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PERSPECTIVES OF THE EXPORT POTENTIAL GROWTH OF UKRAINE

Abstract. Trade position of the country influences its competitiveness on the global markets. It is obvious that war in Ukraine has influenced the export potential and caused decrease of export. Disruption of chains, losing the possibility to export goods via established roots, problems in logistics influenced the trade potential of the country. At the same time the relocation of companies and change of their product orientation can give the possibilities for future development.

The aim of this article is to analyze the export and import changes in Ukraine in the war period, discover the connection between the exchange rate and trade indicators of the country and make the propositions about possible ways of development of industry to stimulate economic growth and increase the competitiveness of economy. It is reviewed the structure of Ukrainian export and import in the years 2021 and 2022. In the article is proposed the system dynamics model, which shows the relation of exchange rate and trade indicators of the country. In the conditions of transition from fixed to floating exchange rate it is important to pay attention to the influence of exchange rate policy on the export and import of the country.

Special attention is devoted to the possibilities of development of industrial branches of economy, as far as, reprocessing industries are important for further development and rebuild of the country. The resource orientation of export only causes the “Dutch curse” for the economy. It is made the conclusion that for security of the country, its rebuild and raising its competitiveness on the world market in future, possible joining the European Union, it is important to develop military industry, IT sector, which already has a big potential, aerospace industry, which was



competitive on the market before the war, automobile industry, chemical, pharmaceutical, light industry, reprocessing in food industry, metallurgy. All these branches have high demand in the country and natural and human resources for further development.

Keywords: Export, import, exchange rate, trade balance, rebuild of Ukrainian economy.

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ПЕРСПЕКТИВИ ЗРОСТАННЯ ЕКПОРТНОГО ПОТЕНЦІАЛУ УКРАЇНИ

Анотація. Торгівельна позиція країни впливає на її конкурентоспроможність на світових ринках. Війна в Україні значно вплинула на експортний потенціал і спричинила зниження експорту. Логістичні проблеми, неможливість перевезення продукції через встановлені шляхи вплинула на торговельний потенціал країни. В той же час, релокація підприємств і зміна їх продуктової орієнтації може дати можливості для розвитку в майбутньому.

Метою даної статті є проведення аналізу змін в експорті і імпорті в Україні в військовий період, визначення зв'язку між валютним курсом і торговельними індикаторами країни і висловлення пропозицій щодо можливих напрямків розвитку промисловості для стимулювання економічного зростання і збільшення конкурентоспроможності економіки України. В статті проаналізована структура українського експорту і імпорту в 2021 та 2022 роках. Запропоновано модель системної динаміки, яка показує взаємозв'язки між валютним курсом і торговельними індикаторами країни. В умовах переходу від фіксованого до плаваючого валютного курсу важливо звернути увагу на вплив валютного курсу на експорт та імпорт країни.

Окрема увага приділена можливостям розвитку промислових галузей економіки, оскільки переробна промисловість є важливою для подальшого розвитку і відбудови економіки країни. Ресурсна спрямованість експорту лише зумовлює «сировинне прокляття» для економіки. Зроблено висновок, що для безпеки країни, відбудови, зростання її конкурентоспроможності на ринку в майбутньому, можливого вступу до Європейського Союзу, важливо розвивати військову промисловість, ІТ, яке вже має значний потенціал,



літакобудування, яке було важливою конкурентоспроможною галуззю до війни, машинобудування, хімічну, фармацевтичну, легку, харчову промисловість, відновлювати металургію. Всі ці галузі мають високий попит на внутрішньому та зовнішньому ринках, а також природні та людські ресурси для розвитку.

Ключові слова: Експорт, імпорт, валютний курс, торгівельний баланс, відбудова економіки України.

Introduction. War caused huge damage to the enterprises influencing the export potential of Ukraine. Problems with transport routes and destruction of enterprises have highly hit the metallurgy sector, which was dominant in the export of products. Enterprises in different sectors were highly influenced by war. But it is observed of positive tendency of increase the economic activity in 2023. In these conditions arises the questions of branch of the business and to our mind there is a possibility of reorienting the enterprises to the current conditions and further changes of the export products in Ukraine. For many years export of Ukrainian product was resources oriented. Before war Ukraine was exporting 15% of world production of corn and 10% of grain [1]. War caused influenced not only Ukrainian market, but also the world one, increasing the prices on agricultural products, energy.

In the conditions of starting new businesses now and further reconstruction with the aim to rebuild the country it is necessary to develop innovative, industrial potential.

A review of the literature. The importance of export for open Ukrainian economy was analyzed by S.Sardak, S. Radziyevska and I. Us (2019) [2]. The authors indicated the problems of trade deficit, low-tech export. Larina T., Kravcov A., Bereznaja N., Kutija O., Fenenko K. (2019) researched the ways of improving agricultural export, highlighting in 2019 the necessity of development of alternative variants of supply chains, like automobile and river transport [3].

Matyushenko, Hlibko, Petrova, Pasmor, Loktionova analyzed the high-tech production in Ukraine using the methodology of Standard International Trade Classification, OECD, Eurostat, including aerospace, pharmaceutical, office equipment, telecommunication equipment industries, instrument, making a conclusion that import of high-tech groups of product is higher than their export with the only exclusion in aerospace industry, which has positive balance in trade [4].

