

The Impact of Sanctions on Iran-China Trade Interactions: Political Risks and Financial Flexibility

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Abstract

Imposing sanctions is a tool to increase pressure on countries' political risk, an issue the United States has been implementing especially since 2018, with its unilateral sanctions against Iran. The main purpose of this study is to examine the impact of sanctions on trade with China and identify ways to improve them. A review of the time series of Iran-China trade from 2000 to 2021 shows that although trade transactions were continuous during the period of sanctions before 2018, they fluctuated in response to sanctions, and trade fell to its lowest level in 2018. The study of existing strategies for maintaining the level of Iran-China exchanges indicates that the development of Iran's export portfolio, especially in the field of petrochemical products, along with Iran's membership in BRICS and the use of existing processes in this organization for de-dollarization, are the facilities available to develop Iran's exchanges under sanctions.

Keywords: Iran, China, Sanctions, De-dollarization, BRICS.

Introduction

The relations and interactions among countries depend on their approaches to the intertwined domestic and international conditions. The foreign policy approach plays a decisive role in shaping governments' behavioral orientation in bilateral or multilateral relations. The behavioral orientation of governments is often different, leading to a mix of cooperation, friendship, competition, and hostility, which in turn shapes the alignment or discord of governments' foreign policies and their sensitivity in their business relations with others. China-Iran relations are no exception. Despite long-standing historical ties, bilateral relations between the two countries have remained volatile, especially in re-

cent years, due to factors such as the United States' unilateral and multilateral sanctions. Although the Islamic Revolution of Iran has been the target of U.S. sanctions since the beginning of its victory, the multi-layered and multiple nature of U.S. sanctions in recent decades has had the greatest impact on the level of relations between the two countries. The sanctions have targeted the economies of both countries and sought to impose restrictions on them. On the other hand, Iran and China are revisionist countries, which have created common chapters in their foreign policies and, accordingly, have shaped their closeness and, ultimately, their extensive cooperation.

In terms of relations between the two countries, energy exchanges are of great importance. Today, the role of energy in the global economy has grown to the point that it is possible to establish a direct and harmonious relationship with issues such as economic growth, recessions, and countries' trade balances. The efforts of industrialized countries to achieve reliable, affordable energy sources can be evaluated in this regard. In other words, natural energy reserves are considered the backbone of the global economy, and industrialized countries must impose more effective control over the relationship between energy and other economic commodities worldwide. This has made Iran, which ranks third in oil reserves at 18 percent, an important energy source for China. China has been an importer since 1993, despite being the world's fifth-largest oil producer. For this reason, ensuring energy stability and security is one of the most important diplomatic priorities for China's leaders. It has become one of the country's strategic goals on the international stage.

In contrast, Iran, with abundant energy resources, geopolitical centrality in regional and international transit, its position on the new Silk Road, and great political and security influence and importance in the Islamic world and the Middle East, can meet China's strategic needs. However, sanctions imposed on Iran have made it necessary for trading partners to mitigate their impact. Accordingly, this research seeks to investigate how the United Nations, the European Union, and the United States of America's sanctions against Iran have impacted Iran-China energy relations. If the sanctions are effective, in which direction will improvement occur? To answer the question, the time-series analysis of Iran-China exchanges from 2000 to 2021 has been used. The present research seeks to assess the impact of these sanctions in pre-sanctions periods, during sanctions, during the maximum pressure period that was accompanied by the expansion of the scope and severity of comprehensive sanctions, and during the JCPOA and reimposition of sanctions after the United States' withdrawal from the JCPOA on Iran-China energy relations. Then the two countries have taken steps to reduce the impact of sanctions or can focus on them.

Literature Research

This section provides a general overview of sanctions theory and its mechanisms. The use of sanctions, particularly economic sanctions, refers to the actions or threats of a country or international organization to punish, restrict, or more generally influence the actions of the sanctioned state, private entities, or powerful elites. Sanctions are clever, targeted, or threatened withdrawal from trade or financial relations (Draca et al., 2023; Gaur et al., 2023; Jeong, 2019). Functionally, the sanctions regime is implemented by blocking assets and imposing trade restrictions to advance foreign policy and national security goals (Blackwill & Harris, 2016). Compared to other foreign policy mechanisms, sanctions are often a medium-level tool that falls short of armed conflict. Sanctions impose a variety of costs on sanctioned countries: currency crises caused by declining exchange rates and dollar

scarcity, banking crises due to disconnects between domestic and foreign banks, and, more generally, economic shocks from a decline in international trade. In addition to sanctioned countries, their trading partners face challenges due to secondary U.S. and UN sanctions.

Sanctions mechanisms against Iran are divided into economic and non-economic thematic areas. Economic mechanisms include financial and banking sectors, energy (oil and gas), petrochemicals, shipping, automobiles, and precious metals. Although non-economic areas cover human rights, terrorism, arms sales, and nuclear issues, their mechanisms are largely economic. In the meantime, trade sanctions are measures to limit economic engagement with the target country by limiting international trade (Maloney, 2015). In this regard, the scope and depth of trade sanctions vary from import to export and are applied unilaterally or multilaterally across sectors. Financial sanctions, on the other hand, include the exchange of financial assets and the blocking of investments. These types of sanctions have increased significantly over time due to the expansion of global economic activity and the integration of financial markets. The main factor influencing sanctions is the dependence of the international trade system on the SWIFT system and the dollar, known as dollarization. In other words, sanctions are imposed through the dollar instrument and by excluding target countries from doing business with it (Heuleppa, 2023).

