



**Faculty of Legal Sciences**

**School of International Studies**

**TRADE RELATIONSHIP BETWEEN  
ECUADOR AND THE REPUBLIC OF CHINA  
FOR THE PERIOD 2007-2021**

**Project prior to obtaining a Bachelor's Degree in  
International Studies**

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I dedicate this work to my family, whose support has  
been crucial in every step of my education.

To my parents, Marcia and Vicente, for being an  
example of effort and perseverance, fundamental  
foundations for this achievement.

To my brother, Kevin, for his encouragement and  
companionship throughout my life.

This accomplishment belongs to all of you.

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# **TRADE RELATIONSHIP BETWEEN ECUADOR AND THE REPUBLIC OF CHINA FOR THE PERIOD 2007-2021**

## **ABSTRACT**

This study analyzes the evolution of the trade relationship between Ecuador and the People's Republic of China from 2007 to 2021, following the PRISMA methodology of systematic literature review. Thirty relevant studies were identified to help understand the economic sectors involved, the economic and political impacts, and Ecuador's growing dependence on China. The research highlights that Ecuador's exports are concentrated in the primary sector, including oil, shrimp, and bananas, while imports are focused on Chinese-manufactured goods, creating a persistent trade deficit. Additionally, Chinese investment has been focused on certain strategic sectors, such as the energy sector, the agricultural sector, and infrastructure. Despite the Free Trade Agreement signed in 2023, concerns persist about the existing asymmetrical situation. It is concluded that Ecuador must diversify its production matrix, improve its productive capacity, and strengthen its trade policies to maximize the benefits and mitigate the risks associated with this relationship.

### **Keywords:**

International trade, Ecuador, China, dependence, trade balance.

## **LA RELACIÓN COMERCIAL ECUADOR – REPÚBLICA DE CHINA PERIODO 2007-2021**

### **RESUMEN**

El presente estudio analiza la evolución de la relación comercial entre Ecuador y la República Popular China durante el periodo 2007-2021, aplicando la metodología PRISMA de revisión sistemática de literatura. Se identificaron 30 estudios relevantes que permiten comprender los sectores económicos involucrados, los impactos económicos y políticos, y la dependencia creciente de Ecuador a China. La investigación destaca que las exportaciones ecuatorianas están concentradas en el sector primario, como lo es el petróleo, el camarón y el banano, mientras que las importaciones se centran en manufacturas chinas, generando un déficit comercial persistente. Además, se evidencia que la inversión china ha tenido un enfoque en ciertos sectores estratégicos, como lo es el sector energético, el sector agrícola y lo referente a infraestructura. A pesar del Tratado de Libre Comercio firmado en 2023, sigue habiendo preocupaciones sobre la situación asimétrica que se presenta. Se concluye que el Ecuador debe diversificar su matriz productiva, mejorar su productividad y fortalecer las políticas comerciales para maximizar beneficios y mitigar riesgos derivados de esta relación.

### **Palabras clave:**

Comercio Internacional, Ecuador, China, dependencia, balanza comercial

# **The Trade Relationship between Ecuador and the People's Republic of China, 2007-2021 period**

## **1. INTRODUCTION**

International trade has become a key foundation for economic growth and global market integration (OMC, 2020). It is that in this context that the commercial relationship between the Republic of Ecuador and the People's Republic of China has gained major relevance during the 2007 – 2021 period; a period in which there have been major changes in the dynamics of trade exchanges as well as in the economic and diplomatic policies of both countries.

Bilateral trade between the two countries in question not only reflects the process of globalization and market diversification but also configures a scenario in which the trade decisions of both countries are influenced by both external and internal factors (Fuentes & De Semrau, 2010). Thus, it is necessary to understand the elements that have shaped the trade balance, foreign investment, and Ecuador's integration into global value chains.

Starting from the definitions of international trade, highlighting the ability to enhance economic development through specialization and comparative advantage, and recognizing the risk of dependence and the challenges associated with the asymmetry resulting from trade relations. This paper aims to describe the historical and statistical evolution of the commercial relationship between Ecuador and China through a systematic literature review.

The main motivation for this paper is to offer a detailed and updated vision of the opportunities and risks resulting from the trade dependence on China. The importance of the paper lies in the changes in the global context and the recent changes in the political and economic environment, highlighting the need for Ecuador to adapt its commercial strategy.

To achieve the proposed objectives, a methodological approach will be followed that pursues the systematic review of the literature following the guidelines set forth by Page et al. (2021), with the purpose of understanding this business relationship and reporting the findings. The paper will be structured by a theoretical framework, followed by the results, discussion, and conclusions on the subject.

Among the main results of this work is the undisputed largest export product from Ecuador to China, oil, which, in addition to being an export product, has also been used as a backing for the payment of very high debts to the China Development Bank and Eximbank. Among other important products in international trade between Ecuador and China are traditional products, such as shrimp, bananas, and cocoa, which are of major importance for Ecuador, not only in trade relations with China but also at the international level. Also, regarding Chinese investments and loans to Ecuador, there has been evidence of large loans from China to Ecuador for the construction of infrastructure, with special focus on the construction of hydroelectric power plants to meet the country's energy demand and a reduced dependence on fossil fuels. Likewise, it is important to mention the risks of these loans from China to Ecuador, since there is a situation of commercial and economic dependence, which becomes a very serious problem for the country, both in fiscal, environmental and social terms, questioning the possible options that Ecuador has to pay off the existing debt.

Following this introduction, the article is structured as follows: first, a theoretical framework is established with all the important terms that will be discussed in this paper, followed by a description of how the study methodology will be used for the literature review, followed by the report of findings in the form of results, followed by the discussion and conclusions on the collected information.

### **1.1 Objectives**

#### **1.1.1 General Objective**

Analizar la relación comercial entre Ecuador y China durante los años 2007-2021.

### 1.1.2 Specific Objective

1. Identify the most significant exports and imports made by Ecuador and China in recent years, as well as their impact on the trade balance.
2. Analyze the trade policies and bilateral agreements between Ecuador and China
3. Analyze the risks associated with trade dependence on China

## 1.2 Theoretical framework

International trade is defined as the movement of goods and services across different countries and their markets, using foreign currencies and subject to the regulations of the countries of destination of such elements of international trade. (Moreno et al., 2016) mentions that international trade is one of the main factors of economic growth, in addition to being a pillar that enabled the globalization process. An important concept to consider when talking about international trade between two countries is the so-called trade balance, (Flores, 2024) defines it as the difference between a country's exports and imports, for example when exports are greater than imports, there is a surplus, and on the other hand, when imports are greater, there is a deficit; there is also the possibility of a balance, which is when imports are equal to exports.

Another very important factor to consider at the time of international trade is the trade policies of every country, which are defined as the management of the instruments available to the state, with the objective of maintaining, altering, or modifying to a great extent the country's trade relations with the rest of the world; within these policies we have tariff and non-tariff restrictions and fiscal and monetary policies, thus determining two different political points of view: protectionism and liberalism (UNAM, n.d.)

Now, there are different theories of international trade, which, according to (Chosgo, 2022), try to analyze, explain, and predict all trade exchange activities between two countries, regions, or more that are different. These theories provide a framework for understanding the reasoning for and benefits of the exchange of goods and/or services between countries or regions and include David Ricardo's theory of comparative advantage, which holds that countries benefit by specializing in the production of goods in which they have lower opportunity costs and trade for those in which they are less efficient (Ricardo, 1817); also the theory of the Hecksher-Olin model, which states that nations export products that intensively use their abundant factors of production and import those that require their more scarce factors (Leamer, 1995).

Within trade theories, it is also important to highlight (Krugman, 1980), which mentions economies of scale and imperfect competition, with which to explain trade between countries with similar economic structures; and finally, and extremely important for the theory, Porter's diamond model, which mentions that national competitiveness is key to success in international commerce. (Porter, 1990) Theory proposes that a nation's competitive advantage is based on four determinants: factor conditions, demand conditions, related and supporting industries, firm strategy, structure, and rivalry; and suggests that the interaction of the elements of this theory of international commerce drives innovation and continuous improvement.

In international trade there are factors that influence it; thus, there are mechanisms to protect the country itself; they're called the so-called trade barriers, which Flórez (2013) defines as a desire to be part of globalization and a way to cover structural flaws and deficiencies in their economies, which serves as a guarantee for the country itself. And likewise there are factors that potentiate international trade, as mentioned by the Organización Mundial de Comercio (2013) demographic evolution (demographic transition and population aging, changes in the structure of the working population and migration), investments (the effect of investments on the nature of international commerce and the financing of the investment), technology (technological patterns, technology and commerce as a bidirectional relationship and future trends), energy and other natural resources (uneven geographical distribution of natural resources, variations and volatility of natural resource prices, scarcity and the role of innovation and environmental costs), institutions (political institutions, economic institutions and culture) and lastly logistics (the consequences of transport costs on trade and the determinants of transport costs); Logistics is of utmost importance in international trade, since without it, the exchange of goods and/or services would not be possible. Coral et al. (2020) defines it as the set of activities and processes necessary to ensure delivery of goods to the final customer.

When talking about foreign trade, recognizing bilateral relations as a pillar of this is of major importance, as it is fundamental for the proper functioning of the Ecuadorian economy, which, according to Bonilla (n.d), receives significant influence from both powerful countries such as the United States and smaller countries such as Colombia.

