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Article

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Belarus - EU: Trade and Perspectives of Integration

Dzianis Rabchuk, Herman Zabaronak, 2023

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Abstract

This study analyzes the current state of trade between Belarus and the European Union, considering the restrictive measures against Belarus and its growing dependence on Russia. In the context of Belarus' limited access to European markets, economic integration with Russia does not contribute to the development of the Belarusian economy. However, integration with the EU could provide new opportunities for growth based on modern standards and innovation. The authors of this study assess the prospects and benefits of such an integration and explore possible ways to ease sanctions to promote the development of trade relations between Belarus and the EU.

1. Introduction

Since 2020, the Belarusian economy has greatly increased its dependency on the stagnating Russian market. This situation provides no prospect for the Belarusian economy in general and Belarusian businesses and people in particular. Therefore, the country should search for other, more favorable, paths.

The European Union is another major trade bloc in the region. In our research, we consider possible scenarios of Belarusian integration into the EU and how these scenarios compare to current relations between Belarus, the EU, and other countries, such as Russia. We discuss several paths to how Belarus can become more prosperous thanks to integration into the European Union.

For successful integration, some key spheres of the Belarusian economy need to be determined so that Belarus can specialize in them, being in closer relations with the Union. We identified several such sectors, mostly those that generate high markup, and proposed ways to make them more resilient and efficient.

One of the most important implications of EU-integration is signing onto the Deep and Comprehensive Free Trade Area (DCFTA) agreement, which

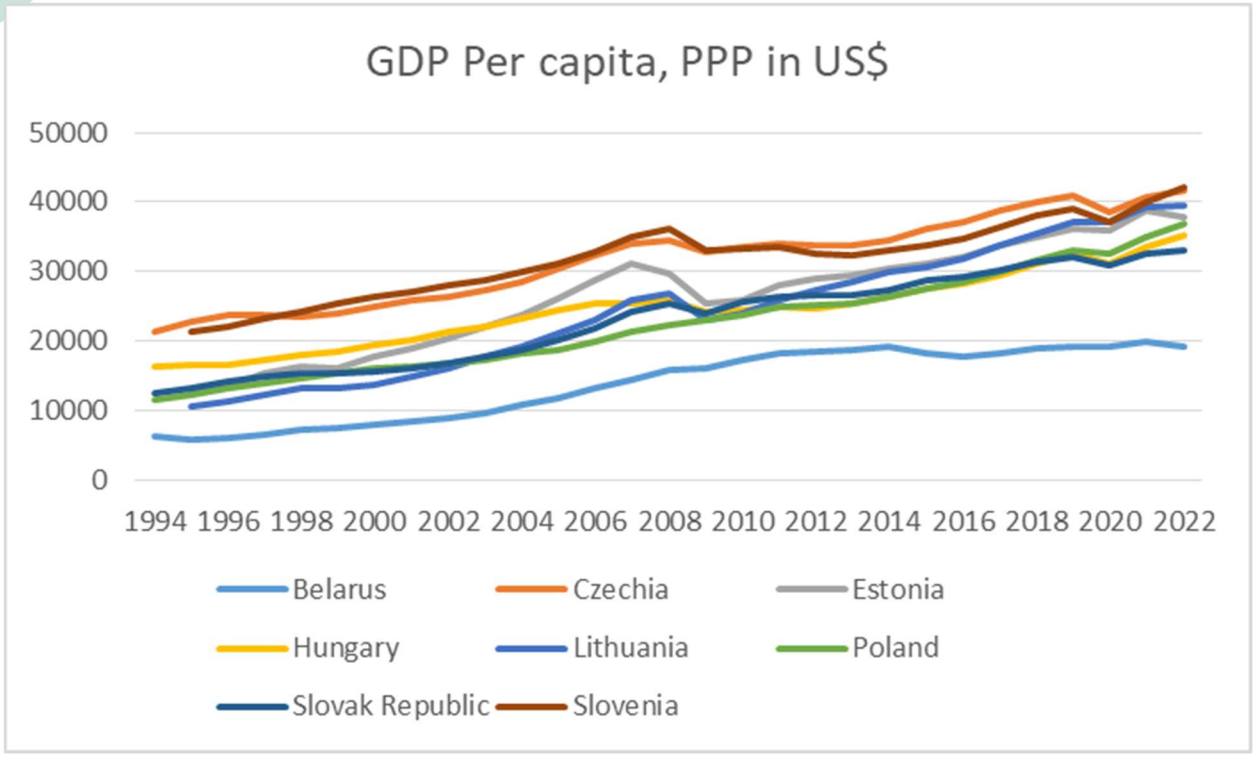
would result in lifting trade tariffs. This action can, from one perspective, increase the competitiveness of Belarusian goods, making them more affordable; however, from another standpoint, Belarusian businesses can be overwhelmed by the influx of European businesses and goods. We analyze the spheres that will be most affected by this move and suggest the strategy to manage the weaknesses of the Belarusian economy before its accession to the EU market.

In the making of such ambitious plans, we shouldn't forget that Belarus is right now under sanctions from the EU, which definitely impact the Belarusian presence on the European market. We analyzed the changes in Belarus-EU trade that were most likely caused by the sanctions and found out that Belarus lost around 25% of its possible presence on the European market. We investigated those changes in detail and made suppositions concerning the long-term consequences of the sanctions.

2. Integration: steps and implications

States strive to protect their independence by creating physical, economic, and political barriers between one another. Borders of countries determine their jurisdiction and regulate the movement of goods and people. Borders also serve as lines of defense and protection for national security. However, borders often correspond to ethnic, cultural, and national groups. They help preserve cultural and national identity, limiting the influence of other cultures within a state's territory.

Integration is a process in which entities seek to establish closer relationships, cooperation, or even unification. Integration facilitates the free movement of goods, services, capital, and labor among participants, leading to increased trade volumes, economic growth, and job creation. The removal of customs and tariff barriers makes it easier to import and export goods and services, thus enhancing economic competitiveness. Integration can contribute to regional security and stability, allowing states to collectively respond to regional and global crises such as wars, conflicts, terrorism, global warming, and more. States can pursue a common international policy. Consequently, the likelihood of conflicts between integrating countries decreases as their interests become more interdependent. Typically, integration is accompanied by freedom of movement, promoting closer contact between people from different countries. Citizens face fewer bureaucratic obstacles when crossing borders, allowing them to travel, interact, and find common points of cultural intersection.
This chart shows the emergence of GDP per person in countries of Central-Eastern Europe that chose the path of euro integration:



Source: calculations based on the data of the World Bank (1994-2022)

[1]

Undoubtedly, integration between states can have some negative effects that should also be considered. For example, during integration, states transfer some of their sovereign authority to common institutions or bodies, which can limit their independent decisions and policies. Countries become more dependent on each other, which can reduce their autonomy. Some states may benefit more from integration than others, leading to increased economic inequalities among participants. Furthermore, the free movement of citizens can lead to migration problems. Conflicts can arise due to cultural differences and the desire to preserve national identity.

Integration steps

According to the theory, there are five steps of integration:

1. Free Trade Zone (FTZ): This is the first stage of facilitated economic interaction. Such agreements aim to eliminate tariff and non-tariff barriers to trade and do not require significant changes in legislation. Examples of such agreements include the United States-Mexico-Canada Agreement (USMCA), the Association of Southeast Asian Nations (ASEAN), the EU-United Kingdom Association Agreement, the EU-Ukraine Association Agreement, the EU-Armenia Association Agreement, etc.

2. Customs Union (CU): Within a CU, signatory parties establish common import and export tariffs. Also, a common external trade policy is implemented. As a result, goods within the Customs Union can move freely without customs duties and quotas. Visa requirements are often eliminated, and the movement of citizens is significantly facilitated. Examples include the Eurasian Economic Union (EAEU), the EU-Turkey Customs Union, and the Andean Community Customs Union.

3. Common Market (CM): In a common market, not only are there common rules for trading goods, but also for services, capital, and the free movement of citizens. Participants in a common market standardize their rules and production standards and create a common legislative base. A successful example of a common market is the predecessor of the EU, the European Economic Community. Many international unions aim to create common markets, such as the EAEU, ASEAN, and USMCA, although they include only some of its elements. The creation of a common market is a complex, multistage process that inevitably involves conflicts of interest.

4. Economic Union (EU): An economic union includes all the previous stages of integration but has significant differences. In an economic union, some sovereignty is transferred to supranational bodies that make decisions on joint economic and political matters. For example: Commission/Council: An executive body responsible for coordinating and overseeing common decisions. Parliament: A legislative body that approves common laws and serves as a platform for dialogue between parliamentarians from different countries. Court: Adjudicates disputes among member states. Other supranational bodies.

4.1. Monetary Union (MU): A monetary union is an advanced form of economic integration in which countries use a single national currency and implement a common monetary policy. Within the European Union, the European Central Bank (ECB) is responsible for a common monetary policy and the management of the euro. The ECB coordinates actions with national central banks to achieve price and financial stability. The advantages of a monetary union include eliminating risks associated with exchange rate fluctuations, simplifying international financial transactions, and consequently reducing interest rates on loans. However, a monetary union also limits the ability of national governments to respond to local economic crises with macroeconomic policies. It is worth noting that monetary integration is an advanced form of economic integration but is not obligatory. In the near future, seven EU member states do not plan to adopt the euro.

5. A Political Union is the highest point of integration, where countries pursue a common foreign policy, create common institutions, adopt a common constitution, and more. A political union goes beyond economic matters and focuses on security, international relations, human rights, and other issues. Examples of political unions include the European Union, the Union State of Belarus and Russia, and NATO.

Below is a table that visualizes the stages of integration.

Level of integraion	Free Trade Area	Customs Union	Common Market	Economic and Monetary Union (sometimes)	Political Union
Participants agree to eliminate tariff and non-tariff barriers. Examples include USMCA, ASEAN, EU-UK, and EU-Ukraine.					
Common customs tariffs. Examples include the Eurasian Economic Union (EAEU), EU-Turkey Customs Union, and the Andean Community Customs Union.					
Free movement of goods, services, capital, and people. Examples include the EU, the Eurasian Economic Union (EAEU), the Association of Southeast Asian Nations (ASEAN), and the United States-Mexico-Canada Agreement (USMCA).					
Monetary and fiscal policy unification, trade policy coordination, and the creation of a regulatory body. Examples include the European Union and the European Central Bank.					
Unification of all policies under the management of one organization. Examples include the European Union and the Union State of Belarus and Russia.					

Source: Bella Balassa "The Theory of Economic Integration", Oxford 2012

3. Belarus and its integration associations

The EU is considered the leading integration union, serving as a model for the creation of other integration associations. Similar supranational bodies have been established in MERCOSUR, the EAEU, ASEAN, but the integration processes within them progress unevenly. Belarus is a member of numerous international organizations. The main integration unions in which Belarus participates are the CIS (Commonwealth of Independent States), the EAEU (Eurasian Economic Union), and the Union State. Each of these organizations has its own specific characteristics.

3.1 CIS

Initially, the CIS was established to facilitate cooperation among countries that had recently gained independence from the USSR. In other words, these countries aimed to maintain a certain degree of integration rather than deepen it. The lack of clarity regarding further steps in integration has hindered the development of the CIS. Signatory countries sought to strengthen their independence from each other. Thanks to this organization, Belarusians can travel visa-free throughout all the CIS member countries. There is also a Free Trade Zone (FTZ) agreement among its members, making it easier for national products to access the markets of participating countries.

3.2 EAEU

The EAEU is a more advanced integration entity. The organization was established in 2010 after the agreements on the formation of the Customs Union (CU) between Belarus, Russia, and Kazakhstan came into effect. The CU unifies and simplifies customs procedures and eliminates trade barriers among its member states. The organization aims to create a single economic space, which implies the realization of the "four freedoms": the free movement of goods, services, capital, and citizens. It's important to remember that the EAEU is a supranational structure that standardizes quality norms in areas such as industry, healthcare, safety, and oversees the compliance of member states with their obligations while resolving trade disputes. Belarus is obligated to ensure that general rules of competition, transparency, and timely notification of subsidies are enforced.
Thanks to the EAEU, Belarus enjoys facilitated access to the markets of Russia, Kazakhstan, Armenia, and Kyrgyzstan. However, the process of creating a common market is not yet complete. In many areas, states still prefer to use national regulatory regimes. As a result, there are no common markets in finance, gas, oil, refinery projects, transport services,[3] nor public procurement.[4] In August 2023, 37 barriers have been recorded.[5]

[6]

Source: calculations based on the data of the Eurasian Economic Comission(2015-2021)

As we see in this graph, Belarus is the leader in terms of export volume to the EAEU, more than 50% as of 2021, while Kazakhstan, Kyrgyzstan and Armenia account for less than 40% of the EAEU market. In 2022, according to the Ministry of Economy, Russia's share in Belarus' trade turnover amounted to 60%[7]. Foreign trade of all EAEU's members is more diversified than of Belarus's. Dependence above 60% negatively affects the sustainability of the Belarusian economy.

3.3 Union State

On December 8, 1999, a treaty on the Union State (US) was signed. The treaty envisioned a relatively close political integration, including the creation of a

common bicameral parliament, constitution, court, audit chamber, and a unified currency with a single issuing authority. However, even after 20 years, these plans have so far merely remained on paper. At present, Belarus is implementing 28 roadmaps, none of which are political. In 2021, Putin and Lukashenko agreed on macroeconomic policy convergence, financial harmonization, tax legislation harmonization, the merging of the gas, oil, and oil product markets, harmonizing government procurement markets, and more. It's worth noting that agreements on the integration of all these areas were previously negotiated within the framework of the EAEU, but so far, the agreements have remained on paper. The slowdown in integration processes is primarily linked to conflicts of economic interests. For a long time, Belarus earned revenue from sanctioned products[8] smuggled into Russia and from preferential oil prices[9], for which the Russian budget paid $106 billion from 2005 to 2015[10].

For citizens, Belarusian-Russian integration offers opportunities for free movement, residence, free healthcare, mutual recognition of diplomas, and more.

3.4 Dependency from Russia

Despite the many economic and social benefits of integration with Russia, there are significant downsides. As mentioned earlier, Russia accounts for 60% of Belarusian exports. Since Russia is Belarus's largest trading partner, any economic problems or a decrease in economic activity in Russia affect Belarusian exporters. Belarus heavily relies on energy resources from Russia, including oil and natural gas. Changes in energy resource prices impact production costs and consumer prices in Belarus. Additionally, the Belarusian ruble is closely tied to the Russian ruble, and exchange rate fluctuations between these currencies can impact the financial position of Belarusian companies and citizens. Russia can use Belarus's dependence on its market to further its interests.

Even before the active phase of the war in Ukraine, Russia showed very modest rates of economic growth[11]. In 2022, the trends intensified. Russia is a stagnating economy. Unprecedented sanctions were imposed against Russia and Belarus. In addition to the 2.1% drop in GDP,[12] oil export decreased by 40%. Approximately $300 billion from the Russian Central Bank was frozen in European accounts. In 2022, more than $43 billion in investments were withdrawn from Russia[13]. In the near term, it may seem that the sanctions have not had a severely destructive impact. However, when looking at the situation from a long-term perspective, it becomes evident that the Russian economy is destined to fall behind and ultimately degrade. Along with it, the Belarusian economy will also deteriorate.

Besides, the potential for expanding Belarusian exports to the Russian market is limited. Russia cannot compensate for all the losses and replace the lucrative EU and Ukrainian markets. In the foreseeable future, there will come a point where there is no room for Belarusian exports to expand. On the other hand, it is not prudent to tether oneself to the unstable, protectionist Russian market. Not to mention the political risks of losing Belarus independence. Export diversification, which means having various trading partners, can help mitigate this risk.

4. EU membership

In light of this, Belarus should consider alternative integration options. The process of a new country joining the European Union involves numerous stages outlined in the primary regulatory documents, such as the Treaty on

the Functioning of the European Union (the Rome Treaty)[14] and Treaty of European Union (Maastricht Treaty)[15]. The first was signed in 1957. The Rome Treaty established the European Economic Community (EEC), the predecessor organization to the EU, and also set out the legal and institutional structure of economic integration. The Maastricht Treaty, which came into effect in 1993, expanded the EU's competencies in the political sphere. In the same year, during a European Council meeting in Copenhagen, criteria were established for countries wishing to join the union. Article 49 of the Treaty on European Union, or the Maastricht Treaty, states that any European country that respects the principles of the EU can apply for membership. The Copenhagen criteria[16] became one of the key documents defining the conditions for new countries to join the European Union. These criteria serve as a guide for candidate countries seeking EU membership and provide standards they must meet in the areas of politics, economics, and legal systems.

4.1 Accession criteria

Political Criteria:

- Democracy and Rule of Law: The country should have stable democratic institutions, ensuring citizens' participation in decision-making and safeguarding their rights. Political processes should be transparent, and the rule of law must be upheld.
- Human Rights: Fundamental human rights, such as freedom of expression, religion, assembly, and association, must be protected. Discrimination and persecution based on various attributes are not acceptable.
- Free and Fair Elections: The country should guarantee free and fair elections, allowing citizens to express their will without pressure or manipulation. A multi-party system should ensure political pluralism.

4.2 Economic Criteria:

- Market Economy: The country must have a stable market economy capable of competing within the EU's internal market.
- Effective Economic Regulation: Market mechanisms must be in place to maintain price stability, a stable exchange rate, and the ability to address macroeconomic challenges. Joining the eurozone is not mandatory.
- Compliance with the EU's Common Market: The country should be prepared to accept and adhere to the rules of the common market, including the free movement of goods, services, capital, and labor.