Since Iran-China trade is mainly based on energy exchanges and the focus of this study is on the effects of sanctions on this part of the two countries' relations, it is generally possible to divide the sanctions mechanisms of Iran's oil and gas industries into four general areas:

1. Sanctions on the purchase and sale of crude oil, gas condensate, and petroleum products.
2. Sanctions on investment in Iran's oil and gas industries and financing them;
3. Sanctions on the export of equipment and technology to Iran;
4. Sanctions on the export of refining products and gasoline to Iran.

The U.S. sanctions on Iran in oil sales date back to the 1979 seizure of the U.S. Embassy, and since 2012 with Obama's Executive Orders 13622 and 13628, the National Defense Authorization Act for 2012 (NDAA, 2012) by Congress on December 31, 2011, the Iran Threat Reduction and Syrian Human Rights Act (TRA) in August 2012, the scope and severity of sanctions increased and various bank, financial, petrochemical, and shipping layers. Moreover, the insurance was covered. Iran's petrochemical industry has also been seriously included in the sanctions regime against Iran since 2011 through various laws and on several occasions. Under Executive Order 13590 (November 2011), under the pretext of the International Atomic Energy Agency's report on Iran's nuclear program, the United States expanded the scope of the D'Amato Act (ISA) to the petrochemical industry. The sanctions mechanisms of this industry also include five main sections: sanctions on petrochemical exports; financial and banking transactions related to exports; shipping and transportation insurance; technical knowledge, equipment, and financing for the establishment of petrochemical units. The following table presents the executive mechanisms for sanctions in the petrochemical industry.

Table 1: sanction Mechanisms against Iran's Petrochemical Industry

Title	Date	Executive mechanism
Executive Order 13590 of the President of the United States	November 21, 2011	Prohibiting the provision of Iranian-backed goods, technology services that would cause the petrochemical industry to be exported if the transaction is worth more than \$250,000 or the total annual transaction value exceeds \$1 million.
EU Council Regulation 2012/267	23 March, 2012	Ban on selling equipment and technology to Iran Investment in petrochemical industry imports and purchasing petrochemical products, providing financial services such as transportation insurance and reinsurance to Iran by the countries of the Europe Union
Executive Order 13622 of the President of the United States	30 July, 2012	Sanctions on any financial entity or individual involved in financial transactions and transactions related to the purchase of Iranian petrochemical products.
The Iran Threat Reduction Act and Syrian Human Rights Act approved by the U.S. Congress	August 3, 2012	Sanctions on any individual in providing goods technology services or support in the development and purchase of petrochemical products from Iran Prohibition of any financial transaction related to the production of logistics or the sale of goods, services and technology related to the Iranian petrochemical industry ...
EU Council Regulation 2012/1263	21 December, 2012	Ban on providing ships to any Iranian individual or company for the transportation and storage of petrochemical products, extending sanctioned items of equipment and technologies related to the petrochemical industry
Executive Order 13645 of the President of the United States	June 3, 2013	Sanctions on any individual or entity involved in financial transactions related to the purchase, sale, transportation and marketing of Iranian petrochemical products.

Sources: US Congress Act (2016); Presidential Documents (2014); The Council of The European Union (2012); Presidential Documents (2012); Presidential Documents (2011); US Congress Act (2010).

In addition to the sanctions literature, political risk theory also explains how creating barriers to a country's trade transactions and reducing access to, or disrupting, the target country's foreign trade system by monitoring the SWIFT system and disconnecting it from dollar payments can destabilize currency systems. The trading partners of the target countries will reconsider their trade, be forced to comply with sanctions due to increased political and financial risks, or be deprived of or punished for trade. According to this theory, international sanctions send strong signals of rising risk, as the target country's access to SWIFT is limited and it cannot pay in dollars (Heuleppa, 2023).

Moreover, political risk theory explains how instability in external systems affects investment op-

portunities. In this theory, investors are portrayed as ethical, risk-averse, and cautious. International sanctions send strong signals of rising levels of risk. Import bans and banking restrictions reduce the host market's capacity and return on investment. While the host country's economy struggles to survive, prospects for future development and market growth are questionable. Sanctions against governments may pose risks of political instability, armed conflict, or internal conflict, as well as potential credit damage to investors. Mirkina (2018), for example, argues that U.S. companies often anticipate sanctions and act on concessions before they take effect. Several studies support this view by providing evidence of foreign investors withdrawing from sanctioned countries and the significant economic consequences of these exits.

The proof of political risk theory is that when a sanctioning country intensifies its sanctions and declares its opposition to the target country, multinational companies become more cautious about investing there and may refuse to do so.

Methodology and data

In this study, a time-series analysis was used to examine the longitudinal quality of governance in Iran and the impact of sanctions on it. Time series analysis is an appropriate statistical method for longitudinal study designs. Such designs typically involve single subjects or units of study, measured repeatedly at regular intervals across multiple observations. Analysis of time series helps us understand natural processes and patterns of change over time and evaluate the impact of planned or unplanned interventions.

A time series process is a set of random variables in which the set of times at which the process has been, will be, or can be observed, and changes over time are examined. Time series are created as records of processes that change over time. A record can be a continuous tracking or a series of discrete observations. Typically, observations can be at full-time intervals, random sampling in a timeframe, or at fixed time points. Time series analysis is used to construct a model that describes the conditions of one or more variables over time. In social science studies, there are two modes in the time series set:

Trend: The evolution of the studied situation over a long period with a steady upward or downward trajectory.

Cyclical changes: Repeating the upward or descending movements of the studied situation around trend levels (Dettling 2020).

The analysis of time series has been more developed and used in areas such as engineering and economics compared to social science research. A primary method used in the social sciences is the autoregressive integrated moving-average (ARIMA) model. ARIMA models have been particularly useful for analyzing time series because they provide a basic framework for modeling temporal dependence and enable proper statistical testing.

