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Field of study
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Department of Sociology, Economic
Theory and International Processes
38.04.01 Economics
International Economics and Business

GRADUATION THESIS

on

Development of oil trade between China and Russia

Master's degree student

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Department of Sociology, Economic Theory and International Processes
Field of study 38.04.01 Economics,
Master's degree programme International Economics and Business

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ASSIGNMENT
FOR THE GRADUATION THESIS OF

Master's degree student Guo Feng, group 23ЭЭВам1, full-time mode of study

1 The topic of the graduation thesis: "Development of oil trade between China and Russia"

was approved by the university order

dated « ____ » _____ 20 ____ no. _____

2 The deadline for the Master's degree student to complete the graduation thesis is 11.06.2025.

3 The input data for the graduation thesis is the regulatory and legal framework, scientific literature and reference books, and Internet data.

4 The list of issues to be studied includes development of trade between Russia and China, economic and trade strategies of Russia and China, production and demand structure of oil in China, development of oil trade between Russia and China, current situation of oil trade between Russia and China, favorable conditions for oil trade between Russia and China, external advantages and challenges of cooperation in oil trade between Russia and China, development strategies of oil trade between Russia and China.

5 The list of visuals contains tables and figures.

6 The date of setting the assignment is 7.09.2023.

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(signature) (full name)

The assignment was accepted by Master's degree student _____ / Guo Feng /
(signature) (full name)

Schedule for completing the graduation thesis

№ п/п	Content of the thesis	Deadline for completion	Due date, signature of the academic adviser
First year of study			
1	Substantiating of the research topic and methodology, subject and object of research	1.09.2023 – 31.10.2023	
2	Framing the scientific concept of research	1.11.2023 – 18.12.2023	
3	Collection of scientific literature for the thesis	19.12.2023 – 15.01.2024	
4	Substantiating the relevance, concept, and novelty of the research	16.01.2024 – 19.02.2024	
5	Framing of a detailed plan and layout of the research	20.02.2024 – 12.03.2024	
6	Studying new literature sources within the topic of the thesis	13.03.2024 – 26.03.2024	
7	Conducting theoretical research within the first chapter of the thesis	27.03.2024 – 30.04.2024	
8	Preparing the first chapter of the thesis	1.05.2024 – 30.06.2024	
Second year of study			
9	Conducting analytical research within the second chapter of the thesis	1.09.2024 – 22.10.2024	
10	Preparing the second chapter of the thesis	23.10.2024 – 24.12.2024	
11	Conducting analytical research within the third chapter of the thesis	25.12.2024 – 25.02.2025	
12	Preparing the third chapter of the thesis	26.02.2025 – 21.04.2025	
13	Preparing the introduction and conclusion	22.04.2025 – 12.05.2025	
14	Completing the graduation thesis	13.05.2025 – 26.05.2025	
15	Handing in the thesis for compliance control and antiplagiat	27.05.2025 – 9.06.2025	
16	Getting acquainted with the feedback and review	10.06.2025	
17	Presenting the written thesis	11.06.2025	

Academic adviser _____ / Vlazneva S. A. /
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The assignment was accepted by Master's degree student _____ / Guo Feng /
(signature) (full name)

Summary

The graduation thesis comprises 62 pages, 3 chapters, 13 figures, 3 tables, 66 sources.

ENERGY COOPERATION, ENERGY RESOURCES, CHINA, RUSSIA, ENERGY TRADE

The object of this research is international energy markets.

The subject is current state and prospects of Russian-Chinese cooperation in oil trade.

The research purpose is to analyze the current state and development prospects of China-Russia oil cooperation.

The methodological framework of the paper is formed by system approach, analysis and synthesis, statistical and comparative methods. To display identified economic dependencies graphical method was applied.

The results of research include: development of trade between Russia and China was studied, economic and trade strategies of Russia and China were examined, production and demand structure of oil in China was overviewed, development of oil trade between Russia and China was studied, current situation of oil trade between Russia and China was analyzed, favorable conditions for oil trade between Russia and China were determined, external advantages and challenges of cooperation in oil trade between Russia and China were examined, development strategies of oil trade between Russia and China were examined.

The novelty of the work is trends and prospects for the development of energy trade cooperation of China and Russia in oil are revealed.

The theoretical and practical significance of the research is that the conclusions made in the thesis form the basis for further research of energy cooperation of China and Russia. The results of the research can be used in the teaching of educational disciplines «World Economy», «International Economic Relations», «International Trade».

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Introduction

The rapid development of the global economy, particularly the strong impetus from industrialization, has led to a sharp increase in oil and energy demand in many countries. This phenomenon underscores the indispensable role of oil as an economic engine. In today's globalized world, where economies are closely interconnected, the economic development of any country heavily relies on the robust support of oil and energy. Among various energy sources, oil resources hold a central position in the energy strategies of countries. As early as the early 1970s, former U.S. Secretary of State Henry Kissinger predicted: «Whoever controls oil controls all countries». Entering the 21st century, despite major economies continuously increasing their investment in new energy fields and actively exploring alternatives to oil and energy-saving methods, oil's role as a cornerstone of economic development remains unshaken in the short term. Oil is not only a key force driving the continuous advancement of the economy and society but also a vital pillar of fiscal budgets and foreign exchange earnings. For example, in Russia, fossil fuels, especially oil exports, hold an absolute dominant position in its foreign trade structure, making Russia a leader in the global oil industry. Russian oil exports contribute more than 30 % to the country's GDP and nearly half of its fiscal revenue.

However, the economic sanctions imposed by Western countries on Russia, combined with the sharp drop in international oil prices, have posed unprecedented challenges to countries heavily dependent on oil exports. The dual impact of these sanctions and the oil price crash has severely hindered economic development, disrupting the balance of international payments and impacting the real economy. This has led to a series of issues, including a decline in retail trade, currency depreciation, reduced fixed capital investment, and increased inflation. After the outbreak of the Russia-Ukraine conflict in 2022, the United States not only imposed multiple economic sanctions on Russia but also worked with Western allies to isolate Russia economically. By the end of that year, the share of Russian crude oil in the EU's total imports had sharply dropped to

just 4 %. In March 2023, the EU took further action by imposing the sixth round of sanctions, banning the maritime transport of Russian crude oil. The ripple effects of these events are most directly reflected in Russia oil industry and the decline in living standards, which have severely impacted Russia's social and economic activities and significantly reduced its share of global oil exports.

Amidst the economic sanctions imposed by European and American countries on Russia, Russia has significantly adjusted its oil export strategy, with a focus on strengthening cooperation with Asian countries, particularly China. First, Asia, especially the Asia-Pacific region, is one of the most dynamic and vibrant regions in the global economy, with a strong demand for oil resources. However, most countries in this region have insufficient oil production and heavily rely on external oil imports to meet their needs. In this context, China's economy has grown rapidly, becoming the world's second-largest economy. Despite its relatively abundant domestic oil resources, China has become the world's largest net importer of oil due to its massive demand. It is projected that by 2026, China's dependence on imported oil will exceed 70 %, highlighting the significant gap between supply and demand. Meanwhile, China's substantial oil demand has attracted the attention of major global oil-producing countries. For China, ensuring the security and stability of oil import channels and the reliability of oil resource supply have become critical issues concerning national security. From Russia's perspective, its geographical proximity to the Asia-Pacific region and its convenient land and sea transportation conditions provide strong support for efficient and cost-effective oil exports to this region. Additionally, Russia has established strategic partnership with China, the largest oil consumer in the Asia-Pacific region, which not only offers significant geopolitical advantages but also lays a solid foundation for bilateral cooperation. Currently, Russia has exported a substantial amount of oil resources to China. According to statistics, between 15 % of China's crude oil imports came from Russia, second only to Saudi Arabia, highlighting the close cooperation between the two countries. However, by 2023, this proportion had significantly increased, with Russia becoming the largest source of growth

in China's crude oil imports and the top supplier, accounting for 19 % of China's total crude oil imports. The primary driver behind this significant increase was the price discounts resulting from sanctions and the crude oil price cap policy. Therefore, ensuring the stability of oil trade cooperation between Russia and China has become a critical issue that both countries need to address together.

Master thesis focuses on the development of oil trade between Russia and China in recent years, deeply analyzes the economic development of oil trade between Russia and China, studies the current situation, favorable conditions and challenges, and finally puts forward reasonable suggestions and countermeasures to solve these problems.

The object of this research is international energy markets.

The subject is current state and prospects of Russian-Chinese cooperation in oil trade.

The research purpose is to analyze the current state and development prospects of China-Russia oil cooperation. In order to achieve it we need to complete the following tasks:

- to introduce the importance of energy trade to China's economy, examine primary energy production in China and describe the energy demand structure of China;
- to overview the current state of Russian-Chinese energy cooperation in oil;
- to examine the obstacles to oil cooperation between Russia and China;
- to determine required directions for China and Russia in oil sector.

The novelty of the work is trends and prospects for the development of energy trade cooperation of China and Russia in oil are revealed.

The theoretical and practical significance of the research is that the conclusions made in the thesis form the basis for further research of energy cooperation of China and Russia. The results of the research can be used in the teaching of educational disciplines «World Economy», «International Economic Relations», «International Trade».

This thesis extensively gathers a diverse range of literature, including articles, newspapers, online journals, and statistical databases, focusing on the issue of Russian oil

exports to China. It provides a comprehensive summary of the research findings from these sources. Building on this solid foundation, we further select literature closely related to the theme of this paper to ensure a deep and thorough understanding of the research topic.

This thesis meticulously gathers and organizes detailed data on the oil trade between Russia and China, followed by a systematic classification and organization of this data. Throughout the data processing, we rigorously verify the completeness and accuracy of the data to ensure the reliability of our analysis. Through a thorough analysis of these data, we uncovered the structure and progress of the oil trade between Russia and China, and conducted an in-depth examination of the existing issues and future trends, ultimately producing a comprehensive and insightful report.

This paper, grounded in thorough theoretical analysis and adhering to the scientific principle of linking theory with practice, aims to explore effective strategies to boost Russia's oil exports to China with the aim to offer valuable advice and strategies for Russia's expansion in the Chinese oil market. We think that through these efforts, both Russia and China can not only deepen their cooperation in the oil trade sector but also reap substantial benefits from this mutually beneficial development.

Master thesis studies the oil trade between China and Russia. Based on the theoretical foundation of Sino-Russian cooperation in Chapter 1, the main reasons for the trade between China and Russia are analyzed, and an evaluation of the oil trade between China and Russia is made. Chapter 2 mainly focuses on the economic analysis of the oil trade between the two countries. Chapter 3 looks forward to the future development trend of oil trade between China and Russia, analyzes the establishment of a reasonable oil and gas cooperation market between China and Russia, and strengthens the political security of enterprises.

Chapter 1 The development of trade between Russia and China

1.1 Overview of the development of trade between Russia and China

In 2023, bilateral trade between Russia and China experienced rapid growth, marking a historic breakthrough. According to Chinese customs statistics, the trade volume of goods between Russia and China reached 240.11 billion dollars, up 26.3 % year-on-year. Specifically, China's exports to Russia amounted to 110.97 billion dollars, up 46.9 % year-on-year, while China's imports from Russia were 129.14 billion dollars, up 12.7 % year-on-year. The growth in trade between Russia and China significantly outpaced the overall growth of China's foreign trade, becoming a new growth driver for China's foreign trade. In recent years, the development of trade between Russia and China has seen a significant improvement in quality, with the complementarity of bilateral trade further enhanced (figure 1.1).

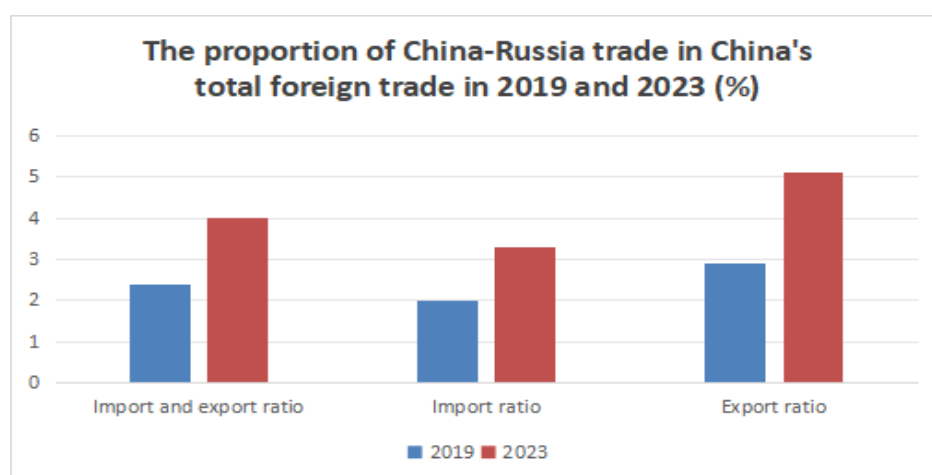


Figure 1.1 – The proportion of China-Russia trade in China's total foreign trade in 2019 and 2023 (%) [14]

The figure shows that in 2023, the share of trade between Russia and China in China's total foreign trade increased significantly, from 2.4 % in 2019 to 4 %. Specifically, the share of exports rose from 2 % to 3.3 %, and the share of imports

increased from 2.9 % to 5.1 %. Russia has become China's fourth-largest trading partner and the largest trading partner in Europe. According to Russian statistics, in 2023, Sino-Russian trade accounted for 34.8 % of Russia's total foreign trade, 45 % of its imports, and 28 % of its exports. By 2025, China is expected to maintain its position as Russia's largest trading partner for the 15th consecutive year (figure 1.2).