Legal Criteria:

- Adoption and Implementation of EU Legislation: The country must be ready to adopt and implement EU laws and norms. This includes integrating EU legislation into national legal systems and ensuring compliance.
- Alignment of National Legislation with EU Norms: National legislation must be harmonized with EU norms and standards to ensure consistent application of rules.
- These criteria represent fundamental principles and standards that aspiring EU member states must meet to ensure their compatibility with the EU's legal, political, and economic framework.

4.3 Accession process

The European integration process itself can be divided into 10 stages[17]:

1. Statement of Intent. The first step is for a country to express its intention to join the European Union (EU). This is an official declaration in which the country expresses its desire to undergo the integration process.

2. Signing an Association Agreement. This document constitutes an agreement on a Deep and Comprehensive Free Trade Area (DCFTA) with a broader spectrum of cooperation, including political dialogue, and provides additional financial support for the country's reform and development.

3. Official Application Submission. After signing the Association Agreement, the country can submit an official application for EU membership.

4. Preliminary Assessment and Negotiations. The EU conducts a preliminary assessment of the country's readiness for membership and begins negotiations on specific conditions and requirements that the country must meet.

5. Attaining Candidate Status. This status confirms that the EU recognizes the country as a potential future member and is ready to begin official accession negotiations. Candidate countries can receive additional financial and technical support. In 2021, the EU allocated over 14 billion euros for this purpose.

6. Signing and Ratification of the Accession Treaty. This document defines the terms of accession. Negotiations officially start after all EU member states have approved the specific conditions for the candidate's accession. The treaty must be ratified by all EU member states and the candidate country.

7. The Accession Process. After the ratification of the Accession Treaty, the country begins the accession process, including legislative changes and reforms in line with EU requirements.

8. Assessment and Monitoring. The EU monitors the country's compliance with its obligations and may assess its progress. It observes the fulfillment of specific requirements on the path to membership.

9. Preparation for Full Membership. The country must be prepared for full EU membership, which includes creating or improving institutional structures, mechanisms to comply with EU standards and commitments, training officials, and implementing deeper economic and political reforms required to meet EU standards.

10. Membership. Finally, after completing all necessary stages and achieving a satisfactory progress assessment, the country becomes a full EU member, signing an accession treaty.

As we can see, Eurointegration is a complex, multi-stage process that requires Belarus to reform in virtually all areas and may take decades. It is impossible to instantly transfer the export of non-sanctioned goods and services from the EU to Russia, and vice versa. There will always be significant losses. Therefore,

given the increasing dependence on the Russian market and the EAEU, Belarus should undertake political reforms and strive to improve relations with its neighbors.

4.4 The EU's integration project. The Eastern Partnership

The EU initiated the creation of neighborhood programs, one of which is the Eastern Partnership (EaP). This initiative is aimed at improving political and trade relations with former post-Soviet countries: Azerbaijan, Armenia, Belarus, Georgia, Moldova, and Ukraine. From 2014 to 2020, Belarus received assistance through this program amounting to 170 million euros[18]. Furthermore, the European Investment Bank has invested over 530 million euros in infrastructure projects and entrepreneurship support programs since 2016. After the presidential elections in 2020, the official Minsk suspended its participation in the Eastern Partnership.

In July 2021, the European Commission adopted a working document that outlines the strategy regarding the Eastern Partnership countries, including investments of more than 17 billion euros[19]. In the case of political reforms and democratization, the EU is prepared to provide Belarus with 3 billion euros. Within the framework of the Eastern Partnership, there are plans for 350 million euros in investments for small and medium-sized enterprises, 200 million euros for improving road infrastructure, 20 million euros for digital transformation, 200 million euros for energy efficiency and waste processing, and 100 million euros for supporting democratization. Therefore, the total amount of support in the event of a democratic transition could reach 3.87 billion euros. This support amount could be increased, but currently, we are witnessing trends that point to the contrary[20].

In December 2019, after the eighth Euronest Parliamentary Assembly, all members adopted a resolution outlining the EU's integration goals to be achieved by 2030. The resolution confirms that the EU's enlargement process is open to Eastern Partnership countries and that future expansion will be mutually beneficial for both the EU and the Eastern Partnership members.

4.5 Armenia – EU Partnership Agreement

The Comprehensive and Enhanced Partnership Agreement between the EU and Armenia (CEPA)[21] is an interesting precedent. This agreement aims to deepen cooperation in politics, economics, and trade between the EU and Armenia. It involves reforms in areas such as human rights, infrastructure, and the environment in Armenia.

The agreement also contains provisions related to external trade. These provisions improve the terms of bilateral trade between the EU and Armenia, considering Armenia's obligations as a member of the Eurasian Economic Union. Consequently, Armenia receives preferential conditions in various areas, including trade in goods and services, company registration within the EU, free movement of capital, access to government procurement markets, and intellectual property rights. CEPA encourages Armenian companies to sell more products and services in the EU, while also allowing European companies to open branches in Armenia.

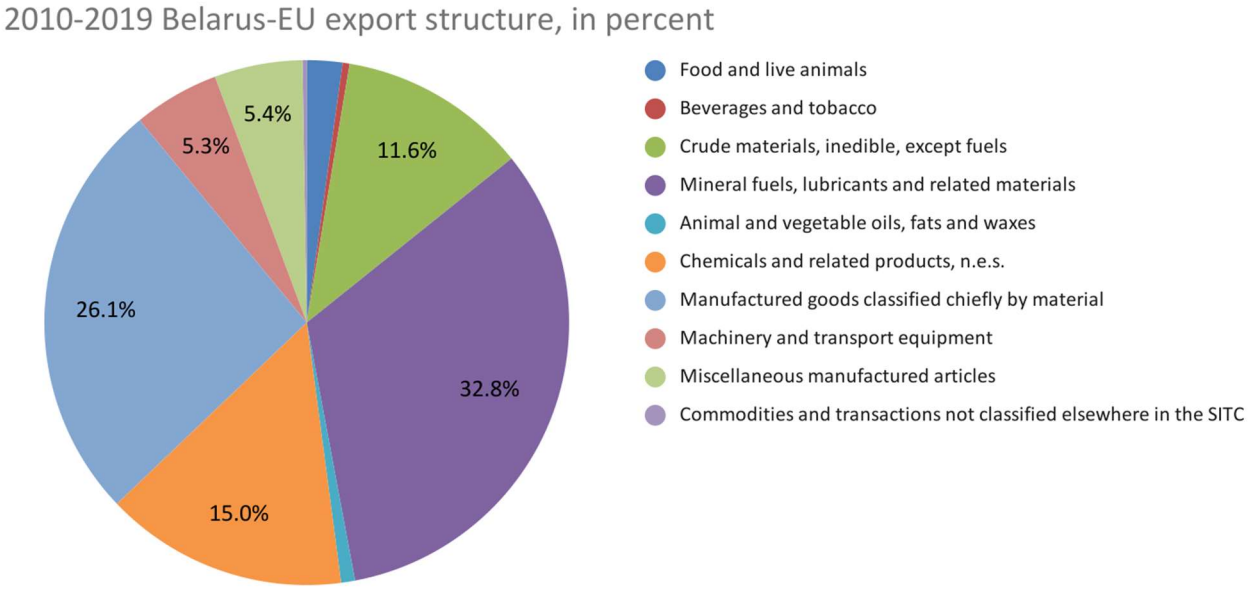
CEPA can be considered a streamlined version of the Free Trade Agreement between the EU and Armenia, where 96% of Armenian goods gain access to

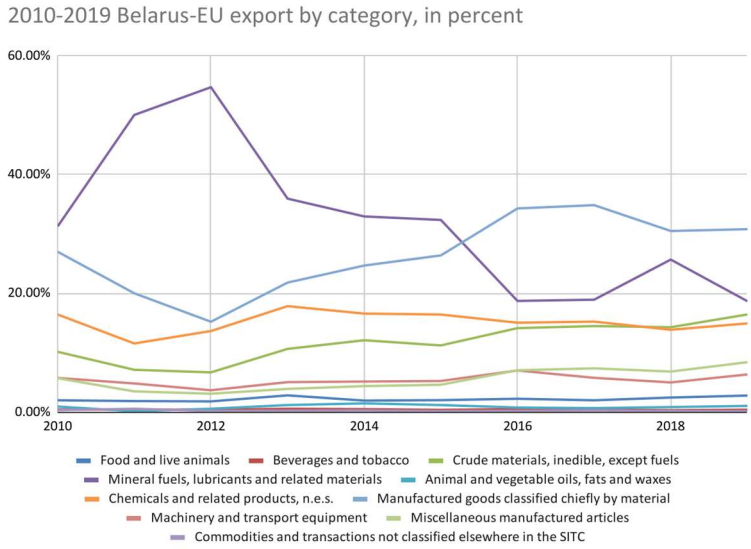
the EU market with zero tariffs. The agreement also confirms the opening of negotiations on a visa-free regime between Armenia and the EU. This allows Armenia to gain significant trade preferences, financial and technical support for reforms while remaining a member of the Eurasian Economic Union.

5. Potential of the Belarusian economy

In this chapter, we will analyze the situation in Belarus-EU exportation before the anomalous period that started in 2020 to figure out what the most developed areas of Belarus-EU trade are. We consider that the statistics for 2020 onward were significantly affected by the COVID-19 pandemic, which skew the image of the potential of the Belarusian economy. We assume that preexisting statistics can be used to figure out the most probable specialization of the Belarusian economy in the EU market. The statistics used comes from Eurostat (goods)[22] and Belstat (services)[23].

5.1 Goods



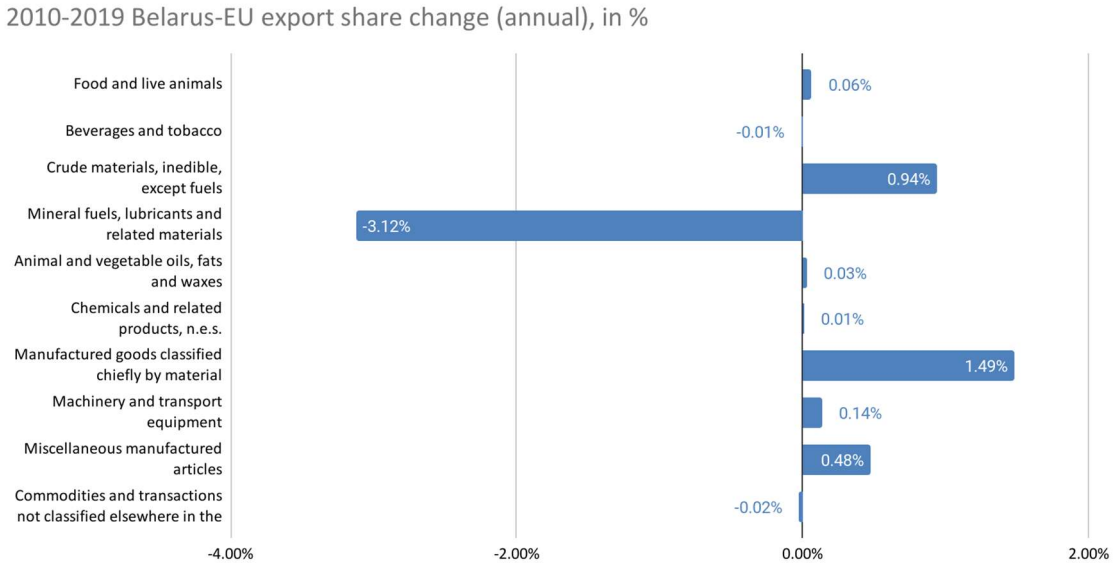


Source: calculations based on the data of Eurostat (2010-2019)

Analyzing the structure of Belarus-EU export in 2010-2019 (average values for the period), we can easily see two leading exports as well as two of those following up. The leading ones are mineral fuels, lubricants, and related materials (mostly oil and its products) (32.8%) and manufactured goods (such as processed metal, wood, textile, etc.) (26.1%). Two other industries that comprise a significant part of the pie are chemicals and related products (15.0%) and crude materials, inedible, except fuels (11.6%). Hence, those four categories are already well-established and can be considered to be used as backbones for our foreign trade strategy.

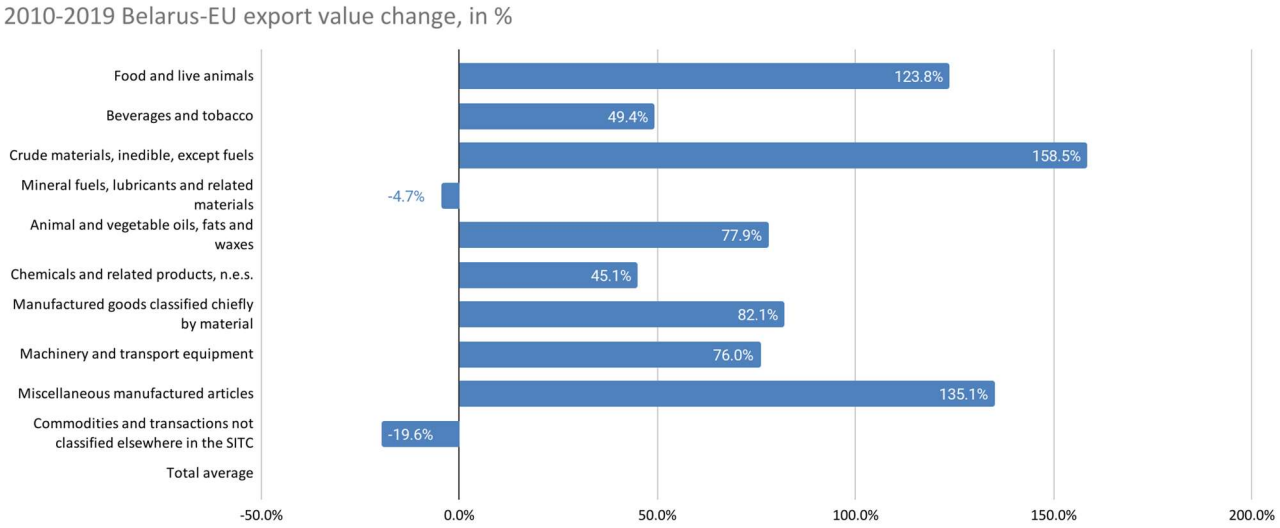
All the other categories maintained consistent growth, such as without sudden peaks observed in 2011–2012 with mineral fuels, lubricants, and related materials; thus we can use figures of average change to figure out the most prominent spheres.

However, as the analysis in time perspective demonstrates, there are quite a few observable trends. Most notably, the share of export of mineral fuels, lubricants and related materials in declining constantly from 2012, by –3.12 percentage point annually on average, while its main competitor, manufactured goods classified chiefly by material, is steadily growing by +1.49 pp. Notably, the other most quickly growing export categories are crude materials, inedible, except fuels (+0.94 pp) and miscellaneous manufactured articles (+0.48 pp). Therefore, we can figure out of three spheres with the quickest increase in share in Belarus-EU export.



Source: calculations based on the data of Eurostat (2010-2019)

To spot possible leading industries that are developing quickly, but haven't been well-established yet, the percent growth analysis can be used. In this case, we have calculated the total percent change across the period and found out that there are three obviously leading industries: crude materials, inedible, except fuels (+158.5%), miscellaneous manufactured articles (+135.1%), and food and live animals (+123.8%). Those three spheres develop in the fastest way.