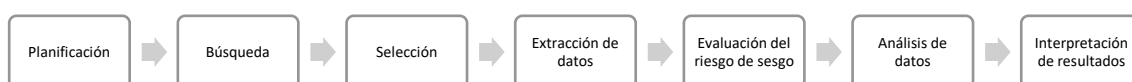
Now, the historical and political context has a significant influence on trade relations between countries, and the relationship between the Republic of Ecuador and the People's Republic of China is no exception. From 2007 to 2021, Ecuador experienced political changes that severely impacted its foreign and commercial policy. During Rafael Correa's government, which lasted from 2007 to 2017, Ecuador strengthened its relations with China to seek financing and investment for strategic projects and reduce its dependence on traditional financial agencies (Herrera, 2016). Under the administration of Lenin Moreno, which took place from 2017 to 2021, the relationship with China was maintained, but there were several questionings by the Ecuadorian people about this relationship due to numerous corruption incidents and Chinese diplomatic maneuvers, which weakened the ties between Ecuador and China in the fields of technology, loans, and investments (Hurtado et al., 2022).

## 2. METHODOLOGY

This research examines the commercial relationship between the Republic of Ecuador and the People's Republic of China across the period of 2007 - 2021. In this way, the review is conducted under the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) methodology with the intent of improving the quality of research and facilitating the identification of the absence of knowledge and the following development of the analysis. It consists of 7 stages, on which the research will be structured

1. Beginning: This process starts by formulating a research question
2. Research: An exhaustive search of relevant literature is conducted, including academic databases, specialized journals, and other relevant sources
3. Selection: A detailed review of the papers is conducted to determine which documents met the predefined eligibility criteria
4. Data extraction: Relevant information is extracted from every selected study
5. Bias evaluation: The risk of bias in the selected studies is evaluated.
6. Data analysis: Analysis of the data collected from the selected studies.
7. Interpretation of results: Clear interpretation of the findings of the included studies.

**Figure 1**  
*PRISMA methodology stages*



*Note: Adapted from Page et al. (2021)*

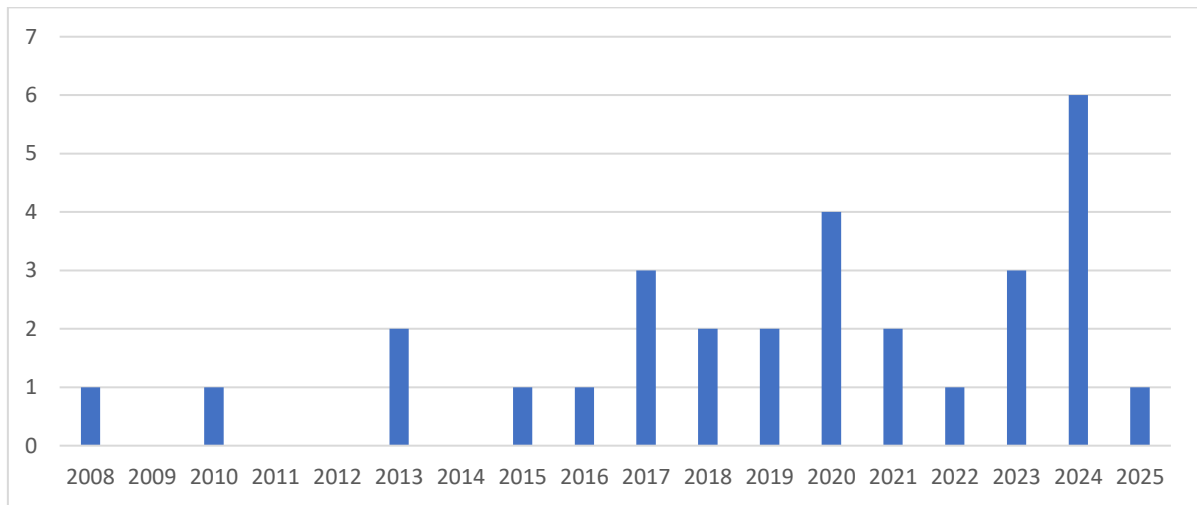
It is worth mentioning that a filter has been applied considering studies that address the commercial relationship between the Republic of Ecuador and the People's Republic of China. These studies employ a methodology that exposes relevant literature for the subject, as well as studies published in Spanish and English. The relevance of the article, the year, the number of citations, and the authors were considered as well. The information presented was compiled from academic databases such as Scopus, Web of Science, and Science Direct. The keywords used in the research search were Ecuador, China, and Trade.

The following chart presents the distribution of years of publication of the articles in the review.



**Figure 2**

*Distribution of years of publication of the articles in the review*

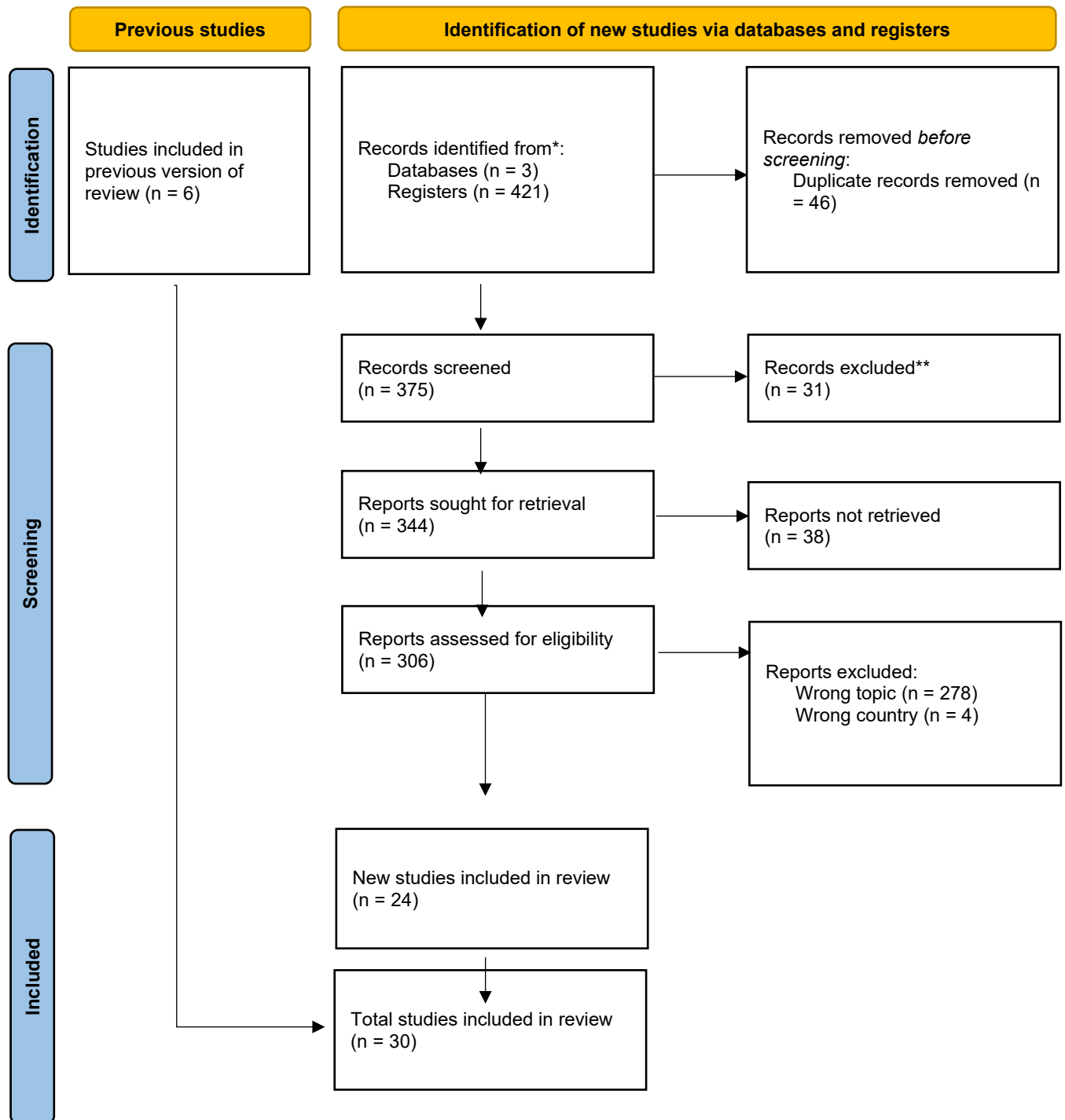


**Note:** The chart shows that most articles were published between 2015 and 2025, which indicates that research on the trade relationship between Ecuador and China is trending. This could indicate that a higher number of publications are in 2024, with six articles, and in 2020, with four articles. This could indicate that a higher number of publications on the subject have been produced in recent years.

Also, the sources selected for the literature review cover a wide range of sectors in which Ecuador and China are related.

Next up, a PRISMA diagram was made with the purpose of showing the results obtained from the research.