Research data are exchange rates registered in the SWIFT system and published by the World Bank and the IMF.

Findings

To investigate the impact of international sanctions on Iran-China trade, the exchange process of these two countries has been selected between 2000 and 2021, and trend analysis has been carried out using time-series analysis. To collect data, international trade information has been sourced from the

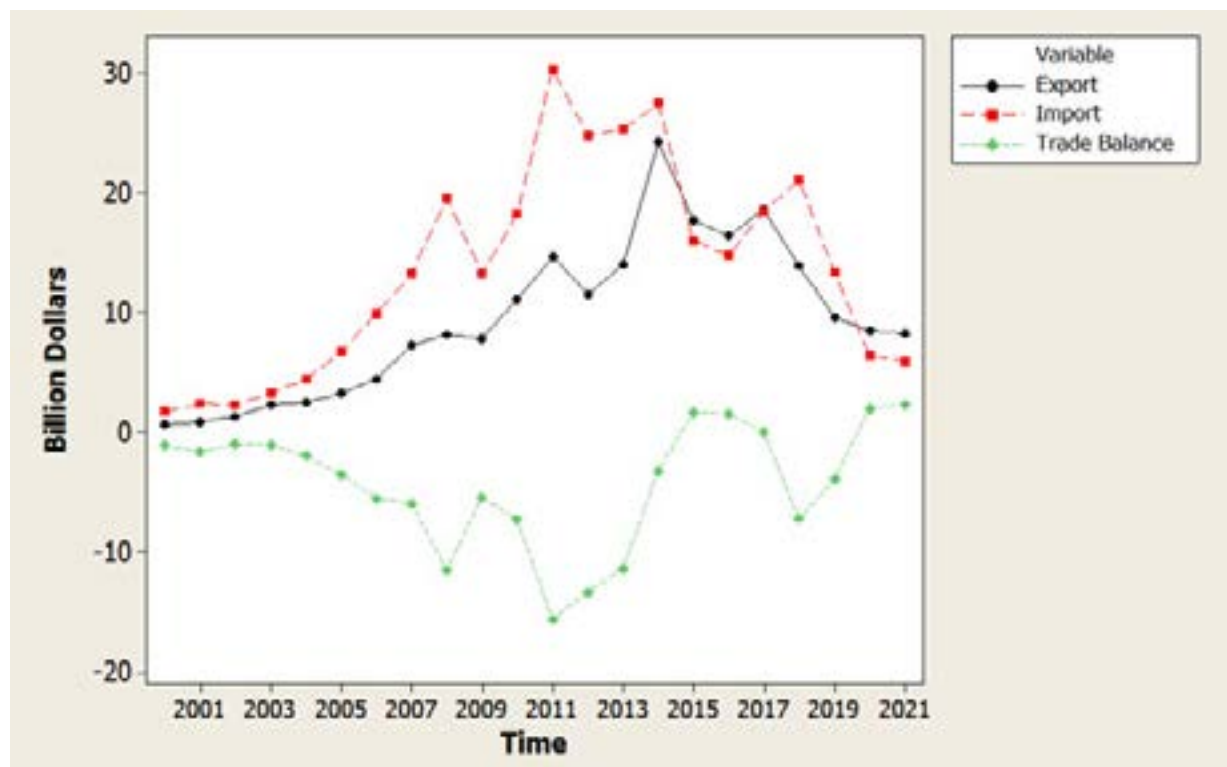
World Bank and the Economic Complexity Observatory. The figures are based on billions of dollars. To closely examine the impact of sanctions, the period under consideration is divided into five periods:

Table 2: International Trade Courses of Iran

Course Name	Timeframe
Pre-sanctions	2000-2006
Sanctions	2007-2011
Maximum pressure	2012-2015
JCPOA	2016-2017
Re-sanction	2018-2021

In Figure 1, the time series of China's exports and imports to Iran between 2000 and 2021 is outlined:

Figure 1: China-Iran Trade Time Series



Source: Authors' calculation based on data from World Bank and IMF resources

As the chart shows, until the maximum pressure phase of the United Nations sanctions on Iran, China's imports from Iran have always exceeded its exports, and for this reason, until 2014, the trade bal-

ance was always in Iran's favor. This means that at the time the secondary sanctions against Iran were implemented in 2007, the upward trend in Iran-China trade had not stopped, and it was not until 2015, during the peak of maximum pressure to comply with the sanctions, that trade between the two was disrupted. China, which in 2011 was Iran's largest buyer of Iranian oil, under new conditions and U.S. pressure, pursued a policy of drastically reducing oil transactions with Iran rather than cutting off imports from Iran and replacing them with imports from Arab countries, including Saudi Arabia. The average Iranian oil exports remained steady for 1.5 years until the conclusion of the JCPOA, at 1.1 to 1.2 million barrels per day (according to the World Energy Analysis Center), and only in July 2012 did exports fall below 1 million barrels per day (Ianchovichina et al., 2016). To continue exporting and selling oil under sanctions, Iran stores oil at times, including in 2014 at the Chinese port of Dalian, and then sells it to customers in South Korea and India.

