

# Analysis of China's Oil Security based on Political Economy

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## Abstract

**This paper describes and analyzes the current situation of China's oil security from two aspects: the current situation of the oil market and the degree of dependence on foreign oil. At the same time, it explores the important factors affecting China's oil security strategy based on the three dimensions of international oil price, oil import channel and oil import transportation channel. By using the interdependence theory and supply-demand relationship theory in political economics, this paper analyzes how China should ensure oil security and realize China's oil security strategy. Finally, it aims to ensure China's oil security from five aspects: improving oil utilization efficiency, enriching oil import sources, developing new energy, integrating into stone oil pricing system and improving oil reserve strategy Safeguard national economic interests and put forward practical policy suggestions.**

## Keywords

**Political Economics; China; Petroleum Security; Policy Suggestions.**

## 1. Overview

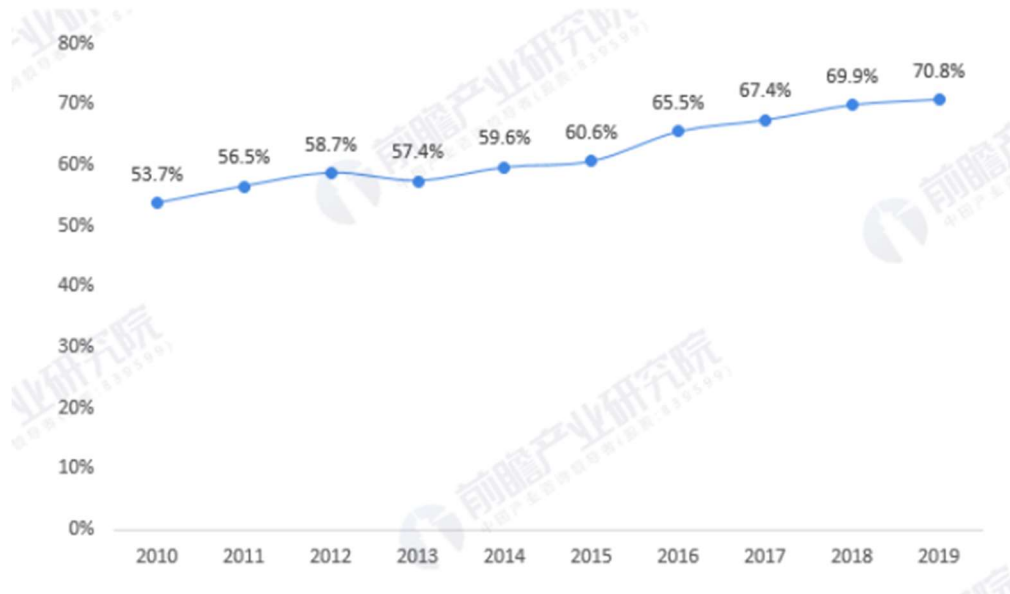
### 1.1. The Importance of Oil Security

As a kind of energy with strong strategic significance, petroleum is known as the "blood" of modern industrial society. Its long-term, safe and stable supply is closely related to national economy and people's livelihood and national security. Oil security not only affects national economic security, but also relates to social and political stability. In today's international world, oil plays a decisive role. Whichever country has the ability to control the world oil, it will have the opportunity and power to dominate the world. So, in a sense, oil is actually more political, a "strategic political commodity".

### 1.2. Significance of Topic Selection

#### 1.2.1. Practical Significance

In 1993, China officially became a net importer of oil, and in the following ten years, China's oil import volume increased year by year. With the rapid development of national economy, China has surpassed the United States and become the largest importer of crude oil in the world. The gap between supply and demand of crude oil is increasing day by day. In the long run, factors such as slow growth of domestic oil production and weak sustainable supply capacity cannot adapt to the rapid growth of domestic oil demand, which leads to high dependence on foreign oil. According to data from the China Association of Petroleum Enterprises, China's crude oil dependence has shown a trend of fluctuations in recent years, rising from 53.7% in 2010 to 70.8% in 2019.



**Figure 1.** 2010-2020 Crude oil dependence of China (unit: %)

At the same time, with the improvement of electrification and electronization in China's economic and social development, the dependence of the Chinese market on imported crude oil will only continue to deepen[1]. As a non-renewable leading resource and an important strategic material, oil will undoubtedly become the focus and key of international contention and control in the 21st century. Therefore, how to ensure China's oil safety is related to the sustainable and healthy development of national economy. Therefore, it is of great practical significance to study China's petroleum security strategy in this paper.