Saliy E. and Saliy O. have analyzed the tendencies and dynamics of export and import during the war [5]. Maksimuk and Mrochko have also revealed the structure of changes in export-import trade of Ukraine in the years 2013 -2022 [6].

Aim of the article. The aim of the article is to analyze dynamics of export and import in 2000-2022, the structure of export and import in the years 2021-2022, to research the relation of exchange rate with the main trade indicators and make propositions regarding the development of industries in Ukraine.

Main part. To analyze the position of the national producers and the trade facilities, it is worth presenting the main trade indicators, such as the dynamic and structure of export-import, the current balance of payment, the current account, and the trade balance.

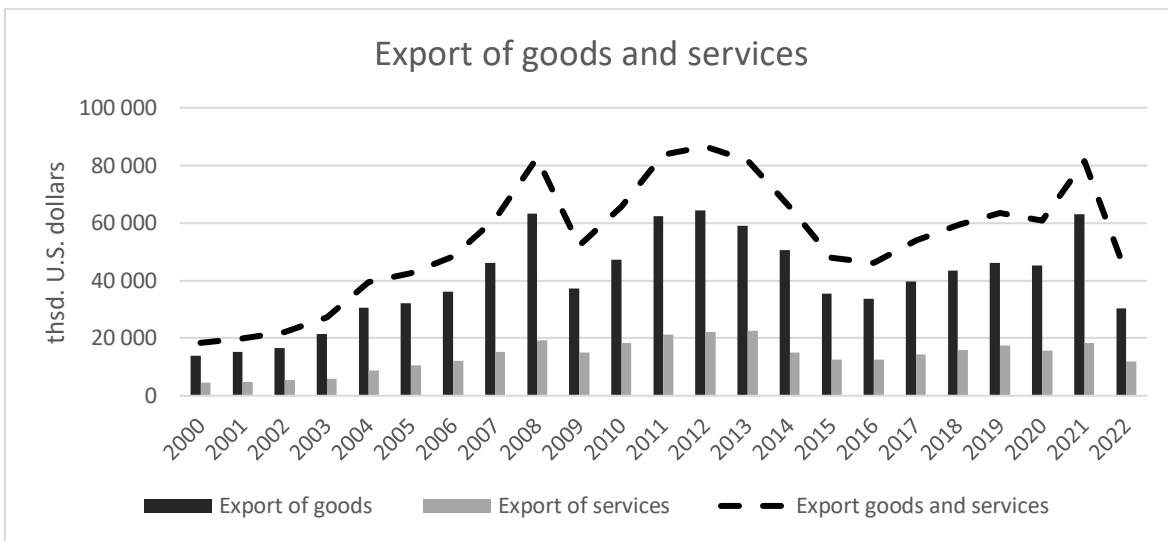


Fig. 1. The dynamics of the export of goods and services as items of the balance of payment of Ukraine (analytical form) from 2000 to 2022

Sources: compiled by the authors based on the [7]

The graph illustrates that the highest volumes in the export of goods were achieved in 2008, 2012, and 2021. After that years there were shocks that led to economic crises. The amount of the export of services is almost three times smaller. This means that the country produced more goods for export and specializes in providing services in the domestic market. At the end of 2022, the total volume of export decreased to the value of 2005 and reached the lowest point in the last 17 years.

Another Figure 2 demonstrates the dynamics of the import of goods and services. Regardless of the similar tendencies between the graphs of export and import, the value of import is much higher in comparison with export volumes.

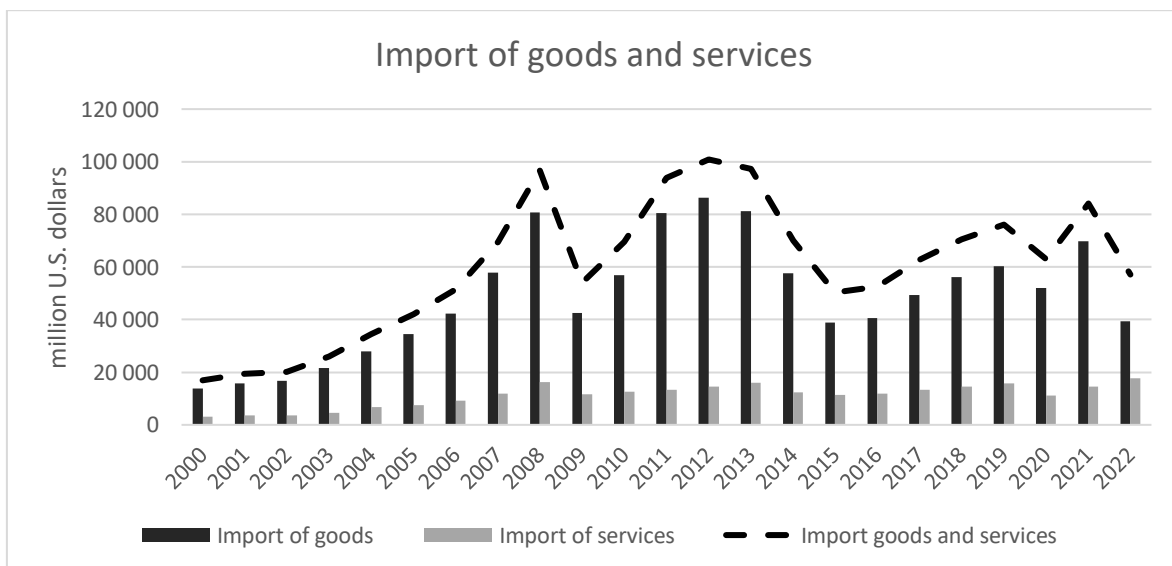


Fig. 2. The dynamics of the import of goods and services as items of the balance of payment of Ukraine (analytical form) from 2000 to 2022

Sources: compiled by the author based on the [7]



One more difference is the deep decrease in imports in 2020. This happened due to the disruption of supply chains because of the spreading of the pandemic COVID-19. Other mentioned shocks have similar negative impacts.

