

**Yurii Varvaruk. Prerequisites for Agricultural Sector Innovative Development in the Context of European Integration Processes.** The article considers the necessity of an innovative development in the agricultural sector within a number of economic indicators. The priority and advantages of innovative development in the agricultural sector are proved. The role of the labor productivity in the agriculture innovative development is determined basing on comparison with the similar indicators of European countries. The dynamics of foreign trade in agrarian products over the past five years has been analyzed and the reasons affecting its change have been determined. The influence of the total crop area and crop yield indicators on the agricultural efficiency is determined. Therefore a system of prerequisites for the innovative development of the Ukrainian agrarian sector is formed. It comprises the social, economic and technological components.

**Key words:** agricultural sector, agriculture, innovations, European integration, innovative development of the agricultural sector.

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### **The Mechanism of International Economic Sanctions Influence on the National Economy (Example of Russian Federation)**

In the article the concept of international economic sanctions is explained; the historical practice of international economic sanctions and effective enforcement criteria are considered; areas, stages, and effects of international economic sanctions against the Russian Federation are defined; prospects of a national economy in the sanctions regime are investigated.

**Key words:** international economic sanctions, Russian Federation, international economic relations.

**Formulation of Scientific Problem and its Significance.** Previous historical practice of international relations leading actors indicates the predominance in their arsenal of military-strategic influence on the opponent. However, the globalization of the world economic ties caused an increasing role of economic influence mechanisms – the use of international economic sanctions, designed to correct the actions (policy) of a state or a group of states in the interests of international security. Their research is a relevant analysis sphere of modern international economic relations.

**Analysis of this Problem Research.** The nature of international economic sanctions is comprehensively studied in works of foreign experts, including Y. Haltunh, J. Blanchard, C. Portela, P. Vallenstine, G. Hafbauer, M. Ninchich, J. Lindsay, N. Dixie etc. Among the wide range of research centers that carry out research on the effectiveness of economic sanctions, an important place belongs to Peter G. Peterson Institute For International Economics [1, p. 128]. Theoretical analysis of international sanctions implemented by the domestic scientists such as Y. Sedlyar, K. Manuyilova, N. Tuvakova, O. Korytska, O. Sharov et al. However, despite a thorough study of some aspects of this problem, the effectiveness of the international economic sanctions influence on the national economy is not fully studied. At present, in terms of aggravation of Ukrainian-Russian confrontation in its bilateral and multilateral dimensions, the issue of the content and consequences of the international economic sanctions mechanism, the sanctional mechanism's role in the relations among countries require an in-depth study.

**The Purpose of the Article** is to analyze the theoretical and practical aspects of the mechanism of direct and reverse effect of international economic sanctions on the national economy as the object of

sanctions. Based on this goal, the following **aims** were chosen: to reveal the nature, functions, structure and performance criteria of international economic sanctions; analyze background, areas, stages and the effects of their implementation against the Russian Federation; outline the prospects for international economic sanctions impact on the national economy.

**The Main Material and Justification of the Study.** N. V. Tuvakova and O. N. Korytska note that economic sanctions imposed by the state, group of states or international organizations are conditionally a form of power influence on the behavior or policy of other countries that do not necessarily violate international law [1, p. 128]. J. Haltunh defines economic sanctions as «sactions initiated by one or several international actors against one or more of the other ones in order to punish the latter, depriving them of certain values and/or making them adhere to prescribed norms sanctions proponents consider important» [2, p. 379]. J. Lindsay defines economic sanctions as «events, in which one country publicly suspends the bulk of its trade with other countries to achieve political objectives» [3, p. 154].

There is no specific and exhaustive list of economic sanctions in international legal instruments, as each case of their application is specific and requires individual consideration [4, p. 39]. Also in the UN Charter there is no concept of «economic sanctions» and «embargo», but at the same time, Article 41 of the Charter refers to «complete or partial interruption of economic relations of rail, sea, air, postal, telegraphic, radio and other means of communication and the severance of diplomatic relations» [5].

In the scientific debate about the content of international economic sanctions their understanding of them as targeted, initiated by government restrictions on trade and financial relationships to achieve foreign policy goals is formulated [6, p. 2]. Based on this formulation, we define two central elements that form the concept of international economic sanctions as coercive measures in world politics: economic nature and foreign policy goals [7].

