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THE WAR IN UKRAINE AND THE RISK OF LOW IMPACT OF WESTERN SANCTIONS IMPOSED ON RUSSIA

Abstract

In 2022, the Russian Federation became the most sanctioned country on Earth due to its full-scale invasion of Ukraine.

The aim of this article is to measure the effectiveness of the economic sanctions adopted against the Russian Federation.

The research main hypothesis was the following: the impact of Western sanctions imposed on Russia caused by the war in Ukraine remains low.

The research methodology was based on literature research and a linear regression model with two variables: dependent and independent.

The results of the study lead to the following conclusions:

1. Sanctions adopted on Russia since 2014 and since 2022 have a direct negative impact on Russian trade (imports and exports in value) with the EU countries and the US.
2. Sanctions adopted against Russia since 2014 and 2022 have a direct negative impact on its trade (imports and exports in value) with the trade partners that have a neutral position concerning the war.

JEL classification codes: D24, G14, F41, F51, F62

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1. Introduction

A state that does not respect the established rules or accepted norms of international behaviour must expect an adverse reaction from an aggrieved party: a state, a group of states or an international organisation. This reaction is, according to the principle of reciprocity, is the punishment of a subject for non-compliance with an established order or norms referred to as a 'sanction'. Sanctions in international law are 'the negative reaction of the international community faced by a state that violates the norms of international law' (Bierzanek, Symonides, 2003; Wiśniewska, 2005). In foreign policy, sanctions are a means of pressure to enforce rules of behaviour that are considered desirable. They are used by states or international organisations and are referred to as non-war coercive measures, for example reprisals, retaliation, any recommendations or decisions and other measures taken to achieve an objective. 'Economic sanctions in the largo sense constitute all measures of an economy-wide nature' ((Hendry, Hyett, 1996). They can be total – covering the entirety of trade relations, or partial – referring to certain areas of economic activity of states. They come in a variety of forms, ranging from the mildest form, which is the suspension of trade agreements, to their termination or the establishment of total import and export embargoes (Bergeijk, 1994; Wiśniewska, 2005). Sanctions are defined using derivative or substitute terms, i.e. embargo, ban, barrier, boycott, trade blockade, discrimination. They are defined as 'measures used in relations between states to achieve specific goals' (Kasprzyk, 2001; Wiśniewska, 2005). 'Economic sanctions consist of an entity of international law (a state, an international organisation or a group of entities) using its economic potential against another entity (or group of entities) in order to: a) punish the latter for the violation of a particular rule or norm, or b) prevent the sanctioned country from violating a particular rule or norm or achieving its objective or benefiting from the results of its conduct' (Anusz, Sulimierski, 1995; Wiśniewska, 2005). Taking this definition into account, it is concluded that the actions of an economic sanctioner are the application of economic coercion against the sanctioned country, preventing it from achieving certain objectives (Lacy D, Niou, 2004). The sanctioning entity demands a change in the existing policy or behaviour of the sanctioned 'target' country. The application of economic sanctions does not lead to the severance of diplomatic relations, possibly to their reduction. Rarely, however, does it go to war (Baldwin D.A., (1985), (Hufbauer, Schott, 1985). The effectiveness of economic sanctions depends on the methods and means available to the state or organisation applying the economic sanctions. Generally accepted sanctions of this type include: – export and import restrictions as selective and partial embargoes to deprive the sanctioned country of imports of goods vital to the functioning of the state

(embargoes on the supply of oil, arms, strategic goods, high technology); – service restrictions covering the international flow of services provided to the sanctioned country as well as by the sanctioned country to others (maritime, air transport services, satellites, undersea cables); – financial and capital transaction restrictions, i.e. any restrictions on the financial operations of the sanctioned country (restrictions on the ability to make purchases abroad, suspension of the flow of funds to the sanctioned country, seizure of funds deposited in bank accounts or freezing of reserves). The entity imposing the sanctions, i.e. the state, international organisation or institution, acts on the basis of its own interests, justifying the rightness of its actions to protect its own economic values or to pursue its political interests. The use of the instrument of economic sanctions is an action in a situation where the lack of response could be interpreted as an expression of the powerlessness of the entity concerned or an acquiescence to the violation of the established order. It is intended to contribute to the correction of the conduct of the sanctioned entity and, above all, to produce effects on a political level. The use of sanctions does not always achieve the desired effect, but can be a cause of political and economic isolation of the sanctioned country, causing its economic imbalance, which in the long run is not profitable for the state and forces it at least partly to change its behaviour (Wiśniewska, 2005).

The aim of the study is to analyse the effectiveness of the impact of Western sanctions imposed on Russia as a result of the war in Ukraine. The realisation of the objective was based on the discussion of the following issues: the essence and scope of Western sanctions against Russia in 2014-II 2023; assessing the state of the Russian economy in light of Western sanctions; and the impact of sanctions imposed on Russia: an empirical approach.

The limitations of the study were due to the research sample adopted. Substantial sanctions began to be adopted only in 2022. The 2014-2021 research period is not characterized by the intensity of activities in this area. Further years of researching sanctions adopted against Russia shall bring a more representative data.

Recommendation for future research is to analyze sanctions implemented every year not only in quantitative measures, but also in qualitative. The effectiveness of the sanctions imposed does not depend on their quantity but on their quality. One sanction imposed may be more effective than a large number of other sanctions of lower quality imposed.

The following specific research hypotheses were adopted:

1. Sanctions adopted on Russia since 2014 and since 2022 have a direct negative impact on Russian trade (imports and exports in value) with the EU countries and the US.

2. Sanctions adopted against Russia since 2014 and 2022 have a direct negative impact on its trade (imports and exports in value) with the trade partners that have a neutral position concerning the war.

The research methodology was based on literature research and a linear regression model with two variables: dependent and independent.

2. The substance and scope of Western sanctions against Russia 2014-2023

When in 2014 Russia occupied Crimea and invaded the East of Ukraine, the West adopted sanctions against Russia – however, the overall response to the aggressor state was weak and indecisive. On 24 February 2022, Russia started its full-scale invasion of Ukraine which mobilized the whole Western world to condemn Russian aggression, help Ukraine militarily and humanitarily and adopt many more sanctions against Russia, making Russia by far the most sanctioned country in the world. Russian response was to create a list of countries unfriendly to Russia which included: all the EU countries, the USA, Canada, Japan, Australia, New Zealand, several other European states and Micronesia.

The sanctions are designed to weaken Russia's economic base, i.e. depriving the country of access to critical technologies and markets and significantly reducing its war-making capabilities. They cover the period from 2014 to the present and include:

- The illegal annexation of Crimea.
- Russia's aggressive war against Ukraine.
- The unlawful annexation of the Ukrainian regions of Donetsk, Luhansk, Zaporizhia and Kherson (Przegląd Prawa Międzynarodowego, 2014).

The sanctions consist of targeted individual sanctions, economic sanctions and visa sanctions. The economic sanctions are intended to result in severe economic consequences for Russia in the face of its actions and effectively inhibit its further aggression. Individual sanctions target individuals who support, finance or carry out activities that undermine the territorial integrity, sovereignty and independence of Ukraine or benefit from such activities. Western sanctions for actions that undermine or threaten Ukraine's territorial integrity, sovereignty and independence currently apply to almost 1,800 individuals and entities. In June 2023, the EU covered a further 71 individuals and 33 entities. Sanctions against specific individuals consist of entry bans and asset freezes. In practice, this means: EUR 21.5 billion of frozen assets in the EU and EUR 300 billion of Central Bank of Russia assets blocked in the EU and G7 countries (Mulder, 2022).