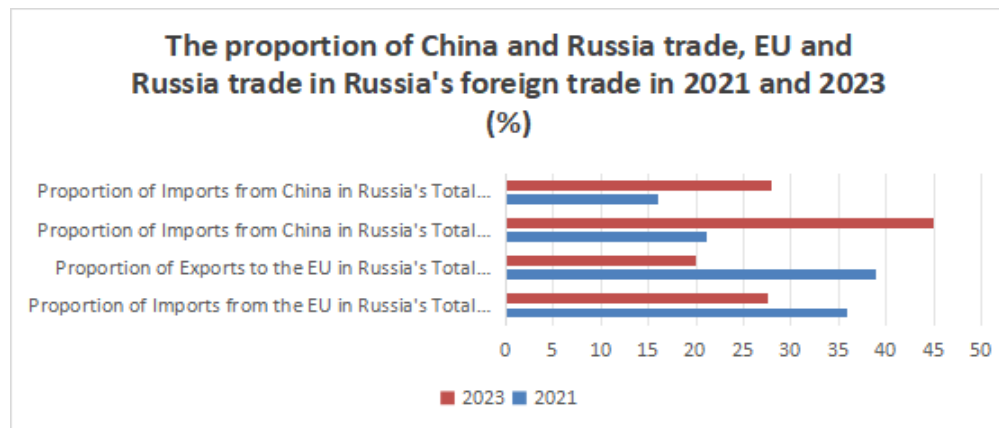


Figure 1.2 – The proportion of China and Russia trade, EU and Russia trade in Russia's foreign trade in 2021 and 2023 (%) [14]

European companies, affected by sanctions, have withdrawn from the Russian market, creating new trade opportunities for Chinese products and significantly boosting the level of trade in goods between Russia and China. According to Russian statistics, China's share of Russian exports rose from 16.1 % to 28 % between 2021 and 2023, while its share of Russian imports increased from 21.1 % to 45 %. In contrast, the EU's share of Russian exports fell from 38.9 % to 20 %, and its share of Russian imports dropped from 35.8 % to 27.5 %. This shift has significantly altered their trade dynamics, enhancing the closeness of trade relations between Russia and China (figure 1.3).

In 2023, China's trade deficit with Russia was 18.07 billion dollars, accounting for 7.5 % of the bilateral trade volume, a significant decrease from 38.1 billion dollars in 2022. The chart shows that China's trade deficit with Russia is at its lowest level in five years, only slightly higher than the 6.1 % recorded in 2020. The improvement in trade balance is beneficial to the healthy development of bilateral trade [63].

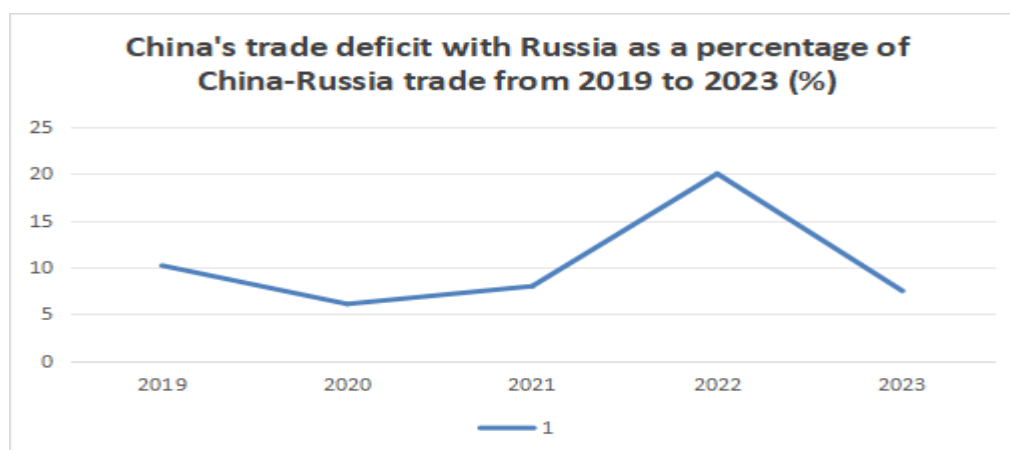


Figure 1.3 – China's trade deficit with Russia as a percentage of China-Russia trade from 2019 to 2023 (%) [14]

Table 1.1 shows top ten provinces with the Largest Import and Export Scale to Russia in 2023.

Table 1.1 – Top Ten Provinces (Autonomous Regions, Directly Under the Central Government) with the Largest Import and Export Scale to Russia in 2023 [14]

Ranking	Import and export			Export			Import		
	Provincial	Amount (Billion US Dollars)	Proportion in the nation, %	Provincial	Amount (Billion US Dollars)	Proportion in the nation, %	Provincial	Amount (Billion US Dollars)	Proportion in the nation, %
1	Shandong	369	15.4	Zhejiang	189	17	Shandong	268	20.7
2	Heilongjiang	299	12.5	Guangdong	160	14.5	Heilongjiang	258	20
3	Zhejiang	264	11	Shandong	102	9.2	Beijing	219	16.9
4	Beijing	257	10.7	Jiangsu	97	8.8	Shanghai	83	6.4
5	Guangdong	203	8.5	Anhui	74	6.7	Zhejiang	76	5.8
6	Jiangsu	156	6.5	Shanghai	48	4.3	Jiangsu	59	4.6
7	Shanghai	131	5.5	Hebei	45	4.1	Liaoning	58	4.5
8	Fujian	89	3.7	Heilongjiang	41	3.7	Fujian	54	4.2
9	Liaoning	78	3.3	Beijing	39	3.5	Guangdong	43	3.3
19	Anhui	78	3.2	Fujian	34	3.1	Neimenggu	23	1.8

Currently, 13 provinces and regions in China rank among the top 10 in terms of trade volume with Russia. The table shows that in terms of imports and exports, Shandong Province, Heilongjiang Province, Zhejiang Province, Beijing Municipality, and Guangdong Province are the top five in terms of trade volume with Russia. In terms of exports to Russia, coastal provinces have a clear advantage, with Zhejiang Province, Guangdong Province, Jiangsu Province, Shandong Province, and Anhui Province, major manufacturing provinces, showing strong competitiveness and ranking in the top five. In terms of imports from Russia, Shandong Province, Heilongjiang Province, Beijing Municipality, Shanghai Municipality, and Zhejiang Province lead the way. The industrial strengths of these provinces and cities provide significant support for trade with Russia.

1.2 Economic and trade strategies of Russia and China

Russia and China stand together in the evolving new international landscape, where their comprehensive strategic partnership in the new era has become a model of win-win cooperation, advancing pragmatically according to their own logic. As globalization accelerates and the international situation becomes more complex, the enduring and friendly relationship between China and Russia has garnered significant attention. As two major countries with friendly relations, the development of their comprehensive strategic partnership in the new era is an inevitable trend in the development of bilateral relations and a significant reflection of the transformation of international relations in the new era. The principles of non-alliance, non-confrontation, and non-targeting of any third party and free from interference or disruption by any third party of the comprehensive strategic partnership in the new era between Russia and China are of great significance to regional and global peace and stability.

The joint construction of the Belt and Road is a benefit brought to the world by China's solution. The Belt and Road initiative is gaining acceptance from an increasing number of countries, and China's support for the eight high-quality actions of the Belt and Road has injected new vitality into the high-quality development between China and other countries. Russia, which connects Europe and Asia geographically, holds a significant

position in the Belt and Road initiative. The figure 1.4 shows Russia's oil and natural gas production.

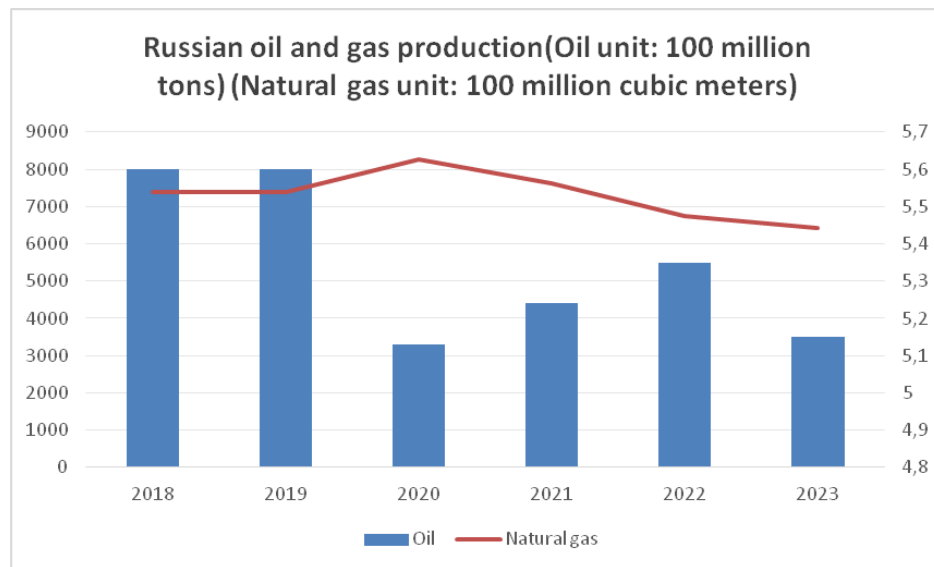


Figure 1.4 – Russian oil and gas production (oil unit:100 million tons) (natural gas unit:100 million cubic meters) [14]

With the introduction and gradual development of the Belt and Road initiative, Russia has shown a growing interest in participating in and supporting the joint construction of Belt and Road, bringing more opportunities to the development of Russia-China relations. In economic cooperation, China has signed agreements with the Eurasian Economic Union (EAEU) regarding the Belt and Road initiative, enhancing the alignment of the Belt and Road strategy with the EAEU. In recent years, Russia has placed greater emphasis on the healthy development of economic and trade relations with the member states of the EAEU. On October 22, 2024, President Xi Jinping held talks with President Putin in Kazan, Russia, during the 16th BRICS Summit. During the talks, he emphasized that both sides should continue to promote the deep integration of the Belt and Road initiative and the EAEU, providing impetus for the high-quality development of their economies. The alignment of the Belt and Road initiative with the EAEU aims to improve the livelihoods of countries in the Eurasian region, working together with more like-minded nations to build a community with a shared future for mankind, forming a large-scale, multi-dimensional, and multi-sectoral economic cooperation model.

The prospects of open innovation and inclusive mutual benefit form the economic foundation for building a community with a shared future for mankind. In recent years, trade between Russia and China has seen robust growth, with significant improvements in both scale and structure, making it a standout highlight in bilateral relations. In 2018, bilateral trade exceeded 100 billion dollars for the first time. In 2019, this figure rose to 110 billion dollars, accounting for 16.6 % of Russia's total foreign trade. Despite the severe impact of the pandemic in 2020, trade between Russia and China still surpassed 100 billion dollars. In 2023, Russia achieved the 200 billion dollars trade target set by the leaders of both countries ahead of schedule, becoming China's sixth-largest trading partner. In 2024, Russia became China's fifth-largest trading partner, with the total bilateral trade reaching 244.8 billion dollars, marking a 1.9 % increase from 2023 and setting a new record [14].

From 2014 to 2024, the trade volume between Russia and China has shown a steady upward trend, making both countries vital trading partners for each other. The trade cooperation between the two nations has deepened, with a growing emphasis on local currency settlements. In 2024, over 95 % of the trade between Russia and China was settled in either the Chinese yuan or the Russian ruble. This increased reliance on local currencies has not only improved trade efficiency but also reduced dependence on third-party currencies. The introduction of local currency settlements marks a significant step forward in the economic relationship between the two countries. In the Russian market, Chinese mobile phones, domestic cars, and digital products are highly favored by consumers, while Russian dairy products, chocolate, honey, flour, and beverages are increasingly becoming part of Chinese households. By 2024, China had been Russia's largest trading partner for 15 consecutive years [14].

As the trade structure continues to optimize, from the initial focus on resource exports and agricultural products to the current diversified cooperation in high-tech sectors such as artificial intelligence and biotechnology, the trade relationship between Russia and China has become increasingly close, with mutual investments steadily increasing. Chinese companies are investing in various sectors, including energy, infrastructure, and agriculture, while Russian companies are primarily involved in machinery and engineering

contracting in China. The governments of both countries have signed bilateral investment protection agreements and other measures to provide a solid legal foundation for mutual investment, further promoting the deepening of investment cooperation. Additionally, both Russia and China have made progress in major landmark projects and small but beautiful livelihood projects. Major landmark projects cover areas such as energy, aerospace, and satellite navigation, while small but beautiful livelihood projects focus on clean energy cooperation. The implementation of these projects has injected fresh and sustainable vitality into the pragmatic cooperation between Russia and China.