Source: calculations based on the data of Eurostat (2010-2019)

To sum up leading export categories, we should rank our industries according to the three criteria above to find out the most promising ones:

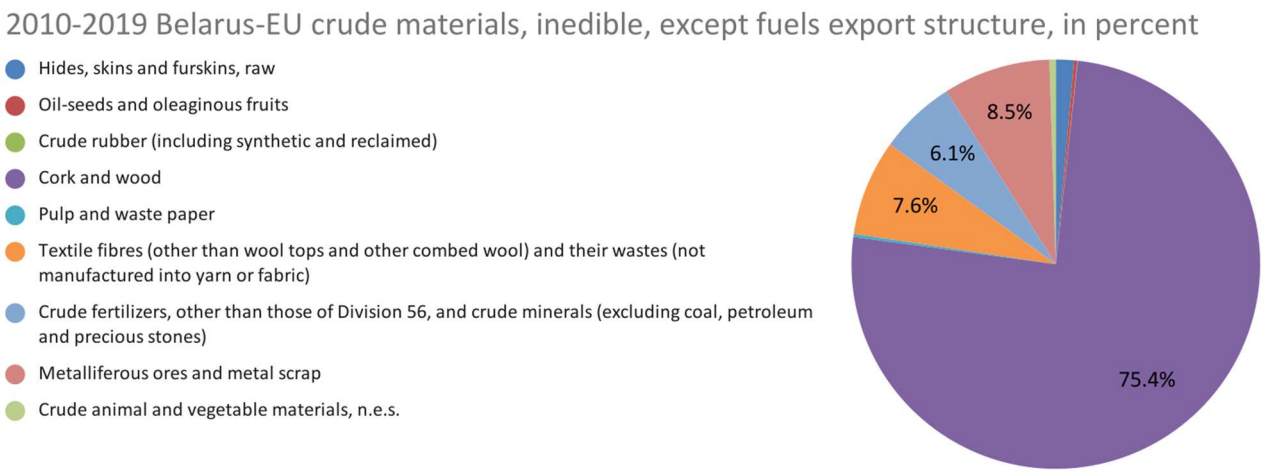
Export category	Most established (market share)	Fastest increase in share	Fastest growth	Average ranking
Crude materials, inedible, except fuels	4	2	1	2.3
Manufactured goods classified chiefly by material	2	1	4	2.3
Miscellaneous manufactured articles	5	3	2	3.3
Food and live animals	7	5	3	5.0
Machinery and transport equipment	6	4	6	5.3
Chemicals and related products, n.e.s.	3	7	8	6.0
Animal and vegetable oils, fats, and waxes	8	6	5	6.3
Mineral fuels, lubricants and related materials	1	10	9	6.7
Beverages and tobacco	9	8	7	8.0
Commodities and transactions not classified elsewhere in the SITC	10	9	10	9.7

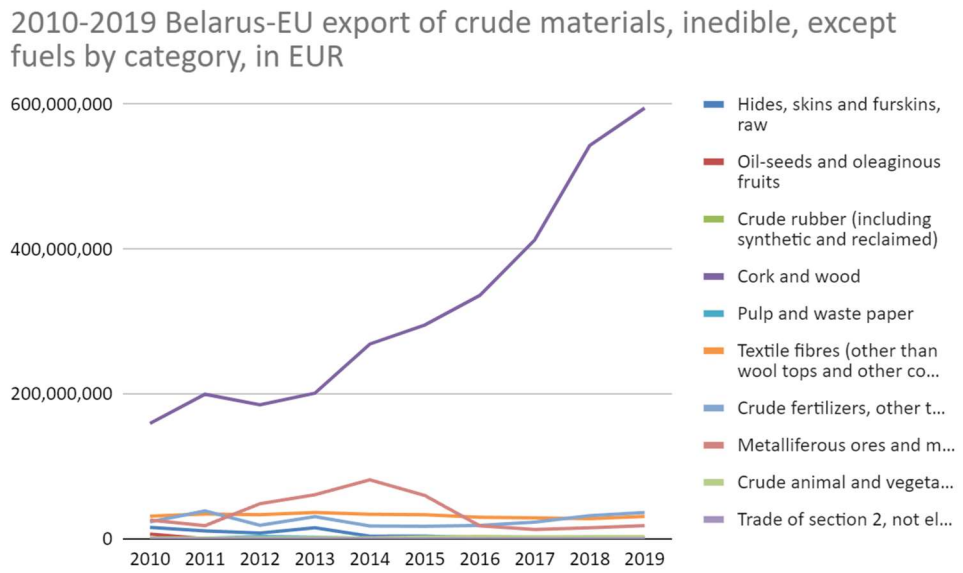
Source: calculations based on the data of Eurostat (2010-2019)

There are three categories with the best results on our “prominence” list, hence more detailed analysis of them would be necessary.

5.1.1 Crude materials, inedible, except fuels

According to Eurostat, this category is mainly composed of cork and wood (75.4%). This category is even more important looking at trends, since it, starting at 60% in 2010, reached 87% in 2019. In addition, looking at absolute export figures, we can surely say that cork and wood are the most significant crude material export in Belarus.

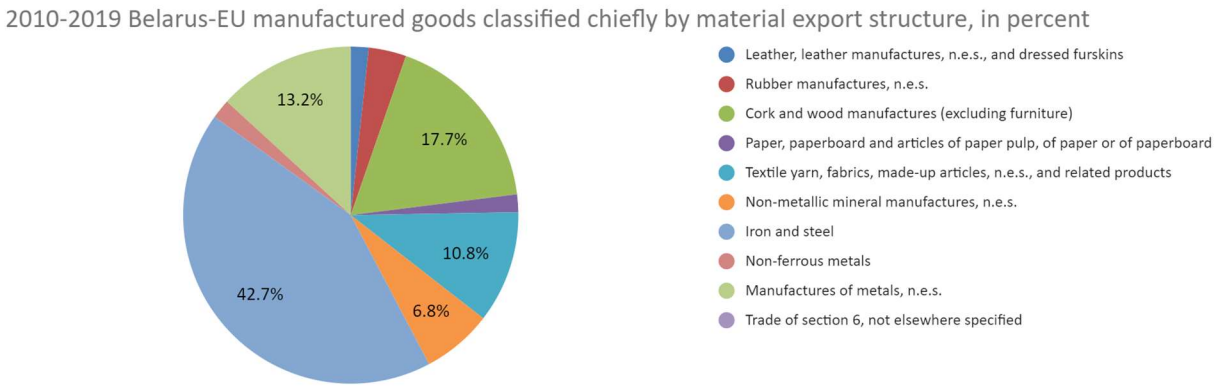


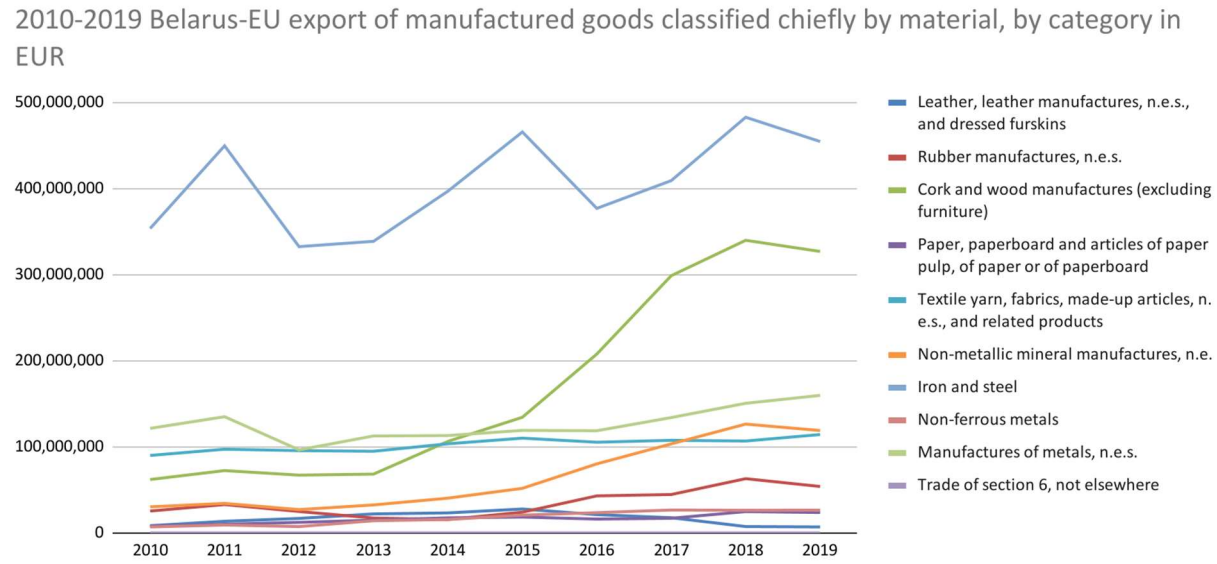


Source: calculations based on the data of Eurostat (2010-2019)

5.1.2 Manufactured goods classified chiefly by material

This sector doesn't have a single leader; instead, there are a number of them. Analyzing the aggregated shares of 2010–2019 export and absolute value trends, we can observe four main leading export industries: iron and steel (42.7%), cork and wood manufactures (excluding furniture) (17.7%), manufactures of metals (13.2%), and textile yarn, fabrics, made up articles, n.e.s., and related products (10.8%).





Source: calculations based on the data of Eurostat (2010-2019)

However, after analyzing structure share changes in this export division, we can divide the leading categories into three categories: with decreasing share (iron and steel; textile yarn, fabrics, made up articles, n.e.s., and related products; manufactures of metals) and increasing share (cork and wood manufactures). Additionally, the highest growth numbers are demonstrated by non-metallic mineral manufactures; thus I would include this in our potential analysis, too.

Therefore, considering both share and trends, our driving categories in this industry are cork and wood manufactures as well as non-metallic mineral manufactures, while iron and steel, despite being decreasing, can still be potential drivers of trade because of its high share of the market.

5.1.3 Miscellaneous manufactured articles

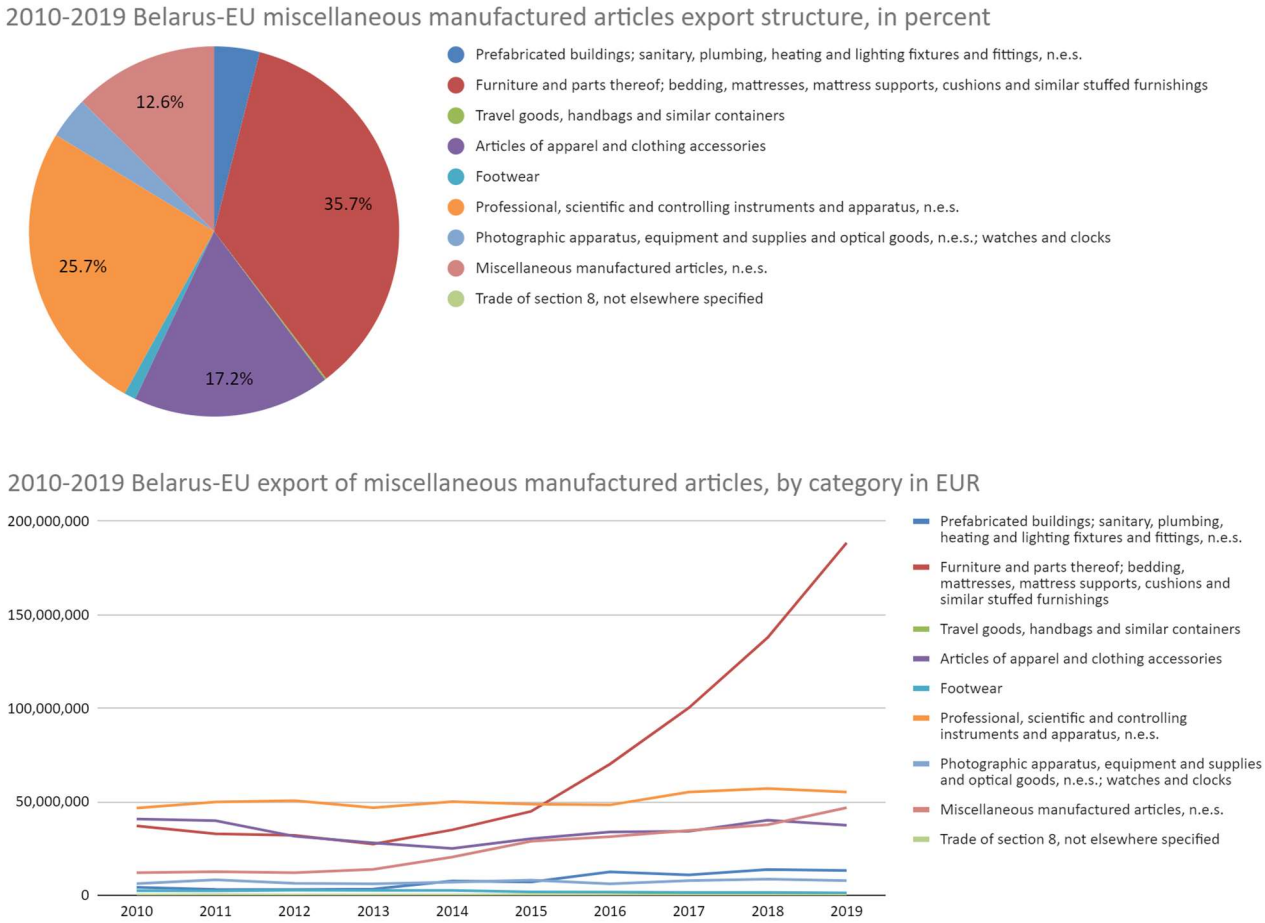
This sector of export is mostly made up of goods with high complexity of manufacturing, meaning that their added value is relatively high compared to other sectors.

After analyzing the structure of this division of exports as well as trends in time, both in absolute numbers and in percent of share from the division, it is possible to say that the leading category in miscellaneous manufactured articles is furniture and its parts. Starting with 25% of share in 2010, it

reached 53% in 2019. This category demonstrates steady growth both in actual and relative numbers, leaving behind other sectors.

Additionally, it is worth mentioning that one sector, not aforementioned, quadrupled in absolute value from 2010 to 2019, which is the second-highest growth in the observed period. Delving deeper, this sector, for Belarus-EU export, is mostly composed of plastic goods, such as plastic packaging and plastic dedicated for building.

Professional, scientific, and controlling instruments and appliances can be another focus of Belarusian export to the EU, mainly due to its complexity. Such industries not only generate markup due to the number of processes conducted by skilled workers, but also drive the growth of other industries, such as software development and education. Development of this sector would be beneficial both in terms of profit and in terms of economic development.



Source: calculations based on the data of Eurostat (2010-2019)

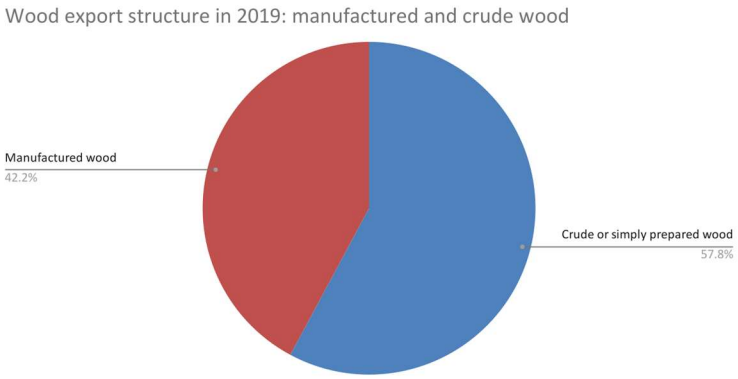
5.1.4 Goods: analysis

One important disadvantage and opportunity can be seen: Belarusian export to the EU consists mostly of raw materials and goods of low degree of processing, which generates little to no added value. Hence, the general advice is to increase the depth of processing before exporting, which would make Belarusian export both more competitive and more profitable. In addition to this, there are several specific conclusions that can be made after analyzing export categories.

According to our analysis of the most prominent sectors of Belarus-EU export, there is one major sphere and many less connected sectors that can potentially become backbones of Belarus' trade with the EU during integration.

The most established sphere is wood, both crude and processed. Export of wood as well as its derived products generates extensive amount of revenue, while having fairly stable growth among other sectors. This means that wood can become our focus and thus be a major driver of Belarusian trade of goods after joining the EU.

However, the wood sector in Belarus has a major disadvantage: more than 57% of exported wood (by value) is crude, meaning that only a little added value is produced. On the other hand, such a situation means that there is some room for more efficient economics, i.e., crude wood can be manufactured in Belarus before selling it to the EU, which increases profits and supplies the country with more job opportunities. The current market position can be used as a guarantee of Belarusian presence, while some important changes are definitely needed. Among them, to increase export share from Belarus to the EU, the industry requires technical innovation, including automation, increase in quality of production, and deepening the level of wood processing.[24] Current imports of raw wood to Belarus is of low quality; approximately 30% of imported wood doesn't comply with quality requirements. Hence, it is necessary to re-analyze trade partners and search for more producers of higher quality wood or enhance domestic wood production, all the while complying with sustainability requirements.[25] In addition, to attract more investments and private businesses to this domain, financial operations should become less regulated from the legal perspective and the judicial system should be reformed, allowing businesses to defend their interests from the state.[26]



Source: calculations based on the data of Eurostat (2010-2019)

Another significant sector with a significant share of export to the EU is metals, specifically manufactured metal products. Metal is predominately imported to Belarus from CIS countries, then it is manufactured in Belarus and sold to the EU. This industry generates significant markup, but the stagnating nature of this sphere of export suggests that either change in approach or significant reforms are needed. The main challenges of this industry are resource insufficiency and technological underdevelopment.[27] There are two major ways to resolve the problem of the lack of resources: exploiting existing Belarusian metal reserves or recycling scrap. The latter is more beneficial since it doesn't require additional expenditures on extraction, while still providing material of

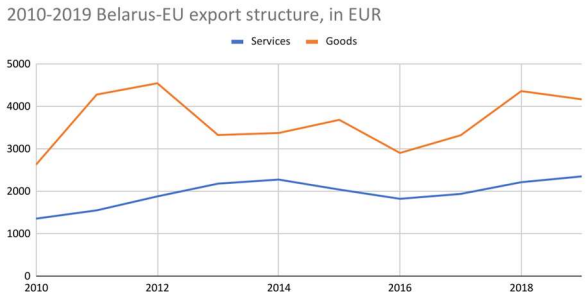
sufficient quality.[28] Additionally, innovation capacity and technological development can be promoted mainly by more favorable legal conditions, which implies deregulating the industry.[29]

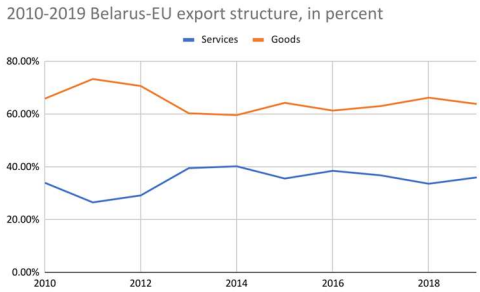
A promising industry with a great potential is scientific and controlling instruments and appliances, which is mostly represented by optics and medical equipment. Both areas generate significant markup by involving highly qualified people in manufacturing, which, in turn, makes Belarusian exports more competitive.

In general, Belarusian exports to the EU become more focused on manufacturing industries and decreases its dependence on Russian oil processing. However, significant changes are still necessary to increase markup of existing export, such as decreasing the share of crude material exports and processing those materials, increasing the share of complex industries, which can be achieved through reforming the legal system and deregulating certain areas.