As part of the economic sanctions, Western countries have imposed a number of import and export restrictions on Russia. European entities

cannot sell certain products to Russia (export restrictions) and Russian entities cannot sell certain products to the EU (import restrictions). The list of banned products has been drawn up in such a way as to maximise the negative impact of sanctions on the Russian economy, while limiting the undesirable effects on EU companies and citizens. With the Russian population in mind, products intended primarily for consumption as well as medical, pharmaceutical and agri-food products were excluded from the export and import restrictions. According to the European Commission, as of February 2022 The EU has banned EUR 43.9 bn worth of exports to Russia and EUR 91.2 bn worth of imports to the EU. This means that, compared to 2021, 49% of exports and 58% of imports are now sanctioned.

The EU, in cooperation with other like-minded partners, also adopted a declaration reserving the right to discontinue the application of the World Trade Organisation (WTO) Most Favoured Nation (MFN) clause to Russia. It decided that instead of increasing import duties, it would adopt a set of sanctions that would include a ban on the import or export of certain goods. The EU and its partners have also suspended all work related to Belarus' accession to the WTO.

A detailed list of export and import sanctioned goods and services is included in Tables 1, 2 and 3.

Table 1. List of goods prohibited from export to Russia

No.	Export commodity groups
1	state-of-the-art technology (e.g. quantum computers, advanced semiconductors, electronic components and software)
2	certain types of machinery and transport equipment
3	specific goods and technology needed for oil refining
4	equipment, technology and services used in the energy industry
5	aerospace goods and technology (e.g. aircraft, aircraft engines, spare parts and equipment for aircraft and helicopters, jet fuel)
6	maritime navigation equipment and radio communication technology
7	a range of dual-use products (which can serve both civilian and military purposes), such as drones and drone software and encryption devices
8	luxury goods (e.g. cars, watches, jewellery)
9	firearms for civilian use, their parts and other military equipment
10	other goods with the potential to increase Russia's industrial potential

Source: Own work based on: Załączniki XVII, XXI, XXII rozporządzenia Rady (UE) nr 833/2014, dotyczącego środków ograniczających w związku z działaniami Rosji destabilizującymi sytuację na Ukrainie, Dz.U.UE.L.2014.229.1.

Załącznik VI rozporządzenia Rady (UE) 2023/427 z dnia 25 lutego 2023 r. w sprawie zmiany rozporządzenia (UE) nr 833/2014 dotyczącego środków ograniczających w związku z działaniami Rosji destabilizującymi sytuację na Ukrainie, Dz.U.UE.L.2023.591.6.

Table 2. List of goods prohibited from import from Russia

No.	Import commodity groups
1	crude oil (from December 2022) and refined petroleum products (from February 2023), with limited exceptions
2	coal and other solid fossil fuels
3	steel, iron and steel products
4	gold, including jewellery
5	cement, asphalt, wood, paper, synthetic rubber and plastic
6	seafood and alcohol (e.g. caviar, vodka)
7	cigarettes and cosmetics

Source: Own work based on: Załączniki XVII, XXI, XXII rozporządzenia Rady (UE) nr 833/2014 dotyczącego środków ograniczających w związku z działaniami Rosji destabilizującymi sytuację na Ukrainie, Dz.U.UE.L.2014.229.1.

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Table 3. List of services prohibited from being provided to Russia

No.	Type of service
1	accounting
2	audit
3	statutory and accounting research
4	tax consultancy
5	business consulting
6	management consulting
7	public relations
8	lobbying
9	IT and legal advice
10	architectural and engineering
11	advertising and market and opinion polls

Source: Own work based on: Załączniki XVII, XXI, XXII rozporządzenia Rady (UE) nr 833/2014 dotyczącego środków ograniczających w związku z działaniami Rosji destabilizującymi sytuację na Ukrainie, Dz.U.UE.L.2014.229.1.

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In order to hit the Russian economy, which depends heavily on imported services from European companies, the EU has banned the provision of certain business-related services to Russian authorities or legal persons (such as companies and other entities or bodies based in Russia).

As of 4 June 2022, the provision – directly or indirectly – of accounting, auditing (including statutory audits) and bookkeeping services, tax, business and management advice and public relations services is prohibited. Lobbying services may be public relations services, and are therefore also subject to the prohibition. To increase the pressure on Russia's industrial capacity, in October

2022 the EU decided to expand the range of services that cannot be provided to the country. It banned IT and legal consultancy and architectural and engineering services. In December 2022, a ban on the provision of advertising and market and opinion research services and product testing and technical inspection services by EU entities came into force. Western sanctions must be complied with by EU-based entities, including subsidiaries of companies based in Russia. In June 2022, the Council adopted a sixth package of sanctions: it banned, among other things, the purchase, import or transfer of oil transported by sea and certain petroleum products from Russia to the EU. The ban is effective from 5 December 2022 for crude oil and from 5 February 2023 for refined petroleum products. Since most of Russian oil enters the EU by sea, sanctions cover almost 90% of Russian oil imports to Europe from the end of 2022 (Rozporządzenie Rady UE, 2014; Rozporządzenia Rady UE, 2023).

Russian and Belarusian road hauliers are not allowed to enter the EU, even if they only carry goods in transit. This is expected to limit the Russian industry's ability to procure key commodities and hinder trade using road transport from and to Russia. In February 2022 the EU banned all Russian carriers from accessing EU airports and flying through EU airspace. This means that aircraft registered in Russia or elsewhere but leased or rented by a Russian national or Russian entity cannot land at any EU airport or fly over EU countries. The ban also applies to private aircraft, such as business jets. The EU has also banned exports to Russia of goods and technology used in the aerospace industry. It is also prohibited to provide insurance and maintenance services and technical assistance related to these goods and technologies. The US, Canada and the UK have introduced similar restrictions. This means that Russian airlines cannot buy aircraft, spare parts or equipment for their fleet. They are also not allowed to carry out necessary repairs or technical inspections. As three-quarters of Russia's current commercial fleet was manufactured in the EU, US or Canada, over time the ban is likely to ground a significant proportion of Russia's civil aviation fleet, even domestic flights. The EU has closed its ports to the entire Russian merchant fleet of more than 2,800 ships. The ban will also apply to vessels that attempt to evade sanctions and, to this end, change their Russian flag or registration to the flag or registration of another country or tranship 'side-by-side'. Port authorities can detect an attempted change of flag or registration by checking the IMO number of the ship in question (a unique number that identifies the ship, assigned on behalf of the International Maritime Organization). The EU has banned the maritime transport of Russian oil (from 5 December 2022) and oil products (from 5 February 2023) to third countries. It also prohibited the provision of related technical assistance, brokering services, financing or financial assistance (Rozporządzenie Rady UE, 2014; Rozporządzenia Rady UE, 2023).