As Russia's pivot to the East strategy is implemented, the country is increasing its investment in the Far East, the Asia-Pacific region, and the Arctic from a national level. Starting in 2025, the first international advanced development zones will be established in Russia's Far East. This pivot to the East has brought more opportunities for cooperation between Russia and China, leading to increasingly close infrastructure collaboration. Cross-border transportation between Russia and China has seen significant progress in recent years, boosting economic and trade cooperation. The cross-border railway, road, and oil and gas pipeline projects jointly promoted by Russia and China have not only strengthened economic interconnectivity but also boosted economic development in border regions. In June 2022, the Heihe-Belgorodskaya boundary river road bridge was officially opened. This bridge is not only the first road bridge across the Heilongjiang River between Russia and China but also a new international transport channel for cross-border connectivity, facilitating the implementation of the Belt and Road initiative. In Northeast Asia and the Far East, Russia and China are working together to promote regional economic integration, accelerating the development of the Northeast Asian Economic Circle and injecting new vitality into the economic development of both countries and neighboring nations [47]. In 2023, Russia and China further increased their cross-border transportation cooperation in multiple areas, including road, rail, sea, and air transport. The trial operation of the China-Mongolia-Russia International Road Transport on Line 4 of the Asian Highway Network (AH4) has promoted the deep integration of local economies in Russia and China. Meanwhile, the new land food corridor projects between Russia and China have opened new routes for railway transportation in the

eastern regions of both countries, significantly enhancing cargo transport efficiency. Some Chinese ports now offer new shipping routes to Russia's Far East, such as the container liner route from Quanzhou Port in Fujian to Russia's Far East, the Russia-China Express Line between Qingdao and Vladivostok (Vladivostok), and the container maritime route from Nansha Port in Guangdong to Vladivostok. Additionally, in August 2024, the two countries established a subcommittee for Arctic shipping cooperation, and in November of the same year, they held their first meeting of the Arctic shipping subcommittee. The focus was on shipping development, navigation safety, polar vessel construction, and technology development, with the aim of promoting cooperation in Arctic shipping. The Arctic shipping routes between Russia and China have not only improved logistics efficiency but also met a growing demand for cross-border freight. Direct cargo flights from China to Russia have greatly increased the cargo capacity between the two countries. These developments reflect the rapid diversification and efficiency of transportation cooperation between Russia and China, further solidifying their deep economic and trade ties. In the field of crude oil pipeline construction, the oil and gas pipelines between Russia and China have become a new artery of the century connecting the two countries. By the end of 2010, the full operation of the crude oil pipeline between Russia and China was completed, and on January 1, 2011, Russia began supplying crude oil to China through this pipeline. In December 2024, the eastern route of the natural gas pipeline between Russia and China, which crosses permafrost areas, was fully operational. Once operational, the pipeline will steadily supply 38 billion cubic meters of natural gas annually to multiple regions, including Northeast China, Beijing-Tianjin-Hebei, and the Yangtze River Delta [10]. This will fully meet the needs of residents and businesses along the route, enhancing the stability and security of regional energy supplies, and injecting new momentum into the high-quality economic and social development of these areas. As infrastructure improves, energy cooperation between Russia and China will also strengthen, contributing to greater stability in the global energy landscape.

1.3 Production and demand structure of oil in China

From 2010 to 2023, China's crude oil production experienced a cyclical pattern of growth-decline-recovery: from 2010 to 2015, thanks to stable production in conventional oil fields like Daqing and Shengli, the demand from industrialization and urbanization, and the stabilize oil and increase gas policy, production steadily increased from 20 million tons to over 21 million tons, with an average annual growth of 2 million tons. Technologies for developing low-permeability oil reservoirs, such as those used in the Changqing Oilfield, laid the foundation for this growth; from 2016 to 2020, due to the long-term low international oil prices since 2014, the natural decline of older oil fields like Daqing and Shengli, the immaturity of unconventional oil and shale oil technologies, and the experimental stage of deep-sea oil technology, along with the impact of the rise in demand from new energy electric vehicles and wind power, production declined to below 19 million tons, reaching a ten-year low in 2018. Despite the recovery of oil prices from 2017 to 2018, growth was limited due to the contraction of upstream investment and the lag in capacity release, such as the 2 million tons annual production of Jimsar shale oil in 2019 and the impact of the epidemic on transportation fuel in 2020. From 2021 to 2023, the energy security demands following the Russia-Ukraine conflict led to a policy of enhancing independent supply and increasing oil and gas reserves. Key achievements included Daqing Gulong shale oil with predicted reserves exceeding 1 billion tons, breakthroughs in unconventional oil technology for shale oil horizontal well fracturing, and international leadership in deep-sea oil drilling. Changqing shale oil production reached over 3 million tons in 2023, while the annual production of deep-sea oil in the western South China Sea exceeded 15 million tons, driving production recovery. The post-pandemic economic recovery boosted transportation and chemical demand, leading to an increase in crude oil-to-olefins demand, which reached over 205 million tons in 2023, returning to 2015 levels. During this period, changes in production reflected fluctuations in international oil prices and advancements in domestic resource development technology, from conventional to unconventional. It also demonstrated the strategic adjustment of energy security to reduce import dependence to about 70 %, thereby enhancing the

resilience of independent supply. Looking ahead, the industry must address the challenges of reducing costs in tertiary oil recovery using chemical flooding and CO₂ flooding in old oil fields, the high costs of developing unconventional oil (over 100 million yuan per well), cost reduction through intelligent and factory operations, and the long-term replacement of electric vehicles and hydrogen energy to curb the peak demand for crude oil. Through technological innovation, such as large-scale development of shale oil, efficient exploration of deep-sea oil, and diversified domestic production with overseas cooperation to optimize the connection between oil and gas and new energy, the industry can ensure short-term energy security while promoting long-term green transformation, achieving high-quality development in the oil and gas sector, and supporting the stability of the national energy system and the goal of carbon neutrality. Figure 1.5 shows China's crude oil production from 2010 to 2023.

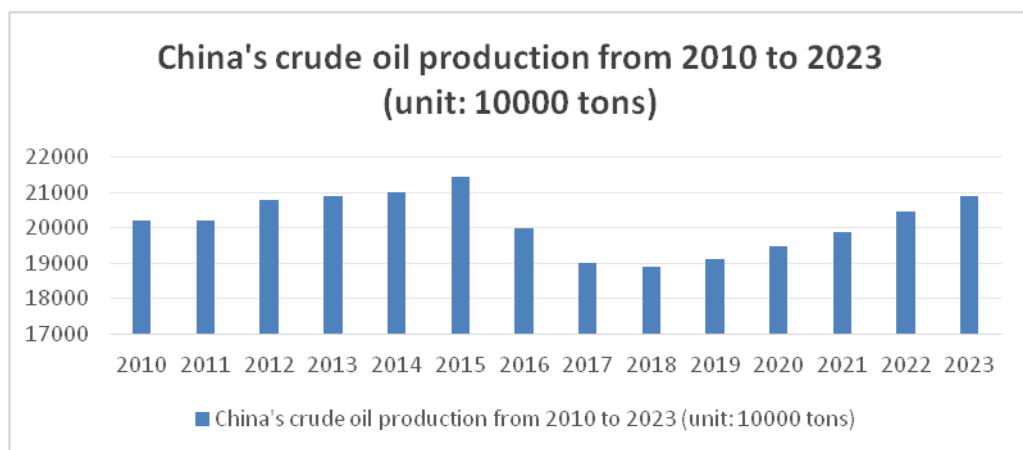


Figure 1.5 – China's crude oil production from 2010 to 2023 (unit:10000 tons) [14]

From 2010 to 2023, China's natural gas production steadily increased from approximately 100 billion cubic meters to 235.3 billion cubic meters, through three stages of development: 2010–2015, relying on conventional gas fields such as Changqing and Tarim, supported by the 12th Five-Year Plan energy strategy and low-permeability gas reservoir technology, with an average annual increase of 8 billion cubic meters, laying a solid foundation; 2016–2020, leveraging the large-scale development of Fuling shale gas, the 'coal-to-gas' policy, and breakthroughs in unconventional drilling technology, coupled with the surge in industrial, power generation, and civilian clean energy demand, with an

average annual increase of 10 billion cubic meters, entering an acceleration phase; 2021–2023, driven by the dual carbon goals and energy security, advancements in deep-sea gas fields like Lingshui 17-2 and coalbed methane, along with improvements in deep-sea drilling, tight gas development, and pipeline infrastructure for the China-Russia East Line, led to a rapid increase in production, averaging over 10 billion cubic meters annually, reaching a peak in 2023, with unconventional gas accounting for more than 40 %. During this period, key milestones such as the Changqing gas field producing 100 billion cubic meters in 2012, Fuling shale gas surpassing 10 billion cubic meters in 2017, and exceeding 200 billion cubic meters in 2021, along with policy support, increased reserves, production, and technological advancements in unconventional gas extraction, were crucial drivers. This process optimized the energy structure, with natural gas accounting for over 10 %, contributing to coal reduction and carbon emission reduction. The technology for shale gas and deep-sea gas is internationally leading, making China a global model for clean energy transition. In the future, China needs to deal with peak demand forecasting, exploration cost control and international market linkage, deepen the production, supply, storage and marketing system, consolidate energy security and carbon neutrality through technological innovation of hydrogen energy coupling and CCUS, continue to play the role of natural gas as a low-carbon transition bridge, promote China's energy green transformation, and contribute to global climate governance. China's natural gas production from 2010 to 2023 is shown in figure 1.6.

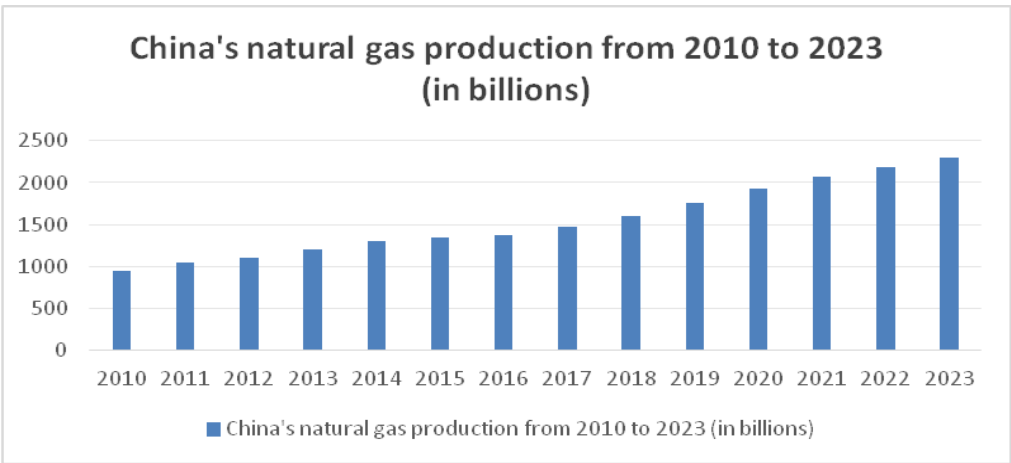


Figure 1.6 – China's natural gas production from 2010 to 2023 (in billions) [14]

In 2018, China's total crude oil consumption reached 625 million tons, driven by rapid economic growth, which led to a continuous rise in demand for industrial production and transportation. However, domestic crude oil production fell by 1.3 % to 189 million tons, with the dependence on imported crude oil rising to 69.8 %. The low average annual price of Brent crude oil at 71 dollars per barrel led to a significant increase in refinery utilization rates, with the annual crude oil processing demand increasing by 7 % year-on-year. In 2019, crude oil demand increased to 668 million tons, driven by a 6.1 % GDP growth rate, which boosted diesel demand through infrastructure construction and manufacturing expansion. Despite the Seven-Year Action Plan aimed at strengthening oil and gas exploration and development, China's self-sufficiency in crude oil remained limited (with an external dependence of 71.7 %), and the decline in international oil prices to 64 dollars per barrel resulted in a 6.91 % increase in crude oil demand that year. In 2020, China's crude oil demand stabilized at 700 million tons. As one of the first major economies to recover (with a GDP growth rate of 2.2 %), the resumption of industrial production and the recovery of automobile consumption, coupled with the historic drop in international oil prices (reaching a low of 16 dollars per barrel), prompted refineries to implement strategic reserve purchases, leading to a recovery in crude oil processing volumes and a record-high annual crude oil import volume of 542 million tons. In 2021, the total demand remained at 700 million tons, with economic resilience evident (with a GDP growth rate of 8.4 %). The demand from chemical raw materials, steel smelting, and transportation sectors provided support, and refineries operated at full capacity. The substitution effect of new energy had not yet significantly impacted the total demand for traditional energy. In 2022, the total crude oil demand slightly decreased to 719 million tons. The epidemic control measures imposed phased constraints on transportation and industrial production, leading to a sharp 31.7 % year-on-year decline in aviation kerosene demand. Amid high international oil prices (averaging 100 dollars per barrel) and the penetration rate of new energy vehicles surpassing 27.6 %, the annual crude oil consumption experienced its first negative growth of 0.6%. In 2023, the total demand rebounded to 756 million tons (a 5.1 % increase year-on-year), driven by economic recovery (GDP growth of 5.0 %), which led to a 74 % surge in aviation kerosene demand

and a 37 %–38 % increase in chemical fuel oil demand. As large-scale integrated refining projects began operations, crude oil processing capacity increased to 735 million tons, and crude oil imports reached a record high of 564 million tons. Figure 1.7 shows China oil demand.

