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Development of countries under sanctions: Iran and Russia

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ABSTRACT

Relevance. The modern world economy is going through a period of ‘sanctions wars’ between countries waged openly or covertly through international institutions, with Russia and Iran serving as vivid examples of the first and second cases, respectively. In this connection, it is increasingly useful to analyze the economic development of countries under sanctions in order to gain new insights into how countries function in this changing reality.

Research objective. The study aims to comparatively examine the macroeconomic development of Iran and Russia during the sanctions period through a comparative and statistical dynamics analysis of the main macro indicators, including the growth rate and value of base-period GDP, consumption expenditures, gross capital formation, export, import, etc. In theoretical terms, the description of sanctions as an instrument for harming economic development is chosen as a secondary aim in this work.

Data and methods. The study is based on the methodology of international comparisons and an analysis of statistical data that can be used to assess the impact of various sanctions on economic development.

Results. The uncertain impact of sanctions on economic development is confirmed. The analysis of empirical data collected over a twenty-year period, reveals no clear connection between the dynamics of indicators and the imposition of sanctions (both for Iran and Russia), which is confirmed by an empirical analysis of available time series. Although in some industrial areas, difficulties were observed. In addition, with the imposition of more stringent sanctions in 2012, the Iranian economy experienced a significant decline, followed by its recovery during the adaptation period.

Conclusions. A counter-sanctions policy requires the integrative cooperation of targeted countries, which opens up new frontiers of collaboration between Iran and Russia. New forms of international labor division should be created to eliminate the possibility of some countries using sanctions as an instrument against others.

KEYWORDS

trade war, Iran, Russia, economic sanctions, losses, anti-sanctions policy, economic development under sanctions

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Развитие стран под санкциями: Иран и Россия

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АННОТАЦИЯ

Актуальность. Развитие современной мировой экономики переживает этап «санкционных войн» между государствами, которые ведутся открыто, либо под прикрытием международных институтов. Россия является ярким примером первого случая, Иран – второго. В связи с этим, высока полезность анализа экономического развития стран, подвергнутых санкциям, поскольку он даёт новые факты функционирования стран в изменяющейся реальности.

Цель исследования. Исследование направлено на сопоставительное выявление результатов макроэкономического развития Ирана и России в период санкций, посредством сравнительного и статистического анализа динамики основных макроиндикаторов. К ним были отнесены: темп роста, величина ВВП в базовом периоде, расходы на потребление, валовое накопление, экспорт и импорт и др. В теоретическом плане в качестве вспомо-

КЛЮЧЕВЫЕ СЛОВА

торговая война, Иран, Россия, экономические санкции, ущерб, антисанкционная политика, экономическое развитие в условиях санкций

гательной цели данной работы выступало описание санкций как инструмента нанесения ущерба экономическому развитию.

Данные и методы. В основе исследования заложена методология международных сопоставлений и анализ статистических данных, которые могут использоваться для оценки влияния различных санкций на экономическое развитие.

Результаты. Подтверждается неоднозначное влияние санкций на экономическое развитие. На анализе эмпирических данных за двадцатилетний период отсутствует точная связь динамики показателей и вводом санкций – и для Ирана, и для России, что подтверждает эмпирический анализ имеющихся рядов динамики. Хотя по некоторым отраслевым направлениям, конечно, трудности наблюдались. Кроме того, Иранская экономика после усиления санкций в 2012 году испытывал существенный спад, но далее в ходе адаптации восстанавливалась.

Выводы. Ответная санкциям политика требует интеграционного взаимодействия государств подвергнутых давлению, что открывает новые рубежи сотрудничества между Ираном и Россией. Новые формы международного разделения труда нужно создавать так, чтобы они исключали возможность применения инструмента в виде санкций одних государств в отношении других.

ДЛЯ ЦИТИРОВАНИЯ

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Национальное “развитие” : Иран и Россия

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Аннотация

Актуальность: Современное развитие мировой экономики проходит через этап “развития”, эта война или открытая, или скрытая в международных отношениях. Россия является типичным представителем, а Иран – типичным представителем. В этой ситуации, для оценки влияния санкций на экономическое развитие стран, находящихся под санкциями, необходимо проводить анализ. Это очень важно, так как оно предоставляет примеры изменений в реальной жизни стран, находящихся под санкциями.

Цели исследования: Целью исследования является анализ динамики макроэкономических показателей стран, находящихся под санкциями, и сравнение их с динамикой стран, не находящихся под санкциями. Включены: темпы роста, базисный ВВП, расходы на потребление, общие сбережения, экспорт и импорт. Целью исследования является описание санкций как инструмента, влияющего на экономическое развитие.

Данные и методы: Исследование основано на международном сравнении и статистическом анализе данных, которые могут использоваться для оценки влияния санкций на экономическое развитие.

Результаты: Подтверждается неоднозначное влияние санкций на экономическое развитие. Анализ эмпирических данных за двадцатилетний период не выявляет четкой связи динамики показателей и вводом санкций – и для Ирана, и для России, что подтверждает эмпирический анализ имеющихся рядов динамики. Хотя по некоторым отраслевым направлениям, конечно, трудности наблюдались. Кроме того, Иранская экономика после усиления санкций в 2012 году испытывала существенный спад, но далее в ходе адаптации восстанавливалась.

Выводы: Ответная санкциям политика требует интеграционного взаимодействия государств, подвергнутых давлению, что открывает новые возможности сотрудничества между Ираном и Россией. Новые формы международного разделения труда необходимо создавать так, чтобы они исключали возможность применения инструмента в виде санкций одних государств в отношении других.

Ключевые слова

торговая война, Иран, Россия, экономические санкции, ущерб, политика санкций, развитие экономики под санкциями

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Introduction

In our highly interdependent world, it is common for countries to be restricted in terms of their long-term development through sanctions while growing economically (Abalkin, 1994). Thus, they are forced to pursue their economic development targets under severe restrictions not constraining other countries. This fact adds specificity to the current global market and ongoing market competition.

Sanctions are not explicitly considered in the well-known theories of international exchange and trade sanctions as an instrument for affecting international trade. Therefore, it seems reasonable to accumulate facts about the impact of sanctions on economic development, as well as the main indicators, in order to develop and clarify certain points of the international trade theory. We believe that this can also lead to changes in the theory of the international division of labor and comparative advantages.

Countries that resort to sanctions justify their actions on the grounds that they undermine the development of sanctions-targeted countries, which could otherwise yield greater results. However, the aspect of independent and sovereign development is not considered, as well as the fact that dependent development may not be of value to the peoples of these countries. The governments of targeted countries often do not share such views of excessive losses. Moreover, it is usually claimed that new development paths and forms have been found, which produce better results while maintaining independence and self-sufficiency in terms of development.

Thus, a model of ‘development under sanctions’ is emerging (Glazyev, 2015). Some of these countries have an extensive experience of such development, including Iran, whose development has been affected by various sanctions for over four decades. The experience of Russia in countering sanctions is not as vast, with the most severe measures taken only in 2022. Thus, it is of analytical relevance to comparatively analyze the economic development of a country subjected to different sanctions at various points in time, in terms of assessing the effectiveness of sanctions and developing an adequate anti-sanctions policy, which translates into success and a different development path of a sanctions-targeted country.

The 2022 Russia-Ukraine conflict (i.e., a special military operation) changed the risks in the development of the world economy by adding to the uncertainty of the sanctions war and repeatedly creating costs for those who impose sanctions without thinking about the systemic consequences (Qureshi et al., 2022). As a result, the initiators of sanctions may suffer greater losses than the country subjected to sanctions. The promotion of cooperation between countries developing under sanctions can have an integral positive impact by eliminating the negative effect caused by them.

