

Mordas Olena,
Master in Finance, NaUKMA
Slaviuk Nataliia
Associate professor NaUKMA

SYSTEM DYNAMIC APPROACH IN ANALYSIS OF EXCHANGE RATE AND TRADE OF UKRAINE

In the conditions of economic instability, it increases the role of the government regulation. It is obvious, that war is a hard shock for the national economy and caused the damage to national wealth. One of the important elements of economic recovery during the war and in the post-war period is the development of the production. The higher developed domestic production the country is less vulnerable during a crisis and the economy recovers faster.

Exchange rate policy influences on the position of national producers. Every exchange rate type has its advantages and disadvantages. The central bank of Ukraine fixed the exchange rate at the beginning of war. Such policy was forced element to maintain the economic stability. Long-term usage of fixed exchange rate influences negatively on the international reserves. In the case of the fixed exchange rate the fiscal policy changes are needed, as the monetary regulation cannot fully stabilize the macroeconomic conditions [1]. Countries with the fixed exchange rate are more sensitive to external shocks. Also, it is was investigated, that this type of exchange rate increases the vulnerability to currency and banking crises [2].

On October 2023 National Bank of Ukraine announced transfer to the managed floating regime, which is more flexible. The central bank in this case sets the rate, but National Bank can influence it via interventions. These changes can be made based of the international reserves, fluctuations on the exchange market, real effective exchange rate. According to the National Bank of Ukraine, this transfer to the managed floating exchange rate was made based on the decrease of inflation, high amount of the international reserves, increase of attractiveness of deposits in national currency and internal government bonds on the market [3]. This regime allows the National Bank to control the movements of the exchange rate and prevent its high

depreciation and appreciation, and at the same time will form more flexible and market situation. It is worth noted, that the movement to the managed exchange rate was made in the favorable economic conditions, when the inflation has decreased, the economic activity increased and the international reserves were high. It is common in the economic history, that countries move to a more flexible exchange rate, when their international reserves are exhausted and the economic crisis deepens. Of course, it leads to further depreciation of the currency. It was rather positive measure of the National Bank of Ukraine to move from the fixed exchange rate to the managed floating-more flexible exchange rate in the favorable economic conditions. Of course, it is rather important to pay attention to the constant changes on the market and economic indicators. In the conditions of war, it is very hard to predict the economic situation and from the monetary and fiscal policy of the country. It demands constant monitoring and cautions changes. To our mind, the monetary policy of the National Bank is rather effective in the conditions of war, and allowed to decrease the inflation, stabilize the exchange rate and keeps trust of citizens. Though challenges are rather severe and often unpredictable.

National production and trade take very important role of the economic stabilization and further development in the course of rebuilding the country. National producers have faced with many problems, including destruction of enterprises, changes of locations, problems of logistics and transportation. All these causes high barriers for the development. But it is rather important to note, that even in this hard conditions, according to the reports of the National Bank of Ukraine there is improvement of economic conditions in 2023 [4].

Exchange rate is rather important part of monetary regulation, which influences the export of the country and to some extent the competitiveness of national producers. It is worth noting, that real effective exchange rate (REER) and nominal effective exchange rate (NEER) are important indicators of the exchange market. They determine the competitive positions of national producers, showing whether the national currency is undervalued or overvalued. These rates give the information about the change of the exchange rate adjusted for the inflation rate in Ukraine and main countries-partners.

Usage of a system dynamics approach allowed to analyse the influence of the exchange rate and the country's trade indicators. The CLD (Causal loop diagram) represents the main logic and links in the model (Figure 1). It is important to mention, that the capacity utilization rate shows how efficiently and to what extent the economy uses its resources.