5.2 Services

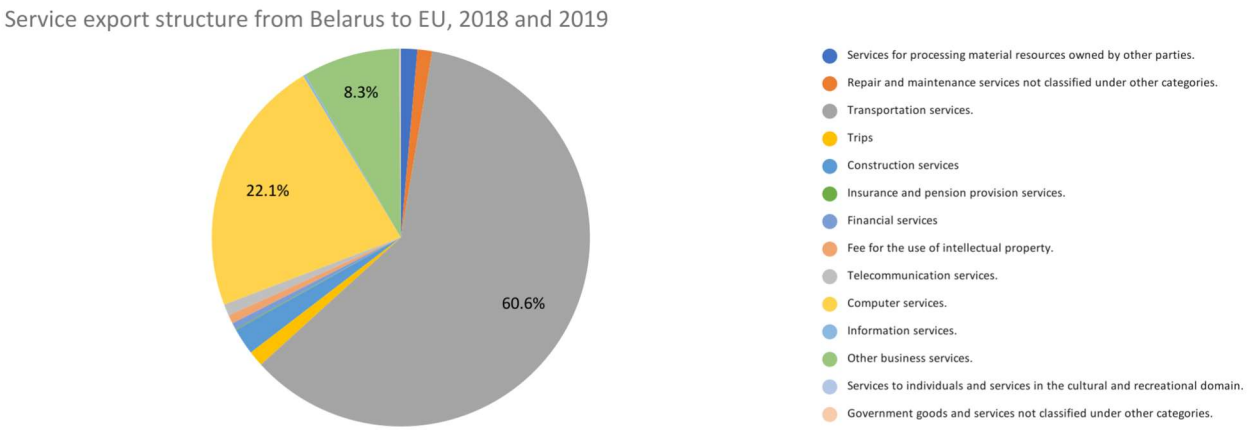
Unfortunately, Eurostat doesn't provide detailed data on service import from Belarus, limiting only to total numbers. According to them, the amount of exported services is growing, while exports of goods are lagging behind.





Source: calculations based on the data of Eurostat(2010-2019)

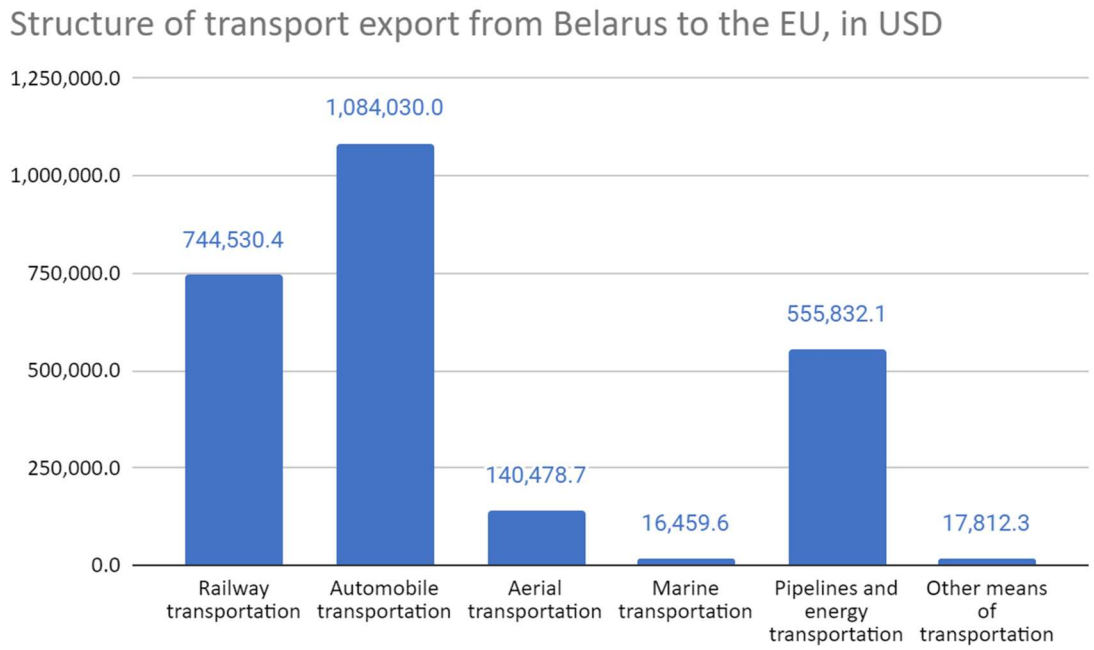
Despite this, services typically generate more added value than goods, hence they are worth analyzing. According to the statistics published by the National Bank of the Republic of Belarus[30], the two dominating service exports to the EU are transportation services (64.4%, mostly shipment of goods) and computer services (17%). Among other services, it's worth considering construction, which, whilst occupying only 3.4% of Belarus-EU exports, provides up to 15.5% of Belarusian total export.



Source: calculations based on the data of National Statistic Committee of the Republic of Belarus (2018-2019)

5.2.1 Transportation services

The transportation export from Belarus to the EU is mainly composed of three types: automobile, railway, and pipelines and energy. Notably, each mode, except for aerial, is dominated by cargo: from 99.51% in pipelines and energy transportation and 96.21% in automobile transportation to 84.59% with "other" means of transport. 65.97% of aerial transport export was generated by passenger services, though the situation will definitely change in years to come due to restrictions on flights to and from Belarus.[31]



Source: calculations based on the data of National Statistic Committee of the Republic of Belarus (2018-2019)

Generally, Belarusian cargo transport is well-connected to the European market and serves its purpose, though there are several major issues to address. Among them are legal obstacles for foreign traffic, not cost-efficient logistical services, disintegrated and not coordinated logistical systems,

limited capacity of logistical facilities, and outdated equipment. The way to improve the situation mainly lies in making an integrated transport system, expanding existing logistical facilities, harmonizing international traffic law with main European partners, and purchasing modern transport equipment.[32]

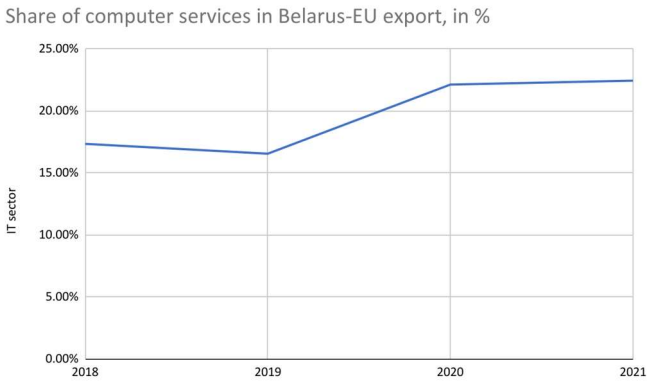
5.2.2 Computer services

Despite the sanctions and situation in the country, Belarusian export of IT services to the EU has been steadily increasing. Its share has also been increasing. This sector is relatively complex and generates a substantial amount of added value; its increase is positive for the economy. In fact, there are both positive and negative aspects of the Belarusian IT sector.

A positive of the sector is that it can be used as one of the drivers for future growth. This is because it connects Belarus to the global market through multinational corporations, such as EPAM and Wargaming. The Belarusian IT sector is inherently export-oriented, which also makes it easy to use it in foreign trade.

On the other hand, an inherent problem of the Belarusian IT industry is its outsourcing nature. Namely, the majority of Belarusian companies provide outsourcing services for Western customers. This strategy can be successful in the short term, but in the long term it can encounter a "salary ceiling," beyond which there will be no substantial growth available. To overcome this, the sector should develop its own technologies and businesses, creating products. A successful example of such a transition is EPAM: starting from a "primitive" outsourcing model, it ended up being the "digital platform and product development services provider." This strategy, however, involves more risk, but a developed network of technical university programs and start-up hubs could be helpful in such a transition.[33]

Unfortunately, in 2020 the situation worsened, when a number of Belarusian IT companies started considering moving their workforce to other countries due to risks related to the political situation in the country.[34] In 2022, this tendency became more clear, mainly due to the full-scale invasion of Ukraine by Russia and the role of Belarus in this event.[35] Such an exodus negatively affects the prospects of the Belarusian computer service sector. However, the existing know-how could be applied after the situation in the country becomes more predictive, leaving some space for positive expectations.



Source: calculations based on the data of National Statistic Committee of the Republic of Belarus (2018-2019)

5.3 Conclusions: key sectors and possible improvements

In general, Belarus exhibits strong potential in the EU market with its manufactured goods, continuously expanding the export of, for example, furniture and specialized equipment. The trends demonstrate the EU market demands these types of goods. However, a significant portion of Belarusian export to the EU is occupied by either raw materials or those with low processing levels. Such a quality decreases the complexity of the economy and added value of the export. The best way to increase the profitability and competitiveness of Belarusian export is to process more raw materials that are now directly sold to the EU in their crude form.

The Belarusian service sector mainly consists of IT services and transportation. Transportation is tightly connected to the export of goods, but lacks technical level and structural cohesion. Improvements in those areas could increase the efficiency of this service. The IT sector is growing steadily and generates a substantial amount of added value. However, to develop further, it needs to break the so-called “salary ceiling,” which can be done only if it changes its nature from outsourcing to creating its own products.

Generally speaking, the main problems for most industries lie in the legal sphere. Belarusian law restricts numerous aspects of foreign trade and investments, which hinders international cooperation. In addition, political risks in Belarus make the country unreliable for long-term projects, which exacerbated in 2020 and, even more, in 2022.

6. Tariffs: defensive mechanism or a barrier?

In this chapter, we will analyze the tariffs that the EU imposes on Belarusian goods and vice versa. According to the European Commission, more than 95% of tariffs have been lifted in shorter than 5 years after Ukraine signed a Deep and Comprehensive Free Trade Agreement (DCFTA).[36] We assume that, if Belarus follows the path of Euro integration, similar steps will be taken. To calculate the risks and benefits of signing a DCFTA, we will assume that the ultimate effect of the agreement will be the elimination of all tariffs and duties. From one perspective, that would reinforce the positions of several Belarusian export sectors, since, ceteris paribus, their cost will be brought down. On the other hand, such elimination of trade barriers could harm some Belarusian industries that are now protected from their European competitors by tariffs. Furthermore, in the text, we will identify the industries that would benefit and lose the most after the DCFTA is signed. All the information about the tariffs and amount of export was taken from WTO's WITS service, using TRAINS data source for Effectively Applied rates calculated using AVE estimation UNCTAD Method.[37]

6.1 If EU tariffs are lifted—benefiting Belarusian exports

From this perspective, there are two ways to categorize Belarusian exports: those with the highest percentage of tariffs, and those that pay the highest amount towards tariffs. The first category can be seen as, possibly, experiencing rapid growth when the tariffs are lifted, while the latter would benefit the most to Belarusian economy in absolute values.

For our research, we have ranked the sectors of Belarusian export (categorized as the divisions of SITC-4) to the EU by the percent of tariff in descending order. We consider high all tariffs that are above or equal to 5%. To simplify the analysis, we sorted the divisions into main categories (according to Eurostat[38]). As we can observe, 47% of all positions are occupied by the categories connected to food and beverages, while another 2 categories, summing 59%, represent raw products of animal origin, which reflects the overall high level of regulation of agriculture in the EU.[39] The rest is composed mostly of three categories: clothing and fabrics, plastic manufacturing, and wood manufacturing. In case of signing the DCFTA, the majority of those tariffs will disappear, meaning that the exports of agricultural products (especially dairy products, which currently experience more than 100% tariffs), and, to a lesser extent, clothing-related goods, plastics, and wood products have the potential to increase substantially. In addition, lowering tariffs would mean that the products will become cheaper for the final customer, thus increasing their competitiveness, ceteris paribus.

For the analysis of absolute values of paid tariffs, we took all divisions of exports, for which the tariff amount paid comprised more than one million USD. Those industries, though oftentimes with lower rates, are most impacted by the tariffs. These amounts can be considered either as potential additional income, if tariffs are lifted, or as a potential resource for the increase in price competitiveness of Belarusian exports to the EU. If tariffs are lifted, those exports can generate the income necessary to finance economic, political, and social transformations that accompany the integration to the EU.

In contrast to the analysis of tariff rates, the sectors connected to food and agriculture occupy only 19% of the categories whose tariff amount was above 1 million USD. Overall, this table is more diverse and is mostly composed of the following categories:

- Crude wood and its products, mostly furniture
- Oil and its products, processed
- Textile and clothing
- Equipment
- Processed metals

Overall, the exports, which pay the most in tariffs, are rather developed and generate a significant amount of added value. Those industries belong to different categories, which means that, if sanctions are lifted, Belarusian export will remain diversified, which is beneficial for economic safety. In sum, if the tariffs are lifted, one can expect an increase in Belarusian exports in the spheres of manufactured and crude wood, processed oil, textile, clothing, technical equipment, and processed metals.

Overall, assuming that lifting tariffs can increase the amount of export from Belarus to the EU, we can point out that the highest growth is expected in food-related exports. However, if tariffs are lifted, the most economically significant changes will appear in more complicated areas, connected to high-level manufacturing (furniture, machinery), chemical industry, and processing.

Coloring scheme	
Green	food, drinks and tobacco (Sections 0 and 1 - including live animals);
Yellow	raw materials (Sections 2 and 4);
Red	energy products (Section 3);
Orange	chemicals (Section 5);
Purple	machinery and transport equipment (Section 7);
Cyan	other manufactured goods (Sections 6 and 8).

Average tariff paid for Belarus-EU export in 2018-2019, by SITC-4 divisions, in percent

Export category	Average tariff paid
02 - Dairy products and birds' eggs	116.93%
12 - Tobacco and tobacco manufactures	34.19%
03 - Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	18.39%
84 - Articles of apparel and clothing accessories	11.52%
09 - Miscellaneous edible products and preparations	10.87%
41 - Animal oils and fats	10.59%
05 - Vegetables and fruit	10.44%
85 - Footwear	8.91%
04 - Cereals and cereal preparations	8.87%
07 - Coffee, tea, cocoa, spices, and manufactures thereof	6.55%
57 - Plastics in primary forms	6.45%

43 - Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	6.28%
58 - Plastics in non-primary forms	6.27%
65 - Textile yarn, fabrics, made -up articles, n.e.s., and related products	6.08%
63 - Cork and wood manufactures (excluding furniture)	5.71%
53 - Dyeing, tanning and colouring materials	5.60%
06 - Sugars, sugar preparations and honey	5.00%

Source: calculations based on the data of World Bank (2018-2019)

Average tariff paid for Belarus-EU export in 2018-2019, by SITC-4 divisions, in thousand USD

Export category	Amount paid in tariffs
63 - Cork and wood manufactures (excluding furniture)	15587.53
56 - Fertilizers (other than those of group 272)	14971.58
33 - Petroleum, petroleum products and related material	10105.77
65 - Textile yarn, fabrics, made -up articles, n.e.s., and related products	8291.55
05 - Vegetables and fruit	8113.05
84 - Articles of apparel and clothing accessories	6263.52
57 - Plastics in primary forms	5954.77
02 - Dairy products and birds' eggs	3645.49
66 - Non-metallic mineral manufactures, n.e.s.	2885.14

77 - Electrical machinery, apparatus and appliances, n.e.s.	2696.69
69 - Manufactures of metals, n.e.s.	2651.16
62 - Rubber manufactures, n.e.s.	2054.47
58 - Plastics in non-primary forms	1889.93
51 - Organic chemicals	1811.30
89 - Miscellaneous manufactured articles, n.e.s.	1783.92
82 - Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	1782.06
42 - Fixed vegetable fats and oils, crude, refined or fractionated	1607.72
78 - Road vehicles (including air-cushion vehicles)	1391.94
59 - Chemical materials and products, n.e.s.	1302.73
68 - Non-ferrous metals	1081.58
03 - Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	1064.38

6.2 If Belarusian tariffs are lifted – increased competition

The tariffs that Belarus imposes on EU goods act as the measures that protect the Belarusian economy from European import. In this section, we will examine which spheres of the Belarusian economy would be endangered in case the tariffs are lifted. We assume that lifting the tariffs would make European goods more cost competitive, thus damaging the positions of respective industries in Belarus.

In fact, Belarus imposes higher tariffs on European goods than the EU on Belarusian ones (the average weighted tariff imposed by the EU on Belarusian goods in 2018-2019 was 2.33%, while the respective number imposed by Belarus on European goods was 8.20%). Additionally, Belarus is a net-importer from the EU (4.5 bln USD in exports vs. 6.9 bln USD in imports). Considering this, we will increase our threshold to 7% when considering the size of tariffs and to seven million USD, when considering the amount of tariff paid.

Before analyzing the data, it's worth noting that taxes on beverages were exceptionally high in 2018 (around 500% as a weighted average), whereas the weighted average tariff for the previous years was around 15% – 20%. Therefore, this category is included, but it should be treated with caution.

The highest tariff rates are in four main categories: edible goods, raw materials of plant and animal origin, clothing, and metal manufactures. Respective Belarusian spheres can suffer from increased competitiveness of European goods due to decreased prices. For our research, we consider that the categories that pay the most tariffs in absolute values will affect the Belarusian market the most, in general. This category is more technologically advanced than the one with the highest tariffs, as it includes — in addition to edible goods — equipment and machinery as well as advanced chemical industry products (such as processed plastic and pharmaceuticals).

Overall, if tariffs are lifted between the EU and Belarus, we can expect that the Belarusian agricultural sector, along with industries that process its products, will experience pressure from European competitors. In addition, we can expect the increase in influence of European technological and chemical import, which can hinder the development of Belarusian industry connected to high levels of processing.

Coloring scheme	
Green	food, drinks and tobacco (Sections 0 and 1 - including live animals);
Yellow	raw materials (Sections 2 and 4);
Red	energy products (Section 3);
Orange	chemicals (Section 5);
Purple	machinery and transport equipment (Section 7);
Cyan	other manufactured goods (Sections 6 and 8).