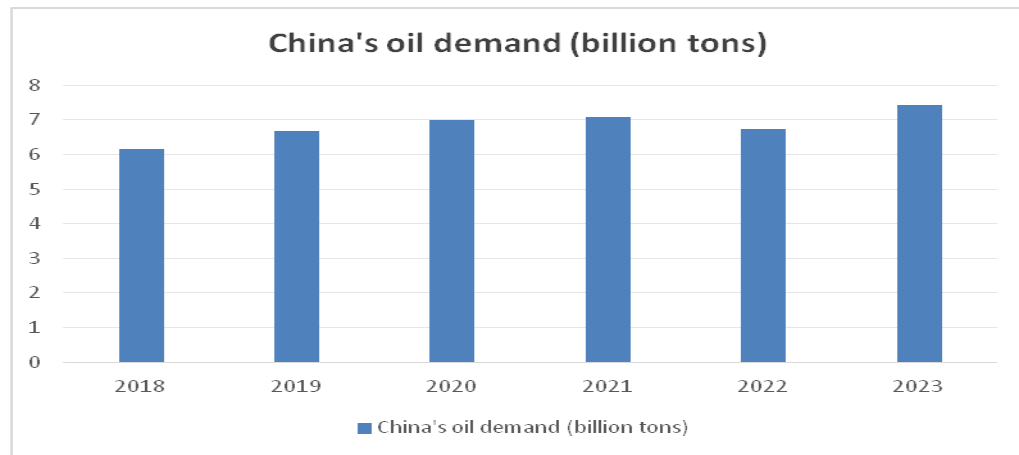


Figure 1.7 – China's oil demand (billion tons) [14]

Between 2018 and 2023, China's natural gas consumption exhibited a three-stage evolution: steady growth, short-term fluctuations, and a strong rebound. In 2018, natural gas consumption reached approximately 280 billion cubic meters, driven by economic growth, the implementation of the coal-to-gas policy, and the optimization of the energy structure. In 2019, consumption increased to 300 billion cubic meters, driven by the expansion of the coal-to-gas project and the improvement of storage and transportation infrastructure. In 2020, consumption reached 320 billion cubic meters, experiencing a brief decline at the beginning of the COVID-19 pandemic, but recovering as production resumed and the natural gas's role as a transitional energy source was recognized under the dual carbon goals. In 2021, consumption surged to 380 billion cubic meters, driven by economic recovery, the substitution effect of high international crude oil prices, and the ongoing efforts of clean energy policies. In 2022, consumption was slightly adjusted to 370 billion cubic meters, constrained by the normalization of epidemic control, significant fluctuations in international natural gas prices, and the expansion of renewable energy generation. In 2023, consumption rebounded to 450 billion cubic meters, reflecting the effects of a comprehensive economic recovery and the downward trend in international

gas prices, as well as the deepening of policy support. Research indicates that the medium to long-term growth in natural gas demand is primarily influenced by economic development levels, the intensity of coal-to-gas policy implementation, the constraints imposed by the dual carbon goals, and the elasticity coefficient of energy substitution. Short-term fluctuations are closely linked to public health events, supply-demand mismatches in the international energy market, and the capacity to absorb new energy sources. It is projected that between 2024 and 2025, China's natural gas consumption will grow at an average annual rate of 8 % to 10 %, with its share in the terminal energy consumption structure expected to exceed 12 %.

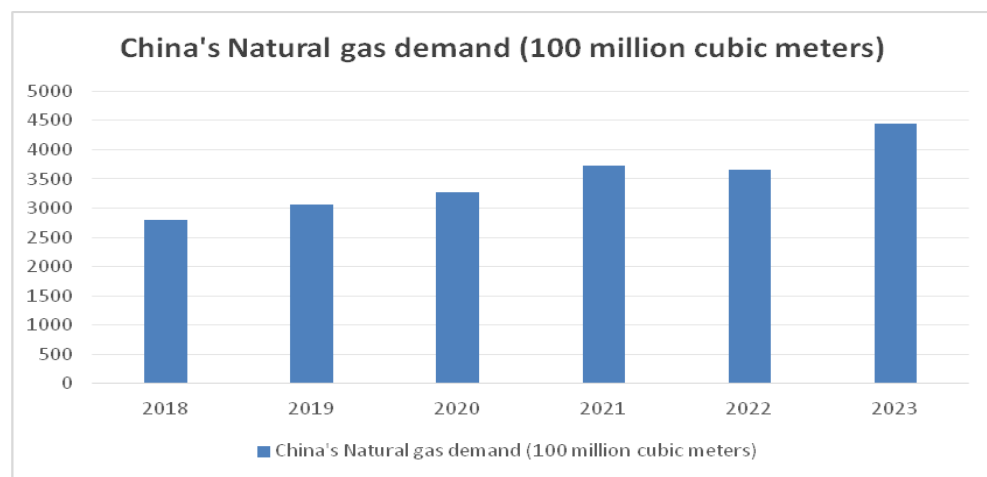


Figure 1.8 – China's Natural gas demand (100 million cubic meters) [14]

The application scenarios will expand into strategic areas such as power peak regulation and energy storage, and industrial low-carbon transformation. Empirical analysis shows that natural gas plays a dual role in the energy system transition, serving both as a transitional energy source and a peak regulation support. The dynamic changes in its consumption elasticity coefficient not only reflect the objective trend of clean energy consumption upgrades but also mirror the evolution of the energy demand structure during economic recovery. This will continue to provide crucial support for the construction of an energy security system and the implementation of low-carbon development strategies.

Chapter 2 The current situation and favorable conditions of oil trade between Russia and China

2.1 The development of oil trade between Russia and China

Between 1992 and 2004, the oil trade between Russia and China was in an exploratory phase. During this period, despite China's economic adjustment and growth, the country's relatively abundant domestic oil production meant that the demand for imported oil was not urgent. Meanwhile, Russia had just emerged from the turmoil of the Soviet Union's dissolution, with its domestic economic order still in disarray, making it difficult to invest significant effort into oil trade with China. Therefore, the two countries primarily relied on existing railway lines for oil transportation to reduce the economic burden and administrative workload of government departments. However, starting from 2000, as the demand for expanding oil trade between the two countries became increasingly evident, relying solely on railway transportation could no longer meet the growing needs. The governments and relevant departments of both Russia and China began actively exploring the feasibility of constructing a transnational oil pipeline. The Russian government and the management of the state oil company showed strong interest in increasing oil exports to China. Both sides signed several letters of intent and memorandums to promote the in-depth development of oil trade and expressed high support for the specific plans for laying the pipeline, with a willingness to further negotiate. In this context, in 1995, facing the severe challenges of domestic economic turmoil and fiscal deficits, the Russian government proposed the construction of an oil pipeline connecting Russia and China's borders, aiming to revitalize oil exports to China to alleviate the domestic economic crisis. In 1998, Russia and China jointly planned the Ande Line oil pipeline, connecting the Angarsk oil field in Irkutsk Oblast, Russia, to the Daqing oil field in China, and engaged in enthusiastic discussions on this plan. The following year, the Russia-China Energy Cooperation Committee was officially established, marking a new phase in the development of bilateral cooperation in the oil and energy sectors. In August 2000, during the meeting between the Prime Ministers of Russia and China, both

sides reaffirmed the planned route of the Angerai Line, demonstrating their strong commitment to cooperation. After years of negotiation and effort, by March 2002, Russia and China reached a consensus on the core issue of constructing the oil transportation pipeline, and jointly planned to officially launch the construction of the Angerai Line in 2003 [1].

However, subsequent developments diverged significantly from the initial agreements. By the end of 2002, Russia's domestic economy began to show signs of recovery. To further expand its presence in the Asia-Pacific oil market, Rosneft decided to adjust or even abandon the Angda Line agreement and introduced the innovative Anana Line plan. This new route, starting from Russia's East Siberia and reaching the port of Nakhodka on the Pacific coast, provided a smoother route for Russian oil to reach the Asia-Pacific countries, quickly gaining President Putin's approval and praise. As a potential beneficiary, Japan highly praised the Anana Line and expressed a strong willingness to cooperate, offering substantial financial support for the development of Russian oil fields and the construction of oil pipelines. Considering the interests, Russia carefully considered and abandoned the Angda Line, focusing instead on the Anana Line. However, in May 2003, after weighing the future development possibilities with China, the Russian government proposed merging the Angda Line and Anana Line and prioritizing the construction of a new branch line to Daqing, China, on the Anana Line. Unfortunately, as circumstances evolved, this merger proposal was ultimately not implemented [53].

Between 2005 and 2009, the oil trade between Russia and China entered a golden era of steady growth. Long-standing issues with oil pipelines were resolved, and both sides agreed to prioritize the construction of a pipeline from East Siberia to Nakhodka on the Pacific coast as the main route for oil exports to China, with a priority on building a branch line to Daqing. However, the pipeline construction was slow and often stalled. In early 2006, Russia and China agreed to jointly advance the construction of the Tena Line and prioritize the Daqing branch line, signing a major agreement to lay the groundwork. However, the continuous rise in international oil prices posed significant challenges to Russian government decision-making, leading to repeated delays in the construction plan.

Fluctuations in international oil prices became a critical factor affecting the progress of oil trade between Russia and China. In 2008, the global financial crisis erupted, causing international oil prices to fluctuate dramatically. The price of New York crude oil futures fell to a historical low, only about 40 % of its peak level. However, the crisis unexpectedly spurred substantial development in oil trade between Russia and China. The Russian oil production sector suffered significant losses, leading to a decline in foreign exchange earnings and financial difficulties. In response, both sides reached an agreement on loans for oil. The Russian government applied to the China Development Bank for a long-term loan of 25 billion dollars, with a term of 20 years, promising to export 15 million tons of oil to China annually over the next 20 years. Although this agreement was reached under special historical circumstances, it marked a shift towards a more stable and sustainable phase in the oil trade between Russia and China [12].

Since 2010, the oil trade between China and Russia has significantly accelerated, entering a substantive development phase. On January 1, 2011, the oil transportation line from Skovorodino, Russia, to Daqing, China, officially began operations, marking a new era in the oil trade between Russia and China. This pipeline has an annual crude oil transmission capacity of 15 million tons. Since then, Russia's oil exports to China have deepened, and the level of cooperation has gradually increased. On June 22, 2013, at the St. Petersburg International Economic Forum, China National Petroleum Corporation (CNPC) and Rosneft signed a landmark long-term oil supply agreement. The agreement stipulates that over the next 25 years, Russia will steadily supply China with a total of 365 million tons of oil resources, valued at 270 billion US dollars, and will gradually increase the supply based on the current annual oil transmission level. Notably, on January 1, 2014, the contract for increasing crude oil supply through the China-Kazakhstan crude oil pipeline came into effect, with a five-year term aimed at gradually increasing the annual oil transmission to 30 million tons. After the contract expires, there is an option to renew for another five years, making the entire contract term 25 years with an additional five-year renewal right. Additionally, the Russian government has committed to increasing the crude oil supply to the Tianjin refinery, a joint venture between Russia and China, by 9.1 million tons annually, further solidifying the foundation of bilateral cooperation. After

multiple rounds of in-depth negotiations, the main institutions responsible for oil imports in China and the Russian government finally reached a consensus. This agreement marks a significant achievement in the oil trade between Russia and China and signifies a historic breakthrough in Russia's oil exports to China. The total amount of oil imported by China from Russia is shown in figure 2.1.

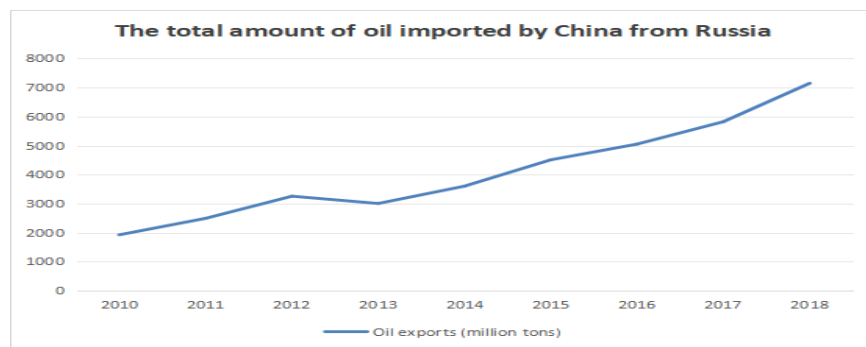


Figure 2.1 – The total amount of oil imported by China from Russia [14]

In recent years, the oil trade relationship between Russia and China has become increasingly close, marking a new phase of deep cooperation. Russia has long been China's largest crude oil supplier, although it was briefly overtaken by Saudi Arabia from 2019 to 2022. To gain more control over global oil prices, Saudi Arabia has implemented several measures, including production cuts, to influence market supply and demand.

Specifically, in October 2022, OPEC+ announced a significant decision to cut production by 2 million barrels per day until the end of 2023, with Saudi Arabia committing to a reduction of 500,000 barrels per day. Following this, Saudi Arabia proposed additional cuts in April and November 2023. After several rounds of production cuts, Saudi Arabia's daily output has been reduced to approximately 9 million barrels, significantly below its original capacity of 12 million barrels per day.

Meanwhile, the outbreak of the Russia-Ukraine conflict in 2022 led to Russia being comprehensively encircled, sanctioned, and contained by Western countries, led by the United States, which had a profound impact on the global energy market. In this context, Russia increased its oil exports to Asian countries like India and China, and by offering discounts on Russian oil, it successfully reclaimed its position as China's largest crude oil

importer. Data shows that in 2023, Russia exported 107 million tons of crude oil to China, a 24 % increase from the previous year, marking the first time it surpassed the 100 million ton mark. This figure accounted for about 19 % of China's total crude oil imports that year, allowing Russia to once again surpass other major oil-producing regions, such as the Middle East, to become China's largest oil supplier.

In terms of price, China imported Russian crude oil at a rate of approximately 77.38 dollars per barrel last year, a decrease of about 16 % from the previous year. This price was lower than both Saudi Arabia's supply price (85.53 dollars per barrel) and the average import price for Chinese crude oil (81.6 dollars per barrel). This competitive edge has further boosted Russia's competitiveness in China's oil market.

On May 16, 2023, Russia and China released a joint statement in Beijing titled On Deepening the Comprehensive Strategic Partnership of Coordination in the New Era on the Occasion of the 75th Anniversary of the Establishment of Diplomatic Relations. The statement emphasized the commitment to continuously strengthen and achieve high-level development in strategic cooperation in oil and energy between Russia and China, ensuring the economic and energy security of both countries. It also stressed efforts to ensure the stability and sustainability of the international energy market, as well as the stability and resilience of the global energy industry and supply chains [51].

In May 2024, Russia agreed to the construction of the third railway transportation line the China-Kyrgyzstan-Uzbekistan Railway. To boost economic development and trade in Asia, Europe, and the Caucasus region, China proposed the construction of this railway in 1997, linking China, Kyrgyzstan, and Uzbekistan. The three countries signed a memorandum of understanding on the project that year, but it was ultimately shelved due to Russian opposition. Russia's opposition to the China-Kyrgyzstan-Uzbekistan Railway stems from two main concerns: first, it fears that China's rise will threaten Russia's influence in Asia, and second, it is concerned that the railway's operation might harm Russian interests.

