a decrease in the number of tourists, and also the exchange rate of the dollar for import was not logical, as it was 24 Syrian pounds per US dollar, but the Bank of Syria did not provide The Central Bank has sufficient support to buy imports, as importers had to secure part of the transaction value from the parallel market, meaning that they would go to the parallel market.

He would buy the US dollar for 40 pounds, while the Ministry of Trade and Consumer Protection would price imported goods in line with the exchange rate. The official Syrian pound was about 24 pounds at that time. However, merchants achieved large losses, which led to an increase in inflation during the period 1992 to 1994, as inflation in Syria during that period can be described as high inflation.

After that, during the period from 1994 to 1999, we notice a significant decrease in inflation rates, as it sometimes achieved negative rates. This was explained by the reduction of the budget deficit through the Syrian government's pursuit of a contractionary policy by squeezing public spending and reducing its imports.

However, during the period 2003 to 2004, we notice a relatively high rate of inflation in Syria, and this is explained by the increase in the consumer price index in Syria from 104 to 114, mainly due to the increase in the consumer price index in relation to education and culture. And because of the increase in demand for homes, I mean here rent, as house rents in Syria increased dramatically by about 35 percent due to the Iraqi brothers' turnout to Syria following the fall of the Iraqi regime in addition to a decrease in the actual nominal exchange rate of the Syrian pound and the rise in the exchange rate of the dollar and the euro in That period.

This inflation has reached its cultivation during that period in 2008, when it almost reached 15%, the reason for the increase in the food index in Syria from 112 to 148, and because of the global financial crisis in 2008.

However, from 2012 to 2020, the Syrian economy witnessed an unprecedented hyperinflation, which has never been witnessed. Where the inflation rate rose by 36.7 % in 2012 and decreased slightly in the next two years, then returned in 2015, to increase to 107 percent, then decline to 27 %, to continue and then achieve a negative value for inflation by -6, to continue within its limits until the year 2019. Inflation has returned and rose by 82%, and to be frank, it is the second highest rate until 2019 of runaway inflation in Syria, but the effects of the civil war in Syria were evident in 2020, as the Syrian economy collapsed dramatically, leading to a 202% rise in inflation, the highest in the history of Syrian.

And explain the reasons accordingly, as in 2015, the Central Bank of Syria issued a new category of Syrian currency with a value of 2000 Syrian Pounds, as this denomination was issued without being covered by a cash balance with the Central Bank of Syria and without a real supply of goods to cope with the increase in the money supply in the market and returned the ball at the end of the day. In 2019, when the Central Bank of Syria announced that it would issue a new cash denomination of 5,000 Syrian pounds, but due to the negative effects of the announcement only, the Central Bank of Syria postponed the date of issuing the new category of Syrian currency to 2020, as because of this issuance, hyperinflation rose in an unprecedented and unimaginable way.

Absolutely unexpected and this explained the economy's dependence on the importer due to the civil war, the difficulty of transport between cities, the burning of agricultural crops, the migration of expert labour, the migration of capital, and the transfer of many Syrian factories from the industrial zone in Aleppo to Turkey, where producers preferred to preserve their capital from Theft and destruction due to the ongoing hostilities in Syria.

The unemployment rate in Syria is starting at a negative rate. I can explain this in that Syria was attracting seasonal workers every year between 1960 and 1970, and the reason is that it provided agricultural lands that needed a lot of manpower to accomplish many tasks that were not entrusted to machines.

During that period, but we notice that after 1970, the unemployment rate began to take a positive curve, meaning that it is people in Syria who are able and willing to work, but do not find work, but the percentages were within acceptable limits. In the performance of many tasks and political stability during that period, which led to a reduction in the period of service in the armed forces and political instability in some sister countries, which pushed the Syrian workforce to return to the homeland, but after 1980 the unemployment rate began to increase at an accelerating rate, and this was explained by the recession that was exposed. It has Syria because of the gradual decrease in the value of the Syrian pound, and salaries and wages have not increased to keep pace with this decrease in the value of the Syrian pound during the period.