Average tariff paid for EU-Belarus export in 2018-2019, by SITC-4 divisions, in percent

Export category	Average tariff paid
11 - Beverages	259.23%
01 - Meat and meat preparations	36.49%
41 - Animal oils and fats	14.12%
26 - Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	13.61%
43 - Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	13.16%
06 - Sugars, sugar preparations and honey	12.81%
83 - Travel goods, handbags and similar containers	12.71%
66 - Non-metallic mineral manufactures, n.e.s.	10.20%
82 - Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	10.19%
09 - Miscellaneous edible products and preparations	9.49%
81 - Prefabricated buildings;sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	8.96%
78 - Road vehicles (including air-cushion vehicles)	8.50%
24 - Cork and wood	8.26%
04 - Cereals and cereal preparations	8.06%
02 - Dairy products and birds' eggs	7.43%
84 - Articles of apparel and clothing accessories	7.29%
69 - Manufactures of metals, n.e.s.	7.09%

Average tariff paid for EU-Belarus export in 2018-2019, by SITC-4 divisions, in thousands of USD

Export category	Amount paid in tariffs
11 - Beverages	223866.71
78 - Road vehicles (including air-cushion vehicles)	46004.29
69 - Manufactures of metals, n.e.s.	22058.11
05 - Vegetables and fruit	20295.00
77 - Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical householdtype equipment)	17427.94
54 - Medicinal and pharmaceutical products	16416.48
71 - Power-generating machinery and equipment	13410.43
74 - General industrial machinery and equipment, n.e.s.	13074.93
57 - Plastics in primary forms	11003.46
65 - Textile yarn, fabrics, made -up articles, n.e.s., and related products	10744.58
64 - Paper, paperboard and articles of paper pulp, of paper or of paperboard	10340.83
29 - Crude animal and vegetable materials, n.e.s.	9980.39
01 - Meat and meat preparations	9882.86
26 - Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	9667.91
59 - Chemical materials and products, n.e.s.	9642.87
09 - Miscellaneous edible products and preparations	9612.21
66 - Non-metallic mineral manufactures, n.e.s.	9349.00
55 - Essential oils and resinoids and perfume materials	9309.26
89 - Miscellaneous manufactured articles, n.e.s.	9060.11
58 - Plastics in non-primary forms	9053.16
82 - Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	7818.66

Source: calculations based on the data of World Bank (2018-2019)

6.3 If tariffs between Belarus and the EU are lifted — overview

Overall, the sectors with high tariffs, both by their rate and by the amount of money paid, are comparable both for the EU and Belarus: both parties heavily tax the import of agriculture and edible products, products of the chemical industry, equipment, and clothing-related manufactures. However, there is a major difference: tariffs imposed by Belarus are generally higher, which, combined with the fact that Belarus is a net importer from the EU, would make the effect of lifting the tariffs more influential for Belarus than for the EU. Additionally, the structure of European export to Belarus is more technologically complex than the export of Belarus to the EU, which is also reflected by the spheres that pay the most in tariffs both for Belarus-EU and EU-Belarus exports.

Based on these observations, we can assume that, ceteris paribus, if the tariffs are lifted, Belarusian businesses connected to high-level processing and manufacturing — especially production of equipment, machinery, clothes, and edibles — can face increased competition from their European counterparts, which, possibly, can hinder the development of respective spheres in the country.

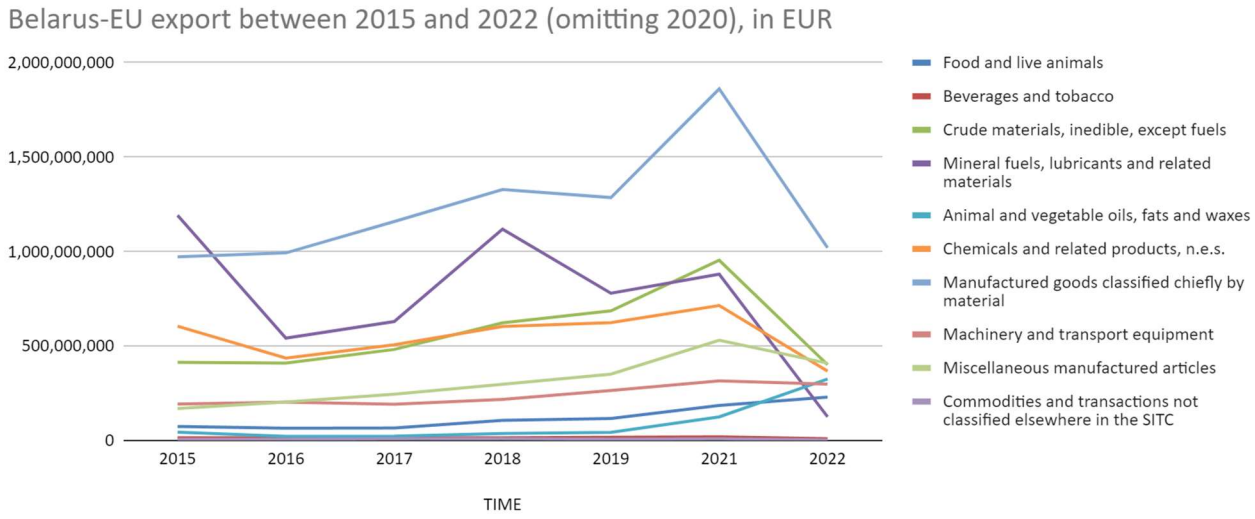
In addition, after signing the DCFTA, Belarus will have to align its production with European standards, since existing discrepancies are rather significant.[xl] This will require additional resources that could otherwise be used to directly increase the competitiveness of Belarusian exports. Therefore, to avoid this vulnerable position, where the tariffs are being lifted, but Belarusian export isn't yet competitive enough, we should spend some time and resources on increasing the efficiency of Belarusian exports. This will permit the Belarusian economy to maintain its efficiency and sustainability.

7. Impact of sanctions

Since October 2020, the EU has been posing restrictive sanctions against Belarus, including trade limitations and financial barriers[xli], while a more significant extent was reached in 2021–2022, making the effect of the sanctions clearly visible in 2022.[xlii] [xliii] In this chapter, we are inspecting the impact of those measures. To do so, we are extrapolating from previous trends and trade amounts and comparing them to the actual data from 2022, a year when the impact of the sanctions is clearly seen. Considering that 2020 was an anomalous level for the global economy due to the COVID-19 pandemic, our extrapolation will be built using the data from 2019 and before it. The gap between our extrapolation and actual amounts of trade will be considered an impact of sanctions. In addition, we assume that a significant number of space, left vacant after the sanctions were posed, could be re-occupied by Belarusian goods and services soon after sanctions are lifted. Our model has its limitations, but it proposes a way to take a look at the impact of sanctions on Belarusian export to the EU.

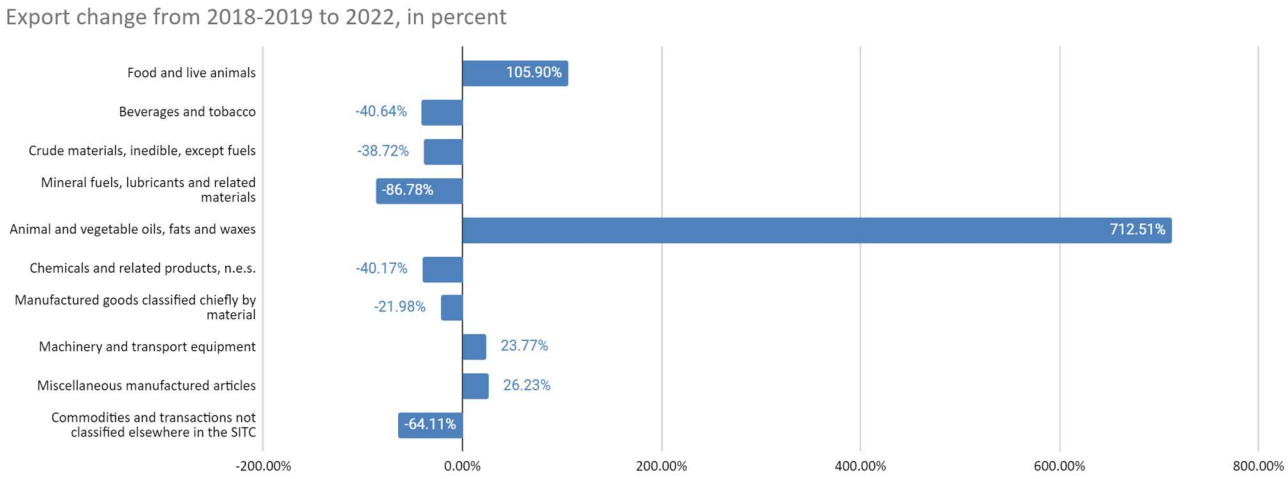
7.1 Goods

To consider more actual data, we will extrapolate using 2015–2019 figures of Belarusian export to the EU by SITC categories.



Source: calculations based on the data of Eurostat (2015-2019)

As we can see from the graph, there is an observable tendency towards export decline. However, to analyze it numerically, we would compare mean trade values for each category from the 2018–2019 period to the figures of 2022.



Source: calculations based on the data of Eurostat (2018-2022)

Comparing the two graphs above, we can spot 4 categories of exports:

1. Those showing a decrease of more than 50%, which can be seen as major targets of the sanctions.
   a. Mineral fuels, lubricants and related materials: - 86.78%
   b. Commodities and transactions not classified elsewhere: - 64.11%
2. Showing a decrease of less than 50%—can be seen as targets of the sanctions, though partial or secondary.
   a. Beverages and tobacco: - 40.64%
   b. Crude materials, inedible, except fuels: - 38.72%
   c. Chemicals and related products: - 40.17%
   d. Manufactured goods classified by material (metal and wooden products): - 21.98%
3. Showing an insignificant increase from 2018–2019 to 2022—can be seen as not suffering from the sanctions.
   a. Machinery and transport equipment: increased by 23.77%
   b. Miscellaneous manufactured articles: 26.23%

4. Showing a significant increase from 2018–2019 to 2022—the export categories that somewhat compensated the loss due to the sanctions.
a. Food and live animals: increased by 105.9%
b. Animal and vegetable oils, fats, and waxes: increased by 712.51%

7.1.1 Categories that have suffered significantly

There are two main categories that suffered the most from the sanctions: mineral fuels and its products, as well as commodities not classified elsewhere. The latter category is insignificant since it occupied only 0.16% of the export in 2019; thus we will concentrate on its more influential counterpart.

Mineral fuels and its products' category can be divided into two main subcategories: oils and gas versus coal. The export of oil and gas with its products dropped significantly, up to a 99.66% decrease in processed petroleum and bituminous oils, which reflects the nature of sanctions. Additionally, the export of electricity has dropped to zero, which is also a part of ongoing sanctions.

On the other hand, the export of coal and its products has increased. The increase is rapid in relative numbers, but only the export of coil briquettes is significant in absolute values. This trend points to primitivization of Belarusian export to the EU, since coal products are less complex: the product complexity index for coal briquettes is -1.68, while PCI for petroleum oil is -0.755.[xliv]

Mineral fuels and its product export in 2018, 2019 and 2022, in EUR

	2018	2019	2022	Percent change between 2018-2019 and 2022
Coal, whether or not pulverized, but not agglomerated	164,399	260,272	585,210	175.61%
Briquettes, lignite and peat	14,968,857	12,652,320	29,436,201	113.14%
Coke and semi-coke (including char) of coal, of lignite or of peat, whether or not agglomerated; retort carbon		2,130	19,241	803.33%
Petroleum oils and oils obtained from bituminous minerals (processed)	700,818,476	527,911,425	2,094,266	-99.66%
Residual petroleum products, n.e.s., and related materials	300,468,258	151,225,295	85,011,458	-62.36%
Liquefied propane and butane	18,764,431	5,493,358	367,873	-96.97%

Petroleum gases and other gaseous hydrocarbons, n.e.s.	38,551,102	43,289,760	7,964,541	-80.54%
Electric current	44,723,484	38,639,788	0	-100.00%

Source: calculations based on the data of Eurostat (2018-2022)

7.1.2 Categories that have suffered less significantly

Throughout the sectors of export that decreased less than by 50%, we can also observe structural changes. Specifically, in the crude materials, inedible, except fuels category, the amount of cork and wood export, which was dominating a large fraction of Belarus-EU export, decreased by 39.65%, whereas some other spheres grew, though insignificantly in absolute values. Among the growing sectors, we can observe two main categories: those connected to recycling (pulp and waste paper) and crude vegetables (74.6% of "crude animal and vegetable materials" is occupied by vegetable materials). The main conclusion is, however, that Belarus is gradually loosing one of its main exports: cork and wood, which adversely impacts both current competitiveness and future prospects.

Crude materials, inedible, except fuels export in 2018, 2019 and 2022, in EUR

	2018	2019	2022	Percent change between 2018-2019 and 2022, in %
Hides, skins and furskins, raw	92,006	5,525	61,811	26.75%
Oil-seeds and oleaginous fruits	549,167	1,142,392	1,486,427	75.75%
Crude rubber (including synthetic and reclaimed)	19,889	23,701	54,438	149.77%
Cork and wood	543,165,886	594,867,463	343,382,718	-39.65%
Pulp and waste paper	247,984	1,470,242	6,371,093	641.59%
Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	27,944,581	31,041,037	19,854,568	-32.68%
Crude fertilizers, other than those of Division 56, and crude minerals (excluding coal, petroleum and precious stones)	32,053,403	36,397,558	13,812,072	-59.64%
Metalliferous ores and metal scrap	15,344,353	18,301,774	8,745,088	-48.02%
Crude animal and vegetable materials, n.e.s.	3,055,540	3,129,439	7,246,730	134.33%

Source: calculations based on the data of Eurostat (2018-2022)

In the export of chemical industry suffered significantly from the sanctions. The most notable effect is the decrease in potassium fertilizers export by 84.35% as well as a comparable decrease in other types of fertilizers. In addition, organic chemicals export also decreased by 62.88%, which can also be linked to current sanctions from the EU. Two significant export articles increased its value, namely inorganic chemicals (mostly due to inorganic chemical

elements, oxides, and halogen salt) and chemical materials not mentioned elsewhere (mostly driven by artificial waxes and wood- and resin-based products).

Chemicals and related products export in 2018, 2019 and 2022, in EUR

	2018	2019	2022	Percent change between 2018-2019 and 2022
Organic chemicals	34,066,272	35,893,143	12,983,466	-62.88%
Inorganic chemicals	13,283,536	8,146,726	36,214,175	237.97%
Dyeing, tanning and colouring materials	2,776,409	2,520,586	7,866,160	197.00%
Medicinal and pharmaceutical products	1,278,446	3,079,446	2,701,452	23.98%
Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	1,890,219	2,098,213	2,975,868	49.22%
Mineral or chemical fertilizers, nitrogenous	39,979,511	89,238,996	31,248,705	-51.63%
Mineral or chemical fertilizers, potassic (other than crude natural potassium salts)	241,586,813	245,316,099	38,105,537	-84.35%
Fertilizers, n.e.s.	125,253,366	118,184,243	85,893,934	-29.43%
Plastics in primary forms	97,510,846	64,924,458	63,020,138	-22.41%
Plastics in non-primary forms	21,513,915	27,717,405	33,565,807	36.36%
Chemical materials and products, n.e.s.	24,595,974	26,396,331	52,456,510	105.74%

Source: calculations based on the data of Eurostat (2018-2022)

In the category named "manufactures goods classified by material" the most dominant industries —cork and wood product along with iron and steel production — decreased in their value, significantly both in relative and absolute terms. However, there were three industries that increased their value in export: paper products (+72.37%), non-ferrous metal products (+51.04%), and non-metallic mineral manufactures (14.54%).

Manufactured goods classified by material export in 2018, 2019 and 2022, in EUR

	2018	2019	2022	Percent change between 2018-2019 and 2022
Leather, leather manufactures, n.e.s., and dressed furskins	7,353,000	6,868,695	7,576,765	6.55%
Rubber manufactures, n.e.s.	62,981,083	53,898,164	26,932,323	-53.91%
Cork and wood manufactures (excluding	340,053,062	327,079,459	289,510,843	-13.21%

furniture)				
Paper, paperboard and articles of paper pulp, of paper or of paperboard	24,736,958	23,672,130	41,720,887	72.37%
Textile yarn, fabrics, made-up articles, n.e.s., and related products	106,726,709	114,295,798	80,017,563	-27.59%
Non-metallic mineral manufactures, n.e.s.	126,418,857	118,927,358	140,512,950	14.54%
Iron and steel	483,079,890	454,857,021	280,388,262	-40.21%
Non-ferrous metals	26,249,038	26,443,370	39,793,530	51.04%
Manufactures of metals, n.e.s.	150,593,055	159,792,557	113,258,416	-27.02%

Source: calculations based on the data of Eurostat (2018-2022)

7.1.3 Categories that didn't show extraordinary change

In the category of machinery and transport equipment, the situation is similar to the ones described before: we observe decline in some areas, while the others experience growth. While the exports that were leading before, such as machinery specialized for particular industries (mostly represented by tractors) is decreasing, one export industry experiences growth that compensates other downward trends: electrical machinery not elsewhere mentioned almost doubled, though this growth is, mostly, represented by isolated cables export. In this case, we also observe the trend towards primitivization: while more complex industries are decreasing, more simple exports flourish.

