

Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Trade and Finance



Bachelor Thesis

Analysis of Trade between the EU-27 and Kazakhstan

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BACHELOR THESIS ASSIGNMENT

Azamat Sholanov

Business Administration

Thesis title

Assessment of Trade between the EU-27 and Kazakhstan

Objectives of thesis

The objective of this thesis is to characterize the trade relationship between the Republic of Kazakhstan and the EU-27. The author's main objective lies in understanding if two economic subjects have a serious impact on each other's economy or not.

Methodology

The methodology of this research paper is based on data collection from internet resources, databases, legal frameworks, and literature.

The practical part of the thesis will be based on quantitative research. Quantitative research is mainly descriptive with numerous correlational methods to describe the behaviour of trade between two sides.

The proposed extent of the thesis

30-40 pages

Keywords

EU-27, Kazakhstan, Trade Flow, Liberalization, Economic Union, Integration

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- Tsertsvadze, T., & Axyonova, V. (2013). Trading values with Kazakhstan.
- Wouters, J., Hoffmeister, F., De Baere, G., & Ramopoulos, T. (2021). The law of EU external relations: cases, materials, and commentary on the EU as an international legal actor. Oxford University Press.
- Xue, Y., & Makengo, B. M. (2021). Twenty Years of the Shanghai Cooperation Organization: Achievements, Challenges and Prospects. *Open Journal of Social Sciences*, 9(10), 184-200.
- Young, A. R. (2017). The new politics of trade: Lessons from TTIP. agenda publishing.
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Declaration

I declare that I have worked on my bachelor thesis titled "Analysis of Trade between the EU-27 and Kazakhstan " by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 15.03.2023

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Analysis of Trade between the EU-27 and Kazakhstan

Abstract

The Republic of Kazakhstan is the author's home country, and the European Union consisting of 27 countries is where the author presently resides. The purpose of this thesis is to describe the nature of the commercial ties that exist between these two subjects of the world economy. The primary purpose of this thesis is for the author to determine whether or not two economic topics have a significant influence on the economies of each other, what are the main commodities traded and what are the most important factors influencing this trade relationship. The methodology of this research paper is based on data collection from internet resources, databases, legal frameworks, and literature.

The practical part of the thesis will be based on quantitative research. Quantitative research is mainly descriptive with numerous correlational methods to describe the behaviour of trade between two sides. Notably, the methods incorporated by the author in his thesis are linear regression estimation, elasticity computation, terms of trade analysis and trend estimation. The trade relationship between the two is primarily driven by the European need to buy raw materials, as crude oil and natural gas are the most important commodities traded between the European Union and Kazakhstan. The trade flow volume has been decreasing over the course of the last decade and is likely to continue doing so as the EU will continue their attachment to the Green Deal policy and decrease of the share of fossil fuels.

Keywords: EU-27, Kazakhstan, Trade Flow, Liberalization, Economic Union, Integration

Analýza obchodu mezi EU-27 a Kazachstánem

Abstrakt

Kazašská republika je domovskou zemí autora a Evropská unie skládající se z 27 zemí je místem, kde autor v současné době sídlí. Účelem této práce je popsat povahu obchodních vazeb, které existují mezi těmito dvěma subjekty světové ekonomiky. Primárním účelem této práce je, aby autor určil, zda dvě ekonomická témata mají či nemají významný vliv na ekonomiky navzájem, jaké jsou hlavní obchodované komodity a jaké jsou nejdůležitější faktory ovlivňující tento obchodní vztah. Metodika této výzkumné práce je založena na sběru dat z internetových zdrojů, databází, právních rámců a literatury.

Praktická část práce bude založena na kvantitativním výzkumu. Kvantitativní výzkum je hlavně popisný s četnými korelačními metodami k popisu chování obchodu mezi dvěma stranami. Zejména metody, které autor do své práce začlenil, jsou lineární regresní odhad, výpočet elasticity, pojmy obchodní analýzy a odhad trendů. Obchodní vztah mezi nimi je primárně poháněn Evropskou potřebou nakupovat suroviny, protože ropa a zemní plyn jsou nejdůležitějšími komoditami obchodovanými mezi Evropskou unií a Kazachstánem. Objem obchodních toků se v průběhu posledního desetiletí snižoval a je pravděpodobné, že v tom bude pokračovat, protože EU bude pokračovat ve své vazbě na politiku zeleného údělu a snížení podílu fosilních paliv.

Klíčová slova: EU-27, Kazachstán, obchodní tok, liberalizace, hospodářská unie, integrace

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List of abbreviations

EU – European Union

CIS – Commonwealth of Independent States

OLS – Ordinary Least Squares

BLUE – Best Linear Unbiased Estimator

1 Introduction

The author, like any other person living in a country where he or she was not originally born, whose level of development is seemingly higher than in one's home country, has a profound interest in the trade between two distinct entities that are both quite close to the author: Kazakhstan and the European Union. This is because Kazakhstan and the European Union are both quite close to the author. In addition to this, the author has long pondered the question of whether or not business conducted with Kazakhstan has any kind of material impact on the economy of the European Union or vice versa. The author was fortunate enough to finally get the chance to put his theory to the test and also investigate such a difficult topic as the international commerce that goes on between the two countries using the lens of economics and relevant statistical analysis.

This piece of art shows not only a convoluted narrative that explains the history that lies behind the economic connections that exist between the EU and Kazakhstan, but it also reveals the structural breakdown of the trade matrix that exists between the two entities. As a result, the author draws a conclusion about whether or not the trade between the two is thriving, what the effect is on domestic economies, and what the future holds for the trade relationship between the two based on his findings in both the literature review and the practical part containing relevant analysis. This conclusion is based on his findings in both the literature review and the practical part.

2 Objectives and Methodology

2.1 Objectives

The Republic of Kazakhstan is the author's home country, and the European Union consisting of 27 countries is where the author presently resides. The purpose of this thesis is to describe the nature of the commercial ties that exist between these two subjects of the world economy. The primary purpose of this thesis is for the author to determine whether or not two economic topics have a significant influence on the economies of each other, what are the main commodities traded and what are the most important factors influencing this trade relationship.

2.2 Methodology

The methodology of this research paper is based on data collection from internet resources, databases, legal frameworks, and literature.

The practical part of the thesis will be based on quantitative research. Quantitative research is mainly descriptive with numerous correlational methods to describe the behaviour of trade between two sides. Notably, the methods incorporated by the author in his thesis are linear regression estimation, elasticity computation, terms of trade analysis and trend estimation.

3 Literature Review

3.1 EU and Trade

3.1.1 History

To begin with, it is worth starting the narrative of this bachelor thesis with a quick recapitulation of the history of the European Union and primary goals for setting up an integrated community of independent European nations.

After the Second World War and devastating consequences of the conflict that lasted for more than six years on the continent, the most important objective of all international organizations (newly established ones, such as the IMF, UN, etc.) was to ensure that no such conflict would happen in Europe. Apart from that, due to the rise of macroeconomics and macroeconomic thinking, notably thanks to Keynes and his studies, economists all over the world started to think about potential ways to increase the economic output of a given country under the condition of not just scarce resources, but under the condition of devastated economies lacking all factors of productions that were wore off by the recent conflict. One of such economics, Jean Monnet, came to the conclusion that a European integration and generally the economic integration is something that not only would prevent major conflicts from happening in Europe, but it will also lead to increase in the output as many different countries with different factor endowments will contribute to the same mechanism uniting all those countries. Consequently, in 1951, the Treaty of Rome was signed between Belgium, Luxembourg, the Netherlands, Italy, West Germany and France setting up the Coal and Steel Community of Europe that would, starting from the year 1952, unite the production of coal and steel – two of the most important elements for any war machine by decentralizing production lines and supply chains all over Europe and placing production of individual components across member states of the community (Dinan, 2004).

Following the overwhelming success of the Treaty of Paris, the next treaty was signed between the same states expanding the original framework of the Coal and Steel community to the economic cooperation and also cooperation in the field of nuclear energy production, thus decreasing the risk of potential conflicts associated with the use of nuclear weapons. However, when it comes to the Treaty of Rome effective from 1957, it is still wise to

consider it as the first-ever document that set the impetus for economic integration between the six mentioned states. Consequently, throughout the 60s, the community faced its very first difficulties related to France's stance towards sensitive questions, leading to the Empty Chair Crisis and two vetoes from the part of France for the entry of the United Kingdom to the economic community (Boerger-De Smedt, 2012).

However, with the eventual accession of the United Kingdom to the community alongside Denmark and Ireland, the role of trade became more and more obvious as the United Kingdom prior to the accession to the European Union had been keen on primarily trading with its former colonies, which now could not have been exercised as before due to the custom code of the European Economic Community, where all member states were setting the same tariffs for any goods entering the community. Custom union that was established back then is still something that shapes the European Union's commercial policy (Lynch, 2000).

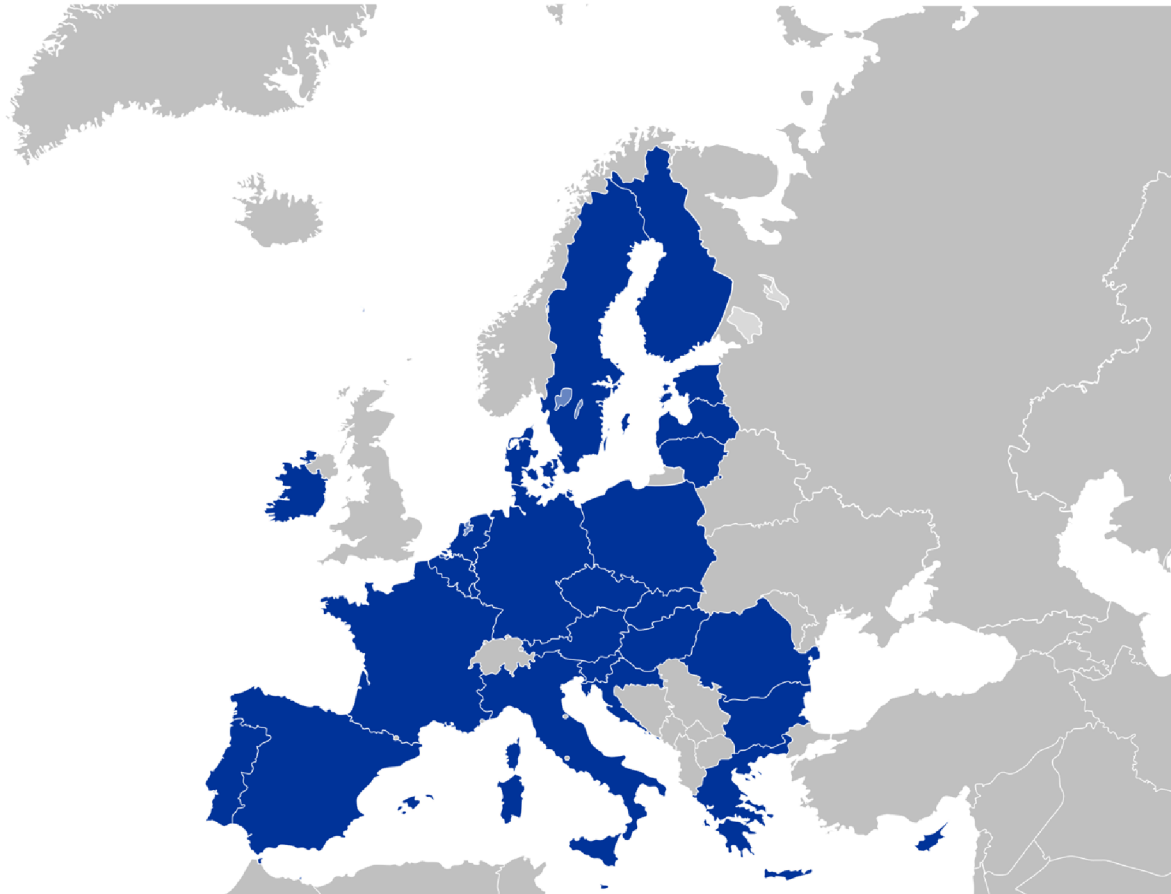
With the further enlargement of the EU and notably the one that happened in the 80s with Greece, Spain and Portugal entering the EU, the EU expanded their borders and by doing so, it stretched out its trading potential as goods were now entering the EU from Portugal and Spain, thus establishing the very first trade connections with South America (Cadarso, 2008).

After the establishment of the European Union according to the Maastricht's treaty, the European Union's trading strategy changed slightly as the union was using trade as a tool for helping other surrounding communities and states, who were willing to adopt the rules of democracy and justice in exchange for either preferential access to the European market or some easement of tariffs. In 1995, Austria, Sweden and Finland entered the EU, and the community became even larger (Baun, 1995).

Yet, the biggest wave of enlargement was yet to come in 2004, when the Eastern enlargement happened opening the doors of the EU to ten new members: Slovakia, Czechia, Hungary, Poland, Slovenia, Estonia, Latvia, Lithuania, Cyprus and Malta.