Since the Cuban Missile Crisis, the Soviet Union's overall national strength began to decline, ultimately leading to its collapse. After the collapse, many former Soviet republics declared independence, and Russia, as the primary successor of the Soviet legacy, remains

a formidable force. With the Soviet Union gone, Russia naturally took on the role of a counterweight to the United States. However, Russia is well aware that to resist American hegemony, it must maintain significant control over Asia. Thus, when China proposed cooperation with Uzbekistan and Kyrgyzstan, Russia was concerned that China's rise would undermine its influence in Asia and that the completion of the railway would put Russia at a disadvantage. Given their strong dependence on Russia, these two countries, under Russian opposition, naturally did not dare to act independently.

However, the situation has changed since then, especially after the outbreak of the Russia-Ukraine conflict. Russia has become increasingly aware of China's importance in Asia and globally, recognizing China's firm stance, which is why Putin changed his mind. Once the China-Kyrgyzstan-Uzbekistan railway is operational, it will be a win-win for Russia. Although China has clearly stated that it will not intervene in the Russia-Ukraine conflict, it can still engage in normal trade with Russia. Since the outbreak of the Russia-Ukraine conflict, the United States has imposed multiple economic sanctions on Russia and, in conjunction with Western allies, isolated Russia economically. In such a challenging situation, only China has the capability and courage to engage in economic cooperation with Russia. Therefore, Russia's change of attitude towards the China-Kyrgyzstan-Uzbekistan railway is a very wise move.

On the surface, Russia's economic environment appears stable. However, the ongoing conflict between Russia and Ukraine, which has lasted for over two years, has already placed a heavy burden on Russia's economy. It is unrealistic for Russia to hope that the China-Kyrgyzstan-Uzbekistan railway alone can reverse its economic difficulties. Therefore, during his visit to China in May 2024, Putin officially decided to jointly develop the Arctic route with China, a move that is highly attractive to China. Although the Arctic is a frigid and desolate region, it is rich in resources and serves as a crucial site for various scientific research. In this regard, Russia holds a natural advantage in the Arctic. During the Cold War, the Soviet Union established an Arctic route to explore the region, which allowed Russia to move swiftly between Asia, Europe, and America. Recognizing the importance of the Arctic route, Russia has been reluctant to open it up, even if it lacks the resources to utilize it. The current decision by Russia to share the Arctic

route with China clearly demonstrates its eagerness to cooperate with China. The total amount of oil imported by China from Russia in the past five years is presented in figure 2.2.

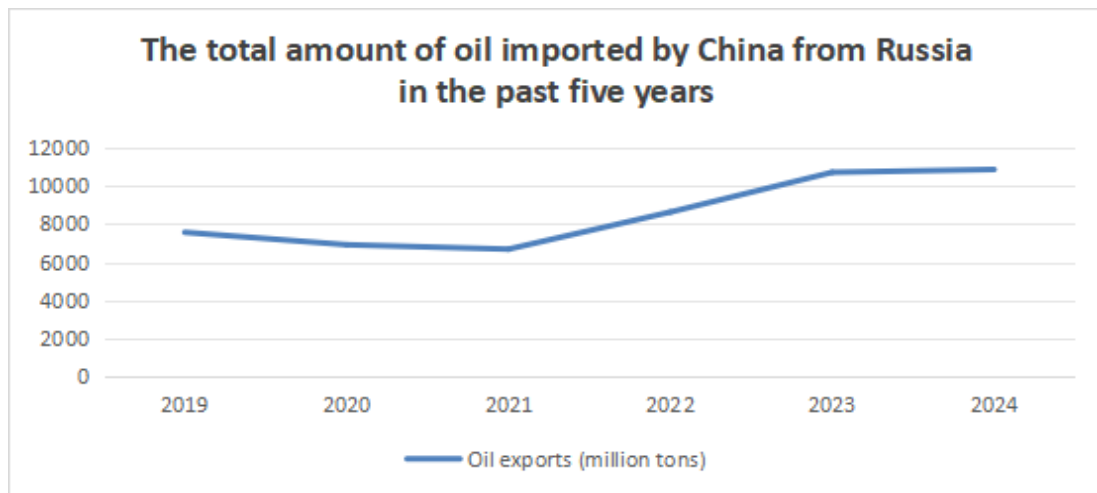


Figure 2.2 – The total amount of oil imported by China from Russia in the past five years [14]

Due to its geographical location, China's imports and exports often require detours through the Pacific Ocean. Many of the areas along China's maritime routes are under Western control. In recent years, the United States and the West have increasingly resorted to intimidation and pressure against China. Therefore, China urgently needs to establish a new route to ensure the efficiency and safety of its imports and exports. Just as China was struggling to find a solution, Russia's opening of the Arctic route has completely alleviated this concern [32]. With this Arctic route, China can not only significantly reduce the frequency of being constrained by the United States and the West but also save a substantial amount of costs in its import and export trade. As a result, the oil trade cooperation between Russia and China is growing stronger.

2.2 Current situation of oil trade between Russia and China

An analysis of the regional structure of Russia's oil export trade reveals that, as the world's largest country in terms of territory, Russia boasts the richest oil and energy resources, ranking it as the world's leading oil exporter. In 2024, Russia ranked sixth

globally in proven oil reserves, and its annual oil production has consistently been the highest in the world for many years, accounting for approximately 5.3 % and 12.9 % of the global total, respectively. Notably, despite its abundant natural resources, Russia's economic development has not matched its resource advantages due to its relatively small population and uneven development of light and heavy industries. Consequently, domestic oil consumption is minimal, with most oil products being exported to meet global demand. The history of Russia's oil industry dates back 150 years, and it has grown and developed through various challenges. During the Soviet era, particularly in 1988, Russia's annual oil production reached a historical peak of 569 million tons, a record that remains impressive today. However, after the dissolution of the Soviet Union, Russia inherited a vast legacy but faced unprecedented economic and social challenges, leading to a significant decline in oil production. Fortunately, in recent years, the Russian government has placed a high priority on the development of the oil industry, implementing a series of policies aimed at optimizing resource allocation and promoting industrial upgrading. These policies have helped stabilize and increase Russia's oil production, which is now between 500 million and 520 million tons annually, continuing to play a crucial role in the global oil market.

Russia, with its vast territory, has diverse natural conditions in its oil-producing regions, leading to varying transportation costs. Key oil fields include the Tyumen Oilfield, Irkutsk-Angharsk Oilfield, Baku Oilfield, Omsk Oilfield, Tomsk Oilfield, as well as the Ural and Ufa oil regions. The Ural and Ufa oil regions, due to their proximity to Europe, often prioritize exports to the European market. However, as European sanctions ease, efficiently transporting oil to China has become a new challenge for Russia's energy exports. To address this, Russia is continuously improving the infrastructure around the Northern Route, laying the groundwork for increased transportation volumes. Meanwhile, oil fields such as Omsk and Tomsk, located in Central Siberia, East Siberia, and the Far East, are continuously supplying oil to China through the Skovorodino hub. Under the Belt and Road initiative, Russia and China are collaborating to develop an oil energy base in Russia's Siberian region and the Far East, deepening cooperation in the energy sector and injecting new momentum into the regional economic integration of the Asia-Pacific. Given China's significant demand for oil and its strong economic growth potential, the oil export

trade between Russia and China not only brings tangible benefits to both countries but also holds the promise of boosting economic prosperity in Russia's Siberian region and the Far East.

On the other hand, an analysis of the regional structure of China's oil export trade shows that Russia's oil exports to China are experiencing robust growth. Currently, China remains the world's largest crude oil importer, with Russia, Saudi Arabia, and Malaysia ranking as the top three sources of oil imports. Firstly, Russia's oil exports to China primarily rely on the Russian-Chinese crude oil pipeline, which runs from west to east across vast territories, continuously delivering high-quality oil from the Tyumen, Omsk, and Tomsk fields to Daqing in Northeast China and Xinjiang in Northwest China. This pipeline has become the primary channel for China's oil imports from Russia. Secondly, although oil transported by rail from Irkutsk, Russia, to Manzhouli in Inner Mongolia, China, is gradually declining. Lastly, a small portion of Russian oil still reaches China's southern coastal regions and Hong Kong via the Kozmino port by sea, providing strong support for the energy supply in these areas [65]. The sources of China's oil imports in 2023 and their respective proportions are presented in figure 2.3.

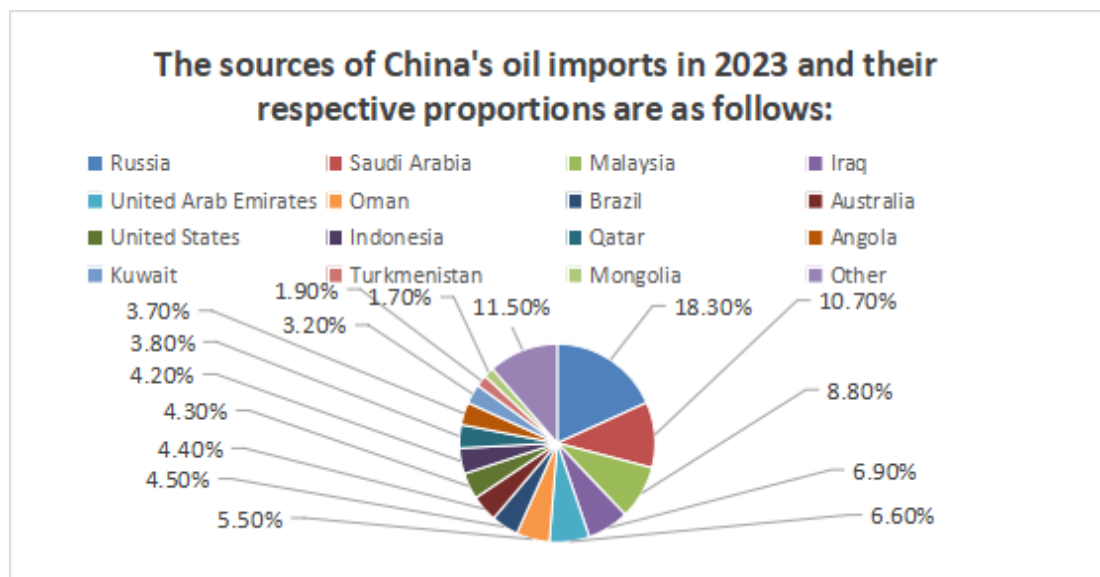


Figure 2.3 – The sources of China's oil imports in 2023 and their respective proportions [14]

It can be said that the scale of oil exports from Russia to various regions of China is significantly uneven. Due to its geographical location, Russia's oil exports to China are mainly concentrated in Heilongjiang, Inner Mongolia, Shandong, and Xinjiang, which together account for almost 80 % of Russia's total oil exports to China. The remaining oil is transported by sea in smaller batches to southern provinces such as Jiangsu, Zhejiang, and Fujian. This uneven distribution is closely linked to both the inherent advantages of the geographical location and the strategic layout of Chinese petrochemical companies. Major Chinese petrochemical giants, such as CNPC and Sinopec, have their main refining centers in northern China, including Heilongjiang, Liaoning, and Shandong, where they have established numerous refining facilities. In contrast, the number of petrochemical enterprises in southern China is relatively limited, making it difficult to meet the large-scale import demand. Therefore, the oil exported from Russia to China is naturally primarily absorbed and utilized by the northern provinces of China.

Shortly after the dissolution of the Soviet Union, Russian oil began to flow into the Chinese market, but the trade volume was relatively limited at that time. However, with China's rapid economic growth, the demand for oil has steadily increased. Meanwhile, profound changes in the global economic and political landscape have provided opportunities for the robust development of oil trade between Russia and China. In recent years, Russia's oil exports to China have seen a significant increase, reflecting the deepening and expansion of energy cooperation between the two countries. Table 2.1 provides a detailed record of the total volume and value of Russian oil exports to China from 2010 to 2024.

From the data in table 2.1, we can clearly trace the dynamic trends of Russia's total oil exports to China and their value from 2010 to 2024. Specifically, in 2010, Russia's total oil exports to China reached 19.284 million tons, valued at 10.76 billion dollars. In the following years, this volume significantly increased, reaching 32.584 million tons by 2012, with the value rising to 26.86 billion dollars [14].

Table 2.1 – Total volume and amount of Russian oil exports to China from 2010 to 2024 [14]

Year	Oil exports (thousands of tons)	Oil exports (billion US dollars)
2010	1928.4	107.6
2011	2495.6	204.0
2012	3258.4	268.6
2013	3007.5	280.1
2014	3604.7	272.8
2015	4512.7	184.2
2016	5053.6	189.5
2017	5825.5	198.5
2018	7149.2	230.5
2019	7564.5	236.4
2020	6915	unknown
2021	6685	unknown
2022	8625	unknown
2023	10702.5	606
2024	10850	624.3

Figure 2.4 and 2.5 shows China oil exports.

