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Empirical analysis of the impact of monetary policy on the labor market in Ukrain during the wartime

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Abstract

The purpose of the study is an in-depth analysis of the impact of monetary policy during the legal regime of martial law on the labor market and the welfare of the population in Ukraine. The article analyzes how the military actions affected the labor force and briefly outlines the central bank's main actions to stabilize the macroeconomic situation in the country, reduce inflationary pressure, and counter the outflow of capital from the country. Based on the available statistical information and expert assessments of the state of the labor market in Ukraine, the effectiveness of monetary mechanisms was analyzed, in particular, the temporary change of the inflation targeting regime to the exchange rate fixation regime. The conducted analysis confirmed that, despite timely changes by the regulator, the effectiveness of the monetary transmission mechanism in war conditions is low, and a high level of uncertainty deters refugees from returning home and encourages them to spend their earned funds in host countries, as evidenced by a slight increase in private transfers due to border despite an unprecedented wave of immigration. Therefore, the priority task of the government should be the development of a strategy of financial incentives for the return of the working population to ensure the post-war reconstruction of Ukraine.

Keywords: monetary policy, economic development, labor market, employment, migration
Jel codes: E58, F24, G28, J21

1. Introduction

The war in Ukraine caused a humanitarian catastrophe, the consequences of which will determine the vector of labor market development for a long time. The war created risks for citizens staying in Ukraine, especially in the front-line regions, and also caused the appearance of barriers to the free movement of production factors, including labor, leading ineffective functioning of existing labor market institutions. Falling production, contraction of the real sector, combined with significant internal displacements and flows of refugees from the country, lead to large-scale losses in the sphere of employment and real incomes of the population. After all, the military actions caused not only a crisis of supply and demand in the labor market, but directly or indirectly affected all areas of the country's economy.

The macroeconomic shock caused by the full-scale invasion led to a number of forced steps on the part of the Government and the National Bank of Ukraine (NBU). In particular, in April 2022, the NBU adopted new framework "Basic principles of monetary and credit policies for the period of martial law" (National Bank of Ukraine, 2022), where approved the change of the monetary regime and monetary policy goals for the period of the legal regime of martial law. The regulator confirmed that in the conditions of instability in Ukraine, the effectiveness of market instruments and monetary policy decreases. That is why the NBU in April 2022 abandoned the regime of inflation targeting with a floating exchange rate, and introduced temporary administrative restrictions on the foreign exchange market. Moreover, in order to ensure the smooth functioning of the state finance system, the NBU approved the possibility of financing the state budget by purchasing securities of the Government of Ukraine on the primary market, effectively "covering" the deficit of budget expenditures with the issue. Evaluating potential inflationary risks, a decrease in the effectiveness of the discount rate as a monetary transmission tool, the threat of monetization of the state budget deficit, the NBU should prioritize only critical government expenditures. Nevertheless, it is likely that, a change in the vector of monetary policy will still lead to structural changes in the development of the labor market and employment spheres.

2. Literature review

Collecting up-to-date statistical information on trends of the labor market in a country where there is an ongoing war, and the number and composition of the workforce is changing, is a challenging task. The State Statistics Service does not currently provide statistics on demography and the dynamics of the main indicators of the labor market. In fact, the only sources of quantitative data for 2022 in the field of employment and migration are mostly reports from international organizations and small statistical surveys from employers and job search services. Nevertheless, in 2022, a thorough study of the quality of life of the population, as well as the consequences of the war on the labor market of Ukraine, was conducted by researchers of the National Academy of Sciences of Ukraine, Institute of Demography and Social Research (Cherenko L.M., 2023.) A group of scientists tried to assess the first socio-economic consequences of the war on the welfare of the population. The analysis of the dynamics of the unemployment rate depending on the economic cycles is also given in the studies of Lukianenko I.H. and Oliskevich M.O. (2020). Features of post-war monetary regulation were studied by Koziuk V.V. and Bublyk E.O. (2022). In his research Bublyk E.O. argues for the need to establish a regime of tighter exchange rate regulation not only during the period of martial law, but also during the period of post-war development. In the opinion of the author, taking into account the stability of the national currency, as an auxiliary goal of the Central Bank's mandate, is necessary in the conditions of increasing volatility of international capital flows. Kozyuk V.V. in turn, considers the possible risks associated with the further restoration of the inflation targeting regime for the NBU and the consequences of the change in monetary policy for the national economy as a whole. In his work, the economist outlines possible mechanisms for adapting the NBU's monetary policy goals for the post-war period in the context of the need to finance infrastructure reconstruction and harmonize Ukraine's monetary policy with European standards and development directions. Among the foreign economists who studied the issue of the interdependence of the unemployment rate and monetary instruments of influence, it is worth mentioning the research of the French macroeconomist Blanchard O. (Blanchard, O., Katz, L.F., 1990) , as well as Mankiv G. (Mankiw G., 2000), who in his work examines the impact of macroeconomic shocks on unemployment and the inflation rate in the short term. Mankiv determined that monetary shocks have a gradual and delayed effect on price stability.