**Figure 3**  
PRISMA flowchart



*Note: Adapted from Page et al. (2021)*

According to the PRISMA flowchart, out of the 421 articles in the database related to the study topic, only 375 were submitted for review. These were obtained from Scopus, Web of Science, and Science Direct. On the other hand, out of the 421 sources identified, 351 were excluded according to the exclusion criteria, such as language, subject matter, and depth. Additionally, duplicate documentation was found on 46 occasions. This left a total of 30 documents that were used in the literature review.

### 3. RESULTS

Regarding the economic sectors that have boosted the commercial relationship between the Republic of Ecuador and the People's Republic of China, the energy industry stands out, accounting for 43% of the total number of documents, this emphasis is on technical support and investment in infrastructure for energy generation in Ecuador. The agricultural industry also stands out in the systematized literature, with 37%. Next is the infrastructure and technology sector with 30% each. The sector that stands out the least is the manufacturing sector, which is mentioned in only 7 out of the 30 analyzed documents. Among other sectors, the aquaculture sector, the main product exported by Ecuador, is extremely important, followed by other topics such as diplomacy, transportation, the public sector, and the quality of products across all sectors. Within this analysis criteria, 2 documents do not mention any economic sector that boosts the trade relationship between Ecuador and China.

According to the Banco Central del Ecuador (2007), According to the Central Bank of Ecuador (2007), Ecuador's exports in 2007 reached a value of 13852.4 million USD, of which non-oil exports had an increase over the previous year, with bananas and plantains being the main products, contributing 54.6% of total traditional exports and 23.4% of non-oil exports. This product was purchased mainly by Russia, the USA, and Italy. Regarding total exports, the five main destinations were the USA with 43.5%, Peru with 10.8%, Colombia with 4.7%, Chile with 4.8%, and Italy with 3.2%. However, it is important to mention that for non-oil exports only, the main destination is the European Union. Ecuador's imports for 2007 reached a value of US\$ 12602 million, an increase of 11.77% over the previous year, where the main products were raw materials and capital goods with 16.2% and 11.7%, respectively. Among all the products imported by Ecuador in 2007, the main supplier was the ALADI common market with 40.2%, followed by the USA with 20.6%, with Venezuela and China showing the greatest increase over the previous year, increasing to 9.8% and 7.9%, respectively. The trade relationship between Ecuador and Venezuela increased considerably due to the purchase of fuels, with 77.9% of imports from Venezuela in 2007 and 27.4% the previous year.

Among Ecuador's key exports for 2023, excluding oil products, are the so-called traditional products, which are shrimp, bananas, cocoa, tuna and coffee; but it is also composed of non-traditional products, among which mining products, canned fish, flowers, wood, and fruits, among other goods stand out (Banco Central del Ecuador, 2023). In the case of the trade balance only between Ecuador and China, for 2022, there was a surplus in the oil trade balance of 50.9 million US dollars but a deficit in the non-oil trade balance of 27.4 million US dollars, but this is different from how it was in 2021, when there was a total trade balance deficit of 188.6 million US dollars (Banco Central del Ecuador, 2022); which shows that there has been an improvement, but it is still not enough, since the most exported products are still the same products of the primary sector, reinforcing the primarization. And for 2024, the Ministerio de Producción (2024) the top five non-oil export destinations are the European Union with \$4830 million, with an increase of 36.5%, and China with \$4212 million, with a decrease of 15.4% compared to the previous year; The United States with \$4056 million, up by 13.7%; Russia with \$739 million, down by 2.8%; and Colombia with \$682 million, up by 6.1% over the previous year; within all Ecuadorian non-oil product importing countries totaled \$20019 million, representing an increase of 7.7% over the previous year, and, in turn, non-oil imports fell to \$17328 million, or 7.2% over the previous year, resulting in a non-oil trade balance of \$2691 million, which is an important step for Ecuador.

Among the main non-oil export products for 2024, shrimp exports stand out with a total of USD 5697 million but suffered a decrease of 6.9%, followed by banana exports with a value of USD 2995 million, down by 0.1%, followed by the cocoa sector with a total of USD 2346 million, up by 173.1%, and canned fish exports with a total of USD 1364 million, up by 24.2%. Here we can see how the cocoa sector has risen greatly; although it is not the most representative product of non-oil exports, it is relatively close to bananas and is approximately half of the total exports of shrimp.

Among the main non-oil import products for 2024, light automobiles stand out in first place with a value of USD 726 million, medicines with a value of USD 719 million, soybean oil residues with USD 696 million, other metal manufactures with USD 635 million, and industrial machinery and its parts with USD 572 million. Among these main products imported into Ecuador, all suffered a considerable decrease, with the exception of

industrial machinery, which had an increase of 1.9%. Likewise, the main countries of origin of oil imports are China with USD 4926 million, the United States with USD 2135 million, the European Union with USD 2022 million, Colombia with USD 1689 million, and Brazil with USD 786 million; all of which, without exception, suffered a decrease of 1.7%, 11.6%, 7.2%, 3.8%, and 16.7%, respectively (Ministerio de Producción, 2024). Thus, we can see that there has been a general decrease in imports of non-oil products.

In this way, it can be observed how Ecuador has been seeing changes in its trade balance, being changes both in imported and exported values as well as in countries of destination and origin of products exported and imported. One of the main changes, with respect to exports, we can see that for 2007, the main supplier of Ecuador was the ALADI grouping, representing almost half of the total Ecuadorian imports, being a very considerable value, followed by the USA; but for 2023, the main countries of origin of imports were the USA and China. Thus, we can see that the USA continues to be one of the main suppliers of products to Ecuador. And in exports, for 2007, the main destinations were the United States and Peru, but for 2024, it was the United States and China; likewise, it can be seen that the United States remains as the main destination. Therefore, it can be affirmed that the USA has been one of Ecuador's main partners historically, but China has had a very high increase in the time that trade relations between Ecuador and China have been taking place, almost equaling the values of the USA, showing that it is also a considerable and important partner due to its wide range of products that it offers to Ecuador. In addition, it can be seen how many products of daily use are of Chinese origin, which in the future could be an even greater part of the market that is of Chinese origin.

It is important to mention that before China was Ecuador's main trading partner, it was the United States, to which there was also a strong dependence, and that Lapeña y Czubala (2018) state that by 2006 there were balanced figures without much difference between exports and imports, unlike the trade relationship with China, which is based on low prices and the ease of placing Chinese products among consumers due to accessibility that led to a deficit in the trade balance with the Asian giant. The decision to move away from the Bretton Woods financial institutions and the ideological closeness of China led to a closer relationship between Ecuador and the Asian country, eventually to a strong financial dependence on China due to the debt with Chinese banks.

With reference to the elements that have influenced the relationship between the People's Republic of China and the Republic of Ecuador, what stands out most are trade agreements and foreign direct investment, both with 43% each, respectively, which shows a tendency to research and develop literature that talks about the relationship between the two countries in the commercial sphere. The third relevant element in the relationship between Ecuador and China is diversification, with a mention of the topic in 37% of the total number of documents, that is, in 11 documents. Other elements that have influenced the relationship between the two countries include external debt, specialization, international quality certifications, and employment generation. Within this analysis criteria, three documents do not talk about any element that boosts the commercial relationship between Ecuador and China.

In terms of the economic impacts of the trade relationship between Ecuador and China, the trade dependence caused by this relationship stands out, with 70% of the systematized documents mentioning the topic, which is a very high number, which could mean that it is a striking and real issue that has implications for Ecuador. A total of 16 mentions among the 30 documents analyzed is the growth and investment criteria, demonstrating that these issues are of utmost importance when talking about trade relations between two countries, as in the case of Ecuador and China. Within this analysis criterion, four documents do not mention any economic impact derived from the relationship between Ecuador and China.

The issue of trade dependence is serious at the national level because it means that trade relations are not balanced or at the same level, as in the case of Ecuador and China, where, due to the scenario of a world power and a small state, the conditions are very different and unfair for Ecuador. Herrera (2016a) mentions that the interdependence between China and Ecuador causes a situation where Ecuador can increase the volume of exports, which may be striking. Still, the problem is that it is in exchange for an unavoidable entry of Chinese products into the Ecuadorian market. These occupy a good market space very easily and quickly, unlike Ecuadorian products in the Chinese market, where they will be dispensable due to the large amount of exports worldwide that are destined for the Asian giant.

Regarding the political impacts of the trade relationship between Ecuador and China, the reviewed documents do not mention the political issue very often, but rather the commercial issue. However, within the political issue, it is worth mentioning dependence and political reforms, which represent 20% and 17% of the total, respectively. Other political impacts derived from the relationship between the two countries include political independence, public regulations, media, political instability, assistance in the public sector, China's foreign policy, and its implications and impacts on Ecuador. And as mentioned, most of the documents do not include political issues, representing 53% of the documents.

Since 2007, the Ecuadorian government opted for a protectionist commercial policy, thus promoting exports and contracting the flow of imports; with the purpose of protecting local industry, with a special focus on the SMEs; and with two strategic points that significantly helped the country, these being the entry to new markets and the promotion of national production (Fárez, 2020).

Espinoza (2015) assures that the economic relationship between the Republic of Ecuador and the People's Republic of China during the 2002-2013 period has been one of commercial dependence but not political dependence. It follows a structural pattern that follows the center-periphery theory, due to Ecuador's exports of mainly raw materials, and its imports of technological products and financial resources from China. In the same way, Angulo & Lis (2023) assure that the relationship between China and Latin America in general is of a strategic nature, since the Asian powerhouse relies on essential natural resources that are abundant in Latin America, while Latin America, as a region, serves as an important consumer market for goods of Chinese origin, where manufactured goods are predominant.