Machinery and transport equipment export in 2018, 2019 and 2022, in EUR

	2018	2019	2022	Percent change between 2018-2019 and 2022
Power-generating machinery and equipment	14,051,855	9,240,380	11,099,889	-4.69%
Machinery specialized for particular industries	54,915,217	47,522,784	42,746,165	-16.54%
Metalworking machinery	2,156,395	1,688,179	1,301,230	-32.31%
General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	26,259,403	23,812,044	26,577,331	6.16%
Office machines and automatic data-processing machines	1,334,411	2,265,659	8,698,682	383.25%
Telecommunications and sound-recording and reproducing apparatus and equipment	4,216,652	4,069,344	2,564,975	-38.09%

Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	64,829,584	87,319,776	149,269,739	96.21%
Road vehicles (including air-cushion vehicles)	44,984,706	30,211,937	42,257,934	12.39%
Other transport equipment	4,770,898	58,435,611	13,831,130	-56.24%

Source: calculations based on the data of Eurostat (2018-2022)

The miscellaneous manufactured articles category, mostly represented by furniture and professional instruments, didn't demonstrate any significant changes that don't align with previous trends, which is, considering the state of the other categories, is worth observing. Here, the growth of certain industries (such as furniture) remained at the previous years' level, while the only category declining was clothing, though insignificantly compared to the categories discussed before. Additionally, prefabricated buildings export doubled, but it doesn't have a significant impact on absolute values. Generally speaking, this category remained quite stable.

Miscellaneous manufactured articles export in 2018, 2019 and 2022, in EUR

	2018	2019	2022	Percent change between 2018-2019 and 2022
Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	13,708,793	13,234,681	28,781,709	113.65%
Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	137,840,708	188,473,256	232,739,129	42.65%
Travel goods, handbags and similar containers	723,210	794,044	1,715,459	126.13%
Articles of apparel and clothing accessories	40,135,755	37,450,117	29,616,111	-23.66%
Footwear	1,462,900	1,221,873	1,499,907	11.73%
Professional, scientific and controlling instruments and apparatus, n.e.s.	57,040,292	55,190,795	57,227,603	1.98%
Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	8,579,104	7,766,865	9,248,073	13.15%
Miscellaneous manufactured articles, n.e.s.	37,729,056	46,818,622	48,259,685	14.16%

Source: calculations based on the data of Eurostat (2018-2022)

7.1.4 Categories that have significantly increased

The most significant increase can be observed in the animal and vegetable oils, fats, and waxes section. As we can see from this section, Belarus has heavily increased its export of plant-based oil. In relative terms, sunflower seeds and oil and rape, colza, or mustard oil and fractions demonstrated the fastest

growth, while the latter one also increased significantly in absolute values. Overall, there is a visible trend on increased exportation of plant-based oil.

Animal and vegetable oils, fats, and waxes export in 2018, 2019 and 2022, EUR

	2018	2019	2022	Percent change between 2018-2019 and 2022
Animal oils and fats	48,202	35,847	29,166	-30.60%
Soya bean oil and its fractions	590,639	4,604,720	10,078,000	287.96%
Sunflower seed or safflower oil and fractions thereof	0	826,053	10,231,557	1138.61%
Rape, colza or mustard oil and fractions thereof	28,028,809	28,675,461	283,283,707	899.16%
Animal or vegetable fats and oils, processed; waxes; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	8,012,908	9,234,578	21,838,946	153.24%

Source: calculations based on the data of Eurostat (2018-2022)

The situation in food and live animals sector is quite different from the one mentioned above, since in food and live animals we can spot two major types of export: those which increased and decreased significantly. This means that Belarusian export to the EU has specialized, mostly in plant-based oil residues from the cultures, whose export increased too, as we can assume from the previous category. Additionally, a part of oil production waste goes to animal feeds.

Live animals category has also increased considerably, while its absolute values remain insignificant.

Overall, in the analysis of the spheres that increased its value in Belarus-EU export, we can observe two trends: specialization and simplification. Belarusian export has specialized in selling plant-based oil and its residues, as well as basic products from it. Those are industries generating little added value and demanding an insignificant amount of capital and intellectual investment. For example, the product complexity index of oilcake is -1.08, soybean oil: - 1.21, sunflower oil: -0.968.[xlv] Thus, we can assume that the observed changes point to primitivization of Belarusian export, and, probably, the economy in general.

7.2 Services

The analysis of sanctions' impact on service export of Belarus to the EU is complicated by the absence of 2022-related data. Therefore, the only source available to be used is data from 2021, which doesn't include sanctions introduced after the Russian full-scale invasion in Ukraine. Thus, our analysis will be based on comparing export of services from Belarus to the EU in 2018, 2019 and 2021, data for which is provided by the National Bank of the Republic of Belarus.

Service export in 2018, 2019 and 2021, in thousand USD

	2018	2019	2021	Percent change between 2018-2019 and 2021
Services for processing material resources owned by other parties.	67,567	66,230	114,966	71.85%
Repair and maintenance services not classified under other categories.	10,878	10,300	17,692	67.09%
Transportation services.	2,591,652	2,568,128	2,243,227	-13.05%
Trips	173,298	163,255	27,586	-83.61%
Construction services	136,378	134,660	92,845	-31.49%
Insurance and pension provision services.	2,315	2,531	3,605	48.80%
Financial services	14,103	17,146	25,564	63.62%
Fee for the use of intellectual property.	22,423	26,839	40,738	65.39%
Telecommunication services.	63,750	52,463	30,171	-48.08%
Computer services.	690,027	665,121	839,644	23.92%
Information services.	7,377	8,273	14,199	81.46%
Other business services.	181,003	284,635	283,152	21.62%
Services to individuals and services in the cultural and recreational domain.	2,691	5,406	3,152	-22.15%
Government goods and services not classified under other categories.	11,567	10,269	3,068	-71.90%

Source: calculations based on the data of National Statistic Committee of the Republic of Belarus (2018-2021)

In terms of services, it is difficult to point out what changes can be attributed to the impact of COVID-19, and which ones are linked to current sanctions. Most likely, the decrease in trips and recreational service export was caused by COVID-19 pandemic.

Transport export suffered twice. First, decreased passenger transport export is almost certainly connected to COVID-19 and accompanying measures, whereas decreased cargo transport export most likely reflects decreased export of goods to the EU.

Transport export in 2018, 2019 and 2021, in thousand USD

		2018	2019	2021	Percent change between 2018-2019 and 2022
Railway transportation	Passenger	1,546.2	1,659.2	0.0	-100.00%
	Cargo	719,957.4	709,927.7	628,240.1	-12.13%
	Other	35,468.9	32,943.5	36,238.3	5.94%
Automobile transportation	Passenger	5,540.6	7,266.9	2,530.6	-60.48%
	Cargo	1,036,476.9	1,042,946.5	968,323.4	-6.87%
	Other	33,202.2	33,816.6	38,406.2	14.61%
Aerial transportation	Passenger	84,333.0	92,672.5	48,698.5	-44.98%
	Cargo	10,909.5	12,190.1	10,955.6	-5.14%
	Other	38,851.9	35,616.1	8,302.2	-77.70%
Marine transportation	Passenger	0.0	0.0	0.0	N/A
	Cargo	20,071.7	16,271.4	22,565.2	24.18%
	Other	85.7	188.2	45.6	-66.70%
Pipelines and energy transportation	Cargo	589,985.7	553,091.7	433,663.6	-24.12%
	Other	1,907.3	2,740.4	408.5	-82.42%
Other means of transportation	Passenger	0.0	0.0	0.0	N/A
	Cargo	7,097.6	15,084.7	30,723.1	177.01%
	Other	291.0	2,727.6	482.1	-68.06%
Postal services		N/A	8,985.3	13,643.9	51.85%

Source: calculations based on the data of National Statistic Committee of the Republic of Belarus (2018-2021)

Construction services export also decreased, although the structure of this sector reveals some important information. The export of construction services to the EU on Belarusian territory halved, meaning that the EU initiated less construction projects in Belarus, whereas the construction beyond Belarusian borders increased. This change reflects the decreased presence of the EU in Belarus, while the position of Belarusian construction companies abroad seems to ameliorate.

Construction services export in 2018, 2019 and 2021, in thousand USD

	2018	2019	2021	Percent change between 2018-2019 and 2022
Beyond the territory of Belarus	19,044.4	23,504.5	33,445.3	57.21%
On Belarusian territory	117,333.1	139,750.7	59,399.9	-53.79%

Source: calculations based on the data of National Statistic Committee of the Republic of Belarus (2018-2021)

There is no observable and significant (in absolute numbers) impact of sanctions on other sectors of Belarus-EU services export. On the contrary, several essential sectors —such as processing materials, fee for intellectual property usage, computer services, and business services — grow, meaning that in 2021 the impact of sanctions was mostly connected to industries that maintain the export of goods and those directly related to the presence of the EU in Belarus through various programs.

Likely, this situation changed in 2022, but, unfortunately, there is no data available concerning service export from Belarus to the EU for this year.

7.2.1 Lost opportunities

In this chapter, we will estimate the lost opportunities in exporting to the EU due to the sanctions — the amount that Belarus could have gained, considering its previous economic tendencies, but didn't gain. We assume that the extraordinary changes in Belarus-EU export in 2021 and 2022 were caused mostly by the sanctions, so we will continue trends established before 2020 using linear regressions based on previous export data. To calculate the cumulative loss of export value, we applied two approaches:

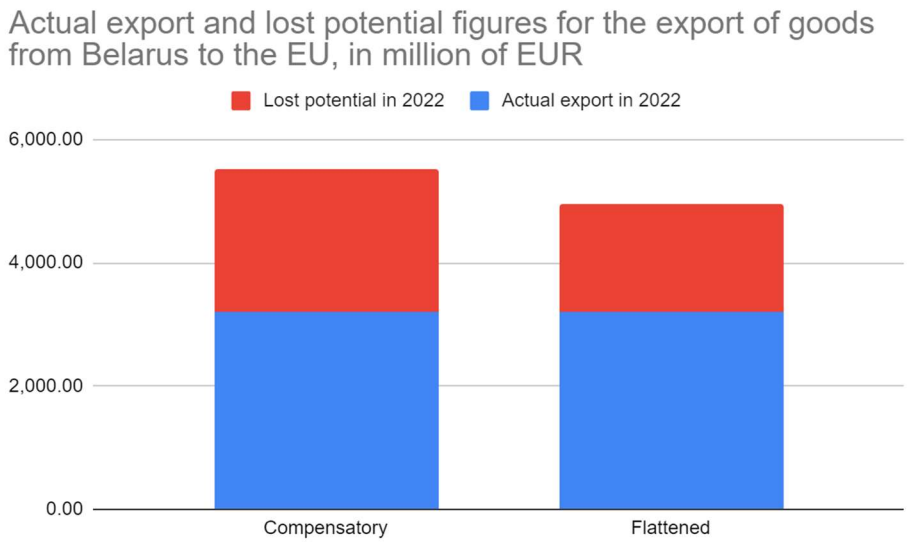
- Compensatory — here, we only consider the difference in case the predicted value for 2021 (for services) or 2022 (for goods) is higher than the actual one.
- Flattened — here, we consider the difference both in case when the predicted value is higher than the actual one and when it's lower

For goods, the calculations were done for each subcategory of SITC classification of foreign trade of Eurostat. To make our regressions, we used the data from 2015 to 2019, while later comparing it to the figures of export in 2022. According to Eurostat, the Belarusian export of goods to the EU in 2022 was 3.19 billion EUR. Compensatory cumulative loss of export was 2.33 billion EUR, which means that the Belarusian economy lost around 42% of its goods export potential. Flattened cumulative loss, in its turn, was 1.76 billion EUR, being equal to around 36% loss in potential.

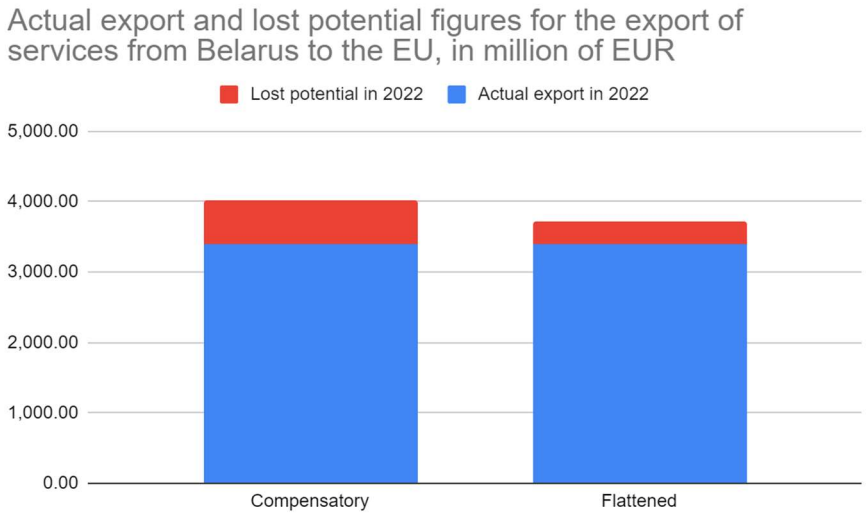
For services, we have used the data provided by the National Bank of the Republic of Belarus, collected according to IMF's Balance of Payments and International Investment Position standards. For regressions, we used the data from 2018 and 2019, while later comparing it to the figures of export in 2021. The year 2021 is the last year available with detailed statistics, which is why it is analyzed. According to the National Bank, the export of services from Belarus to the EU in 2021 was 3.74 billion USD (3.42 billion EUR). Compensatory cumulative loss of export was 678 million USD (619 million EUR), which means that the Belarusian economy lost around 15% of its

service export potential. Flattened cumulative loss, in its turn, was 356 million USD (325 million EUR), being equal to around 9% loss in potential.

Specific formulas are demonstrated in the Appendix 2



Source: calculations based on the data of Eurostat (2018-2022)



Source: calculations based on the data of National Statistic Committee of the Republic of Belarus (2018-2021)

It is worth mentioning that in 2021 the effect of the sanctions wasn't as explicit as in 2022, therefore a relatively modest loss in services can be determined by the difference of the years compared. In addition, goods have mostly been a primary target of the sanctions, whereas services suffer from those restrictive measures secondarily, which mitigates the negative effect. Additionally, the effects of COVID-19 and subsequent economic changes is very difficult to account for, but for our analysis we assume that the impact of the sanctions is more substantial.

Overall, the lost potential in goods, according to both calculation methods, is significant, which could impact future Belarusian positions on the European market even after the sanctions are lifted. The situation in the service export

sector is more optimistic, though it still shows a certain amount of lost export potential, and, consequently, loss of Belarusian positions on the European market.

7.2.2 Impact of sanctions: conclusions

Belarusian export to the EU changed significantly after sanctions were introduced, especially in the areas directly affected by these measures. In general, Belarusian export became more specialized and primitive. It means that, nowadays, the export of complex goods has decreased and was replaced by the export of less complex goods, mainly plant-based oil and its products, products of recycling, and coal. This primitivization can be seen as a mechanism of Belarusian export to the EU that allows it to safe at least a part of its presence on the EU market. However, this change doesn't typically apply to complex goods, such as furniture and equipment, either of which didn't show any signs of decreasing, insignificant or not.

As for 2021, services suffered sanctions only in the areas either directly connected to the export of goods, such as cargo transportation, or to the presence of the EU programs in Belarus, such as construction export to the EU on the territory of Belarus. In other essential services, there is no decrease caused, probably, by the sanctions of the EU against Belarus, though this situation likely changed in 2022.

Overall, according to our analysis, if the sanctions are lifted right now, Belarus export to the EU has a potential to increase by 2–3 billion EUR, which is around 30% – 45% of the value of the current Belarusian export to the EU.

8. Conclusions

Belarus is an export-oriented economy heavily dependent on trade with its neighbors. As of August 2023, the country found itself under an effective economic blockade from the EU and Ukraine. It is essential to acknowledge that Belarus cannot effectively develop its economy under the pressure of sanctions. Prior to 2020, the EU and Ukraine accounted for about 40% of its foreign trade, but according to statements from government officials, that figure has now dropped to 5%[xlvi].

The Gravity Model developed by Walter Isard in 1954, which posits that the volume of trade between two countries is proportional to their economic mass and the extent of their relative trade disagreements[xlvii]. Avoiding cooperation with the closest and wealthiest region in the world is not prudent. Seeking new trading partners in distant and economically less developed countries in Africa, Southeast Asia, and South America is ineffective. The Russian economy is under even greater sanction pressure and will continue to stagnate. Further deepening integration with Russia jeopardizes Belarus' independence.

The European market offers additional opportunities for economic growth. European integration is a way for Belarus to balance its foreign trade, gain access to new technologies and investments, facilitate the movement of its citizens, enhance its competitive advantages, and truly leverage its geographical location.

Starting from 2021, sanctions significantly affected trade between Belarus and the EU. In terms of value of export from Belarus to the EU, 9% – 15% of potential export of services and 36% – 42% of that of goods was lost over the last three years. If the sanctions are lifted now, the Belarusian economy can increase its export by around 30–45% compared to current levels.
This was accompanied by primitivization of export: in lieu of oil refinery and chemical industry products, Belarus now sells coal, plant-based products and recycled materials, which produce significantly less markup. However, more advanced spheres, such as furniture and equipment, remained relatively stable in export structure. Export of services decreased mostly in parts connected to export of goods, i.e., transport, whereas another dominant sector, IT, even grew over the period.

The Belarusian economy has several industries that demanded in the EU and can become a backbone of the country's success in the union: furniture and specialized equipment. However, Belarus exports a significant amount of raw or low-processed materials, such as wood, which can be processed before the export to, for example, furniture, which would produce higher margin. Thus, Belarusian good exportation has capacity for and should consider increasing its complexity.