Unsolved parts of the problem: Despite the existence of a sufficient number of studies on the impact of monetary policy on the stability of the labor market, the full-scale invasion and scale of transformations that the Ukrainian economic system has undergone is unprecedented. The war became the most powerful macroeconomic shock during the independence of Ukraine and affected all spheres of citizens' lives. The country's government takes measures to minimize the destructive impact of martial law on the welfare of the population, however, during the period of accumulation of external and internal imbalances, the market's reaction may be unpredictable. Therefore, there is a need for a detailed empirical analysis of the impact of monetary policy on the stability of the labor market of Ukraine under martial law. The **purpose** of the study is an in-depth analysis of the impact of monetary policy during the legal regime of martial law on the labor market and the welfare of the population in Ukraine. To achieve the goal, the primary task is to identify the main trends and challenges faced by the labor market in the conditions of war, as well as to determine the main adaptation reforms in the monetary sphere adopted by the NBU in order to counter the macroeconomic instability caused by the war.

3. The main results of the study

To ensure macroeconomic stability in accordance with the goals of economic growth, central banks implement monetary policy. In order to ensure price stability, the central government influences inflation by regulating the monetary base through interest rates. Lowering rates usually helps to increase inflation. The central bank can also use lower interest rates to stimulate economic growth, which in turn leads to increased real output and, as a result, increased employment. However, the effectiveness of the central bank's policy depends primarily on the adequate functioning of the transmission mechanism. The monetary transmission mechanism is a complex process that includes a number of channels that transmit changes in monetary policy to the real economy. Its main channels include:

- *Interest rate channel*: This channel is one of the most direct ways of transmitting monetary policy. When the central bank changes the key interest rate, it directly affects short-term money market rates. This, in turn, determines the cost of loans for households and companies. Lower interest rates encourage businesses to increase investment and expand operations, which can stimulate job creation. On the other hand, higher interest rates can reduce consumer and investment spending, which can lead to reduced employment;
- *Credit channel (or banking channel)*: A change in the interest rate can affect banks' ability to provide credit. For example, when interest rates are high, loans become more expensive for borrowers and less attractive for banks;
- *Inflation expectations channel*: The central bank can use its communication channels to shape public expectations about future monetary policy and thus influence the behavior of households and companies;
- *Asset channel (or wealth channel):* Changes in monetary policy can affect the prices of assets such as stocks and real estate, thereby changing household wealth. An increase in wealth can in turn contribute to an increase in spending;
- *Exchange rate channel*: For countries with a freely floating exchange rate, changes in monetary policy can affect the exchange rate, which affects the cost of imports and the competitiveness of exports. Decrease cost national currency may do export goods more competitive that helps increase production and employment in export industries economy.

The central bank uses these channels to achieve its main goals: price stability and full employment at the natural level of unemployment. However, during periods of instability, the monetary transmission degrades and the effect of central bank reforms on the real sector weakens.