When multiple sanctions are imposed on various economic activity areas, it can be difficult to assess their cumulative impact. Moreover, the targeted country begins to counteract sanctions at all levels. Therefore, we believe that the estimation of losses, which serves as the main method in such studies, should involve a selective impact assessment of a sanction targeting a specific facility, whose operation it affects directly. Obviously, indirect forms of influence that cannot always be taken into account also exist. Of note is that they may arise some time after the imposition of sanctions.

When estimates for a sector or a facility are obtained, they can be summed up to determine the total level of losses at a given time interval. The violation of certain contracts, especially strategic projects (e.g., shutdown of the Nord Stream), incurs a certain amount of losses. However, the search for other customers and the shipment of goods to other areas of sale and use provide benefits and income compensating for sanctions-induced losses. The specified method for estimating benefits and losses arising from sanctions is very convenient, as it allows losses for a specific sanctions measure to be determined. This factor specifies the estimation of sanctions-induced losses and the benefits of policies used to counter them, as opposed to the method for assessing the overall impact according to the dynamics of aggregates, such as exports and imports. The latter are affected by different influencing factors, whose effect it is not always possible to determine as it is combined with that of sanctions. This factor may significantly undermine the method for assessing losses and the impact of sanctions. However, it is possible to determine the impact of the sanctions policy over the entire time interval of its application according to the dynamics of macroeconomic aggregates. If it is downward across the entire period in which sanctions are considered and in effect, it seems safe to conclude that the anti-sanctions policy fails to work well, while sanctions generally succeed in hindering the development of the country.

Thus, the paper aims to comparatively assess the overall economic development of Russia and Iran as the two most sanctions-targeted countries. In addition, it is important to focus on the general theoretical description of sanctions wars determining the modern economic development. The research methodology is based on the theory of international exchange and institutional changes, as well as a set of methods (macroeconomic, comparative, and statistical analysis). In order to accomplish the specified aim, it is necessary to achieve the following objectives:

- to consider the general patterns of sanctions impact on economic development, as well as the possibility of estimating economic losses incurred by them, including a review of current sources regarding sanctions;
- to assess the economic development of Iran and Russia under sanctions, summarizing the ef-

fect of sanctions on them in 2000–2021 for Iran and 2014–2022 for Russia.

We will address these objectives one by one while reviewing current literature on the issue of sanctions against Iran and Russia.

Theory and methodology of research: features of the sanctions policy and losses

Although numerous studies are available on the impact of sanctions imposed on certain development aspects, they are highly contradictory, inaccurate, and sometimes biased by the initial assumptions preceding the problem statement.

Numerous works focus on the sanctions against Iran, noting a slower adaptation rate of Iranian firms to such measures in 2001–2018 according to the Tehran Stock Exchange (Aflatooni et al., 2022). In this case, the assessment of the impact strength of sanctions and the adaptation of firms, as well as the process of choosing alternatives, is very conditional and by no means flawless. Several studies are available on the sectoral impact of sanctions, i.e., employment and the functioning of certain sectors, healthcare (Aloosh et al., 2019), energy industry, oil-and-gas and petrochemical sectors (Bonyani & Alimohammadlou, 2018; Dudlák, 2018), banking system (Bolgorian & Mayeli, 2019), etc. One of these studies argues that sanctions, specifically those imposed in 2012, led to a 16.4% employment growth rate decline in the manufacturing sectors of the Iranian economy (Kelishomi & Nisticò, 2022). However, this effect is observed only in sectors using imported resources and manifested in labor-intensive industries. As noted, the financial sanctions imposed on Iran resulted in the reduced leverage of firms while providing them with more funds to manage emerging risks, which can be considered as a natural primary reaction to the imposed sanctions (Ghasseminejad & Jahan-Parvar, 2021). In May 2018, the most stringent sanctions were imposed on Iran, which were initiated and implemented by the United States. However, with the advent of the Covid-19 pandemic, the impact of sanctions on Iran (including financial) becomes uncertain. Nevertheless, the studies recognize the following adverse aspect: due to the sanctions, the impact of the COVID-19 pandemic is exacerbated for Iran (Murphy et al., 2020). Studies using wavelet coherency analysis attempted to reveal the effect accumulating in 2014–2020 (Samadi et al., 2021). The year 2012 was hardest for Iran, with the country's GDP decreasing by 11.8% as compared to

2011, inflation exceeding 35%, and the exchange rate plunged by almost 200%. However, in the years that followed, GDP continued to grow. It is noted that economic losses were observed during the period of the most stringent sanctions (Takian et al., 2020), which, however, does not mean that the sanctions constitute the only reason for these losses. Clearly, when the UN Security Council authorizes sanctions restricting medicine, including for Iranian children, it becomes a threat, rather than a peaceful body. Thus, its very activities destroy international relations. It is correctly noted in the specified work that crimes against children can be considered as war crimes authorized by the main UN body. This fact perfectly confirms the aggressiveness of the sanctions policy, as well as the inability to seek peaceful and mutually beneficial economic and political solutions in the modern world. We also believe that it indicates a complete crisis of the UN as an organization declaring noble goals in accordance with its Charter. However, it is impossible to agree with the requests for sanctions relief, as it is fair to raise the question of their complete abolition as a method of modern discrimination and military-economic aggression. Since the covid pandemic could have been of man-made origin according to available data, the proposals to relieve sanctions during the pandemic seem completely unjustified. Here, a different statement of the question regarding the neutralization of such instruments is required, as well as the development of a modern world order founded on the principles of lower dependence, which should lead to a revision of the classical models of world trade. The modeling used in the works under consideration proves little, as it does not take into account a significant range of influencing factors, covering only some, often local aspects and manifestations of a systemic problem. That is also the reason why we will not resort to such methods and approaches in this study.

It is not necessary to absolutize the ongoing research on the impact of sanctions on the Russian economy. They are also not always valid, raising more questions than providing answers in terms of an accurate assessment of the impact of sanctions on the development of the Russian economy. It should be noted that the impact of the most stringent sanctions placed in 2022 is still uncertain, as little time has passed since their imposition (March–April 2022), i.e., they have been in effect for one quarter. Although some of them are related to the freezing of the country's foreign ex-

change reserves, they can essentially be interpreted as an act of military and economic aggression against Russia, leading to corresponding retaliatory measures, including military in nature. This fact demonstrates the severity and ill-considered nature of sanctions against such a global player as Russia, which significantly distinguishes it from Iran. Differences are observed in scientific-technical, resource, and economic potential, in international capabilities, as well as in terms of military technologies. After foreign exchange reserves and the banking system, sanctions were imposed on exports from Russia and imports. Russia responded with counter-sanctions.

However, studies using the gravity model of trade (Nguyen & Do, 2021) yield conclusions that do not quite reflect the reality. As will be shown below, the share of exports in the Russian GDP increased in 2014–2015, 2018, and 2021, while steadily decreasing, as did the share of imports from 2000 to 2013–2014, i.e., prior to the imposition of all the sanctions. Therefore, serious doubts arise as to the accuracy of the estimates presented in the cited study arguing that the cost of exports and imports decreased specifically due to the sanctions, while GDP increased in 2021 and the share of exports in GDP rose as well, as in 2018. Meanwhile, the share of imports showed no significant increase, thus ensuring that the net exports of Russia continued to rise, as well as remaining positive. Since sanctions are imposed sporadically in so-called packages having a post-impact period and the inertia of influence, the fact that the impact of sanctions is not evenly distributed does not require confirmation. The decline in imports of agricultural products and other types of imports is seen as a negative impact on Russia; however, this factor allows the problem of import substitution to be solved by developing domestic production, specifically, agricultural and other activities (Nguyen & Do, 2021). This factor, as well as other important aspects, is completely neglected in the specified study.