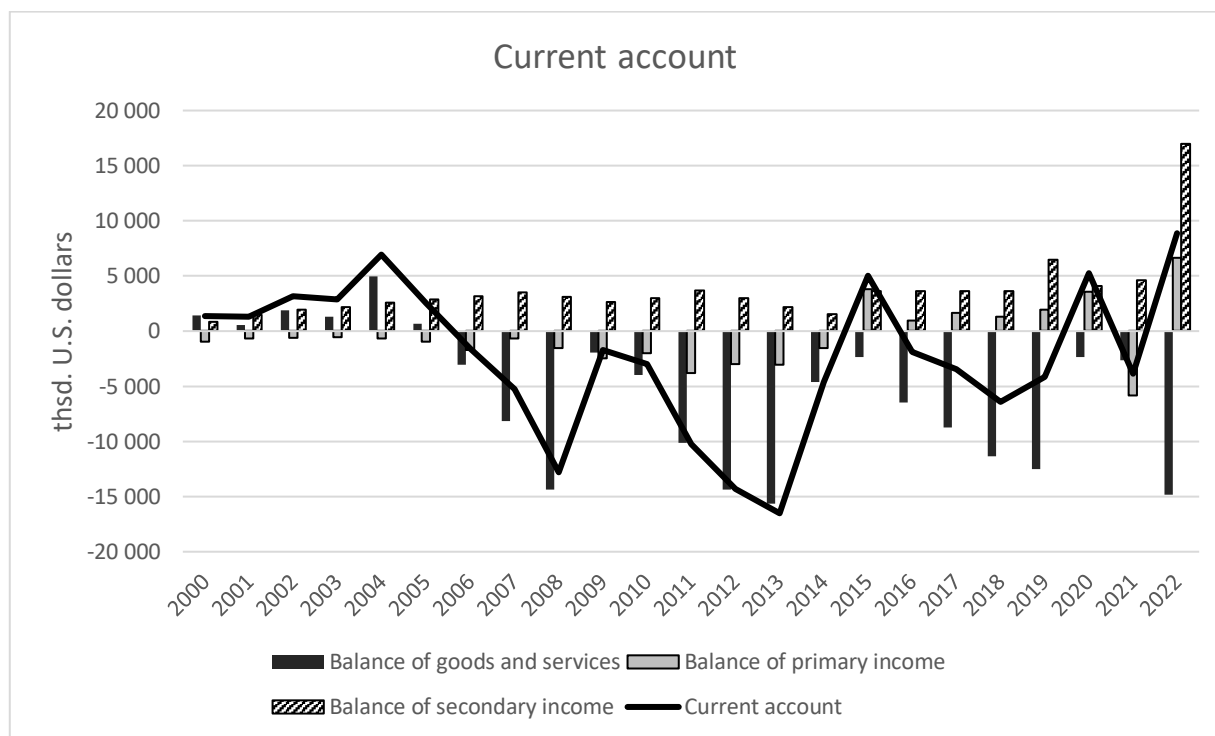


Fig. 3. The key items of the current account of Ukraine
Sources: compiled by the author based on the [7]

The export-import dynamics reflects the constant predominance of exports over imports until 2004. Since then, the balance of goods and services is constantly falling. The country's negative trade balance has some risks for the economy, such as the devaluation of the currency, dependence on the supplier country, increase of external debt, and others. The lowest value was in 2008 which was triggered by the financial global crisis. That period was the first time when the net export was negative (-17 million USD). However, after 2008 occurred sharp recovery of the economy. Another significant decline in the balance of goods and services started in 2010 and was the deepest in 2013 (-15,6 million USD). The main reasons for that were the combination of different shocks such as geopolitical (revolution and occupation of the East region of Ukraine), banking crisis, deterioration of trade, and reduction of the capacity of producers. After the period of decline in trade activity, the economy sharply recrudesced. Simultaneously, the balance of the secondary income remained positive.

Due to the full-scale war in Ukraine, the balance of goods and services was – 14,8 million U.S. dollars. This happened due to many reasons which are caused by the war factor. For instance, the inability to produce goods in the temporarily

occupied territories, disruption of logistics and transport connections between regions, blocking ports as the main trade routes, migration and forced relocation of workers, loss of warehouses, and equipment, restrictions on electricity consumption, loss of access to internal natural resources and so on.

However, in comparison with 2013 in 2022 the current account is positive, despite the huge drop in the balance of goods and services. The main reason lies in the level of primary and secondary income. The value of the balance of the secondary income is 2 million more than the balance of goods. This and the positive primary income balance compensate for the losses in the trade balance. This once again emphasizes the importance of international financial assistance during crisis periods.

Further, the structure of the export and import of goods will be analysed. To begin with the depictions of the export (Figure 4).