### 1.2.2. Theoretical Significance

In recent years, researchers at home and abroad have conducted increasingly in-depth research on national security, and divided national security into traditional security issues and non-traditional security issues. Traditional security issues generally refer to military threats posed by external countries to one's sovereignty and territorial integrity, including diplomatic security and military security. Non-traditional security includes not only the national security issues ignored in the traditional realistic security paradigm, but also the "human security" issues ignored in the traditional security paradigm[2]. As one of the most important energy sources in the 21st century, oil security is undoubtedly closely related to national security. Therefore, this paper has a strong theoretical significance for the study of Petroleum security in China.



**Figure 2.** National security views of major countries today

### 1.3. Research Methods

Firstly,Combining history with reality, through the description and analysis of the current situation of China's petroleum security, this paper studies the important factors affecting China's petroleum security strategy, and puts forward some policy suggestions for guaranteeing China's petroleum security and safeguarding national economic interests.

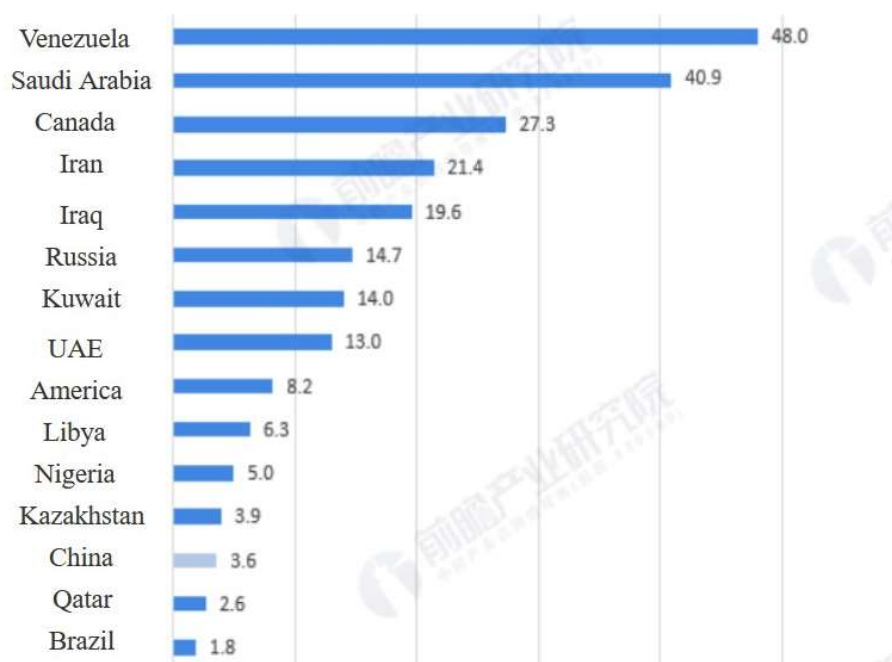
Secondly,analyze how to guarantee China's oil security and realize China's oil security strategy by using the theory of interdependence and supply and demand in political economy.

## 2. Overview of Petroleum safety in China

### 2.1. Current Situation of the Oil Market

#### 2.1.1. Serious Shortage of Oil Resources

Data show that China's proven prospective reserves of petroleum geological resources are only 18.14 billion tons, less than one sixth of the world's per capita level. At present, China's remaining recoverable reserves are low, about 3.555 billion tons. The reserve-production ratio is only 14.8 billion tons, and the reserve-production ratio of developed oil areas is only 10.9, ranking 41st in the world in terms of per capita reserves. At the same time, most of China's oil fields have entered the middle and late stage of exploitation, and the recoverable value is not high. In the foreseeable future, oil production is unlikely to increase significantly, especially in eastern China, which has entered the middle and late stage, with more water than oil and serious natural decline.