The mechanism of international economic sanctions means a coherent set of principles, forms, methods and tools of its ensuring in order to force the member countries of the international community to bring their behavior and actions towards other countries in accordance with international law.

In modern history, there are few examples where sanctions have been able to overcome the resistance of an object of sanctions. The most famous example of international economic sanctions is the situation with Iran and its nuclear program. The algorithm implementation of international economic sanctions against Iran consisted of three stages. The beginning was marked by the freezing of assets and visa bans concerning involved in the nuclear program entities. When these measures proved insufficient, a series of full-scale sectoral sanctions was introduced. The most painful impact on the Iran's economy was caused by sanctions against its oil sector, which share in 2011 was approximately 85 % (120 billion US dollars) of total exports. Targeted economic sanctions by the UN, US and EU led to a reduction of 50 % of the oil revenues to the Iranian budget, unemployment, devaluation of the national currency more than doubled. Two measures had the greatest negative impact on the economy: exclusion from the international SWIFT interbank system and the ban on exports of oil and gas to the EU and the US. As a result, the decline in GDP in 2013 reached 6,6 % [8, p. 8]. In order to improve the situation, Iran held a democratic presidential election and the newly elected head of state refused to continue the nuclear program. Therefore, economic sanctions have achieved their goal.

It is extremely important that the effectiveness of sanctions is a significant and tangible economic loss for the object country of sanctions. We have identified the key criteria for evaluating the international economic sanctions influence on the national economy: the dynamics of GDP growth; dynamics of the interest rate; ratings given by international institutions; capital flow; devaluation; reduction of the budget expenditure and change of its structure. Clearly, the more intense the negative impact on the economy is, the more likely the country is to bring its conduct in line with the generally recognized norms of international relations.

The main prerequisite for the implementation of international economic sanctions against the Russian Federation (RF) was the violation of numerous international laws, primarily the armed aggression of the RF against Ukraine. International economic sanctions against the RF were introduced by most of the developed countries of the West in several stages. The first of these concerned the targeted sanctions against corporate entities («Rosneft», NPO «Almaz-Antey», «Concern Kalashnikov» et al.) and individuals. During the second stage the sanctions were aimed at the economy as a whole and its individual sectors (sectoral sanctions), the third stage of the sanctions have been strengthened and aimed at a wider range of participants in the financial sector, the oil industry, defense industry, production of dual-use technologies and Russian technologies.

Evidence of the effective influence of international economic sanctions on the RF's economy is its GDP growth. Dynamics of quarterly GDP growth rates of the Russian Federation for 2014–2016 years are

shown in fig. 1. In 2014 GDP growth was 0,6 % and in 2015 and 2016 it reached a negative value of -3,9 and -0,8 % respectively [9].

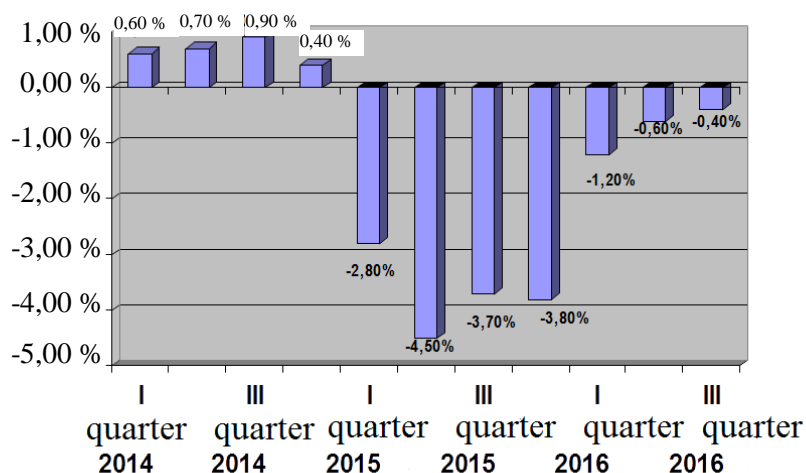


Fig. 1. Growth of GDP of the Russian Federation Quarterly for 2014–2016 \*.

\* Compiled by the authors [10].