Finally, the very last two waves of enlargement happened in 2007 with Romania and Bulgaria joining and in 2013 with Croatia joining the union. Despite a relatively long history of the European Integration, some fundamentals remained the same and one of them is the custom code of the European Union and the same principle of commerce for all goods entering the EU – regardless of the country receiving goods, the same tariff is applied to them regardless of whether it is Cyprus, Portugal or France. However, the tendency for enlargement changed in 2020, when the United Kingdom became the first-ever state to use the “exit clause” recently included in the Treaty of Lisbon allowing any member state to leave the European Union. As of 2020 and further on, the European Union is also referred to as the EU-27 (Dhingra, 2022).

Figure 1, the map of the European Union in 2022



Source: Research Gate, 2022

3.1.2 European Trade Policy

In order to understand the main tendencies related to economic and trade of the European Union, it is wise to understand that the Union is operated based on the principle

of both supranationalism and inter-governmentalism. When it comes to particular sensible matters, the principle of inter-governmentalism is applied and for this purpose, some decisions require unanimous approval of all member-states. However, trade is something that lies in the direct jurisdiction of the European Commission that exercised their policies related to trade cooperation with different countries and other trading blocks and also related to the trade protection (Wouters, 2021).

Figure 2, the headquarter of the European Commission



Source: Alliance, 2022

Trade protection is something that is absolutely essential for the EU because of the single market that is run on four basic principles – 4 freedoms. These freedoms are freedom of movement of people, freedom of movement of capital, freedom of movement of goods, and freedom of services. This unique market with its unique system has to be both protected and the main protection tools are:

- 1) Anti-dumping (ensuring that no dumping, i.e., sale of goods for a price significantly lower than the price set in other communities in order to destroy fair competition) mechanism.
- 2) Tariff protection with the average tariff for goods entering the EU equal to 1.84%, as of 2019.
- 3) Quantity control (various quotas). However, the EU stopped relying on this tool and focused primarily on tariff barriers.
- 4) Control of national aid. This is done in order to ensure fair competition among all companies operating in the single market (Borchert, 2021).

Given the fact that the EU states are also members of the WTO, it is fair to say that the European Union is slowly moving towards tariffs instead of focusing on other measures, such as various quotas that were really popular in the EU couple of decades ago. However, despite the European movement towards the trade liberalization, the Union is still exercising the policy of protectionism in particular domains and evidently, the most obvious example of this are agriculture products. Imported agrarian products are subjects to tariffs that are on average significantly higher than for other goods since they are categorized as sensitive goods and they are directly related to the national interest of member-states (Beck, 2020).

3.1.3 Trade Agreements of the EU

Despite the fact that the European Union is originally a custom union, it does not necessarily mean that no country or trading block has a preferential access to the European market. Quite on the contrary, the EU has a series of trade agreements with numerous countries around the globe. However, it is first wise to start by mentioning that the European Union has a very important FTA, i.e., free trade agreement with a bunch of small European countries which all were considering the idea of joining the EU at some point but dropped the idea due to either national reasons or economic concerns. The most well-known free trade agreement between the European Union and other countries is EFTA, standing for the European Free Trade Association that includes the European States and countries as Iceland, Norway, Lichtenstein, and Switzerland. This practically means that goods coming from those countries are not subjects to any tariffs as they are also given a free access to the single market. Yet, in the case of Switzerland, the rule of four freedoms is partially different as the

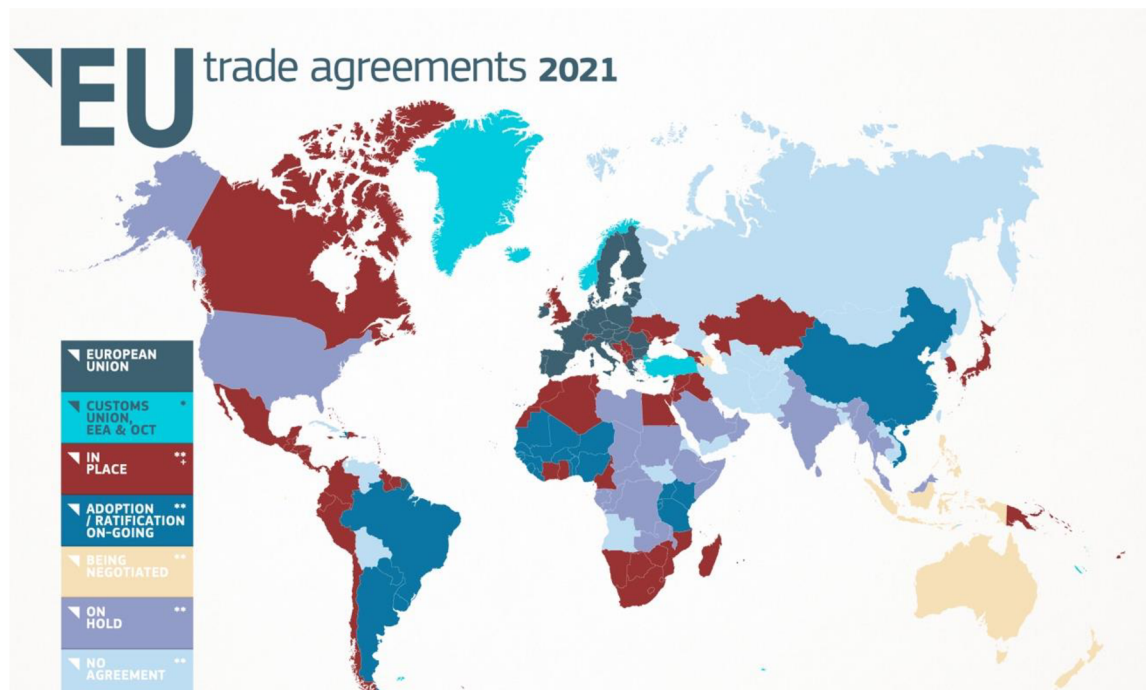
country did not fully want to enjoy the free movement of labor out of concern for its domestic labor market (Van Randywyck, 2011).

Apart from EFTA, another important country that enjoys good trade relationship with the EU is Turkey, which also has a custom union with the European Union. The relationship between Turkey and the EU was always rather interesting and somewhat unique with the country being treated as a potential member of the community starting from the 80s until the eventual submission of application in the 00s. Yet, the future of this relationship is really uncertain as the country is switching more and more to autocratic kind of leadership with the controversial figure of the president in the form of Recep Erdogan (Phinnemore, 2016).

However, what is rather interesting is the fact that the European Union does not really have any trade agreement in place with the United States, Russia and China. When it comes to the United States, despite the same attitude towards democratic values and free market approach to economics, the two does not really have any trade agreement in place, since the recently proposed one under the name of TTIP, standing for the Transatlantic Trade and Investment Partnership was not adopted due to mutual disagreements in the concept of the partnership (Young, 2017). When it comes to Russia, the relationship was rather optimistic and good until 2014, when Russia annexed Crimea, which lead to numerous sanctions imposed on the country by the part of the European Union, thus leading to the gradual decline in the trade relationship between the two, where mostly raw materials were being imported from the country to the EU through 2 main pipelines – Friendship (Дружба) and Nordstream. The third one that was under the construction under the name Nordstream 2 was eventually shut down due to the Russian invasion of Ukraine, so it is expected that the cooperation between the two will shortly cease to exist (Maass, 2016). When it comes to China, the rhetoric was somewhat the same as with Russia until the EU realized that China is moving more and more to the direction of autocracy, so the discussed trade agreement under the name “16+1” and later on “17+1” was shut down under the pressure of the European doubts and concerns about the future of the cooperation with China (Gabriel, 2018).

Yet, there are two important agreements with G-7 countries – Canada (CETA) and Japan (EPA) with reduction of tariffs and cooperation in the fields of sustainability and research (Hubner, 2017).

Figure 3, European trade agreements in 2021



Source: EU Council, 2021

3.2 Trade of Kazakhstan

3.2.1 History

Kazakhstan is an independent country situated in the middle of Europe and Asia covering a large territory making the country the 9th largest one and offering the country a large richness of land and raw materials that are often exported elsewhere. However, it is wise to understand that the country started its existence just 21 years ago after the collapse of the Soviet Union in 1991. What is quite interesting is the fact that the country was technically the last one to abandon the Union and claim its independence (Olcott, 2010).

Figure 4, Kazakhstan on the map



Source: Britannica, 2022

Kazakhstan is a multinational and multicultural state where two languages are officially recognized – Russian and Kazakh. Large presence of Russian-speaking minority and relatively good level of Russian language allows the country not to lose its ties with Russia and other post-Soviet countries, such as Uzbekistan, Tajikistan and Kyrgyzstan, as well as Georgia and Ukraine (Matuszkiewicz, 2010).

All in all, the country remains a highly industrialized one with a huge share of the gross domestic product produced in the industrial sector – 34.1% as of 2019, which is higher than on the world average (approximately 30%). However, the biggest sector is still services,

which indicates that the country is closer to the developed world rather than to developing. Yet, despite good indicators and relatively high GDP of nearly 200 billion USD, the country is classified as a transition economy or emerging economy due to the ongoing transition from the centrally planned Soviet economy to the free-market or capitalistic kind of economy (Jumadilova, 2012).

Kazakhstan is a net-exporting country with crude oil making up for nearly 50% of total exports of the country, which are approximately equal to 50 billion USD annually, while the country imports just 40 billion USD annually. The biggest trading partners of Kazakhstan are Russia, China and the European Union, which is not at all surprising as the country serves as a hub between the three, allowing Kazakhstan to trade with three giants and enjoying gains from trade (Argyngazinov, 2021).

Yet, it is also wise to say that starting from 2020, the country started to focus on new strategic partners in the form of China, the EU and the USA instead of relying on Russia with numerous companies from those countries alongside investors setting their businesses and companies in Kazakhstan. On the contrary, Kazakhstan still considers Russia as a key partner, for which there is plenty of evidence related mostly to the participation in international agreements and organizations – almost every single one in which Kazakhstan participate is also marked by the presence of Russia (Zhanabayev, 2021).

3.2.2 Trade Agreements

It does not come as a surprise that Kazakhstan is a United Nations member, so its independency allows Kazakhstan to choose strategic partners, as well as trading ones according to their own decisions and assessment. However, as of 2022, Kazakhstan is a member of a series important international organizations related to partnership and trade cooperation, which are:

- 1) Shanghai Cooperation Organization, also known as the Shanghai Five, which was established under the mutual impetus coming from the part of China, Russia, , Tajikistan, Kyrgyzstan and Kazakhstan, later on expanded to Uzbekistan, India and Pakistan and potentially Iran, which is expected to join the organization in the nearest future. This partnership agreement and organization as a whole sets

preferential access of the member states' goods to domestic markets of each country, thus facilitating trade and investment in the community (Xue, 2021).

- 2) CIS, standing for the Commonwealth of Independent States, an organization established under the idea of economic integration and unification of former Soviet countries. Yet, the organization was believed to be highly controversial due to the ongoing degree of imperialism coming from the part of Russia. This controversy led to the eventual abandonment of the organization on the part of Georgia and Ukraine, which both had a direct confrontation with Russia. However, other members of the Commonwealth seem to be cooperating with each other just well (Sodikovich, 2021).
- 3) Eurasian Economic Union is another association, which is shared by Kazakhstan and a bunch of former Soviet republics, such as Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia. However, this association is a custom union, thus making it more economically focused with no tariffs for the member-states' goods when being transported between the member-states (Dragneva, 2021).

In addition to the series of economic and strategic partnerships mentioned earlier, Kazakhstan is also a part of the Collective Security Treaty Organization (CSTO) which is operated on the same principle as NATO and the Warsaw Pact. What is also worth mentioning is the fact that the forces of the CSTO were recently (in 2021) ordered to enter Kazakhstan in order to fight street protestors who were directly endangering the sovereignty of the country, according to the press-release of the organization. However, the move itself caused a lot of controversy in the country and the world thus leading to the consideration of potential leave from the organization by Kazakhstan (Krivopalov, 2021).

3.3 WTO and Trade Liberalization

The chapter about the WTO and the trade liberalization in general is included into this thesis in order to give some idea about the ongoing tendencies in the world related to trade. When talking about the 20th century in the context of trade, it inevitably comes to the realization that over the course of the previous centuries, countries were gradually moving from the protectionist kind of thinking towards the liberal one, where trade barriers between different countries and trading blocs will eventually be either eradicated or simply lowered.

After the end of the Second World War and Bretton-Woods conference, there were talks related to the establishment of the third organization that would be given a name of International Trade Organization alongside the International Monetary Fund and the International Bank of Reconstruction and Development (later known as the World Bank). The idea of the International Trade Organization turned out to be a flop when the US legislators did not approve the establishment of the organization, which led to the creation of a non-official kind of summit or platform for negotiations under the name of GATT in 1948. GATT stands for the General Agreement on Tariffs and Trade and over the course of its almost 50 years history, the summit was able to first lower the value of tariffs imposed worldwide by almost twice and then to engage more than 100 countries all over the world into the international trade dialog (Goldstein, 2022).