In services, the most prominent sphere is IT and transportation. IT services should concentrate more on creating new products rather than providing outsourcing services, which would generate more added value, whereas transportation suffers from lacking interconnectedness and technical quality. Overall, Belarusian production and export of both goods and services suffer from excessive legal regulations of international cooperation and political risks.

Considering these weaknesses, Belarus needs to prepare before joining the common market with the EU. Since lifting tariffs is associated with signing DCFTA—an integral EU-joining document—we should consider risks and opportunities connected to it. Taxed industries are similar from both the European and Belarusian side: edible products, chemical products, equipment, and clothing, but the Belarusian side poses higher tariffs than the European counterparts. In addition, the European market presents higher-value and higher-complexity products, which, combined, creates a heavy competition for Belarusian companies. Therefore, structural reform and development of business are necessary before lifting tariffs to maintain the sustainability of the Belarusian economy and to give at a chance to become more advanced technologically by itself, thus being more competitive.

Currently, Belarus has the opportunity to return to the Eastern Partnership program. The projects implemented by the European Union do not threaten the development of Belarusian trade. On the contrary, investments in infrastructure, civil society, and small and medium-sized enterprises are aimed at strengthening the Belarusian economy. The political decision to suspend participation deprives Belarus of access to favorable financing programs and worsens its already negative investment image. Belarus should aim for the removal of sanctions across all sectors. Integrating with an economic union while under its sanctions is not feasible. Presently, Belarus is not considered a trustworthy and stable partner; instead, it is perceived as a threat. Belarus should demonstrate its readiness for economic and political reforms to rebuild trust with the EU.

For this purpose, we propose exploring the possibility of signing a Comprehensive and Enhanced Partnership Agreement with the EU. The agreement could include provisions for cooperation in democracy and reform, facilitate the registration of companies in both the EU and Belarus, and potentially start negotiations on visa liberalization. During the negotiations,

areas where reducing trade tariffs would be mutually beneficial could be identified. Therefore, institutional basis of deepening the common trade will be designed.

Belarus has its commitments within the Eurasian Economic Union (EAEU) and the Customs Union. If Belarus aims for European integration, it means it needs to reshape its relationship with Russia. Reformatting does not necessarily imply a complete severance of all economic ties. European integration would allow Belarus to balance its foreign trade and find new points of economic growth. Deepening integration with Russia and the EAEU only increases dependency on an unpredictable and stagnant market, and it carries the risk of losing the country's independence. The future of Belarus-Russia economic relations depends in large part on Russia's stance and its future elites. As a result, it is necessary to mitigate the risks associated with Russia's intention to maintain dependence on Belarus. Before reshaping relations with Russia, Belarus must fully restore its trade with the EU to pre-sanction levels. Positive dynamics in trade turnover will enable Belarusian businesses to see real prospects for cooperation with the EU.

Whereupon, Belarus can propose a new format of economic cooperation with Russia that does not entail continuous financial injections from the Russian budget. For example, the legal format of relations with Russia can be built on a new Free Trade Agreement or other forms of economic cooperation.

Finally, after the sanctions are lifted and the economy is reformed, Belarus will be ready to sign Association Agreements with the EU and a full-fledged Free Trade Agreement. This document is the first step toward potential membership. The country will be provided with preferential trade conditions, reduced tariffs on imports and exports, and access to favorable financing. The EU will offer financial and expert support for further development. The process of joining the EU typically takes around 10 years, although it largely depends on the country's motivation to carry out reforms. Belarus has a long path ahead for full membership, but it is a realistic and promising journey. Euro integration will provide the impetus for development and strengthen the stability of the Belarusian economy.

9. Appendices

Appendix 1: EU-Belarus trade tariffs

Effectively Applied Tariffs on Belarusian export to the EU, Word Bank, WITS, TRAINS (in percent) and imports value (in thousands of USD), and amounts paid as a tariff (in thousands of USD)

Name of the category - code in SITC 4	2018 trade year		2019 trade year		Average tariff		Amount paid as a tariff
	Weighted average tariff	Imports Value	Weighted average tariff	Imports Value	Weighted average tariff	Imports Value	
00 - Live animals other than animals of division 03	0.15%	215.25	0.12%	371.53	0.14%	293.39	0.40

01 - Meat and meat preparations	5.25%	638.87	1.77%	593.59	3.51%	616.23	21.63
02 - Dairy products and birds' eggs	100.53%	4,172.06	133.33%	2,063.28	116.93%	3,117.67	3645.49
03 - Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	18.03%	5,804.16	18.74%	5,774.64	18.39%	5,789.40	1064.38
04 - Cereals and cereal preparations	6.14%	1,708.08	11.59%	1,230.21	8.87%	1,469.14	130.24
05 - Vegetables and fruit	10.32%	76,271.45	10.55%	79,225.51	10.44%	77,748.48	8113.05
06 - Sugars, sugar preparations and honey	4.91%	8,755.54	5.09%	7,928.84	5.00%	8,342.19	417.11
07 - Coffee, tea, cocoa, spices, and manufactures thereof	7.62%	1,377.90	5.47%	1,863.67	6.55%	1,620.78	106.08
08 - Feeding stuff for animals (not including unmilled cereals)	1.20%	40,562.01	0.72%	39,135.92	0.96%	39,848.96	382.55
09 - Miscellaneous edible products and preparations	10.63%	1,398.43	11.10%	2,268.12	10.87%	1,833.28	199.19
11 - Beverages	1.10%	16,387.75	0.96%	18,583.81	1.03%	17,485.78	180.10
12 - Tobacco and tobacco manufactures	33.17%	186.05	35.20%	194.39	34.19%	190.22	65.03
21 - Hides, skins and furskins, raw	0.00%	107.66	0.00%	6.12	0.00%	56.89	0.00
22 - Oil-seeds and oleaginous fruits	0.00%	997.83	0.00%	1,337.52	0.00%	1,167.67	0.00
23 - Crude rubber (including synthetic and reclaimed)	0.00%	23.49	0.00%	26.54	0.00%	25.01	0.00
24 - Cork and wood	0.02%	159,541.82	0.02%	189,866.05	0.02%	174,703.94	34.94
25 - Pulp and waste paper	0.00%	287.99	0.00%	1,643.19	0.00%	965.59	0.00
26 - Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	2.53%	33,061.12	2.58%	35,454.49	2.56%	34,257.80	875.29
27 - Crude fertilizers, other than those of Division 56	1.33%	43,723.48	1.50%	45,344.31	1.42%	44,533.90	630.15
28 - Metalliferous ores and metal scrap	0.00%	18,092.09	0.00%	20,740.86	0.00%	19,416.47	0.00
29 - Crude animal and vegetable materials, n.e.s.	1.26%	3,563.39	1.53%	3,599.67	1.40%	3,581.53	49.96
32 - Coal, coke and briquettes	0.00%	17,789.48	0.00%	14,350.82	0.00%	16,070.15	0.00
33 - Petroleum, petroleum products and related material	0.96%	1,241,368.10	0.95%	875,023.92	0.96%	1,058,196.01	10105.77
34 - Gas, natural and manufactured	0.44%	69,328.72	0.18%	57,043.92	0.31%	63,186.32	195.88
35 - Electric current	0.00%	52,961.62	0.00%	43,448.23	0.00%	48,204.92	0.00

41 - Animal oils and fats	7.27%	56.96	13.90%	40.13	10.59%	48.54	5.14
42 - Fixed vegetable fats and oils, crude, refined or fractionated	4.80%	33,771.93	4.82%	33,077.05	4.81%	33,424.49	1607.72
43 - Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	6.28%	9,498.40	6.28%	10,359.85	6.28%	9,929.13	623.55
51 - Organic chemicals	4.23%	41,489.59	3.61%	50,923.42	3.92%	46,206.51	1811.30
52 - Inorganic chemicals	4.86%	14,890.09	4.27%	9,424.13	4.57%	12,157.11	554.97
53 - Dyeing, tanning and colouring materials	5.66%	3,280.53	5.54%	2,835.28	5.60%	3,057.90	171.24
54 - Medicinal and pharmaceutical products	0.00%	1,649.59	0.02%	3,475.99	0.01%	2,562.79	0.26
55 - Essential oils and resinoids and perfume materials	1.16%	2,368.04	0.95%	2,391.75	1.06%	2,379.90	25.11
56 - Fertilizers (other than those of group 272)	2.81%	503,442.10	3.05%	518,508.47	2.93%	510,975.29	14971.58
57 - Plastics in primary forms	6.46%	117,135.36	6.44%	67,508.81	6.45%	92,322.08	5954.77
58 - Plastics in non-primary forms	6.25%	27,631.02	6.28%	32,701.83	6.27%	30,166.42	1889.93
59 - Chemical materials and products, n.e.s.	4.40%	28,924.76	4.48%	29,756.88	4.44%	29,340.82	1302.73
61 - Leather, leather manufactures, n.e.s., and dressed furskins	2.32%	8,610.80	2.35%	7,683.34	2.34%	8,147.07	190.23
62 - Rubber manufactures, n.e.s.	3.46%	66,057.91	3.41%	53,562.03	3.44%	59,809.97	2054.47
63 - Cork and wood manufactures (excluding furniture)	5.90%	285,920.64	5.52%	260,052.26	5.71%	272,986.45	15587.53
64 - Paper, paperboard and articles of paper pulp, of paper or of paperboard	0.00%	29,246.49	0.04%	26,500.72	0.02%	27,873.61	5.57
65 - Textile yarn, fabrics, made -up articles, n.e.s., and related products	6.00%	135,563.65	6.16%	137,184.86	6.08%	136,374.25	8291.55
66 - Non-metallic mineral manufactures, n.e.s.	2.00%	147,435.44	2.16%	129,981.98	2.08%	138,708.71	2885.14
67 - Iron and steel	0.02%	649,183.64	0.03%	582,739.43	0.03%	615,961.54	153.99
68 - Non-ferrous metals	3.05%	32,571.20	3.93%	29,410.66	3.49%	30,990.93	1081.58
69 - Manufactures of metals, n.e.s.	1.38%	190,211.20	1.37%	195,412.56	1.38%	192,811.88	2651.16
71 - Power-generating machinery and equipment	2.61%	18,885.86	2.49%	10,497.39	2.55%	14,691.62	374.64
72 - Machinery specialized for particular industries	0.83%	11,266.52	0.93%	10,233.41	0.88%	10,749.96	94.60

73 - Metalworking machinery	2.11%	2,038.34	2.17%	1,691.23	2.14%	1,864.79	39.91
74 - General industrial machinery and equipment, n.e.s.	1.73%	29,443.04	1.75%	25,608.96	1.74%	27,526.00	478.95
75 - Office machines and automatic dataprocessing machines	0.01%	1,018.82	0.00%	1,528.16	0.01%	1,273.49	0.06
76 - Telecommunications and sound-recording and reproducing apparatus and equipment	2.57%	8,554.83	2.29%	9,123.63	2.43%	8,839.23	214.79
77 - Electrical machinery, apparatus and appliances, n.e.s.	2.90%	84,173.66	2.80%	105,067.45	2.85%	94,620.55	2696.69
78 - Road vehicles (including air-cushion vehicles)	3.09%	50,756.84	3.23%	37,340.88	3.16%	44,048.86	1391.94
79 - Other transport equipment	2.20%	5,568.40	1.87%	64,932.90	2.04%	35,250.65	717.35
81 - Prefabricated buildings;sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	3.79%	10,202.13	4.03%	6,931.46	3.91%	8,566.79	334.96
82 - Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	0.83%	188,071.05	0.84%	238,768.78	0.84%	213,419.91	1782.06
83 - Travel goods, handbags and similar containers	4.39%	846.17	4.43%	885.84	4.41%	866.01	38.19
84 - Articles of apparel and clothing accessories	11.58%	57,365.97	11.45%	51,422.89	11.52%	54,394.43	6263.52
85 - Footwear	8.45%	1,880.99	9.36%	1,728.85	8.91%	1,804.92	160.73
87 - Professional, scientific and controlling instruments and apparatus, n.e.s.	1.19%	79,779.31	1.02%	74,966.91	1.11%	77,373.11	854.97
88 - Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	4.00%	11,209.78	3.45%	10,079.24	3.73%	10,644.51	396.51
89 - Miscellaneous manufactured articles, n.e.s.	4.05%	41,157.67	3.85%	49,167.42	3.95%	45,162.55	1783.92
96 - Coin (other than gold coin), not being legal tender	0.00%	44.08	0.00%	7.59	0.00%	25.84	0.00
97 - Gold, non-monetary (excluding gold ores and concen	0.00%	1,082.36	0.00%	567.47	0.00%	824.91	0.00

Source: calculations based on the data of World Bank (2018-2019)

Effectively Applied Tariffs on EU export to Belarus, Word Bank, WITS, TRAINS (in percent), imports value (in thousands of USD), and amounts paid as a tariff (in thousands of USD)

Name of the category	2018 trade year		2019 trade year		Average tariff		Amount paid as a tariff
	Weighted average tariff	Exports value	Weighted average tariff	Exports value	Weighted average tariff	Imports Value	
00 - Live animals other than animals of division 03	1.06%	20,306.10	0.32%	19,780.80	0.69%	20,043.45	138.30
01 - Meat and meat preparations	36.64%	33,340.40	36.33%	20,834.50	36.49%	27,087.45	9882.86
02 - Dairy products and birds' eggs	7.19%	17,383.90	7.67%	19,483.00	7.43%	18,433.45	1369.61
03 - Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	4.03%	23,904.30	4.41%	23,299.90	4.22%	23,602.10	996.01
04 - Cereals and cereal preparations	7.93%	45,585.80	8.19%	48,266.40	8.06%	46,926.10	3782.24
05 - Vegetables and fruit	6.16%	303,105.90	5.55%	390,147.70	5.86%	346,626.80	20295.00
06 - Sugars, sugar preparations and honey	13.90%	17,204.70	11.71%	13,345.70	12.81%	15,275.20	1955.99
07 - Coffee, tea, cocoa, spices, and manufactures thereof	5.11%	42,911.30	4.38%	47,916.50	4.75%	45,413.90	2154.89
08 - Feeding stuff for animals (not including unmilled cereals)	6.48%	42,368.30	6.59%	46,413.40	6.54%	44,390.85	2900.94
09 - Miscellaneous edible products and preparations	9.06%	102,501.30	9.92%	100,074.30	9.49%	101,287.80	9612.21
11 - Beverages	510.32%	74,148.20	8.13%	98,571.80	259.23%	86,360.00	223866.71
21 - Hides, skins and furskins, raw	1.79%	730.20	1.26%	450.50	1.53%	590.35	9.00
22 - Oil-seeds and oleaginous fruits	1.35%	5,185.60	0.99%	7,121.00	1.17%	6,153.30	71.99
23 - Crude rubber (including synthetic and reclaimed)	3.96%	12,182.60	4.23%	13,969.70	4.10%	13,076.15	535.47
24 - Cork and wood	8.07%	1,135.10	8.44%	1,371.60	8.26%	1,253.35	103.46
25 - Pulp and waste paper	5.51%	4,436.10	5.18%	5,581.30	5.35%	5,008.70	267.72
26 - Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	13.32%	85,661.20	13.90%	56,409.50	13.61%	71,035.35	9667.91
27 - Crude fertilizers, other than those of Division 56	4.94%	18,153.20	4.90%	14,252.60	4.92%	16,202.90	797.18
28 - Metalliferous ores and metal scrap	0.01%	41,005.60	0.00%	53,958.20	0.01%	47,481.90	2.37
29 - Crude animal and vegetable materials, n.e.s.	4.57%	180,361.50	4.69%	250,756.90	4.63%	215,559.20	9980.39

32 - Coal, coke and briquettes	5.00%	12,187.70	5.00%	7,968.70	5.00%	10,078.20	503.91
33 - Petroleum, petroleum products and related materials	5.00%	40,455.80	5.00%	53,172.30	5.00%	46,814.05	2340.70
34 - Gas, natural and manufactured	2.76%	1,840.60	4.60%	1,422.60	3.68%	1,631.60	60.04
41 - Animal oils and fats	14.00%	4,859.30	14.24%	5,190.80	14.12%	5,025.05	709.54
42 - Fixed vegetable fats and oils, crude, refined or fractionated	4.75%	7,460.50	4.82%	7,384.70	4.79%	7,422.60	355.17
43 - Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	13.15%	1,858.10	13.17%	1,880.30	13.16%	1,869.20	245.99
51 - Organic chemicals	3.66%	80,743.30	4.38%	89,046.70	4.02%	84,895.00	3412.78
52 - Inorganic chemicals	4.50%	21,444.00	4.67%	26,012.60	4.59%	23,728.30	1087.94
53 - Dyeing, tanning and colouring materials	4.40%	126,157.20	4.63%	130,888.50	4.52%	128,522.85	5802.81
54 - Medicinal and pharmaceutical products	3.98%	375,059.60	3.95%	453,010.00	3.97%	414,034.80	16416.48
55 - Essential oils and resinoids and perfume materials	5.93%	156,552.30	6.12%	152,468.80	6.03%	154,510.55	9309.26
56 - Fertilizers (other than those of group 272)	6.42%	7,308.60	6.44%	7,212.40	6.43%	7,260.50	466.85
57 - Plastics in primary forms	4.68%	237,502.90	4.73%	230,231.70	4.71%	233,867.30	11003.46
58 - Plastics in non-primary forms	6.28%	144,469.20	6.25%	144,538.40	6.27%	144,503.80	9053.16
59 - Chemical materials and products, n.e.s.	4.90%	203,464.30	4.90%	190,122.20	4.90%	196,793.25	9642.87
61 - Leather, leather manufactures, n.e.s., and dressed furskins	5.01%	13,726.10	4.68%	11,755.40	4.85%	12,740.75	617.29
62 - Rubber manufactures, n.e.s.	6.24%	79,339.40	6.18%	79,244.80	6.21%	79,292.10	4924.04
63 - Cork and wood manufactures (excluding furniture)	6.73%	35,302.30	6.95%	38,105.50	6.84%	36,703.90	2510.55
64 - Paper, paperboard and articles of paper pulp, of paper or of paperboard	6.13%	168,064.50	6.08%	170,701.40	6.11%	169,382.95	10340.83
65 - Textile yarn, fabrics, made -up articles, n.e.s., and related products	6.11%	184,836.50	6.09%	167,444.90	6.10%	176,140.70	10744.58
66 - Non-metallic mineral manufactures, n.e.s.	10.19%	94,635.10	10.20%	88,768.60	10.20%	91,701.85	9349.00
67 - Iron and steel	5.40%	123,833.70	5.59%	112,325.30	5.50%	118,079.50	6488.47

