

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics (FEM)**



**Master's Thesis**

**Foreign Trade of the Republic of Kazakhstan**

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**CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE**

Faculty of Economics and Management

# **DIPLOMA THESIS ASSIGNMENT**

Kamila Yessekina

Economics and Management

Thesis title

**Foreign Trade of the Republic of Kazakhstan**

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## **Objectives of thesis**

The objective of the thesis is to evaluate challenges and trends of Kazakhstan's foreign trade. It will assess the impact of prevailing imports on the economic welfare of the state. Moreover, the thesis will analyze trends of Kazakhstan's export.

## **Methodology**

The methodology that will be used for this thesis are quantitative and qualitative methods.

Quantitative methods include statistical method, the collection of the data to create econometric model.

Qualitative methods include SWOT analysis of Kazakhstan's foreign trade through the data collected from different academic sources.

### **The proposed extent of the thesis**

60 – 80 pages

### **Keywords**

Kazakhstan, Foreign Trade, Import, Export Balance, Turnover

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### **Recommended information sources**

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1906

## **Declaration**

I declare that I have worked on my master's thesis titled "Foreign Trade of the Republic of Kazakhstan" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the master's thesis, I declare that the thesis does not break any copyrights.

In Prague on 31.03.2024

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**Kamila Yessekina**

## **Acknowledgment**

I would like to thank my diploma thesis supervisor PhDr. Ing. Tomáš Maier, Ph.D. for the guidance, support, and expert mentorship throughout the entire process of writing this thesis.

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## **Abstract**

The thesis focuses on the foreign trade of Kazakhstan. The objective of this thesis is the evaluation of the trends and challenges of the Kazakhstan's foreign trade and the impact on the economic growth. The study provides an overview of the existing scientific literature on the concept of the foreign trade, Kazakhstan's export, imports, FDI and trade relations and the influence on the state's economy.

The empirical research conducted for this thesis includes the time frame of 23 years from 2000 to 2022. The impact of the foreign trade in the terms of export, import, foreign direct investment, external debt and unemployment on economic growth on the state was estimated. The results demonstrated that the most significant impact on the economic growth was observed by exports of goods and services and external debt stocks. The SWOT analysis showed that Kazakhstan possesses strengths in its location, natural resources and trade agreements which creates opportunities for infrastructure development, participation in Belt & Road Initiative.

**Keywords:** Kazakhstan's foreign trade, export, import, economic growth, trade agreements

## **Abstrakt**

Diplomová práce se zaměřuje na zahraniční obchod Kazachstánu. Cílem této práce je zhodnocení trendů a výzev zahraničního obchodu Kazachstánu a dopadu na ekonomický růst. Studie poskytuje přehled dosavadní vědecké literatury o konceptu zahraničního obchodu, kazašském exportu, importu, FDI a obchodních vztazích a vlivu na ekonomiku státu.

Empirický výzkum provedený pro tuto diplomovou práci zahrnuje časový rámec 23 let od roku 2000 do roku 2022. Byl odhadnut vliv zahraničního obchodu z hlediska exportu, importu, přímých zahraničních investic, zahraničního dluhu a nezaměstnanosti na ekonomický růst na stát. Výsledky ukázaly, že nejdůležitější vliv na ekonomický růst měl export zboží a služeb a stav zahraničního dluhu. Analýza SWOT ukázala, že Kazachstán má silné stránky ve své poloze, přírodních zdrojích a obchodních dohodách, což vytváří příležitosti pro rozvoj infrastruktury, účast v Iniciativě Belt & Road.

**Klíčová slova:** zahraniční obchod Kazachstánu, export, import, ekonomický růst, obchodní souhlasy



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## **1. Introduction**

Kazakhstan's foreign trade has become a pivotal driver of its economic growth due to high numbers of natural resources exports, FDI attractiveness and strong trade relations and agreements with other countries. Kazakhstan's economic development depends on foreign trade, which contributes to the increase of GDP, employment, and general economic growth. Determining prospects for additional development and evaluating the state's economic growth require an understanding of the dynamics of the international trade. Kazakhstan, a resource-rich and landlocked state in Central Asia, stands at the crossroads of global trade, due to its geographical location. However, Kazakhstan faces different challenges in the expanding its foreign trade such as political instability in the region, dependency on the exports and external debt. Understanding the factors influencing the foreign trade of Kazakhstan as well as evaluating the significance of it is relevant for addressing state's issues and highlighting its strengths. This thesis aims to analyze the foreign trade of Kazakhstan by identifying the effect on its economic growth and assessing trends and challenges.

The time frame for this thesis is from 2000 till 2022 which poses limitation of the research as the time period is limited to 23 years. Furthermore, the effects out of Kazakhstan's influence also might influence the comprehensive outcome of the analysis made in this thesis. The findings and insights of this thesis can bring the attention of the existing gaps in the researches on the foreign trade of Kazakhstan. The outcome of this research might also be used for the policy making decisions. Kazakhstan is important participant in the global trade between different countries due to its geographical location. Kazakhstan provides land route for trade for European Union, China and Russia. Moreover, the state a significant player as it is exporting huge number of goods and services to its trading partners. Consequently, Kazakhstan's international trade is an important topic in global arena and international economic trends.

This thesis demonstrates literature review on Kazakhstan's foreign trade providing findings of similar researches and observations of the existing academic literature. Moreover, the main trends and challenges of the international trade of the Republic of Kazakhstan are discussed in the separate chapter. It provides an overview and analysis of exports, imports, FDI inflows, external debt of the state, involvement in international organizations, and relations with neighboring countries. It is followed by the analytical part of the thesis which includes SWOT

analysis and ordinary least square model estimating the influence of the Kazakhstan's foreign trade on its economic growth by studying export, import, FDI, external debt and unemployment. The results and conclusion are presented at the final part of the thesis.

Kazakhstan's economy is largely dependent on foreign trade, which influences the country's expansion, stability, and general prosperity. Determining pathways for sustainable growth and evaluating the nation's economic performance require an understanding of the dynamics of trade flows, patterns, and trends.

## **2. Objectives and Methodology**

### **2.1.Objectives**

The objective of this thesis is the evaluation of the Kazakhstan's foreign trade challenges and trends in the period of 2000-2022. The period of 2000-2022 were chosen as it captures WTO accession in 2015, currency fluctuations, major political events and implementation of different trade agreements. Therefore, the thesis will assess exports, imports and trade balance of the Republic of Kazakhstan, examine the influence of the country's relationship with neighboring countries such as Russia and China on foreign trade and evaluate the influence of the foreign trade on the economy of Kazakhstan.

- Assessing the trends in exports and imports of the Republic of Kazakhstan;
- Analyzing the impact of relationships between Kazakhstan and neighboring countries on the Kazakhstan's trade;
- Evaluating the significance of the effect of foreign trade on economic growth of Kazakhstan in the period of 2000-2022;
- Identifying strengths, weakness, opportunities and threats of the foreign trade of Kazakhstan.

### **2.2.Methodology**

The methodology that will be used for this thesis are quantitative and qualitative methods:

- Quantitative method: Econometric model for identifying influence of foreign trade on Kazakhstan's economic growth.

- Qualitative method: SWOT analysis of Kazakhstan's foreign trade.

This diploma thesis uses strategy integrating quantitative and qualitative methodologies. The quantitative part includes evaluating the effect of foreign trade on Kazakhstan's economic growth using an econometric model. The qualitative aspect entails conducting a SWOT analysis to assess the strengths, weakness, opportunities and threats linked to Kazakhstan's international trade. This approach will provide a comprehensive understanding of the dynamics and development of Kazakhstan's trade relations.

Research questions:

- How have the trade policies and agreements impacted Kazakhstan's foreign trade?
- What is the influence of the relationship between Kazakhstan and neighboring countries in Central Asia on foreign trade of Kazakhstan?
- How does the foreign trade effect the economic growth of Kazakhstan?
- What are strengths, weaknesses, opportunities and threats of Kazakhstan in terms of its foreign trade?

The theoretical part includes the information about Kazakhstan's foreign trade that has already been studied in the existing literature. Therefore, the analysis will be made based on the publications in the academic articles and journals, official statements, reports and announcements. This part will examine trends and challenges of Kazakhstan's foreign trade. Moreover, the diploma thesis will analyze the impact of neighboring countries on the international trade.

The study examines the influence of the foreign trade on the real Gross Domestic Product as an indicator of the economic growth in the period of 2000-2022. Due to the unavailability of the data for the first 9 years of Kazakhstan's independence, this research has a limitation. The data for some variables is not available for the period earlier than 2000, the study only covers 23 years. The dependent variable to identify the influence is Real GDP expressed in 2015 prices. The adjustment of the GDP to the year of 2015 removes effects such as inflation and deflation because the current market prices are reflected. The independent variables are Exports, Imports, FDI, External Debt Stocks and Unemployment rate.

### Hypotheses:

- The higher rate of Total Exports is positively correlated with the economic growth of the country. Therefore, increase in export contribute to the increase of GDP.
- The higher rate of Total Imports is positively correlated with the economic growth of the country. An increase of import leads to the increase of GDP.
- The higher rate of Foreign Direct Investment is positively correlated with the GDP of Kazakhstan and economic development. The higher FDI, the higher real GDP.
- The higher rate of External Debt Stocks is negatively correlated with the economic developments of Kazakhstan. An increase in External Debt Stocks of the country contribute to the decrease in the real Gross Domestic Product.
- The higher rate of Unemployment is negatively correlated with the GDP of the state. An increase in Unemployment leads to the decrease of the GDP in Kazakhstan.

Furthermore, the qualitative analysis of the foreign trade of Kazakhstan to identify challenges and opportunities will be conducted in this thesis. SWOT analysis will identify strengths, weaknesses, opportunities and threats in the context of international trade.

The declaration of the variables used in this study can be seen below. The name, type and unit of the variable are specified.

**Table 1:** Declaration of the variables

<b>Variable</b>	<b>Name</b>	<b>Unit</b>
$y_t$	Real GDP	millions of US\$ in constant 2015 price
$x_1$	Unit vector	Unit vector
$x_2$	Export	% of GDP
$x_3$	Import	% of GDP
$x_4$	FDI	% of GDP
$x_5$	External Debt Stocks	millions of US\$ in current price
$x_6$	Unemployment rate	%

Sources of data:

- Committee on Statistics of the Ministry of National Economy of the Republic of Kazakhstan
- World Bank
- CEIC data
- Bureau of National Statistics of the Republic of Kazakhstan.

The following formulas are used in this study:

**Formula 1:** Economic model

$$y_t = f(x_{2t}, x_{3t}, x_{4t}, x_{5t}, x_{6t})$$

Where:

$y_t$  – dependent variable at the time  $t$ ,

$x_{nt}$  – independent variable at the time  $t$ ,

$\gamma_n$  – parameter of the model.

**Formula 2:** Econometric model

$$y_t = \gamma_1 x_{1t} + \gamma_2 x_{2t} + \gamma_3 x_{3t} + \gamma_4 x_{4t} + \gamma_5 x_{5t} + \gamma_6 x_{6t} + u_t$$

Where:

$y_t$  – dependent variable at the time  $t$ ,

$x_{nt}$  – independent variable at the time  $t$ ,

$\gamma_n$  – parameter of the model,

$u_t$  – error term at the time  $t$ .

**Formula 3:** First difference

$$\Delta y_t = y_t - y_{t-1}$$

Where:

$\Delta y_t$  – first difference at the series of time  $t$ ,

$y_t$  – the value of the series at time  $t$ ,

$y_{t-1}$  – the value of the series at time  $t-1$ .

**Formula 4:** Econometric equation of the estimated model

$$y_t = 65.67 + 0.93*x_{2t} - 0.31*x_{3t} + 1.34*x_{4t} - 0.83*x_{5t} - 4.31*d_{x_{6t}} + u$$

### **3. Theoretical Part**

#### **3.1. The role of foreign trade in the economy of the state**

Foreign trade is a vital factor in an economic development of a country. The contracts, transactions, economic activities, trade, and actions which include the movement of products or services, or other tangible property, and intangible assets between the state and other countries are considered foreign trade (World Trade Organization, 2013). In order to boost the economic expansion and encourage productivity, the international trade helps to focus on the spheres and areas in which the state has a comparative advantage. It also has difficulties and challenges such as economic imbalances and geopolitical problems, which requires the implementation of effective policies and international cooperation.

According to a report by the World Economic Forum (McCord, 2021), international trade is vital for the economy of the whole world as it provides goods and services that are being traded across borders to bring wealth and prosperity to the states. The importance of the international trade for the world economy is considered to be the most vital factor of the economic development of the countries (Jenicek & Krepl, 2008). The international trade allows domestic producers of the state to diversify and expand their customers with trading partners of the country (Jenicek & Krepl, 2008). Consequently, international trade contributes to the economic development of the state by enhancing the growth of the economy and the diversity of the market and economy itself. Moreover, the demand from the foreign countries for the domestic goods and services boosts production, job opportunities as well as attracts investments.