GATT, which was a real success with its numerous rounds stretching out from Tokyo, Geneva and finally finishing in Uruguay eventually led to the creation of the WTO, standing for the World Trade Organization established in 1995. One of the main principles of the WTO are:

- 1) Transparency – countries are bound to not just publish but also inform international communities and people all over the world about the ongoing changes in the trade policy and trade agreements concluded between different countries-members of the WTO.
- 2) Reciprocity. This is related to limitation of the free-rider problem in the international trade.
- 3) Non-discrimination based on two main components – the most favored nation principle (MFN) and national treatment policy. According to the first component, countries should treat all WTO members equally and not to grant some preferential access to somebody based on historical or cultural ties. According to the second component, countries should not create obstacles preventing goods coming from other WTO members to their country out of the strategy of protecting domestic producers and domestic industries.
- 4) Binding and enforceable commitments. Decisions and legislation of the WTO is binding and if a given member does break some of them, those countries can become subjects to increased tariffs or loss of preferential entry.

- 5) Safety values. Countries are allowed to restrict trade flows in situation when the safety of their citizens and people is being put under risk due to the quality of goods being imported (Agbaragam 2021).

Overall, the one and the only round of the WTO – DDA standing for Doha Development Agenda does primarily focus on the solution of the problems related to the trade liberalization, intellectual property rights and agriculture. However, this one and only round cannot anyhow be considered as a successful one compared to fruitful rounds of the WTO's predecessor – GATT, since there are some serious obstacles to the development of the WTO in the selected fields, such as the reluctance of the USA to cooperate and a recent block of appointing new judges, controversial policy of China, national interests with sensitive goods and many other serious issues that do really prevent the world from achieving the maximum degree of trade liberalization. Thus, the very final agreement achieved during the DDA took place in 2013 and it was concluded under the name of Bali package, granting preferential access to the LCDs, i.e., least developed countries to markets of developed countries and also solution of some problems related to agriculture (Rastogi, 2022).

4 Practical Part

4.1 Time Series Analysis

The very first step of the analysis is related to the time series analysis, where the development of fundamental indicators related to the trade between the EU and Kazakhstan will be conducted. For the purpose of the analysis, the author focuses on collecting data from open sources, notably the World Bank, Eurostat and FAO. The very first dataset used by the author is presented below:

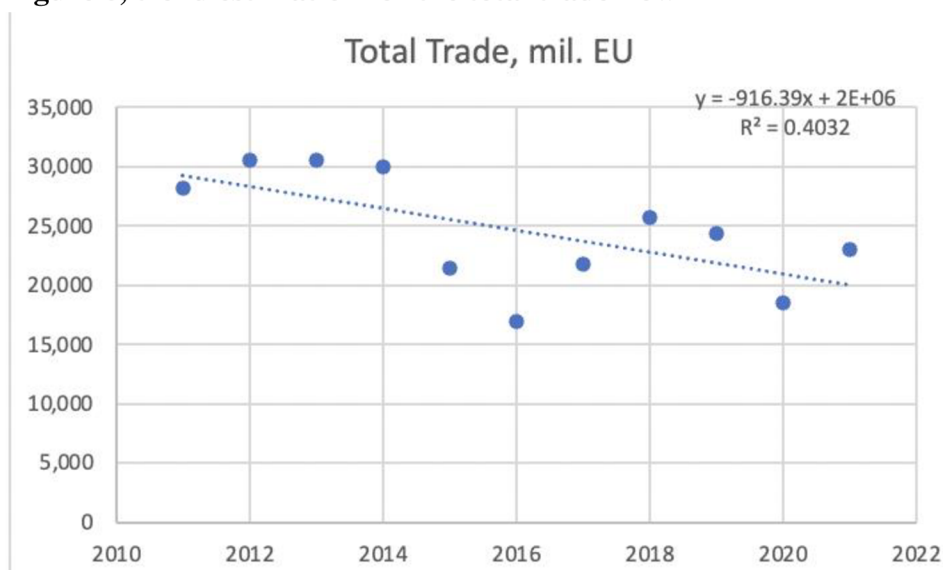
Figure 5, trade flow and related indicators between Kazakhstan and the EU

Year	Total Trade, mil. EU	Extra-Eu %	Imports, mil. EU	Export, mil EU
2011	28,172	1.4	22,492	5,680
2012	30,503	1.4	23,961	6,542
2013	30,495	1.4	23,432	7,063
2014	29,950	1.5	23,601	6,349
2015	21,403	1	15,658	5,745
2016	16,934	0.8	12,157	4,777
2017	21,750	1	16,928	4,822
2018	25,662	1.1	20,167	5,495
2019	24,321	0.9	18,403	5,918
2020	18,510	0.7	12,598	5,912
2021	22,956	0.8	17,479	22,939

Source: Eurostat, 2022

As it can be observed after looking at the dataset, the trade flow reflecting the trade between the EU and Kazakhstan was constantly fluctuating without any particular direction – for some years, the value was increasing, while in other years it was decreasing. Presumably, it is connected to numerous factors influencing the trade such as the economic growth and other related indicators. This development can be analysed using trend estimation, where the following trend is created:

Figure 6, trend estimation for the total trade flow



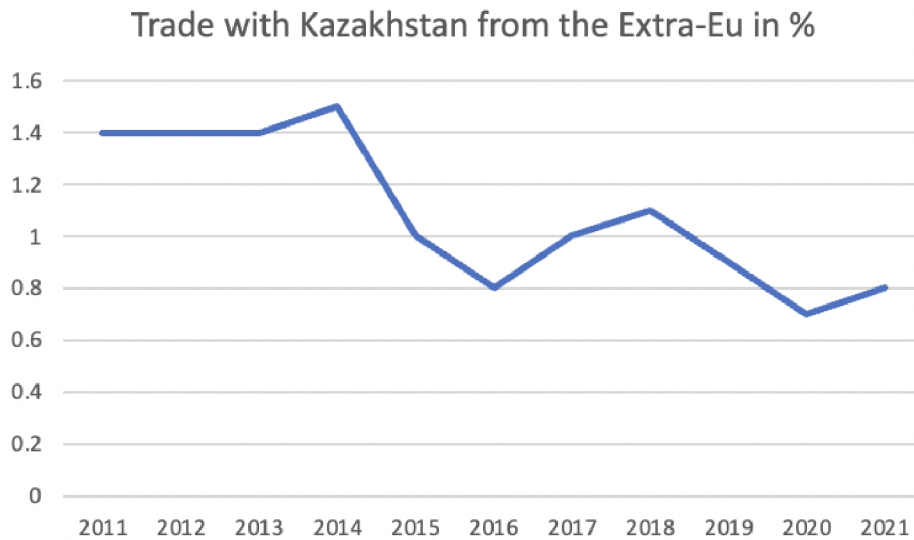
Source: own processing

According to the output of MS Excel and the OLS method for the trend estimation, the author can conclude the following linear trend reflecting the development of total trade flow between the two:

$y = -916.39t + 2E + 06$, practically meaning that per each year, there is an average annual decrease of 916.39 million tons. Henceforth, it is possible to say that over the last decade, trade cooperation between Kazakhstan and the EU was actually diminishing rather than increasing.

Then, it is also wise to take a look at another important indicator: share of trade with Kazakhstan in the total extra-EU trade. The following figure contains the development of this indicator over 11 years (from 2011 to 2021):

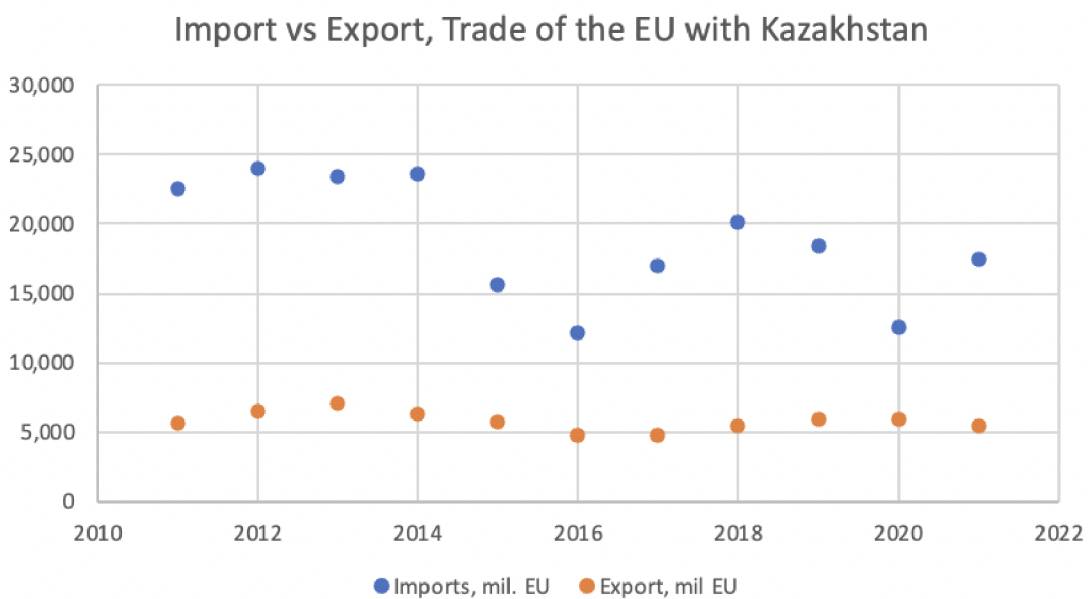
Figure 7, share of trade with Kazakhstan from the total extra-EU



Source: own processing

Clearly, the same pattern persists in the next indicator as in the very first one – the share is diminishing over time and Kazakhstan became a less relevant partner for the EU over the course of the last decade. Then, the author takes a look at the development of individual trade indicators – export to Kazakhstan in million euros and import from Kazakhstan of millions of euros for the EU:

Figure 8, visual comparison of imports and exports



Source: own processing

Evidently, it is fair to say that the European Union is a net importer of goods and services from Kazakhstan, as the Union had a trade deficit (amount of import exceeded the amount of export) for every single year from 2011 to 2021. What is also quite interesting is that the drop in the trade flow between the two is primarily explained by the drop in the amount imported from Kazakhstan, as the amount of goods and services exported to Kazakhstan remained on more or less the same level in 2021 as in 2011.

4.2 Terms of Trade Analysis

Then, another important aspect that is needed to be discussed in the thesis is the terms of trade of the EU in the trade with Kazakhstan. Terms of trade is an indicator that is based on the following computation:

$$\text{Terms of Trade (in \%)} = \frac{\text{Value of Export}}{\text{Value of Import}} * 100$$

Whenever the price of export is higher than the price of import, it practically means that a given country is benefitting from the trade relations, as they sell something for a price higher than they are buying it from the same partner. When it comes to the trade relations between Kazakhstan and the EU in the context of the following analysis, the author focuses on analysing the terms of trade in agriculture products based on data collected from FAO for the same interval – from 2011 to 2021. The following dataset is the one on which calculations will be based:

Figure 9, dataset used for the calculation of ToT

Year	Export Quantity	Export Value	Import Quantity	Import Value
2011	1066	1071	110	113
2012	1108	1110	127	129
2013	1205	1210	151	152
2014	1211	1228	176	182
2015	1244	1258	137	143
2016	1093	1108	159	169
2017	1071	1086	162	172
2018	974	987	195	204
2019	1020	1021	210	217
2020	1028	1034	234	245
2021	954	961	286	298

Source: FAO, 2022

The very first thing that comes to one's mind when looking at the dataset above are relatively low values for all indicators – quantities are expressed in tons, while values are expressed in thousands of dollars. Clearly, the EU and Kazakhstan are not really engaged much in the trade of agrarian goods. Yet, the calculations for the terms of trade are presented below:

Figure 10, terms of trade analysis

Year	Export price, ton	Import price, ton	ToT, %
2011	1.004690432	1.027272727	97.80%
2012	1.001805054	1.015748031	98.63%
2013	1.004149378	1.006622517	99.75%
2014	1.014037985	1.034090909	98.06%
2015	1.011254019	1.04379562	96.88%
2016	1.013723696	1.062893082	95.37%
2017	1.014005602	1.061728395	95.51%
2018	1.013347023	1.046153846	96.86%
2019	1.000980392	1.033333333	96.87%
2020	1.005836576	1.047008547	96.07%
2021	1.007337526	1.041958042	96.68%

Source: own processing

Based on the indicator, it is possible to say that the EU's position in the trade of agriculture products with Kazakhstan is not that strong, as the average price of unit exported is lower than the average price of unit imported, meaning unfavorable trade conditions for the EU. Yet, it might also mean that Kazakhstan is imported some kind of special or unique goods which generally cost a lot.

4.3 Linear Regression

The very final piece of analysis incorporated by the author in this thesis is linear regression analysis, where the author will create a linear regression model explaining the development of total trade flow in million euros between Kazakhstan and the EU based on the time interval of 2011-2021. The following model will be created:

$$yt = \gamma_0 + \gamma_1x_{1t} + \gamma_2x_{2t} + \gamma_3x_{3t} + \varepsilon_t, \text{ where:}$$

$\gamma_{1,2,3,4}$ are parameters of independent variables;

γ_0 is an intercept term;

X_1 is average annual price per barrel of oil in USD;

X_2 is the value of GDP of Kazakhstan in billion USD;

X_3 is the exchange rate of tenge per one USD;

T is time vector representing one year.