In the year 1990, the rate of inflation continued to rise, and this was explained by the increase in the population, as the annual growth rate of the population in Syria reached more than 3% and this is what pressures the economy a lot. The unemployment rate in Syria reached 16%, and this was explained by the government's expansionary functional policy, as the Syrian government adopted a plan to employ all university graduates, and because of this, Syria suffered in the following years from underemployment, but this did not last for long, as, with the beginning of the civil war in Syria in 2011, it returned and the inflation rate rose slightly to become at a rate of 20% annually, and this rate will almost continue until 2019.

However, as we note that the inflation rate in 2020 decreased to 8.45%, and this was explained by the migration of experienced workers outside Syria, as well as the summoning of many young people to reserve service in the armed forces and the lack of a work culture for women in some Syrian cities.

It is evident through the analysis of the macro variables of the Syrian economy during the period that the Syrian economy has achieved an annual growth rate of 3.72%, and this is a weak figure as the Syrian economy needs nearly 30 years to double the gross domestic product. Investment Law No. 10 of 1991, as this law encouraged the private sector to start productive, vital, and beneficial projects in Syria, which led to an average GDP growth of 7% after that law. As the domestic investment in relation to the gross domestic product increased by approximately 17 % in the year 2000, and the rate of domestic investment continued to rise at a decreasing rate during the period due to the lack of clarity of the executive instructions of the Investment Law No 10 of 1991.

The balance of payments achieved remarkable growth in some periods due to the government's policy in supporting exports, but at other times it achieved a large deficit due to the failure to follow a rational policy of the Central Bank of Syria in managing the exchange rate of the Syrian pound against the rest of the currencies.

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The rate of inflation was the weakest link, as we noticed that the rate of inflation took an increasing curve, as the rate of inflation increased according to an increasing geometric progression. The government sold a contractionary policy during 1995-1999, which led to a decrease in the gross domestic product (GDP) on average by 2.5% and a decrease in the ratio of domestic investment to GDP.

The unemployment rate was maintained at acceptable levels during the study period compared to the conditions of the Syrian economy, but if we compare the inflation rate in Syria with global unemployment rates and averages, we notice that the unemployment rate in Syria is really high, it can be said that the real unemployment rate in Syria is much higher than what we have here, but the government's pursuit of an expansionary employment policy to reduce the unemployment rate at its mentioned levels, as it can be said that Syria suffers from underemployment during the year 2005, the gross domestic product achieved an acceptable growth rate, due to the government's central planning method. In 2006 the government followed the strategy of the social market economy as a main strategy for the economy according to the tenth five-year plan.

Real GDP achieved acceptable growth rates. But with the onset of the civil war in Syria, we notice that most indicators have taken an unwanted (negative) direction, where inflation has increased at an unprecedented rate. It can be said that Syria suffers from unbridled inflation, unemployment also increased, real GDP decreased, and the value of the Syrian pound decreased for the following reasons: Foreign reserves at the Central Bank of Syria and the lack of experience of employees at the Central Bank of Syria to deal with such crises, and as it is known that Syria will not suffer from a similar crisis for more than sixty years, the migration of experienced labour, agricultural crop fires, the high costs of transporting products between cities, and fear Traders have migrated their capital as most of the capitals have migrated and the same applies to the experienced labour force.

### ***Autocorrelation and correlograms analysis (see figures 9-16)***

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.

### ***Testing the series stationarity by Dickey-Fuller Unit roots test***

The results of Dickey-Fuller Unit roots test presented in Tab. 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  
(Source: made by the author, based on the STATA output)

Variables	Level I (0)	1 <sup>st</sup> diff I (1)	2 <sup>nd</sup> 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***	-

Table 2 – Models Output  
(Source: made by the author, based on the STATA output)

diff log Exert	Coeff	Cost	R <sup>2</sup>	Adj-R <sup>2</sup>	P-Value	T-Ratio	DW	Prop F
Model (1) Lager	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*

***Analyse 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.

## EXCHANGE RATE AND ECONOMIC STABILITY DURING

According to the p-value/ Prof F models 1,2,4,5 is 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.