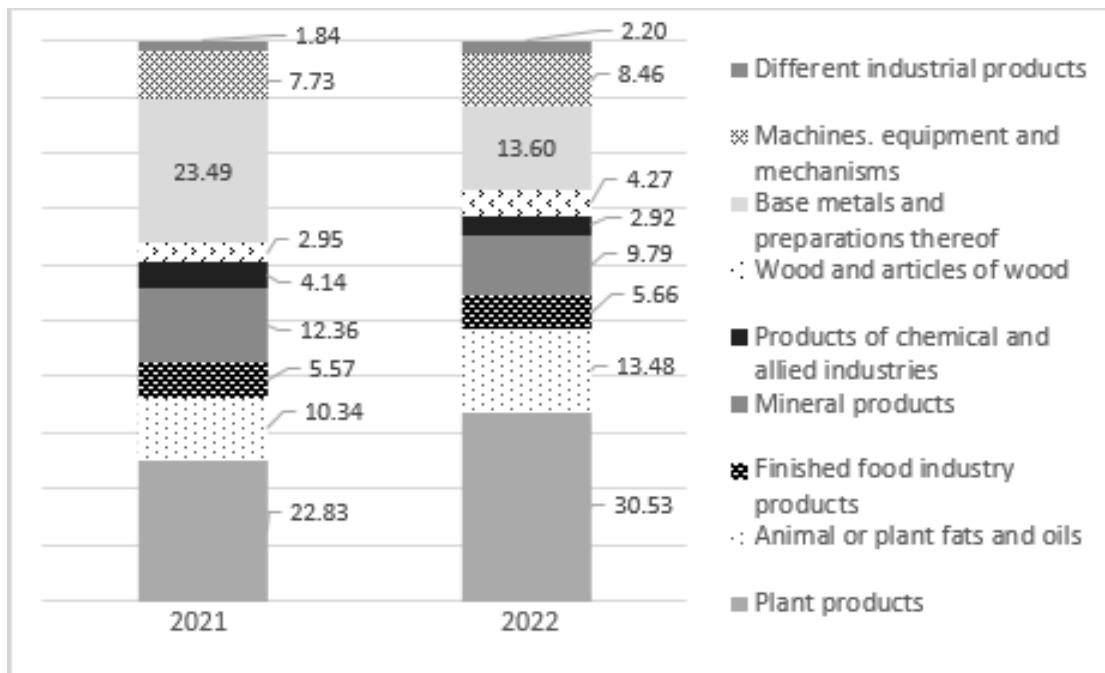


Fig. 4. The commodity pattern of export of goods, 2021-2022

Sources: compiled by the author based on the [8]

In 2022, export volumes amounted to 44.1 billion U.S. dollars, which is 35.1% less compared to the previous year.

The structure described above indicates that the country's economy is raw material oriented. On the other hand, it demonstrates the lack of production potential to create high-tech goods with high added value. Thus, it can be concluded that as of 2022, Ukraine is a raw material country.

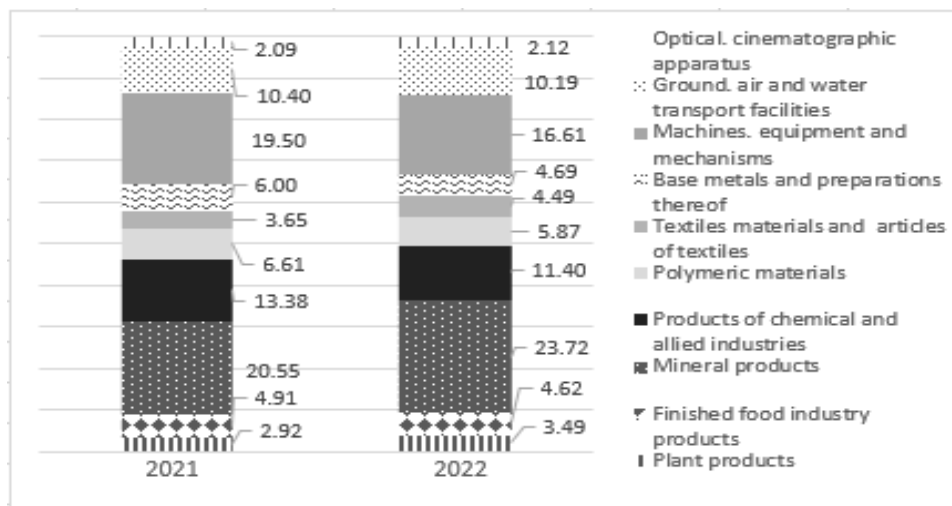


Fig. 5. The commodity pattern of import of goods, 2021-2022
 Sources: compiled by the author based on the [8]

The import of goods according to the results of 2022 (55.3 billion U.S. dollars) decreased by 24.1% compared to 2021 (ME, 2023).

According to the author's opinion, the emphasis on the development of the raw material trade has a negative impact on the technological and scientific growth of the economy. Only focusing on the export of high-tech and knowledge-intensive products with a high level of added value can ensure stability, sustainability, and minimal vulnerability to the influence of economic cycles.

There is such a pattern that resource-rich countries are significantly inferior in economic development to countries with smaller reserves of minerals, but with greater technological progress. There are many examples of successful use of own natural resources.

Since Ukrainian foreign trade is focused on the export of raw materials and the import of technological machines, the need for technological and scientific development disappears. When extracting raw materials, there is no great need for highly qualified engineers and a powerful scientific base. Therefore, highly qualified personnel, as a rule, migrate to countries where there is a higher need for their specialization. In this way, not only brain drain occurs, but also the country lags behind in scientific and technological development.