Several functions of the international trade in the economy of the state can be identified such as transformation and growth. The necessary consumption-related structure is followed by the foreign trade which is modified by the allocation of the natural resources and the structure of the domestic output (Jenicek & Krepl, 2008). It implies that foreign trade provides the ability to produce goods and services which have comparative advantage which increases efficiency. The managing of the comparative advantage allows countries to provide more rational and optimal



use of resources they possess. As a result, international trade enhances economic growth and performance. The advancement of the economy's specialized profile is closely related to the growth trend of foreign trade. This relationship is most evident in relatively small economies, where the competitiveness of a nation's exports and the efficiency of its exports greatly influence the structure of the domestic economy (Jenicek & Krepl, 2008).

The importance of the foreign trade in the economic development of the state was acknowledged by two events: United Nations Conference on Trade and Development and General Agreement on Tariffs and Trade (Frank, 1968). UNCTAD and GATT, which were both established in 20<sup>th</sup> century, offer institutional framework for providing foreign trade and international collaboration (Frank, 1986). Through effective trade policies, countries are able to establish foreign trade which contributes to the positive and effective economic development. Therefore, it is important to manage foreign trade policies as well as comply with the international agreements and development strategies to conduct productive trade which might help to develop the economy of the state.

According to United Nations Conference on Trade and Development (2014), international trade is a compelling driver of the economic development. The structural transformation of the economies commits to the growth of the economies of the developing countries (UNCTAD, 2014). Therefore, participation in the global markets increases the opportunity for the flow of capital, innovative technology, goods and services to boost productivity and to promote more economic and industrial development for the developing countries. It proves the importance of the foreign trade in the economy of the state.

Foreign trade might have a negative influence on the development of the economy. Accumulation of foreign debt and imbalances in the balance of payments might be a result of the persistent trade deficits (Gould & Ruffin, 1996). Persistent trade deficits happen due to imports exceeding exports. Consequently, high debt levels can obstruct economic growth and stability because it challenges country to pay the external debts to other countries or keep its currency stable. On the other hand, trade surplus, when export exceeds import, can be both beneficial and unfavorable for the economy of the state. It might lead to currency appreciation and imbalance economy. The currency appreciation happens due to the high inflow of the foreign currency to the country, and low amount of outflow of the domestic currency. The value

of the currency of the state increases as a result of the trade surplus. Therefore, the domestic products become more expensive for the foreign customers and create high competitiveness for domestic producers. However, foreign product become cheaper for the state and they can facilitate more import.

The empirical research conducted by Grossman and Helpman (1990) propose that states with international trade driven GDP are more likely to establish more effective and productive economy rather than countries with focus on domestic production. Accordingly, foreign trade contributes to the development and growth of a state's economy.

According to the study on the trends and patterns in foreign trade of Central Asian countries (Mogilevskii, 2012), foreign trade was identified as one of the important predictors of the economic growth of a country. Consequently, foreign trade has an influence on the increasing the economic growth with efficient resource allocation, spread of knowledge and technology, and specialization (Mogilevskii, 2012). Moreover, increased trade activity is frequently associated with increased competition, which boosts domestic industry productivity and innovation (Mogilevskii, 2012). Therefore, it can be said that foreign trade is considered to be a huge influence on the economy of the state and can be associated with the economic growth of the states.

The state plays a significant role in managing foreign trade. Based on the research by Georgia State University (McIntyre, 1983), state can regulate the flow of goods and services across borders, which can contribute to the protection of domestic industries from foreign competition. In addition, negotiating trade agreements with other countries to reduce tariffs and other barriers to trade contributes to the rise of the trade between countries, particularly it boosts the volume of the traded goods and services (McIntyre, 1983). As a conclusion, it can be said that the government of the state and the policies that state implements in terms of the foreign trade play an important part in the foreign trade and the economic development of the country. The government is considered to be the representation of the country to the world. One of their responsibilities are establishing trade agreements, negotiations and joining organizations which directly affects the volume of the foreign trade and its management. For instance, accession to the World Trade Organization, which is vital aspect of the foreign trade, requires negotiations and managing balance of rights and obligations (WTO, 2024). The process is long and

challenging for the country, which means the government's management influence the result of the negotiations.

### **3.2.Literature review on Kazakhstan's foreign trade**

The Republic of Kazakhstan is located in Central Asia crossing borders of Asia and Europe. Kazakhstan produces many minerals such as chromium, vanadium, bismuth, fluorine, potassium, cobalt, iron, zinc, tungsten, molybdenum, phosphorite, copper, kaolin and cadmium (Azretbergenova & Syzdykova, 2020). They are the largest reserves in the world. There are about 160 oil and gas reserves in the country. The largest oil and gas field, Tengiz field, in Kazakhstan is located in the Atyrau region. Therefore, one of the main industries of the state is oil and gas extraction. Moreover, Kazakhstan focuses on agriculture and services sectors.

According to the World Bank (2022), the Kazakhstan's foreign trade, which is mainly represented by imports and exports, contributes 56.2% to Gross Domestic Product of the state. It demonstrates close connection of the international trade of Kazakhstan with the economic growth of Kazakhstan. It was studied in the quantitative research by Akhter et al. (2022) that Kazakhstan's trade policies should include globalization of the international trade which contributes to its economic boost. Moreover, natural resources are one of the main drivers of the rapid growth of the state's economy (Akhter et al., 2022). Natural resources compound Kazakhstan's foreign trade in terms of its exporting and importing of the raw materials and processed goods which increases attractiveness for trading partners and foreign investors.

The Republic of Kazakhstan joined World Trade Organization in 2015, hence allowing its trade to be more liberalized. It means that some of the limits and barriers on trade were lowered or removed which were preventing Kazakhstan to trade with other countries and demand for trade increased. Furthermore, Kazakhstan signed the treaty on the Eurasian Economic Union between Kazakhstan, Belarus and Russia in 2014. The union's main goal is single market between member states of this union. It implies free movement of the goods and services without trade barriers. Firstly, the idea of the EAEU was proposed by the first President of Kazakhstan, Nursultan Nazarbayev, in 1994 to boost economies of the countries in Central Asia. However, the idea came into force only in the beginning of 2015.

The relations between foreign trade and economic growth have been studied by different scholars. However, there are low number of the studies on the economic growth of Kazakhstan. The relationship between export, import and economic development of Kazakhstan was studied Revista Espacios academic journal. The data was selected for the period of 18 years where GDP is a dependent variable, hence it studies the influence on gross domestic product. Export and Import were chosen as explanatory variables for this study and it examined the effect of the GDP on import and export (Syzdykova et al., 2019). The result of the model estimated in this study demonstrated significant impact of the export and import on the economic growth of the Republic of Kazakhstan (Syzdykova et al., 2019).

The study by Agayev (2012) showed a different result between the relations of GDP and export of Kazakhstan as a post-Soviet country. The study examined the relationship between export and economic growth of the post-Soviet states and their transitioning economies. The result of this research demonstrated that the export expansion does not influence the economic growth of the post-Soviet economies. Consequently, it cannot determine accurate effect of the Kazakhstan's export on its economic growth as Kazakhstan was observed with other 15 countries.

According to the research conducted for the Academy for Economics and Economic Education (2009), the inflows of foreign direct investments positively influence the economic development of Kazakhstan. GDP growth was selected as an indicator of the economic growth for this study which means GDP was chosen as explained variable (Lee et al., 2009). The explanatory variables that were chosen are FDI, fixed capital investment, employment, retail trade turnover, and industrial production (Lee et al., 2009). The time frame what was selected for the study of Lee et al. (2009) are 10 years from 1997 till 2006. The hypotheses that there is no relation between FDI and economic growth of Kazakhstan was not rejected (Lee et al., 2009). Therefore, the study confirmed that there is no to little relation between FDI and GDP of Kazakhstan.

According to a report by The Astana Times (Haidar, 2023), Kazakhstan's trade turnover reached \$134.4 billion in 2022, exceeding the pre-pandemic level of \$97.8 billion in 2019. The OECD Investment Policy Reviews report (2012) demonstrates that the Kazakh government has been taking steps to improve the framework conditions for investment and discuss challenges and opportunities for further reforms. Therefore, the government of the Republic of Kazakhstan has

a huge contribution to the development of the foreign trade of the state. According to a report by IMF (International Monetary Fund, 2022), Kazakhstan's trade balance reduced the current account deficit to 3 percent of GDP in 2021. It signifies potential economic stability and increase in domestic production with both lead to the improvement of the economic development of the country, in this case Kazakhstan.

#### **4. The trends and challenges of Kazakhstan's foreign trade**

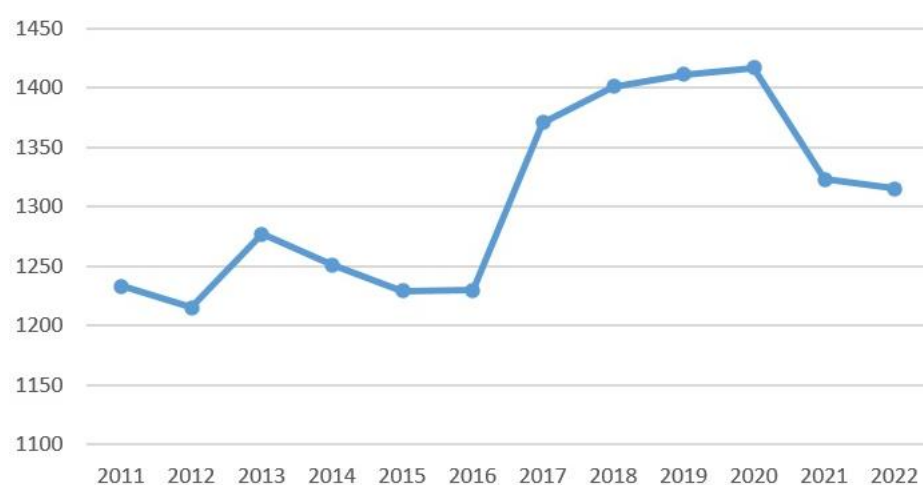
##### **4.1. Main exports and imports of the state**

The main aspects of the foreign trade are export and import of the state. The Republic of Kazakhstan's imports and exports are important to the country's expansion and progress. The state is rich in natural resources such as minerals, oil, gas, and agricultural items, uses these resources to establish its export-focused economy. In the meantime, imports sustain a number of industries and meet domestic consumption needs. Kazakhstan's international trading partners are closely connected to the country's export and import. Among Kazakhstan's main export partners are Russia, China, Italy, the Netherlands, and Turkey; the main exports to these states are gas and oil (Observatory of Economic Complexity). Regarding imports, Kazakhstan mostly imports from Russia, China, Germany, and the United States. These countries provide a wide range of items, including consumer goods, automobiles, electronics, and machinery (Observatory of Economic Complexity). Kazakhstan confronts difficulties in diversifying its export by trying to reduce the reliance on oil and gas exports, and enhancing trade infrastructure and logistics despite its substantial export potential. Its export-oriented economy is vulnerable to changes in global economic conditions and commodities prices.

It is important to take into consideration factors out of Kazakhstan's management that influenced exports and imports percentages. The lockdown due to COVID-19 limited the trade due to different restrictions on movement of people, goods and services. As it was mentioned before, another factor influencing Kazakhstan's trade is the Russian invasion in Ukraine in 2014. Due to the invasion and annexation of the Crimean Peninsula, the trade sanctions influenced Kazakhstan's trade (Ybrayev, 2021).

Oil and gas industries of the Republic of Kazakhstan are considered as the drivers of the development of the state's economy (Azretbergenova & Syzdykova, 2020). It helped Kazakhstan to establish most of its trading relations and contribute to the development of the foreign trade. It was identified that country is dependent on its oil production and export, which triggered the stagnation of the economy starting in 2014 (Azretbergenova & Syzdykova, 2020).

**Figure 1:** Export of Crude Oil (Barrel/Day) - Kazakhstan



**Source:** CEIC data

The earliest available data regarding crude oil export was from 2011. It is expressed in barrel per day. According to the figure 1, it can be observed that export of crude oil noticeably increased from 2016 year from 1229.5 to 1370.833 barrels per day. Therefore, the state started to export more crude oil in 2017 and in the following years (Staff Report, 2017). It was influenced by the expansion of the Tengizchevroil field and the resume of the production on the Kashgan field (U.S. Energy Information Administration, 2017). However, from 2020 the exported barrel per day of crude oil started to decrease.