68 - Non-ferrous metals	6.99%	47,057.90	6.36%	49,493.00	6.68%	48,275.45	3222.39
69 - Manufactures of metals, n.e.s.	7.05%	304,325.00	7.12%	318,345.80	7.09%	311,335.40	22058.11
71 - Power-generating machinery and equipment	4.87%	304,220.10	4.94%	242,586.40	4.91%	273,403.25	13410.43
72 - Machinery specialized for particular industries	0.64%	469,352.10	0.68%	423,422.60	0.66%	446,387.35	2946.16
73 - Metalworking machinery	3.70%	55,299.90	3.24%	95,889.60	3.47%	75,594.75	2623.14
74 - General industrial machinery and equipment, n.e.s.	1.72%	740,669.00	1.83%	732,562.40	1.78%	736,615.70	13074.93
75 - Office machines and automatic dataprocessing machines	0.23%	45,867.90	0.23%	42,118.10	0.23%	43,993.00	101.18
76 - Telecommunications and sound-recording and reproducing apparatus and equipment	1.78%	46,461.70	1.58%	43,570.50	1.68%	45,016.10	756.27
77 - Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical householdtype equipment)	3.74%	459,821.20	3.47%	507,054.80	3.61%	483,438.00	17427.94
78 - Road vehicles (including air-cushion vehicles)	8.63%	578,881.40	8.36%	504,209.70	8.50%	541,545.55	46004.29
79 - Other transport equipment	4.69%	16,768.20	5.44%	98,071.50	5.07%	57,419.85	2908.32
81 - Prefabricated buildings;sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	8.96%	38,097.60	8.95%	38,315.60	8.96%	38,206.60	3421.40
82 - Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	10.33%	71,829.00	10.04%	81,703.80	10.19%	76,766.40	7818.66
83 - Travel goods, handbags and similar containers	12.73%	6,664.60	12.69%	7,325.30	12.71%	6,994.95	889.06
84 - Articles of apparel and clothing accessories	7.57%	50,791.70	7.01%	67,363.90	7.29%	59,077.80	4306.77
85 - Footwear	2.37%	57,907.00	1.62%	41,549.30	2.00%	49,728.15	992.08
87 - Professional, scientific and controlling instruments and apparatus, n.e.s.	1.30%	165,755.00	1.26%	166,456.00	1.28%	166,105.50	2126.15
88 - Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	6.10%	12,702.40	6.04%	17,259.60	6.07%	14,981.00	909.35
89 - Miscellaneous manufactured articles, n.e.s.	6.27%	159,911.90	5.33%	152,505.80	5.80%	156,208.85	9060.11

Source: calculations based on the data of World Bank (2018-2019)

Appendix 2: Impact of sanctions – calculation of loss

The loss of potential export was calculated using the regressions based on export figures from previous years: 2015–2019 for goods, and 2018–2019 for services. The data for the export of goods was taken from Eurostat's statistics by SITC, while the data for services was taken from the Belarusian National Bank's publication. Due to the difference in sources, the export of goods is reflected in EUR and based on data from 2015 to 2019, while the data for services is only available from 2018 to 2021, reflected in USD. The least square method was used to create a linear regression for each category of export. Their formulae are presented below. The years up to 2019 were taken as the base of the model, since those are the last years before the anomalous years 2020 and 2021, where heavy sanctions started being introduced. We assume that without sanctions, Belarusian exports would have followed the same trends as it did before 2020.

To calculate the potential export of Belarus to the EU, we used the regressions to assume the level of export for 2021 (for services) and 2022 (for goods). The resulting values were compared with the actual export figures using two approaches.

The first approach is compensatory. Compensatory loss for each category was calculated by finding the difference between the actual value of export for 2021 (for services) and 2022 (for goods) with the ones predicted by the regressions, but only the categories where the predicted value is higher than the actual one. The second approach, flattened, considers all the categories, regardless is the actual value is higher or lower than the predicted one.

The general formula for the regressions is the following:

$$y = ax + b$$

Where a and b are constants, y is the amount of export, in EUR (for goods) or USD (for services), and x is the year studied.

* If a regression shows that for the target year the value of export for a certain category is negative, zero is put. The export cannot be a negative number, so, to approach the results of the regression, we assume that for this category there would be no export.
** Compensatory loss considers only the categories, where the predicted value was higher than the actual one.
*** Flattened loss considers all the categories, both where the predicted value was higher than the actual one and those where the predicted value was lower than the actual one.

Calculation of the impact of sanctions on export of goods from Belarus to the EU. In EUR, unless other mentioned.

Category of goods	Regression equation	Value of export predicted by regression for 2022*	Actual value of export, by category, in 2022	Difference for compensatory loss**	Difference for flattened loss***

Live animals other than animals of division 03	y = 74941x-150998705	531,794	3,585,474		-3,053,680
Meat and meat preparations	y = -118186x + 239112106	140,621	1,178,958		-1,038,337
Dairy products and birds' eggs	y = 603503x-1215691756	4,591,107	1,244,422	3,346,685	3,346,685
Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparations thereof	y = 678242x-1364496869	6,908,253	3,671,045	3,237,208	3,237,208
Cereals and cereal preparations	y = -280002x + 566115300	0	2,738,842		-2,738,842
Vegetables and fruit	y = 6568310x-13198381044	82,741,776	63,592,688	19,149,088	19,149,088
Sugars, sugar preparations and honey	y = -583099x + 1183261993	4,236,017	16,532,550		-12,296,533
Coffee, tea, cocoa, spices, and manufactures thereof	y = 328712x-662038365	2,617,703	705,629	1,912,074	1,912,074
Feeding stuff for animals (not including unmilled cereals)	y = 4986091x-10037595193	44,281,011	130,911,390		-86,630,379
Miscellaneous edible products and preparations	y = 347951x-700869410	2,687,916	5,407,485		-2,719,569
Beverages	y = 565334x-1125647648	17,458,306	9,204,726	8,253,580	8,253,580
Tobacco and tobacco manufactures	y = 14580x-29251537	228,617	93,092	135,525	135,525
Hides, skins and furskins, raw	y = -944906x + 1907110413	0	61,811		-61,811
Oil-seeds and oleaginous fruits	y = -25141x + 51538303	703,403	1,486,427		-783,024
Crude rubber (including synthetic and reclaimed)	y = -3882x + 7863183	12,971	54,438		-41,467
Cork and wood	y = 80610133x-162154187343	839,501,381	343,382,718	496,118,663	496,118,663
Pulp and waste paper	y = 278801x-561854269	1,881,960	6,371,093		-4,489,134
Textile fibres (other than wool tops and other combed wool) and their wastes (not manufactured into yarn or fabric)	y = -658836x + 1359118562	26,952,372	19,854,568	7,097,804	7,097,804
Crude fertilizers, other than those of Division 56, and crude minerals (excluding coal, petroleum and precious stones)	y = 5147662x-10357316948	51,255,211	13,812,072	37,443,139	37,443,139
Metalliferous ores and metal scrap	y = -8599027x + 17369162720	0	8,745,088		-8,745,088
Crude animal and vegetable materials, n.e.s.	y = 77866x-154077220	3,367,023	7,246,730		-3,879,707

Coal, coke and briquettes	y = 1312928x-2636639884	18,099,926	30,040,652		-11,940,727
Petroleum, petroleum products and related materials	y = -32179984x + 65676101953	608,173,901	87,105,724	521,068,177	521,068,177
Gas, natural and manufactured	y = -3612418x + 7336961561	32,651,758	8,332,414	24,319,344	24,319,344
Electric current	y = 9632054x-19406900865	69,111,514	0	69,111,514	69,111,514
Animal oils and fats	y = -4096x + 8315327	33,013	29,166	3,847	3,847
Fixed vegetable fats and oils, crude, refined or fractionated	y = 634202x-1253921139	28,434,900	303,593,265		-275,158,365
Animal or vegetable fats and oils, processed; waxes of animal or vegetable origin; inedible mixtures or preparations of animal or vegetable fats or oils, n.e.s.	y = 764692x-1534012067	12,195,966	21,838,946		-9,642,980
Organic chemicals	y = -892844x + 1833919953	28,589,991	12,983,466	15,606,525	15,606,525
Inorganic chemicals	y = 1306162x-2626262503	14,796,454	36,214,175		-21,417,721
Dyeing, tanning and colouring materials	y = 67509x-133726961	2,777,045	7,866,160		-5,089,115
Medicinal and pharmaceutical products	y = 427991x-861641426	3,755,770	2,701,452	1,054,318	1,054,318
Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	y = -632291x + 1278052596	0	2,975,868		-2,975,868
Fertilizers (other than those of group 272)	y = 5111413x-9909450677	425,827,015	155,361,336	270,465,679	270,465,679
Plastics in primary forms	y = 8949291x-17984544715	110,921,485	63,020,138	47,901,347	47,901,347
Plastics in non-primary forms	y = 5565766x-11209873183	44,106,275	33,565,807	10,540,468	10,540,468
Chemical materials and products, n.e.s.	y = 566955x-1119394318	26,988,894	52,456,510		-25,467,616
Leather, leather manufactures, n.e.s., and dressed furskins	y = -5554039x + 11218642563	0	7,576,765		-7,576,765
Rubber manufactures, n.e.s.	y = 7973091x-16036033464	85,557,549	26,932,323	58,625,226	58,625,226
Cork and wood manufactures (excluding furniture)	y = 51768988x-104156403883	520,490,460	289,510,843	230,979,617	230,979,617
Paper, paperboard and articles of paper pulp, of paper or of paperboard	y = 1936355x-3885682167	29,628,249	41,720,887		-12,092,638
Textile yarn, fabrics, made-up articles, n.e.s., and related products	y = 981889x-1871668153	113,711,000	80,017,563	33,693,437	33,693,437
Non-metallic mineral manufactures, n.e.s.	y = 18062064x-36335051172	186,443,045	140,512,950	45,930,095	45,930,095

Iron and steel	y = 8368472x-16441110525	479,940,870	280,388,262	199,552,608	199,552,608
Non-ferrous metals	y = 1441724x-2883289109	31,876,819	39,793,530		-7,916,711
Manufactures of metals, n.e.s.	y = 11324956x-22705993903	193,067,129	113,258,416	79,808,713	79,808,713
Power-generating machinery and equipment	y = 548245x-1095251738	13,299,248	11,099,889	2,199,359	2,199,359
Machinery specialized for particular industries	y = -1560329x + 3201208185	46,223,149	42,746,165	3,476,984	3,476,984
Metalworking machinery	y = -516179x + 1043884621	170,885	1,301,230		-1,130,345
General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	y = -523946x + 1083770367	24,352,364	26,577,331		-2,224,967
Office machines and automatic data-processing machines	y = -374651x + 757686670	141,539	8,698,682		-8,557,143
Telecommunications and sound-recording and reproducing apparatus and equipment	y = 225477x-450796472	5,118,426	2,564,975	2,553,451	2,553,451
Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including non-electrical counterparts, n.e.s., of electrical household-type equipment)	y = 9927549x-19963390695	110,113,180	149,269,739		-39,156,559
Road vehicles (including air-cushion vehicles)	y = -94021x + 223969240	33,858,373	42,257,934		-8,399,561
Other transport equipment	y = 8151093x-16421907536	59,603,521	13,831,130	45,772,391	45,772,391
Prefabricated buildings; sanitary, plumbing, heating and lighting fixtures and fittings, n.e.s.	y = 1343273x-2697899904	18,198,304	28,781,709		-10,583,405
Furniture and parts thereof; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings	y = 35498568x-71492300511	285,803,985	232,739,129	53,064,856	53,064,856
Travel goods, handbags and similar containers	y = 190908x-384599277	1,416,294	1,715,459		-299,165
Articles of apparel and clothing accessories	y = 2074419x-4148930273	45,545,147	29,616,111	15,929,036	15,929,036
Footwear	y = -123626x + 250876085	903,707	1,499,907		-596,200
Professional, scientific and controlling instruments and apparatus, n.e.s.	y = 2172376x-4328804914	63,738,549	57,227,603	6,510,946	6,510,946

Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	y = 178297x-351956053	8,560,481	9,248,073		-687,592
Miscellaneous manufactured articles, n.e.s.	y = 4228371x-8492745794	57,020,772	48,259,685	8,761,087	8,761,087
Commodities and transactions not classified elsewhere in the SITC	y = 445011x-890090924	9,720,914	2,914,242	6,806,672	6,806,672
Special transactions and commodities not classified according to kind	y = 523x-711998	346,317	2,928	343,389	343,389
Gold, non-monetary (excluding gold ores and concentrates)	y = 849x-758549	958,736	294,900	663,836	663,836
Trade of section 9, not elsewhere specified	y = 446847x-895118154	8,406,480	2,616,414	5,790,066	5,790,066
		Predicted value for 2022, in mln. EUR	**Actual value for 2022, in mln. EUR**	**Compensatory loss in 2022, in mln. EUR**	**Flattened loss in 2022, in mln. EUR**
		4,950.78	3,190.94	2,337.23	1,759.84

Source: calculations based on the data of Eurostat (2018-2022)

Calculation of the impact of sanctions on export of services from Belarus to the EU. In USD, unless other mentioned.

Category of export			Regression formula	Value of export predicted by regression for 2021*	Actual value of export, by category, in 2021	Difference for compensatory loss**	Difference for flattened loss***
Services for processing material resources owned by other parties.			y = -1337x + 2765431	63,556	114,966		-51,410
Repair and maintenance services not classified under other categories.			y = -578x + 1177080	9,144	17,692		-8,548
Transport services	Railway transport	Passanger	y = 113x-226488	1,885	0	1,885	1,885
		Cargo	y = -10030x + 20959892	689,868	628,240	61,628	61,628
		Other	y = -2525x + 5131726	27,893	36,238		-8,346

	Automobile transport	Passanger	y = 1726x-3478133	10,720	2,531	8,189	8,189
		Cargo	y = 6470x-12019176	1,055,886	968,323	87,562	87,562
		Other	y = 614x-1206657	35,045	38,406		-3,361
	Aerial transport	Passanger	y = 8340x-16744778	109,352	48,699	60,653	60,653
		Cargo	y = 1281x-2573341	14,751	10,956	3,796	3,796
		Other	y = -3236x + 6568696	29,144	8,302	20,842	20,842
	Marine transport	Passanger	y = 0x + 0	0	0		0
		Cargo	y = -3800x + 7689077	8,671	22,565		-13,894
		Other	y = 103x-206759	393	46	348	348
	Pipelines	Cargo	y = -36894x + 75042078	479,304	433,664	45,640	45,640
		Other	y = 833x-1679289	4,407	409	3,998	3,998
	Other means of transport	Passanger	y = 0x + 0	0	0		0
		Cargo	y = 7987x-16110870	31,059	30,723	336	336
		Other	y = 2437x-4916768	7,601	482	7,119	7,119
	Postal services		y = 3059x-6166328	15,103	13,644	1,459	1,459
Trips	Business		y = -4222x + 8548328	15,060	2,758	12,302	12,302
	Personal		y = -5821x + 11892148	128,109	24,828	103,281	103,281
Construction services	In Belarus		y = 6161x-12414055	37,528	33,445	4,082	4,082
	Outside Belarus		y = -7879x + 16016550	93,697	59,400	34,297	34,297
Insurance and pension provision services.			y = 216x-432968	2,962	3,605		-643
Financial services	services for which a fee is explicitly charged, and other		y = 3042x-6125460	23,231	25,564		-2,334

	financial services					
	services for financial intermediation, measured indirectly	y = 0x + 0	0	0		0
Fee for the use of intellectual property.		y = 4415x-8887652	35,669	40,738		-5,068
Telecommunication services.		y = -11286x + 22839301	29,891	30,171		-280
Computer services.		y = -24906x + 50951143	615,308	839,644		-224,336
Information services.		y = 896x-1800953	10,065	14,199		-4,134
Other business services.		y = 103632x-208948777	491,900	283,152	208,748	208,748
Services to individuals and services in the cultural and recreational domain.		y = 2715x-5476582	10,837	3,152	7,685	7,685
Government goods and services not classified under other categories.		y = -1298x + 2630729	7,673	3,068	4,605	4,605
			Predicted value for 2021, in mln. USD	Actual value for 2021, in mln. USD	Compensatory loss in 2021, in mln. USD	Flattened loss in 2021, in mln. USD
			4095.7	3739.6	678.5	356.1

Source: calculations based on the data of National Statistic Committee of the Republic of Belarus (2018-2021)

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