### 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 labour market, and the financial assets market.

The central bank, as the authority empowered to issue money, must stop printing money that is not 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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# EXCHANGE RATE AND ECONOMIC STABILITY DURING

*Paper submitted*

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Appendix

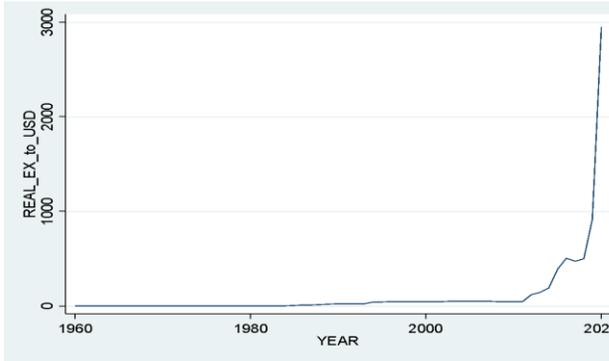


Figure 1 – Real ex rate of Syrian bound to USD  
(Source: made by the author)

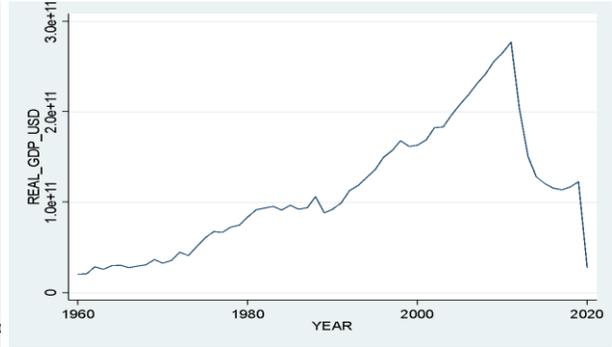


Figure 2 – Real Syrian GDP by USD  
(Source: made by the author)

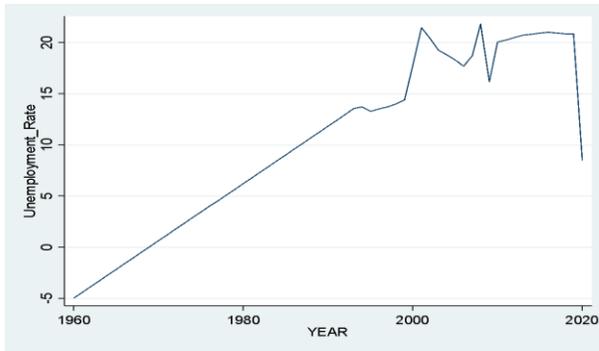


Figure 3 – Real Syrian UNEMPLOYMENT  
RATE by present  
(Source: made by the author)



Figure 4 – Real Syrian BOP by USD  
(Source: made by the author)

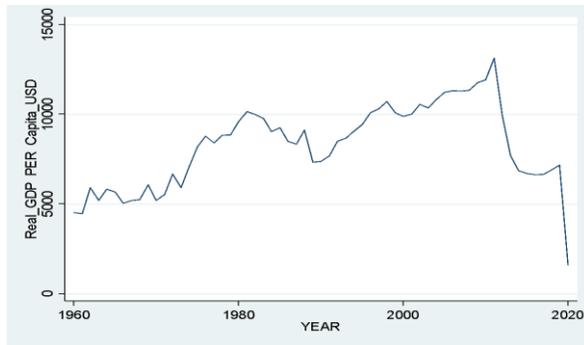


Figure 5 – Real Syrian GDP per capita by USD  
(Source: made by the author)

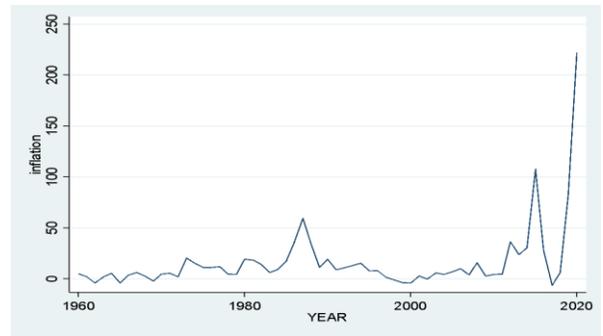


Figure 6 – Real Syrian Inflation by present  
(Source: made by the author)