The following dataset is used for the linear estimation, data was collected from the World Bank and Eurostat:

Figure 11, dataset is used for the linear estimation

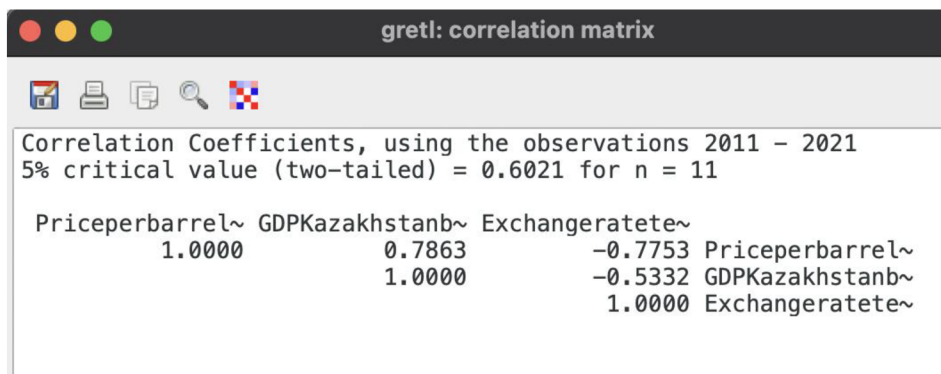
Year	Total Trade, million EUR	Price per barrel of oil, USD	GDP, Kazakhstan billion USD	Exchange rate, tenge for USD
	y_t	x_{1t}	x_{2t}	x_{3t}
2011	28,172	94.88	7.400000001	146.6208333
2012	30,503	94.05	4.8	149.1125
2013	30,495	97.98	5.999999999	152.1291667
2014	29,950	93.17	4.200000001	179.1916667
2015	21,403	48.66	1.2	221.7283333
2016	16,934	43.29	1.1	342.16
2017	21,750	50.8	4.1	326.0010227
2018	25,662	65.23	4.1	344.7058333
2019	24,321	56.99	4.5	382.7473106
2020	18,510	39.68	-2.5	412.9533333
2021	22,956	68.17	4.3	425.9075

Source: The World Bank, 2022 and Eurostat, 2022

The author expects the sign of oil price to be negative, the sign of GDP of Kazakhstan to be positive and the sign of exchange rate to be also positive. In addition to that, no autocorrelation, normality of residuals, no heteroscedasticity and no multicollinearity are assumed. Gretl is used for the implementation of the OLS method:

The very first step will be the check of multicollinearity. Acceptable level of correlation is selected to be 0.8; above this value, the author considers a possible transformation of data since a presence of multicollinearity results in parameters not being the best. Correlation matrix is available below:

Figure 12, correlation matrix



Source: own processing

As a consequence, it is possible to conclude that no multicollinearity is identified as all values are lower than 0.8. Estimation can proceed without any transformation of data. The output of the OLS is presented below:

Figure 13, OLS output

	coefficient	std. error	t-ratio	p-value	
const	11766.7	4883.17	2.410	0.0468	**
Priceperbarrelof~	186.303	53.3070	3.495	0.0101	**
GDPKazakhstanbil~	111.771	334.056	0.3346	0.7477	
Exchangerateteng~	-1.11124	7.91181	-0.1405	0.8923	
Mean dependent var	24605.09	S.D. dependent var	4786.285		
Sum squared resid	20934598	S.E. of regression	1729.352		
R-squared	0.908617	Adjusted R-squared	0.869452		
F(3, 7)	23.20010	P-value(F)	0.000518		
Log-likelihood	-95.13293	Akaike criterion	198.2659		
Schwarz criterion	199.8574	Hannan-Quinn	197.2626		
rho	-0.020190	Durbin-Watson	1.746919		

Source: own processing

Consequently, it is possible to create the following model:

$$y_t = 11766.7 + 186.303x_{1t} + 111.771x_{2t} - 1.11x_{3t} + \varepsilon_t,$$

The following dependencies and relationships can be concluded:

- When the price of oil increases by 1 USD, the trade flow between Kazakhstan and the EU increases by 186.303.
- When the GDP in Kazakhstan increases by 1 billion USD, the trade flow between Kazakhstan and the EU increases by 111.771.
- When the exchange rate of tenge to USD increases by 1 tenge, the trade flow between Kazakhstan and the EU decreases by 1.11.

Apart from formulating basic relationships, it is also essential to conduct additional econometric tests to verify the compliance of the created model to the assumptions put in the beginning:

Figure 14, econometric tests

```
White's test for heteroskedasticity -  
  Null hypothesis: heteroskedasticity not present  
  Test statistic: LM = 8.16963  
  with p-value = P(Chi-square(9) > 8.16963) = 0.517146  
  
Test for normality of residual -  
  Null hypothesis: error is normally distributed  
  Test statistic: Chi-square(2) = 1.433  
  with p-value = 0.488459  
  
LM test for autocorrelation up to order 1 -  
  Null hypothesis: no autocorrelation  
  Test statistic: LMF = 0.00282485  
  with p-value = P(F(1, 6) > 0.00282485) = 0.959338
```

Source: own processing

- Autocorrelation – absent at $\alpha = 0.05$ and $P = 0.95$. $0.95 > 0.05 \Rightarrow H_0$ about absence is not rejected.
- Normality – present at $\alpha = 0.05$ and $P = 0.48$. $0.48 > 0.05 \Rightarrow H_0$ about normality is not rejected.
- Heteroscedasticity – absent at $\alpha = 0.05$ and $P = 0.51$. $0.51 > 0.05 \Rightarrow H_0$ about heteroscedasticity is not rejected.

According to the correlation matrix and also to the series of econometric tests, it can be concluded that the model created by the author is BLUE, standing for the best linear unbiased estimator.

Additionally, it is wise to talk about the significance of the whole model, significance of individual parameters and also the coefficient of determination. According to the coefficient of determination, it can be concluded that the model describes approximately 86% of variation in the trade flow between Kazakhstan and the EU-27 (based on the adjusted R square), this is a good value but still, more predictors can be added in order to increase the accuracy.

According to the F value and P value attributed to it, it can be concluded that the model estimated by the author is significant at $\alpha = 0.05$, since $0.0005 < 0.05$. However, there is just one predictor whose effect on the annual trade flow value is significant, and it is the price of oil in USD.

Additionally, the author does also compute elasticities for the year 2021 in order to assess percentual effect of each predictor. Elasticity calculation is based on the following formula:

$$\text{Elasticity} = \text{partial derivation (parameter of a selected variable)} * \frac{X_{ij}}{Y_{\text{fitted}}}$$

The output of the calculation is available below:

Figure 15, elasticitiy computation for 2021

	Price per barrel of oil, USD	GDP, Kazakhstan billion USD	Exchange rate, tenge for USD
	x1t	x2t	x3t
Elasticity	0.518911621	0.019637122	-0.019316059

Source: own processing

According to the calculation, the following interpretation can be concluded:

- When the price per parrel of crude oil increases by 1%, the trade flow value between Kazakhstan and the EU increases by 0.51%, making the variable the largest contributor to the change in the dependent variable.
- When the GDP of Kazakhstan increases by 1%, the trade flow value between Kazakhstan and the EU increases by 0.019%.
- When the exchange rate of tenge to USD increases by 1%, the trade flow value between Kazakhstan and the EU decreases by 0.019%.

Clearly, the most important contributor to the changes in trade flow value is the price of crude oil in USD. Reflections and further conclusions will be provided in the next chapter – Results and Discussion.

5 Results and Discussion

To begin, it is worthwhile to begin this chapter by drawing attention to the most significant discoveries made by the author in the practical phase of his research. To begin, throughout the course of the last decade, the amount of trade that has taken place between Kazakhstan and the EU has been steadily decreasing, with only brief periods of growth lasting one to two years before the trade volume again begins to decline. According to the calculations that were done by the author, it is possible to draw the conclusion that the average decrease in the trade volume between the two is equal to 916.39 million euros. This is, fairly speaking, not such a large value for the European Union given their focus on the intra-EU trade and cooperation with other large countries including Brazil, Canada, Japan, and the United States of America. However, it is still interesting that despite the general improvement in the relationship between the EU and Kazakhstan and despite the recent accession of Kazakhstan to the WTO (entered in 2015), the trade continued to decrease. This is despite the fact that both of these events occurred relatively recently.

However, the most straightforward reason for this can be found right on the surface: both parties have signed the Enhanced Partnership and Cooperation Agreement, which will go into effect on March 1, 2020. As a result, the vast majority of tariffs on goods and services that flow between the two parties will be eliminated as a result of this agreement, with a few exceptions for sectors that are particularly sensitive, such as agriculture for the EU. The author is of the opinion that a steady decline in the volume of commerce that takes place between Kazakhstan and the EU will eventually result in the two parties reaching an agreement that would allow them to resume their previous level of economic cooperation. According to the author's conclusions, it is another step that the EU has taken towards the liberalization of international trade, and it is also something that will assist Kazakhstan in finally ending their economic dependence on Russia and China and pointing the country towards the west. Both of these things are true. Regarding this particular point, the writer of this bachelor's thesis wholeheartedly concurs with the original author (Dienikova, 2021).

Therefore, it is prudent to state that the unexpected trade balance (deficit) of the EU in the trade with Kazakhstan can be explained by two primary factors: first, Kazakhstan is relatively far away from the EU, so trade in agriculture and other durable goods is limited

by high distance between the two; and second, the trade between the two is mostly represented by raw materials, which are imported from Kazakhstan. In exchange, the EU purchases raw resources such as crude oil, natural gas, and other commodities from Kazakhstan. However, the quantity of these high value-added items that Kazakhstan imports is substantially smaller than the quantity of these raw materials that the EU purchases. What's more, the author thinks that the recently signed agreement is an attempt from the EU to change the situation and increase their imports to the country, which will ultimately lead to the trade balance, or at least a partial trade balance. This belief is supported by the fact that the EU recently signed the agreement. According to the findings of another scholar, the relationship between the European Union and Kazakhstan has always been mostly centered on the European goal to find themselves a new dependable supply of raw materials (Tsvertsadze, 2013).

However, there is also another explanation to the diminishing value of trade flow between the EU and Kazakhstan, and the author believes that if his assumption is indeed true, then the recently signed agreement is not likely to change the situation very much. This is because the author believes that if his assumption is true, then the author's assumption is true, then the author believes that With its Green Deal and other similar programs, the European Union (EU) is the world's largest driver of sustainable development and environment conservation. Some of these projects are even put into practice in other nations where the EU seeks to promote the idea that sustainability is important. The environmental pillar is one of the most important pillars of sustainable development. The concept behind this pillar is primarily related to the eventual abandonment of fossil fuels and the production of energy that is harmful to the environment, thus eventually focusing on renewable sources of energy.

The percentage of energy that comes from renewable sources has increased dramatically over the course of the past decade (Simionescu, 2020), which is directly related to a reduction in the amount of fossil fuels that were purchased from other countries, most notably Russia. There is no doubt that the European Union is making significant headway in this area, as the other author has pointed out. However, in this perspective, Kazakhstan may also be seen as a losing side since the country's principal product that was sold to the EU was nearly everything linked to fossil fuels. As a result, Kazakhstan was the leading supplier of fossil

fuels to the EU. It is anticipated that Kazakhstan's role in the European extra-EU trade relations will continue to decrease over time if the country does not discover another commodity that is in high demand among Europeans. This is due to the fact that the EU will continue to place a greater emphasis on sustainable development and renewable sources of energy in the coming years. Kazakhstan is not a preferred partner for the European Union due to the fact that the EU does not really have a good stance in the trade with Kazakhstan, as the author discovered. According to the author's findings, the trade between the two in agrarian products is virtually nonexistent, and even in spite of this, the terms of trade are not favorable for the EU.

The results of the linear regression analysis come out as a piece of evidence to support the author's previous reflections – the price of oil is the primary driving force behind fluctuations in the volume of trade flow between Kazakhstan and the EU. Finally, as for the driving forces of the trade between the European Union and Kazakhstan, the results of the linear regression analysis come out as a piece of evidence to support the author's previous reflections. In addition to this, it is reasonable to assert that the astoundingly low yearly average prices for crude oil are the primary factor responsible for the comparatively low amount of trade that occurred during certain years. This dependency makes it difficult for domestic governments to consider any potential changes or reformation of national economies that might result in diversified exports, as the author points out. The problem that plagues countries like Kazakhstan is what is known as the resource curse. These countries are extremely dependent on their exports of raw materials, and this dependency makes it difficult for domestic governments to consider any potential changes (Ross, 2015). The author of this thesis, on the other hand, contends that the current state of affairs in Kazakhstan are not quite as dire as they may first seem since there is still time to effect positive change.

6 Conclusion

To conclude, it is possible to highlight the following list of findings done by the author: The trade relationship between the two is primarily driven by the European need to buy raw materials, as crude oil and natural gas are the most important commodities traded between the European Union and Kazakhstan; The trade between the two has been decreasing over the last decade, which is presumably explained by the European energy transition and the Green Deal and absence of a trade agreement between the two; The relationship might improve in the nearest future under the weight of the agreement signed between Kazakhstan and the EU, but it is still quite likely that the trade flow volume will keep diminishing until Kazakhstan makes an attempt to diversify their exports and focus on specializing in different kinds of goods; The most important contributor to the development of the trade flow is the annual average price of crude oil, where 1 dollar increase results in the increase of 186.303 million euros in the trade flow volume.

Apart from all this, the author suggests to expand the current study and conduct the same analysis in a decade to actually see if the trade agreement between Kazakhstan and the EU resulted in any positive changed in the trade relations between the two.