The banking system in Russia was also sanctioned. The exclusion of banks from the SWIFT system means that ten Russian banks and four Belarusian banks cannot make or receive payments using the system. As a result, sanctioned banks are not allowed to acquire foreign currencies (as their transfer between two banks is generally a foreign transfer involving a foreign intermediary bank) or transfer assets abroad. This has negative consequences for the Russian and Belarusian economies.

The European Union has banned all transactions with the Central Bank of Russia involving the management of the bank's reserves and assets. As a result of the asset freeze, the central bank no longer has access to assets held at central banks and private institutions in the EU. In December 2022, the EU added the Russian Regional Development Bank to the list of entities owned or controlled by the Russian state subject to a total transaction ban (Rozporządzenie Rady UE, 2014; Rozporządzenia Rady UE, 2023).

Sanctions are more effective the more international partners participate in them. The EU works closely with like-minded partners such as the US, in coordinating sanctions. The EU works with the World Bank Group, the European Bank for Reconstruction and Development (EBRD), the Organisation for Economic Co-operation and Development (OECD), and other international partners to prevent Russia from obtaining funding from them. In order to coordinate international action, the EU is cooperating in the implementation of sanctions in the newly created Task Force on Russian elites, proxies and oligarchs (REPO) with the G7 countries France, Japan, Canada, Germany, the US, the UK and Italy – as well as Australia. Although the EU works closely with many partners, each non-EU country decides for itself on the sanctions to be imposed.

3. Assessment of the state of the Russian economy in the light of Western sanctions

The sanctions do not block the export of agri-food products or transactions related to these products. Western sanctions do not affect food security. They only concern bilateral trade between the EU and Russia, not international trade. Food supplies and fertilisers are explicitly excluded from EU sanctions: food exports from Russia to world markets are not subject to restrictions. Activities involving food and fertilisers from Russia are permitted, as are their acquisition, transport and delivery. Restrictions on imports of certain potash fertilisers due to EU sanctions only apply to products imported into the EU. They do not cover exports of these fertilisers to Ukraine from the EU or from Russia.

As part of the sanctions, the Union has also provided for derogations: despite the closure of European airspace to Russian aircraft, Member States

may allow them to fly over if this is done for humanitarian purposes. Member States may also allow Russian-flagged vessels to call at an EU port and Russian road hauliers to enter the EU, as long as the purpose is to import or transport agricultural products, including fertilisers and wheat, which are not subject to restrictions.

Russia's macroeconomic performance in 2022 turned out to be much better than forecast a year ago – in the first weeks after the invasion of Ukraine. The first months of 2022, when Russian companies generated strong profits, had no small impact on the results achieved. Over the past year, both Russian business and society there have shown considerable adaptability, making it much easier to stabilise the economic situation in the country. Growing repression and the threat of loss of assets by those outside the Kremlin's immediate circle meant that Russian business not only did not protest against the war and the losses incurred, but also actively joined the process of 'technological transformation' (as the head of the Central Bank of Russia (CBR) calls the country's progressive technological regression) and adaptation to the new conditions. The past year has led to an increase in the state's presence in the economy and a strengthening of the economic model that has been in place so far: state capitalism with all its pathologies, such as corruption, the consolidation of assets in the hands of the president's entourage and a biased judicial system. According to Rosstat's (Rosstat, 2023) preliminary estimates, Russia's GDP in 2022 declined by 2.1% (prior to the invasion, growth of 3% was forecast) ((Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sułek, 2014/2015; World Economic Outlook 2022). However, in the first weeks of the aggression, on a wave of massive sanctions imposed by the West, it was expected that the Russian economy could shrink by up to a dozen per cent. Despite many doubts about the quality of the statistics presented by the authorities there, it must be acknowledged that Russia has managed to avoid deep declines, influenced by a number of factors. For example, the Kremlin managed to limit the negative consequences (devaluation of the rouble and inflation) of the financial sanctions imposed in the first days after the invasion.

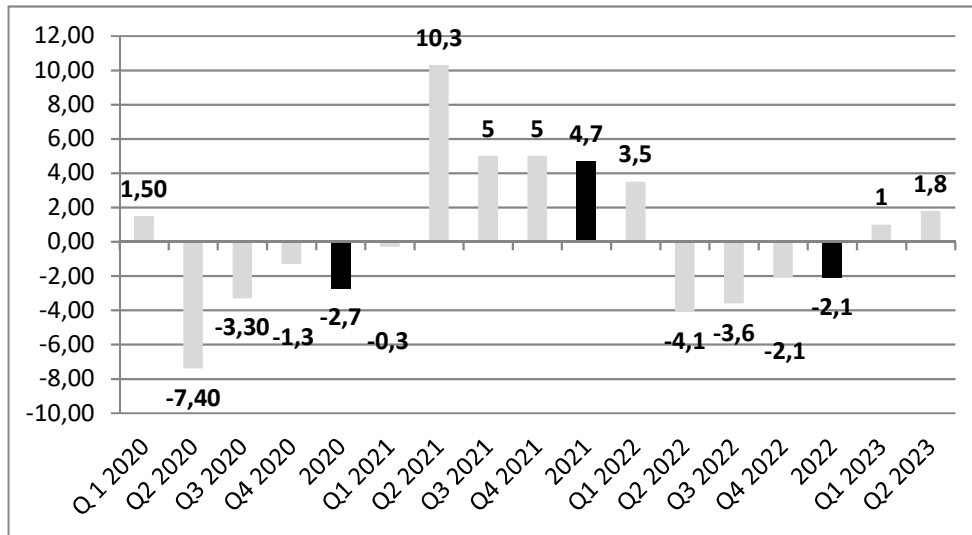


Figure 1. Russia's GDP dynamics 2020-2022

Source: Own compilation based on: Global Stability Report IMF 2020-2023

This was made possible by very high revenues from energy exports (restrictions on Russian exports were implemented with a delay of several months) and the actions of the CBR which, among other things, reduced the convertibility of the rouble. In turn, thanks to accumulated stocks and cooperation with intermediaries from countries that did not join the sanctions, Russian companies have been able to maintain production despite corporate boycotts, import cut-offs and disrupted logistics chains. As a result, Russia's plunge into the crisis has been gradual (with the most difficult situation occurring in late 2022 and early 2023), but it has been prolonged. Most forecasts assume a decline in Russian GDP this year as well, including the World Bank at 3 per cent, although there are also positive predictions, e.g. the IMF predicts 0.3 per cent growth – see Figure 1.

An important factor in slowing down the rate of GDP decline was the strong performance of agriculture and construction. In 2022, the value of agricultural production increased by more than 10%. 154 million tonnes of cereals were harvested from the fields, 27% more than a year earlier (of which wheat 104 million tonnes – an increase of 37% y-o-y). The fertility and limited export of the previous agricultural season's harvest (1 July 2021 – 30 June 2022), in which 38 million tonnes of cereals were exported abroad (11 million tonnes less than the previous year), resulted in an oversupply on the internal market and price falls (Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sułek, 2014/2015; World Economic Outlook 2022).