The war in Ukraine is an unprecedented macroeconomic shock in Europe since World War II. The reaction of the national economy in 2022 to such a scale of destruction is following:

1. Fall in GDP (decrease in real production volumes). According to the estimates of the State Statistics Service, the fall in GDP in 2022 amounted to 29.1% compared to the corresponding period last year;
2. Rising inflation and dollarization of the economy (devaluation of the national currency). The index of consumer prices in Ukraine for 2022 reached 26.6% , and the rate of devaluation of the hryvnia against the US dollar for 2022, even with the exchange rate fixed, was 34%;
3. Rising unemployment. According to the NBU, the unemployment rate at the end of 2022 was 21.1%. (Patskan Y., 2023)

The NBU also reacted to potential threats to the economy by introducing a number of restrictions, in particular, in order to prevent inflation, the regulator set the discount rate at 25% from July 2022, increasing it by 15 points from the pre-war level. Changes have also taken place in the foreign exchange market since the beginning of the war. Despite their anti-market nature, the measures taken by the NBU were able to ensure the stable functioning of the economy and the stability of the banking system in the conditions of a full-scale war.

On the first day of military service invasion, the regulator adopted Resolution No. 18 dated 24.02.2022 (*On the operation of the banking system during the introduction of martial law*, Law of Ukraine), which a number of restrictions were introduced, in particular:

- fixed official exchange rate as of February 24, 2022;
- cash withdrawals are limited;
- issuance of funds in foreign currency is prohibited;
- the operation of the foreign exchange market was stopped, except for the sale of foreign currency;
- prohibited cross-border currency transfers;
- replenishment of electronic wallets with electronic money and distribution of electronic money are suspended.

For deterrence outflow currency from Ukraine, the concept of critical import was introduced. The introduced NBU are temporary norms are not given be able to retell foreign currency abroad for repayment and maintenance Ukrainian borrower enterprises debt obligations to foreign creditors. You can assert that exchange rate fixation was revealed most effective by the decision of the NBU at present realities. After all, despite the installation discount rate at the level of 25% due to the surplus liquidity, which observed in the economy, the mechanism monetary transmission became less effective, and lag from implementation new norms to them effect on the market increased. So, the exchange rate is one of the effective one's elements monetary transmission also affects the country's trade balance. Through the military actions deficit external trade in goods and services increased almost tenfold, to 25.9 billion dollars. compared to USD 2.7 billion. in 2021. And export goods decreased by 35.2%.

Analysis commodity structure of export and import for 2022 and the previous year peaceful year 2021 (see Fig. 1 and Fig. 2) showed that war influenced the biggest export and import industry. The share of exports agricultural products actually increased during the period war " grain agreement" - became the driver of currency of income to Ukraine. In turn fall export inexpensive metals and products also is explained fierce battles in the east countries where they are concentrated the main centers of mining and processing metals _

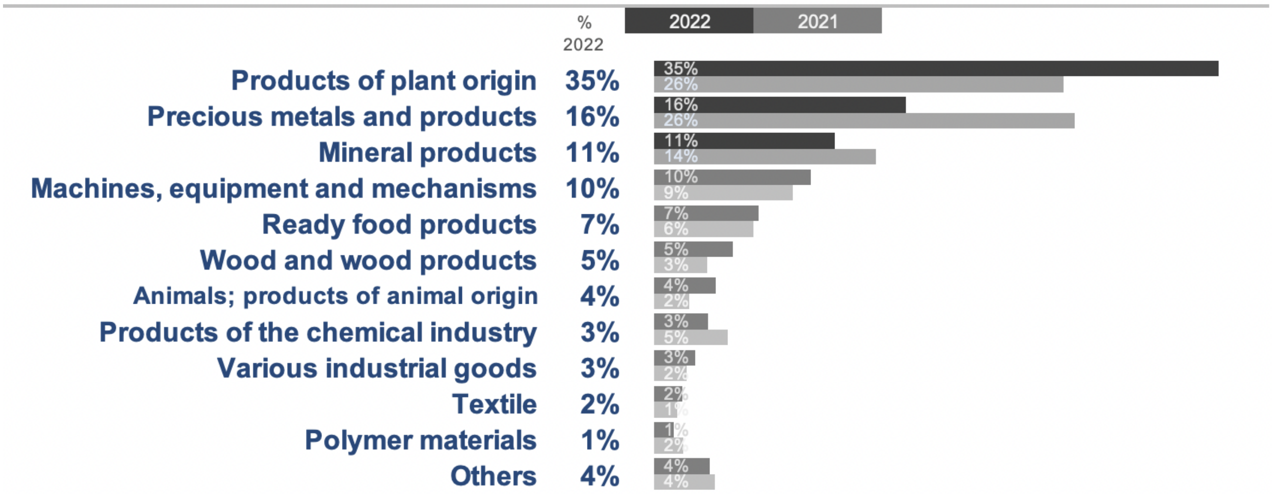

Figure. 1 The share of product groups in total export in 2021 and 2022, %

Source: Compiled by the author based on data State statistics service

In general, the import of goods decreased by 19.4% and amounted to 56.2 billion dollars. USA. However, the 6% increase in the share of mineral imports in total imports, which in particular includes oil and products of its processing, is explained by the increase in fuel needs during the military conflict.