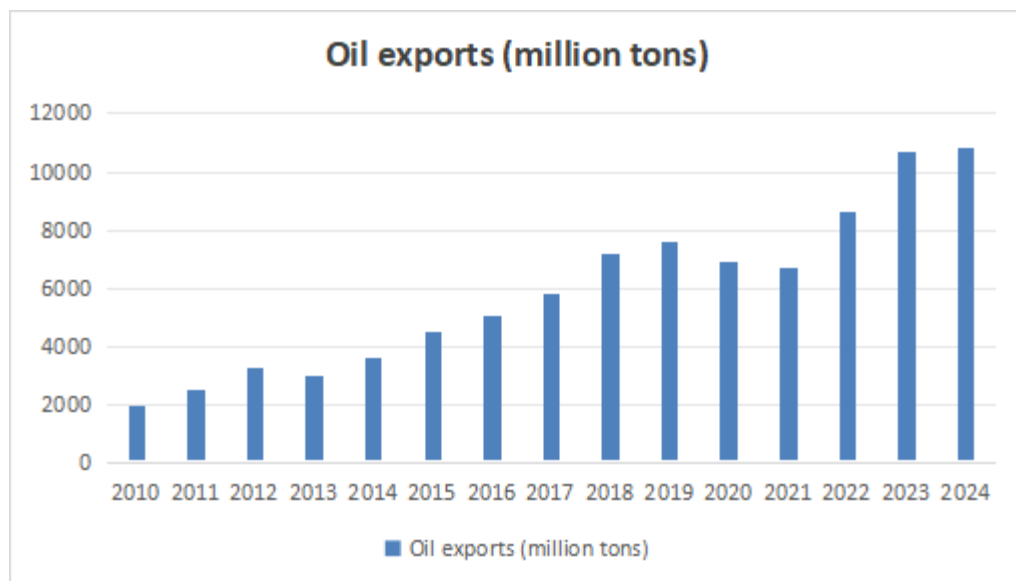


Figure 2.4 – Oil exports (million tons) [14]

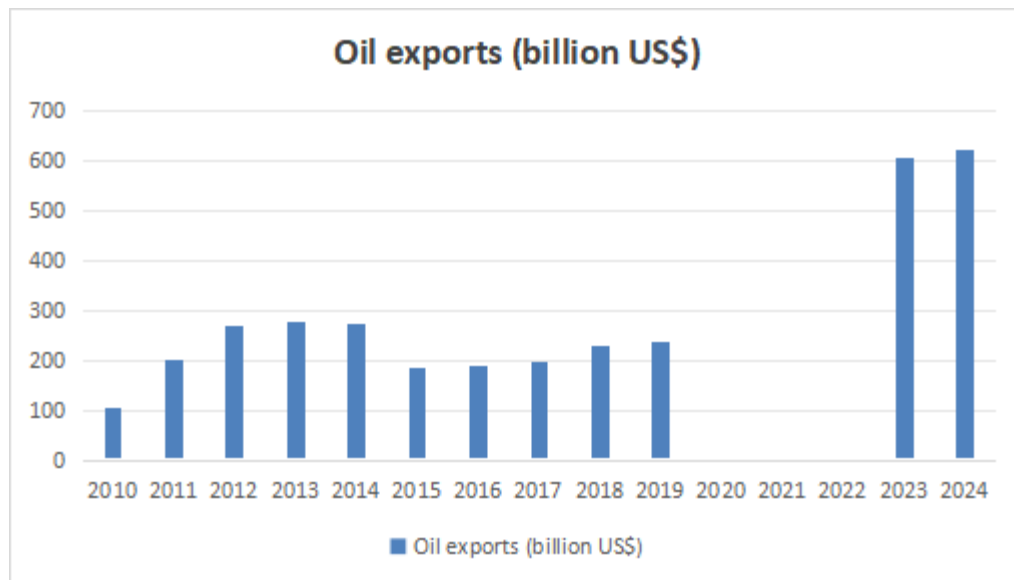


Figure 2.5 – Oil exports (billion US dollars) [14]

However, the volatility in international political and economic conditions has had a profound impact on Russia's economy and its foreign trade environment. In 2013 and 2014, due to the Ukraine crisis, the United States and other Western countries imposed multiple rounds of economic sanctions on Russia, severely impacting Russia's economic and trade environment. This impact also affected oil exports to China. Although the export volume slightly decreased to 30.075 million tons in 2013, the value remained high at 28.01 billion dollars. In the following year, the export volume quickly rebounded to 36.047 million tons, but the value slightly decreased to 27.28 billion dollars. Faced with ongoing pressure from Western countries, including the impact of low oil prices and the depreciation of the ruble, Russia's oil exports to China surged in 2015, reaching 45.127 million tons, while the export value dropped significantly to 18.42 billion dollars, a decrease of 32.5 %, reflecting the severe downturn in international oil prices. In the years that followed, despite the continuous expansion of the export scale, the annual export value failed to return to its peak due to low international oil prices. In 2019, the export volume reached 75.645 million tons, but the export value was only 23.64 billion dollars. At the beginning of 2020, the outbreak of the COVID-19 pandemic severely impacted the global economy, causing a sharp decline in crude oil demand and a significant drop in

prices. In April of the same year, WTI crude oil futures prices even fell into negative territory, and Brent crude oil prices also dropped below the historically rare 20 dollars per barrel, marking the entry of crude oil prices into a trough. As a result, Russia's oil exports to China were reduced to 69.15 million tons, with the exact value not specified, but it is easy to imagine the significant drop. In 2021, the export volume further decreased to 66.85 million tons, with the value also unspecified. However, as the economy gradually recovered in the post-pandemic era and economic sanctions from Europe and America intensified following the Russia-Ukraine conflict, Russia increased its oil exports to India, China, and other Asian countries. In 2022, oil exports to China quickly rebounded to 86.25 million tons. By 2023, there was a historic breakthrough, with oil exports to China exceeding 100 million tons for the first time, reaching a record-breaking 107 million tons, a nearly 25 % increase from the previous year. This achievement not only enabled Russia to surpass other major oil-producing countries and regions like the Middle East but also solidified its position as China's largest oil supplier, with export value reaching 60.6 billion US dollars. In 2024, exports to China surpassed 100 million tons for the first time, reaching a record-breaking 108.5 million tons.

To sum up, based on the above data analysis, Russia is constantly strengthening its oil trade cooperation with China to cope with the sanctions of western countries. At present, Russia has become one of the largest oil suppliers to China.

2.3 Favorable conditions for oil trade between Russia and China

The distribution of known oil reserves shows a highly uneven pattern. Currently, oil production is primarily concentrated in Angola and Nigeria in Africa, Venezuela in Latin America, several countries in the Middle East, Russia, and shale oil regions in the United States. As East Asia's economy rapidly develops, the global oil supply and demand pattern and trade are gradually shifting towards a trend of production moving westward and consumption tilting eastward, quietly reshaping the global oil energy landscape.

Oil is often referred to as the lifeblood of modern industry and a focal point of

international competition. Over the past few decades, the Middle East has consistently been the dominant region for global oil exports. The United States, leveraging its robust economic and military power, plays a pivotal role in the Middle East, aiming to control the region's abundant oil resources. Key oil-producing countries in the Middle East, such as Kuwait, Saudi Arabia, and Bahrain, are strategic allies of the United States, with their oil export policies prioritizing American interests. With China's rapid economic growth, the demand for oil has far exceeded expectations and continues to rise. The cultural differences and barriers between the East and West have led Western countries, including the United States, to be wary and fearful of China's development. As a result, Western countries, led by the United States, have intensified their efforts to control the global oil trading market and transportation routes. Currently, key nodes in global oil transportation are heavily guarded by U.S. forces, demonstrating the United States' comprehensive control over oil resources and their transportation channels. This tight grip on oil resources has placed significant pressure on developing countries like China. In the context of a stark disparity in military strength, China faces severe challenges in ensuring oil supply security and maintaining strategic space [36].

In the current global energy landscape, Russia stands out, largely free from interference and control by Western countries, becoming a leading oil producer and exporter. The vast regions of West Siberia, East Siberia, and the Far East are rich in oil and natural gas resources. By 2024, Russia had risen to the top of global oil production and was second only to Saudi Arabia in oil exports, solidifying its status as a major energy power. In response to the tough stance and sanctions from European and American countries, Russia has taken a firm stance, while these countries have chosen to use oil prices as a key economic lever to exert economic pressure on Russia. Fortunately, China and Russia have established a strategic partnership that operates around the clock. The vast demand for oil in China and Russia's abundant oil reserves are perfectly aligned, making cooperation between the two countries a natural fit. This shared interest not only provides a historic opportunity for the thriving development of oil trade between the two countries but also has the potential to reshape the global oil market, potentially influencing its future

direction. At the same time, this cooperation has, to some extent, weakened the containment and suppression efforts by European and American countries against Russia and China, opening up broader strategic development space for both countries.

Russia, a leading global oil producer, despite its domestic economic volatility, remains a significant player in the global oil export market due to its relatively low oil consumption. With its substantial oil exports, Russia's role in international oil trade is becoming increasingly prominent. Meanwhile, the rapid growth of emerging economies like China and India has led to a sharp increase in oil demand. Particularly, China's massive oil consumption has attracted significant attention from international strategic observers, signaling a shift in the focus of the international oil energy market towards the Asia-Pacific region. This trend has also drawn close attention from major oil-exporting countries. Currently, China is firmly among the world's top two economies, with its economy maintaining a medium-to-high growth rate. The demand for energy imports, particularly oil, is expected to continue expanding [35].

In the current international oil and energy market landscape, China's strong purchasing power and significant demand for oil and energy are having a profound impact on the global market. For countries like Russia, which rely heavily on oil exports, especially when facing political and economic pressures from Western nations, China's growing demand for oil and energy presents a rare development opportunity. For China, the instability in the Middle East and the growing bottlenecks in oil transportation through the Strait of Malacca have compelled it to seek new and secure oil import channels to ensure its energy security. In this context, Russia has emerged as an ideal choice for China. In the international oil trade sector, Russia, a major producer and exporter of oil, urgently needs to boost its domestic economy through oil exports. Meanwhile, China, a major consumer of oil, not only has a strong desire to purchase but also possesses significant purchasing power. Given their geographical proximity, Russia and China can achieve complementary advantages in oil trade, jointly promoting economic development and prosperity on both sides.

According to the World Energy Statistics Yearbook, a significant portion of Russia's

proven oil reserves are located in the West Siberia and Central Siberia regions. Given the 4,300-kilometer-long border between Russia and China, the construction of transportation facilities for oil exports offers a unique geographical advantage, laying a solid foundation for the smooth operation of bilateral oil trade. Historically, China has heavily relied on the Strait of Malacca for its oil imports, with the long sea voyage and time not only increasing trade costs but also introducing numerous uncertainties and safety risks. However, thanks to the neighboring relationship between Russia and China, the crude oil pipeline constructed between the two countries highlights several significant advantages: large transportation capacity, low construction costs, short construction periods, and safe, reliable, and less susceptible to interference during transportation. This undoubtedly adds significant weight to China's strategy for diversifying its oil imports. Below is the roadmap for the 2024 oil trade between Russia and China (table 2.2).

Table 2.2 – Roadmap for oil trade between Russia and China in 2024 [14]

Mode of Transport	Main Origin	Transit Points	Destination	Annual Volume (million tons)	%
Pipeline	Skovorodino	Mohe, Daqing	Northeast Refineries	Approximately 30	27.80
Pipeline	Omsk	Atasu, Alashankou	Northwest Refineries	Approximately 10	9.30
Sea	Kozmino	Qingdao, Dalian	Shandong Refineries	Approximately 80	74.10
Sea	Murmansk	Arctic Route	East China Ports	Approximately 5	4.60
Rail	Skovorodino	Manzhouli, Daqing	Northeast Refineries	Approximately 5	4.60
Rail	Megtekh	Zamyn-Üüd, Erenhot	North China Refineries	Approximately 2	1.90

Following the Ukraine crisis, Western countries, led by the United States, imposed several rounds of severe economic sanctions on Russia, leading to its relative isolation on the international stage. To break this isolation, Russia urgently needs to find a partner, and China, with its geographical advantages and economic strength, has naturally become Russia's top choice. In recent years, as the conflict between Russia and Ukraine escalated, Russia has increasingly relied on China's economic power to counter Western sanctions and also to alleviate domestic economic pressures.

Moreover, despite historical frictions over border issues between Russia and China, the two governments have consistently adhered to the principles of mutual understanding and concession, as well as equal consultation. They successfully signed a series of legal documents, including the Agreement on the Eastern Section of the Border Between Russia and China, the Agreement on the Western Section of the Border Between Russia and China, and the Supplementary Agreement on the Eastern Section of the Border Between Russia and China in the 1990s and the first decade of the new century. These agreements have effectively resolved the border issues in bilateral relations. This achievement has undoubtedly provided a solid foundation for oil trade cooperation between the two countries, leveraging their geographical and economic advantages.

In the current complex landscape of global cooperation and competition, only by establishing a solid foundation of cooperation between the two governments can we ensure steady progress in bilateral cooperation. Historically, the governments of Russia and China have laid a strong foundation for cooperation. This is due to their shared social systems, which foster deep cultural and humanitarian connections; and because, after the Cold War, they closely collaborated to address the threats of American hegemony and power politics. In the development of trade between Russia and China, both governments have adhered to the core principles of seeking common ground while respecting differences and mutual benefit, achieving significant cooperation in various areas such as economy, politics, and cultural exchanges. Building on the solid foundation laid by successive governments, Russia and China have signed a series of important documents, including the Joint Statement of Russia and China, the Joint Statement of the Moscow Summit of the Heads of State of Russia and China, the Treaty of Good-Neighborliness and Friendly Cooperation between Russia and China, and the Joint Statement of the People's Republic of China and the Russian Federation on Major International Issues, providing a robust legal framework for the ongoing deepening of bilateral relations. The frequent interactions between the governments and people of Russia and China not only demonstrate their firm commitment to deepening cooperation but also underscore the importance of comprehensive political, economic, and trade cooperation in consolidating and developing the strategic partnership

between Russia and China.