For example, the decline in oil exports does not translate into losses for the country as the price of oil on the world market rises, while with an inelastic demand curve for hydrocarbons (including gas), the total revenue from sales increases rather than decreases. In this connection, net exports rise, allowing the country to benefit from the imposed sanctions and changes in world markets. The counter-sanctions of Russia have protected the domestic food market via import substitution

since 2015, which can be considered as an overall positive result of the sanctions policy for this country (Hinz & Monastirenko, 2022). However, the increase in commodity prices and the associated 1.84% decline in the welfare of Russia is also conditionally estimated. Such studies cannot distinguish between the impact of sanctions and the errors in the economic counter policy, as well as take into account the effects of import substitution and the inherent generation of additional costs due to the initial inefficiency of economic structures.

It can be concluded that the application of the conventional gravity model of trade (or the equilibrium Ricardian model of trade) does not necessarily help to avoid incorrect conclusions and conditional estimates, whose validity requires an additional justification. As a rule, they tend to be largely inconsistent with the actual facts and data. Therefore, foreign studies should be subjected to critical reflection and analysis rather than absolutized. After all, under the import substitution policy, welfare does not include independence and development of domestic production.

This fact necessitates an analysis of specific basic indicators characterizing the macroeconomic development of Iran and Russia under sanctions to obtain more or less accurate assessments of this impact that meet the realities. In this case, it is pointless to discuss alternative development scenarios, as the global situation cannot be changed. We believe that empirical studies are more useful than modeling under the conditions of severe institutional and organizational transformations of the global system (Korkmaz, 2022). They provide a systematic insight into an equally systemic relationship of multiple parameters, both over short and longer periods of time. It is such comparisons that help in assessing the overall effect of sanctions on economic development.

Sanctions are intended to have an impact on the economic development of the targeted country with the common goal of forcing it to do what the government or the international ruling conglomerate needs. Therefore, sanctions have a threefold effect:

- 1) to harm economic development, including as a form of punishment;
- 2) to pressure countries into changing their decisions and adopting positions favored by foreign agents;
- 3) to constrict development opportunities, thus inciting public discontent with the government.

In this connection, analytical efforts can be focused on estimating losses arising from sanctions, as well as the benefits of a counter-sanctions policy. Thus, the procedure for assessing the impact of sanctions and making decisions that are useful in terms of eliminating the impact of sanctions is important. Sanctions can slow down economic growth or cause a recession; in this case, government measures are needed to counteract these phenomena and support economic growth, including through structural changes in the national economy (Sukharev & Voronchikhina, 2019, 2021).

Sanctions can be imposed on financial markets, the banking system, various industries and individual projects or companies, the transfer of technology and investment, as well as export-import operations. They constitute restrictive rules or some kind of prohibitive norm imposed by a particular country against another country, its companies, citizens, political leaders, etc. This norm takes on the form of legal enforcement if it is imposed by UN institutions, specifically, the Security Council.

Economic sanctions are primarily aimed at increasing economic costs, curtailing certain activities, and constraining the implementation possibilities (e.g., Iranian nuclear project). The deterioration of general development conditions usually leads to discontent and a change in the national leadership, which is also the purpose of imposing sanctions. However, no one pays any attention to the plight of the population, as well as not considering sanctions as the most undemocratic instrument that contradicts all organizational forms of a competitive economy. It goes without saying that sanctions can be used as a way of punishing the government of a country, including individual firms and corporations.

Thus, sanctions provide a means of applying non-military pressure on a country by other participants in the world market using the method of “false competition”, as sanctions represent such a method resulting from the asymmetry of power in the world market.

However, the effectiveness of sanctions is not as certain as their aims. A country may experience difficulties with economic development prior to sanctions, which may or may not have an impact on its development. Moreover, they can aid in solving certain development problems unresolved prior to sanctions. For example, the restriction of food imports encourages domestic producers to

provide the country with food. This is exactly what happened in Russia since 2014, with the improvement of all food security indicators due to a significant reduction in the share of food imports for a wide range of goods. While the loss of exports under certain conditions can be disruptive, the losses of imports, in the case where a country has resources to develop its production, can help to implement import substitution, specifically when the government sets such a task. Therefore, the blockade of such imports cannot harm the country in any way. With a nationally oriented leadership, the deprivation of technology will encourage the country to search for new technological solutions, instead of going along with those who impose sanctions on the country. Under a corresponding policy, the population perceives the situation as an open trade war against their country, which does not help to relieve international tensions and find a genuine solution to the problem.

If a general assessment of the sanctions-induced impact can be made on the basis of macro-economic aggregates, the losses assessment cannot be assessed using the same parameters. Losses are typically tied to a facility, a company, or a sector of the economy. In particular, the question is how to calculate the loss of profit due to the imposition of sanctions. It would be incorrect to compare profits prior to and following sanctions, as before sanctions, this profit is earned without sanctions, whereas following sanctions imposition, it is already determined by them, i.e., different conditions and factors are in effect as compared to the pre-sanctions situation. The difference between these types of profit does not amount to damage or losses. In this case, it is necessary to assess the profits as if sanctions had not been imposed. However, since it is not clear whether the relevant factors would have changed or not, such an estimation is already hypothetical and it is no longer possible to determine the exact change in this case. The pre-sanctions strategies and models of firms prior to the sanctions were different, as were the market shares that they controlled.

For example, direct foreign investment may decline with an increase in recessionary processes in the global system rather than with the imposition of sanctions. The general global situation can weaken the effect of sanctions if they provoke a global crisis. In this context, it is even more difficult to assess the impact of sanctions.

Of note is that economic sanctions are used as an instrument of discrimination against econo-

mic development. The types, scale, and duration of sanctions are not determined by any international laws, while trade discrimination is condemned by such institutions as the World Trade Organization (WTO). Therefore, they can clearly be considered an unfriendly act.

Since losses arising during the sanctions are of high importance, it is necessary to theoretically assess these losses.

Two types of losses can be distinguished:

- the expected losses (used to justify the imposition of sanctions) that should be assessed prior to the imposition of sanctions;
- actual losses estimated post factum.

The actual losses may be lower than the expected losses, or they may be reduced under the anti-sanctions policy of the country. Otherwise, they may be higher than expected losses, thus providing additional justification for the imposition of sanctions. The procedure for assessing the specified types of losses was developed on the example of the “covid crisis” (Sukharev, 2020); however, it is fully applicable to assessing the consequences of sanctions.

Sanctions have an impact over time, with the packages of sanctions accumulating their effect on the country that adapts to them. Quite naturally, the “switch effect” can be observed when resources are allocated from non-effective to more productive activities or opportunities are sought to develop this type of activity using new resources coming from other suppliers (parallel import). Such solutions were implemented by Iran, as well as modern Russia in 2014–2022, specifically in 2022.

Sanctions reveal an interconnected effect leading to trade wars. The underlying reason for sanctions is a strong mutual interdependence, shifted more in one direction than the other, thus creating an impulse under otherwise equal conditions. Therefore, a certain degree of autarky leaves no room for a fierce sanctions battle. However, the global nature and the expansion of world trade with emerging asymmetries form the basis for the emergence of a pressure regime in the form of sanctions.