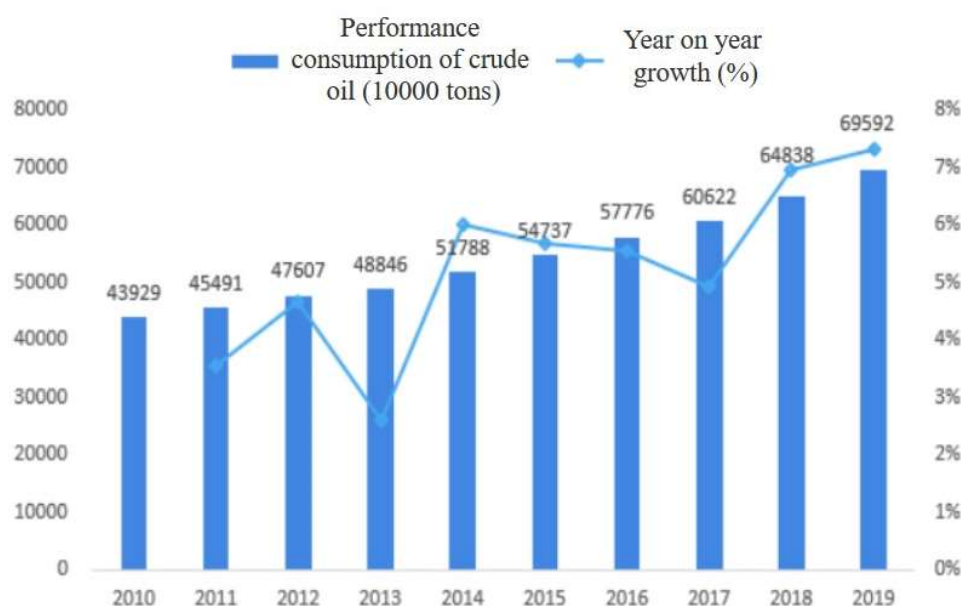


**Figure 3.** Proved oil reserves of some countries (unit: 1 billion barrels)

#### 2.1.2. Oil Supply and Demand Contradiction is Prominent

In 2003, China's oil demand reached 5.43 million barrels a day, overtaking Japan to become the world's second-largest oil consumer after the United States. From 2001 to 2004, China's oil consumption increased at an average annual rate of 10 percent, and even reached 15 percent in 2004. With the rapid development of social economy, China's oil demand is bound to show a trend of substantial growth. At the same time, data show that during the 10 years from 2010 to 2019, China's oil consumption increased by 5.49% annually, while the annual growth rate of oil production during the same period was only 1.71%. It can be seen that the contradiction

between oil supply and demand is very serious, and we have to rely on imported oil to maintain the demand for oil.



**Figure 4.** China's crude oil apparent consumption and growth rate 2010-2019

## 2.2. Oil External Dependence

Oil external dependence refers to the percentage of imports and consumption of crude oil and petroleum products, and is an important indicator of oil supply security. The higher the external dependence, the more vulnerable the security of oil supply is to threats.

### 2.2.1. High Import Dependence

In 2019, China's oil consumption reached 650 million tons, of which about 505 million tons were imported. China is the world's largest net importer of oil, and its oil consumption ranks the second in the world, second only to the United States, with 72% dependence on oil imports. Experts predict that oil imports will reach 600 million tons by 2030 and the dependence on foreign oil will exceed 80 percent. For China, the rising dependence on oil imports indicates that the instability of China's oil import sources is also rising. Therefore, the loss of oil import dependence is the fundamental problem that threatens China's oil security.