In the oil trade sector, after more than two decades of close cooperation and joint development, the scope of China's oil trade cooperation with Russia has significantly expanded. Initially focused on traditional crude oil trade, exploration and production, and oil pipeline construction, it has now extended to comprehensive cooperation across the entire industrial chain, including chemical oil production, technological innovation, and oil equipment. For instance, on July 4, 2018, China Huaxin and Rosneft officially signed a strategic cooperation agreement, marking a comprehensive collaboration in areas such as oil exploration and development, production, refining, chemical processing, crude oil and petroleum product trade, retail business, and financial services. The agreement also revealed the intention to jointly establish a joint venture in the Russian Federation, aiming to promote the implementation of oil projects and the establishment of investment funds. Notably, China Huaxin was given the opportunity to purchase shares in Rosneft's retail business, which adds new momentum and depth to their cooperation. The foundation of cooperation between China Huaxin and Russian companies across the entire oil industry chain has opened up broader prospects for collaboration. Beyond resource exchanges, both sides have shown strong interest in energy market cooperation and the construction of a vertically integrated supply chain. Collaborating with Rosneft not only helps Chinese companies achieve a comprehensive layout in the upstream, midstream, and downstream of the oil industry but also deepens and upgrades cooperation between Russia and China in the oil sector. Through close cooperation across the entire industrial chain, both sides will jointly promote the prosperity and progress of the oil industry.

Since 2023, China's economy has shown a general trend of recovery and improvement. The summer heat in some regions has increased the demand for living energy, leading to a significant rise in oil consumption. To ensure the energy needs of economic and social development, domestic oil and energy companies have been implementing policies to ensure stable supply and prices. They have steadily increased production of coal, oil, gas, and electricity, and imports have grown rapidly. This has continuously improved the supply capacity and quality of oil and energy, maintaining an

overall balance between supply and demand. Russia has surpassed Saudi Arabia as China's largest oil supplier, making Russian oil increasingly indispensable for China's energy needs.

Thanks to the solid foundation of cooperation between the governments of Russia and China, trade cooperation in the oil sector has progressed more smoothly. As strategic collaboration between Russia and China deepens, the scale of oil resource trade between the two countries has grown, truly achieving mutual benefits in energy development and further promoting the deepening of oil trade. Therefore, for China and Russia to deepen their oil trade cooperation, it must be based on a strong foundation of political mutual trust, which aligns with the sincere cooperation advocated by the liberal system.

Chapter 3 External advantages and challenges of cooperation in oil trade between Russia and China

3.1 External advantages and challenges of cooperation in oil trade between Russia and China

Diversification of European oil and energy supply.

In the oil sector, Russia and European countries have long maintained a highly interdependent relationship. However, since the outbreak of the Russia-Ukraine conflict, this balance has been significantly disrupted. On one hand, the United States has imposed a series of economic sanctions on Russia and, in collaboration with Western allies, has implemented an economic isolation strategy against Russia. On the other hand, Ukraine, a major transit country for natural gas, has fallen into conflict, further reducing the trend of reduced oil trade cooperation between Russia and European countries. In this context, European countries are actively seeking diversified oil supply channels to diversify their oil supplies and reduce Russia's influence in the European oil energy market. This shift has, objectively, led China to gradually become the primary exporter of Russian oil [12].

Following the outbreak of the Ukraine crisis, Russia engaged in intense political and economic competition with Western countries, including Europe and the United States. This confrontation significantly altered the trade dynamics between Russia and Western nations, triggering a series of chain reactions. Faced with challenges in cooperation with Europe and America, Russia actively sought new avenues, accelerating deep cooperation with China in the oil sector. Since the escalation of the conflict between Russia and Ukraine, the United States has imposed multiple economic sanctions on Russia and worked with Western allies to isolate Russia economically. In this context, the pace of oil and energy cooperation between Russia and China has noticeably accelerated, achieving significant progress [23].

Promoting the implementation of the look east strategy.

From the perspective of economic development in Asia, the Russian government has actively implemented the Look East strategy. This strategy aims to reverse the challenges in energy diplomacy and effectively address the complex and dynamic international energy landscape. By doing so, Russia seeks to further solidify its position as a major player in the global oil and energy market and provide strong support for the sustained growth of its domestic economy. Throughout this process, the Russian government has continuously refined and upgraded the Look East strategy, which is reflected in strengthening trade cooperation between Russia and China in the Far East, actively developing and revitalizing the economy in Siberia, and proposing a strategic vision for integrated development with East Asian and Pacific countries.

Let us look at challenges facing oil trade between Russia and China.

The impact of the new energy technology revolution.

Influenced by the U.S. shale gas revolution, China, considering its own development needs, has gradually expanded the use of clean energy. During this critical period of economic transformation, stable economic growth is crucial for national development. However, given the technological gap between China and developed countries, China is more vulnerable to changes in the international energy landscape. The oil and energy trade cooperation between China and Russia is also challenged by the new technological revolution. On the other hand, Russia's economy heavily relies on oil and natural gas exports, which generate significant revenue but also lead to an imbalanced economic structure and a single trade export. To achieve sustainable development, the Russian government strongly promotes the development of clean energy to maintain economic stability. Therefore, at this critical stage of economic stability, exploring new energy technologies is particularly important. China and Russia have strengthened technical cooperation, jointly promoting the internationalization strategy of new energy, achieving significant progress in areas such as unconventional oil and gas exploration, offshore engineering technology, and deep-sea oil and gas resource extraction. However, due to limitations in technology and funding, the current level of energy cooperation

remains insufficient, hindering further exploration in the new energy sector [16].

National new energy development policy.

In 2016, China officially released the 13th Five-Year Plan for National Economic and Social Development (covering 2016 to 2020), which strongly advocated for energy conservation across society and set a grand goal of reducing energy consumption by 20 % by 2020. In 2020, China released the 14th Five-Year Plan for National Economic and Social Development (covering 2021 to 2025), marking significant progress in ecological civilization. Given China's long-term reliance on high-pollution, high-energy-consuming heavy industries such as oil and natural gas, and the sharp increase in energy demand driven by the continuous expansion of the domestic economy, the Chinese government recognized the importance of enhancing domestic energy security. Consequently, a series of policies were introduced to promote the application of new energy sources, encourage the use of clean energy across various sectors, and position new energy as a key trend in future industrial development. Faced with the severe challenges of air pollution and global climate change, energy security and environmental protection have become strategic priorities for the government. Particularly, China's domestic oil production can no longer meet the growing demand, further highlighting the urgency and necessity of implementing new energy policies to ensure national energy security and economic stability. The implementation of these policies will significantly alter China's energy consumption pattern and may have a profound impact on the cooperation between Russia and China in the oil trade sector.

The construction of oil transportation infrastructure is not perfect because oil transport routes are unsafe. In the oil trade between China and Russia, maritime transport has long been the primary method. However, due to the numerous risks associated with maritime transport, land routes are seen as a safer alternative. The construction of oil trade pipelines has progressed slowly due to the cautious economic considerations of both sides. For instance, negotiations on the Anding Line have lasted for several years. Whenever changes in the Middle East oil transportation routes or the surrounding strategic

environment lead to a sudden increase in transportation risks, especially when China's oil transportation security is threatened, the Russian government insists that the pipeline or transportation route must be entirely within its territory to ensure control over oil exports, and it will not compromise on this issue. Conversely, when China's oil transportation is relatively stable and secure, with improved safety levels, discussions between Russia and China will focus more on the progress of the transportation channel construction and its potential impact on oil trade, which may demonstrate a degree of flexibility or willingness to compromise [28].

In Russia's land transportation system, railway transport plays a dominant role. However, this mode of transport faces significant challenges when traversing the vast Northeast Asian region. The severe shortage of railway infrastructure in this area significantly limits the scale of oil imports from Russia to China, thereby hindering the further expansion and deepening of the oil trade between Russia and China.

Moreover, some of Russia's border ports have revealed significant limitations in cargo turnover and dispatch capabilities, which are limited and difficult to significantly improve in a short period. Currently, Russia mainly supplies oil to China through the two major ports of Naumsk (in the Republic of Buryatia) and Vostok-Belgorodsk (in the Primorsky Krai). However, the transportation capacity of these two ports is far from meeting the rapidly growing demand for oil trade between Russia and China.

On the other hand, Russia's high tariffs on oil exports to China and the high costs of land transportation have also reduced the enthusiasm of Russian oil companies for trading in the Chinese market. As the Russian government continues to raise export tariffs on oil to China, the revenue from domestic oil exports has fallen below that from domestic sales, further reducing the incentive for companies to engage in export trade.

There is a lack of long-term strategy in oil trade between Russia and China. The lack of a cross-border oil investment mechanism is the core issue hindering cooperation between China and Russia in the oil trade. Since 2015, Russia has significantly tightened its review and management of foreign investment in the oil industry, almost to the

maximum extent of restricting such investments. This indicates that the Russian government has clearly stated that any foreign investor wishing to acquire oil field development rights or purchase oil mines in Russia must obtain explicit government approval. However, Russian domestic legislation does not clearly define entry conditions, which grants the government broad discretion to easily prevent foreign investment in the development, investment, and acquisition of Russian oil resources.

For instance, the Russian government once invoked relevant provisions of the antitrust law to block France's Total from acquiring a 25 % stake in Russia's second-largest natural gas company. Moreover, the Russian government's restrictions on foreign investment and cooperation extend beyond the oil and mineral sectors to include controlling stakes in oil companies. Notably, the Russian government is particularly cautious about Chinese efforts to gain control in Russia's oil exploration and production. When China National Petroleum Corporation (CNPC) sought to take control of Slavneft, the Russian government intervened informally in the bidding process, ultimately allowing TNK-BP and Sibneft to emerge as the winners. This phenomenon clearly indicates that, within Russia's oil resource management system, most foreign investors, including those from China, are often relegated to secondary roles.

China lacks experience in energy diplomacy.

Globally, oil and energy resources are in a state of scarcity, leading to intense competition among countries. In contrast, China's oil industry has a relatively short history and limited development, and its domestic oil and energy development strategy is not well-established, lagging significantly behind developed countries like Europe, America, and Japan. This disparity is evident in energy diplomacy, where China often finds itself at a disadvantage in oil trade with Russia, sometimes hindering the coordinated development of oil resources between the two sides [33].

When formulating China's oil and energy strategy, it is essential to have a more precise understanding of the domestic oil market and to enhance the ability to predict oil development trends and changes in the market landscape. However, China currently lacks

these capabilities, which directly impacts the smooth progress of its oil trade cooperation with Russia.

In the process of oil trade with Russia, China often finds itself in a passive position due to insufficient understanding of Russia's oil trade policies, strategic development trends, and industrial planning. This not only limits China's initiative and flexibility in cooperation but also risks causing misunderstandings on the Russian side, potentially threatening the stability and healthy development of bilateral oil trade relations. Therefore, China needs to enhance its research and analysis efforts, adopting a more comprehensive perspective to review and manage cooperation with Russia in the oil trade sector.

Facing fierce competition from other countries. The competition between South Korea and Japan.

Both South Korea and Japan are developed countries with high levels of economic development, showing significant demand for oil and energy resources, whether through consumption or imports. As a result, Russia, a major oil exporter in Northeast Asia, has become a key target for both South Korea and Japan in their competition for oil exports. Compared to China, a developing country, Japan and South Korea have a longer history in energy diplomacy and a more mature oil and energy strategy, giving them a strong competitive edge in the oil market and a more advantageous position in oil trade with Russia [37].

Many countries in Northeast Asia are experiencing rapid economic growth, with a significant and rapidly growing demand for oil. This has further solidified Russia's commitment to the region as a key area for oil trade cooperation. Japan, the world's third-largest oil importer, is particularly eager to engage in oil trade with Russia. Similar to China, Japan enjoys geographical and complementary advantages in oil trade with Russia, which significantly influence the progress of oil trade cooperation between Russia and China.

A closer look reveals that Japan's well-developed economy and ample domestic investment capital give it a clear advantage in oil trade cooperation, infrastructure

development, investment, and technical collaboration with Russia. Meanwhile, Russia hopes to leverage Japan's financial and technological strengths to boost its own oil industry. As a result, Russia and Japan are engaged in intense competition with China in the realm of oil trade cooperation.

From Japan's actions, it is evident that as early as 1993, Japan had plans to construct the 'Anana' oil transportation route. However, due to various considerations, the project was ultimately not implemented. Despite territorial disputes between Japan and Russia, given their long-standing strategic cooperation and international political coordination, Russia still hopes to engage in bilateral economic and trade cooperation with Japan through energy diplomacy.

India's competition.

India, a country with a large population, has seen remarkable economic growth in recent years. This growth has driven a growing demand for oil and energy resources. However, India's domestic oil resources are limited, making the security of its oil supply a critical issue that hinders economic development. According to the International Energy Agency (IEA), by 2030, India's reliance on imported oil is expected to exceed 90%. Therefore, ensuring the stability and security of oil supplies is a critical issue that India urgently needs to address.

China and India share similar trends in economic development and oil demand, both actively seeking global partners for oil supply. Notably, India's unique geographical position places it closer to Middle Eastern oil-producing countries, giving it a natural advantage over China in oil imports. However, given the limited global oil resources and the complexity of geopolitical dynamics, the competition between China and India in Russian oil trade, as well as in the broader global oil market, is expected to intensify. This will have a profound impact on both countries' oil energy strategies and economic security.

3.2 Development strategies of oil trade between Russia and China

Improve the efficiency of oil energy utilization and develop clean energy.

In the process of promoting clean energy development, China and Russia should work together to set an example of a responsible major country, actively play the leading role of a major country, continue to optimize the utilization efficiency of oil and energy resources, and devote themselves to the research and development of more environmentally friendly new energy technologies.

Improve the efficiency of oil and energy use.