There is a problem of separating the degree of influence of international economic sanctions on the decline in the GDP growth. To solve this problem we have applied economic modeling on the basis of multiple regression and correlation. To analyze the effective basis the following factors were selected: GDP growth (Y) as a dependent variable, and such factor variables as net capital outflow (X1), investment in the Russian Federation (X2), oil prices (X3) and their fall (X4) (table 1 and fig. 2).

Table 1

**Correlation of International Economic Sanctions and the GDP of the Russian Federation \***

Year / Quarter	GDP Growth, % (Dependent Variable Y)	Net Capital Outflow, Billion USD (Factor Variable X1)	Foreign Investment in Russia, m USD (Factor Variable X2)	Oil Prices at the end of the Quarter, in USD/ Barrel (Factor Variable X3)	Falling Oil Prices, USD/ Barrel (Factor Variable X4)
2013/1	2,1	27,9	120,89	109,85	0,5
2013/2	1,1	5,1	92,54	102,76	7,09
2013/3	1,2	10,5	187,49	108,2	-2,98
2013/4	2,1	16,8	129,09	111,18	-2,98
2014/1	0,6	47,6	153,89	108	3,18
2014/2	0,7	21,8	88,77	113,3	-5,3
2014/3	0,9	7,3	122,02	97,15	16,15
2014/4	0,4	76,2	182,99	57,35	39,8
2015/1	-2,8	32,9	100,79	56,31	1,04
2015/2	-4,5	18,7	60,58	61,77	-5,46
2015/3	-3,7	-3,3	84,38	48,53	13,24
2015/4	-3,8	9,7	79,97	37,6	10,93
2016/1	-1,2	7,0		39,57	-1,97

\* Source: Compiled by the authors.

To describe the interdependence between GDP growth rates and four factors a multiple regression model was built:

$$Y = -8,95662 + 0,000672228 * X1 + 0,00817123 * X2 + 0,0836556 * X3 + 0,072731 * X4 \quad (1)$$

The coefficient of determination included in the model, which shows the proportion of the variance in the dependent variable that is predictable from the independent variable(s), is 93,58 %.

After finding the correlation coefficients for this model, the most important factor characteristics were determined: X3 with a correlation coefficient of 0,87 and X2 (0,62). Since the value of P (the probability) model is 0,0003, which is less than 0,01, there is a substantial dependence between the variables with 99% confidence.

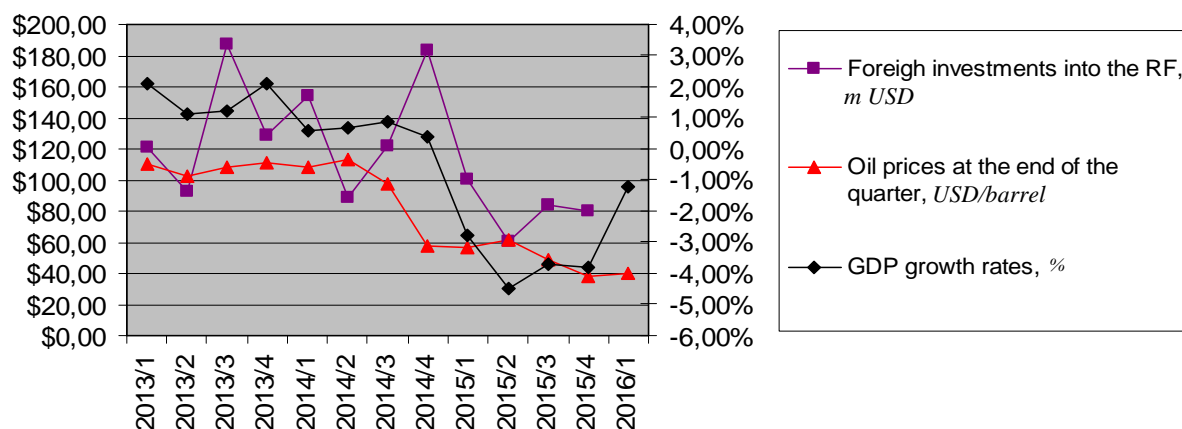


Fig. 2.4. Correlation of IES and Russian GDP\*.

\* Compiled by the authors.