Good results were also reported in the construction industry, although the figures are questionable. Last year, the value of work in this sector officially increased by 5%. Government support programmes, e.g. preferential mortgages, renovation of old residential houses, contributed strongly to this result. Almost 8 per cent of all construction work was financed with state funds. The significant (by around 5% of GDP) increase in budget expenditure also had a significant impact on sustaining production in Russia in 2022. The necessary adaptation to the new economic conditions, including the change of suppliers and commodities, technological regression or the creation of new logistics chains, contributed to the fact that, despite the ongoing economic crisis, Russian state-supported business increased investments – see Figure 2. In the first nine months of last year (no data available for the fourth quarter), they increased by almost 6% y-o-y. For example, Gazprom's capital expenditure rose by 100% y-o-y in 2022 (to over USD 30 billion) (Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sułek, 2014/2015; World Economic Outlook 2022), driven by the need to expand its export potential in the eastern direction (expansion of the Siberian Power pipeline leading to China and further development of the fields feeding it) and gasification of the country.

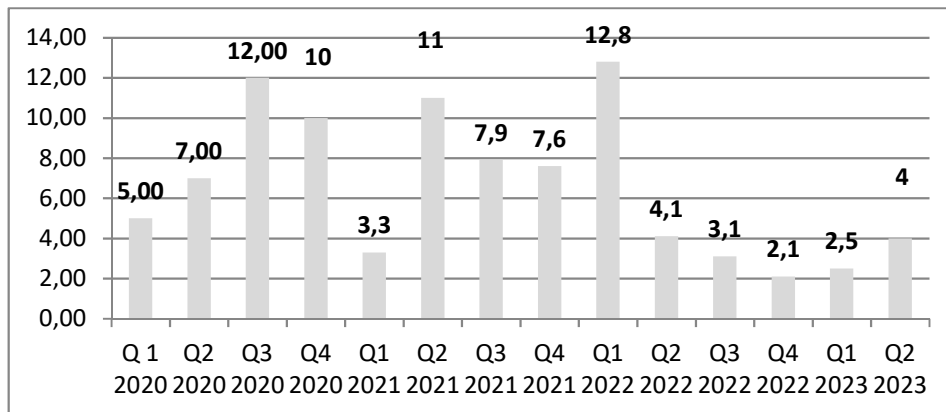


Figure 2. Investment in Russia's economy in 2021-2022

Source: Own compilation based on: Global Stability Report IMF 2020-2023

Reduced demand and the actions of the Russian authorities (including raising interest rates and strengthening the rouble) have contributed to a slowdown in inflation. At the end of the year, it had reached just under 12% – see Figure 3.

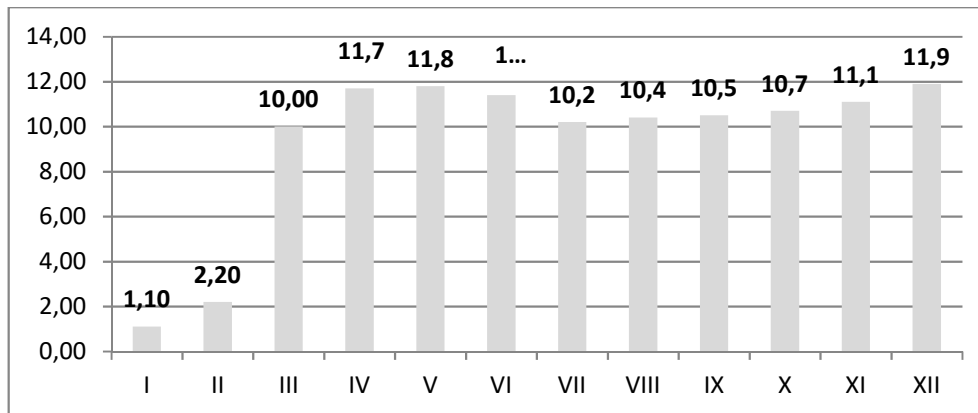


Figure 3. Inflation in Russia in 2022

Source: Own compilation based on: Global Stability Report IMF 2020-2023

The situation in individual industries – see Figure 4 – varied widely. Industrial production for the year as a whole officially declined by only around 0.5% y-o-y, mainly due to a very strong performance in the first few months of the year, as well as state orders related to the handling of the war (this includes industries such as machinery, textiles and food). The upstream sector, mainly due to the postponement of the EU embargo on Russian oil imports at the end of the year, recorded a slight increase (oil sector output increased by 2% y-o-y). Already in February this year, however, the government announced a 'voluntary' reduction in its production of this crude by 0.5 million barrels per day, i.e. by almost 5%, in response to the difficulty of finding importers of Russian petroleum products in particular. The situation also varied strongly between the different regions of Russia. Lower industrial production in 2022 was notably recorded by those dependent on the automotive sector, i.e. Kaluga (by 20%) and Kaliningrad regions (by 18%), and the timber industry, e.g. Karelia (by 9%). On the other hand, regions related to the arms sector, such as Bryansk Oblast (up 18%), the energy sector, i.e. the Nenets Autonomous Okrug (up 12%), or both sectors at the same time, such as Tatarstan (up 6%), recorded growth (Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sułek, 2014/2015; World Economic Outlook 2022).

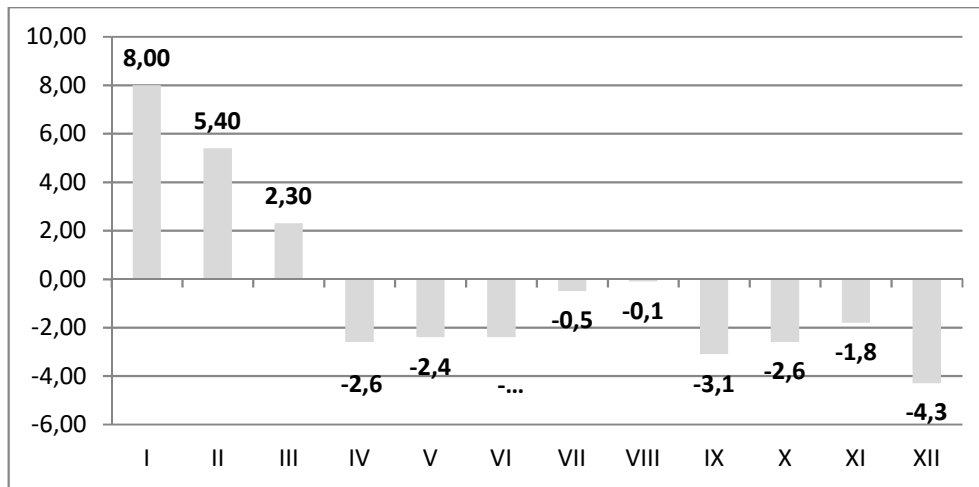


Figure 4. Industrial production in Russia in 2022

Source: Own compilation based on: Global Stability Report IMF 2020-2023

The high prices of natural resources on world markets and the continued significant level of their supply abroad, especially in the first half of last year, allowed Russia to obtain significant revenue, even though imports were restricted due to sanctions. Available data from the Central Bank of Russia shows that the Russian Federation's receipts from exports of goods and services in 2022 (as of spring 2022 the CBR only publishes aggregated balance of payments data) – see Figure 5, amounted to more than USD 628 billion, 14% more than the year before. The value of imports, on the other hand, shrank by 9% to USD 346 billion (Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sułek, 2014/2015; World Economic Outlook 2022).

