

ТЕМАТИЧНИЙ НАПРЯМОК 1
НОВІ ВИКЛИКИ ДЛЯ ОФІЦІЙНОЇ СТАТИСТИКИ
В УМОВАХ ВІЙНИ

STATISTICS IN STUDYING THE ECONOMIC
AND SOCIAL CONSEQUENCES
OF RUSSIA'S FULL-SCALE AGGRESSION IN UKRAINE

Mantsurov Igor,

Doctor of Sciences in Economics, Professor
Corresponding Member of the National Academy of Science of Ukraine,
Director of the Research Institute for System Statistical Studies,
Extraordinary Professor of the
Department of Statistics and Demographic Studies of;
the University of the Western Cape in the Republic of South Africa;

Khrapunova Yana,

PhD in Economics,
Leading Researcher
Research Institute for System Statistical Studies,
Researcher of the Department of Statistics and Demographic Studies of;
the University of the Western Cape in the Republic of South Africa;

Stolietova Iryna,

Candidate of Economic Sciences
Associate professor Department of Digital Economy and System Analysis State;
University of Trade and Economics

The subject of the research is the study of global and national economic growth during the war in Ukraine, the analysis of the war economy and the postwar economic development in Ukraine and define the tasks of the official statistics in studying the economic and social consequences of russia's full-scale aggression in Ukraine. The study used general scientific methods, in particular: theoretical generalization; methods of positive and normative analysis and statistical analysis.

Exactly twenty months ago, on February 24, 2022, russian troops invaded the independent and sovereign territory of Ukraine. For every Ukrainian, these 12 months have been an eternity, and fear and tears have haunted even the sunniest of days. But, despite the pessimistic predictions of our allies, the proud and brave people of Ukraine have stood together and are confidently moving towards victory, which will surely come to our homes soon.

According to the World Bank 2022 Executive Summary, after reaching an estimated 5.5 percent in 2021, global growth was expected to slow to 4.1 percent in

2022 and 3.2 percent in 2023. The war in Ukraine is causing an enormous humanitarian crisis. More than 9 million people are estimated to have been displaced and more than 13 million need urgent humanitarian assistance. Ukraine's economy is being devastated

It should be noted that a full-scale war has a huge number of economic, social, and psychological problems. Each of these problems requires in-depth study. *And since all the processes associated with the war occur within the country among the population of Ukraine, and outside the state - in a competitive international environment, all these processes are of a massive nature. What defines them as a collection of units subject to statistical study and use of Big data methodology.*

Thus, the authors set the purpose of outlining the tasks of state statistics in a comprehensive study of the consequences of the war.

Careful measurement of war in the *context of a Big data* set indicates that war is not good for business. In addition to the loss of lives and destruction of physical and human capital ignored by national income accounting, and the mistreatment of the cost of war as a positive value by national income accounting, the tendency is for war to reduce GDP per capita as measured. Countries that suffer from war underperform in terms of production and also underperform in terms of consumption. GDP per capita falls because of lower labor and total factor productivity, presumably due to the destruction of existing physical and human capital, the lack of investment in new physical and human capital, and because of reduced gains from both internal and external trade.

It is obviously that putting aside the very real human cost, war has also serious economic costs – damage to infrastructure, a decline in the working population, inflation, shortages, uncertainty, a rise in debt and disruption to normal economic activity.

Applying this conceptual approach, authors would like to suggest the following analytical scheme (see Figure 1).