The smaller the share of processing and manufacturing industries, the lower the productivity of the economy. As a result, the level of wages decreases, which in turn leads to a decrease in domestic demand and negatively affects economic growth.

In the economic literature, there are such concepts that determine the raw material dependence of the country – “resource curse” and “Dutch disease”. The first one is also known as the “poverty paradox” or “paradox of plenty”. The key idea of the “resource curse” is the following – the countries with rich deposits of natural resources (fossil fuels, ores, minerals) under certain conditions have lower economic growth, a lower level of development, and democracy than resource-poor countries.

In our opinion, the “resource curse” and “Dutch disease” processes are observed in the Ukrainian market. The resource orientation of the economy leads to



a deepening of the raw material recession and inhibition of the technological or innovative development of the national commodity market.

Further, the export-import structure of services will be considered and analyzed. To begin with the export of services (Figure 6).

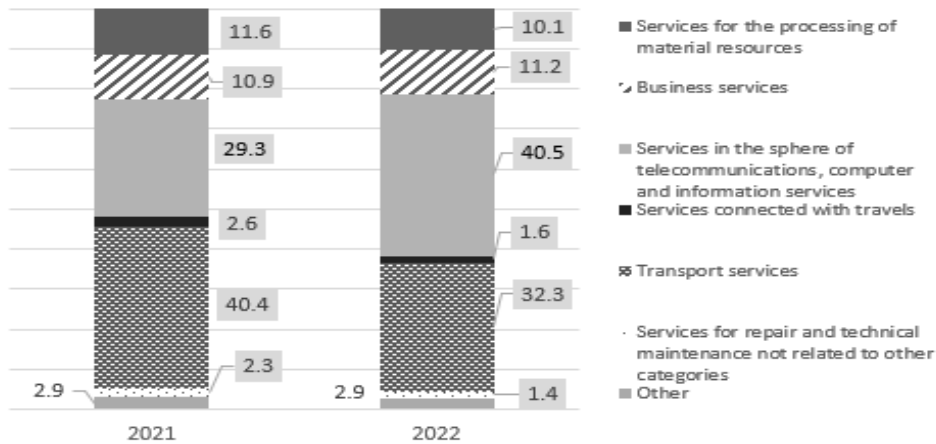


Fig.6. Structure of export by types of services in 2021 and 2022
Sources: compiled by the author based on the [9]

Thus, as of 2021, before the start of a full-scale war, Ukraine had a developed air transport system. Pipeline transportation services are explained by the large transit of fuel resources and the export of raw materials. This is also related to the processing of raw materials. The field of software and telecommunication services has a high potential.

The total export of services decreased by 28.2% in 2022 compared to the previous year and amounted to 9.2 billion U.S. dollars.

The structure of the import of services is depicted in Figure 7. Similar to exports, the largest item is transport services - 23%. However, in this case, sea transportation prevails.

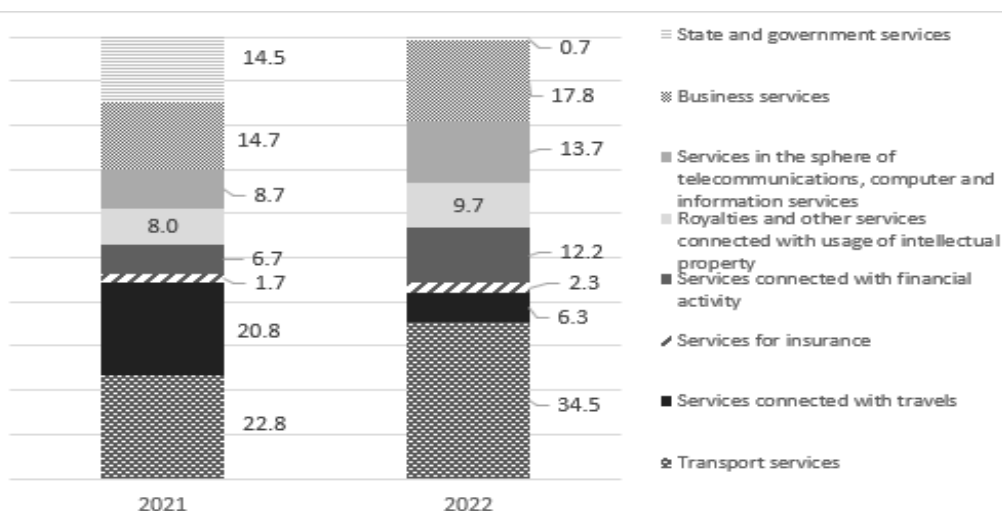


Fig.7. Structure of import by types of services in 2021 and 2022
Sources: compiled by the author based on the [9]



Summarizing the export-import structure of services, the following conclusions can be drawn. Before the war, Ukraine had a developed transport system and provided transportation air services. Transport services are the largest items of export and import. From our point of view, this is related to the sale of raw materials, and the transportation of fuel resources to Europe due to a favorable geopolitical position. Ukraine has the potential to provide programming and telecommunication services, which can be developed further. In addition, it is worth improving the field of consulting and business services.

The import of services in 2022 amounted to 3 billion U.S. dollars. Compared to 2021, the import of services decreased by 61.2%.