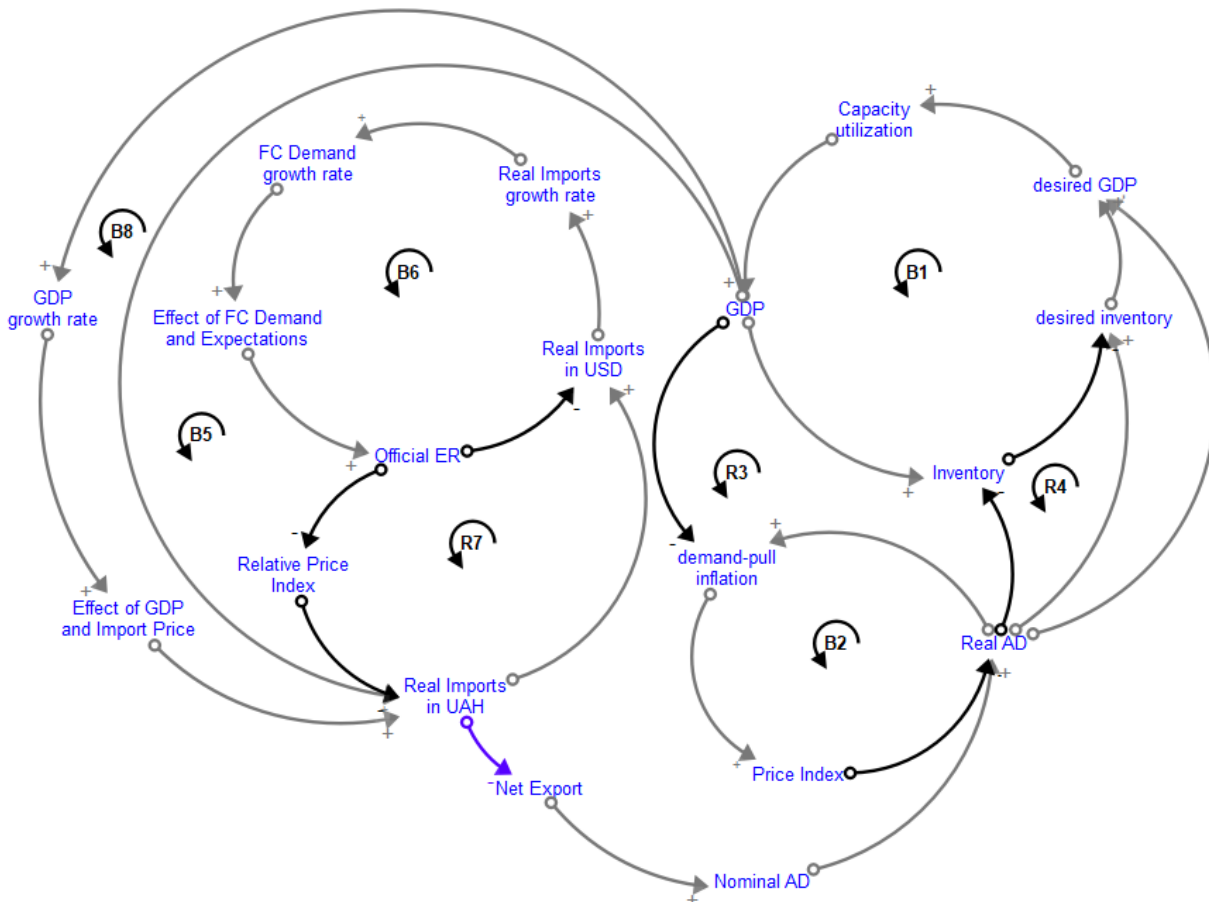


Figure 1. The CLD of the interactions of the exchange rate, trade, prices

The greater the volume of imports, the greater the demand for foreign currency. When the demand for foreign currency grows, then the demand for the national currency declines. When the exchange rate of the national currency drops, the currency devalues. Hence, when the demand for foreign currency increases, the exchange rate increases. When it increases, import prices also grow. The rise in import prices reduces the possibilities to import, and therefore the number of imports decreases.

While appreciation, the foreign currency rate decreases, but the relative price of goods rises. This change means that the price of goods and services in Ukraine

becomes higher relative to the price level in the rest of the world. One of the consequences of such changes is an increase in import prices. Importing goods becomes more expensive than domestically produced goods. As a consequence, import volumes are declining.

It is worth noting, that the growth of production capacity enlarges the opportunities for imports. But, when import grows, there is a decrease in net exports. Of course, the increase in the amount of imported goods influences negatively the development of domestic production.

Before the war there were many publications, which paid attentions to the problems of resource-oriented export of Ukraine. Different economists, for example Erick Reinert, highlighted, that Ukraine should develop its industries to protect from Russia and to boost the economic growth [4]. We completely agree with this statement. And in the possibilities to rebuild the country, high attention should be paid to innovations, industrial and technological development. Many branches have a great potential, it is worth noting the aero-space industry, military, machine building, chemical, pharmaceutical, IT industry, light and food industry. Industrialization and development of reprocessing industries is crucial. They had the potential before the war and now are of high importance for the development and rebuild of the country.

References

1. Casiraghi M., Habermeier K. and Harjes T.. Monetary and Capital Markets Department TECHNICAL ASSISTANCE HANDBOOK. Choice of Exchange Rate Arrangements. IMF. December 2022. 29 p.
2. Duttagupta R., Fernandez G., and Karacadag C.. Moving to a Flexible Exchange Rate: How, When, and How Fast; Economic Issues 38. January 9, 2006.
3. NBU moves to the Managed flexibility of the Exchange rate. URL: <https://bank.gov.ua/ua/news/all/nbu-vprovadjuye-kerovanu-gnuchkist-obminnogo-kursu-scho-posilit-stiykist-valyutnogo-rinku-ta-ekonomiki>
4. Ворожбит О. Ерік Райнерт: «Переконайте ЄС, що Україна сьогодні – це як Берлін за часів холодної війни». Український тиждень. URL: <https://tyzhden.ua>