Therefore, we can draw the following conclusions:

- a set of indicators that were analyzed, causes changes in GDP growth with 93,56 % probability rate;
- the GDP growth rate is affected by two factors the most: the dynamics of oil prices and investment in the Russian Federation.

The results of the study show that the dynamics of oil prices has more impact on the economic development of the Russian Federation than the decline in investment, which is a direct result of sanctions. Consequently, the impact of sanctions, compared with the impact of oil prices, can be seen as not that much significant. However, the dynamics of oil prices can be viewed as a part of the sanctions mechanism because it is largely caused by political factors. It is therefore advisable to examine the dynamics of oil prices and international economic sanctions as the parts of a single mechanism that reinforce each other.

One of the main consequences of the negative impact of economic sanctions on the economy of the Russian Federation can be called the increase in the cost of borrowing capital both inside and outside the country, which negatively affects economic growth. It is showed by a significant increase in the interest rate by the Central Bank of Russia (tabl. 2).

Table 2

Dynamics of the Central Bank Interest Rate\*

The Period	Value Discount Rate, %
13.09.2013–02.03.2014	5,5
03.03.2014–27.04.2014	7,0
28.04.2014–27.07.2014	7,5
28.07.2014–04.11.2014	8,0
05.11.2014–11.12.2014	9,5
12.12.2014–15.12.2014	10,5
16.12.2014–01.02.2015	17,0
02.02.2015–15.03.2015	15,0
16.03.2015–04.05.2015	14,0
05.05.2015–15.06.2015	12,5
16.06.2015–02.08.2015	11,5
02.08.2015–19.09.2016	11,0
19.09.2016–today	10,0

\* Source: [11].

An important consequence of economic sanctions against Russia are negative ratings given by international institutions, a result of which is the participants of the world market being extremely cautious with Russian companies.

Feeling the lack of funding, the largest Russian companies have reduced the programs of investment, rejected many vital investment projects or postponed them indefinitely (development of South Kyrnsk oil fields off the coast of Sakhalin, deep sea exploration and oil production on the Arctic shelf, oil shale projects, etc.). Another manifestation of the negative international economic sanctions influence is the reduction of spending on the environment and maintaining the security of oil and gas pipelines.

Without any doubt, sanctions negatively influence the Russian economy, but the question is whether they are sufficiently effective and whether Russia will adapt to new conditions with minimal losses for itself. Mid-term effect of international economic sanctions was assessed by Economic Expert Group. Four scenarios were determined with different combinations of oil prices and the sanctions in the years 2015–2017 (table 3).

*Table 3*

**Basic Parameters of Predictive Scenarios \***

<b>Scenario Number</b>	<b>Scenario Symbol</b>	<b>The Contents of the Scenario</b>	<b>The Price of oil in 20152017 Years., USD / Barrel</b>
1	B	Basic without sanctions	100–100–100
2	BS	Basic with sanctions	100–100–100
3	SH	Shock without sanctions	53–50–52
4	SHS	Shock with sanctions	53–50–52

\* Source: [12].

The basic scenario represents a hypothetical variant in which oil prices remain stable and no sanctions are introduced. The second scenario – a combination of stable oil prices and financial sanctions. The third and fourth scenarios are similar to the first two ones, but with low oil prices. Comparison of scenarios B and BS shows the sanctions influence on the high oil prices and options for SH and SHS – the consequences of low oil prices. Similarly, comparing the performance in scenarios SH and B (SHS and BS), we can assess the effect of falling oil prices without sanctions or with them.

Comparison of macroeconomic indicators for different scenarios showed that at low oil prices penalties carry a much greater impact on the economy than at high ones. Similarly, the presence of sanctions strengthens the impact of falling oil prices on the economy.

Medium-term consequences of financial sanctions and the oil shock for 2017 have also been defined. From the results obtained by Economic Expert Group a number of conclusions can be made. The sanctions against the Russian Federation carry out a significant impact on the performance of the real sector, taking into account only their financial results causes 2,4 % of pre-crisis GDP loss in 2017 (at oil prices around 50 USD/barrel), provided the simultaneous decrease in investment and consumption.