Kazakhstan's main exports goods are crude oil, refined copper and gold which is mostly exported to China, Russian, Greece, United Kingdom and Germany (Observatory of Economic Complexity). Based on the graph presented above, export of good and services of Kazakhstan

significantly decreased in the percentage of GDP from 2014 to 2015. The research by Nazarbayev University (Ybrayev, 2021) suggests that the adoption of the new monetary policy by the state's government contributed to moderate-to-high growth period of the economy and export of Kazakhstan.

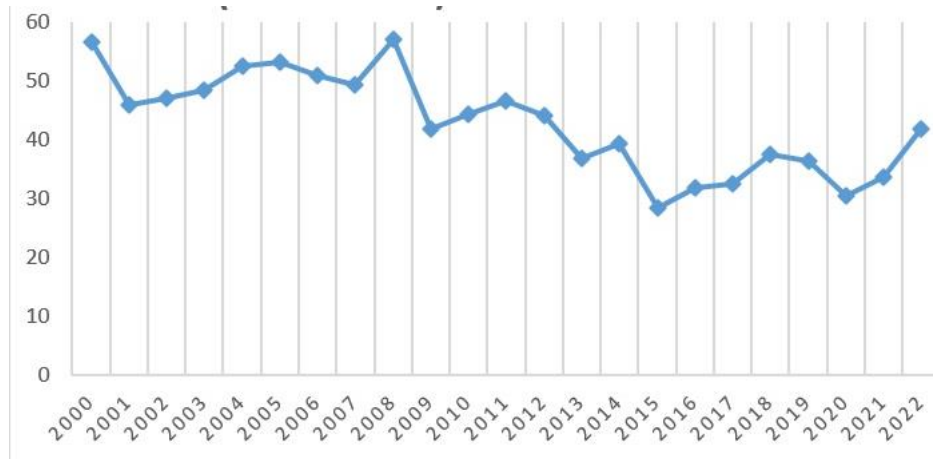
This study demonstrated the relationship between exchange rate and export growth. The researcher came to a conclusion that 10% of the undervaluation of the real exchange rate is associated with increase in increase of the exports of goods and services by 0.05 percentage points (Ybrayev, 2021). Therefore, the state's exports become cheaper for the foreigners which contributed to the increase of exporting goods in 2015. However, it might negatively influence the economic growth of the country since the economy may become more vulnerable to external shocks, such as shifts in major trading partners' trade policies or variations in worldwide demand, if it depends too heavily on exports. Furthermore, an excessive emphasis on exporting could take funds away from domestic sectors, impeding long-term economic resilience and restricting diversity. Finally, an over reliance on exports may result in currency appreciation, which might undermine export-led growth initiatives and reduce the competitiveness of domestically produced goods in global markets.

Agriculture has always been the foundation of Kazakhstan's economy, with a particular emphasis on exporting goods to over 70 countries, mainly Uzbekistan, Kyrgyzstan, Afghanistan, and Tajikistan (Kurmanova et al., 2021). Nonetheless, there was a significant decrease in grain production beginning in 2015, with seasonal output falling from 18.6 million to 18.1 million tons (Kuanyshbek, 2022). Kazakhstan's grain exports were impacted by this decline as well as the depreciation of the ruble, which increased demand for Russian grain in Central Asian nations. Furthermore, Afghanistan stopped importing flour from Kazakhstan in favor of 20% less expensive options from Russia (Kursiv, 2015). As such, there has been a decline in the market for Kazakh flour since 2015.

The figure 2 represents the exports of goods and services as a percentage of GDP. As it can be seen, the percentage of exports in terms of GDP is relatively high and amounted almost to 60% until 2008. In 2009 there was a sudden fall of exports in 2009 by almost 20%. It was also observed that in 2015 exports reached the lowest contribution to GDP which was less than 30%. However, it was recovered from 2018 and reached 40% contribution of exports to GDP. In 2022

exports' percentage of GDP amounted to 50% which signifies high influence of exports on GDP. Overall, it can be observed that exports of goods and services has a high percentage of contribution to the GDP of the state.

**Figure 2:** Export of goods and services, % of GDP - Kazakhstan



**Source:** World Bank data

According to the World Bank data (2022), annual growth of exports was negative in some periods of time. One of factors that has influenced the negative measure was mentioned earlier. It can be said that after Crimean annexation Kazakhstan's export recovered only in 2017. The recovery was influenced by the accession to World Trade Organization. The lowest annual growth of exports was in 2020 due to COVID-19 lockdown. However, exports significantly increased over the period of 2021 to 2022.

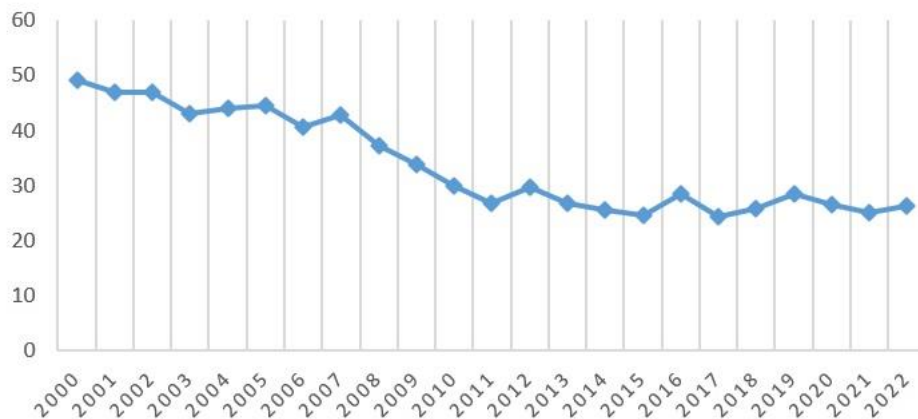
25% of Kazakhstan's oil is produced by Chinese companies, which is marginally less than what Kazakhstan's state-owned company "KazMunayGas" produces. The KazMunayGas produces 38.44% of Kazakhstan's total oil output. Thus, about the same proportion of production is owned by one of Kazakhstan's largest oil and gas corporations as by all of the Chinese enterprises combined (Najibullah, 2019). Moreover, the total trade between China and Kazakhstan constitutes \$10.5 billion in 2017. Hence, China is the third biggest trade partner of the Republic of Kazakhstan. One of the significant places in the Kazakhstan's economy is taken



by the oil industry. According to the report of the Organization for Economic Cooperation and Development (Dodonov, 2016), both oil and natural gas industries contribute 30% of Kazakhstan’s GDP. It is two-thirds of Kazakh export.

The highest imported products to Kazakhstan are cars. The main importing countries are Russia, China, Germany and Turkey (Observatory of Economic Complexity). Based on WTO statistics (2022), the import of motor cars for transporting of people amounted to 1817 million US dollars in 2022.

**Figure 3:** Import of goods and services, % of GDP – Kazakhstan



**Source:** World Bank data

As it can be seen from figure 3 (World Bank, 2022), the contribution of imports of goods and services to the GDP steadily decreasing beginning from 2007. The highest contribution to the economic development of the state since 2007 was in 2016 and 2019. It amounted around 30% of GDP of Kazakhstan. In comparison with export (World Bank, 2023), the contribution of imports is lower by approximately 10%. Moreover, it can be observed from the curve that the imports’ percentage of GDP does not undergo sudden changes.

According to the WTO statistics (2023), the export of petroleum oils by 2022 is significantly higher than the export of the other products such as refined copper and copper alloys, fore-alloys. The export of petroleum oils amounts to 46920 million US dollars and in contracts the

export of agricultural goods such as wheat and meslin amounts to 1920 million US dollars (WTO, 2023). This shows the importance of the oil industry in the export of Kazakhstan and its economy in general.

Total exports of Kazakhstan are higher than total imports which indicates trade surplus. In 2022, the total exports were 78809 million US dollars when total imports were 44189 million US dollars (WTO, 2023). It leads to the currency appreciation as there is a foreign currency inflow which makes exports more expensive for the foreign countries. Hence, the state's attractiveness decreases which is a negative influence for the economic growth and stability.

According to Bureau of National Statistics (2023), the highest trade turnover was in 2022 which amounted to 135,527.5 million US dollars. The trade turnover is identified by the summarizing the total values of exports and total value of imports. According to Bureau of National Statistics (2022), the share of Russia to Kazakhstan's economy by trade turnover is 23,9%. The highest-ranking goods that Russia imports from Kazakhstan are energy products and processed food (Sukhanova et al., 2023). For instance, the trade turnover for the first six months of 2022 between Kazakhstan and Russia amounted to 15,900 million US dollars (Sukhanova et al., 2023). Consequently, the trade turnover value of Kazakhstan is relatively dependent on the relations with Russia. The trade turnover with China amounted to 1,400 million US dollars in the first 9 months of 2023 (APK Inform, 2024). It demonstrates that trade turnover with Russia is higher than the trade turnover with China. Kazakhstan and Russia has a long standing relations not only in terms of political aspects, but also in their mutual foreign trade.

#### **4.2. Involvement in international organizations and agreements**

Kazakhstan is a part of Commonwealth of Independent States (CIS) which were created right after the USSR dissolved in December 1991. The member states of the CIS are Kazakhstan, Kyrgyzstan, Azerbaijan, Armenia, Belarus, Tajikistan, Moldova, Russia, and Uzbekistan. Georgia was a part of CIS until 1993. Ukraine left CIS in 2014 after annexation of the Crimean Peninsula. Member states of the CIS signed an agreement on free trade in 2011. The free trade allows countries of the Commonwealth of Independent states to remove fees on export and import. However, Kazakhstan introduced to the agreement around 40 duties and fees as an

exception on oil, gas, wool, and aluminum. The state managed to keep fees for the most exporting goods such as oil and gas.

Kazakhstan also became a member of World Trade Organization in 2015. As Kazakhstan joined the WTO, it was obliged to follow the accords and adhere to the particular pledges made for goods and services throughout the discussions (Amirbekova et al., 2017). The state maintains tariff rate quotas for beef, pork, poultry, and whey in order to balance domestic production and consumption, with a particular emphasis on protecting the poultry meat industry (Amirbekova et al., 2017). Kazakhstan applied temporary reduction factors under the WTO based on objective standards such geographic remoteness, not for the aim of substituting imports or exports (The working group report, 2015). Experts state that although some industrial subsidies must be removed or changed to guarantee they are not linked to import or export substitution, initiatives such as "Business Road Map - 2020" may unintentionally give out illegal export subsidies (Amirbekova et al., 2017). Regarding export levies, Kazakhstan abides by the WTO rules, but it also has the option to enact safeguards when needed to protect domestic businesses. WTO regulations have reduced the export transportation subsidies that were previously given to grain producers, which has forced the government to come up with new ways to help agricultural businesses (Amirbekova et al., 2017).

World Trade Organization accession helped Kazakhstan to facilitate trade without barriers and restrictions with other countries on the global arena. Additionally, it allows Kazakhstan to be a part of different international negotiations. According to Investment Policy Reviews (2017), the GDP of Kazakhstan increased by 3.7% in the medium run after accession to the WTO. The most influenced sectors were foreign direct investment and access to the Kazakh market. The increase in these sectors of economy of the state positively impacted GDP.

Kazakhstan and China had a negotiation on customs in 2021 (Forbes, 2021). Kazakhstan and China discussed the exchange of customs statistics between the two countries, meaning that Kazakhstan will share information about its customs with China, and so will China. This reduces the security and privacy of Kazakhstan's data, which could affect the trust of other international trading partners. The two countries have come to an agreement on this data sharing. In addition, the two countries agreed to simplify the customs process on the border between Kazakhstan and China. Since China plans to realize the Belt & Road Initiative, it is important for them to

simplify customs with Kazakhstan. All goods on the land route will pass through the territory of Kazakhstan. In 1997, the two countries signed a treaty on the reduction of military forces along the common border (Zhuangzhi, 2007). This simplifies trade between the two countries and increases the attractiveness of imports and exports. China is one of Kazakhstan's largest trading partners.

The Republic of Kazakhstan joined Eurasian Economic Union (EAEU) in 2010 (Dosmukhamedova & Zhiyentayev, 2019). The member states of this union are Kazakhstan, Russia and Belarus. Kyrgyzstan and Armenia joined EAEU in 2015. The main goals of the EAEU are common market, free movement of goods and services, capital, labor and achieving economic integration in different sectors (Dosmukhamedova & Zhiyentayev, 2019). Firstly there was established single economic space and treaty of customs between Kazakhstan, Belarus and Russia in 1999. It was a base for creating the EAEU with similar goals of single market and agreements on customs. Consequently, these agreements created the union which contributes to the Kazakhstan's foreign trade and its openness to the international market with countries in Eurasia.