According to the results of the export-import analysis of goods and services, it can be stated that before the war, Ukraine remained a country with a raw material-oriented economy. This has disadvantages for the development, scientific growth, and stimulation of own production facilities. The export of goods and services is insufficient to pay for the import of goods and services and the country becomes more of a consumer than a producer. This trend leads to an increase in external debt. As a rule, financing this deficit is possible due to obtaining loans from abroad or selling capital financial assets to foreigners. Simultaneously, Ukraine has the potential to produce more of its own goods.

The main reasons for the decrease in exports are the violation of critical infrastructure facilities and the shortage of electricity for producers, closure or removal of businesses from the war zone, population migration, and logistical difficulties.

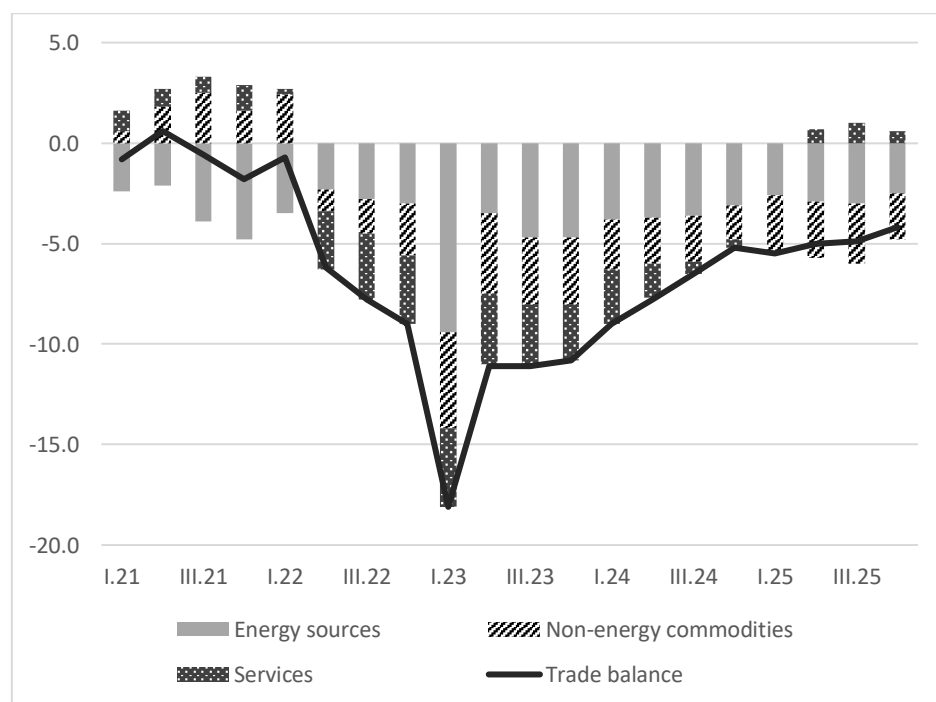


Fig.8. The trade balance of Ukraine in 2022 and its forecasting
Sources: compiled by the author based on the [10]



Of course, trade dynamics of the country has relation with the exchange rate. In the current conditions with the transfer from fixed to floating exchange rate, it is important to pay attention to their relation. It is well-known that depreciation of national currency can be economically more favorable for exporters, and the same time it causes the increase of the prices of import. All this have significant impact on the economic activity and domestic market.

A system dynamics method was implemented for an in-depth analysis of the mutual influence of the exchange rate and the country's trade indicators. It allows to comprehensively describe the system, considering direct and inverse relationships between variables.

The CLD (Causal loop diagram) represents the main logic and links in the model, including the feedback structure of the system [11].

Figure 9 depicts the main balancing and reinforcing loops. Each of them will be considered further.

To begin with B1, the capacity utilization rate shows how efficiently and to what extent the economy uses its resources. In other words, it is the ratio between the output obtained at the current level of resources and the potential output that can be achieved if the production capacity is used to the maximum [12]. Larger production capacities contribute to the increase in production volumes, which in turn leads to the accumulation of inventory. It is worth reminding that three main branches of the real sector of the economy are added to the model – manufacturing (the largest of them), agriculture, and the mining industry. Therefore, inventories (like other variables) relate only to these industries. A high level of inventory accumulation reduces the desired future needs in inventory due to the high financial costs of its maintenance, obsolescence, spoilage, and other losses. The identified inventory volume stimulates production.

It is also worth noting that the exchange rate is expressed in the number of hryvnias (national currency in Ukraine) per dollar USA unit (UAH/USD).

The concept of “demand-pull inflation” (B2) arises under conditions of growth in aggregate demand, but with a limited level of supply (its fall or constant level). In the model, this type of inflation is reflected as a ratio of Aggregate Demand to GDP and shows whether supply can or cannot meet growing demand [13]. This type of inflation and cost-push inflation, which shows an increase in the price level due to an increase in production costs (materials, wages, salaries, etc.) are the components of the general level of inflation. Therefore, with the growth of each of them, the overall level of prices in the country increases. As a result, the real aggregate demand decreases due to rising prices.