### 2.2.2. High Oil Consumption Intensity

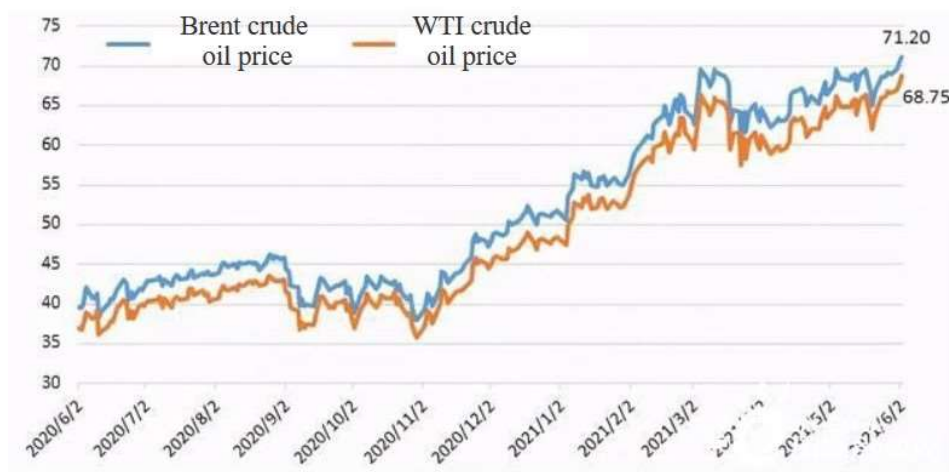
Oil consumption intensity refers to the ratio between economic growth and oil consumption. Reducing the intensity of oil consumption can reduce the external dependence of oil. The lower the intensity of oil consumption is, the higher the consumption efficiency is, and vice versa. Compared with other oil consuming countries, China's oil energy efficiency is very low. Data show that China's energy consumption per unit of GDP per dollar is 11.5 times that of Japan, 7.7 times that of France and Germany, 5.3 times that of the United Kingdom and more than four times that of the United States.

## 3. The Basic Factors Affecting China's Oil Security

### 3.1. International Oil Price

The price of crude oil and refined oil in China has been gradually connected with the international oil market more than a decade ago. With the increase of China's oil imports, the impact of China's economy on the price fluctuation of the international oil market is gradually increasing, and the importance of ensuring oil security is also increasing. As a result,

uncertainty about the performance of China's economy will inevitably be exacerbated by the impact of rising oil prices.



**Figure 5.** 2020.6-2021.6 Crude oil futures price trend (unit: USD/barrel)

### 3.1.1. Macro Level

Rising oil prices will lead directly to higher inflation, forcing China's central bank to raise interest rates and further slowing economic growth. High oil prices therefore threaten the macroeconomic outlook. Moreover, the higher the proportion of oil in primary energy and the higher the dependence on foreign countries, the more serious the impact of oil price rise will be. According to statistics, China imported about 542 million tons of crude oil in 2020, up about 7.11% from 2019, and the average import price decreased by 31.9%, resulting in a net increase of 18.02 trillion yuan in foreign exchange expenditure. Obviously, the high oil price is easy to affect China's economic development and social stability.

### 3.1.2. Micro Level

First of all, the rise of oil prices in the international market leads to a surge in the price of domestic refined oil products, which then drives up the price of products in the relevant industries with oil as the main fuel and raw materials, such as coal and building materials, etc. The increase of product costs drives up the price and hinders the growth of consumer demand. Secondly, with the rise of production costs, the competitiveness of products is reduced, which makes China's export commodities face a potential crisis -- the reduction of export volume. In addition, the export target countries are experiencing difficulties in their international balance of payments due to rising oil prices, thus reducing their import capacity[3].

## 3.2. Oil Import Channel

The stability of oil import channels is a key link to ensure the security of China's oil supply. If the import channels are blocked, the normal supply of oil will be greatly threatened. How to ensure the security of China's oil import channels is a major problem that needs to be solved in front of oil enterprises and government decision-making departments.

The three centers of the world's oil export market are the Middle East, Africa and the Commonwealth of Independent States. As the largest oil importer in the world, China is bound to have contacts with these major oil exporting countries in terms of oil production, exchange and transportation. In this process, we should not only ensure the smooth acquisition of oil from petroleum exporting countries, but also coordinate the import of oil from different petroleum exporting countries to maximize the interests of China's oil demand. Currently, Korea imports 56.2 percent of its crude oil from the Middle East, 22.5 percent from Africa, 14.4 percent from the Asia-Pacific region, and 6.9 percent from Europe and Central Asia.



### 3.3. Transport Channel for Imported Oil

Whether oil can be safely and timely transported from the place of oil exploitation to the place of consumption through certain channels and ways is also one of the main aspects of stable oil supply. In recent years, with the rapid growth of China's oil trade, the transportation volume of China's imported oil has increased greatly, the supply chain has become longer, and the security problem of China's oil import transportation channel has become increasingly prominent.

China's oil has few options for transportation, with more than 90 percent of its oil imports shipped by sea. China's shipping routes mainly have 3, namely the Middle East route, Africa route and Southeast Asia route, these three routes account for about 80% of China's imports of crude oil, and must pass through the Malacca Strait. China's oil imports are so large that accidents in maritime transport routes will directly affect China's normal oil supply, and thus affect people's happy life, normal economic operation and even national defense security.