In Ecuador's case, Reyes & Chun (2017) mention that raw material exports to China have shown significant growth since 2007, in addition to the fact that in the period from 2008 to 2015, the sales numbers of primary products of Ecuadorian origin to the Chinese market grew about 800%, reaching a figure of USD 2.2 billion.

Likewise, Sornoza et al. (2015) state that the commercial relationship with China intensified during that period, with a considerably disadvantageous trade balance for Ecuador, thus affecting the Ecuadorian industry and its products, that are in a complicated situation because of the very low prices of Chinese products when comparing them with Ecuadorian products.

Now, when talking about the commercial impact that comes from China, Delgado & Yáñez (2019), mention that it is significant for Ecuador since, the trade balance that Ecuador presents, which has a negative impact on the gross domestic product, the capital outflow originated by the international commerce between both countries and the unequal competition that takes place; additionally they state that Ecuador has become dependent of the Asian powerhouse, assuring that the problem is in the Ecuadorian production structure.

Among the products exported by Ecuador, regarding shrimp Nuñez (2023) mentions that it has achieved significant benefits, resulting in a positive effect for the nation. Still, in the case of agricultural products, Escalante et al. (2021), even though they are one of the most important products in the Ecuadorian economy, they need investment in research and development areas, in order to eventually not only offer primary products.

Due to the implemented political model based on leftist or socialist foundations, Pulgar (2020) states that the bilateral relationship between Ecuador and China has been reinforced, but that the trade balance has not been balanced, resulting in a balance deficit for Ecuador; also that the non-existence of a trade treaty or agreement as a framework for commerce, the primary-extractivist-exporter relationship was maintained. But, in the case of bilateral cooperation between both countries, Terán (2018) states that it has had an approach towards Ecuador's development objectives, which is similar in the relations between China and other countries in the region.

Regarding China's relationship with other countries in the region, Fairlie (2019) mentions that the FTA between China and Peru is very positive in terms of the expansion of commercial flows with the Asian country but highlights that the impact on Peruvian exports has been more than double compared to imports, highlighting that both exports and imports of the primary material sector experienced an expansion. Meanwhile, in Uruguay, Bartesaghi & Melgar (2018), after analyzing the case of a supposed FTA between Uruguay and China, the probability of increasing exports and an elimination of tariff rates are very high, this would represent a

significant decrease in prices, in addition to an opening of new export channels, which would benefit economic activity and employment.

In the case of the relationship between China and Brazil, Passi (2021) mentions that Chinese interests seem to be aimed at building an infrastructure for international commerce towards a deeper, more dynamic, and extensive style of globalization and that a systematic transition is taking place through what can be called the Silk Project 2.0. Salazar (2024) states that the Silk Project 2.0 was intensified as a result of the Covid-19 pandemic and that this project would focus on the expansion of the necessary infrastructure for international commerce, such as ports and railroad systems, in order to facilitate the trade of products with China for both exports and imports, which could facilitate trade, as well as deepen the economic dependence of the region's countries on China.

However, such agreements have additional consequences, as mentioned by de Lucio (2019), which have an impact on the growth of these countries, in addition to strengthening the regulatory cooperation, the geopolitical bonds, and the international influence; in addition, trade agreements also incorporate social and economic topics of interest, such as labor rights, environment, and health, among others, with the purpose of the well-being and an improvement in the standard of living of the people.

Constantino et al. (2024) mention that Ecuador has remained highly dependent on oil and banana exports but has recently been gaining a place, positioning itself in global markets in the shrimp and flower sectors. They also recommend that Ecuador promote policies that support the agro-industrial and manufacturing sectors and emphasize the importance of negotiating new trade agreements.

Márquez et al. (2023) state that the bilateral relationship between Ecuador and China is asymmetrical, with Ecuador having a negative trade balance. They also highlight China's support for Ecuador in multilateral initiatives, but in financial terms, Ecuador suffers from a strong dependence on primary products and natural resources.

Herrera & Carranco (2024) mention that Ecuador has worked with the People's Republic of China with a focus on a free trade agreement, but for Ecuador. However, there is a situation of weakness towards the Asian powerhouse, as it can easily shape trade agreements to protect its interests. However, it has managed to protect its economic sectors by granting exemptions for primary products exportable to China.

Rodríguez et al. (2020) state that trade between Ecuador and China is focused on importing good quality products at a reasonable price from the Asian powerhouse, but this creates a commercial dependence on China, having to buy only from this partner in order to have a good profit in the prices of the products at the time of sale to the final customers. Also, he mentions that, in the case of China, the implementation of solid policies helped establish the foundations of a solid economy, while in Ecuador, the opposite occurred.

Terán (2018) states that trade between Ecuador and China, from 2013 to 2017, was negative for Ecuador, creating a negative trend in the trade balance. However, thanks to China's investment, several infrastructure and energy projects were developed; however, there was a situation where excessive public spending promoted employment supported by oil revenues, which, at the time of reduction, generated a negative trade balance for the country. In addition, it is mentioned that China has agreements with several nations, so it does not depend almost at all on Ecuador, however, Ecuador depends more and more on China, especially in commercial terms.

Herrera-Vinelli & Bonilla (2019) mention that Ecuador has made reforms in China's favor, giving preferential and flexible treatment to Chinese companies to benefit from Chinese financing. This is due to the large number of Chinese projects currently in Ecuador. In addition, he recommends that Ecuador should create long-term policies that are clear regarding China and predicts that there will be changes in relations with investors, business partners, and financial partners in the short term.

Arteaga et al. (2020) state that Latin American exports show year-over-year growth and have indirect effects on productivity, considering the impact of GDP in relation to China. It is important to note that export growth intensifies the primary export character of Latin American countries; also, global exports reduce the

productivity of non-exporting sectors in Latin America, but exports to China increase productivity in the other exporting sectors.

Among commercial agreements that there have been between Ecuador and China, we can mention the financing from China Eximbank with an investment of almost US\$1.7 billion, covering 70% of the entire Coca Codo Sinclair hydroelectric project and at a fixed rate of 6.2% (Corporación Eléctrica del Ecuador, 2017); there is also the Silk Road Economic Belt and 21st Century Silk Road Maritime Initiative, where cooperation will be given in the areas of policy coordination, infrastructural connectivity, commercial connectivity, financial connectivity, people-to-people exchange and other forms of collaboration between the parties (Cancillería del Ecuador, 2018); other hydroelectric projects such as Sopladora, Toachi-Pilatón, Delsitanisagua, Quijos, Mazar-Dudas; the joint declaration between the Republic of Ecuador and the People's Republic of China on the deepening of the Ecuador-China comprehensive strategic partnership (Ministerio de Relaciones Exteriores y Movilidad Humana, 2022); and the signing of the Ecuador-China Free Trade Agreement on May 10 in Quito and May 11, 2023 in Beijing, with which Ecuadorian exports will benefit when it enters into force, accessing 99.6% of Ecuador's supply to China in baskets of immediate relief or less than 10 years to match conditions with other Latin American countries (Ministerio de Producción Comercio Exterior Inversiones y Pesca, 2023).

Among the various trade agreements and contracts that have been signed between Ecuador and China are those shown in Table 1.

**Table 1**  
*Contracts and Agreements between Ecuador and China*

Name of Agreement/Contract	Year	Financed amount	Objective
Loan from PetroChina to PetroEcuador	2009	1.000 million USD	Government financing
Loan from the Development Bank of China	2011	2.000 million USD	Finance infrastructure projects within the National Development Plan of Ecuador
Loan from the Export-Import Bank of China for Coca Codo Sinclair	2010	1680 million USD	Finance the construction of the Coca Codo Sinclair hydroelectric plant
Loan from the Export-Import Bank of China for Sopladora	2011	570 million USD	Finance the construction of the Sopladora hydroelectric plant
Loan from the Development Bank of China for Minas-San Francisco	2012	312 million USD	Finance the construction of the Minas-San Francisco hydroelectric plant
Loan from the Development Bank of China for Delsitanisagua	2013	240 million USD	Finance the construction of the Delsitanisagua hydroelectric plant
Loan from the Development Bank of China for Quijos	2015	100 million USD	Finance the construction of the Quijos hydroelectric plant
Loan from the Development Bank of China for Cañar-Naranjal	2017	100 million USD	Finance the construction of the Cañar-Naranjal hydroelectric plant
Debt renegotiation with the Eximbank of China	2020	417 million USD	Defer payments related to hydroelectric projects
Debt restructuring with Chinese banks	2022	4400 million USD	Reduce financing needs; duplicate repayment terms; reduce interest rates; and improve oil sale conditions
Ecuador-China Free Trade Agreement	2023	n/a	Promote trade expansion and diversification; eliminate trade barriers
Agreement to avoid double taxation	2013	n/a	Avoid double taxation and prevent tax evasion in transactions between both countries
Memorandums of understanding	2016	n/a	Cooperate in the development of industrial parks, special economic zones, and productive capacity

**Note:** Taken from Minga Service. (2011). Ecuador recibe 1.000 millones de Petrochina. (<https://www.mingaservice.com/web/noticia/item/ecuador-recibe-1000-millones-de-petrochina>), Ministerio de Economía y Finanzas. (2011). Ecuador suscribe crédito por USD 2.000 millones con CDB de China. (<https://www.finanzas.gob.ec/ecuador-suscribe-credito-por-usd-2-000-millones-con-cdb-de-china/>), el Universo. (2018). La madeja de los créditos chinos en Ecuador. (<https://www.connectas.org/la-madeja-de-los-creditos-chinos-en-ecuador/>) la Hora. (2021). Más de \$5.200 millones en créditos chinos financiaron en el país un sistema hidroeléctrico con problemas. (<https://www.lahora.com.ec/pais/hidroelectricas-deuda-china-ineficiencias-perdidas/>), Ministerio de Economía y Finanzas. (2020). Ecuador totaliza alivio financiero por USD 891 millones con China.