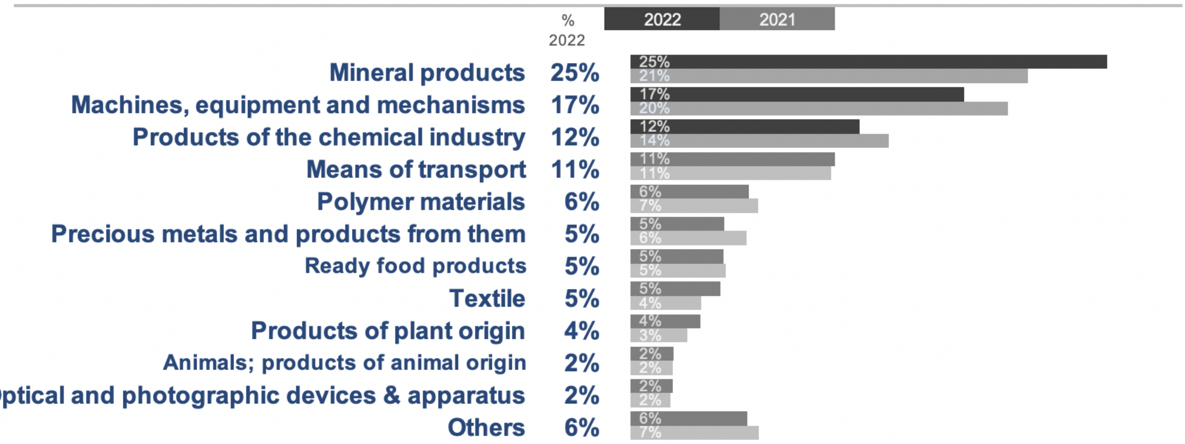

Figure 2. The share of product groups in total import in 2021 and 2022, %

Source: Compiled by the author based on data State statistics service

A full-scale invasion in 2022 was a macroeconomic shock for Ukrainian business. However, thanks to diplomatic work and the regulator's timely decision to fix the hryvnia exchange rate, the export of agricultural products demonstrated stability even in war conditions. In 2022, Ukraine remained among the top five global food exporters.

Application of the fixed exchange rate regime in the conditions of military operations justified itself. The stability of the foreign exchange market reduces the risk for exporters. Under such conditions, exporters can plan their activities without fearing sharp fluctuations in exchange rates. Taking into account the fact that about 17% of the employed work in the field of agriculture (see Fig. 3), which is one of the largest export sectors of the economy, the minimization of currency risks has become one of the priority tasks of the NBU.