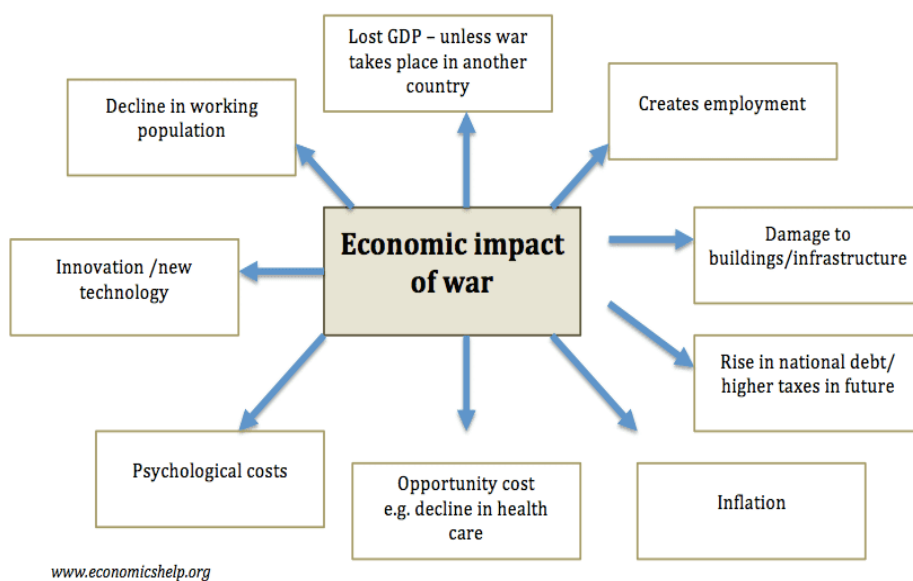


Figure 1.

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1. Statistics of Aggregate Economic Results

The cost of war is largely results on GDP lost, masked by national income accounting, which ignores the loss of lives and the destruction of physical and human capital associated with war. Moreover, resources devoted to war are treated as final goods or services instead of as costs of production. So, the statistics has to study all of the issues mentioned above.

Additionally, it is necessary to note that the war can have a devastating impact on the economic development of countries. Countries experiencing war will see a collapse in tourism, foreign investment and domestic investment. It also can lead to shorter life-expectancy and lost GDP.

While wars are destructive of physical and human capital, the impact of war on GDP per capita is unclear. This ambiguity is fundamentally due to the way national income accounting deals with killing people and destroying things during war. Producing weapons and munitions is counted positively, while killing people and destroying things is not counted at all.

On the one hand, war can increase GDP per capita by reducing unemployment and by shifting people from family formation and other nonmarket activities into wartime production.

On the other hand, even with the failure to account for the destruction of physical and human capital or the loss of nonmarket activity, war can lower GDP per capita by reducing labor and total factor productivity through the destruction of existing physical and human capital and by reducing investment in new physical and human capital. War can also reduce GDP per capita by reducing gains from both domestic and foreign trade.

Conceptually, the total cost of war includes three parts: (1) the opportunity cost of the resources used to prosecute war, (2) the loss of lives and destruction of physical and human capital during the war, and (3) the reduction of GDP per capita as measured during and following the war.

2. Statistics of War and Inflation

In many circumstances, war can lead to inflation – which leads to loss of people's savings, rise in uncertainty and loss of confidence in the financial system. For example, in the US civil war, the Confederacy struggled financially to meet the cost of the war. Therefore, they started printing money to pay soldiers' salaries. But, as they printed money, the value of money soon declined. High inflation hits middle-income savers the most as they see the value of their savings wiped out.

During the Second World War, the United States saw a rise in inflation because the economy was running close to full capacity, the high levels of government spending and shortage of workers saw inflationary pressures. During war, the economy can also experience cost-push inflation due to shortages of goods and services and rising price of raw materials like oil.

If a country is devastated by war and the capacity to produce goods is sharply reduced, it can create the circumstances of hyperinflation as governments desperately print money to try and deal with the lack of goods. For example, with a devastated economy, in 1946, Hungary and Austria experienced the highest rates of hyperinflation on record.

3. Statistics of the Financial Cost of War

Although war can provide a temporary boost to domestic demand, it is important to bear in mind the cost of war. In particular the opportunity cost of military spending, the human cost of lost lives, the cost of rebuilding after the devastation of war. Also, it depends on the kind of war, how prolonged it was, where and how it is fought. For example, the US fought wars – WWII, Korean War, Vietnam War and it appeared that these wars led to a boost in domestic demand and some manufacturing companies did very well. However, we shouldn't forget that these wars occurred on territories outside the US. The real devastation took place in Asia and Europe.

4. War and National debt Statistics

During war we often see a rapid rise in public sector debt. The government is willing to borrow a lot more than usual because – there is patriotic support for the war effort. UK national debt, for instance, rose to 150% at the end of World War Two – but then rose to 240% by the early 1950s.

The UK relied on loans from the US during the Second World War and took many decades to pay them off.

For the US, which was not involved for the first two years, the rise in national debt was not as pronounced. The US profited from selling arms and equipment to the UK during the early years (though on generous lend-lease terms).