Sanctions imposed by the UN Security Council are considered legitimate. However, even in this case, sanctions resulting from the asymmetry of the international law unequally established and observed become a part of the “international law” regime, as well as its continuation, and serve a coercive purpose.

The imposition of sanctions may change the dynamics of macroeconomic indicators while the domestic policy can strengthen the effect of sanctions, provided such a policy is erroneous, or weaken and neutralize it if the appropriate policy is adopted. In order to reasonably develop measures to counter sanctions, it is necessary to have a clear understanding of the composition, content, and application scope of sanctions, as well as the introduction of additional sanctions, i.e., their dynamic change, including their increased scope. The assessment of losses is also gaining importance.

The method for assessing the impact of sanctions according to basic macroeconomic indicators using it further in a comparative analysis on the example of Iran and Russia.

Method and data

This study uses a method for assessing the dynamics of general macroeconomic indicators, enabling a comparison of the impact arising from sanctions imposed on Iran and Russia, which were subjected to various sanctions at different points in time (Iran for over forty years; Russia for about eight years). Moreover, the sanctions pressure imposed on Russia dramatically increased in 2022. Since sanctions targeted the foreign exchange and financial markets, exports, imports, the work of foreign firms and owners in Russia, industrial sectors of the economy, political figures, etc., it had a systemic impact on Russia. In order to achieve the aim of the study, we will compare the basic macroeconomic indicators for Iran and Russia. Then, the chronology of sanctions imposed on each country will be evaluated to draw conclusions about the relative success or failure of anti-sanctions measures, relying on the dynamics analysis of the specified macroeconomic indicators.

The following methods are used: construction of data series in uniform prices, comparative dynamics analysis of identical indicators, as well as the chronology method, which allows the introduction of sanctions to be tracked by dates in each period under consideration. The data of the World Bank, the Russian Council for International Affairs, the Bloomberg agency, as well as literary sources, are used.

The general methodology of this study includes the following steps.

Step 1. Form a time series of the main macroeconomic indicators for Iran and Russia.

Step 2. Evaluate changes in the selected indicators.

Step 3. Compile the main sanctions imposed on Iran in 2000–2021 and on Russia in 2014–2022, specifically in 2022, which is unprecedented in terms of the number of imposed sanctions (seven packages of sanctions).

Step 4. Draw conclusions as to the dynamics of the relevant macroeconomic indicators of the countries (to conduct a comparative analysis of the two countries).

Step 5. Draw conclusions about the effectiveness of sanctions, as well as anti-sanctions solutions, which are expressed in the macroeconomic dynamics of the selected key indicators.

Sanctions can generally be aimed at worsening the general parameters of economic development, as well as harming a particular industry or sphere of economic activity in a given country. This is expressed in the dynamics of relevant socio-economic indicators. Such important parameters used to ascertain the impact of sanctions include:

- gross value added of the country;
- GDP per capita growth rate;
- inflation and unemployment;
- exports and imports (share in GDP);
- gross capital formation;
- machinery and transport equipment (% of value added in the manufacturing industry).

A negative change in these basic indicators can be confirmed by the impact of sanctions provided it occurs following their placement at some interval. Although government policy can eliminate this kind of influence.

Of note is that the selected macroeconomic indicators are basic, characterizing the creation of a product, investment, growth rate, international economic activity, as well as the state of machinery

and transport as the basic means of production in the country. Since numerous studies on this subject exist, we did not attempt to estimate financial indicators (Ankudinov et al., 2017; Bagheri & Akbarpour, 2016; Besedeš et al., 2021; Dreger et al., 2016; Gharehgozli, 2017; Gurvich & Prilepskiy, 2015; Hoshdar et al., 2017; Klomp, 2020; Tuzova & Qayum, 2016; Umar et al., 2022). In addition, the basic indicators will change their dynamics if the financial support of economic development decreases significantly.

Results

Here we will examine the main results, providing a section on the comparative analysis of dynamics and a section on the analysis of sanctions against Iran and Russia.

The study is conducted according to the specified algorithm of its implementation, with the aim of achieving the set objectives.

Comparative macroeconomic analysis of dynamics during the period of sanctions against Iran and Russia

Let us analyze the macroeconomic dynamics of Russia and Iran according to the most general indicators characterizing the success of economic development. Figures 1–8 show the change in gross value added at 2015 prices, the GDP growth rate, final consumption expenditures, inflation, unemployment, changes in the share of exports and imports for the two countries, and gross capital formation.

To summarize, it can be noted that the dynamics of these indicators do not reveal any dependence on sanctions, although it is problematic

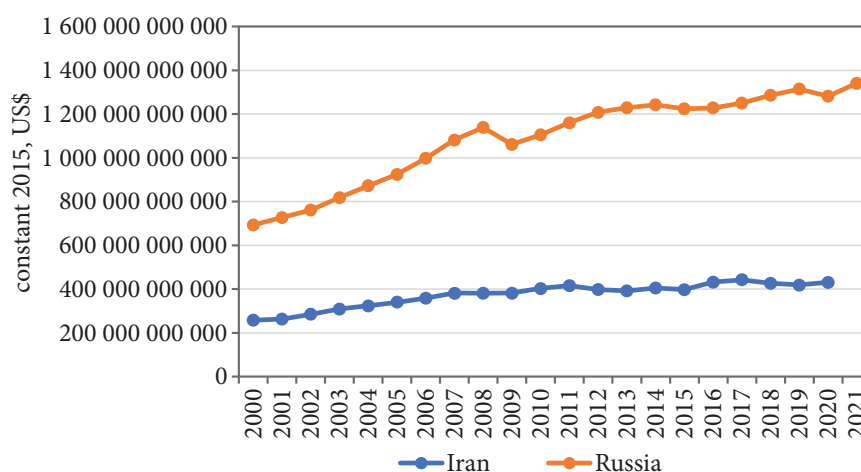


Figure 1. Gross value added in 2015 prices (2000–2021)

Source: World Bank. Available at: <https://data.worldbank.org> (Accessed: 08.03.2022)

to assess how the countries would have developed in the absence of such restrictions. No model would be able to reflect such a development since it is difficult to imagine the emerging factors that stimulate and inhibit development in such a scenario. Evolutionary and agent-based models can simulate some variant of development without sanctions; however, extrapolation logic will be present in one way or another, meaning that the reality that would have emerged outside the sanctions regime of the countries' development might not be accurately reflected. One thing is clear that the demonstrated dynamics by no means reflect a strong economic blow to Russia, as well as Iran, although in the latter case, several indicators are highly unstable. Let us analyze the dynamics in Figures 1–8.

Figure 1 shows the dynamics of gross value added in Iran and Russia. Although Iran has seen a decline in this indicator at 2015 prices in 2018–2019, nearly a twofold increase is observed in both countries in the period under consideration, suggesting that countries are growing in terms of production and income. Sanctions pressure can limit this process to some extent; however, it cannot curtail it, resulting in a crisis. Per capita GDP also increased, despite a slight decline in 2012–2015 and 2018–2020 for Iran. The dynamics of this indicator were much higher in Iran until 2008, exhibiting a subdued trend until 2021. However, it is difficult to say what is the factor here: the sanctions that have been in effect in Iran for four decades or the inflation that increased

during this period. Most likely, the general factors of economic development had a far stronger impact than the sanctions.