Currently, global oil reserves are continuously declining, while the demand for oil is constantly increasing, making the shortage of oil energy a serious challenge for the world. In this context, Russia and China, as major countries, are actively taking on the important task of improving the efficiency of oil energy use. Both sides are collaborating closely to develop new technologies, aiming to achieve significant breakthroughs in oil energy utilization. To effectively address the issue of oil energy shortage, the governments of both countries are promoting energy-saving and emission reduction concepts across various industries and are actively promoting the widespread application of smart management systems for oil energy. By leveraging technology and management, the goal is to significantly enhance the efficiency of oil energy use. Moreover, the Russian and Chinese governments play a crucial role in policy guidance and technical cooperation. Through the formulation of scientific and reasonable policies and the strengthening of technical exchanges and cooperation, they aim to improve the efficiency of oil energy use at its root. This cooperative model not only helps alleviate the pressure of oil energy shortages but also provides valuable experience for the sustainable development of the global energy sector. In summary, the cooperation between the governments of Russia and China in improving the efficiency of oil energy use is an effective approach to addressing the challenge of oil energy shortage, with profound significance and important value.

We will carry out cooperation on new energy technologies.

China and Russia can deepen their research into clean energy technologies through technical and investment cooperation, ensuring global oil energy security. This will alleviate pressure on oil-supplying countries, promote a balance in the supply and demand of oil energy, fundamentally address global environmental pollution, and drive global sustainable development. Furthermore, by collaborating to advance clean energy, both sides can deepen technical cooperation in new energy and clean energy, share technological achievements, and jointly build a clean energy system. This will significantly enhance the core competitiveness of both countries in the global new energy industry, with profound strategic implications for both sides [22].

Strengthen political mutual trust to improve the construction of oil trade infrastructure.

Maintaining stable, healthy, and lasting political relations between China and Russia is of great strategic importance for deepening their cooperation in oil and energy trade. On one hand, from the perspective of economic security and national interests, the stability and harmonious development of political relations provide a solid political foundation for oil and energy cooperation. On the other hand, as strategic partners, maintaining a stable political relationship and enhancing communication and collaboration in the political sphere can not only promote the efficient advancement of oil trade cooperation but also fully leverage the geographical and economic advantages and complementarity of oil trade between Russia and China, leading to mutual benefits and win-win outcomes in the oil trade sector.

Deepen cooperation between Russia and China to promote new growth in oil trade.

Under the influence of the China threat theory in the West, Russia has some doubts about carrying out long-term cooperation with China. In order to eliminate these concerns, China can make efforts from various aspects.

First, continuously enhance meetings and exchanges with the Russian head of state and government leaders, using consultation mechanisms to address key issues in cooperation, thereby fostering mutual trust between both sides across various fields.

Leverage the effectiveness of people-to-people diplomacy, establishing specialized trade institutions under government leadership, and using private enterprises to create platforms for free exchange and consultation, deepening the understanding of China among various sectors in Russia and strengthening the grassroots foundation of mutual trust. Increase efforts to promote China to Russia, using traditional media and newspapers to introduce China's economic development and its policies toward Russia to Russian businesses and the public, thereby enhancing mutual trust [23].

Secondly, the governments of both countries should enhance political dialogue and develop a long-term strategic plan for oil trade at the national level. Based on a thorough analysis of the trends in the international oil energy market and the current and future dynamics of the political and economic relations between the two countries, they should carefully examine their respective domestic strategies and policies for oil energy development, to guide the medium-and long-term development of oil cooperation between Russia and China. Furthermore, by utilizing China's medium-and long-term strategic plan for oil energy, effective guidance can be provided for cooperation, investment, development, negotiation, and other aspects of oil trade.

Thirdly, during the period of oil trade cooperation, Russia and China should coordinate their plans, considering comprehensive cooperation in other energy sectors such as natural gas and electricity. They should implement integrated development of mixed resources in the East Siberian region, which can be achieved by establishing long-term cooperation agreements to mitigate risks and guide trade. Only on the basis of mutual trust can the geographical and complementary advantages of both countries be fully realized, thereby becoming the most favorable growth point for oil trade between Russia and China.

Establish a strategic dialogue mechanism on oil and energy between Russia and China

The strategic alignment between China and Russia in the field of oil and energy cooperation is crucial for advancing bilateral oil trade. On one hand, Russia views its

domestic oil resources as a core pillar of economic development, and the government takes a very cautious approach to this issue. On the other hand, oil trade cooperation directly impacts China's oil and energy security, and China must also consider these factors comprehensively. Therefore, both Russia and China adhere to a pragmatic approach in their oil trade cooperation, which fundamentally aligns with their mutual interests.

In the process of cooperation, China and Russia should adhere to the principles of fairness and mutual benefit, abandoning the improper mindset of monopolization and seeking priority. Additionally, both sides can draw on successful experiences from other areas of cooperation to further refine the dialogue mechanism for oil and energy. On the basis of consensus, they should formulate and implement a medium-to long-term development strategy for oil trade between Russia and China, providing solid policy guidance for their oil trade cooperation [55].

Formulate long-term development strategies for Russian and Chinese oil to deepen trade cooperation. We will explore various ways of cooperation to diversify our cooperation.

While Russia and China continue to cooperate in traditional oil transportation methods, China can further increase its investment in Russia's oil infrastructure. This will help Russia comprehensively survey oil resources, achieve efficient extraction, and ensure smooth transportation. Building on the existing strong foundation of railway and sea transportation, increasing investment and construction efforts in pipeline facilities will accelerate the robust development of oil trade between Russia and China. To address resource bottlenecks, particularly funding shortages, the Asian Infrastructure Investment Bank (AIIB) can provide financial support, effectively alleviating the practical difficulties in oil and energy trade cooperation between Russia and China. Additionally, by establishing an open cooperation platform to attract more countries, this will not only introduce external funds and advanced technology but also achieve resource sharing and complementary advantages in oil exploration and development. Specifically, other countries' enterprises can be allowed to set up wholly-owned companies in Russia or

participate in investments, mergers, and acquisitions of Russian oil companies, collaborating with domestic Russian oil companies or international large multinational oil companies to jointly develop and invest in oil resources. This diversified cooperation model will strongly promote the deepening of oil trade cooperation between Russia and China, creating a new situation of mutual benefit and win-win outcomes.

We will expand areas of oil and energy cooperation.

Under the «Belt and Road» strategic framework, China and Russia are deepening their oil trade cooperation. The goal is to build on a solid foundation of trade relations and continuously expand the industrial chain of oil trade. First, both sides need to establish and continuously refine technical standards for the oil industry that are mutually recognized, laying a strong foundation for cooperation. Second, they should focus on optimizing the oil distribution system, building an oil transportation network in Northeast Asia, and enhancing cooperation in infrastructure, such as direct pipeline transportation of refined oil products, to improve the efficiency of oil trade and further promote the robust development of oil trade between Russia and China. Based on this, Russia and China can jointly participate in domestic oil trade in Russia. Through close trade collaboration, they can jointly explore and develop offshore oil fields, co-invest in the construction of refineries, achieve mutual benefits and win-win outcomes, and continuously expand the scope of cooperation. As bilateral oil trade cooperation deepens, Russia and China will work together to build a regional oil trade market in Northeast Asia, adding significant momentum to the region's oil energy trade cooperation and playing an indispensable role in driving it forward.

Taking into account the surrounding areas to create a regional oil and energy community. We will strengthen cooperation with neighboring countries.

In the process of trade cooperation between China and Russia, both sides can collaborate with neighboring regions, particularly countries in Northeast Asia such as South Korea and Japan, to jointly advance multilateral oil and energy trade cooperation. The primary goal is to address issues of insufficient capital and technological limitations

by attracting investment and technical expertise from various sources, achieving complementary strengths, and ensuring that each participating country benefits from the cooperation. Specifically, China has a vast labor force and extensive experience in large-scale oil field development and production; Japan and South Korea possess substantial financial resources and advanced technology; Russia, with its abundant oil and natural resources, provides a solid foundation for this multilateral cooperation. Therefore, actively promoting and vigorously supporting the development of multilateral trade, and strengthening cooperation in political, economic, and oil and energy sectors, is crucial for achieving mutual benefits and win-win outcomes for all participants. The cooperative relationship among China, Russia, Japan, and South Korea not only facilitates the facilitation and liberalization of oil and energy trade but also promotes the upgrading and optimization of the trade structure through policy guidance. The complementary strengths in multilateral trade will inject strong and lasting momentum into the security and economic development of oil and energy in Northeast Asia.

Russia and China are leading the construction of an oil and energy community.

In the global oil and energy landscape, Russia, Central Asia, and the Caspian Sea region hold a pivotal position. This region is rich in oil resources, and thus, cooperation between China and these regions will undoubtedly have a profound and significant impact on the international oil and energy landscape [60]. Russia and China should not only strive to be exemplary neighbors and partners for mutual benefit but also work together to build a community of shared prosperity, economic cooperation, and a community of shared destiny in the oil and energy sector.

Conclusion

China has become the global energy needs country, energy needs to be timely and effectively met; active seeking energy cooperation is the inevitable choice. Russia is a vast land and energy resources the abundance very rich, coupled with its economic and steady development is largely dependent on energy exports the realities of the Russian imperative is to seek a reliable energy-importing countries. China and Russia energy cooperation can be traced back to the early 90's, although the middle stranded for a period of time, but the two countries energy cooperation still continues.

Modern development of the global economy leads to growth in consumption of energy resources. In this case regional energy resources disproportions for the most number of regions isn't provided with the sufficient level of hydrocarbons. The same way, energy integration processes is a characteristic of the World economy' present stage and testifies a globalization energy market tendency by creating transregional economic relations contributing to the countries' development. From Russia's perspective, China's massive industrial and economic growth creates enormous demand for energy and natural resources. Russia's economy, which relies heavily on these exports, is now highly complementary to China's growth. It is in Russia's best interest to cooperate with China for its own economic growth.

Master thesis primarily explores the development of trade between Russia and China, focusing on the current status, favorable conditions, external advantages, and challenges in their oil trade. It also proposes corresponding strategies. The article highlights that Russia is the world's second-largest crude oil producer. Following economic sanctions imposed by European and American countries on Russia, Russia has intensified its oil export cooperation with Asian countries, particularly China. As the world's largest net importer of oil, China has a significant demand for oil. Therefore, the oil trade cooperation between Russia and China holds significant strategic importance.

This article provides a comprehensive review of the development of trade between

Russia and China, covering an overview of their trade relations, economic and trade strategies, the production and demand structure of oil and natural gas in China, and the trajectory of oil trade between Russia and China, including the initial exploration phase, the stable development phase, the substantive progress phase, and the phase of deep cooperation. Furthermore, the article delves into regional analysis, total volume analysis, and transportation method analysis of oil trade between Russia and China, highlighting the significant growth in the scale and value of this trade in recent years.

This article further explores the favorable conditions for oil export trade between Russia and China, including an analysis of the global oil market, the complementary advantages of Russia and China in the oil market, their geographical economic advantages, and the solid foundation of cooperation between the Russian and Chinese governments. Additionally, it examines the challenges faced by the oil trade between Russia and China, such as the impact of the new energy technology revolution, the underdevelopment of oil transportation infrastructure, the lack of long-term strategic planning in the oil trade, and intense competition from other countries.

Finally, this paper puts forward the development strategies of Russia and China's oil export trade, including improving the efficiency of oil energy utilization and developing clean energy, strengthening political mutual trust to strengthen the construction of oil trade infrastructure, formulating long-term development strategies of oil cooperation between Russia and China to deepen trade cooperation, and considering the establishment of regional oil energy community in neighboring areas.

In the current global energy landscape, Russia and China, as key energy producers and consumers, are strengthening their bilateral cooperation by establishing a joint oil and energy community to achieve mutual benefits. This collaboration not only enhances the energy security of both countries but also has the potential to significantly impact the global energy market. Russia, the world's largest natural gas producer and second-largest oil producer, is endowed with abundant energy resources. China, the world's largest energy consumer, has a growing demand for oil and natural gas. The energy sector between the

two countries offers a natural complementarity. By forming a joint oil and energy community, both sides can ensure a stable energy supply, provide Russia with a steady export market, and offer China a reliable energy source.

The deepening of cooperation extends beyond oil trade to include energy infrastructure development, technical exchanges, and investment collaboration. For instance, the 'East Siberia-Pacific' oil pipeline, a joint investment by China and Russia, is a key project in their energy cooperation. Moreover, both countries are exploring opportunities for collaboration in areas such as oil processing, petrochemicals, and unconventional oil and gas resource development. In the context of complex and dynamic international political and economic conditions, the joint construction of an oil and energy community between Russia and China not only supports the stable economic growth of both nations but also has the potential to positively impact the global energy market. Through this cooperation, the two countries can enhance their bargaining power in the international energy market, reduce dependence on single energy suppliers, and improve the diversity and security of energy supplies.

In summary, the joint construction of an oil and energy community by Russia and China is a significant step in deepening cooperation between the two countries in the energy sector. This initiative not only helps to meet China's growing energy needs but also provides Russia with a stable market for its energy exports, significantly impacting the global energy landscape. As cooperation deepens, both sides are expected to achieve more success in the energy sector, contributing more to the energy security and economic development of both countries and the world at large.

In short, the oil and gas cooperation between China and Russia has gone through a long period of development and exploration, accumulated rich experience, formed a solid legal, institutional, and policy foundation, and formed a sound cooperation mechanism. In recent years, practice has shown that in the complex world situation and geopolitical conditions, China and Russia have unwaveringly carried out practical cooperation in the energy field, seeking mutual benefit and win-win results. This is a correct choice that is in

line with the national conditions and energy policies of both countries, and is the only way for both countries to achieve peaceful development. In the future, China and Russia will continue to deepen oil and gas energy cooperation, expand cooperation space, innovate cooperation areas, improve cooperation mechanisms, and innovate cooperation methods, with the aim of forming a comprehensive, multi angle, and three-dimensional cooperation model covering energy products, capital, technology, equipment, talent, infrastructure, and other aspects.

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