Shanghai Cooperation Organization (SCO) was established in 2001 as economic, political and security cooperation (Azarkan, 2010). The members of the alliance are China, Kazakhstan, Kyrgyzstan, Russia and Tajikistan. The main goal of the organization is cooperation on security, terrorism, trade and economic development in the member states. Kazakhstan has improved economic cooperation with neighboring states, developed infrastructure projects, and attracted foreign investors by participating in the organization. Trade and economic cooperation have expanded as a result of cooperative efforts inside the SCO framework, like the SCO Business Council and the SCO Interbank Consortium, which have encouraged business-to-business contacts and investment opportunities (Azarkan, 2010). For example, the participation in the alliance, helped Kazakhstan and China construct oil pipeline which goes through both countries in 2006 (Najibullah, 2019). It was a contribution to the bilateral trade expansion.

The partnerships Kazakhstan has mostly connected either to China or Russia. It gives Kazakhstan opportunities to participate in trade and import goods and services without duties and barriers. Besides the advantages, it can be considered as challenge for Kazakhstan's foreign trade because it associates Kazakhstan with countries who constantly violate human rights.

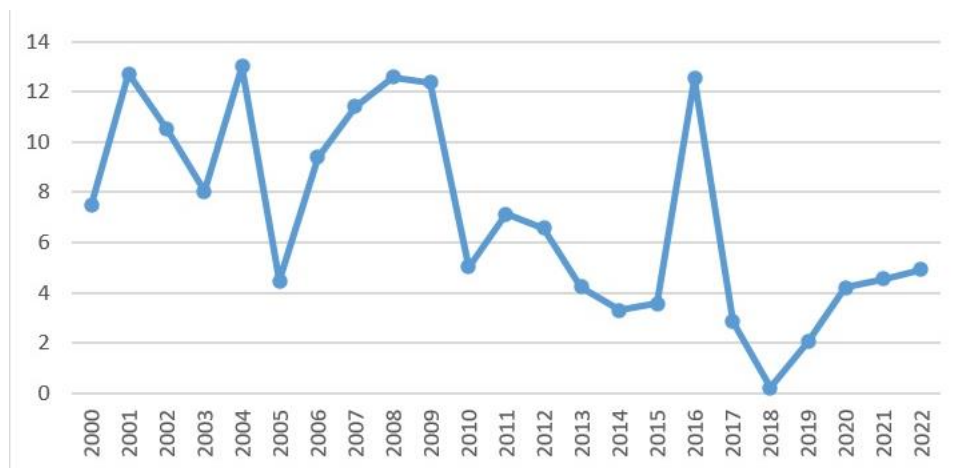
Moreover, international sanctions imposed in this country also influence the unions and partnerships. The goals pursued by the member states of the union are differ from each other which creates an obstacle for the unified list of goals to be achieved to boost foreign trade.

### 4.3.Foreign Direct Investment and External Debt of Kazakhstan

Significant foreign direct investment has been drawn to Kazakhstan due to the country's relatively stable political environment and favorable economic environment (Lee, Fariza & Sharipova, 2015). Kazakhstan is a developing country with a lot of industries to be developed. Due to its stability and business-friendly policies, Kazakhstan has become a sought-after location for both domestic and foreign businesses. The attraction of FDI contributes the sphere of human capital development, production, state’s capital through international cooperation (Vanderhill, 2019).

Out of the five countries with a transit economy that was attracting foreign direct investments in 2015, Kazakhstan ranked fourth (Aubakirova, 2020). Its positioning highlights how important it is for Kazakhstan to consistently improve its investment climate and eliminate any perceived obstacles to be able to attract additional foreign direct investment and sustain its economic growth trajectory despite regional competition.

**Figure 4:** Foreign direct investment, net flows % of GDP – Kazakhstan



**Source:** World Bank data

The Netherlands is Kazakhstan's largest investment country. As to the data provided by the Kazakh embassy located in the Netherlands, the country has invested around 72.4 billion US dollars in Kazakhstan. Oil products make up the majority of Kazakhstan's exports to the Kingdom, accounting for 87% of total exports in 2019. It indicates the dependency on the commodity of the relations between Kazakhstan and its main investors country which also shows the dependency of the state's economy on oil production.

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Figure 4 present the FDI net inflows in the percentage of gross domestic product from 2000 to 2022. It can be seen that FDI contributes about up to 13% of Kazakhstan's GDP (World Bank, 2022). In 2016 when the state attracted high amount of the FDI inflows due to its accession of the WTO and adoption of the new monetary policy, the FDI inflows amounted to 12.5% of GDP. However, the contribution of the FDI to GDP was 0.20% in 2018 which is comparatively low percentage. According to the World Bank (2022), in 2018 Kazakhstan attracted only 353 million US dollars net FDI inflows to the state whereas in 2016 it amounted to 17.22 billion US dollars. Volatility of oil prices made Kazakhstan less attractive for the investors in 2018 as the state's economy is closely connected with oil production. The oil prices have risen in 2018 due to several global events which affected Kazakhstan's economic development.

FDI inflows started to increase from 2019, however the highest percentage of GDP that it has reached was around 6% in 2022. Therefore, it can be seen that the contribution of the FDI

inflows significantly decreased and its contribution to the development and growth of the state's economy.

Kazakhstan's external debt increased at an average annual rate of 6% from 2008 to 2015, totaling \$153 billion or 83% of its GDP (Kapparov, 2017). Just 1% of the \$81 billion in total debt is made up of loans to state-owned businesses; the majority, or about 53%, are intercompany loans. The debt repayment, estimated to be \$22 billion in 2016, is more than the yearly foreign direct investments into Kazakhstan (\$4 billion in 2015), which make up 40% of the country's \$53 billion worth of exports (Kapparov, 2017).

Due to a drop in oil exports in 2015, the state's debt-service ratio increased from 35% to an estimated 53% in just a year, with nearly half of its income going toward paying off its foreign debt (Kapparov, 2017). The repayment of principal as well as interest on long-term debt in cash, products, or services is referred to as total debt service. Consequently, the external debt of Kazakhstan is relatively high for the economy and exceeding the investments the country receives.

#### **4.4. Impact of neighboring countries on foreign trade**

The Republic of Kazakhstan shares borders with Russia, China, Kyrgyzstan, Uzbekistan, and Turkmenistan. As the state is a landlocked country, it is important to manage trade agreements, customs negotiations and infrastructure with bordering countries. The closest relations Kazakhstan has in terms of the foreign trade are with China, Russia and Uzbekistan because of the volumes of the trade. Therefore, it is important to analyze and discuss the relations between Kazakhstan and these countries. The relations are also connected to the political actions of the neighboring countries as it has an influence on the managing of the foreign trade.

In 2017, Uzbekistan started to liberalize its market and lowering their protectionist policies on import and export from another countries (World Bank, 2019). Due to this change in trade policy in the neighboring country, Kazakhstan showed its interest in the trade with Uzbekistan. Moreover, they improved social safety and liberalized the foreign exchange market. According to OEC data, the most exported product from Kazakhstan to Uzbekistan is wheat which 817 million US dollars by 2022. Also, Kazakhstan exported to Uzbekistan broadcasting equipment

and copper ore. The most imported products from Uzbekistan to Kazakhstan are vehicle bodies for motor vehicles which amounts to 236 million US dollars by 2022 (Observatory of Economic Complexity).

The Kazakhstan was a part of the Union of Soviet Socialist Republics until the dissolution of the Soviet Union in 1991. Kazakhstan got its independence on 16<sup>th</sup> of December 1991 being formally the last republic to leave the union. Therefore, since its independence Kazakhstan is maintaining close relations with neighboring countries which all of them except China are former members of USSR. Furthermore, Kazakhstan is land locked country without access to the sea and it is important for the state's international trade to have relations with countries who provide opportunity for trading.

Russian Federation's political and economic actions have a huge influence on Kazakhstan's foreign trade. Russia illegally annexed the Crimean Peninsula and began the Russian-Ukrainian war in 2014 which influenced Kazakhstan's export and FDI. The Kazakhstan's national currency, tenge, was devaluated the same year because of its close connection to Russian ruble because of the customs union and trade with Russia (Zholamanova, 2019). The West imposed sanctions against Russia and some of its citizens. Therefore, Kazakhstan's trade was under huge risk because of the sanctions Russia had and it became an obstacle. Moreover, the attractiveness of Kazakhstan for investors also decreased due to unstable relations of Russia and Ukraine. The neighboring country is presented at a disadvantage to most of the Kazakhstan's important trading partners, such as some of the members of the European Union and USA, by constantly violating human rights. The Russian invasion in Ukraine and beginning of the war in February 2022 also influenced Kazakhstan's national currency. However, this time Kazakhstan's currency recovered faster than in 2014. Moreover, Kazakhstan did not show its support to Russia's actions, instead Kazakhstan advocated for an immediate ceasefire and peace negotiations (Davis, 2022). Moreover, in 2022 Kazakhstan accepted a lot of Russian citizens fleeing the country, mostly men who is of military age. Therefore, it can be seen that Kazakhstan does not show full support to the Russian Federation and the actions of its government.

Kazakhstan is separating its economy from Russia by connecting more with other neighboring country China. Even though China was also seen to violate human rights, the world reaction is not so severe as it is to Russia's actions. Beside it, China is promoting Belt & Road Initiative to



Kazakhstan with a perspective of increasing international trade in different spheres and build land and sea connections with other states. China also participated in different infrastructure projects on Kazakhstan's territory to improve the quality of the manufacture and roads on the territory of Kazakhstan. Chinese interest in Kazakhstan is also enhanced by Baikonur Cosmodrome as Russian lease will come to an end in 2050. China was among the first countries, along with other Central Asian Republics, who recognized Kazakhstan's independence as it sought both independence and international recognition (Zhuangzhi, 2007). In the same year, the Chinese government established diplomatic relations with Kazakhstan. As a result, China was interested in trading and diplomatic relations with the Republic of Kazakhstan from the start and was fostering an environment that would be beneficial to its growth. One of the first nations to assist Kazakhstan in the creation of the Astana International Financial Center (AIFC) was China (Shaimergenova, 2019). The Republic of Kazakhstan participation in the Belt & Road Initiative is an important source of the Kazakh-Chinese relationships and foreign trade development of both countries. The Belt & Road Initiative (BRI) was introduced by Chinese government in 2015 and announced in the capital of the Republic of Kazakhstan, Astana (Garlick, 2020). This initiative is a strategy which is implemented on an international arena and has two main routes which are land and maritime. It has multiple corridors which connects China with several parts of the world. Kazakhstan connects China with Europe as it is located on the border between Asia and Europe. BRI will go through Southern to the Northern parts of Kazakhstan which is about 1700 kilometers. As Kazakhstan is China's route to Europe for international trade, BRI will facilitate international trade for Kazakhstan as well. Kazakhstan is considered the most convenient way to transport Chinese goods to the other part of the world such as Europe. The strategy is the future link in the development of state-to-state infrastructure. As a result, there will be more electricity cables, pipelines, roadways, trains, and airplanes. Under Xi Jinping's direction, the Chinese government carried out the Belt and Road Initiative. China's Greater Neighborhood Policy, which aims to strengthen and expand ties with Europe, includes the BRI (Fallon, 2015). The Belt and Road Initiative is designed to be the most expedient and practical means of facilitating trade and moving commodities and other materials between continents. As the BRI contributes to the development of the infrastructure, FDI and export, it directly contributes to the expansion of the foreign trade. The better the infrastructure,

the easier it is to transport goods and establish foreign trade with other countries. High FDI inflows will facilitate more opportunities for Kazakhstan's economy and its trade.

## 5. Analytical Part

### 5.1.SWOT analysis

SWOT is a method for strategic planning by identifying four main aspects such as Strengths, Weaknesses, Opportunities and Threats. This diploma thesis is analyzing foreign trade of Kazakhstan by using SWOT analysis. It provides information that will guide decision-making of international trade policymakers to optimize the state's trade potential and economic growth. The SWOT analysis will be also presented as a summary of the information that was gathered through the theoretical part of this thesis. The table represents the main points and the discussion is demonstrated in the created table above.

**Table 2:** Results of the SWOT analysis of the Kazakhstan's foreign trade

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Abundancy of natural resources</li> <li>• Located in middle of Eurasia and by the Caspian Sea</li> <li>• Trade agreements and partnerships</li> <li>• FDI attractiveness</li> </ul>	<ul style="list-style-type: none"> <li>• Dependency on commodities</li> <li>• External debt</li> <li>• Corruption</li> <li>• Technological gaps</li> <li>• Infrastructure</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Belt &amp; Road Initiative participation</li> <li>• Infrastructure development</li> <li>• Job opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Geographical and geopolitical location</li> <li>• Domestic political instability</li> <li>• Oil prices fluctuations</li> <li>• Currency Volatility and Exchange Rate Fluctuations</li> </ul>

## **Strengths**

One of the main strengths of Kazakhstan is the location in the middle of the Eurasia. The country has land connections to both Europe and Asia. Also, it is located by the Caspian Sea which possess many oil deposits and connects Kazakhstan with Middle East. Kazakhstan is abundant with natural resources which is a huge strength of its foreign trade. These resources offer multiple possibilities for export, which boosts the state's revenue from international trade. Moreover, it is used as a base for trade agreements with other developed countries. Most of the investments are also attracted by the abundancy of the natural resources. The state has several trade agreements and participates in international organizations which provide opportunities for lowering trade barriers and limits. Trade agreements can improve regional cooperation and diplomatic ties, among other geopolitical effects. Kazakhstan can strengthen its standing in international affairs and advance regional stability by forming trade partnerships.