The growth of gross value added (Figure 1) and GDP per capita was accompanied by a natural increase in final consumption expenditures in both Russia and Iran during the period under consideration. However, while in Russia, it increased by over two times at 2015 prices, this growth was much more modest in Iran, amounting to about 50%. This fact can certainly be viewed as a constraint; however, the growth of consumption expenditures was much more significant in 2000–2008, stabilizing until 2021. Therefore, it is unlikely that sanctions against Iran, which have even been eased in recent years rather than tightened, were the main reason for such dynamics of this indicator.

The change in the GDP per capita growth rate for Iran is very similar to the dynamics of this indicator for Russia in 2000–2008. Starting from 2012, the growth rate becomes negative, then alternating between positive and negative dynamics. In Russia, a gradual decline to a negative value is observed from 2011 to 2015, followed by an increase until 2018 and another decrease, with the growth rate turning negative during the 2020 covid crisis. Noteworthy is the decrease in the rate prior to the imposition of anti-Russian sanctions in 2014, while an increase was observed in 2016–2019 under a fairly tough sanctions regime. It is pointless to deny that sanctions could have somehow restrained growth; however, the pre-

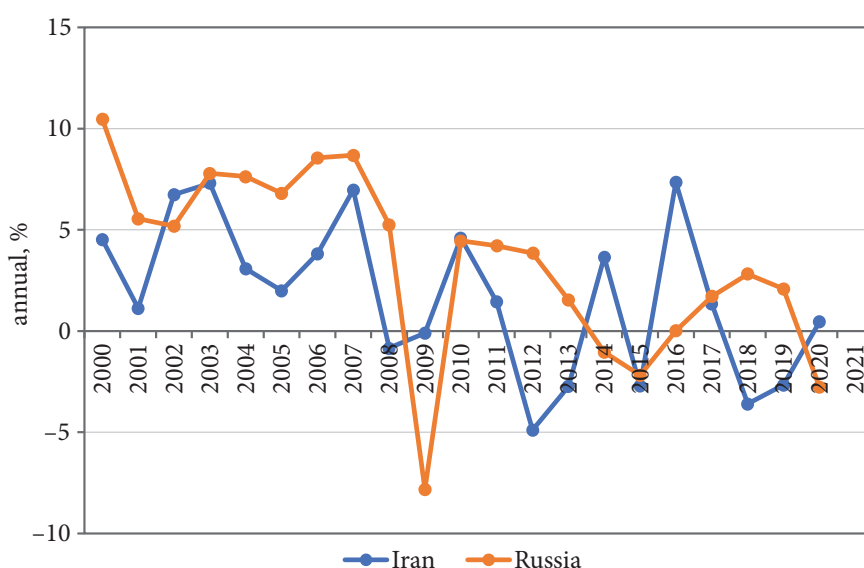


Figure 2. GDP per capita growth rate in 2000–2020

Source: World Bank. Available at: <https://data.worldbank.org> (Accessed: 08.03.2022)

sented dynamics clearly confirm that it did not change under the influence of sanctions, as it was independent of them. The dynamics were significantly affected by much stronger economic factors related to the economic structure and development opportunities.

Inflation is reflected in Figure 3. As can be seen, it is steadily decreasing in Russia, both in the years prior to and following the imposition of sanctions. In Iran, it is consistently high and clearly galloping, varying from 10 to 35 and even 40% year-on-year in some years. However, in 2013–2018, it dropped to 7–8% (Figure 3).

The presented dynamics of consumer prices are not related to the sanctions regime, which is more or less stable, while the price dynamics ex-

hibit a constant alternation of upward and downward dynamics in Iran. This fact may be attributed to the internal features of market functioning, the state of aggregate supply and demand, and the government policy.

The unemployment rate (see Figure 4) is higher in Iran than in Russia. While in Russia, it declined in 2000–2021, it remained virtually unchanged in Iran, fluctuating within the range of 10–12%, with the highest level of 14% recorded in 2010. It can be seen that no steady decline in unemployment is observed in Iran, unlike Russia, whose unemployment rate has decreased even under sanctions since 2014, increasing only during the 2020 covid crisis, which was also followed by a decline in 2021.

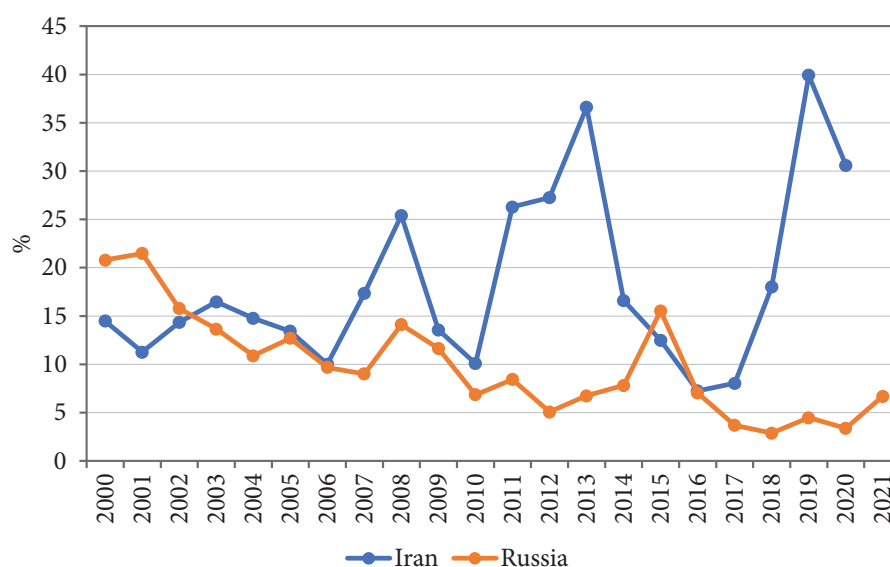


Figure 3. Inflation (consumer prices) in 2000–2021

Source: World Bank. Available at: <https://data.worldbank.org> (Accessed: 08.03.2022)

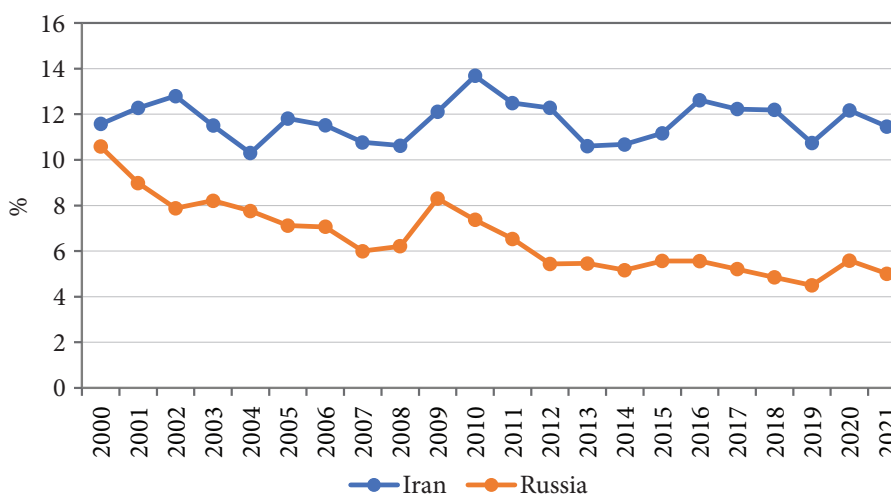


Figure 4. Unemployment, total (% of total labor force) (modeled ILO estimate) in 2000–2021

Source: World Bank. Available at: <https://data.worldbank.org> (Accessed: 08.03.2022)

Of note is that in Russia, the share of goods and services exports was still decreasing during the period under consideration, with the imposition of sanctions having no effect on it or rather stabilizing it (Figure 5), while in Iran, this share, while fluctuating, still did not significantly decrease and was close to the Russian indicator (Figure 5), specifically in 2013 and 2018–2019.