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Zhanabayev, D. K., & Merdenov, A. E. (2021). Kazakhstan and the European Union problems and prospects for the development of legal relations.

BACHELOR THESIS ASSIGNMENT

Azamat Sholanov

Business Administration

Thesis title

Assessment of Trade between the EU-27 and Kazakhstan

Objectives of thesis

The objective of this thesis is to characterize the trade relationship between the Republic of Kazakhstan and the EU-27. The author's main objective lies in understanding if two economic subjects have a serious impact on each other's economy or not.

Methodology

The methodology of this research paper is based on data collection from internet resources, databases, legal frameworks, and literature.

The practical part of the thesis will be based on quantitative research. Quantitative research is mainly descriptive with numerous correlational methods to describe the behaviour of trade between two sides.

The proposed extent of the thesis

30-40 pages

Keywords

EU-27, Kazakhstan, Trade Flow, Liberalization, Economic Union, Integration

Recommended information sources

- Tsertsvadze, T., & Axyonova, V. (2013). Trading values with Kazakhstan.
- Wouters, J., Hoffmeister, F., De Baere, G., & Ramopoulos, T. (2021). The law of EU external relations: cases, materials, and commentary on the EU as an international legal actor. Oxford University Press.
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Prague on 16. 03. 2023

Czech University of Life Sciences Prague

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Bachelor Thesis

Analysis of Trade between the EU-27 and Kazakhstan

Azamat Sholanov

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Declaration

I declare that I have worked on my bachelor thesis titled "Analysis of Trade between the EU-27 and Kazakhstan " by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any copyrights.

In Prague on 15.03.2023

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Analysis of Trade between the EU-27 and Kazakhstan

Abstract

The Republic of Kazakhstan is the author's home country, and the European Union consisting of 27 countries is where the author presently resides. The purpose of this thesis is to describe the nature of the commercial ties that exist between these two subjects of the world economy. The primary purpose of this thesis is for the author to determine whether or not two economic topics have a significant influence on the economies of each other, what are the main commodities traded and what are the most important factors influencing this trade relationship. The methodology of this research paper is based on data collection from internet resources, databases, legal frameworks, and literature.

The practical part of the thesis will be based on quantitative research. Quantitative research is mainly descriptive with numerous correlational methods to describe the behaviour of trade between two sides. Notably, the methods incorporated by the author in his thesis are linear regression estimation, elasticity computation, terms of trade analysis and trend estimation. The trade relationship between the two is primarily driven by the European need to buy raw materials, as crude oil and natural gas are the most important commodities traded between the European Union and Kazakhstan. The trade flow volume has been decreasing over the course of the last decade and is likely to continue doing so as the EU will continue their attachment to the Green Deal policy and decrease of the share of fossil fuels.

Keywords: EU-27, Kazakhstan, Trade Flow, Liberalization, Economic Union, Integration

Analýza obchodu mezi EU-27 a Kazachstánem

Abstrakt

Kazašská republika je domovskou zemí autora a Evropská unie skládající se z 27 zemí je místem, kde autor v současné době sídlí. Účelem této práce je popsat povahu obchodních vazeb, které existují mezi těmito dvěma subjekty světové ekonomiky. Primárním účelem této práce je, aby autor určil, zda dvě ekonomická témata mají či nemají významný vliv na ekonomiky navzájem, jaké jsou hlavní obchodované komodity a jaké jsou nejdůležitější faktory ovlivňující tento obchodní vztah. Metodika této výzkumné práce je založena na sběru dat z internetových zdrojů, databází, právních rámců a literatury.

Praktická část práce bude založena na kvantitativním výzkumu. Kvantitativní výzkum je hlavně popisný s četnými korelačními metodami k popisu chování obchodu mezi dvěma stranami. Zejména metody, které autor do své práce začlenil, jsou lineární regresní odhad, výpočet elasticity, pojmy obchodní analýzy a odhad trendů. Obchodní vztah mezi nimi je primárně poháněn Evropskou potřebou nakupovat suroviny, protože ropa a zemní plyn jsou nejdůležitějšími komoditami obchodovanými mezi Evropskou unií a Kazachstánem. Objem obchodních toků se v průběhu posledního desetiletí snižoval a je pravděpodobné, že v tom bude pokračovat, protože EU bude pokračovat ve své vazbě na politiku zeleného údělu a snížení podílu fosilních paliv.

Klíčová slova: EU-27, Kazachstán, obchodní tok, liberalizace, hospodářská unie, integrace

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List of abbreviations

EU – European Union

CIS – Commonwealth of Independent States

OLS – Ordinary Least Squares

BLUE – Best Linear Unbiased Estimator

1 Introduction

The author, like any other person living in a country where he or she was not originally born, whose level of development is seemingly higher than in one's home country, has a profound interest in the trade between two distinct entities that are both quite close to the author: Kazakhstan and the European Union. This is because Kazakhstan and the European Union are both quite close to the author. In addition to this, the author has long pondered the question of whether or not business conducted with Kazakhstan has any kind of material impact on the economy of the European Union or vice versa. The author was fortunate enough to finally get the chance to put his theory to the test and also investigate such a difficult topic as the international commerce that goes on between the two countries using the lens of economics and relevant statistical analysis.

This piece of art shows not only a convoluted narrative that explains the history that lies behind the economic connections that exist between the EU and Kazakhstan, but it also reveals the structural breakdown of the trade matrix that exists between the two entities. As a result, the author draws a conclusion about whether or not the trade between the two is thriving, what the effect is on domestic economies, and what the future holds for the trade relationship between the two based on his findings in both the literature review and the practical part containing relevant analysis. This conclusion is based on his findings in both the literature review and the practical part.

2 Objectives and Methodology

2.1 Objectives

The Republic of Kazakhstan is the author's home country, and the European Union consisting of 27 countries is where the author presently resides. The purpose of this thesis is to describe the nature of the commercial ties that exist between these two subjects of the world economy. The primary purpose of this thesis is for the author to determine whether or not two economic topics have a significant influence on the economies of each other, what are the main commodities traded and what are the most important factors influencing this trade relationship.

2.2 Methodology

The methodology of this research paper is based on data collection from internet resources, databases, legal frameworks, and literature.

The practical part of the thesis will be based on quantitative research. Quantitative research is mainly descriptive with numerous correlational methods to describe the behaviour of trade between two sides. Notably, the methods incorporated by the author in his thesis are linear regression estimation, elasticity computation, terms of trade analysis and trend estimation.

3 Literature Review

3.1 EU and Trade

3.1.1 History

To begin with, it is worth starting the narrative of this bachelor thesis with a quick recapitulation of the history of the European Union and primary goals for setting up an integrated community of independent European nations.

After the Second World War and devastating consequences of the conflict that lasted for more than six years on the continent, the most important objective of all international organizations (newly established ones, such as the IMF, UN, etc.) was to ensure that no such conflict would happen in Europe. Apart from that, due to the rise of macroeconomics and macroeconomic thinking, notably thanks to Keynes and his studies, economists all over the world started to think about potential ways to increase the economic output of a given country under the condition of not just scarce resources, but under the condition of devastated economies lacking all factors of productions that were wore off by the recent conflict. One of such economics, Jean Monnet, came to the conclusion that a European integration and generally the economic integration is something that not only would prevent major conflicts from happening in Europe, but it will also lead to increase in the output as many different countries with different factor endowments will contribute to the same mechanism uniting all those countries. Consequently, in 1951, the Treaty of Rome was signed between Belgium, Luxembourg, the Netherlands, Italy, West Germany and France setting up the Coal and Steel Community of Europe that would, starting from the year 1952, unite the production of coal and steel – two of the most important elements for any war machine by decentralizing production lines and supply chains all over Europe and placing production of individual components across member states of the community (Dinan, 2004).

Following the overwhelming success of the Treaty of Paris, the next treaty was signed between the same states expanding the original framework of the Coal and Steel community to the economic cooperation and also cooperation in the field of nuclear energy production, thus decreasing the risk of potential conflicts associated with the use of nuclear weapons. However, when it comes to the Treaty of Rome effective from 1957, it is still wise to

consider it as the first-ever document that set the impetus for economic integration between the six mentioned states. Consequently, throughout the 60s, the community faced its very first difficulties related to France's stance towards sensitive questions, leading to the Empty Chair Crisis and two vetoes from the part of France for the entry of the United Kingdom to the economic community (Boerger-De Smedt, 2012).

However, with the eventual accession of the United Kingdom to the community alongside Denmark and Ireland, the role of trade became more and more obvious as the United Kingdom prior to the accession to the European Union had been keen on primarily trading with its former colonies, which now could not have been exercised as before due to the custom code of the European Economic Community, where all member states were setting the same tariffs for any goods entering the community. Custom union that was established back then is still something that shapes the European Union's commercial policy (Lynch, 2000).

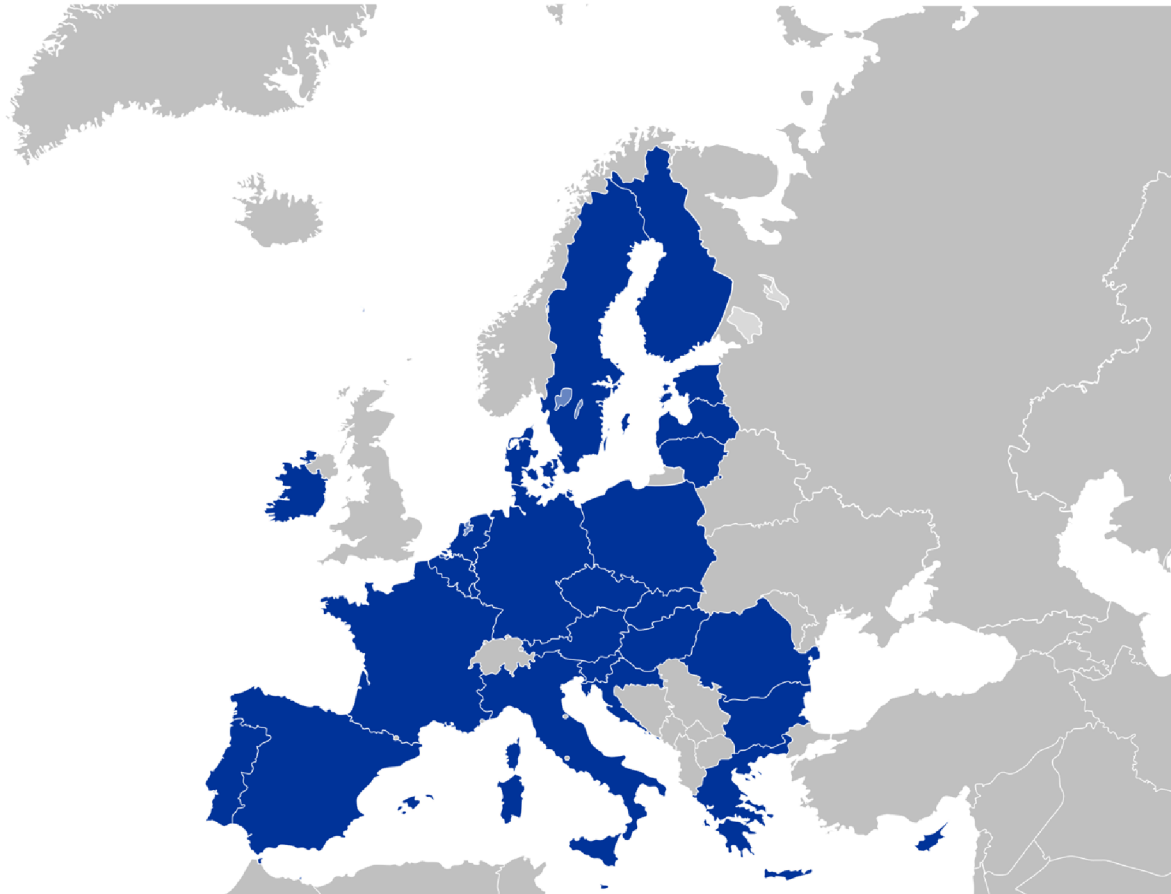
With the further enlargement of the EU and notably the one that happened in the 80s with Greece, Spain and Portugal entering the EU, the EU expanded their borders and by doing so, it stretched out its trading potential as goods were now entering the EU from Portugal and Spain, thus establishing the very first trade connections with South America (Cadarso, 2008).

After the establishment of the European Union according to the Maastricht's treaty, the European Union's trading strategy changed slightly as the union was using trade as a tool for helping other surrounding communities and states, who were willing to adopt the rules of democracy and justice in exchange for either preferential access to the European market or some easement of tariffs. In 1995, Austria, Sweden and Finland entered the EU, and the community became even larger (Baun, 1995).

Yet, the biggest wave of enlargement was yet to come in 2004, when the Eastern enlargement happened opening the doors of the EU to ten new members: Slovakia, Czechia, Hungary, Poland, Slovenia, Estonia, Latvia, Lithuania, Cyprus and Malta.