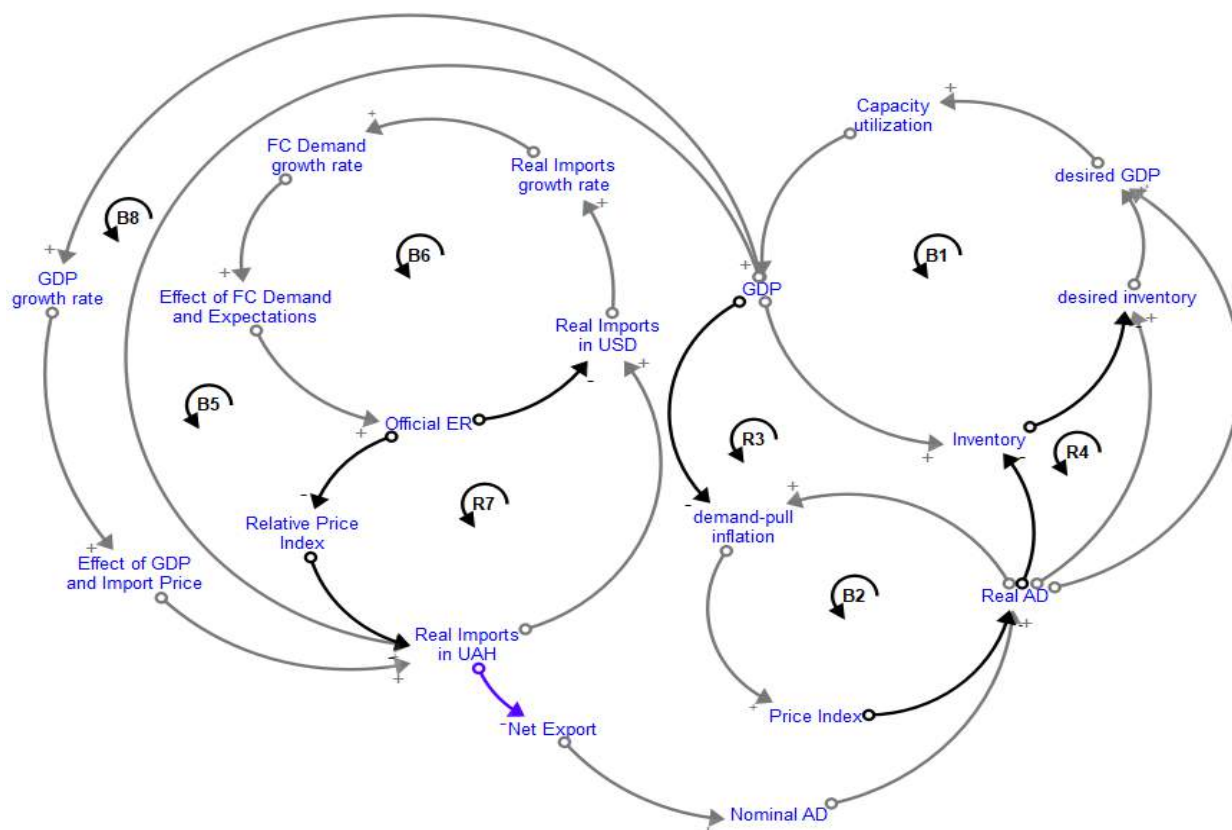


Fig.9. The CLD of the interactions of the exchange rate, trade, prices
 Sources: compiled by the author

Next, will be considered two loops simultaneously (R3 and R4). R3 – GDP - demand-pull inflation – Price Index – Real AD – desired GDP – capacity utilization – GDP. R4 - GDP -demand-pull inflation – Price Index – Real AD – inventory – desired inventory – desired GDP – capacity utilization – GDP. These loops are based on the two previous ones. However, both are reinforcing.

Loop B5 is a balancing loop. An rising in GDP increases the country's import capacity. Simultaneously, imports volumes have a negative effect on net exports, which is defined as the difference between exports and imports. Net export is a component of Aggregate Demand. Therefore, the increase in net exports has a positive effect on real aggregate demand, which stimulates production and improving capacity utilization.

Import and its growth rate creates demand for foreign currency (B6). The greater the volume of imports, the greater the demand for foreign currency. If the demand for foreign currency increases, then the demand for the national currency decreases relatively. Accordingly, the exchange rate of the national currency falls, the currency devalues. Therefore, when the demand for foreign currency increases, the exchange rate of foreign currency increases. When the exchange rate increases, import prices also grow ceteris paribus. The increase in import prices reduces the incentives to import, and therefore the volume of imports decreases.



Relative price is the ratio of changes in prices on the domestic market in the national currency and on the foreign market in US dollars, adjusted for the exchange rate. The calculation of the relative price is the inverse of the expression of the real effective exchange rate (REER) [14], which reflects the level of competitiveness of national producers in the market.

Thus, the growth of the national exchange rate means appreciation of the currency (R7). During the appreciation, the foreign currency rate decreases, but the relative price of goods increases. 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 that changes in the relative price is an increase in import prices. Importing goods becomes more expensive than domestically produced goods. As a result, import volumes are decreasing. Therefore, the relationship is inverse.

The last loop (B8) describes the relationship between GDP and imports. The growth of production capacity increases the opportunities for imports. However, if there is an increase in imports, the volume of aggregate demand will reduce due to a decrease in net exports. Thus, an excessive increase in imported goods restrains the development of domestic production.

The described links reveal the complexity of the exchange rate interaction system and the real sector of the economy through various channels. The developed model makes it possible to estimate the future dynamics of variables. According to the obtained results, the exchange rate will devalue in the coming years (provided there is a transition from a fixed currency regime to a flexible one), maintaining fluctuating dynamics throughout the forecast period (from 2023 to 2030). The value of imports and volumes of real GDP will also have downward dynamics until the next 3-4 years. However, the implemented policies of the model allow to improve and accelerate the recovery of indicators. Such main policies are the active attraction of international investments, improvement of population expectations and increase of the share of reinvested profit in enterprises of manufacturing industries of the economy.