According to Figure 1, the short period of the JCPOA has been accompanied by a very low uptrend. However, the unilateral sanctions imposed by the United States in 2018 and the imposition of secondary sanctions on countries that trade with Iran have led to a decline in trade between Iran and China since 2018. After the JCPOA, because sanctions on oil sales are intertwined with banking sanctions, SWIFT, and shipping, and according to the National Defense Authorization Act 2012 and the European Sanctions Act, central bank sanctions, along with sanctions on the energy sector as a law, minimized the possibility of energy cooperation between the two countries, and the upward trend was very small. After Trump withdrew from the nuclear deal in May 2018 and reimposed sanctions, China again pursued a pre-JCPOA policy of reducing, rather than cutting oil purchases from Iran, and, despite a commitment not to increase future oil imports, it rejected U.S. pressure to stop buying Iranian oil. According to official Chinese data, China's purchases of Iranian oil began to decline significantly in 2019 due to compliance with sanctions to avoid Washington's fines, including restrictions on access to the U.S. financial system (Chaziza, 2020). China's official imports of Iranian oil were \$118 million per month in 2020, down from \$589 million per month in 2019, an 82 percent year-on-year decrease (Green & Roth, 2021). China's pendulum policy between intermittent compliance and noncompliance with U.S. sanctions against Iran, in addition to supplying Iran's energy needs, is related to intense economic competition with the United States. On the one hand, China has refused to fully cooperate with U.S. sanctions against Iran in economic competition with the United States. On the other hand, it has refused to use this oil to maintain its complex relations with Washington amid the trade war.

In addition to oil cooperation, China has been a regular customer of Iran's petrochemical products, alongside crude oil, and is one of Iran's most important partners in the polymer and chemical products market. The following table shows the most important Chinese imported products from Iran, including petrochemical products in the studied period:

Table 3: Chinese Imported Products from Iran

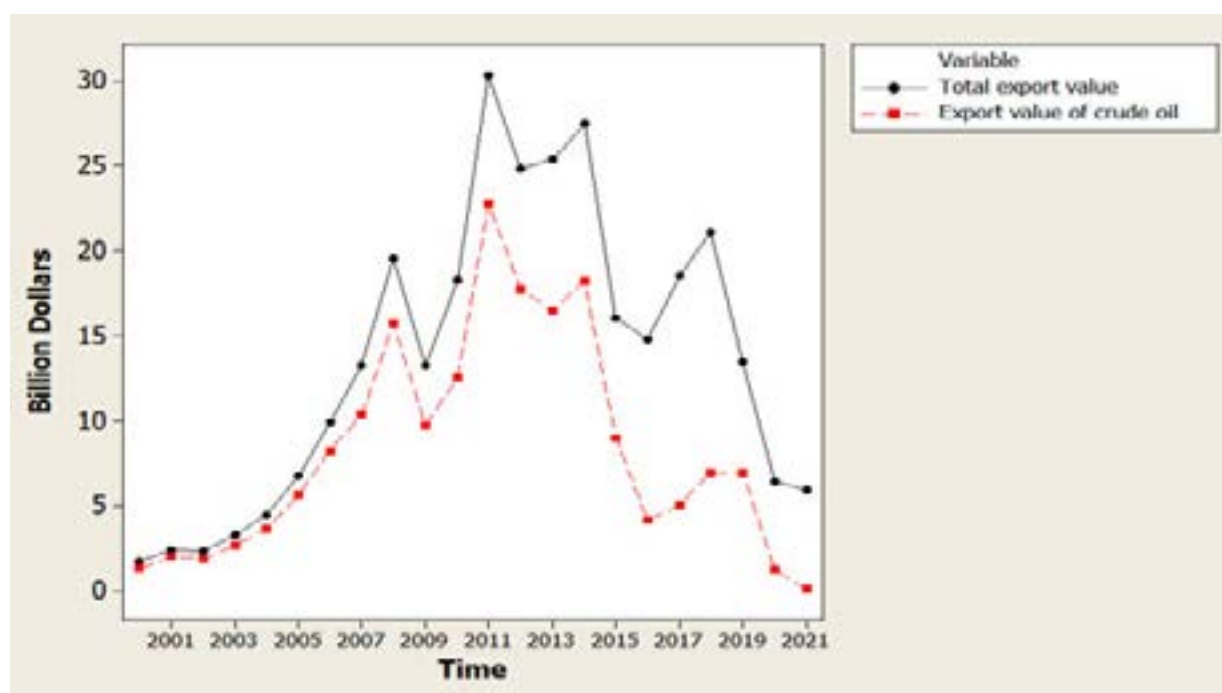
Course Name	Average value of each year in the period (Billions of dollars)	The most important imported products	average of each year in the period	
			Percent	Value
Pre-sanctions	4.44	Crude Oil	82.1	3.64
		Oil Gas	2.23	0.099
		Oil refined	1.72	0.076
Sanctions	18.96	Crude Oil	75.24	14.27
		Iron ore	5.1	0.966
		Oil refined	1.87	0.355
Maximum pressure	23.46	Crude Oil	64.73	15.19
		Ethylene Polymers	7.35	1.72
		Oil Gas	4.49	1.05
JCPOA	16.69	Crude Oil	27.75	4.63
		Ethylene Polymers	21.6	3.61
		Oil Gas	12.15	2.03
Re-sanction	11.73	Ethylene Polymers	28.5	3.34
		Crude Oil	26.2	3.07
		Non-edible alcohol	5.5	0.65

Source: Authors' calculation based on data from World Bank and IMF resources

According to the information provided, crude oil is the most important Iranian export to China, with its share fluctuating over different periods. The petrochemical industry during the period of maximum pressure and re-sanctions was most affected by financial and banking sanctions and transport restrictions. However, it was able to overcome these problems to some extent through measures. For example, international insurance companies (P&I and H&M) generated substantial foreign-exchange income and circumvented sanctions by insuring their ships and oil tankers. Iran and China also opened credit lines using Iran's overseas assets, as China could provide foreign sources of petrochemical financing alongside domestic resources. The two countries agreed to allocate part of the assets to joint projects in Iran for financing, with Iran's deposits with Chinese banks serving as the guarantee. China also invests in petrochemicals, cement, steel, urban trains, water, and sewage (Green & Roth, 2021). During the JCPOA, the remaining sanctions on the National Oil and Tanker Company and