The comparison of Figures 5 and 6 reveals a constant export surplus (net exports) for Russia, i.e., exports fully cover imports. For Iran, the situation changed in 2000–2021, as the share of imports was comparable to that of exports (Figure 5–6). The share of imports decreased from 25 to 15% in 2003–2011, rising to 22% and then to 27% in 2018–2019. The comparison of the imports share in the GDP of Russia and Iran confirms that, on average, this value is similar for the two countries. While a gradual decline was observed in Russia; in Iran, this parameter either increased or decreased quite significantly.

In Iran, gross capital formation exceeds the Russian indicator as a share of GDP (Figure 7) over the entire period from 2000 to 2021. It has been declining from 40 to 30% since 2008, while remaining at a rather high level. In Russia, this indicator did not exceed 25% in the best years, most of the time remaining at a much lower level, i.e., about 20–23%. Given that gross capital formation increased under sanctions against Russia, this situation was in no way affected by the sanctions. For Iran, the indicator rose and decreased under sanctions while remaining at a relatively high level.

Noteworthy is the superiority of Iran in the production of machinery and transport equipment in the form of the value added share in the manufacturing industry. These indicators of the two countries were similar only in 2012–2013 and 2017–2018. (Figure 8).

Thus, the macroeconomic comparative analysis does not reveal any special impact of sanctions on the Russian and Iranian development,

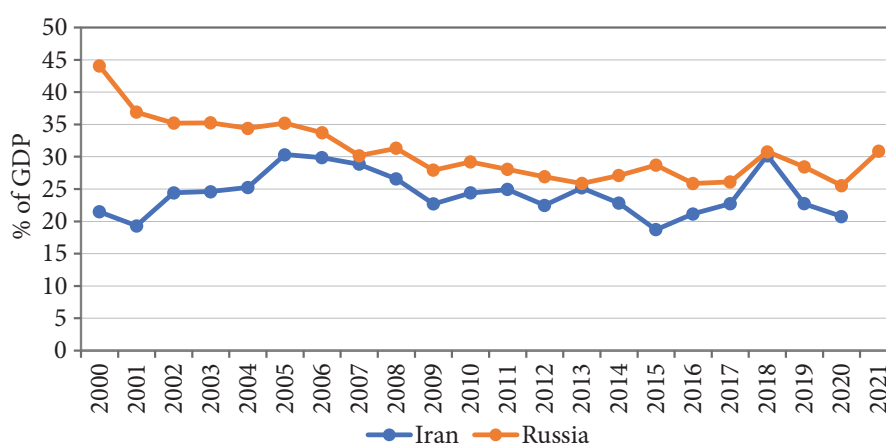


Figure 5. Exports of goods and services (% of GDP) in 2000–2021

Source: World Bank. Available at: <https://data.worldbank.org> (Accessed: 08.03.2022)

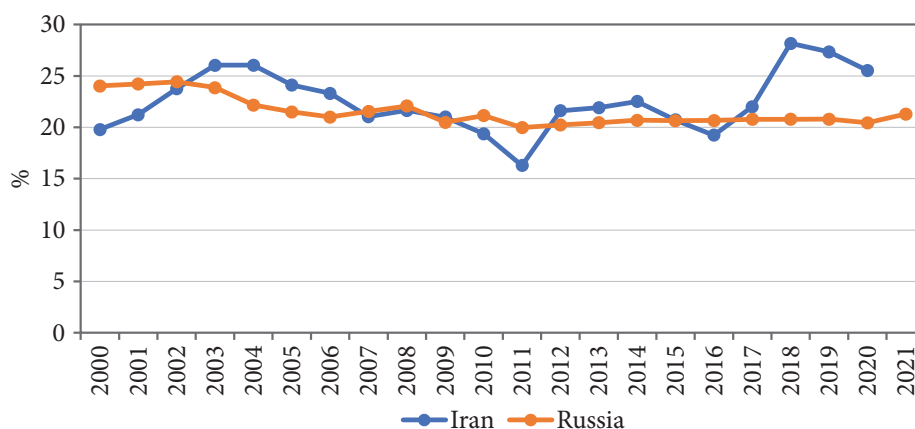


Figure 6. Imports of goods and services (% of GDP) in 2000–2021

Source: World Bank. Available at: <https://data.worldbank.org> (Accessed: 08.03.2022)

although Iran has an extensive experience of sanctions pressure being exerted on its economy. The fact that Iran has always had more modest development indicators and potential also explains the existing difference in the dynamics of these indicators and their magnitude. However, in terms of some parameters (e.g., machinery and transport; gross capital formation), it surpasses similar indicators of Russia (Figures 7–8).

The content of sanctions placed on Iran in 2000–2021 and Russia in 2014–2022

Table 1 contains the main sanctions imposed on Iran in 2000–2021. As can be seen, the main initiator of sanctions is the United States. Previously placed trade restrictions (before 2000) were expanded during the specified period: e.g., the publication of scientific manuscripts was considered as a violation of the trade embargo, which had been introduced earlier. It is certain

that the unprecedented restrictions on scientific exchange can raise nothing but criticism among objective researchers. However, the desire of the ruling circles of individual countries to influence those of other countries overrides any logic, leading to similar types of trade war. We did not consider the possibility of sanctions relief, as it still fits into the general scheme of sanctions pressure rather than limiting the systemic impact of sanctions over a long period of time.

In 2017, Donald Trump expanded the sanctions against Iran to include organizations and individuals who, one way or another, support the Iranian missile program. Essentially, such actions can be interpreted only as a race for world domination, which completely fits into the 1909 Taft–Knox doctrine of ‘dollar diplomacy.’ According to this doctrine, the dollar should act as bullets; however, wherever its power to economically dominate the world weakens, actual bullets

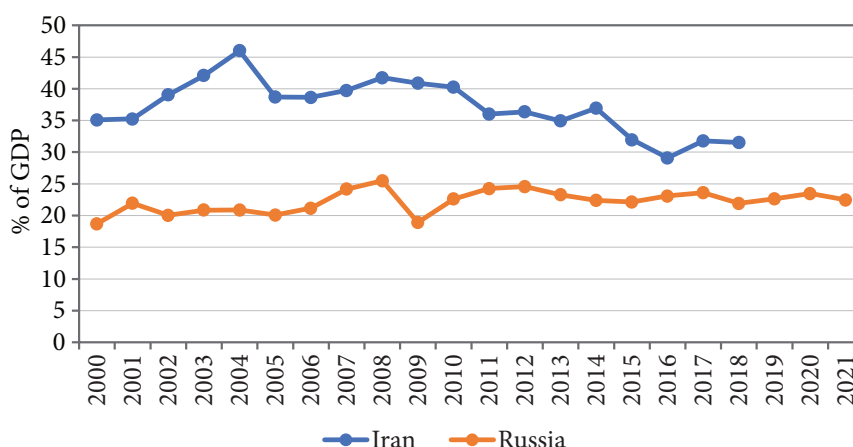


Figure 7. Gross capital formation (% of GDP) in 2000–2021

Source: World Bank. Available at: <https://data.worldbank.org> (Accessed: 08.03.2022)