5. War and Oil Prices Statistics

War can often lead to higher prices of oil because major conflict can threaten supplies. For example, the Gulf war of 1990 led to rising oil prices. Prices rose from \$21 a barrel in July to a post-invasion peak of \$46 in mid-October.

The 2022 Russian invasion of Ukraine led to a rise in the price of oil and gas, and this will lead to higher global prices for fuel. As Russia is a major supplier of oil and gas, economic sanctions on Russia in response to the invasion will reduce supply and put upward pressure on gas prices.

6. Statistics of Sanctions

In response to Russia's invasion of Ukraine and subsequent actions, a number of countries have imposed escalating financial, trade, and other sanctions. *The impact of these sanctions also is the subject for statistical study.*

6.1 Financial Sanctions. The United States, the European Union (EU), and other countries have imposed blocking sanctions on the Central Bank of the Russian Federation (CBR). These prevent the Russian authorities from accessing foreign exchange reserves in the custody of institutions in sanctioning countries, or the liquidation of which would require access to financial systems in sanctioning countries. This amounts to freezing about half of Russia's foreign exchange reserves.

6.2 Trade Sanctions. The United States, the EU, and other countries have enacted a growing list of export bans, import restrictions, and other trade sanctions on Russia. Restrictions on exports to Russia have focused on “dual-use” technologies, including semiconductors, goods and services related to aviation, aerospace and oil and gas production, and luxury goods. Measures to curtail imports from Russia include plans to reduce energy purchases, alongside a wide array of tariffs, import bans and restrictions on other Russian goods and services.

6.3 Other Sanctions. A large number of assets freezes and travel bans have been introduced targeting the personal wealth and activities of specific Russian officials, politicians, and businesspeople. In addition, more than 150 multinational companies have announced complete withdrawals from Russia, while a further 250-plus have suspended operations or new investments. Entities and persons in Belarus associated with Russia's invasion, including financial institutions and defense and security sector companies, are subject to various travel bans, asset freezes and export bans.

7. Statistics of Humanitarian Needs and Assistance

The war has caused an enormous humanitarian crisis in Ukraine.

7.1. Overall Destructions Statistics. Urban centers in many parts of the country have been badly damaged, maritime, road and rail transit have been severely disrupted, and vital economic and social service infrastructure including power generation, digital infrastructure, bridges, and ports has been destroyed or rendered unusable. As of the end of March, nearly 6 million Ukrainians had little or no access to safe water.

7.2. Statistics of Population Displacement. About 12 million people are estimated to have been displaced as of mid-April. About 9 million are classified as international refugees and a similar number of people—especially the elderly and infirm—urgently require humanitarian assistance inside the country.

7.3. Statistics of Human Capital Loses. The war is also substantially eroding human capital. It is likely to have a particularly acute impact on children by increasing malnutrition and stunting, reducing years of schooling, and worsening labor market outcomes.

8. Psychological Costs Statistics

It is necessary to estimate statistically economic costs of war. However, it is harder to estimate the psychological costs of war – the pain of death, suffering, fear and disability. A conflict can leave soldiers and civilians traumatized for the rest of their lives. In recent years, post-traumatic stress syndrome is more widely accepted, but putting a cost on how war negatively affects those involved, is difficult to do.

It is also necessary to note that ongoing war and increased availability of weapons can lead to increase in rates of armed violence and organized crime. The decline in health services and education are likely to be even greater.

9. Possible Unemployment Statistics

There is the danger that returning soldiers may struggle to find employment. So, another task to statistics is to study the number and structure of the protentional unemployment people.

10. Economic Benefits of Wars

War can appear to have potential economic benefits. Though as already stated all these could be achieved without war.

- Full employment
- Higher economic growth
- Increased rate of innovation as the government invests in new technology, e.g. development of radar/jet engine in the Second World War could be used for peaceful purposes.

- Change in social attitudes. For example, women entering labor market after First World war.

In the 1930s, J.M. Keynes advocated government borrowing and government spending to reduce the mass unemployment of the great depression. However, it was only the onset of the Second World War, where there was the political impetus to pursue sufficient spending. In both UK and US, the economy soon reached full employment – often with shortages in key areas as men joined the army.

Taking this into consideration, it is necessary to note that the state statistical system also has to consider these issues as its own very important task.

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