*(<https://www.finanzas.gob.ec/ecuador-totaliza-alivio-financiero-por-usd-891-millones-con-china/>), Tapia, E. (2022). Ecuador logra cuatro años de alivio fiscal tras acuerdo con China. (<https://www.primicias.ec/noticias/economia/reestructuracion-deuda-china-ecuador/>), Ministerio de Relaciones Exteriores. (2013). Acuerdo entre el gobierno de la República del Ecuador y el gobierno de la República Popular China para evitar la doble imposición y prevenir a evasión fiscal con respecto a los impuestos sobre la renta. y Cancillería del Ecuador. (2018). Memorando de entendimiento entre el gobierno de la República del Ecuador y el gobierno de la República Popular de China sobre cooperación dentro del marco de la iniciativa de la franja económica de la ruta de seda y la iniciativa marítima de la ruta de seda del siglo 21.*

Of these agreements and contracts between Ecuador and China, the Ecuador-China Free Trade Agreement, signed in 2023, stands out as the main one, which had the objectives of promoting the expansion and diversity of trade between the parties; eliminating trade barriers and facilitating the cross-border movement of goods; promoting conditions of fair competition in the free trade zone; establishing comprehensible rules to ensure a regulated and transparent environment for trade in goods between the parties; creating new employment opportunities; establishing effective procedures for the implementation and application of the agreement, its joint administration and the settlement of disputes between the parties; creating new employment opportunities; establishing effective procedures for the implementation and application of the agreement, its joint administration and the settlement of disputes; establish clear rules to ensure a regulated and transparent environment for trade in goods between the parties; create new employment opportunities; establish effective procedures for the implementation and enforcement of the Agreement, its joint administration and dispute settlement; and establish a framework for greater bilateral, regional and multilateral cooperation to expand and enhance the benefits of the Agreement (Electronic Database of Investment Treaties, 2023). This FTA aims to progressively eliminate tariffs on more than 90% of the products traded between Ecuador and China, promoting trade and investment. The agreement became effective on May 1, 2024, and has facilitated the access of several Ecuadorian products, such as shrimp, bananas, and flowers, to the Chinese market, thus boosting Ecuadorian exports and diversifying destination markets.

Likewise, loans related to the construction of hydroelectric power plants such as Coca Codo Sinclair, which was built by Sinohydro with financing from China Eximbank, are designed to produce 1500 MW, satisfying 30% of the national electricity demand and fostering the reduction of dependence on fossil fuels (Ministerio de Energía y Minas, 2017). Currently, the hydroelectric power plant faces serious structural problems regarding its turbine distributors and is at risk of collapsing due to erosion in the Coca River valley, thus operating at 30% of its capacity (Stott, 2024). Similarly, the Sopladora hydroelectric power plant, which has a capacity of 487 MW, built to complement the country's energy matrix, has a capacity of 1,000 MW.

The Mirador copper mine, which is operated by Ecuacorriente S.A., a subsidiary of CRCC - Tongguan Investment, is an open-pit mine located in Zamora Chinchipe and is the first large-scale copper project in Ecuador, with the objective of diversifying the economy and attracting foreign investment (Info ECSA, 2021). It has been operating normally since January 2025, after electricity rationing in 2023, and continues to face challenges related to energy supply and environmental concerns (Shanghai Metal Market, 2025).

PetroChina's loans to PetroEcuador, in which Ecuador received an advance of US\$1 billion in exchange for committing 69 million barrels of oil in a pre-sale agreement. These funds were used to finance infrastructure projects and cover fiscal needs. While the original contracts expired in 2024, two oil delivery agreements remain in place until 2027 (Myers et al., 2024). And in 2022, Ecuador renegotiated debt, approximately US\$4.4 billion with the China Development Bank and Eximbank, providing US\$1.4 billion in relief through 2025, extending maturities and reducing interest rates (Araujo, 2022).

These projects and agreements have been of critical importance in the existing relationship between Ecuador and China, offering development opportunities, but, at the same time, exposing challenges in terms of sustainability, financial dependence, and risk management.

## 4. DISCUSSION

The purpose of this paper is to analyze the trade relationship between the Republic of Ecuador and the People's Republic of China during the 2007-2021 period through a systematic review under the PRISMA methodology.



Trade relations are an essential component for countries due to the need that countries have for elements and/or capabilities that they do not possess but other countries do. These trade relations can be either through the purchase and sale of products and/or services or through investment in strategic sectors of the countries.

Within these strategic sectors mentioned, the energy sector is of crucial importance, which is the main sector in which China invests in Ecuador in order to support the energy matrix and avoid failures and delays in the current system (Arteaga et al., 2020; Constantino et al., 2024; Smith, 2010).

Consequently, the second strategic sector that is important for the trade relationship between Ecuador and China is the agricultural sector, on which China is dependent (Montes et al., 2024), but it is essential to identify, research, and develop new potential markets. In other words, the Latin American region, in general, benefits from trade with China, but it limits the development of Latin America since exports are focused on the raw materials and primary goods sector, while imports from China are in the manufactured goods sector.

In addition, it is often mentioned that shrimp is one of the main sectors traded from Ecuador to China, but few authors mentioned the sector within their publications; among these authors, Khiem et al. (2022) mention that Price is a fundamental factor; Tabarestani et al. (2017) mention that price is important, but links it to the size of the shrimp; Keithly & Poudel (2008) state that promotion and improving the sanitary conditions of the imported product is important.

Terán (2014) states that China seeks political stability and to generate a domestic market that can make up for the drop in exports by the United States, which requires an in-depth study of the political and social situation in China, but it should not be taken for granted. It is important to mention the role of the Pacific Alliance to create a deeper regional initiative.

Based on trade relations between the two countries, there is a trade dependence from Ecuador to China due to Ecuadorian exports of raw materials and imports from China of manufactured products. Due to this, Chinese debt and investment and the quality of institutions play an important role in the countries' trade relations (Wong et al., 2020). Likewise, Gamso (2015) mentions that the degree of economic dependence of a country to another determines the options it has at the political level, for which it is important that market diversification is developed. In addition, China's loans to developing countries have potential consequences for the borrowing countries (Horn et al., 2021).

In terms of investment and financing, Delgado & Suárez (2022) report that Chinese investment in Ecuador in 2011 was marked in the mining industry due to an interest in raw materials. The commercial relationship between Ecuador and China is in a situation where common interests are shared, where China has technology, experience, knowledge, and financial resources, while Ecuador has the natural resources, which shows a significant inequality. Between 2002 and 2022, Chinese investments in Ecuador increased from 15.74 million US dollars to almost 60 million US dollars, which means a significant increase (Sinohydro Ecuador, 2024).

During the 1995 to 2021 period, there is a clear trade deficit in the current account in goods and services between Ecuador and China, which López (2023) associates with the growing presence of the Asian giant in world trade; although the GDP has increased, migration and the flow of remittances have been an important source of foreign exchange for the maintenance of the country's economy. Thus, Ecuador is considered a periphery economy, which supplies natural resources to the largest and most dynamic economies such as China and the United States, causing a very unequal exchange relationship, since Ecuador has historically been a major importer of manufactured products, which means that for every dollar exported by Ecuador, large physical volumes go out, while every dollar imported means small volumes of materials coming in.

In addition to the trade issue, the political issue is also important and has also had an impact, although in this case there is not much literature on this topic. Albright (2024) states that national policies, alignment with world powers, and the specific objectives of the projects are fundamental elements for borrowing countries, in this case China, to invest or lend sums of money to a country. Similarly, Teng (2017) focuses on highlighting south-south cooperation, which he mentions has created a win-win situation, which has greatly favored Ecuador's energy sector as well as the logistics sector. While many countries mention that they pursue

their own goals and paths, many countries, with special emphasis on Latin American countries, accommodate Chinese investors (Blanchard, 2019).

It should also be considered what refers to the debt between Ecuador and China, which seriously affects Ecuador's situation in the trade relationship with China, causing dependence, for which Rodríguez (2020) suggests that it is important to renegotiate the external debt with both the International Monetary Fund and Chinese banks to reach conditions that are favorable to Ecuador, but in turn states that it is unfeasible, since a negotiation of the debt with China generally means the termination of investments or loans in other strategic sectors; this represents an economic, social and environmental risk for Ecuador.