The attractiveness of foreign direct investment is a major asset for Kazakhstan's international trade for a number of reasons. First of all, Kazakhstan has access to enormous markets due to its advantageous location at the meeting point of Europe and Asia. Secondly, the state offers a favorable climate for foreign investors thanks to its proactive investment policies and stable political climate. Thirdly, there are abundant natural resources in Kazakhstan, especially in the mineral and energy industries, which present profitable business prospects. Fourth, the government's dedication to industrialization and economic diversification projects improves the investment climate's appeal. Lastly, Kazakhstan continues to attract foreign investors looking for long-term growth prospects thanks to its investments in human capital and continuing infrastructure development projects.

## **Weaknesses**

One major issue is the state's reliance on commodities. Kazakhstan has large deposits of minerals, natural gas, and oil, but its economy still depends largely on these resources. Kazakhstan's export earnings and trade balance are highly susceptible to fluctuations in the price of commodities globally, which leaves the country's economy open to outside shocks. Due to this reliance, Kazakhstan's export base is less diverse and its economy is more vulnerable to

market fluctuations, which makes it more difficult for the country to maintain long-term growth and development.

Due to the large external debt of the state, Kazakhstan's financial stability and sovereignty are at stake. The foreign debt which is compounds from loans taken out to fund economic development and infrastructure projects, can put a pressure on the country's financial resources and make it more vulnerable to downturns in the economy. Elevated amounts of external debt may also cause lenders and investors to become more cautious, which could result in increased borrowing costs and restricted access to global capital markets.

Moreover, these vulnerabilities are made worse by infrastructure flaws, technical gaps, and corruption. Corruption makes trade procedures less effective, deters foreign investment, and skews market competitiveness, making it more difficult for Kazakhstan to realize the full potential of its trade. The Kazakhstan's ability to improve and increase productivity is hampered by technological gaps, which reduces its competitiveness in international markets. The seamless movement of goods and services is hampered by inadequate infrastructure, which includes transportation and logistics networks. This raises transaction costs and makes Kazakhstan less appealing as a trade partner.

### **Opportunities**

Kazakhstan's participation in the Belt & Road initiative introduced by China is considered as an opportunity for the state. This strategy allows Kazakhstan to establish trade relations with a large number of countries, as well as improve infrastructure within the country to make trade more efficient and profitable. China is also interested in investing in manufacture projects in Kazakhstan, as it is one of the parts of the BRI. The building of ports, railroads, and other transportation infrastructure under the BRI framework expands Kazakhstan's export market and strengthens commercial ties with its neighbors. Kazakhstan can enhance its status as a hub for regional trade and logistics, attracting investments and stimulating economic growth, by capitalizing on its advantageous location and actively participating in Belt and Road Initiative.

Therefore, it is important to mention infrastructural development as an opportunity for Kazakhstan. The goal of the government's investment and modernization programs, including the Nurly Zhol (eng. Bright Path) program, is to strengthen connectivity both inside and outside

the nation by modernizing logistics facilities and transportation networks. These improvements to the infrastructure not only make it easier for goods and services to move around efficiently, but they also lower transit times and costs, increasing Kazakhstan's competitiveness in international markets. By leveraging these infrastructure expenditures, Kazakhstan can increase its export potential, attract investments, and promote economic growth in a number of industries.

As the foreign trade expands, the job opportunities increase for the citizens of Kazakhstan. It was determined that unemployment has a negative effect on the economic development of the state. The expansion of the exports and imports, as well as establishing more trade agreements will increase the demand on the job market.

### **Threats**

Kazakhstan's geographical location is a threat for its foreign trade as the country is landlocked country and doesn't have an exit to the sea nor ocean. The only mean of transporting its goods is by land which limits the amounts of transported goods. Moreover, to transport goods Kazakhstan needs to establish and support relations with neighboring countries who has an access to sea. As it is considered as a weakness for Kazakhstan but it might also be a threat because in case of political instability, Kazakhstan will be cut from the sea infrastructure.

The geopolitical location is also considered as a threat to the foreign trade as it is located between Russia to the North and China to the southwestern border. Moreover, in 2022 there were a conflict on the border of Tajikistan and Kyrgyzstan. It has also an influence on Kazakhstan as it has common border with both of the countries. Russia is at war with Ukraine as of February 2022. China is being accused of violation of the human rights of Uyghurs. Consequently, it might be considered as a threat to Kazakhstan because for trading partners and investors is unattractive to have a partner with wars and conflicts on the border.

Kazakhstan is experiencing political instabilities domestically. In January 2022, the government raised the prices on gas which triggered uprisings all around the country. It became violent in the most of the large cities. One of the most populated cities in Kazakhstan, Almaty has experienced uprisings for several days in a row. The electricity was cut, the network was not working. The internet was given to people all around the state for several hours per day. It was impossible to get in contact to the people in Kazakhstan. The governmental institution was set

on fire during the uprisings. It led to the death of more than 200 citizens of Kazakhstan (Toyken, 2022). Even though, the uprisings started due to the rise in gas prices, it continued for more reasons that were citizens of Kazakhstan dissatisfied since the first president resigned (Toyken, 2022). Therefore, Kazakhstan might be considered for its trading partners as an unstable state for trading as during uprisings most of the operations were put on hold in January 2022.

Kazakhstan's economy, which is reliant on commodities, is very sensitive to changes in the pricing of these commodities globally, especially those of oil and natural gas. Because exchange rate fluctuations have an effect on the prices of commodities traded on international markets, they may have a direct effect on Kazakhstan's exports' competitiveness. A sharp decline in the value of the Kazakhstani tenge in relation to important trading currencies, such the US dollar or the euro, can lower export profitability and weaken foreign purchasers' purchasing power, which will lower trade revenue for the nation.

## **5.2.OLS Model – The impact of the foreign trade on the economic growth of Kazakhstan**

### **5.2.1. Data**

The dataset for this diploma thesis consists of annual data for the period of 23 years from 2000 to 2022. The earliest possible year that contains data for all variables was 2000. The Republic of Kazakhstan established its independence from Soviet Union only in 1991. Some of the variables taken for this study were not recorded by the government into statistics before 2000. Accordingly, it is considered as a limitation of this study as longer time period cannot be analyzed. The statistical data which was prepared for this study was taken from World Bank. It was chosen to consider data annually as it will remove possible fluctuations based on the seasonal changes. Moreover, the data takes for the whole state as the main objective is to evaluate foreign trade on the national level, hence, regional statistical data would have been inappropriate for this study. The whole dataset for this study is presented below including unit vector.

**Table 3: Dataset**

<b>Year</b>	<b>Unit Vector</b>	<b>Real GDP</b>	<b>Exports</b>	<b>Imports</b>	<b>FDI</b>	<b>External Debt Stocks</b>	<b>Unemployment</b>
2000	1	66.179	27.9	28.0	7.49	12.890	12.75
2001	1	75.114	-1.8	-1.5	12.72	15.340	10.43
2002	1	82.475	16.6	3.1	10.51	18.437	9.33
2003	1	90.145	7.5	-7.6	8.05	23.227	8.78
2004	1	99.799	11.2	14.9	13.01	33.233	8.40
2005	1	108.382	1.4	12.1	4.46	43.862	8.13
2006	1	119.979	6.8	12.6	9.40	74.438	7.79
2007	1	130.657	10.1	26.1	11.42	96.241	7.26
2008	1	134.969	4.9	-11.5	12.60	106.739	6.63
2009	1	136.589	-9.6	-15.7	12.38	109.741	6.55
2010	1	150.560	3.1	2.9	5.04	119.151	5.77
2011	1	157.405	3.4	2.8	7.14	124.330	5.39
2012	1	164.960	4.8	24.8	6.56	135.531	5.29
2013	1	174.860	5.7	7.8	4.23	149.708	5.20
2014	1	182.200	-2.5	-4	3.30	157.698	5.06
2015	1	185.390	-0.4	-0.1	3.57	153.180	4.93
2016	1	187.890	1.5	-2	12.55	163.488	4.96
2017	1	196.060	8.0	1	2.85	158.949	4.90
2018	1	202.020	10.6	6.6	0.20	156.979	4.85
2019	1	211.110	13.7	14.9	2.05	158.958	4.80
2020	1	205.830	-5.1	-9	4.21	162.974	4.89
2021	1	214.680	14.8	-0.3	4.55	160.810	5.60
2022	1	231.550	19.6	11.6	4.91	161.720	4.90

**Source:** World Bank

### **5.2.2. Significance of the research**

This research is evaluating the significance and impact of the foreign trade on the economic growth of Kazakhstan. There were found low number of similar studies which examine the impact of the foreign trade on the economic growth of Kazakhstan. It increases the significance of this particular research. Moreover, most of the variables that were selected in other studies were mainly export and import. This diploma thesis will examine the influence of the exports, imports, FDI, external debt and unemployment which are important indicators of the foreign trade. Therefore, this research observes wider influence of the foreign trade on the economic

growth of Kazakhstan comparing to the existing observations. Understanding the relationship between the foreign trade and economic growth of Kazakhstan provides insights for policymakers about efficiency and productivity of the current trade policies on the economy of the state. The research might be used as a guide for creating more effective trade policies which will focus on the development of the Kazakhstan's economy. Furthermore, analyzing the factors which impact on a Kazakhstan's competitiveness in the international market can be facilitated by examining how foreign trade affects economic growth. It could be used in similar developing countries as Kazakhstan in the policy creation and structuring.

### **5.2.3. Ordinary Least Square Model**

Ordinary Least Square model is a statistical method in regression analysis for representing the relationship between one dependent and one or more independent variables. It is applied to estimate the coefficients in the equations of the linear regression. Minimizing the sum of squared residuals of the collected data is the main goal of the OLS model. Error term is a deviation among the observed and predicted values of dependent variable.

Ordinary Least Square Model (OLSM) has several assumptions that has to be achieved to provide a valid and accurate evaluation of the output of the regression model. When the assumptions of OLSM are met, the regression model is considered unbiased and consistent. The regression model is linear in parameters. Therefore, there is a linear relationship between dependent and independent variables. Regressors of the model in this study are assumed fixed which means they are non-stochastic. It implies that there is no possibility of variability or uncertainty and that they are taken to be non-random. The dataset for this study was taken from the credible source which is World Bank which can be considered as prove of non-random values of the regressors.

The mean value of the error term should be 0 in the ordinary least square model. Another assumption is that there is a difference for a chosen set of independent variables between the value predicted by the regression model and the observed value of the dependent variable. Moreover, the variance of each error term is constant or homoscedastic. The spread or dispersion of the errors around the regression line stays constant at all levels of the independent variables.



There is no correlation between error terms belonging to 2 different observations. The residuals from one observation are unrelated to the errors from another observation. Another assumption of the OLS model is about no perfect linear relationship among the independent variables. It means that there is no perfect multicollinearity. The multicollinearity for this research is estimated in Gretl through the correlation matrix. The multicollinearity is analyzing its coefficients and the relationship between the selected variables.

The regression model used in the analysis is correctly specified. There is no specific error or bias. The model includes all suitable independent variables. It means that the model should consider suitable independent variables. The independent variables of this study are suitable because they are connected to the foreign trade. The error term has a normal distribution with 0 mean and constant variance  $\sigma^2$ ;  $u_i \sim N(0; \sigma^2)$ . The errors of the model have a normal distribution around 0. According to this assumption, the errors typically have a mean of 0, meaning that the model generally predicts the dependent variable accurately.

For this study, one dependent and six independent variables were chosen (Formula 1 & 2).

#### **5.2.4. Overview of the variables**

Dependent variable:

- **Real GDP:** This variable was chosen for this study as the measure of the economic growth of the selected state and period. As it was proved by other academic sources mentioned in this thesis, GDP is one of the common and suitable indicators of the economic growth. Therefore, the GDP was chosen for this study as well. The real GDP is expressed in millions of US dollars in constant 2015 price.

Independent variables:

- **Total Exports (% of GDP):** This variable represents the total exports of good and services as a percentage of GDP in the particular year. The purpose of this variable is to explain the significance of total exports of goods and services and demonstrate the impact on the country's economic growth.