# EXCHANGE RATE AND ECONOMIC STABILITY DURING

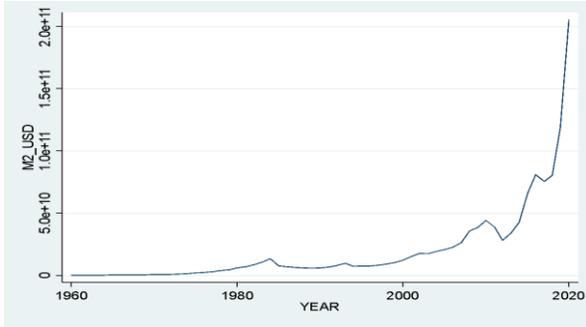


Figure 7 – Real Syrian M2 by USD  
(Source: made by the author)



Figure 8 – Real Syrian GDP Gap by USD  
(Source: made by the author)

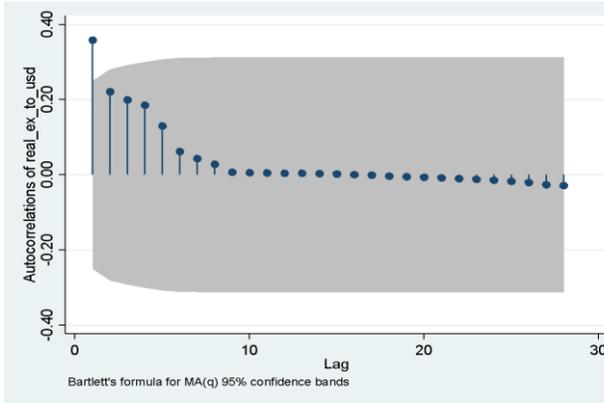


Figure 9 – Autocorrelation of Real ex rate of Syrian bound to USD  
(Source: made by the author)

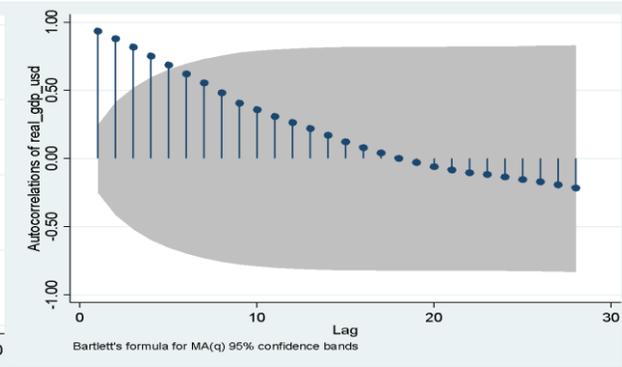


Figure 10 – Autocorrelation of Real Syrian GDP by USD  
(Source: made by the author)

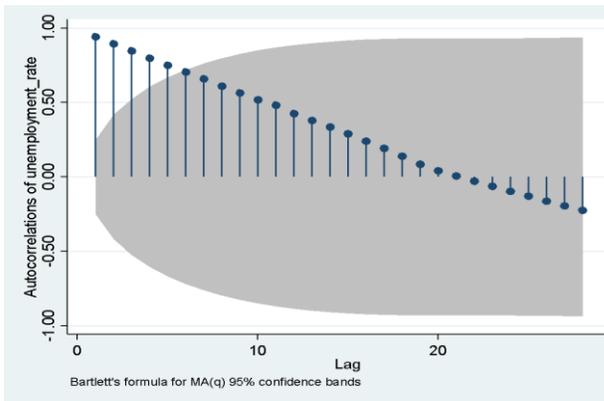


Figure 11 – Autocorrelation of Real Syrian UNEMPLOYMENT RATE by present  
(Source: made by the author)