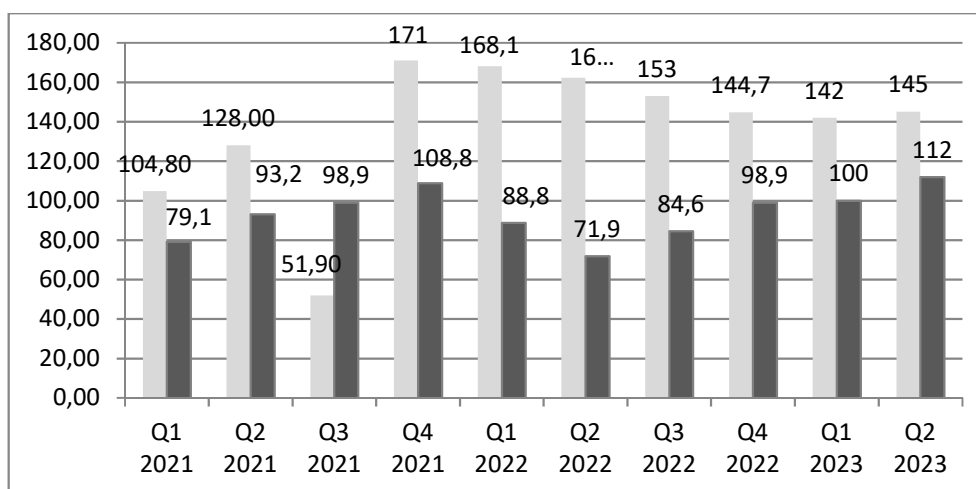


Figure 5. Russia's exports and imports of goods and services in 2022 in USD billion

Source: Own compilation based on: Global Stability Report IMF 2020-2023

Since the middle of the year, with the entry into force of sanctions on Russian exports (metals, timber, coal, oil), supplies abroad have gradually decreased. At the same time, thanks to intensified relations with non-Western countries, mainly with China, local imports were recovering. However, it is not known to what extent this was associated with an increase in the price of imported goods.

Mirroring data from Russia's most important trading partners, it appears that China (a 12% y-o-y increase in exports) and Turkey (an 80% increase) will see the largest increases in supplies of goods to the Russian Federation in 2022. At the same time, Western countries were reducing their exports to the Russian Federation: the European Union reduced its exports by more than 35% (figures for the first 11 months of 2022), the USA by 70% and the United Kingdom by 80% (Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sułek, 2014/2015; World Economic Outlook 2022).

The value of Russian sales abroad increased primarily to China (by 45%), Turkey (by 120%) and India (by 400%, mainly crude oil was exported). Exports to the EU also increased (by 35%, as a result of high energy commodity prices, especially in the first half of the year), while decreases were recorded by the USA (by 50%) and the United Kingdom (by 60%).

As a result, Russia achieved a record current account surplus in 2022, i.e. USD 227.5 billion (see Figure 6), noting that it was declining dynamically towards the end of the year. In December, it amounted to a mere USD 1.7 billion (while as recently as November it stood at over USD 10 billion). In turn, it increased again in January 2023 – to USD 8 billion.

It is unclear whether this was due to the maintenance of export earnings or the traditional decline in imports in the first months of the year (Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sułek, 2014/2015; World Economic Outlook 2022).

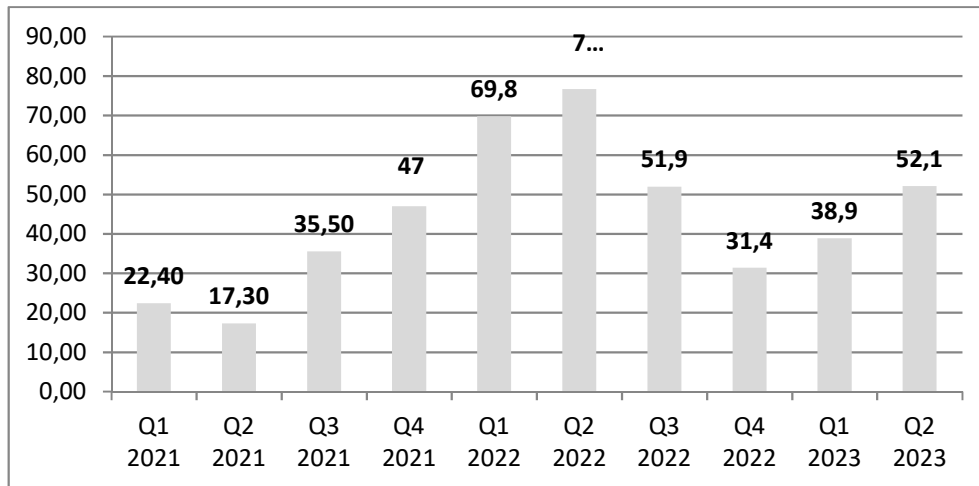


Figure 6. Russia's current account in 2022 in USD billion

Source: Own compilation based on: Global Stability Report IMF 2020-2023

Data published by the Ministry of Finance of the Russian Federation shows that, despite a fall in the price of Russian exports in the second half of 2022, budget revenues for the year as a whole turned out to be RUB 2.5 trillion (i.e. 10%) higher than in 2021 (see Figure 7). This was largely made possible by the increased burden imposed on Gazprom. The corporation turned out to be the largest contributor to the state coffers, as it paid a total of more than RUB 5 trillion (almost USD 73 billion) to the federal and regional budgets, including RUB 1.2 trillion in additional one-off mining tax (paid in three equal tranches). In addition, in the autumn it also paid the dividend for the first half of 2022 in advance (it had previously paid it once a year), which injected a further RUB 600 billion into the budget. As a result, payments from Gazprom have replaced declining regular revenues from the oil and gas sector. The Kremlin has also increased taxation on the oil, coal, metallurgy and mineral fertiliser sectors. A blow to the Russian budget was the introduction (5 December) of an EU embargo on crude oil and the implementation of a price cap on its supply by sea to non-Western countries. In parallel, the Kremlin has been dynamically increasing budget spending. In 2022, they increased by 25% compared to the previous year, with expenditure on national defence expected to increase by at least 30% (as of spring 2022, the government does not

publish itemised expenditure data). Funds were spent unevenly, with December accounting for more than 20% of total expenditure.

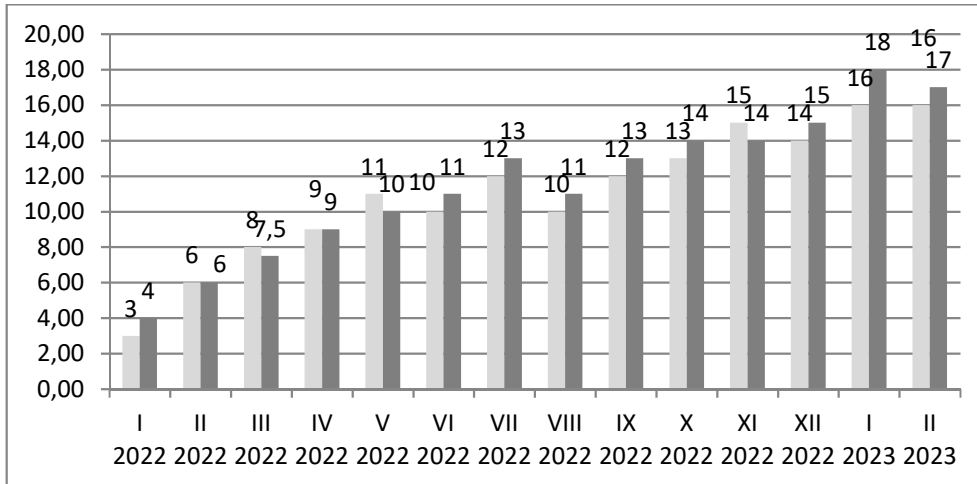


Figure 7. Russia's budget revenue and expenditure in RUB trillion

Source: Own compilation based on: Global Stability Report IMF 2020-2023

In 2022, the Russian currency strengthened. The average dollar exchange rate was 68.5 roubles, compared to 73.7 roubles a year earlier (Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sulek, 2014/2015; World Economic Outlook 2022) – see Figure 8.