- Total Imports (% of GDP): This variable represents the total imports of goods and services as a percentage of GDP in the particular year. The purpose of this variable is to explain the significance of total imports of goods and services and demonstrate the impact on the country's economic growth.
- Foreign Direct Investment (% of GDP): This variable represents the foreign direct investment the state received as a percentage of GDP in the particular year. The goal of this variable is to explain the significance of the foreign direct investment the state received and show the influence on the economy of the observed state.
- External Debt Stocks (million US dollars): This variable represents external debt stocks of the state in million US dollars over the particular year. The aim of the variable is to interpret the significance of the external debt stocks and demonstrate its influence in the state's GDP alteration.
- Unemployment rate (%): This variable represents the percentage of the unemployment in the state annually. The variable aims to explain the significance of the unemployment and show the impact on the state's economy.

### **5.2.5. Correlation matrix**

Correlation matrix is statistical method for depicting the correlation between given variables. It shows the correlation coefficients which can be interpret to identify the relations between variables. The matrix will be analyzed as the relation of the endogenous variable with its explanatory variables. Therefore, the coefficients of the correlation between GDP with export, import, FDI, debt and unemployment will be analyzed separately to identify the significance of their relation. The matrix will also analyze the relation between independent variables. It means that the coefficients between export, import, FDI, debt and unemployment will analyzed to estimate of there is a high multicollinearity and eliminate it if needed. The presence of high multicollinearity might signify the strong relations between variables and lead to the loss of the statistical power or interpretation issue and errors. If the correlation coefficient is higher than 0.8, then there is a strong relation between variables. If the correlation coefficient is lower than -0.8, then there is a strong relation between variables. The high multicollinearity might be

eliminated through the 1st difference of one the variables that are correlated to each other. Correlation matrix for this diploma thesis was estimated in Gretl using World Bank data.

**Figure 5:** The correlation matrix of variables

GDP	1.0000					
Exports	0.0982	1.0000				
Imports	-0.1518	0.6256	1.0000			
FDI	0.6294	0.1146	-0.0998	1.0000		
Debt	-0.9650	-0.2296	-0.1942	-0.5582	1.0000	
Unempl	-0.9129	0.3592	0.2674	0.5108	-0.9398	1.0000
	GDP	Exports	Imports	FDI	Debt	Unempl

**Source:** own calculations based on World Bank data

The figure 5 demonstrates that the dependent variable, GDP, demonstrates relatively high correlation with its explanatory variables. The highest correlation is with Debt variable (-0.9650), FDI variable (0.6294) and Unemployment variable (-0.9129). The other two variables given in this study has comparatively low correlation with dependent variable, Export and GDP (0.0982) and Imports and GDP (-0.1518). It denotes that that GDP has a strong linear relationship with Debt, FDI and Unemployment variables. It indicates that there is a substantial correlation between changes in the independent variables and changes in the dependent variable.

The high multicollinearity is determined if the results is higher than 0.8 or lower than -0.8. As it can be seen from correlation matrix, there is high multicollinearity between GDP and Debt variables (-0.9650) and GDP and Unemployment (-0.9129). However, as GDP is the dependent variable the high correlation between these two variables is not taken into consideration. It is a desirable correlation between endogenous and its explanatory variables. GDP and FDI variables (-0.6294) show relatively high multicollinearity, however, it is higher than -0.8 which means

that they don't have significant multicollinearity which might affect the result. Moreover, it shows the relation between endogenous and its explanatory variables. Exports and Imports variables also demonstrate relatively reasonable multicollinearity (0.6256). It might indicate relatively strong connection between imports and exports as well the tendency of corresponding changes. Another case of comparatively high multicollinearity is between FDI and Debt variables (-0.5582). This indicator might mean the dependency of a state on foreign investments for financing external debts. Other relationships of the variables demonstrated comparatively low multicollinearity. However, high multicollinearity was recorded between two independent variables, Unemployment and Debt (-0.9398). As the multicollinearity is lower than -0.8, it means that it might cause the problems of the interpretation, and significance of the model. High multicollinearity between two independent variables causes the difficulty of understanding each variable individually as it is harder to distinguish the effect of the similar variables. Moreover, such variables might duplicate the information it is providing for the prediction of the dependent variable. The elimination of the multicollinearity will be conducted with replacing the Unemployment variable with its 1<sup>st</sup> difference (Formula 3).

**Figure 6:** The correlation matrix of variables – modified

GDP	1.0000					
Exports	-0.0982	1.0000				
Imports	-0.1518	0.6256	1.0000			
FDI	-0.6294	-0.1146	-0.0998	1.0000		
Debt	0.9650	-0.2296	-0.1942	-0.5582	1.0000	
UnemplDif	0.5408	0.0899	0.0652	-0.4532	0.5571	1.0000
	GDP	Exports	Imports	FDI	Debt	UnemplDif

**Source:** own calculations based on World Bank data

After finding the values of the first difference of the variable Unemployment for the time series selected in this research, the new correlation matrix was conducted.

The multicollinearity was eliminated by 1<sup>st</sup> difference method. As it can be seen from the correlation matrix with 1<sup>st</sup> difference of Unemployment variable (Figure 6), there is no high multicollinearity have been detected between Debt and Unemployment. The multicollinearity coefficient is 0.5571 which is lower 0.8. After eliminating the multicollinearity, any elements or values that the variables have in common will not influence the significance and the accuracy of the analysis. Therefore, these two variables are valid for further steps of the regression analysis.

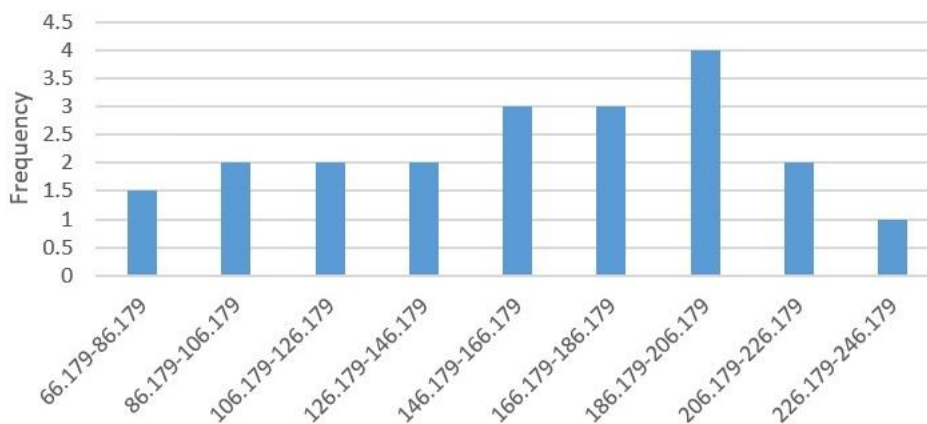
The evaluation of the relations between endogenous variable and its explanatory variables, as well evaluation of the correlation coefficients of the relation between independent variables demonstrated that all variables are relevant for this model. Therefore, these variables can be used for estimating the impact of the foreign trade on the economic growth and following steps of the empirical model.

#### **5.2.6. Distribution of the variables**

The distribution of the variables is an important step for the regression analysis. It demonstrates the way selected data points are dispersed across various values within a dataset. It explains the features, pattern, and form of the selected data. The sort of distribution that a variable has can vary according on the type of data. It allows to check if the analysis will be significant and accurate. Moreover, the variables of the regression analysis should be normally distributed. Normal distribution of the variables includes bell shaped distribution of the data. This type of distribution is considered ideal distribution (Krithikadatta, 2014). As the dataset was derived from real world experiences, the distribution cannot be ideally perfect. Consequently, there can be deviations of the normal distribution that can be also considered for the regression analysis (Krithikadatta, 2014). These deviations are skewness and kurtosis of the selected data. Skewness of the data refers to asymmetric right-tailed or left-tailed distribution around its mean. Therefore, the date might be skewed to the left of to the right side of the graph which will assert no changes are needed for the distribution of the variable. Kurtosis of the data refers to the way how a

dataset's data point distribution is shaped. A distribution with heavier tails and a more peaked center tendency is indicated by a positive kurtosis, whereas a distribution with lighter tails and a flatter central tendency is indicated by a negative kurtosis (Westfall, 2014). Knowing a dataset's kurtosis can help with statistical analysis and modeling since it sheds light on the dataset's divergence from a normal distribution.

**Figure 7:** Distribution of “GDP” variable

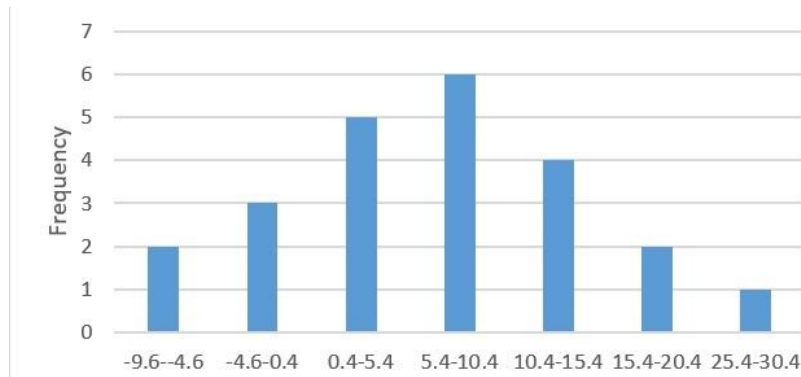


**Source:** own calculations based on World Bank data

The distribution of “GDP” (Figure 7) which is dependent variable is slightly skewed to the right side. The mean, median, and mode are all inclined to the right of the distribution's peak. It indicates that the data, despite its skewness, relatively follows the shape of a normal distribution. This shows that most observations are still centered around the distribution's central tendency. Therefore, the distribution of GDP can be considered normal and no modifications are required.

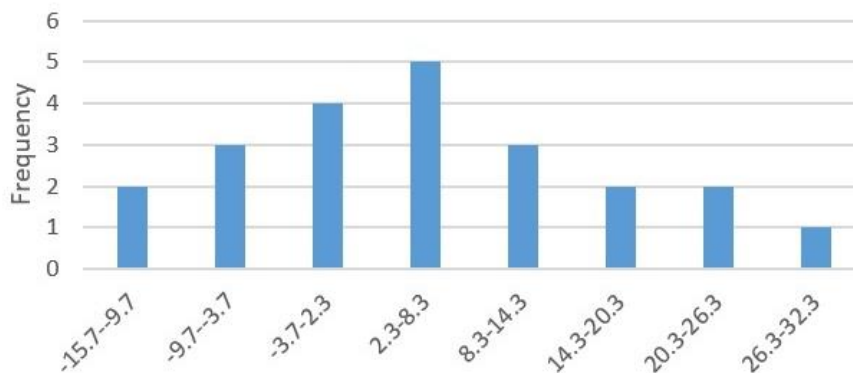
The variable “Exports” shows a bell-shaped normal distribution which can be seen in figure 8. It symmetric which can be seen that right and left sides of the curve are mirroring each other. The mean of the export value is distributed around 5.4-10.4 percentage points which is the highest point of the curve. Therefore, data of export values does not require any changes or modifications and can be used in the regression analysis.

**Figure 8:** Distribution of “Exports” variable



**Source:** own calculations based on World Bank data

**Figure 9:** Distribution of “Imports” variable



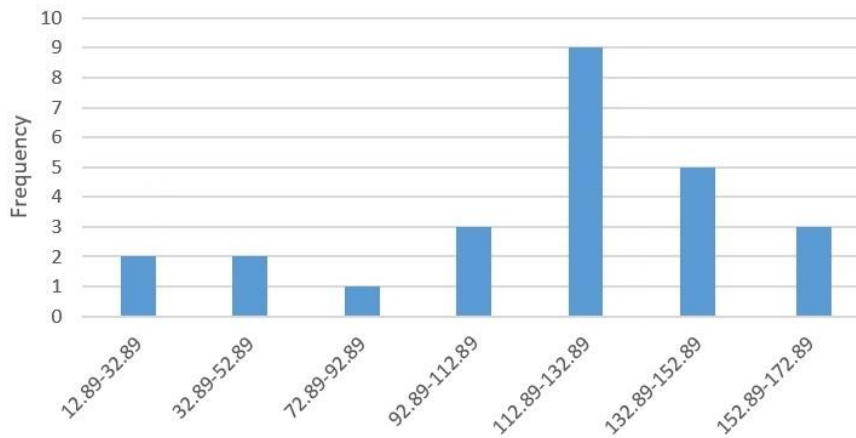
**Source:** own calculations based on World Bank data

The variable “Imports” demonstrates the normal distribution (Figure 9), as it can be seen from the graph it is a bell-shaped distribution. The mean of the import value is distributed around 2.3-8.3 percentage points. As the variable shows normal distribution, the import values do not require any modification to be estimated in the regression model.

The “Debt” variable is skewed to the right side which signifies the deviations from the normal distribution (Figure 10). The external debt stocks values are skewed to the positive side of the graph which means that there are more bigger numbers in the dataset than the smaller values.