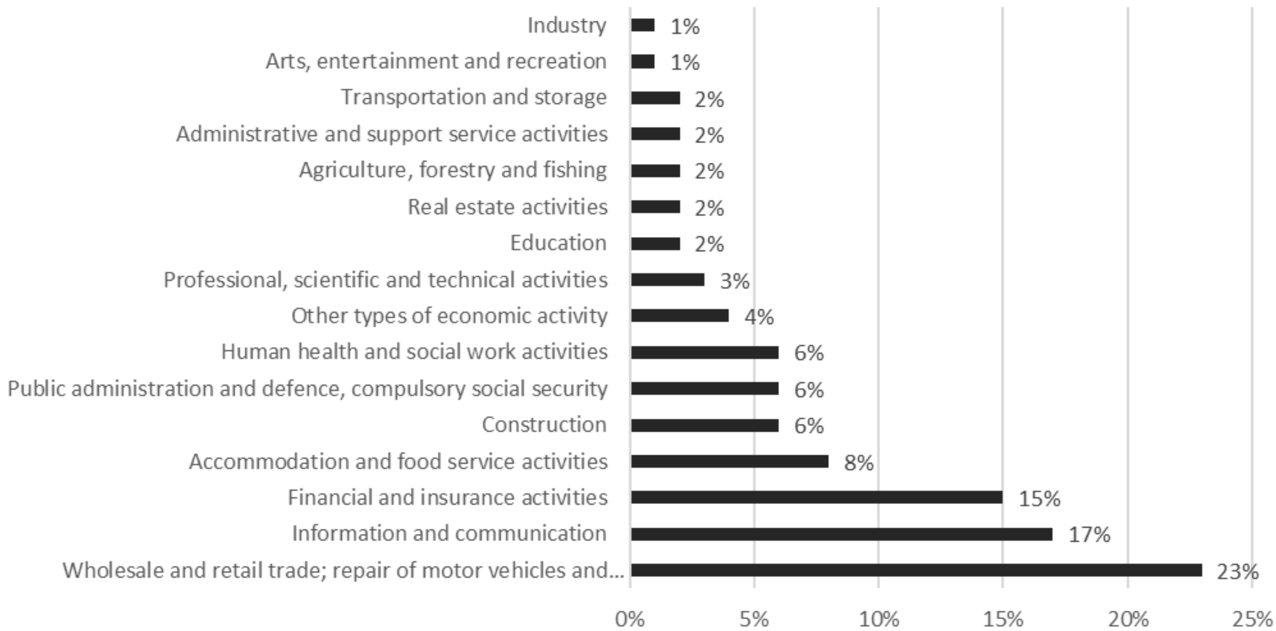

Figure 3. Employment rate by industry economy in 2021, %

Source: Compiled by the author based on data State statistics service

According to NBU forecasts, provided there are no new significant shocks, the recovery of the labor market will continue in 2023–2025 against the background of economic growth and a fairly soft fiscal policy. The unemployment rate will gradually decrease: in 2023 – to 18.3%, in 2024 – to 16.5%, and in 2025 – to 14.7%. However, it will exceed the pre-war level, particularly given the likely persistence of significant qualification and regional disparities in the labor market. Real wages will return to growth, which will however be moderate in 2023 (3.7%) due to still double-digit inflation. After the reduction of security risks and the full opening of borders, a significant part of businesses will have to compete for workers, including with foreign employers, which will be a significant factor for the further growth of wages and the likely reduction of unemployment. (National Bank of Ukraine, 2023)

According to data published in the UN report on displaced persons as of May 2023, about 8.24 million refugees from Ukraine are currently in Europe. Poland and Germany are the largest recipient countries in terms of the number of Ukrainian citizens granted asylum. (UNHCR, 2023) Moreover, according to experts' estimates, the population of Ukraine at the beginning of 2023 is 36.7 million people, which is 15.5 % less than at the end of 2021 before the full-scale invasion. Such a sharp reduction is primarily caused by a high level of emigration, which negatively affects not only the number of economically active population, but also the structure of employment. Even despite significant emigration, according to alternative estimates of experts, the unemployment rate still remains high and reaches about 21.1% as of the end of the second quarter of 2023.

It is important to analyze the dynamics of private income from abroad. According to the statistics of the World Bank, it can be seen that significant emigration did not increase the rate of remittances in 2022 compared to 2021 (see Figure 4). The volume of private remittances increased by only $361 million, which is an increase of 2% compared to the pre-war year.