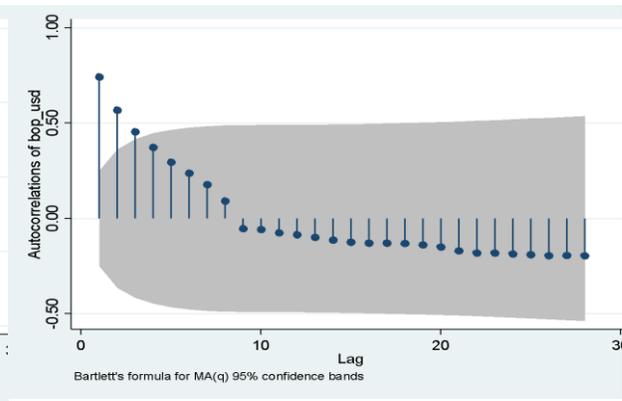


Figure 12 – Autocorrelation of Real BOP by USD  
(Source: made by the author)

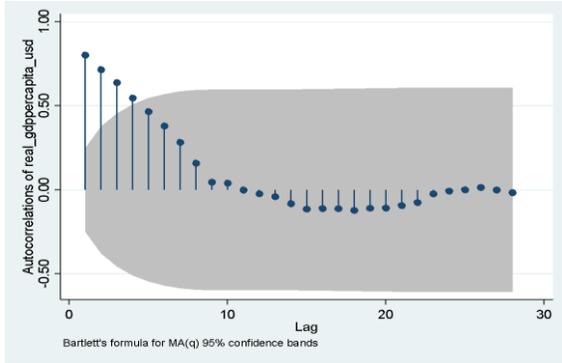


Figure 13 – Autocorrelation of Real Syrian GDP per capita by USD  
(Source: made by the author)

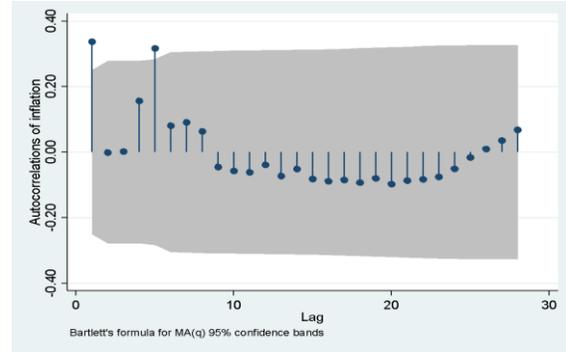


Figure 14 – Autocorrelation of Real Syrian Inflation by present  
(Source: made by the author)

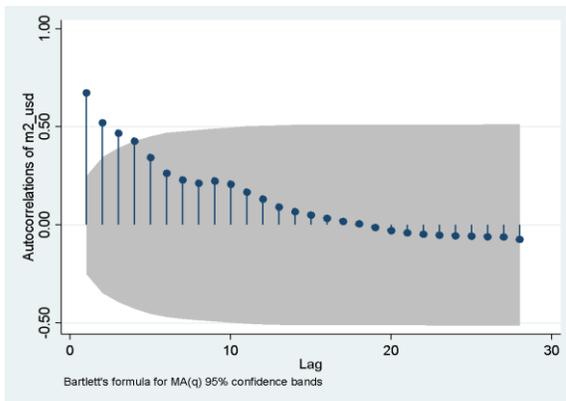


Figure 15 – Autocorrelation of Real Syrian M2 by USD  
(Source: made by the author)

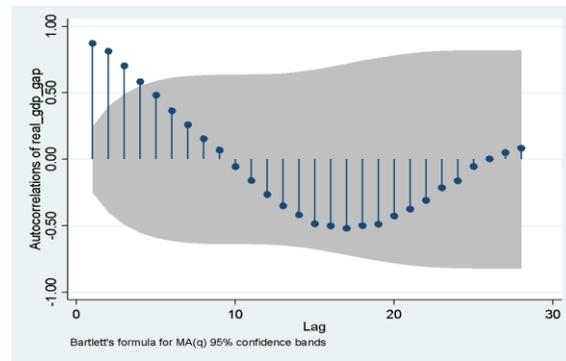


Figure 16 – Autocorrelation of Real Syrian GDP Gap by US  
(Source: made by the author)