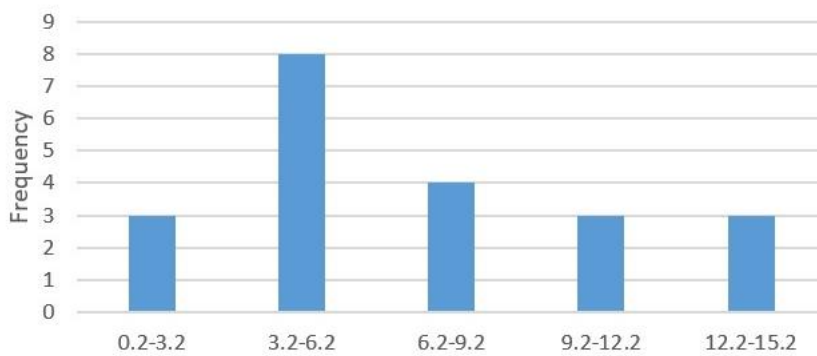
There is also moderate kurtosis of the data as the peak by the left side are slightly shorter than by the right side. However, the kurtosis is not extreme for this dataset. This variable does not require any changes or modification for the regression estimation because it is only moderately skewed to the right.

**Figure 10:** Distribution of “Debt” variable



**Source:** own calculations based on World Bank data

**Figure 11:** Distribution of “FDI” variable

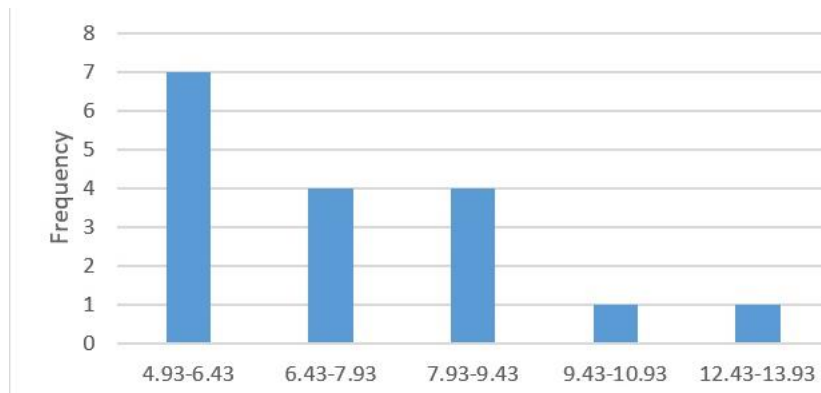


**Source:** own calculations based on World Bank data



Another explanatory variable “FDI” shows skewness to the left side which is a deviation from the normal distribution (Figure 11). It indicates that FDI values are skewed to smaller values. The modification of the variable is not required as the data are only slightly left-skewed.

**Figure 12:** Distribution of “Unemployment” variable

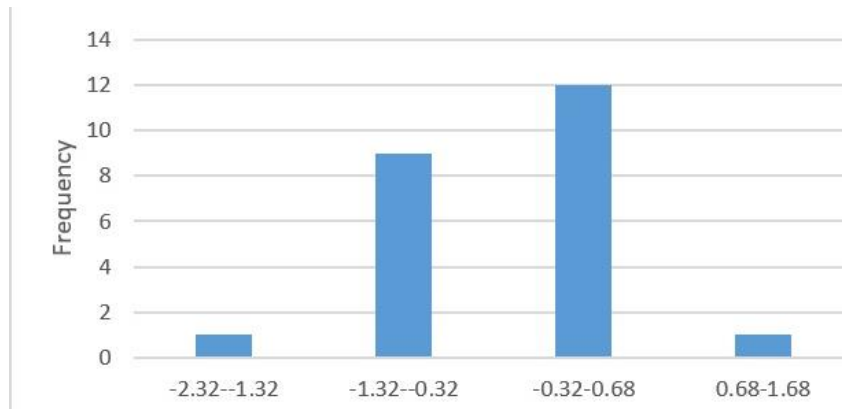


**Source:** own calculations based on World Bank data

The explanatory variable “Unemployment” shows skewness to the left side (Figure 12). It can be seen that the unemployment values immensely skewed to the left side showing the bias for negative observations. Therefore, this variable is deviated from normal distribution which is required for the regression analysis. However, the modification will not be done for this variable as the dataset was modified due to elimination of the high multicollinearity.

There was found high multicollinearity between “Debt” and “Unemployment” variables, hence for the accurate analysis the first difference of the variable “Unemployment” was taken for the model. The distribution of the first difference of the variable shows normal distribution in bell-shaped distribution (Figure 13). The mean of this variable is around -0.32 and 0.68 percentage points. The distribution shows kurtosis of the data as there are relatively higher peaks in the middle of the curve compared to the peaks by the left and right side. However, the values are mirroring each other. As the deviations are immense, the modifications are not required for this variable.

**Figure 13:** Distribution of “Unemployment 1st Difference” variable



**Source:** own calculations based on World Bank data

### 5.2.7. Summary statistics

The summary statistics provides a basic summary of the selected dataset which include metrics such as mean, median, standard deviation, minimum, and maximum values. Before performing more analysis, this exploration might help in understanding the distribution and characteristics of the data. The figure 14 presents the summary statistics for the regression model of this thesis made in Gretl.

Four variables of this study are presented in percentages, the other two GDP and Debt are presented in million US dollars. The mean value of the real GDP is 152.56 million US dollars. The mean value of the export dataset is 6.6138 percent of the annual growth of GDP. The mean value for import is 5.1087 percent. FDI’s mean value showed the result of 7.0957 percent. The mean for External Debt stocks dataset is 108.59 million US dollars. The mean value for the first difference of the unemployment dataset is -0.34130 percent.

The range of observation coverage is displayed by the variables' minimum and maximum values. The wider range between minimum and maximum values indicate more fluctuations. The variable of FDI shower smaller range between its maximum and minimum values which indicates steadiness during the chosen time frame. However, the range of the Debt variable is between 12.890 and 163.49 million US dollars for the selected period which suggests more

unplanned outcomes. As this variable is presented in million US dollars and not in percentage points, comparing its maximum and minimum values might not be accurate.

The medians of the variables do not immensely differ from their mean values which signifies of the normal distribution of each variable. It also means that the existed skewness of some of the variables are not significant.

**Figure 14:** Full summary statistics

Summary Statistics, using the observations 1 - 23				
Variable	Mean	Median	Minimum	Maximum
GDP	152.56	157.41	66.179	231.55
Exports	6.6138	5.7000	-9.6000	27.900
Imports	5.1087	3.9000	-15.700	28.000
FDI	7.0957	6.5600	0.20000	13.010
Debt	108.59	114.33	12.890	163.49
UnemplDif	-0.34130	-0.24000	-2.3200	0.71000
Variable	Std. Dev.	C.V.	Skewness	Ex. kurtosis
GDP	49.403	0.32383	-0.22250	-1.1573
Exports	8.4615	1.2794	0.45911	0.29230
Imports	11.745	2.2990	0.33159	-0.53417
FDI	3.9798	0.56087	0.19333	-1.2600
Debt	56.637	0.52156	-0.63817	-1.1774
UnemplDif	0.56616	1.6588	-1.7629	4.8854
Variable	5% Perc.	95% Perc.	IQ range	Missing obs.
GDP	67.966	228.18	87.678	0
Exports	-8.7000	26.233	9.8000	0
Imports	-14.860	27.620	14.600	0
FDI	0.57000	12.952	7.2100	0
Debt	13.380	163.39	115.09	0
UnemplDif	-2.0760	0.58600	0.50000	0

**Source:** own calculations based on World Bank data

The information on the dispersion or spread of values within a dataset can be obtained by interpreting the standard deviation in summary statistics. The standard deviation calculates each data point's average distance from the dataset mean. It measures how much variation or

dispersion there is in the selected data for the regression model. Greater variability or dispersion around the mean is indicated by a bigger standard deviation, whereas smaller standard deviations tend to show that the data points are closer to the mean. Comparing the standard deviation of the variables presented in percentage, the smallest deviations are for export and FDI variables. The import variable shows relatively high standard deviation – 11.745 which suggests that the data points spread out of the data mean. However, the standard deviation of import does not require any changes.

It can be observed from the summary statistics that the difference between minimum and maximum values of 5% and 95% is moderately small. It suggests a certain amount of consistency and minimal fluctuation in the main part of the data.

The normal distribution of each variable was examined in the chapter above. The summary statistics also shows the skewness and kurtosis of the data for each variable. It can be noticed that outcomes are relatively small which indicates the existence of the normal distribution for the variables of the estimated model.

One more necessary step of the summary statistics is to check missing variables. Regression models with missing observations present problems for the validity and dependability of the findings. As it can be seen from the picture there are no missing observations for any of the selected variables for this study.

### **5.2.8. Results**

The estimation of the regression model was conducted in Gretl with Ordinary Least Square method. The acronym Gretl represents "GNU Regression, Econometrics and Time-series Library." It is a cross-platform statistical analysis program made specifically for econometrics.

#### **Economic verification**

The economic verification is conducted according to estimated coefficients of each variable presented in figure 15. The econometric equation of the model are presented in formula 4.

If other variables are equal to zero, then the dependent variable real GDP is 65.67 million US dollars, *ceteris paribus*. It matches economic verification as the real GDP should always be presented as a positive number.

1 percentage point increase of Export of goods and services ratio is associated with increase of annual real GDP by 0.93 million US dollars, *ceteris paribus*. The result matches economic verification because higher export of good and services ratio should be correlated with higher GDP. Moreover, it was confirmed from the theoretical part of this study that export contribution to GDP relatively high which implies that export's influence is huge on the economic growth of Kazakhstan.

**Figure 15:** Ordinary Least Square model

Model 1: OLS, using observations 1-23					
Dependent variable: GDP					
	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
const	65.6653	12.5769	5.221	<0.0001	***
Exports	0.928432	0.387674	2.395	0.0284	**
Imports	-0.309296	0.270431	-1.144	0.2686	
FDI	1.34376	0.790830	1.699	0.1075	
Debt	-0.832429	0.0633915	-13.13	<0.0001	***
UnemplDif	-4.30827	5.48663	-0.7852	0.4431	
Mean dependent var	152.5567	S.D. dependent var	49.40281		
Sum squared resid	2258.972	S.E. of regression	11.52739		
R-squared	0.957929	Adjusted R-squared	0.945555		
F(5, 17)	77.41538	P-value(F)	4.35e-11		
Log-likelihood	-85.38805	Akaike criterion	182.7761		
Schwarz criterion	189.5891	Hannan-Quinn	184.4895		

**Source:** own calculations based on World Bank data

1 percentage point increase of Import of goods and services ratio is associated with decrease of annual real GDP by 0.31 million US dollars, *ceteris paribus*. It does not match economic

verification as import of good and services ratio should be associated with higher GDP values. The import's contribution to GDP of Kazakhstan was low comparing to export's contribution.

1 percentage point increase of FDI ratio is associated with increase of annual real GDP by 1.34 million US dollars, *ceteris paribus*. The result matches economic verification because higher FDI ratio should be correlated with higher GDP. As it was studied, FDI contribution to GDP should positively influence the economic growth of the country as it increases production and effectiveness.

1 percentage point increase of External debt stocks ratio is associated with decrease of annual real GDP by 0.83 million US dollars, *ceteris paribus*. The parameter matched the economic verification as the higher external debt stocks should associated with lower GDP values. It was observed that Kazakhstan has a high amount of external debt stocks which is even higher FDI received in a year. Therefore, it decreases the value of GDP.

1 percentage point increase of Unemployment ratio is associated with decrease of annual real GDP by 4.31 million US dollars, *ceteris paribus*. The parameter for Unemployment variable matched economic verification because higher unemployment ratio should be correlated to the lower GDP values. The unemployment rate of Kazakhstan is relatively high which signifies a negative influence on the economic growth of the country.

### **Statistical verification**

Statistical verification of this study includes t-test, r-squared interpretation, and p-value interpretation. It demonstrates the output of the estimated ordinary least square model and its validity. The t critical was calculated for this model.  $t\text{-critical}_{17, 0.05} = 2.12$ . As it can be seen from the result, it is two-tailed. The t-value of this model was estimated in Gretl (Figure 15) for each variable individually. When t-value is higher the t-critical, the variable is considered statistically significant.

For the first variable, constant, t-value 5.221 is higher t-critical, then it is statistically significant. The t-value of the second variable, export, is 2.395, hence it is statistically significant. The import variable's t-value is 1.144 which is lower than 2.12. It is not statistically significant. The same situation with the next variable – FDI. The t-value of the fourth variable is 1.699 which entails that the variable is not statistically significant. The t-value of the fifth variable is 13.13

which demonstrates statistical significance. The t-value of the variable Unemployment is 0.7852. It implicates that the variable is not statistically significant.