Tidewater, the port service provider, prevented the export of this industry's products, as they had before the JCPOA (Green & Roth, 2021). After the reimposition of the sanctions in November 2018, China imported more of these products, including ethylene polymers, than other importing countries. China thus remained Iran's biggest customer, although the resumption of sanctions adds to the complexity and difficulty of continuing cooperation. Based on the authors' estimates, the total value of Iran's exports to China and the share of crude oil exports in it are shown in Figure 2:

Figure 2: Total export value and value of Iranian crude oil exports to China



Source: Authors' calculation based on data from the World Bank and IMF resources

As the chart shows, there is a direct relationship between the value of Iranian oil exports to China and Iran's total exports, confirming the importance of Iranian crude oil exports to China in Iran's international trade basket. Time series have been used to investigate the relationship between crude oil exports and Iran's total exports to China.

Table 4: Time Series Effect of Crude Oil Export Value on Total Value of Iranian Exports to China

Predicted	Predictor	Model Fitting	Ljung-Box		
		Factor R	Coefficient	df	significant
The total value of Iran's exports	Export value of crude oil	0.939	9.052	17	0.939

The study's results show that Iranian crude oil exports to China alone account for more than 94 percent of Iran's total exports. In other words, 94% of Iran's total exports to China depend on crude oil. The point to bear in mind is that the value of crude oil, in addition to the volume of trade, has been heavily influenced by global prices, which is why the following table examines the volume and value of trade in Iran-China crude oil.

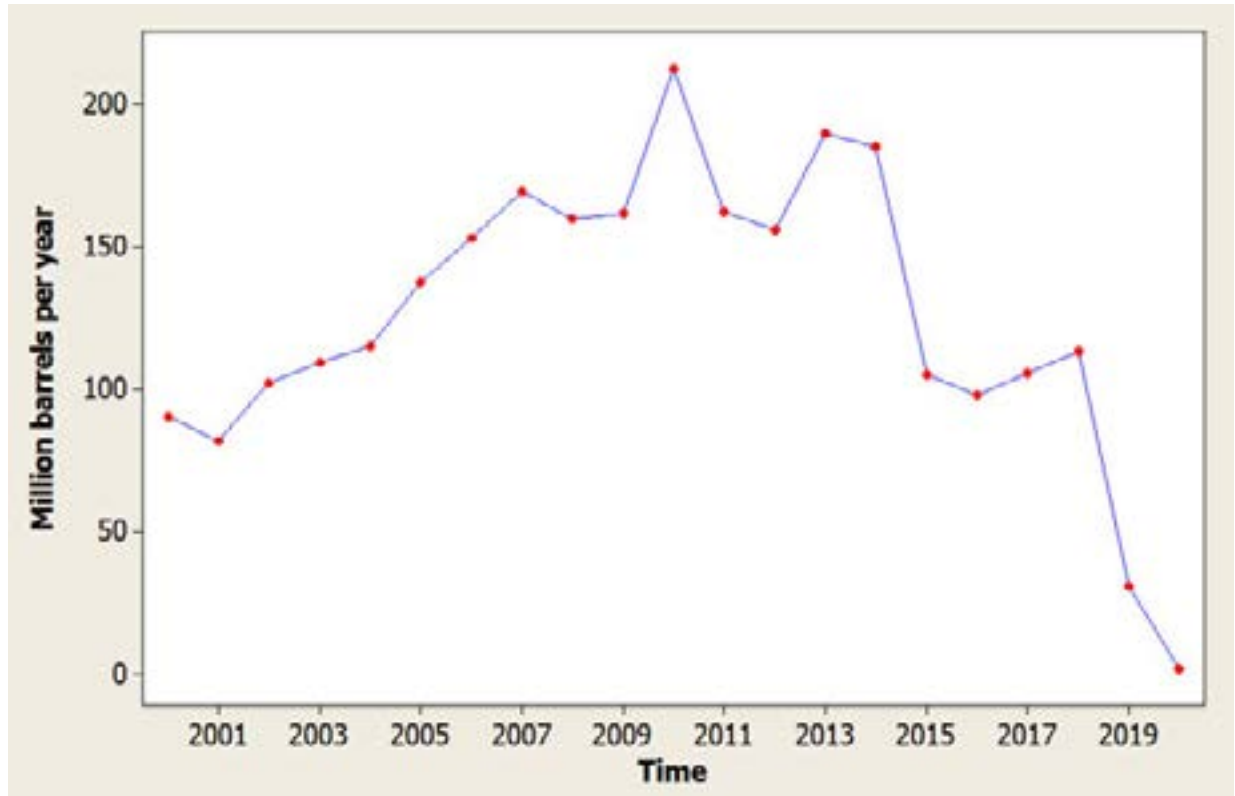
Table 5: The volume and value of Iran's crude oil exports to China

Course name	Ratio of crude oil to total trade	Crude oil value (billion dollars)	Average price of crude oil (barrels in dollars)	Crude oil sales (million barrels per year)
Pre-sanctions	82.1	3.46	34.56	98.47
Sanctions	75.24	14.27	81.37	171.39
Maximum pressure	64.73	15.19	90.03	173.21
JCPOA	27.75	4.63	45.76	101.5
Re-sanction	26.2	3.07	55.25	62.96