Within the political part, it is also important to mention regulations, which Khiem et al. (2022) affirm may bring advantages or disadvantages in the markets, in addition to varying the prices of the products and/or services that are traded. Similarly, with regard to the media, studies related to FTAs should be approached in a holistic manner, considering international processes and the public diplomacy that occurs thanks to the media (Ortiz, 2024). The FTA between Ecuador and China represents a big step for Ecuador, which would encourage the expansion and diversification of trade between the two countries, which means a significant increase in the export of traditional and non-traditional Ecuadorian products. By 2030, exports are expected to grow by an average of 8.4% and imports by 7.8% (Banco Central del Ecuador, 2024).

On the other hand, trade relations can cause political instability for one of the countries derived from economic impacts, as mentioned by López (2023) that bilateral trade between Ecuador and China is related to Ecuador's GDP, which can affect having a commercial openness with the Asian dragon and even having a negative effect on the exchange rate on Ecuador's economic growth over time. Bas & Paunov (2021) also mention that the liberalization of trade of high-quality foreign inputs has a great impact on improving the quality of production and that if there is an absence of skilled labor, it could limit the number of companies able to improve their manufacturing processes, for which it is vital to invest in training and education of the population to promote the improvement of quality in production.

This reinforces the primary-extractivist pattern and the center-periphery pattern, in which Ecuador exports resource-intensive goods and imports manufactured products and/or technology. Without strict policies of productive chaining, the FTA signed between Ecuador and China could reinforce dependence, and in turn, some sectors could benefit from the same treaty. In addition to this dependence, there are also risks such as fiscal volatility, since some payments of debts and strategic works are tied to oil deliveries, so if the international price drops, the fiscal cash flow is compressed and the government has to cut expenses or go into debt again; industrial displacement due to Chinese manufactures competing with national products causing the closure of 12% of manufacturing units and losing 36,000 jobs (Terán, 2018); the environmental risk that hydroelectric plants with Chinese financing have generated a large amount of sedimentation affecting several communities, resulting in a cost for Ecuador (Miranda, 2019); resulting in a cost for Ecuador (Miranda, 2019); exchange rate risk and in turn loss of competitiveness in case the exchange rate appreciates against the yuan, which would make exports more expensive, widening the trade deficit; and over-indebtedness, where by 2021, debt reached US\$5.2 billion, where several contracts include “cross-default” clauses where breach of a contract can trigger the clause and the other party can demand immediate repayment of the loan even without being in default (Dañino et al., 2005).

These types of clauses, derived from contractual commitments between Ecuador and China, are a considerable risk, as they may compromise Ecuador's sovereignty. For example, certain contracts mention provisions that allow China to claim Ecuadorian assets in case of default, with the exception of military equipment, embassies and cultural heritage, which raises concerns about the country's ability to maintain control over its resources and debt management (Sanz, 2010).

Another very important issue that is affected by trade dependence is global value chains and supply chains, which, if a geopolitical or commercial incident were to happen, could be interrupted, and significantly affect producers, intermediaries, and eventually end consumers. But equally, Ecuador, by largely orienting its exports towards China, with special emphasis on primary products, is vulnerable to fluctuations in demand and prices determined by the Chinese market, which can lead to national economic instability (Badaraco et al.,

2019). Furthermore, the lack of diversification limits the country's opportunities for the development of other productive sectors that could achieve considerable relevance at the international level.

Although loans or credits granted by Chinese banks, such as the China Development Bank and Eximbank, have been pillars for the financing of infrastructure projects in Ecuador, many of these loans are backed by deliveries of barrels of oil, which has caused great concern regarding the loss of control over strategic resources and the country's sovereign decision-making capacity. In addition, there is concern about the environmental and social impacts derived from the fulfillment of these loans and the infrastructure financed with these loans, such as the Coca Codo Sinclair hydroelectric plant and the Mirador copper mine, which have been criticized for their environmental and social impacts. There is also a situation of dependence on hydroelectric projects financed by China, as was experienced in the country in 2024. During a prolonged drought, there were power cuts of up to 14 hours a day, which means that there is a lack of diversification in the energy matrix, and added to the infrastructure problems, it has affected the welfare of the population, it has also had a very strong impact on the Ecuadorian economy (As, 2025).

In addition, there have been reports of damage to sensitive ecosystems, such as the Yasuní National Park, and conflicts with indigenous communities living in areas affected by hydroelectric projects (Corporación Eléctrica del Ecuador, 2020). There have even been reports of forced displacement, damage to so-called ancestral lands, and irreversible damage to sensitive ecosystems.

In addition, with respect to the FTA signed between Ecuador and China, there are questions about the fact that it grants significant advantages to imports from China, while Ecuadorian exports face non-tariff barriers, complicating the export of Ecuadorian goods. There is also concern that, as a result of the FTA, there has been a significant increase in manufactured products, machinery and technology of Chinese origin, while Ecuadorian exports continue to focus on primary goods. Similarly, the FTA does not contain agreements on labor rights, environmental protection and intellectual property, which could represent a serious risk to Ecuador's productive sectors (Zuppello, 2024). In addition, there is a possible technological and national security dependence, since the ECU911 system, of Chinese origin, has raised concerns about the violation of privacy and civil rights (Álvarez & Vila, 2023).

Finally, strengthening trade and financial ties with China, as mentioned as one of the objectives of the FTA signed between the two countries, could generate tensions with other strategic partners of Ecuador, such as the United States. If excessive alignment with China were to occur, it could affect diplomatic and trade relations with other countries to a great extent, leading to limited access to markets and few sources of financing, without considering China (Lozano et al., 2024).

In order to address these risks brought by trade dependence, we can promote productive and economic policies focused on productive diversification to encourage non-traditional sectors with great export potential; productive linkages to give added value to Ecuador's main products such as shrimp, cocoa and bananas; and credits at preferential rates to sectors that replace Chinese imports or for the diversification of exports. Also, with respect to trade strategies at the international level, negotiations with other strategic partners that are balanced to avoid dependence on a single partner should be promoted, and also encourage new strategic alliances such as MERCOSUR or the Pacific Alliance.

Similarly, a new renegotiation of the debt could be applicable to seek more sustainable terms, mainly with Chinese banks, which in turn are supervised by multilateral organizations; also, the limitation of harmful clauses such as the cross-default clause that greatly affects Ecuador. Regarding the legal aspect itself, it may be important to advance a clause or an agreement where the transfer of knowledge and intellectual property is discussed. And finally, it would also be important and, in turn, positive to seek a balance between the world powers, i.e. with China, the United States and the European Union, to avoid dependence on a single partner; and an active trade defense in which safeguards and anti-dumping policies are applied when Chinese products affect national production, affecting the country's economic growth.

## 5. CONCLUSIONS

This study applied a systematic literature review using the PRISMA methodology to analyze the trade relationship between the People's Republic of China and the Republic of Ecuador during the period 2007-2021. From 421 initial records, 30 relevant papers were selected, which allowed us to build a comprehensive view of the evolution, the sectors that influence the relationship between the two countries, and the economic and political implications of this relationship.

The results show that Ecuadorian products exported to the People's Republic of China are dominated by primary goods, including oil, shrimp, bananas, and flowers. Between 2008 and 2015, Ecuadorian exports to China increased by around 800%, reaching USD 2.2 billion annually, while imports of Chinese-manufactured goods expanded at an even faster rate. But the result is a trade balance deficit that is persistent, and, according to 70% of the studies analyzed, deepens the country's vulnerability.

Two out of three of the works analyzed indicate that, even without a free trade agreement between the Republic of Ecuador and the People's Republic of China, the relationship has taken place through financing agreements in the oil sector, in public works contracts and in investment agreements, where the energy sector, the agricultural sector and the infrastructure sector stand out. Since 2022, negotiations for an FTA have advanced, but several authors mention that these negotiations are being conducted under asymmetric conditions, where the terms of the FTA would likely favor China and would support the probability of a primary-export pattern, which will have a very serious impact on Ecuador.

70% of the analyzed documents mention the concentration of raw material exports, which highlights a few already mentioned, combined with the growing domestic market of Chinese products for Ecuadorian consumers, which causes a dependence on the Asian giant and limits Ecuador's industrial capacity. In addition, financial debts with Chinese entities cause the prices of raw materials to vary.

Within each of the sectors that influence the trade relationship between the Republic of Ecuador and the People's Republic of China, 43% of the documents highlight the importance of the energy sector, in which hydroelectric generation and multipurpose and multisectoral projects are mentioned; 37% of the documents mention the agricultural sector, which focuses on shrimp and bananas; and the infrastructure sector, which is mentioned in 30% of the total number of documents. The least influential strategic sector is manufacturing, which is mentioned in only 23% of the studies.

In order to mitigate dependence on China and maximize the benefits of the relationship with that country, several authors suggest designing fiscal incentives to promote productive transformation so that oil, shrimp and bananas, Ecuador's main export products, are incorporated into industrial processing stages; they also suggest diversifying export destinations by negotiating trade agreements with other countries and regions; strengthening trade defense mechanisms and quality standards to balance competition with Chinese products; and making debt and investment contracts transparent to reduce the risk of over-indebtedness and improve accountability.