Finally, the very last two waves of enlargement happened in 2007 with Romania and Bulgaria joining and in 2013 with Croatia joining the union. Despite a relatively long history of the European Integration, some fundamentals remained the same and one of them is the custom code of the European Union and the same principle of commerce for all goods entering the EU – regardless of the country receiving goods, the same tariff is applied to them regardless of whether it is Cyprus, Portugal or France. However, the tendency for enlargement changed in 2020, when the United Kingdom became the first-ever state to use the “exit clause” recently included in the Treaty of Lisbon allowing any member state to leave the European Union. As of 2020 and further on, the European Union is also referred to as the EU-27 (Dhingra, 2022).

Figure 1, the map of the European Union in 2022



Source: Research Gate, 2022

3.1.2 European Trade Policy

In order to understand the main tendencies related to economic and trade of the European Union, it is wise to understand that the Union is operated based on the principle

of both supranationalism and inter-governmentalism. When it comes to particular sensible matters, the principle of inter-governmentalism is applied and for this purpose, some decisions require unanimous approval of all member-states. However, trade is something that lies in the direct jurisdiction of the European Commission that exercised their policies related to trade cooperation with different countries and other trading blocks and also related to the trade protection (Wouters, 2021).

Figure 2, the headquarter of the European Commission



Source: Alliance, 2022

Trade protection is something that is absolutely essential for the EU because of the single market that is run on four basic principles – 4 freedoms. These freedoms are freedom of movement of people, freedom of movement of capital, freedom of movement of goods, and freedom of services. This unique market with its unique system has to be both protected and the main protection tools are:

- 1) Anti-dumping (ensuring that no dumping, i.e., sale of goods for a price significantly lower than the price set in other communities in order to destroy fair competition) mechanism.
- 2) Tariff protection with the average tariff for goods entering the EU equal to 1.84%, as of 2019.
- 3) Quantity control (various quotas). However, the EU stopped relying on this tool and focused primarily on tariff barriers.
- 4) Control of national aid. This is done in order to ensure fair competition among all companies operating in the single market (Borchert, 2021).

Given the fact that the EU states are also members of the WTO, it is fair to say that the European Union is slowly moving towards tariffs instead of focusing on other measures, such as various quotas that were really popular in the EU couple of decades ago. However, despite the European movement towards the trade liberalization, the Union is still exercising the policy of protectionism in particular domains and evidently, the most obvious example of this are agriculture products. Imported agrarian products are subjects to tariffs that are on average significantly higher than for other goods since they are categorized as sensitive goods and they are directly related to the national interest of member-states (Beck, 2020).

3.1.3 Trade Agreements of the EU

Despite the fact that the European Union is originally a custom union, it does not necessarily mean that no country or trading block has a preferential access to the European market. Quite on the contrary, the EU has a series of trade agreements with numerous countries around the globe. However, it is first wise to start by mentioning that the European Union has a very important FTA, i.e., free trade agreement with a bunch of small European countries which all were considering the idea of joining the EU at some point but dropped the idea due to either national reasons or economic concerns. The most well-known free trade agreement between the European Union and other countries is EFTA, standing for the European Free Trade Association that includes the European States and countries as Iceland, Norway, Lichtenstein, and Switzerland. This practically means that goods coming from those countries are not subjects to any tariffs as they are also given a free access to the single market. Yet, in the case of Switzerland, the rule of four freedoms is partially different as the

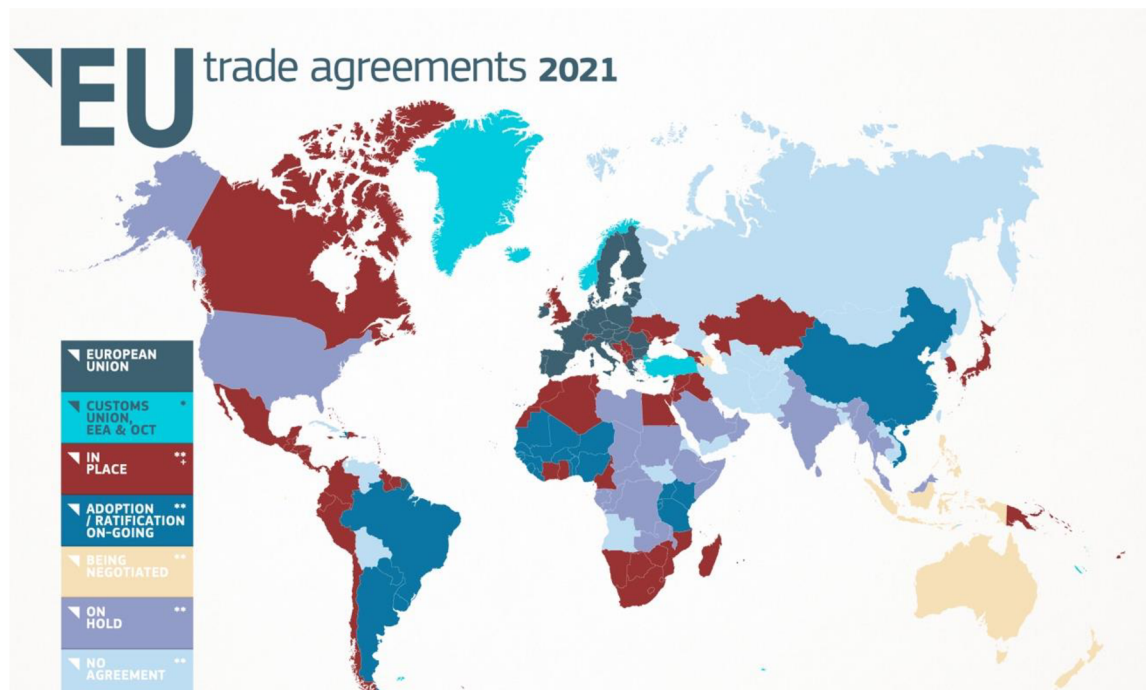
country did not fully want to enjoy the free movement of labor out of concern for its domestic labor market (Van Randywyck, 2011).

Apart from EFTA, another important country that enjoys good trade relationship with the EU is Turkey, which also has a custom union with the European Union. The relationship between Turkey and the EU was always rather interesting and somewhat unique with the country being treated as a potential member of the community starting from the 80s until the eventual submission of application in the 00s. Yet, the future of this relationship is really uncertain as the country is switching more and more to autocratic kind of leadership with the controversial figure of the president in the form of Recep Erdogan (Phinnemore, 2016).

However, what is rather interesting is the fact that the European Union does not really have any trade agreement in place with the United States, Russia and China. When it comes to the United States, despite the same attitude towards democratic values and free market approach to economics, the two does not really have any trade agreement in place, since the recently proposed one under the name of TTIP, standing for the Transatlantic Trade and Investment Partnership was not adopted due to mutual disagreements in the concept of the partnership (Young, 2017). When it comes to Russia, the relationship was rather optimistic and good until 2014, when Russia annexed Crimea, which lead to numerous sanctions imposed on the country by the part of the European Union, thus leading to the gradual decline in the trade relationship between the two, where mostly raw materials were being imported from the country to the EU through 2 main pipelines – Friendship (Дружба) and Nordstream. The third one that was under the construction under the name Nordstream 2 was eventually shut down due to the Russian invasion of Ukraine, so it is expected that the cooperation between the two will shortly cease to exist (Maass, 2016). When it comes to China, the rhetoric was somewhat the same as with Russia until the EU realized that China is moving more and more to the direction of autocracy, so the discussed trade agreement under the name “16+1” and later on “17+1” was shut down under the pressure of the European doubts and concerns about the future of the cooperation with China (Gabriel, 2018).

Yet, there are two important agreements with G-7 countries – Canada (CETA) and Japan (EPA) with reduction of tariffs and cooperation in the fields of sustainability and research (Hubner, 2017).

Figure 3, European trade agreements in 2021



Source: EU Council, 2021

3.2 Trade of Kazakhstan

3.2.1 History

Kazakhstan is an independent country situated in the middle of Europe and Asia covering a large territory making the country the 9th largest one and offering the country a large richness of land and raw materials that are often exported elsewhere. However, it is wise to understand that the country started its existence just 21 years ago after the collapse of the Soviet Union in 1991. What is quite interesting is the fact that the country was technically the last one to abandon the Union and claim its independence (Olcott, 2010).

Figure 4, Kazakhstan on the map



Source: Britannica, 2022

Kazakhstan is a multinational and multicultural state where two languages are officially recognized – Russian and Kazakh. Large presence of Russian-speaking minority and relatively good level of Russian language allows the country not to lose its ties with Russia and other post-Soviet countries, such as Uzbekistan, Tajikistan and Kyrgyzstan, as well as Georgia and Ukraine (Matuszkiewicz, 2010).

All in all, the country remains a highly industrialized one with a huge share of the gross domestic product produced in the industrial sector – 34.1% as of 2019, which is higher than on the world average (approximately 30%). However, the biggest sector is still services,

which indicates that the country is closer to the developed world rather than to developing. Yet, despite good indicators and relatively high GDP of nearly 200 billion USD, the country is classified as a transition economy or emerging economy due to the ongoing transition from the centrally planned Soviet economy to the free-market or capitalistic kind of economy (Jumadilova, 2012).

Kazakhstan is a net-exporting country with crude oil making up for nearly 50% of total exports of the country, which are approximately equal to 50 billion USD annually, while the country imports just 40 billion USD annually. The biggest trading partners of Kazakhstan are Russia, China and the European Union, which is not at all surprising as the country serves as a hub between the three, allowing Kazakhstan to trade with three giants and enjoying gains from trade (Argyngazinov, 2021).

Yet, it is also wise to say that starting from 2020, the country started to focus on new strategic partners in the form of China, the EU and the USA instead of relying on Russia with numerous companies from those countries alongside investors setting their businesses and companies in Kazakhstan. On the contrary, Kazakhstan still considers Russia as a key partner, for which there is plenty of evidence related mostly to the participation in international agreements and organizations – almost every single one in which Kazakhstan participate is also marked by the presence of Russia (Zhanabayev, 2021).

3.2.2 Trade Agreements

It does not come as a surprise that Kazakhstan is a United Nations member, so its independency allows Kazakhstan to choose strategic partners, as well as trading ones according to their own decisions and assessment. However, as of 2022, Kazakhstan is a member of a series important international organizations related to partnership and trade cooperation, which are:

- 1) Shanghai Cooperation Organization, also known as the Shanghai Five, which was established under the mutual impetus coming from the part of China, Russia, , Tajikistan, Kyrgyzstan and Kazakhstan, later on expanded to Uzbekistan, India and Pakistan and potentially Iran, which is expected to join the organization in the nearest future. This partnership agreement and organization as a whole sets

preferential access of the member states' goods to domestic markets of each country, thus facilitating trade and investment in the community (Xue, 2021).

- 2) CIS, standing for the Commonwealth of Independent States, an organization established under the idea of economic integration and unification of former Soviet countries. Yet, the organization was believed to be highly controversial due to the ongoing degree of imperialism coming from the part of Russia. This controversy led to the eventual abandonment of the organization on the part of Georgia and Ukraine, which both had a direct confrontation with Russia. However, other members of the Commonwealth seem to be cooperating with each other just well (Sodikovich, 2021).
- 3) Eurasian Economic Union is another association, which is shared by Kazakhstan and a bunch of former Soviet republics, such as Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia. However, this association is a custom union, thus making it more economically focused with no tariffs for the member-states' goods when being transported between the member-states (Dragneva, 2021).

In addition to the series of economic and strategic partnerships mentioned earlier, Kazakhstan is also a part of the Collective Security Treaty Organization (CSTO) which is operated on the same principle as NATO and the Warsaw Pact. What is also worth mentioning is the fact that the forces of the CSTO were recently (in 2021) ordered to enter Kazakhstan in order to fight street protestors who were directly endangering the sovereignty of the country, according to the press-release of the organization. However, the move itself caused a lot of controversy in the country and the world thus leading to the consideration of potential leave from the organization by Kazakhstan (Krivopalov, 2021).

3.3 WTO and Trade Liberalization

The chapter about the WTO and the trade liberalization in general is included into this thesis in order to give some idea about the ongoing tendencies in the world related to trade. When talking about the 20th century in the context of trade, it inevitably comes to the realization that over the course of the previous centuries, countries were gradually moving from the protectionist kind of thinking towards the liberal one, where trade barriers between different countries and trading blocs will eventually be either eradicated or simply lowered.

After the end of the Second World War and Bretton-Woods conference, there were talks related to the establishment of the third organization that would be given a name of International Trade Organization alongside the International Monetary Fund and the International Bank of Reconstruction and Development (later known as the World Bank). The idea of the International Trade Organization turned out to be a flop when the US legislators did not approve the establishment of the organization, which led to the creation of a non-official kind of summit or platform for negotiations under the name of GATT in 1948. GATT stands for the General Agreement on Tariffs and Trade and over the course of its almost 50 years history, the summit was able to first lower the value of tariffs imposed worldwide by almost twice and then to engage more than 100 countries all over the world into the international trade dialog (Goldstein, 2022).

GATT, which was a real success with its numerous rounds stretching out from Tokyo, Geneva and finally finishing in Uruguay eventually led to the creation of the WTO, standing for the World Trade Organization established in 1995. One of the main principles of the WTO are:

- 1) Transparency – countries are bound to not just publish but also inform international communities and people all over the world about the ongoing changes in the trade policy and trade agreements concluded between different countries-members of the WTO.
- 2) Reciprocity. This is related to limitation of the free-rider problem in the international trade.
- 3) Non-discrimination based on two main components – the most favored nation principle (MFN) and national treatment policy. According to the first component, countries should treat all WTO members equally and not to grant some preferential access to somebody based on historical or cultural ties. According to the second component, countries should not create obstacles preventing goods coming from other WTO members to their country out of the strategy of protecting domestic producers and domestic industries.
- 4) Binding and enforceable commitments. Decisions and legislation of the WTO is binding and if a given member does break some of them, those countries can become subjects to increased tariffs or lose of preferential entry.