An R-squared value that is closer to 1 suggests that the independent variables account for a greater percentage of the variance in the dependent variable, indicating a better fit between the model and the data. On the other hand, a number that is closer to 0 indicates that the dependent variable's variability is not well explained by the model. Coefficient of determination of the model of this thesis is  $R^2 = 0.957929$ . The Adjusted  $R^2 = 0.945555$ , which expected to be lower than  $R^2$ . According to the coefficient of determination result, the variation of the selected explanatory variables in the model accounts for 95.79% of the variance in the annual real GDP.

P-value helps to measure the strength of the evidence in support of a  $H_0$ . If the p-value is lower than the significance level which is 0.05, then  $H_0$  is rejected. In case, p-value is higher than the significance level then there is no evidence to reject  $H_0$ .

The constant or unit vector has a significant p-value (6.92e-05), as it is lower than 0.05 significance level. Significant p-value of the constant variable indicates that the dependent variable has an anticipated value that is not zero, even in the case where all independent variables are zero or nonexistent. Therefore, null hypothesis can be rejected.

The p-value for export variable is 0.0284, which is lower than the significance level 0.05.  $H_0$ : The higher rate total export of good and services is negatively correlated with the GDP of the country. The null hypotheses can be rejected. Consequently, the higher rate is positively correlated with GDP of Kazakhstan. The higher rate of total export of goods and services, the higher the GDP.

The p-value for import is 0.2686 which is higher than the significance level. The null hypothesis is failed to be rejected.  $H_0$ : The higher rate of total import of good and services is negatively correlated with the GDP of Kazakhstan. Therefore, it shows that the higher rate of the import of goods and services the lower the GDP value of the country.

The p-value for FDI variable is 0.1075, which is lower than 0.05 and the null hypothesis is failed to be rejected.  $H_0$ : The higher rate of FDI is negatively correlated with the GDP of Kazakhstan.

The p-value for the debt variable is 2.51e-010, which is significantly lower than 0.05. The null hypothesis is rejected which indicates that the higher rate of debt contributes to the smaller rate

of GDP of Kazakhstan.  $H_0$ : The higher rate of external debt stocks is positively correlated with the GDP.

The p-value of the 1<sup>st</sup> difference of Unemployment variable is 0.4431 which is higher than the significance level. The null hypothesis is failed to be rejected.  $H_0$ : The higher rate of unemployment is positively correlated with the GDP.

### Econometric verification

The econometric of this study includes Breusch-Pagan test (Figure 16) and test for Normality of residuals (Figure 17) which were both conducted in Gretl. It demonstrates the validity of the output of the estimated model in this study.

#### Figure 16: Breusch-Pagan test

Breusch-Pagan test for heteroskedasticity  
 OLS, using observations 1-23  
 Dependent variable: scaled uhat^2

	coefficient	std. error	t-ratio	p-value
const	0.591360	1.29099	0.4581	0.6527
Exports	0.0666716	0.0397937	1.675	0.1121
Imports	-0.00581304	0.0277590	-0.2094	0.8366
FDI	0.0103021	0.0811765	0.1269	0.9005
Debt	-0.000410298	0.00650696	-0.06306	0.9505
UnemplDif	-0.0759758	0.563188	-0.1349	0.8943

Explained sum of squares = 5.99501

Test statistic: LM = 2.997505,

with p-value =  $P(\text{Chi-square}(5) > 2.997505) = 0.700371$

**Source:** own calculations based on World Bank data

Breusch-Pagan test is determining the presence of the heteroskedasticity in the regression model. Heteroskedasticity is a scenario where the variance of the errors (residuals) is not constant across all levels of the independent variables. When this assumption is not met, estimations of the regression coefficients may become skewed and ineffective, which compromises the validity of statistical inference and hypothesis testing.



- $H_0$ : Heteroskedasticity is not present in the regression model
- $H_1$ : Heteroskedasticity is present in the regression model

P-value is 0.700371 which is higher than the significance level (0.05). Therefore, the null hypothesis cannot be rejected. Heteroskedasticity is not present in the estimated model of this thesis.

**Figure 17: Normality of residuals**

Frequency distribution for residual, obs 1-23  
 number of bins = 7, mean = -7.41436e-015, sd = 11.5274

interval	midpt	frequency	rel.	cum.
< -14.256	-17.394	1	4.35%	4.35% *
-14.256 - -7.9790	-11.117	4	17.39%	21.74% *****
-7.9790 - -1.7020	-4.8405	7	30.43%	52.17% *****
-1.7020 - 4.5750	1.4365	4	17.39%	69.57% *****
4.5750 - 10.852	7.7135	3	13.04%	82.61% ****
10.852 - 17.129	13.991	3	13.04%	95.65% ****
>= 17.129	20.268	1	4.35%	100.00% *

Test for null hypothesis of normal distribution:  
 Chi-square(2) = 0.462 with p-value 0.79377

**Source:** own calculations based on World Bank data

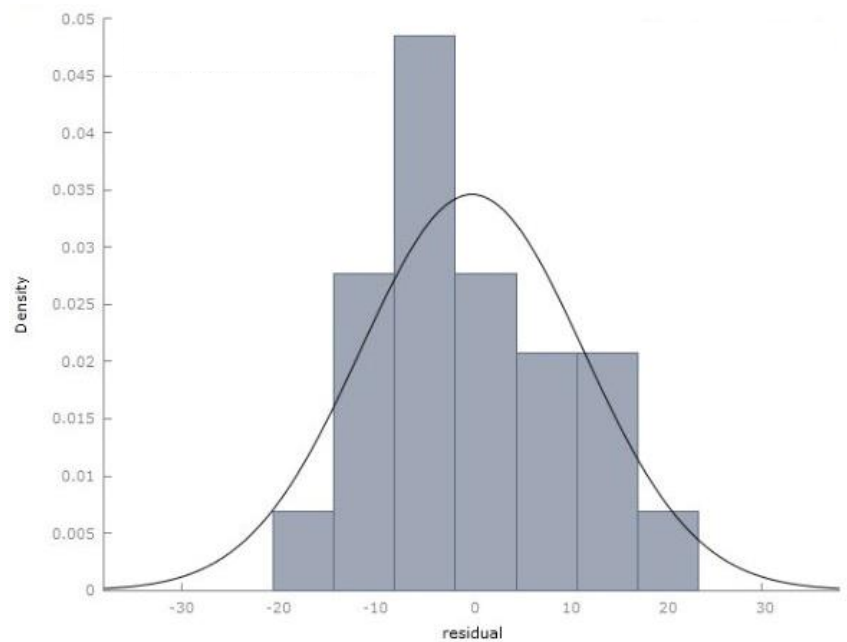
An essential step in regression analysis is determining if the residuals are normal. Since many statistical tests and procedures require that the residuals, which are also called errors, are normally distributed, residual normality is important. The validity of statistical inferences and hypothesis tests based on the regression model may be impacted if the residuals exhibit a large deviation from a normal distribution.

- $H_0$ : random errors are normally distributed
- $H_1$ : random errors are not normally distributed

P-value is 0.79377 which is more than the significance level (0.05). Consequently, the null hypothesis cannot be rejected. Random errors are normally distributed, there is no large deviation from normal distribution.

As it can be seen from the histogram (Figure 18), estimated in Gretl, the residuals are following the pattern of normal distribution with slightly skewness to the left side. As long as there is no large deviation from the normal distribution, no modifications are required.

**Figure 18:** Normality of residuals - Histogram



**Source:** own calculations based on World Bank data

### **5.2.9. Conclusion and discussion**

This regression model is aimed to evaluate the effect of the foreign trade on the economic growth of Kazakhstan in the period from 2000 to 2022. The model is one-equation model with Real GDP as the endogenous variable. The explanatory variables of this model are unit vector, total exports, total imports, foreign direct investment, external debt stocks and unemployment rate. The estimated model has 3 statistically significant variables the parameters of which

matched the economic verification. There was a multicollinearity between two variables which are Debt and Unemployment, hence, first difference of the unemployment variables was applied to eliminate multicollinearity. The model's significance was demonstrated as expected by all of the used econometric tests, and the coefficient for determination was moderately high - 95.79%.

Four hypotheses were confirmed by the regression model of this thesis. It was expected that the increase in the total exports of goods and services positively impacts the economic growth, which was presented by the GDP. Moreover, the variable is statistically significant. Another hypotheses that were confirmed is that the increase in external debt stocks negatively impacts economic growth of Kazakhstan. This variable is statistically significant. The other two hypotheses were confirmed; however, the variables were not statistically significant. The increase in FDI has a positive effect on the GDP values. The increase in unemployment rate has a negative effect on the economic growth of the state. The hypothesis of total imports of goods and services did not have an expected effect on the GDP and it was not statistically significant.

Other models, that were mentioned in Chapter 3.2, were studying the effect of the foreign trade indicators on the economic growth of Kazakhstan. The results of this model are matching with two similar models on Kazakhstan's economic growth. The study (Syzdykova et al., 2019) on the relationship of GDP and export and import demonstrated that export positively impacts the economic growth of Kazakhstan. Therefore, the higher the export values the higher the GDP values. Another study (Lee et al., 2009) examined the relation between FDI and GDP of Kazakhstan. The result of this study corresponds to the result of the estimated model in this thesis. The higher FDI, the higher GDP but the relations are not highly significant. However, the results were corresponding with the model of the study by Agayev (2011) because the researcher examined 15 countries at the same time which might have been a reason for a different result. Another reason might have been different time series as the study was conducted in 2011, and this thesis included the time series from 2000 till 2022. It was determined that export does not have an impact on the economic growth of Kazakhstan, when the result of the model of this thesis showed the opposite result.

## 6. Conclusion

This main objective of this thesis was to analyze the foreign trade of the Republic of Kazakhstan. By conducting comprehensive research through the literature review, SWOT analysis and estimation of the ordinary least square model, the following objectives were achieved:

- Examined the trends in exports and imports of the Republic of Kazakhstan;
- Analyzed the impact of relationships between Kazakhstan and neighboring countries on the Kazakhstan's trade;
- Estimated the significance of the effect of foreign trade on economic growth of Kazakhstan in the period of 2000-2022;
- Identified strengths, weakness, opportunities and threats of the foreign trade of Kazakhstan.

Kazakhstan's foreign trade is an important part of the economic growth of the state. The country

The analysis conducted with SWOT method the strengths, weaknesses, opportunities and threats of Kazakhstan's foreign trade was identified. Main advantages are abundance of natural resources, FDI attractiveness, participation in international organizations such as WTO and EAEU, as well as established trade agreements with neighboring countries. Moreover, geographical location of Kazakhstan was indicated as an advantage but also as a threat to its foreign trade. The main weaknesses of the Kazakhstan's international trade are dependency on commodities, high amount of external det, corruption in the country, and technological gaps. The opportunities that Kazakhstan can benefit from foreign trade are participation in the Belt & Road Initiative to strengthening the infrastructure and trade relations with other participant countries. However, there are some threats were indicated such as geopolitical location, domestic instability, oil prices fluctuations and exchange Rate fluctuations.

The OLS model aimed to estimate the significance of the impact of the foreign trade on the economic growth of Kazakhstan. The comprehensive analysis of each variable was conducted in order to have effective and significant results. As a part of the results of the estimation of the model, economic, statistical and econometric verifications were made. Economic verification included verification with current economic aspects of the outcome of the model estimation. Statistical verification consisted of analyzing and evaluating p-value, adjusted R-squared and t-test. Econometric was done through Breusch-Pagan test and Normality of residuals. The model

demonstrated that export has an effect on the Kazakhstan's GDP, the higher the export the higher the economic growth. Moreover, the external debt has an opposite negative effect on Kazakhstan's economic growth, hence higher rate of external debt leads to the decrease of GDP.

All the approaches of this thesis showed the significance of the export of the goods and services as a part of the foreign trade of Kazakhstan and its positive effect on the economic development. Moreover, the results of this thesis matched to the outcomes of the academic researches that was discussed in the literature review. SWOT analysis summarized and sorted the trends and challenges of Kazakhstan's foreign trade that were mentioned in the theoretical part of the thesis. Consequently, the effective and comprehensive research was conducted to understand the trends and challenges of the foreign trade as well its impact on the economic development of Kazakhstan.

The findings of this thesis might be used for the decision making of the foreign trade policy creations. Kazakhstan's foreign trade is vulnerable to the relations with its neighboring countries, mostly with China and Russia. Therefore, it is important to maintain stable relations and establish foreign trade outside the central Asia. Moreover, Kazakhstan's economy needs diversification policies, as it is mostly based on exporting goods and services. The export showed a positive impact on economic growth; however, the external debt of the state is relatively high and has a negative influence. The possible policies that could be implemented are infrastructure development, attracting more foreign direct investment by offering favorable incentives, strengthening the economy by reducing the dependence on Russia and China.

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