The study was based exclusively on academic literature and documents available up to December 2021, but certain documents were added that were highly relevant for the study of the subject that have been published up to December 2024, so the lack of primary trade statistics that are sectorized and detailed, in addition to the scarce literature on political impacts resulting from the relationship between China and Ecuador, limited the depth of the analysis of this area. Also, following the PRISMA methodology, which assumed inclusion criteria that, while guaranteeing rigor and seriousness, could have left out relevant works published in a non-indexed format.

In order to overcome these challenges, it is important to design and implement tariff policies to make national products more competitive and standardize sanitary and phytosanitary certifications for Ecuadorian agri-food exports; policies that promote the diversification of the export basket with incentives for non-traditional products, in addition to country branding programs, agreements for technology transfer, knowledge and cooperation; logistics facilitation in terms of port infrastructure such as the Belt and Road Initiative; and

programs for the implementation of environmental and labor standards in order to take care of the Ecuadorian consumer.

The present work has had some limitations in carrying out the research. First, this research focuses exclusively on trade relations between Ecuador and China during the period 2007-2021, so it does not include other Latin American countries or years prior to the defined period. In addition, using the proposed methodology, although the synthesized information is rigorous, following the exclusion criteria, some documents relevant to the studies could have been eliminated because they were not indexed. Finally, by analyzing only the commercial area, other important aspects that define relations with other countries are left aside, in this case, with a focus on the Ecuador-China relationship.

This study establishes one of the bases of relations between Ecuador and China, trade relations. However, options remain open for an analysis of other aspects of the topic, such as diplomatic, regional, and/or multilateral relations. Likewise, a more in-depth analysis of some of the criteria analyzed in this paper or the application of other methodologies is suggested in order to have a more practical approach, and not only a theoretical approach. Finally, an analysis of Latin American relations with China, as a region or by regional groups, is recommended in order to have a more complete view of the outlook for China's trade relations with Latin America and the world.

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## 7. APPENDICES

### Appendix 1

#### *Documents used*

Gamso, Jonas	A case of diversified dependency	2015	Ecuador	Diversification of foreign policy and economic dependence	Ecuador transitions from dependence on U.S. to China
Khiem, N; Takahashi, Y; Yasuma, H; Dong, K; Hai, T; Kimura, N	A novel machine learning approach to predict the export price of seafood products based on competitive information: The case of the export of Vietnamese shrimp to the US market	2022	Vietnam	Prediction of export prices with machine learning tool	Model that predicts shrimp price using competitive variables and certifications.
Tabaresteani, Maryam; Keithly, Walter; Marzoughi, Hassan	An analysis of the us shrimp market: A mixed demand approach	2017	United States	Mixed demand model in the shrimp market	Analysis of price elasticities between domestic and imported shrimp by origin
Keithly, Walter; Poudel, Pawan	The Southeast U.S.A. Shrimp Industry: Issues related to trade and antidumping duties	2008	USA	International trade and antidumping policies	Impact of antidumping measures on shrimp exports from Ecuador to the U.S.
Mayra Escalante, Sonnia Urbina, Valeria Banderas, Ronny Farinango, Karina Sotomayor	Analysis of the productive structure of the Ecuadorian economy	2021	Ecuador	Agricultural exports and economic structure	Projections for bananas, flowers, cocoa and coffee
Delgado Dilmar, Suárez Julia	China-Ecuador economic growth analysis	2023	Ecuador	External debt and economic growth	Debt-to-GDP correlation with China
Sornoza Gema, Gallegos Bárbara, Sornoza, Diego	Analysis of Ecuador's trade relations with China	2015	Ecuador	Trade relations and external indebtedness	Lines of credit and oil impacts
Flores, Ana	Trade balance and its effect on the exchange rate in Mexico	2024	Mexico	Exchange rates and foreign trade	Balance of payments-exchange rate correlation analysis
Flórez, Mónica	Trade barriers: threats and opportunities for developing economies	2013	Colombia	Trade barriers and globalization	Non-tariff barriers in Colombia
Terán, Germán	China in Latin America: The Cases of Ecuador and Peru	2014	Perú	Political and trade relations with China	Ecuador-Peru analysis and Chinese dependence
Ortiz, Diego	China in Latin America: media work ahead of Nicaragua and Ecuador's FTAs between 2022 and 2024	2024	Ecuador and Nicaragua	Public diplomacy and strategic communication in FTA processes	Analysis of China's media coverage and strategy prior to FTAs with Ecuador and Nicaragua
Rodríguez, Angélica; Benalcázar, Mónica; Pozo, Fanny; Soza, Karen	China, a favorable or unfavorable alliance for Latin America and its influence on Ecuador's economy	2020	Ecuador	China's influence on Latin America and its economy	Impact of trade relations with China on Ecuadorian production and competitiveness
Horn, Sebastian; Reinhart, Carmen; Trebesch, Cristoph	China's overseas lending	2021	China (global analysis)	Official international loans from China	Creation of global database of China's debt to developing countries
Angulo, Harold; Lis, Jenny	Trade and inclusive economic growth: China and Latin America (2004-2021)	2023	Ecuador	International trade and inclusive economic growth	Trade with China negatively impacts Latin America's inclusive growth

Constantino, Angélica, Rosillo, Susan; Montalvan, Atenas; Montes, José; Zegarra, Homero	Commercial Dynamism of the Andean Community: An Analysis of Product and Market Diversification	2024	Bolivia, Colombia, Ecuador and Perú	CAN trade diversification	Product and market analysis with HHI; recommendations to improve regional competitiveness
Page, et al	PRISMA 2020 Declaration	2021	Spain	Systematic review methodology	PRISMA Guide
Wong, Sara; Valverde, Ivanna; Silva, Carlos	Dynamics of the relationship between Latin America and China: cluster analysis, 2005 - 2018	2020	Latin America (focus on Ecuador)	Regional typology of relations with China by trade and financing	Cluster analysis on trade, debt and institutional framework of countries vis-à-vis China
Uscanga, Carlos	Ecuador and the US-China rivalry	2020	Mexico	Global geopolitics and U.S.-China rivalry	Strategic impacts in Ecuador
Herrera, Lorena; Bonilla, Mateo	Ecuador-China Relations: the Growing Effect of Chinese Investment on Ecuadorian Domestic Politics, 2007–2016	2018	Ecuador	Economic and political relations between Ecuador and China	Effects of Chinese foreign direct investment on Ecuador's domestic policies
López, Ángel	The Ecuador - China bilateral trade agreement and its impact on Ecuador's gross domestic product	2023	Ecuador	Economic evaluation of bilateral treaties	Negative impact of bilateral agreement on Ecuador's GDP growth
Fárez, Jorge	Study of the evolution of foreign trade	2020	Ecuador	Evolution of regional foreign trade	Historical export/import data
Banco Central del Ecuador	Evolution of trade balance January-December 2022	2023	Ecuador	National trade balance report	Statistics by country and sector
Banco Central del Ecuador	Evolution of trade balance January-February 2022	2022	Ecuador	Monthly foreign trade report	January-February comparison by country
Arteaga, Julio; Cardozo, Mónica; Diniz, Marcia	Exports to China and economic growth in Latin America, unequal effects within the region	2020	México and Brasil	Export-led growth model	Uneven impact of exports to China on Latin American growth
Organización Mundial de Comercio	Key economic factors	2013	Latin America	Regional macroeconomic fundamentals	Key development indicators
Lozano Karen, Moreta Alex, Coral Carmen	Impact of the Trade Agreement with China: An Economic Boost for Ecuador or a Purely Extractivist Approach?	2024	Ecuador	Economic impact of trade agreements	Export and investment evaluation
Badaraco Macías, Díaz Tinoco, Cortes Puyol	Export vulnerability index	2019	Ecuador	Vulnerability of the export sector	Diversification and trade dependence
OMC	World Trade Report	2012	International	Global trade trends	Non-tariff measures and services
Dañino, Gabriela, Delgado, Luis, Gjurinovic, Andrés, López, Romina, Vargas, Claudia	Innovating project financing	2005	International	Financing of development projects	Innovative multilateral mechanisms
Bas, María; Paunov, Caroline	Input quality and skills are complementary and increase output quality: Causal evidence from Ecuador's trade liberalization	2021	Ecuador	Trade liberalization and intermediate inputs	Quality of imported inputs improves labor skills and product quality
Herrera, Lorena	Asymmetric interdependence and small states	2016	Ecuador	Power relations in foreign trade	Vulnerability of states against powers
UNAM	Introduction to international trade	s.f.	Mexico	Theories of international trade	Classic and contemporary models
Álvarez Carlos, Vila Maximiliano	Cooperation between Ecuador and China	2023	Ecuador	Ecuador-China bilateral relations	Technical and financial cooperation
Fuentes Rosa, De Semrau Gantenbein	Globalization and its impact on constitutional law	2010	International	Economic impacts of globalization	Development effects and inequality