- 5) Safety values. Countries are allowed to restrict trade flows in situation when the safety of their citizens and people is being put under risk due to the quality of goods being imported (Agbaragam 2021).

Overall, the one and the only round of the WTO – DDA standing for Doha Development Agenda does primarily focus on the solution of the problems related to the trade liberalization, intellectual property rights and agriculture. However, this one and only round cannot anyhow be considered as a successful one compared to fruitful rounds of the WTO's predecessor – GATT, since there are some serious obstacles to the development of the WTO in the selected fields, such as the reluctance of the USA to cooperate and a recent block of appointing new judges, controversial policy of China, national interests with sensitive goods and many other serious issues that do really prevent the world from achieving the maximum degree of trade liberalization. Thus, the very final agreement achieved during the DDA took place in 2013 and it was concluded under the name of Bali package, granting preferential access to the LCDs, i.e., least developed countries to markets of developed countries and also solution of some problems related to agriculture (Rastogi, 2022).

4 Practical Part

4.1 Time Series Analysis

The very first step of the analysis is related to the time series analysis, where the development of fundamental indicators related to the trade between the EU and Kazakhstan will be conducted. For the purpose of the analysis, the author focuses on collecting data from open sources, notably the World Bank, Eurostat and FAO. The very first dataset used by the author is presented below:

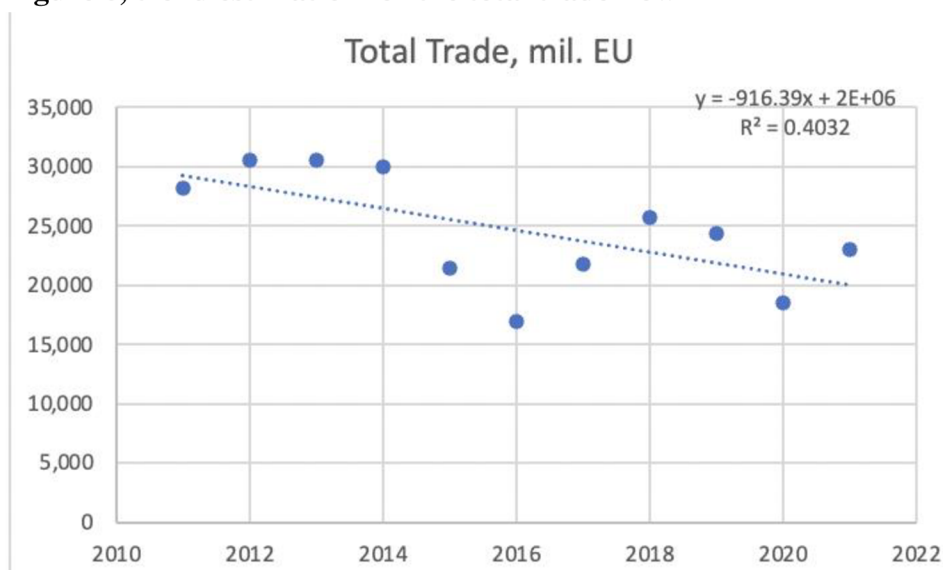
Figure 5, trade flow and related indicators between Kazakhstan and the EU

Year	Total Trade, mil. EU	Extra-Eu %	Imports, mil. EU	Export, mil EU
2011	28,172	1.4	22,492	5,680
2012	30,503	1.4	23,961	6,542
2013	30,495	1.4	23,432	7,063
2014	29,950	1.5	23,601	6,349
2015	21,403	1	15,658	5,745
2016	16,934	0.8	12,157	4,777
2017	21,750	1	16,928	4,822
2018	25,662	1.1	20,167	5,495
2019	24,321	0.9	18,403	5,918
2020	18,510	0.7	12,598	5,912
2021	22,956	0.8	17,479	22,939

Source: Eurostat, 2022

As it can be observed after looking at the dataset, the trade flow reflecting the trade between the EU and Kazakhstan was constantly fluctuating without any particular direction – for some years, the value was increasing, while in other years it was decreasing. Presumably, it is connected to numerous factors influencing the trade such as the economic growth and other related indicators. This development can be analysed using trend estimation, where the following trend is created:

Figure 6, trend estimation for the total trade flow



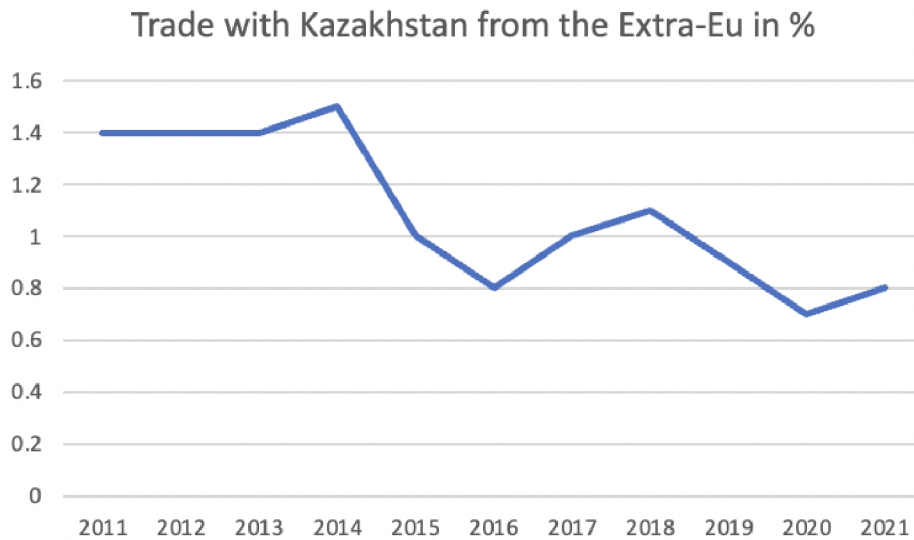
Source: own processing

According to the output of MS Excel and the OLS method for the trend estimation, the author can conclude the following linear trend reflecting the development of total trade flow between the two:

$y = -916.39t + 2E + 06$, practically meaning that per each year, there is an average annual decrease of 916.39 million tons. Henceforth, it is possible to say that over the last decade, trade cooperation between Kazakhstan and the EU was actually diminishing rather than increasing.

Then, it is also wise to take a look at another important indicator: share of trade with Kazakhstan in the total extra-EU trade. The following figure contains the development of this indicator over 11 years (from 2011 to 2021):

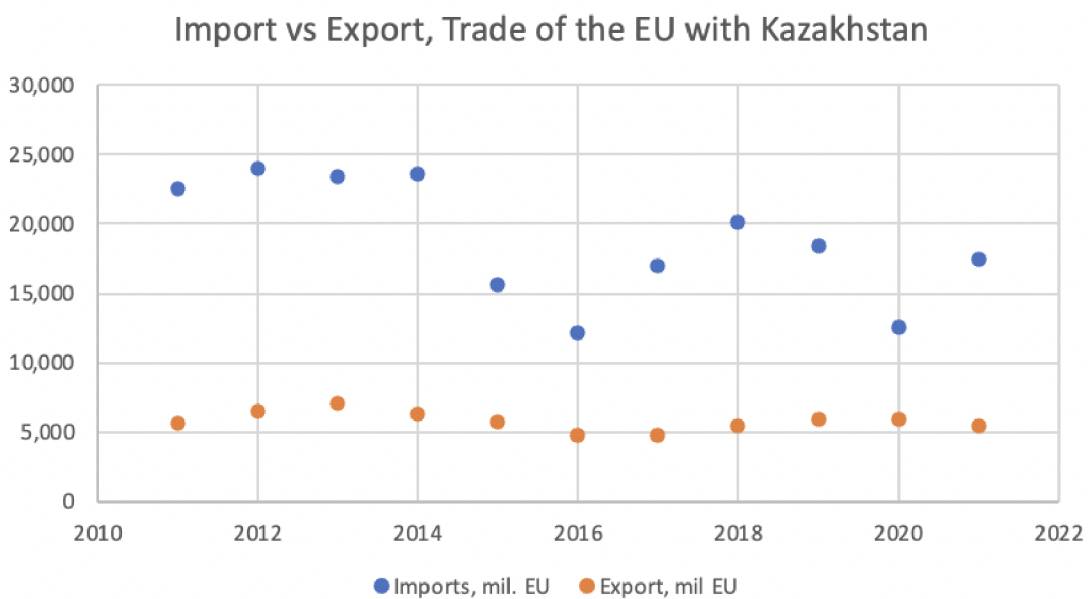
Figure 7, share of trade with Kazakhstan from the total extra-EU



Source: own processing

Clearly, the same pattern persists in the next indicator as in the very first one – the share is diminishing over time and Kazakhstan became a less relevant partner for the EU over the course of the last decade. Then, the author takes a look at the development of individual trade indicators – export to Kazakhstan in million euros and import from Kazakhstan of millions of euros for the EU:

Figure 8, visual comparison of imports and exports



Source: own processing

Evidently, it is fair to say that the European Union is a net importer of goods and services from Kazakhstan, as the Union had a trade deficit (amount of import exceeded the amount of export) for every single year from 2011 to 2021. What is also quite interesting is that the drop in the trade flow between the two is primarily explained by the drop in the amount imported from Kazakhstan, as the amount of goods and services exported to Kazakhstan remained on more or less the same level in 2021 as in 2011.

4.2 Terms of Trade Analysis

Then, another important aspect that is needed to be discussed in the thesis is the terms of trade of the EU in the trade with Kazakhstan. Terms of trade is an indicator that is based on the following computation:

$$\text{Terms of Trade (in \%)} = \frac{\text{Value of Export}}{\text{Value of Import}} * 100$$

Whenever the price of export is higher than the price of import, it practically means that a given country is benefitting from the trade relations, as they sell something for a price higher than they are buying it from the same partner. When it comes to the trade relations between Kazakhstan and the EU in the context of the following analysis, the author focuses on analysing the terms of trade in agriculture products based on data collected from FAO for the same interval – from 2011 to 2021. The following dataset is the one on which calculations will be based:

Figure 9, dataset used for the calculation of ToT

Year	Export Quantity	Export Value	Import Quantity	Import Value
2011	1066	1071	110	113
2012	1108	1110	127	129
2013	1205	1210	151	152
2014	1211	1228	176	182
2015	1244	1258	137	143
2016	1093	1108	159	169
2017	1071	1086	162	172
2018	974	987	195	204
2019	1020	1021	210	217
2020	1028	1034	234	245
2021	954	961	286	298

Source: FAO, 2022

The very first thing that comes to one's mind when looking at the dataset above are relatively low values for all indicators – quantities are expressed in tons, while values are expressed in thousands of dollars. Clearly, the EU and Kazakhstan are not really engaged much in the trade of agrarian goods. Yet, the calculations for the terms of trade are presented below:

Figure 10, terms of trade analysis

Year	Export price, ton	Import price, ton	ToT, %
2011	1.004690432	1.027272727	97.80%
2012	1.001805054	1.015748031	98.63%
2013	1.004149378	1.006622517	99.75%
2014	1.014037985	1.034090909	98.06%
2015	1.011254019	1.04379562	96.88%
2016	1.013723696	1.062893082	95.37%
2017	1.014005602	1.061728395	95.51%
2018	1.013347023	1.046153846	96.86%
2019	1.000980392	1.033333333	96.87%
2020	1.005836576	1.047008547	96.07%
2021	1.007337526	1.041958042	96.68%

Source: own processing

Based on the indicator, it is possible to say that the EU's position in the trade of agriculture products with Kazakhstan is not that strong, as the average price of unit exported is lower than the average price of unit imported, meaning unfavorable trade conditions for the EU. Yet, it might also mean that Kazakhstan is imported some kind of special or unique goods which generally cost a lot.

4.3 Linear Regression

The very final piece of analysis incorporated by the author in this thesis is linear regression analysis, where the author will create a linear regression model explaining the development of total trade flow in million euros between Kazakhstan and the EU based on the time interval of 2011-2021. The following model will be created:

$$y_t = \gamma_0 + \gamma_1 x_{1t} + \gamma_2 x_{2t} + \gamma_3 x_{3t} + \varepsilon_t, \text{ where:}$$

$\gamma_{1,2,3,4}$ are parameters of independent variables;

γ_0 is an intercept term;

X_1 is average annual price per barrel of oil in USD;

X_2 is the value of GDP of Kazakhstan in billion USD;

X_3 is the exchange rate of tenge per one USD;

T is time vector representing one year.