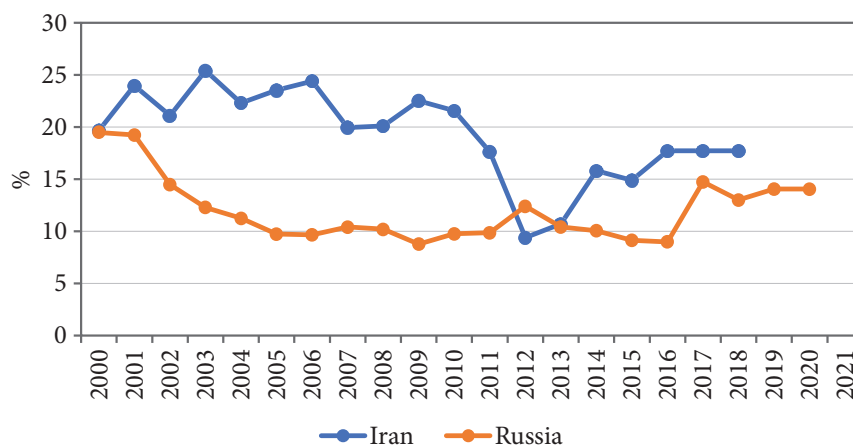


Figure 8. Machinery and transport equipment (% of value added in manufacturing) in 2000–2021

Source: World Bank. Available at: <https://data.worldbank.org> (Accessed: 08.03.2022)

should be used. In general, the United States has been adopting its philosophy for over a century to ensure its global economic and political domination. In November 2018, Iran was disconnected from the SWIFT system. Then sanctions were imposed on the Bank of the Islamic Republic, the construction sector, the supply of semi-finished products and components important for Iran, as well as software. In 2021, the EU expanded its blacklist of Iranian banks disconnected from the SWIFT system. The sanctions against Iran are generally aimed at preventing the technological development of this country, including its rocket industry, space industry, and nuclear power industry (specifically civilian nuclear power), which also enables the development of nuclear weapons. Nevertheless, Figures 6–8 confirm that with the imposition of more stringent and additional sanctions, the Iranian economy has been developing

since 2018. The GDP per capita growth rate was negative for the two years 2018 and 2019 (Figure 2), yet unemployment exhibited a slight decrease (Figure 4), though with a rise in inflation (Figure 3). However, no decline was observed in terms of exports and imports (Figure 5–6). Gross capital formation exceeded the Russian indicator, as well as the indicator of machinery and transport equipment in terms of the value-added share in the manufacturing industry (Figure 8).

In Russia, overt sanctions pressure began to be exerted in 2014, following the annexation of Crimea. The stages and main steps of the sanctions policy against Russia are reflected in Table 2 containing the main, one might say, basic decisions on this issue, up to the 2022 sanctions. The period up to 2022 is considered separately, with the 2022 sanctions categorized by the dates of their imposition.

Table 1

Imposition of major sanctions on Iran in 2000–2021

Year of sanctions imposition	Content of the sanctions
February 9, 2004	The U.S. Department of the Treasury decreed that the publication of scientific manuscripts from Iran, Libya, Sudan, and Cuba violates the trade embargo against these countries. Thus, American scientists collaborating with the Iranians may be held accountable. As a result, the journals of the Institute of Electrical and Electronics Engineers (IEEE), the American Nuclear Society, the American Chemical Society, and the American Society of Microbiology stopped accepting manuscripts from researchers from Iran, Cuba, Libya, and Sudan.
2005	Following the 2004 uncovering of uranium enrichment centrifuges in Iran, which had not been reported to the IAEA, the administration of George W. Bush imposed sanctions against banks, companies, and individuals associated with the nuclear and arms industries.
2017	In January, the administration of Donald Trump resumed the policy of tightening the sanctions regime: sanctions against several legal entities and individuals supporting the Iranian missile program were expanded. Donald Trump signed the Countering America's Adversaries Through Sanctions Act, imposing restrictions on individuals involved in the Iranian ballistic missile development program.
November 2018	Iran was disconnected from the SWIFT (Society for Worldwide Interbank Financial Telecommunications)
September 20, 2019	Additional restrictive measures were introduced against the main bank of the Islamic Republic amid rising tensions in the Middle East region.
November 1, 2019	The United States imposed sanctions on the construction sector of Iran and several restrictions on supplying Tehran with materials that can be used in nuclear and missile programs. A ban was introduced on the supply of raw or semi-processed metals, graphite, coal, and software for the construction sector to Iran, as well as a ban on the sale of certain types of steel pipes and foil, regardless of their end use.
January 2020	The US Office of Foreign Assets Control added eight top Iranian officials to the sanctions list, as the U.S. considers them to be involved in the murder of Iranians participating in protests. Sanctions were imposed on the construction, textile, mining, manufacturing, and metallurgical industries of Iran. Sanctions were also placed against the Atomic Energy Organization of Iran and its President Ali Akbar Salehi for allegedly exceeding the limits on uranium enrichment.
March 17, 2021	SWIFT introduced a ban on the use of its services by Iranian financial institutions. Leading banks were disconnected from the system: Saderat Bank of Iran, Bank Mellat, Post Bank of Iran, and Sepah Bank, which were blacklisted by the EU for financial complicity in Tehran's alleged nuclear activities.

Source: Reuters. Available at: <https://www.reuters.com/article/us-usa-iran-sanctions/u-s-not-too-bothered-by-europes-idea-for-iran-trade-as-companies-moving-out-idUSKCN1NH208>; Russian Council for International Affairs. Available at: <https://russiancouncil.ru/analytics-and-comments/columns/sanctions/obzor-mezhdunarodnoy-sanktsionnoy-politiki-yanvar-2020/>; Bloomberg. Available at: <https://www.bloomberg.com/news/articles/2019-09-20/trump-says-u-s-sanctioned-iran-s-national-bank-for-attack>