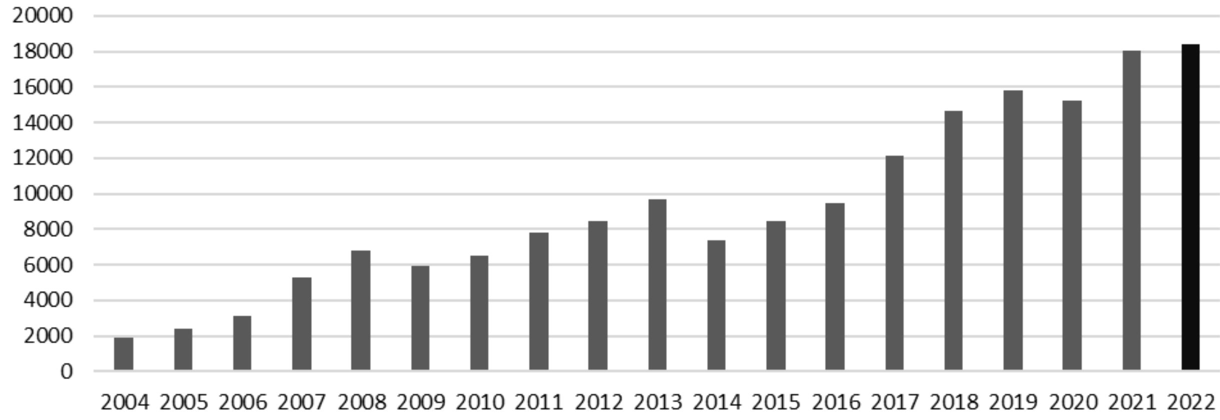

Figure 4. Dynamics of private remittances and payments for wages to Ukraine from abroad from 2004 to 2022, million dollars

Source: Compiled by the author based on data of the World Bank

Conducted in-depth statistical analysis allows do conclusion that _ majority refugees earned money or money received under the program support temporarily displaced persons spend abroad, and massively forced resettlement did not create additional private currency of income to Ukraine. However, according to the NBU, it is clean influx currency to Ukraine is stored thanks to essential volumes international help

Nevertheless, with the high level of uncertainty caused by the war, by the second quarter of 2023, about 6 million refugees, which is more than 1% of the population of the European Union, still remain abroad on a permanent basis, and therefore, even with the condition of working remotely, Ukrainian business costs consumption is carried out in the host country. According to NBU estimates, in 2022 Ukrainian migrants will spend about 22 billion dollars abroad .

The integration of Ukrainian migrants will have an impact on the indicators of the labor market of the recipient countries. Ukraine's geographical and cultural proximity to Europe, the presence of the diaspora, and the status of temporary protection will contribute to increasing the participation of forced migrants in the labor force. In particular, the European Central Bank expects the labor force participation rate of Ukrainian migrants of working age to range from 25% to 55% in the medium term. It is worth noting that according to the UN survey, 70% of Ukrainian refugees have a higher education, that is, they are a qualified workforce. At the same time, the EU labor force will grow by 0.2–0.8%, or by 0.3–1.3 million people. Although migrants create additional challenges for public finances in the short term, the additional costs of healthcare, education and financial support for temporarily displaced persons, if they remain in their host countries for more than a few years and become active participants in the labor market, for these countries the impact on the budget and economic growth will most likely be positive. Of course, the impact on the GDP of the recipient countries will depend on the integration policy, but for example, according to Deloitte's estimates , the integration of Ukrainian refugees into the Polish labor market can give an impetus to the additional growth of Poland's GDP by 0.2–3.5% annually in the first five years. (National Bank of Ukraine, 2022b)

4. Conclusions

During the period of martial law in Ukraine, the labor market faced macroeconomic challenges of an unprecedented scale. The war became a catalyst for the mass exodus of the population: according to estimates, from February 24, between 9 and 14 million citizens left the country. Despite a noticeable decrease in the active labor force, the unemployment rate in Ukraine is still 21.1%, which reflects a significant decrease in production and structural changes in employment as a result of the war. The NBU, as the main regulator, tried to stabilize the economic situation by conducting an active monetary policy from the first days of the full-scale invasion . In particular, this included increasing the discount rate to 25%, fixing the hryvnia exchange rate, and introducing currency restrictions to counter the dollarization of the economy and capital outflow. However, these actions also had undesirable consequences. In particular, in the conditions of a significant emission of funds to finance critical Government expenditures , the economy faced the problem of excess liquidity. This caused a decrease in the effectiveness of the monetary transmission mechanism and reduced the effectiveness and efficiency of the reforms carried out by the NBU. In addition, as long as there remains a significant level of danger of staying in the country and the support of the EU countries for temporarily displaced persons is maintained, a large part of people of working age will be outside the country, mostly women. This, in turn, reduces aggregate consumption in the country, which will negatively affect business recovery and tax revenues. Statistical analysis showed that money earned abroad is mostly spent in host countries, because during the war, the rate of private currency transfers to Ukraine increased by only 2%. In accordance with the development of events at the front, the state should develop a plan for the "return" of refugees, the creation of economic incentives for the workforce, because the outflow of qualified personnel will have a negative impact on Ukraine's post-war reconstruction potential.

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