## 4. China's Petroleum Security Policy Suggestions

### 4.1. Vigorously Improve the Efficiency of Oil Utilization

Major developed countries in the world regard saving energy and improving energy efficiency as important goals of their energy strategies and important measures to ensure the security of energy, especially oil supply. China has a great potential to save oil. Improving the efficiency of oil utilization and reducing dependence on oil is always a major direction of our efforts.

There are two main ways to improve oil utilization efficiency:

First, encourage private capital to compete in some oil monopoly industries and promote the reform of property rights system of large oil energy enterprises, which will help to ensure the supply of oil energy and make enterprises become real market subjects and leading factors of oil prices. At the same time, the optimization and adjustment of industrial structure have an important impact on slowing down the rapid growth of petroleum energy demand, and the introduction of reasonable market competition mechanism is beneficial to improve the utilization efficiency of petroleum.

Second, through technical transformation, energy consumption can be significantly reduced and good economic benefits can be brought. In the process of petroleum production, transportation and terminal utilization, it is of great significance for China to continuously improve the level of energy efficiency by drawing lessons from foreign advanced energy conservation management experience and technology, adopting advanced high-efficiency and low-consumption technology and equipment, and paying attention to scale economy of energy efficiency.

### 4.2. Diversification Strategy of Oil Import Sources

"Diversification strategy of oil import" refers to the use of different modes of transportation to safely transport the oil purchased from the origin of oil in the world, the share of oil obtained, and the oil traded on the world spot or futures market back to China for use. In recent years, China's oil import diversification strategy has been carried out smoothly, and China has actively carried out oil diplomacy with a number of major oil exporting countries. On the one hand, China has reduced its over-dependence on a specific region, and on the other hand, It can obtain foreign oil supply in a more stable and larger quantity.

### 4.3. Actively Develop New Energy Sources

The development of alternative energy is one of the focuses of attention. Global oil production is forecast to peak around 2040, followed by a gradual decline before reaching exhaustion early in the next century. Therefore, if the world can still secure oil supply through various means in 2020, it will have to rely on the development of complementary and alternative energy sources of oil to expand gradually after 2040-2050. At present, all energy companies are committed to

investment and research and development of alternative energy. It is expected that by 2030, alternative energy will account for about one-fifth of the world's energy consumption, with a very promising development prospect. As the world's largest oil importer, China has to face the fact that oil supply is decreasing, so actively developing new energy has become a major focus of China.

#### **4.4. Join the Global Oil Pricing System**

Over the years, due to the defect of external procurement management system of our country and the futures market is not sound, formed a "several purchasing, internal competition, push each other", makes our country can only passive receiving international oil prices, thus in the "buying high and selling low price trap, bring great losses to the national economy. Therefore, China should give full play to the demand advantages of major consumer countries, actively integrate into the global pricing system, strive for the right to participate in pricing, say and control ability, and change the passive recipient of international prices into a positive influence.

#### **4.5. Improve the National Strategic Petroleum Reserve System**

Strategic petroleum reserve refers to a certain amount of petroleum reserve or savings established in a planned way in peacetime in order to cope with unexpected situations in war and peace time and guarantee the normal operation of national economy and national defense demand. Strategic petroleum reserve plays a major economic role in alleviating the impact of oil supply shock on the overall economy by releasing reserve oil to the market to relieve the psychological pressure of the market, thus reducing the possibility that oil prices will continue to rise. As an effective way to deal with short-term oil supply shock, strategic petroleum reserve is one of the means to ensure oil security. The weakness of China's economic development lies in the fact that oil storage technology lags behind that of western developed countries, resulting in high dependence on imported oil. Due to the shortage of petroleum strategic reserve, the state and enterprises will be in a very passive position in case of emergencies, which is not conducive to guaranteeing national economic security.

## **References**

- [1] EAL. International Energy Outlook 2001. World Oil Market: 29.
- [2] Fu Yong. Non-traditional Security and China's New Security Concept [J]. World Economic Research, 2004(7): 10~11.
- [3] Liu Zhenqiu Wang Xianglin. Current oil price changes in international market and its impact on China [J]. Price Theory & Practice, 2003(4): 21.