Fairlie, Alan	The influence of the FTA with China	2019	Ecuador	Impact of trade agreements	Evaluation of the Ecuador-China FTA
Lapeña Ramiro, Czubala Marcin	Dependent foreign policy	2018	Ecuador	International political dependence	Historical analysis of foreign relations
Reyes Milton, Chun Po	The economic relationship between Ecuador and China	2017	Ecuador	Diplomatic and economic relations	Growth of Chinese influence
Espinoza Edwin	The China-Ecuador relationship in the 21st century	2015	Ecuador	Bilateral economic relations	Exports, imports and investment
Herrera Lorena	Latin America in Light of China's Global Economic Power: Brazil and Ecuador and their foreign policies. A Comparative Study	2016	International	China's geo-strategy in Latin America	Economic and diplomatic expansion
De Lucio Juan	Geopolitical leadership: the role of trade agreements	2019	Latin America	Theory and practice of geopolitical power	International influence and hegemony
Coral, Yhancy, Melo, Gladis, Realpe, Iván, Mujica, Rubén	Export logistics of the main agricultural products from the department of Nariño to the Republic of Ecuador.	2020	Ecuador	Foreign trade logistics	Export processes for key products
Passi, Gastón	China's Interests in Brazil. An Analysis of the Brazilian Insertion Strategy and Possible Trends for South America.	2021	Brasil	Chinese geo-strategy in South America	Investment in Brazilian natural resources
Cancillería del Ecuador	Memorandum of Understanding between the Government of the Republic of Ecuador and the Government of the People's Republic of China on cooperation within the framework of the Silk Road Economic Belt Initiative and the 21st Century Maritime Silk Road Initiative.	2018	Ecuador	International bilateral cooperation	Ecuador-China investment agreements
Chosgo, Tala	Notes on international trade theories	2022	Bolivia	Theories of international trade	Classic and contemporary models
Téran, Nicole	Analysis of the effects of Ecuador - China bilateral trade on macroeconomic indicators GDP, trade balance and employment in Ecuador during the period 2013 - 2017.	2018	Ecuador	Macroeconomic analysis of bilateral trade between Ecuador and China	Impact on GDP, employment and trade balance in the period 2013-2017.
Bartasaghi, Ignacio, Melgar, Natalia	Possible impacts of an FTA between Uruguay and China	2018	Uruguay	Free trade agreements	Social and economic impacts of the FTA
David Ricardo	Principles of economics, politics and taxation	1817	United Kingdom	Classical political economy	Theory of value and differential rent
Márquez, Gabriel; Márquez, Fidel; Vergara, Arnaldo	Relationship between the People's Republic of China and the Republic of Ecuador: A perspective from dependency theory.	2023	Ecuador	Dependency theory from a structuralist perspective	Ecuador as a peripheral country dependent on China for trade and financing
Krugman, Paul	Scale Economies, Product Differentiation, and the Pattern of Trade	1980	International	Economies of scale and trade	Product differentiation theory
Moreno, Alicia, Narváez, Diana, Sancho, Sebastián	Theories of International Trade	2016	Ecuador	Classical and modern trade theories	Absolute advantage, comparative, Heckscher-Ohlin
Eli Heckscher, Bertil Ohlin	The Heckscher-Ohlin Model	1933	Sweden	International partnership and factorial endowment	Heckscher-Phlin Theorem

Pérez, Lesbia	Trade relationship with China and implications for Latin American productive structures	2023	Mexico	Structural changes due to international trade	Effects of trade with China on the Latin American production structure
Porter Michale	The Competitive Advantage of Nations	1990	United States	International competitiveness	Diamond model and national advantage
Teng, Chung	The Pattern of China's Financial Initiative in Latin America: A Comparative Study	2017	Taiwan	China's economic strategy towards Latin America	1+3+6" and '3x3' models in financial and industrial cooperation with Latin America
Albright, Zara	The Political and Pragmatic Determinants of Chinese Development Finance in Latin America and the Caribbean, 2008-2019	2024	United States	Development Finance and geopolitical competition	Internal and external political factors that explain China's loans to Ecuador
Blanchard, Jean	The Politics of Latin America's Investment and Other Links with China: Contextualizing the Region's Cash Chasing while Racking Richer Research Rewards	2019	China/USA	Political effects of Chinese FDI in Latin America	Three theoretical approaches: wealth is power, conditionalism and politics is power.
Smith, David	The way we think: Ethics, health and the environment in international business	2010	Singapur	International Business Ethics	Ethical and Environmental Impact of Transnational Corporations in Developing Countries
Montes, José; Arbulú, Marco; Ludeña, Diego; Lamadrid, Milagros; Guzmán, María; Cruz, Luis; Farfán, Gary; García, Hugo	Competition in the international cherry market: a competitiveness analysis of the developing country	2024	Chile	Export competitiveness in the cherry sector	High concentration in China; proposal to diversify markets and improve production and logistics efficiency
Saldarriaga, Miguel; Winkelried, Diego	Trade linkages and growth in Latin America: An SVAR analysis	2013	Perú	International economic independence	Influence of China's growth on Latin America's growth through trade
Espinoza, Edwin; Cabrera, Diana; Morán, Diana	Primarization of foreign trade and ecologically unequal exchange in Ecuador	2017	Ecuador	Ecological economics and social metabolism	Ecologically unequal trade in Ecuadorian exports
Benita, Francisco; Urzúa, Carlos	Mirror trade statistics between China and Latin America	2016	Mexico	Mirror statistics on international trade	Trade misinvoicing between China and Latin America, with case study of Ecuador
Takamiya, Kenji	Recently Acceded Members of the World Trade Organization Membership, the Doha Development Agenda, and Dispute Settlement	2019	Multinational (including Ecuador)	Theoretical analysis of multilateral agreements and trade policies in recently acceded WTO member economies.	Application of theories such as unilateral commitment, reciprocity, terms-of-trade externalities and domino theory
Geetha, R; Ravisankar, T; Patil, P; Avunje, S; Vinoth, S; Sairam, C; Vijayan, K	Trends, causes, and indices of import rejections in international shrimp trade with special reference to India: a 15-year longitudinal analysis	2020	India	International trade of aquaculture products	Shrimp exports rejected due to sanitary noncompliance
Herrera, Lorena; Carranco, Santiago	The negotiation of free trade agreements between Ecuador and Panama with the People's Republic of China.	2024	Ecuador and Panamá	Adaptive trade strategies of small countries vis-à-vis China	Analysis of the Ecuador-Panama FTA with China within the framework of commercial diplomacy
Durán, José; Morales, Jesús	European Union Regional Facility for Latin America and the Caribbean	2021	Ecuador (with ECLAC and EU assistance)	Economic and commercial evaluation of a bilateral agreement	Projected effects of the Ecuador-China agreement on GDP, trade and employment
Argusmedia	China, Ecuador to renegotiate "harmful" loan terms	2022	Ecuador	Debt negotiation	Negotiation between president for debt renegotiation

As	This small, resource-rich country bet on hydroelectric power: a severe drought broke out	2025	International	Dependence on an energy matrix	Dependence on hydroelectric power
Banco Central del Ecuador	Signing of the Free Trade Agreement with China: A great opportunity for Ecuador	2024	Ecuador	Signing of FTA with China	FTA with China and what it represents
Bonilla Adrián	Ecuador's Foreign Policy: 25 Years of Vulnerability	2022	Ecuador	Ecuador's foreign policy	Debt, multilateralism, bilateralism
CELEC EP	Coca Codo Sinclair Hydroelectric Power Plant	2022	Ecuador	Chinese investment in hydropower plants	Coca Codo Sinclair case in the energy matrix
Electronic Database of Investments and Treaties	FREE TRADE AGREEMENT BETWEEN THE GOVERNMENT OF THE REPUBLIC OF ECUADOR AND THE GOVERNMENT OF THE PEOPLE'S REPUBLIC OF CHINA	2023	Ecuador	Ecuador-China FTA	Free trade agreement between Ecuador and China
Info ECSA	The Mirador copper mine, a model of China-Ecuador cooperation	2021	Ecuador	Mirador copper mine	Ecuador-China Cooperation
Ministerio de Energía y Minas	Coca Codo Sinclair hydroelectric power plant	2017	Ecuador	Coca Codo Sinclair hydroelectric power plant	Construction and use of the hydroelectric power plant
Ministerio de Producción, Comercio Exterior, Inversiones y Pesca	Ecuador-China Free Trade Agreement	2023	Ecuador	Ecuador-China FTA	TLC explanation and benefits
Ministerio de Relaciones Exteriores y Movilidad Humana	Joint Declaration between the Republic of Ecuador and the People's Republic of China on Deepening the Ecuadorian-Chinese Comprehensive Strategic Partnership	2022	Ecuador	Ecuador-China strategic cooperation	Cooperation agreement between the two countries
Miranda, Boris	Coca Codo Sinclair: the problems of the multi-billion dollar dam built in Ecuador by China	2019	Ecuador	Coca Codo Sinclair hydroelectric power plant	Hydropower failures
CEPAL	The Belt and Road Initiative and the opportunities for productive transformation in Latin America and the Caribbean	2024	Latin America	Belt and Road Initiative	Opportunities from the initiative and benefits to the parties
Shanghai Metal Market	Tongling Nonferrous: Mirador Copper Mine Resumes Normal Production with Dual Production Lines	2025	China	Open air mine Mirador	Copper mining
Sinohydro Ecuador	China and its contribution to Ecuador's economic and social development	2024	Ecuador	Relations between Ecuador and China	Trade, cooperation, investment
Stott, Michael	Latin America's hydro power bet suffers effects of climate change	2024	United States	Hydroelectric power plants in Latin America	Flooding and droughts in the electrical system