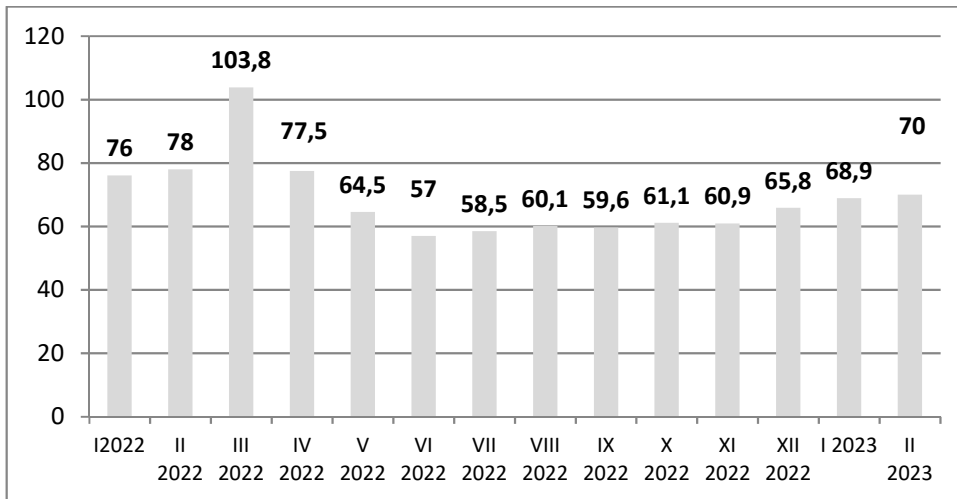


Figure 8. Average monthly dollar exchange rate in roubles

Source: Own compilation based on: Global Stability Report IMF 2020-2023

In 2022, Russia saw record capital outflows, reaching more than USD 250 billion (see Figure 9). This was largely driven by individuals transferring their savings out of the country. The total deposits of Russians in foreign banks more than doubled to around USD 82 billion. Russian entities, mainly businesses, were also reducing their foreign liabilities. In the whole of last year, debt decreased by USD 100 billion (Global Stability Report IMF 2020-2023; Wiśniewska, 2023 A; Sulek, 2014/2015; World Economic Outlook 2022).

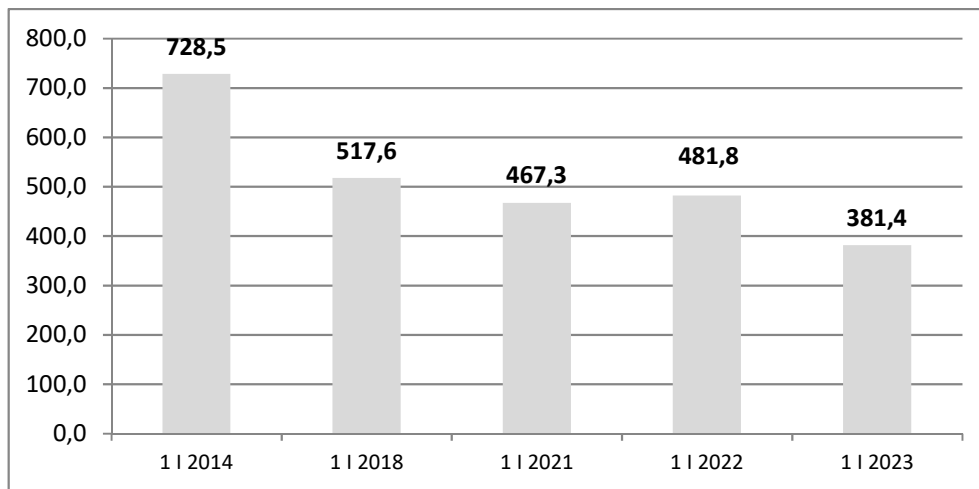


Figure 9. Russia's external debt in USD billion

Source: Own compilation based on: Global Stability Report IMF 2020-2023

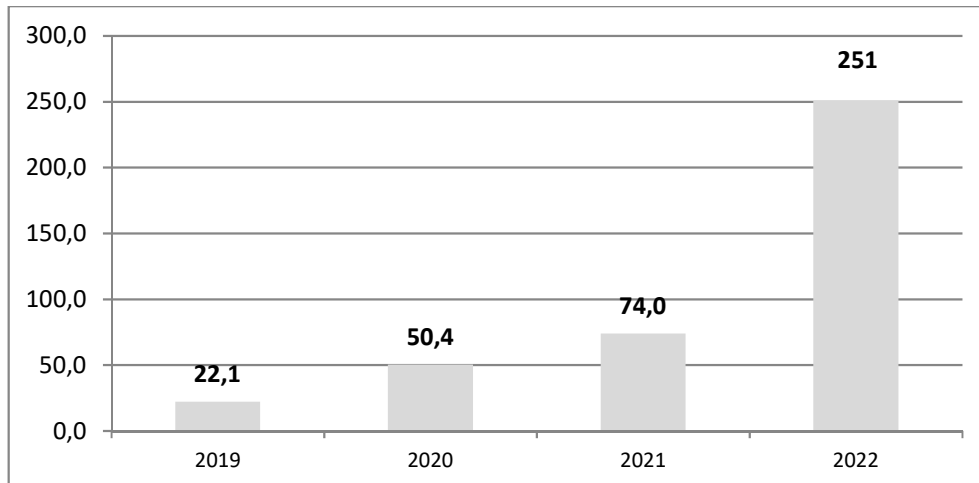


Figure 10. Net capital outflows from Russia in USD billion

Source: Own compilation based on: Global Stability Report IMF 2020-2023

4. Impact of sanctions adopted on Russia: empirical approach

4.1. Empirical assumptions

The study period adopted in the analysis covers the years: 2014-2022. It includes the annexation of Crimea and the ongoing war in Ukraine. It covers an essential part of the sanctions that have been imposed by the countries of the European Union and the US, Canada, Japan, Australia, New Zealand and Micronesia in the area and dimension of bilateral trade.