Now the question arises about the rebuild of Ukrainian economy after the war. Though to our mind it is important to start rebuilding of the economy now. Researchers reveal that possible variant of attracting capital now is insurance from military risks, industrial parks and grant programs for business. Investors are interested in the market of demining and military industry [15].

Before the war there were warnings of Erik Reinert, that Ukraine should develop its processing industry [16]. In 2016 he noted that the best way to save Ukraine from Russia is to industrialize the country.

High dependence on export of resources and resource-oriented industries, does not stimulate the economic development and caused the deindustrialization of the country.



That can be defined as one of the problems of lack of defense in the beginning of war. Though to stimulate economic growth, to defend the country, to boost employment, it is important to develop the industrial potential of the country. To the opinion of Eric Reinert, industrialization stimulates economic growth and helps to fight corruption.

It is worth mentioning that Marshall Plan was oriented for industrialization of Germany. And results of this policy are obviously positive. The other situation was in Balkan countries, where the part of donor investment of industrial sector maintained only 3%, what caused low tempos of rebuild, increase of trade deficit, unemployment and shadow economy [17].

Currently (as at October 2023) in the world are recorded 6200 400 refugees from Ukraine [18] and question arises with the return of migrants. It is obvious that one of reasons to stay in Ukraine or return to the country is the possibilities of job placement and high salaries.

Of course, economy of Ukraine was highly hit by war. One of the exported products which highly decreased was metallurgy industry. But the main problem arises with the export of metallurgy products because of trade roots, in this case it would be an option of development of industries, which use metals.

In the current conditions, it is obvious that it should be developed the military industry. It has the high demand on the national market and interest of foreign investors.

Military purposes are stimulating light industry, pharmaceutical, food industry. It is important to develop reprocessing in the food industry as far as country has developed agricultural sector. The relocation of companies to the west of the country gave stimulus of development for different branches on the West.

In future, high potential can have also automobile industry, which can have material and human resources and is an important element of developed economies. Ukraine had high potential in aircraft construction, now this branch is at risk, but has the potential to develop in future.

It is worth to pay attention to the green energy. And there are already achieved the positive goals in this sector. In 2019 Ukraine was in Top 10 countries in the tempos of development of renewable energy, in 2020 -Top5 among the European countries in the development of solar systems. In 2021, Ukraine ranked 48th in terms of the total investment potential of the state among 136 countries in the Bloomberg New Energy Finance ranking [19]. In the case of risk of attacks on nuclear power stations, it is important to diversify resources and develop renewable energy.

To our mind, high potential has the IT industry in Ukraine. It is worth to pay attention to the tendency of rapid development of IT sector. In 2020 IT industry provided more than machine building sector for 1,5 times, and 25% of the agricultural export. In the export of services IT placed 37% in 2021, and this number has grown for 300% for last 3 years [20]. IT sector was the only one which grew in the amount of export in 2022, and achieved 45% of all export of services of the



country. In 2022 IT branch was giving work for 309 thousands of specialists [21]. IT industry can cooperate with military industry and many other sectors.

We have already positive experience of Dija projects, which fasters operations of businesses and helps citizens. Currently, there are available more than 100 electronic public services via Dija Portal. For the year 2022-2025 it is planned further development of services, for example, E-business, creation of the English version of portal, documents about education in the Portal-app Dija, electronic forms of tax residency in Ukraine, guarantees for veterans, e-school and e-kindergarten, e-licenses, e-tourism, e-court, services abroad and many others. In this conditions it is worth mentioning that usage of the skills of IT specialists on the government level, like it has shown the experience in Estonia, and now we can observe in Ukraine, is very positive for the development of business and digital society.

In 2023 it is observed the high activity of opening small and medium size business. They can give also additional potential for the economy, as far as they create workplaces, they are more flexible in places and products, what is rather important in war time. It is important to develop their export opportunities.

In the case of expensive loans the solution can be the creation of the Bank of Development. Other possible variants can be the attracting of loans of EBRR, World Bank, further increase of state credit under the program “5-7-9”.

It is worth mentioning that in desire to integrate the European Union the path is long and complicated. And it is important to remember the case of Greece, which joined the European Union and had the economy not in strong position and cannot propose competitive products to the EU market. Joining the economic union, to our mind, need the creation of competitive branches and industries, not to become the resource base and develop the “resource curse”.

Conclusions. There are many discussions about the problems of export of Ukraine and its influence on world economy. It is obvious, that development of trade roots and effective diplomatic policy is crucial. At the same time, scientists pay attention, that Ukraine for many years has been exporting resources, products of metallurgy industry and agricultural sector. That form the “resource curse” for the economy of country and limits its development. To satisfy the needs of internal consumers, to defend the country and stimulate economic growth it is important to develop industrial sector, including military industry, pharmaceutical, light industry, reprocessing in food industry. These branches are already in high demand and can be developed now. In further perspective to rebuild the country construction, metallurgy, aerospace, automobile industry, further development of IT industry is important. Ukraine has a great variety of natural resources, educated people and can propose to the world many products. The events of 2022 and the assistance from all over the world are a unique opportunity for reconstruction, rebuilding, and investing in the new type of economy.



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