Source: Authors' calculation based on data from World Bank and IMF resources

Taking into account the average annual oil sales in the period under consideration until the United States reimposed sanctions on Iran in 2018, the imposition of UN sanctions did not disrupt Iran-China trade. Of course, it is worth noting that during the period of maximum pressure, part of the Iran-China crude oil trade was disrupted, as seen over the two years of the JCPOA. To better illustrate the impact of sanctions on Iran's crude oil exports to China, the annual export situation from 2000 to 2021 is delineated:

Figure 3: Volumes of Iranian Crude Oil Exports to China



Source: Authors' calculation based on data from the World Bank and IMF resources

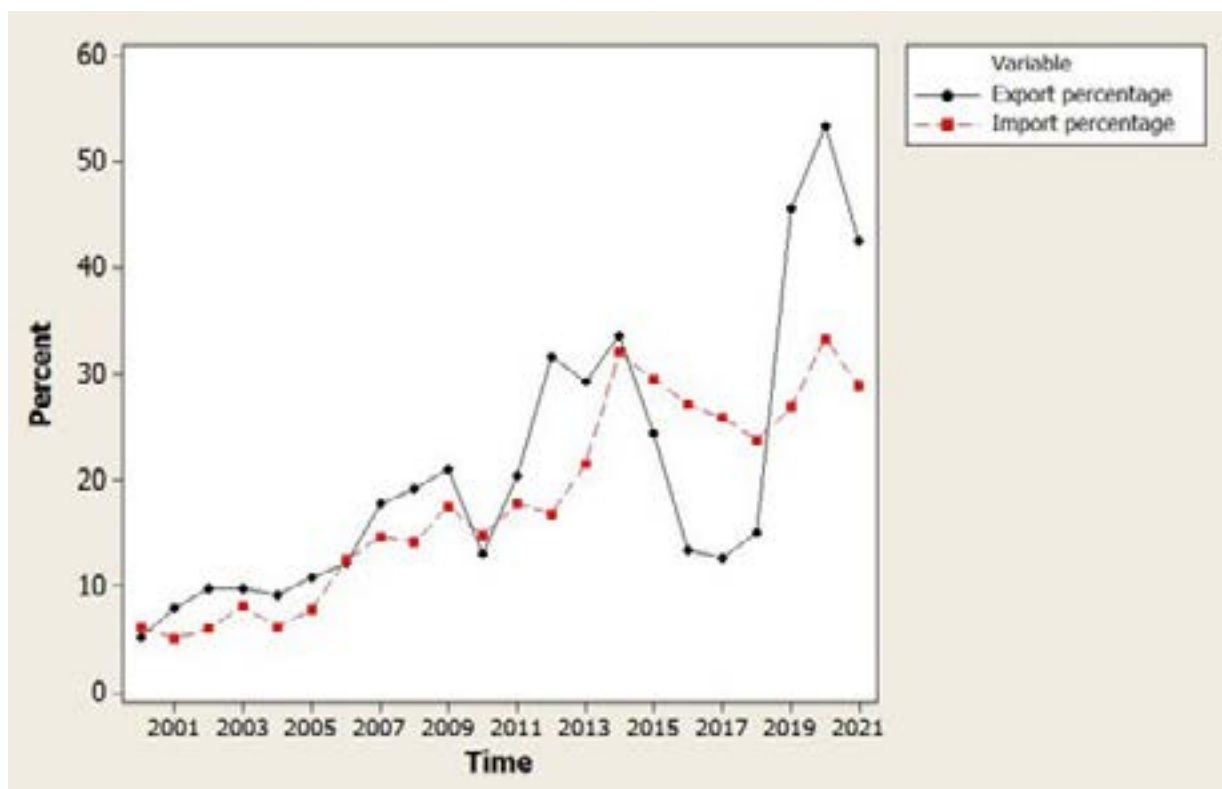
The chart shows the main impact of sanctions on Iran-China trade: Iran's crude oil exports to China began in 2000 at about 100 million barrels per year and rose to more than 210 million barrels per year by 2010. However, with the onset of maximum pressure on Iran in the form of UN sanctions and secondary U.S. sanctions, this level fell to about 100 million barrels per year in 2014 and 2015, marking the end of maximum pressure on Iran. The start of the increase in crude oil exports during the JCPOA did not last long, and with the reimposition of U.S. sanctions on Iran was sharply reduced, reaching about 31 million barrels per year in 2020 and about 2 million barrels per year in 2021, the lowest in the time series and about 50 times lower than in 2000, when the base year of the time series. In other words, in two periods, Iran's crude oil exports to China have been on a downward trend:

- Between 2013 and 2015, which is the period of maximum pressure, exports reached about 100 million barrels per year, which is equivalent to the start year of the time series.
- Between 2018 and 2021, which equates to unilateral U.S. sanctions against Iran and the use of a secondary sanctions mechanism to sanction countries with trade with Iran, Iran's crude oil exports to China have fallen sharply to about 2 million barrels per year. This has led to crude oil, which was by far the top of Iran's exports to China by a wide margin in 2020, with a sharp decline in 2021, accounting for only about 2.2% of Iran's exports to China and ranking 10th among Iran's export products.

Another measure is the percentage of trade partnerships when examining the impact of sanctions on

Iran-China trade relations. This criterion is based on exceeding the value of exchanges and converting it to an annual volume of exchanges; it is an appropriate criterion for studying the amount of exchanges between two countries, regardless of exchange rates, which are affected by prices.