The empirical part is based on a linear regression model. The classical linear regression model is a very useful tool for analyzing empirical data. Regression analysis deals with the description of the relationship between a selected variable (called the dependent or explanatory variable) and one or more variables called independent variables or explanatory variables. A linear regression model with two variables, dependent and independent, was adopted as the primary research method. Linear regression analysis aims to calculate such regression coefficients (coefficients in a linear model) that the model best predicts the value of the dependent variable, so that the estimation error is as small as possible. Thus, regression analysis "fits" such a straight line to the subjects (linear relationship), so that how the model is the best possible (with the lowest possible random error). Linear regression is the simplest variant of regression. It assumes that the relationship between the explanatory and explanatory variables is a linear relationship. As in correlation analysis, if one value increases then the other increases (positive correlation) or decreases (negative correlation). In linear regression, it is assumed that an increase in one variable (predictor, predictors) is accompanied by an increase or decrease on the other variable.

The significance of the dependency will be measured by a p-value considering the option of three acceptable thresholds: in which 0.01 or less, 0.05 or less and 0.1 and less p-value means a relation significancy. R squared determines the proportion to which the dependent variable can be explained by independent variable (numbers of sanctions). A fitted regression line or curve represents the estimated expected value of a variable y with specific values of another variable or variables x. Regression in general is the problem of estimating conditional expected value. Linear regression is called linear because the assumed model of the relationship between the dependent and independent variables is a linear (affine) transformation with respect to the parameters, represented in the multivariate case by a matrix.

The y variable is traditionally called the explanatory or dependent variable. The x variables are called explanatory or independent variables. Both explanatory and explanatory variables can be scalar quantities or vectors. The linear regression model assumes that there is a linear (affine) relationship between the dependent variable y and the vector $p \times 1$ of the regressors x.

$$y_i = \beta_0 + \beta_1 X + \epsilon \quad [1]$$

where:

Y – is the dependent variable (also called the explanatory variable) whose values we want to explain,

X – is the independent variable (aka the explanatory variable) is also called the predictor, this variable is not degenerate to a constant,

ϵ – is a random error (or disturbance, noise), the only source of randomness,

β_0 – is the free expression which is the point of intersection of the line $y_i = \beta_0 + \beta_1 X + \epsilon$ with the axis of ordinates,

β_1 – is the directional coefficient, i.e. the tangent of the angle at which the line $y_i = \beta_0 + \beta_1 X + \epsilon$ is inclined to the abscissa axis (Kostrzewski, 2020).

The research calculations are based on two main steps: 1) Conducting tables that consist of three columns: time limit of the research (2014-2022); the independent variable (number of sanctions established); the dependent variable which differs depending on the assumption. 2) Running a regression analysis in the MS Excel program to establish the character of the relations between the dependent and independent variables.

The scope of the research includes: sanction vs. import from Germany to Russia, sanction vs. export from Russia to Germany, sanction vs. import from the US to Russia, sanction vs. export from Russia to the US, sanction vs. import from France to Russia, sanction vs. export from Russia to France, sanction vs. export from Russia to Italy, sanction vs. export to the Netherlands from Russia, sanction vs. import from China to Russia, sanction vs. export from Russia to China, sanction vs. import from Turkey to Russia, sanction vs. export from Russia to Turkey, sanction vs. import from Kazakhstan to Russia, sanction vs. export to India from Russia, sanction vs. export to North Korea from Russia, sanction vs. import to Russia from North Korea, sanction vs. export to Australia from Russia, sanction vs. import to Russia from Australia, sanction vs. export to Japan from Russia, sanction vs. import to Russia from Japan, sanction vs. export to Canada from Russia, sanction vs. import to Russia from Canada, sanction vs. export to New Zealand from Russia, sanction vs. import to Russia from New Zealand.

4.2. Discussion and conclusions

Research calculations are based on two main steps:

- 1) Conducting tables that consist of three columns: time limit of the research; the independent variable (number of sanctions

established); dependent variable which differs depending on the assumption.

- 2) Running a regression analysis to establish the character of the relations between dependent and independent variables.

1-15. This relation lacks significance as the p-value is much lower than 0.01; 0.05; 0.1. While Russian exports to and imports from Australia decreased significantly since 2016. This relation is statistically significant because the p-value is much lower than all three thresholds: 0.01; 0.05; 0.1. Negative coefficient means that as the independent variable increases (number of sanctions), the dependent variable decreases.

2-16. This relation lacks significance as the p-value is much lower than 0.01; 0.05; 0.1. While Russian exports to and imports from Canada decreased significantly since 2015. This relation is statistically significant because the p-value is much lower than all three thresholds: 0.01; 0.05; 0.1. Negative coefficient means that as the independent variable increases (number of sanctions), the dependent variable decreases.

3-17. This relation is statistically significant as the p-value is lower than 0.1, only a little bit higher than 0.05; however, much higher than 0.01. The coefficient is high and positive which means that the higher the sanctions adopted on Russia, the more Russia imports from China.

This relation is statistically significant because the p-value is much lower than 0.01; 0.05; 0.1. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (export from Russia) also increases. R-squared equals 72%, which means that in the proportion of 72%, export from Russia to China can be explained by the sanctions adopted on Russia. Russian exports to China grew significantly as well as its imports from China.

4-18. This relation is statistically significant because the p-value is much lower than 0.05 and 0.1. It's higher than the 0.01 threshold, though. Negative coefficient means that as the independent variable increases (number of sanctions), the dependent variable (import to Russia), decreases. R-squared equals 49%, which means that in the proportion of 49%, imports from France can be explained by the sanctions adopted on Russia. Russian imports from France were decreasing since 2014, coming closer to the 2013 level of imports only in 2021, after which falling dramatically by 72%.

5-19. This relation lacks significance for two thresholds: the p-value is much higher than 0.01; 0.05. However, it fits almost perfectly into the p-value of 0.1. Import from Germany decreased significantly from 2014 to 2016; however, it was on a steady rise since 2017. It significantly decreased again in 2022 after a new bigger wave of sanctions. Below is presented the table with the same trading partner, with the only difference that now Russian exports to Germany are measured. This relation lacks

significancy as the p-value is much higher than 0.01; 0.05; 0.1. Russian exports to Germany are highly inconsistent to the relation of sanctions adopted against Russia. It decreased a little from 2014 to 2015 and more from 2015 to 2016 however, Russian exports to Germany started rising again even to the levels before the first wave of sanctions in 2014, peaking in 2022. This can be explained by the German dependency on Russian gas and oil, the products which EU restricted at the end of the year 2022, beginning of 2023. It's expected that Russian exports to Germany in 2023 will be much lower.