Table 2

Imposition of major sanctions on Russia 2014–2022

Year of sanctions imposition	Content of the sanctions
2014–2021	<p>Sanctions against Russian individuals and legal entities were imposed by the United States, the EU, Canada, Japan, Australia, and Switzerland.</p> <p>US President Barack Obama issued a decree allowing sanctions to be used against the “key sectors of the Russian economy” (financial sector, metallurgy, energy industry, mining, engineering, defense industrial sector). The assets of five Russian defense companies under U.S. jurisdiction were blocked. New investments by U.S. residents in the Crimean region and the import of Crimean goods, services, and technologies to the USA were banned, as well as the export, re-export, sale, and supply of goods, services, and technologies from the USA to the Crimean region. Two international payment systems – Visa and MasterCard – decided to suspend their services for cards issued by Russian banks operating on the Crimean territory.</p> <p>The EU imposed “sectoral sanctions,” including an embargo on arms supplies to Russia and arms export from Russia; a ban on the import of dual-use goods and technologies into Russia; a ban on supplying Russia with innovative technologies for the oil industry. The EU prohibited European companies from providing services to Russian partners for the exploration and production of deepwater and Arctic oil, as well as for shale oil projects. On December 20, EU sanctions against the economy and tourism industry of Crimea came into force. In particular, cruise ships were prohibited from entering Crimean ports.</p> <p>Australia imposed a ban on the supply of arms and equipment to Russia for the oil-and-gas sector; access of Russian state-owned banks to the Australian capital market; investments in or trade with Crimea.</p>
2022	<p><i>February 23. The first package of sanctions (for the recognition of the DPR and LPR)</i></p> <p>Sanctions were placed against banks financing the defense industry (VEB, Promsvyazbank, and their 42 subsidiaries). A ban was imposed on transactions with Russian federal loan bonds on the secondary market. The United States placed sanctions against the Swiss company Nord Stream 2 AG, the operator of the Nord Stream-2 gas pipeline. Germany suspended the certification of the Nord Stream-2 main gas pipeline. The UK imposed sanctions against five Russian banks: Promsvyazbank, Rossiya, Industrial Savings Bank, Black Sea Development Bank, and Genbank.</p> <p><i>February 25. The second package of sanctions</i></p> <p>Sanctions were imposed on the financial, energy, and transport sectors, as well as dual-use products, export controls, export financing, and visa policy.</p> <p><i>February 28. The third package of sanctions</i></p> <p>A ban was imposed on the cooperation of European manufacturers and bankers with Russian defense companies; the sale of European-made aircraft, equipment, and spare parts to Russian airlines; the supply of semiconductors, microelectronics, sensors, lasers, equipment for the production of microcircuits, and other goods to Russia that can be used in the defense industry; the supply of goods and equipment that is used in oil refining. In addition, the following measures were implemented: the freezing of reserves kept by the Russian Central Bank in the banks of G7 countries; cancellation of the “golden passports” program for Russian investors; disconnection of Russian banks VTB, Otkritie, Novikombank, Sovcombank, and Promsvyazbank from the SWIFT system; the freezing and seizure of private property.</p> <p><i>March 16. The fourth package of sanctions</i></p> <p>Restrictions were imposed on trade with Russia in iron and steel goods. The following bans were placed: a ban on the supply of luxury goods to Russia; a ban on business relations with Russian companies in which state participation exceeds 50%; a ban on the financial evaluation of Russia and Russian companies by European rating agencies; a ban on new investments in the Russian energy sector (except for nuclear power).</p> <p><i>April 8. The fifth package of sanctions</i></p> <p>The following bans were imposed: a ban on Russian ships entering European ports; a ban on any Russian and Belarusian motor transport companies that prevent the transportation of goods by road within the EU, including in transit; a ban on the import of jet fuel, quantum computers, and semiconductors into Russia; a ban on the import of seafood and alcohol; a ban on transactions and an asset freeze of key Russian banks; extension of the ban on the sale of banknotes and securities denominated in the currencies of EU countries.</p> <p><i>June 4. The sixth package of sanctions</i></p> <p>Since the imposition of sanctions, the supply ban on crude oil has been “postponed for six months, for petroleum products – for eight”. The following banks were disconnected from the international SWIFT system: Sberbank, Rosselkhoz nadzor, Credit Bank of Moscow, and the Belarusian Bank for Development and Reconstruction. A ban was placed on the provision of consulting, auditing, and PR services for Russia, as well as cloud Internet services.</p> <p><i>July 21. The seventh package of EU sanctions:</i></p> <p>A ban was placed on direct and indirect import, as well as purchase or transfer of gold if it originates and is exported from Russia. Restrictions were expanded on the acceptance of deposits from legal entities and organizations established in third countries and primarily controlled by Russian citizens or individuals located in Russia. Deliveries of aviation goods to Russia are allowed to the extent necessary to ensure the safety standards of the International Civil Aviation Organization (ICAO). The port of Rotterdam has stopped container transportation to and from Russia.</p>

Source: Official Journal of the European Union. Available at: <https://eur-lex.europa.eu/oj/direct-access.html>

It follows from the analysis of Table 2 that the sanctions imposed on Russia are very different from those against Iran in terms of their rapid and comprehensive implementation. These include financial and sectoral sanctions, restrictions on banks and knowledge-intensive sectors, the energy industry, as well as exports from Russia and imports into the country. Since 2022 (in just four months), seven packages of sanctions have already been announced and implemented, which are designed to curtail the economic development of Russia. Foreign exchange reserves were arrested and the country was disconnected from the SWIFT system; in this sense, sanctions mirror the measures adopted against Iran. Subsequent sanctions were designed to promptly block the receipt of income from domestic production, as well as to withhold imported technologies and components required for domestic development. However, just as the potential of the USSR was not taken into account in 1941, the U.S. and EU sanctions against Russia also do not take into account the potential of our country, which has the capacity and means to substitute imports and increase exports to other countries.

Thus, the performed comparative analysis, including the integral assessment of sanctions (Tables 1–2), revealed that Iran and Russia focus their efforts on resisting external impacts on their economy and development. These actions can be considered quite effective, provided that these countries suffer losses that directly affect the initiators of sanctions. As a result, the global economy loses as a whole, which is typical for any world-scale war.

Anti-sanctions measures are a matter of ensuring the economic security of countries subjected to such an impact. Of note is that modern world sanctions, specifically those against Russia, can be considered illegal under international law, as they are imposed by individual countries without the decision of the United Nations Security Council. Against a nuclear-armed country, they have been introduced for the first time (starting from 2014–2015 and up to and including 2022 when sanctions acquired a frontal-systemic nature). The sanctions imposed on Iran, were conditionally legal, as they had also been approved by the UN Security Council; even Russia advocated some restrictions in the past years to comply with the nuclear non-proliferation agreement and due to the active Iranian nuclear program. It can be assumed that

the current situation may change this position over time.

However, the basic international architecture, especially that affecting the construction of the global financial system, is designed in such a way that it enables economically leading countries to exert sanctions pressure on a significant number of countries, while the reform of international institutions (including financial ones) is discussed solely for the purpose of maintaining such influence and pressure (Stiglitz, 2010). As a result, long-standing discussions about the need for a better international economic order confirm the persistence of the problem and its acute relevance (Tinbergen, 1971). Essentially, nothing has changed, except for the fact that the world development is assuming the form of a “global excess”.

Conclusion

The analysis carried out in this study showed that Iran, as well as Russia, handled the sanctions pressure quite well. Moreover, Iran has been doing this for several decades. Of note is that the scale of the sanctions targeting Russia in 2022 exceeds that in 2014–2021, as the number of sanctions and their scope is unprecedented over a limited period of time. In addition, a half of the country's foreign exchange reserves was withdrawn, which can be considered as a military-economic blow undermining national security. Such sanctions have no precedent, with the example of Iran not being equivalent in this sense.

In addition, the performed dynamics analysis of the macroeconomic indicators in the previous period confirms that both countries handled the sanctions pressure, consistently ensuring their economic development, with greater potential demonstrated by Russia than Iran.

Thus, we can draw the following main conclusion: development under sanctions constitutes a special trajectory in the form of government decisions resisting external impacts and ensuring a search for management solutions that provide a substitute measure for imposed restrictions or help to counter these limitations. This applies to Iran, which has been consistently implementing this approach for many decades, as well as to modern Russia.

An anti-sanctions policy is viewed as a means to focus on domestic development rather than counter-sanctions, whose potential may be limited (for Iran) or present (for Russia, which quite reasonably applies them). Future studies should focus

on the current world economic order, in which a group of countries or one country having a leading position in the world economy can impose sanctions on the development of other multi-million countries that, under the sovereign policy, do not fulfill the conditions of this leader.

In addition, the economic development of targeted countries requires the coordination of economic activities in these countries. Therefore,

those agents of the world system who impose sanctions essentially contribute to the integration and expansion of interaction between these countries, deepening and developing their cooperation. According to the literature review undertaken in this article, this effect of sanctions is clearly not considered by anyone, constituting a promising area of research in the development of the modern theory of international exchange.

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