The following dataset is used for the linear estimation, data was collected from the World Bank and Eurostat:

Figure 11, dataset is used for the linear estimation

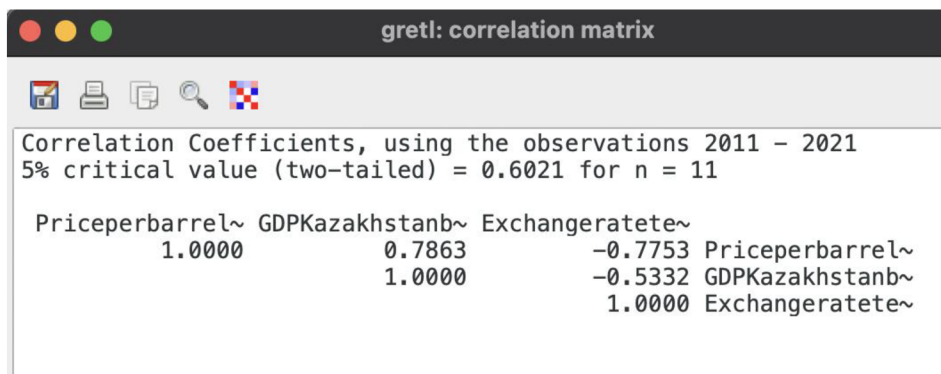
Year	Total Trade, million EUR	Price per barrel of oil, USD	GDP, Kazakhstan billion USD	Exchange rate, tenge for USD
	y_t	x_{1t}	x_{2t}	x_{3t}
2011	28,172	94.88	7.400000001	146.6208333
2012	30,503	94.05	4.8	149.1125
2013	30,495	97.98	5.999999999	152.1291667
2014	29,950	93.17	4.200000001	179.1916667
2015	21,403	48.66	1.2	221.7283333
2016	16,934	43.29	1.1	342.16
2017	21,750	50.8	4.1	326.0010227
2018	25,662	65.23	4.1	344.7058333
2019	24,321	56.99	4.5	382.7473106
2020	18,510	39.68	-2.5	412.9533333
2021	22,956	68.17	4.3	425.9075

Source: The World Bank, 2022 and Eurostat, 2022

The author expects the sign of oil price to be negative, the sign of GDP of Kazakhstan to be positive and the sign of exchange rate to be also positive. In addition to that, no autocorrelation, normality of residuals, no heteroscedasticity and no multicollinearity are assumed. Gretl is used for the implementation of the OLS method:

The very first step will be the check of multicollinearity. Acceptable level of correlation is selected to be 0.8; above this value, the author considers a possible transformation of data since a presence of multicollinearity results in parameters not being the best. Correlation matrix is available below:

Figure 12, correlation matrix



Source: own processing

As a consequence, it is possible to conclude that no multicollinearity is identified as all values are lower than 0.8. Estimation can proceed without any transformation of data. The output of the OLS is presented below:

Figure 13, OLS output

	coefficient	std. error	t-ratio	p-value	
const	11766.7	4883.17	2.410	0.0468	**
Priceperbarrelof~	186.303	53.3070	3.495	0.0101	**
GDPKazakhstanbil~	111.771	334.056	0.3346	0.7477	
Exchangerateteng~	-1.11124	7.91181	-0.1405	0.8923	
Mean dependent var	24605.09	S.D. dependent var	4786.285		
Sum squared resid	20934598	S.E. of regression	1729.352		
R-squared	0.908617	Adjusted R-squared	0.869452		
F(3, 7)	23.20010	P-value(F)	0.000518		
Log-likelihood	-95.13293	Akaike criterion	198.2659		
Schwarz criterion	199.8574	Hannan-Quinn	197.2626		
rho	-0.020190	Durbin-Watson	1.746919		

Source: own processing

Consequently, it is possible to create the following model:

$$y_t = 11766.7 + 186.303x_{1t} + 111.771x_{2t} - 1.11x_{3t} + \varepsilon_t,$$

The following dependencies and relationships can be concluded:

- When the price of oil increases by 1 USD, the trade flow between Kazakhstan and the EU increases by 186.303.
- When the GDP in Kazakhstan increases by 1 billion USD, the trade flow between Kazakhstan and the EU increases by 111.771.
- When the exchange rate of tenge to USD increases by 1 tenge, the trade flow between Kazakhstan and the EU decreases by 1.11.

Apart from formulating basic relationships, it is also essential to conduct additional econometric tests to verify the compliance of the created model to the assumptions put in the beginning:

Figure 14, econometric tests

```
White's test for heteroskedasticity -  
  Null hypothesis: heteroskedasticity not present  
  Test statistic: LM = 8.16963  
  with p-value = P(Chi-square(9) > 8.16963) = 0.517146  
  
Test for normality of residual -  
  Null hypothesis: error is normally distributed  
  Test statistic: Chi-square(2) = 1.433  
  with p-value = 0.488459  
  
LM test for autocorrelation up to order 1 -  
  Null hypothesis: no autocorrelation  
  Test statistic: LMF = 0.00282485  
  with p-value = P(F(1, 6) > 0.00282485) = 0.959338
```

Source: own processing

- Autocorrelation – absent at $\alpha = 0.05$ and $P = 0.95$. $0.95 > 0.05 \Rightarrow H_0$ about absence is not rejected.
- Normality – present at $\alpha = 0.05$ and $P = 0.48$. $0.48 > 0.05 \Rightarrow H_0$ about normality is not rejected.
- Heteroscedasticity – absent at $\alpha = 0.05$ and $P = 0.51$. $0.51 > 0.05 \Rightarrow H_0$ about heteroscedasticity is not rejected.

According to the correlation matrix and also to the series of econometric tests, it can be concluded that the model created by the author is BLUE, standing for the best linear unbiased estimator.

Additionally, it is wise to talk about the significance of the whole model, significance of individual parameters and also the coefficient of determination. According to the coefficient of determination, it can be concluded that the model describes approximately 86% of variation in the trade flow between Kazakhstan and the EU-27 (based on the adjusted R square), this is a good value but still, more predictors can be added in order to increase the accuracy.

According to the F value and P value attributed to it, it can be concluded that the model estimated by the author is significant at alpha = 0.05, since 0.0005 < 0.05. However, there is just one predictor whose effect on the annual trade flow value is significant, and it is the price of oil in USD.

Additionally, the author does also compute elasticities for the year 2021 in order to assess percentual effect of each predictor. Elasticity calculation is based on the following formula:

$$\text{Elasticity} = \text{partial derivation (parameter of a selected variable)} * \frac{X_{ij}}{Y_{\text{fitted}}}$$

The output of the calculation is available below:

Figure 15, elasticitiy computation for 2021

	Price per barrel of oil, USD	GDP, Kazakhstan billion USD	Exchange rate, tenge for USD
	x1t	x2t	x3t
Elasticity	0.518911621	0.019637122	-0.019316059

Source: own processing

According to the calculation, the following interpretation can be concluded:

- When the price per parrel of crude oil increases by 1%, the trade flow value between Kazakhstan and the EU increases by 0.51%, making the variable the largest contributor to the change in the dependent variable.
- When the GDP of Kazakhstan increases by 1%, the trade flow value between Kazakhstan and the EU increases by 0.019%.
- When the exchange rate of tenge to USD increases by 1%, the trade flow value between Kazakhstan and the EU decreases by 0.019%.

Clearly, the most important contributor to the changes in trade flow value is the price of crude oil in USD. Reflections and further conclusions will be provided in the next chapter – Results and Discussion.

5 Results and Discussion

To begin, it is worthwhile to begin this chapter by drawing attention to the most significant discoveries made by the author in the practical phase of his research. To begin, throughout the course of the last decade, the amount of trade that has taken place between Kazakhstan and the EU has been steadily decreasing, with only brief periods of growth lasting one to two years before the trade volume again begins to decline. According to the calculations that were done by the author, it is possible to draw the conclusion that the average decrease in the trade volume between the two is equal to 916.39 million euros. This is, fairly speaking, not such a large value for the European Union given their focus on the intra-EU trade and cooperation with other large countries including Brazil, Canada, Japan, and the United States of America. However, it is still interesting that despite the general improvement in the relationship between the EU and Kazakhstan and despite the recent accession of Kazakhstan to the WTO (entered in 2015), the trade continued to decrease. This is despite the fact that both of these events occurred relatively recently.

However, the most straightforward reason for this can be found right on the surface: both parties have signed the Enhanced Partnership and Cooperation Agreement, which will go into effect on March 1, 2020. As a result, the vast majority of tariffs on goods and services that flow between the two parties will be eliminated as a result of this agreement, with a few exceptions for sectors that are particularly sensitive, such as agriculture for the EU. The author is of the opinion that a steady decline in the volume of commerce that takes place between Kazakhstan and the EU will eventually result in the two parties reaching an agreement that would allow them to resume their previous level of economic cooperation. According to the author's conclusions, it is another step that the EU has taken towards the liberalization of international trade, and it is also something that will assist Kazakhstan in finally ending their economic dependence on Russia and China and pointing the country towards the west. Both of these things are true. Regarding this particular point, the writer of this bachelor's thesis wholeheartedly concurs with the original author (Dienikova, 2021).

Therefore, it is prudent to state that the unexpected trade balance (deficit) of the EU in the trade with Kazakhstan can be explained by two primary factors: first, Kazakhstan is relatively far away from the EU, so trade in agriculture and other durable goods is limited

by high distance between the two; and second, the trade between the two is mostly represented by raw materials, which are imported from Kazakhstan. In exchange, the EU purchases raw resources such as crude oil, natural gas, and other commodities from Kazakhstan. However, the quantity of these high value-added items that Kazakhstan imports is substantially smaller than the quantity of these raw materials that the EU purchases. What's more, the author thinks that the recently signed agreement is an attempt from the EU to change the situation and increase their imports to the country, which will ultimately lead to the trade balance, or at least a partial trade balance. This belief is supported by the fact that the EU recently signed the agreement. According to the findings of another scholar, the relationship between the European Union and Kazakhstan has always been mostly centered on the European goal to find themselves a new dependable supply of raw materials (Tsvertsadze, 2013).

However, there is also another explanation to the diminishing value of trade flow between the EU and Kazakhstan, and the author believes that if his assumption is indeed true, then the recently signed agreement is not likely to change the situation very much. This is because the author believes that if his assumption is true, then the author's assumption is true, then the author believes that With its Green Deal and other similar programs, the European Union (EU) is the world's largest driver of sustainable development and environment conservation. Some of these projects are even put into practice in other nations where the EU seeks to promote the idea that sustainability is important. The environmental pillar is one of the most important pillars of sustainable development. The concept behind this pillar is primarily related to the eventual abandonment of fossil fuels and the production of energy that is harmful to the environment, thus eventually focusing on renewable sources of energy.

The percentage of energy that comes from renewable sources has increased dramatically over the course of the past decade (Simionescu, 2020), which is directly related to a reduction in the amount of fossil fuels that were purchased from other countries, most notably Russia. There is no doubt that the European Union is making significant headway in this area, as the other author has pointed out. However, in this perspective, Kazakhstan may also be seen as a losing side since the country's principal product that was sold to the EU was nearly everything linked to fossil fuels. As a result, Kazakhstan was the leading supplier of fossil

fuels to the EU. It is anticipated that Kazakhstan's role in the European extra-EU trade relations will continue to decrease over time if the country does not discover another commodity that is in high demand among Europeans. This is due to the fact that the EU will continue to place a greater emphasis on sustainable development and renewable sources of energy in the coming years. Kazakhstan is not a preferred partner for the European Union due to the fact that the EU does not really have a good stance in the trade with Kazakhstan, as the author discovered. According to the author's findings, the trade between the two in agrarian products is virtually nonexistent, and even in spite of this, the terms of trade are not favorable for the EU.

The results of the linear regression analysis come out as a piece of evidence to support the author's previous reflections – the price of oil is the primary driving force behind fluctuations in the volume of trade flow between Kazakhstan and the EU. Finally, as for the driving forces of the trade between the European Union and Kazakhstan, the results of the linear regression analysis come out as a piece of evidence to support the author's previous reflections. In addition to this, it is reasonable to assert that the astoundingly low yearly average prices for crude oil are the primary factor responsible for the comparatively low amount of trade that occurred during certain years. This dependency makes it difficult for domestic governments to consider any potential changes or reformation of national economies that might result in diversified exports, as the author points out. The problem that plagues countries like Kazakhstan is what is known as the resource curse. These countries are extremely dependent on their exports of raw materials, and this dependency makes it difficult for domestic governments to consider any potential changes (Ross, 2015). The author of this thesis, on the other hand, contends that the current state of affairs in Kazakhstan are not quite as dire as they may first seem since there is still time to effect positive change.

6 Conclusion

To conclude, it is possible to highlight the following list of findings done by the author: The trade relationship between the two is primarily driven by the European need to buy raw materials, as crude oil and natural gas are the most important commodities traded between the European Union and Kazakhstan; The trade between the two has been decreasing over the last decade, which is presumably explained by the European energy transition and the Green Deal and absence of a trade agreement between the two; The relationship might improve in the nearest future under the weight of the agreement signed between Kazakhstan and the EU, but it is still quite likely that the trade flow volume will keep diminishing until Kazakhstan makes an attempt to diversify their exports and focus on specializing in different kinds of goods; The most important contributor to the development of the trade flow is the annual average price of crude oil, where 1 dollar increase results in the increase of 186.303 million euros in the trade flow volume.

Apart from all this, the author suggests to expand the current study and conduct the same analysis in a decade to actually see if the trade agreement between Kazakhstan and the EU resulted in any positive changed in the trade relations between the two.

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