Figure 4: Iran's Trade Partnership with China (%)



Source: Authors' calculation based on data from World Bank and IMF resources

Table 6: Iran-China Trade Partnership

Course name	Average export percentage	Average percentage of imports	China rank	
			Export	Import
Pre-sanctions	9.22	7.40	Third	Fourth
Sanctions	18.25	15.76	First	Second
Maximum pressure	29.73	24.96	First	First
JCPOA	13.03	26.46	Second	First
Re-sanction	39.11	28.20	First	First

Source: Authors' calculation based on data from World Bank and IMF resources

The important point in the chart and table of "Iran-China Trade Percentage" is that during the two periods of maximum pressure and re-sanctions, China has become Iran's main trading partner in both exports and imports, underscoring China's importance to Iran during the sanction's era. Although the value of Iran-China trade has been affected by U.S. sanctions, especially after 2018, the lack of trade between other countries and Iran due to increased political risk has led China to become Iran's strategic trading partner.

Promoting Iran-China Trade Cooperation

A review of Iran's trade situation, especially after 2018, shows that sanctions have increased the political risk of doing business with Iran and disrupted its business processes. In this process, the removal of Iran from the SWIFT system and the utilization of the U.S. dollar against Iran has played an important role, in addition to increasing the political risk of trade with Iran, by imposing sanctions on Iran's trading partners, has caused a lot of political risk of trade with Iran; but at the same time, the volume of exchanges with China also leads to the fact that during the sanctions, mechanisms have been used to reduce the effects of the sanctions. Iran can use some of them as tools. Given the current sanctions, countries' de-dollarization from international trade could increase Iran's trade power. Importantly, many countries that began de-dollarizing trade were trading partners with Iran before the sanctions, and all of them have extensive trade with China.

The imposition of sanctions on Iran since 2018, along with targeted disruptions to its trade relations, are significant obstacles to Iran's exploitation of its commercial potential. This is an important overlap with the de-dollarization theory, and, as stated in the theoretical section, sanctions are implemented using a dollar tool; for this reason, a significant part of countries' worldwide efforts is to develop solutions to ease these sanctions (Desai & Hudson, 2021). Some of China's actions to improve its currency position in the field of international trade and counter the use of the dollar have provided appropriate strategies for Iran: international payment system, as well as alternative SWIFT systems, have a suitable platform to increase Iran's trade exchanges, which if using these facilities, it will be possible to de-dollarize part of the trade exchange. The most important measures taken by China that have also led to Iran are:

1. Expansion of non-dollar transactions with Iran's trading partners: For example, the countries of Association of Southeast Asian Nations (ASEAN), India, and China Taipei, which have been important trading partners for Iran's oil exports, have ceased or severely reduced their trade with Iran under the influence of sanctions, are trading without dollars with China, which has provided the appropriate ground for the expansion of Iranian oil exports on a non-dollar basis. There are also common trading partners in the import field, such as Brazil, Turkey, Russia, and the United Arab Emirates. (Liu and Papa 2022; Molodyko 2020; Sciortino 2022).

Interestingly, regarding changes in the bases of exchange, the bulk of transactions is conducted in currencies pegged to gold by countries of origin (such as China and Russia), thereby reducing exchange risk (Sciortino, 2022). Central banks have also approved digital alternative currencies, officially launched, and used in exchange since spring 2022, and are priced in gold (Sciortino, 2022; Sutter & Nelson, 2021). However, the most important point for Iran in its exchange with China is a change in how oil deals are made. In addition to the possibility of signing Renminbi-based oil contracts from 2018, China has officially been encouraging oil-exporting countries to conduct financial transactions

in Renminbi since 2022 and has pushed some of its purchase and investment contracts in this direction (Sciortino, 2022). In general, at the beginning of 2023, China's financial exchange system has been fully connected to more than 100 countries, of which about 50 countries have trade exchanges with Iran, accounting for 70% of Iran's imports and 31% of Iran's exports, and this is possible for Iran to expand its trade with China from the process of de-dollarization in order to expand its trade with China. Use it itself.

2. Membership in BRICS and taking advantage of the commercial benefits of institutional cooperation: Iran will become a new member of the BRICS Organization starting in 2024, and leveraging these benefits will help expand Iran's business activity during sanctions. Membership in the BRICS Organization and the use of existing agreements and economic opportunities within this organization have differentiated the business processes of its members, so that they can be compared with those of Iran. However, since 2018, imposing sanctions on Iran and targeting it specifically to disrupt its trade relations will be a significant obstacle to Iran's use of BRICS membership. This is an important overlap with the de-dollarization theory and, as stated in the theoretical section, sanctions are considered the basis for de-dollarization policy. It is an important part of countries' efforts worldwide to develop solutions to ease these sanctions (Desai & Hudson, 2021).

The measures taken in the BRICS, including the payment system and alternative SWIFT systems in BRICS countries (China and Russia), provide a good platform to increase trade exchanges with Iran, and, if used, will make it possible to de-dollarize part of those exchanges. The most important steps taken in the BRICS to reduce the dollar are:

- Russia's de-dollarization policy, which reduced the dollar share from 79.6 to 55.7 percent from 2013 to 2020, while increasing the ruble's share from 10.2 to 14.7 (Shagina, 2022). In addition to replacing U.S. dollar reserves with other currencies, Russia has also pursued a gold strategy to reduce its exposure to U.S. assets. Russia has been the largest buyer of gold over the past few years, quadrupling its gold reserves over the past decade. Between 2018 and 2019, the value of Russian gold reserves rose 42 percent to \$109.5 billion. As a result, gold accounted for the largest share of Russia's total reserves since 2000. As of June 2020, gold accounted for 23% of Russia's central bank reserves, while the share of U.S. dollar assets fell to 22%. Russia's gold strategy has made it the leading BRICS member in this area (Sciortino, 2022).
- Brazil and China have de-dollarized more than \$40 billion in trade since 2013, settling trade in their own currencies. China is currently Brazil's largest trading partner (Liu & Papa, 2022).
- Since 2015, South Africa has de-dollarized trade with China. The use of the Renminbi in South African trade grew by 65% in 2016. Swift data shows that between 2013 and 2015, the number of South African payments on a Renminbi basis increased by 191 percent. By June 2015, the value of direct payments in Renminbi between South Africa and China reached 31.3 percent (Liu & Papa, 2022).
- Russia and China have taken the most important steps toward de-dollarization, and under the 2016-2020 agreement, \$24.5 billion in trade was paid annually through Renminbi swaps. Bilateral currency swaps were also useful for circumventing U.S. sanctions. Under the harsh sanctions imposed in 2014, bilateral currency swaps between the Russian and Chinese central banks enabled Russia to mitigate the effects of sanctions and strengthen the dynamics of de-dollarization between China and Russia (Sutter & Nelson, 2021). By the end of 2020, more than 83 percent of Russia's exports to China will be settled in euros. The share of the U.S. dollar in bilateral trade set-

tlement between Russia and China has fallen from nearly 90% in 2015 to 46% in 2020 (Liu & Papa, 2022).

- India and Russia have increased their ruble-based trade exchanges from 6 percent to 30 percent. Russia and India have increased their use of their national currencies for bilateral trade since 2014. Almost half of trade has been withdrawn from dollar transactions, and significant progress is being made in de-dollarizing Russian-Indian trade (Molodyko, 2020).
- In 2019, Russia and Turkey agreed to settle in national currencies: the Turkish lira and the Russian ruble. At the end of 2018, the share of trade settlements with Turkey in rubles and lira reached 22% (Sciortino, 2022).

According to data from the final year of the time series, more than 29% of Iran's imports came from China and Russia, both of which have been using SPFS (Russia) and CIPS (China) since 2022. Both countries have been able to design and implement their de-dollarization policies. At the same time, despite imposing sanctions on Iran, these two countries account for more than 10 percent of Iran's exports, which means that the use of these trading systems will result in a total of \$ 22 billion worth of Iranian trade in yuan and rubles, both of which are equated to gold by the central banks of these countries (Sciortino, 2022). Given that 14.5% of Iran's imports and 7.4% of exports are with these countries, even during the time of sanctions, it has a high capability to pursue a policy of de-dollarizing Iran's trade. In addition, India is the destination for 2% of Iran's exports. Given Iran's negative trade balance with Russia and India's need for rubles for trade, this possibility can also be used to reduce Iran's dependence on the dollar and diversify its currency holdings. Turkey, another trading partner that accounts for 6% of Iran's imports and 3% of Iran's exports, has begun trading with Russia in rubles since the end of 2022. The country's presence in Russia's financial exchange system has also provided the conditions for ordering and exchanging goods and services for Iran.

Conclusion

Iran has geopolitical and geo-economic importance in West Asia, which is of great importance for China, which is seeking to increase its role as a responsible shareholder in the international arena, along with its energy supply. That is why, as a review of the trade trends of the two countries showed, during the sanctions period, China played an important role in reducing the effects of sanctions on Iran. Given the pressures and limitations of the West, economic interaction between Iran and China is becoming increasingly important as one of the variables shaping relations between the two countries. A look at the sanctions imposed on Iran shows that economic angles, in terms of consumption, income, imports of goods and services, etc., are the target of sanctions and have affected these variables. Oil and non-oil exports are among the sanctions' goals. They can have a special place depending on Iran's conditions, because oil-exporting countries, including Iran, are heavily dependent on oil revenues and have been the pivot of economic development in these countries. However, shocks and changes in oil prices, the balance of payments, government plans, and current government expenditures affect the current government expenditures.

To reduce these destructive effects, Iran's strategy has been to develop petrochemical products, including polymers, plastics, and chemical fertilizers. This is also evident in exports to China: after the decline in crude oil exports after 2018, polymer exports increased and became Iran's first export product. However, the increase in petrochemical products did not replace Iran's oil revenue, and in paral-

lel, a strategy should be taken to expand oil exports. Iran's cooperation with China through the Shanghai Cooperation Organization (SCO), as well as its exports to alternative currencies such as the yuan or gold, currently promoted by China, has provided fertile ground for Iran's return to the oil market. However, it should be noted that trade between Iran and China has been affected by sanctions and by restrictions on banking and finance, as well as changes in trade rules and regulations and bilateral policies. Increased pressure on international sanctions and economic sanctions against Iran could limit Iran's direct exports to China. In these cases, intermediary countries can act as mediators between Iranian exporters and Chinese buyers, enabling trade through financial transactions and indirect transactions. Some countries are known as Iran's main export destinations to China due to their geographical location, effective transportation systems, and strong trade relations with both Iran and China. These countries can serve as international bridges for exporting goods from Iran to China, generating revenue and trade opportunities.

In addition, one of Iran's policies to address financial and banking restrictions and problems caused by sanctions on money transfers and direct transactions with China is the use of digital currencies as a strategy to manage these issues. Using digital currencies allows international financial transactions with minimal restrictions and fees. Iran can use digital currencies to facilitate trade. These currencies can be used as international clearing units in business transactions that may not require restrictions and fees associated with traditional bank transactions.

Also, the use of blockchain technology and cryptocurrencies in the face of financial sanctions of the Islamic Republic of Iran has positive consequences. These consequences include increased economic connectivity and easier payments with other countries; reduced international costs and e-commerce; out-of-SWIFT payments and sanctions relief; the independence of the payment system from the United States; countering U.S. dollar hegemony; and gaining a competitive advantage.

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