Tabela 4. Sanction vs. export/import Russia to countries in the period 2014-2022. Results of theregression model

No.	Variable explained Export	p-value	Explanatory variable	Explanatory variable	R-squared	No.	Variable explained Import	p-value	Explanatory variable	Explanatory variable	R-squared
1	Australia	0.013933	-0.310014	0.184166	0.18416	15	Australia	0.000660	-0.010024	0.351176	0.35117
2	Canada	0.001753	-0.210004	0.151111	0.15111	16	Canada	0.012263	-0.500031	0.171177	0.17117
3	China	0.051608	2.078122	0.395061	0.39506	17	China	0.001961	6.037302	0.718214	0.71821
4	France	0.000000	0.000000	0.000000	0.00000	18	France	0.023963	-0.510054	0.491177	0.4911
5	Germany	0.334563	0.397598	0.116440	0.11644	19	Germany	0.105625	-0.897153	0.293690	0.29369
6	India	4.869463	2.736560	0.988461	0.98846	20	India	0.024100	0.214050	0.392322	0.39232
7	Italy	0.173740	0.905752	0.217954	0.21795	21	Italy	0.000000	0.000000	0.000000	0.00000
8	Japan	0.101111	-0.225113	0.102591	0.10259	22	Japan	0.003311	-0.596121	0.191380	0.19138
9	Kazakhstan	4.768251	3.233393	0.911231	0.91123	23	Kazakhstan	0.025102	0.264858	0.485740	0.48574
10	Netherlands	0.192977	-1.784674	0.201636	0.20163	24	Netherlands	0.000000	0.000000	0.000000	0.00000
11	N. Zealand	0.001000	-0.086111	0.701102	0.70110	25	N. Zealand	0.000101	-0.056111	0.501100	0.50110
12	N. Korea	3.564423	2.535550	0.951362	0.95136	26	N. Korea	0.001111	4.035201	0.904215	0.90421
13	Turkey	5.719276	3.264394	0.932838	0.93283	27	Turkey	0.042560	0.347573	0.420469	0.42046
14	USA	0.000000	0.000000	0.000000	0.00000	28	USA	0.002505	-0.997231	0.701102	0.70110

Source: Own compilation based on: data from the American State Department (2021) and TradeMap (2023)

6-20. This relation is statistically significant because the p-value is much lower than 0.01; 0.05; 0.1. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (exports to Russia) also increases. R-squared equals 99%, which means that in the proportion of 99%, export from India to Russia can be explained by the sanctions adopted on Russia. Russian export to India increased by 78% in 2022 over 2021. This relation is statistically significant because the p-value is lower than 0.05 and 0.1. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (imports to Russia) also increases. R-squared equals 39%, which means that in the proportion of 39%, imports from India can be explained by the sanctions.

7-21. This relation lacks significancy as the p-value is much higher than 0.01; 0.05; 0.1. Russian exports to Italy were inconsistent, rising to levels higher in value than before the first wave of sanctions in 2014.

8-22. This relation lacks significancy as the p-value is much lower than 0.01; 0.05; 0.1. While Russian exports to and imports from Japan decreased significantly since 2018. This relation is statistically significant because

the p-value is much lower than all three thresholds: 0.01; 0.05; 0.1. Negative coefficient means that as the independent variable increases (number of sanctions), the dependent variable decreases.

9-23. This relation is statistically significant because the p-value is lower than 0.05 and 0.1. It's higher than 0.01, though. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (imports to Russia) also increases. R-squared equals 49%, which means that in the proportion of 49% imports from Kazakhstan to Turkey can be explained by the sanctions adopted on Russia. This relation is statistically significant because the p-value is much lower than 0.01; 0.05; 0.1. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (export from Russia) also increases. R-squared equals 91%, which means that in the proportion of 91% exports from Russia to China can be explained by the sanctions adopted on Russia. Russian exports to China grew significantly as well as its imports from China.

10-24. This relation lacks significance as the p-value is much higher than 0.01; 0.05; 0.1. While Russian exports to Netherlands decreased significantly since 2014, there's been high growth in trade observed between the countries between 2014 and 2022.

11-25. This relation lacks significance as the p-value is much lower than 0.01; 0.05; 0.1. While Russian exports to and imports from New Zealand decreased significantly since 2017. This relation is statistically significant because the p-value is much lower than all three thresholds: 0.01; 0.05; 0.1. Negative coefficient means that as the independent variable increases (number of sanctions), the dependent variable decreases.

12-26. This relation is statistically significant because the p-value is much lower than 0.01; 0.05; 0.1. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (exports to Russia) also increases. R-squared equals 95%, which means that in the proportion of 95% exports from North Korea to Russia can be explained by the sanctions adopted on Russia. Russian exports to North Korea increased by 70% in 2022 over 2021. This relation is statistically significant because the p-value is lower than 0.05 and 0.1. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (imports to Russia) also increases. R-squared equals 90%, which means that in the proportion of 90% imports from North Korea can be explained by the sanctions.

13-27. This relation is statistically significant because the p-value is lower than 0.05 and 0.1. It's higher than 0.01, though. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (imports to Russia) also increases. R-squared equals 42%, which means that in the proportion of 42% imports from Turkey

to Russia can be explained by the sanctions adopted on Russia. Russia significantly increased its imports from Turkey. This relation is statistically significant because the p-value is significantly lower than 0.01; 0.05; 0.1. Positive coefficient means that as the independent variable increases (number of sanctions), the dependent variable (imports to Russia) also increases. R-squared equals 93%, which means that in the proportion of 93% export from Russia to Turkey can be explained by the sanctions adopted on Russia.

14-28. This relation is statistically significant because the p-value is much lower than all three thresholds: 0.01; 0.05; 0.1. Negative coefficient means that as the independent variable increases (number of sanctions), the dependent variable (import to Russia), decreases. R-squared equals 70%, which means that in the proportion of 70% imports from the USA can be explained by the sanctions adopted on Russia. US exports to Russia fell significantly after implementing sanctions in 2014. There was a steady increase in exports to Russia from 2015; however, there was much less import value than before 2014. The peak of the post 2014 increase in trade was in 2021, after which American exports to Russia fell by 90% in 2022.

Summary

The adopted research hypothesis: the impact of Western sanctions imposed on Russia caused by the war in Ukraine remains low – was positively verified. This is evidenced by the following research findings:

1. There are no statistically significant relations between sanctions adopted against the Russian Federation since 2014 and Russian GDP. For this analysis a nominal GDP was chosen which might be misleading, however - the analysis of the real GDP, adjusted to inflation, showed 2.07% of a decline in 2022 compared to the year 2021. It is a much lower GDP decline than Russia had because of the covid pandemic or because of the large-scale economic crisis. It is a much lower decline than scholars and economists forecasted and predicted in the spring of 2022.
2. Sanctions adopted against Russia since 2014 had a direct impact on Russian import from the EU countries and the USA. There is also a negative correlation: the more sanctions imposed on Russia by the Western countries, the less imports in value Russia receives from these countries. The situation is different for Russian export to the same countries. This relation was not found statistically significant due to the inconsistencies of trade and dependency of European countries on Russian oil and gas.
3. Sanctions adopted against Russia since 2014 have had a direct impact on Russian trade (import and export in value) with the main trade partners that have maintained a neutral position concerning the war.

There is a statistical significance in all six measured outcomes both in Russian export and import with friendly countries. As the EU and other Western countries are breaking ties with the Russian Federation due to its full-scale invasion of Ukraine, trade volume with the main trade partners non-aligned with Ukraine and friendly to Russia only increases. Among these countries are China, Turkey, India, Kazakhstan, North Korea and Belarus. (Russia expanded the trade both in imports and exports with its main non-Western trade partners).

4. Economic sanctions do not have a huge impact on Russia in the short run. At least it is not the impact expected by many public figures and politicians. Most scholars agree that expectations from the impact of sanctions on the Russian economy were much higher in the spring of 2022.

A recommendation for future research is to analyze sanctions implemented every year not only in quantitative measures, but also in qualitative. One sanction implemented against an especially important individual or entity can be more influential and decisive than 15 sanctions adopted against other entities and individuals.

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