However, a much greater shock for the Russian economy was the fall in oil prices. It is estimated that it caused a total growth loss of 8,5 % for 2014–2017. Comparison of macroeconomic indicators for different scenarios showed that at low oil prices penalties carry a much greater impact on the economy than at high. Similarly, the presence of sanctions on the economy strengthens the impact of falling oil prices. In particular, the effect of sanctions has grown by more than 1,5 times.

According to calculations, the total 2014–2017 loss of net capital inflows through sanctions constitute 8,0 % of 2013 GDP level (with low oil prices), and the accumulated loss of GDP (total output difference in the 2014–2017 between scenarios SH and B) is estimated at 6,0 % of 2013 GDP level [12].

With regard to international institutions, until recently they made mainly negative forecasts for the Russian economy, but recent reports have referred to the positive trends. For example, the IMF estimates that the Russian economy will grow in 2017 by 1,1 % and next year □ by 1,2 % [13].

One of the ways Russia has chosen to counteract the pressure on the West countries is the use of counter-sanctions. This phenomenon is new in international practice, as none of the countries which was imposed sanctions did not use the same sanctions in response.

In reply on the sanctions from the west Russian government declared about the introduction of a number of restrictive measures – a number of goods prohibited for importation was identified. Both international economic sanctions and counter-sanctions led to negative consequences for the economies of most countries imposing sanctions, especially the EU and Ukraine. This was in particular the reduction of exports of these

countries to the Russian Federation, the slowdown in GDP growth and the reduction of jobs [14]. However, the scale of the above mentioned influence is disproportionate with the effect on the Russian economy, therefore, it is reasonable to continue the sanctions.

**Conclusions and Recommendations for Further Research.** Thus, international economic sanctions are causing a negative influence on the economy of the Russian Federation. Moreover, this influence will amplify the negative effects in the medium-term perspective. However, it should be analyzed further whether this mechanism is effective enough in its current form due to the lack of full consolidation of the EU and other global actors as to the future use of sanctions. We believe that continued study of the international economic sanctions influence is perspective, especially concerning the aspects of enhancing effectiveness of the sanctions regime for countries which are infringers of modern international law.

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**Андрій Сишук, Наталія Павліха, Ольга Тетерук. Механізм впливу міжнародних економічних санкцій на національну економіку (на прикладі Російської Федерації).** У статті обґрунтовано поняття міжнародних економічних санкцій; розглянуто історичну практику міжнародних економічних санкцій та критерії ефективного застосування; визначено сфери, етапи та наслідки дії міжнародних економічних санкцій проти Російської Федерації; досліджено перспективи функціонування національної економіки в режимі санкцій.

**Ключові слова:** міжнародні економічні санкції, Російська Федерація, міжнародні економічні відносини.

**Андрей Сышук, Наталья Павлиха, Ольга Тетерук. Механизм влияния международных экономических санкций на национальную экономику (на примере Российской Федерации).** В статье исследуется механизм влияния международных экономических санкций на национальную экономику (на примере Российской Федерации). Исследованный пример не имеет аналогов в исторической практике, поскольку впервые международные экономические санкции применяются по отношению к одной из крупнейших в военном и политическом смысле стран.

Международные экономические санкции определены как экономические меры принуждения для достижения неких политических целей; выделяются характеристики таких мер; приведены показатели эффективности международных экономических санкций. Исследован исторический опыт применения международных экономических санкций, в частности, по поводу ядерной программы Ирана.

Особое внимание уделяется влиянию санкций на экономику Российской Федерации. Для исследования влияния международных экономических санкций на темпы роста ВВП применяется экономико-математическое моделирование.

Анализируются перспективы влияния международных экономических санкций на экономику Российской Федерации. Представлены результаты исследования экономической экспертной группы, свидетельствующие о среднесрочных перспективах такого влияния. Доказано, что политическая составляющая снижения цен на нефть усиливает негативное влияние международных экономических санкций на экономику Российской Федерации.

**Ключевые слова:** международные экономические отношения, международные экономические санкции, Российская Федерация.

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### **Економічний розвиток прикордонних із ЄС територій України в умовах дії Угоди про асоціацію Україна–ЄС**

Обґрунтовано, що Угода про асоціацію Україна–ЄС кількома етапами впливатиме на економічний розвиток прикордонних із ЄС територій України. На першому етапі відбуватиметься зростання обсягів торгівлі

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