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# Perfecting China's anti-monopoly legal system: international shipping in the digital economy era

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The rapid development of digital economy promotes the transformation and upgrading of China's shipping fields. Among them, the international shipping anti-monopoly legal system is one of the important contents of China's shipping legislation. In the era of digital economy, it is difficult for the existing system to better regulate the international liner shipping market with shipping alliance as the core. Countries have re-examined the anti-monopoly legal regulation system of international shipping. As both a major shipping and trading country, it is urgent for China to improve its shipping legislation with the anti-monopoly system as its core. In order to cope with the new pattern of shipping alliance in the era of digital economy, we should learn from the advanced experience of international shipping legislation, base on the perspective of China's shipping economic development and our own needs, and make effective exploration from the aspects of coordinating the development of digital economy and shipping management mechanism, improving shipping supervision ability and accelerating the improvement of shipping legal system with Chinese Characteristics.

## KEYWORDS

digital economy, international shipping, shipping anti-monopoly, shipping supervision, shipping law

## 1 Introduction

In recent years, digital technologies such as blockchain, artificial intelligence, and big data have become hot spots in the development of digital shipping. The process of digital transformation and development of shipping is accelerating. At present, the international environment is facing many uncertainties and challenges to its stability. The prevalence of trade protections and unilateralism has made the multilateral trading system difficult. The rules and systems of international shipping competition are facing multiple challenges as well, and anti-monopoly laws play an important role in the construction of the legal system surrounding Chinese shipping. However, due to limited legislative resources and technologies, the Shipping Law—with an anti-monopoly legal system at its core—has not yet been officially promulgated in China. The rules and procedures of international

anti-monopoly exemptions for shipping lack legislative guarantees at a higher legal level, thus restricting the development of China's shipping industry despite China's position as the largest trader of goods and the country with the second largest number of shipowners. Based on this, and set against the backdrop of the digital economy and the fiercely competitive global shipping market, China must rapidly dominate global shipping discourse, actively prevent blockchain, artificial intelligence, and big data from becoming new tools for western countries to monopolize the international shipping market, protect the interests of Chinese shipping enterprises, and improve the core competitiveness of China's international shipping market.

This paper is structured as follows. Section 2 is literature review. Section 3 is methodology. Section 4 introduces the development trend of international shipping anti-monopoly legal system in the era of digital economy. Section 5 explores the development process of China's shipping anti-monopoly legal system, including the development logic behind it and the results achieved; Section 6 focuses on the problems existing in the development of China's international shipping anti-monopoly legal system in the era of digital economy. Based on the analysis of the previous content, Section 7 puts forward corresponding suggestions on the development of China's international shipping anti-monopoly legal system. Section 8 presents conclusions.

## 2 Literature review

In the field of digital economy, at this stage, digital economy has become the new engine of China's economic development. Different from other economies, the digital economy is a new economic form based on the new generation of information technology and with big data as the core element (Xie, 2018). Some scholars believe that the digital economy has shown an unstoppable growth trend, and the competition in the field of digital economy has become a new game point for the core strength of big countries (Yu and Feng, 2022a). Under the background of national digital competitiveness, the digitalization of the government and the digital economy have brought many benefits to development (Sagarik, 2023). Some scholars also elaborated the development of digital economy in China in the post-epidemic era, and thought that with the support of "digital economy policy", the long-term development of digital economy in China showed a positive trend (Jiang, 2020). With China's application to join regional free trade agreements such as RCEP and CPTPP, China is internationalizing digital economic governance. At the same time, China has also established industry-level interoperability with the United States (Zha and Ting, 2022). However, due to the rapid development of China's digital economy has been significantly ahead of the existing system norms and regulatory capabilities, market irregularities are constantly emerging and difficult to effectively manage. It is urgent for the government to take measures to actively respond (Sun and Zhang, 2024).

In the field of international shipping antitrust, domestic and international scholars have launched numerous discussions and studies from different angles. Generally speaking, most of the

studies combine the domestic competition law or anti-monopoly law to evaluate the anti-monopoly regulation in the international shipping field and point out the future reform direction. The anti-monopoly exemption system in the American Ocean Shipping Reform Act of 1998 has had a certain impact on the freight adjustment mechanism (Fung, 2014). Taking the regulation path of EU competition law as an example, some scholars pointed out that the abolition of the collective antitrust exemption of liner conferences by EC Council Regulation 1419/2006 may lead to fundamental changes in the EU shipping competition legal system (Munari, 2009). In the researches on the anti-monopoly exemption system of shipping alliance, some scholars have compared the anti-monopoly regulations of the European Union, the United States and China, and think that the cooperation arrangement of shipping alliance may lead to excessive concentration and interdependence (Tang and Sun, 2018); (Power, 2019).

Compared with foreign researches, there are some domestic researches on the anti-monopoly legal system of shipping alliance, mainly focusing on the debate on whether the shipping industry enjoys anti-monopoly exemption, and analyzing the restrictive competition events in the shipping market with practice as the guide. The mainstream view is that the establishment of shipping anti-monopoly exemption system is beneficial to the development of China's shipping industry (Tian, 2024) (Wang and Wang, 2023). However, earlier there were also views that the shipping anti-monopoly system should be established on the basis of exemption negation theory (Li, 2010). In addition, some scholars have made a multi-dimensional investigation on the legislation and practice of shipping anti-monopoly under the background of China, the United States and Europe (Xia and Li, 2022). Another scholar combined with the particularity of the international shipping industry, demonstrated the necessity and rationality that China should construct the anti-monopoly system of shipping alliance from two aspects of regulation and exemption (Lin, 2023).

In a word, the existing some domestic researches rarely discuss the anti-monopoly regulation of international shipping under the background of digital economy, and this paper fills the gap in this aspect. Combined with the development of digital economy, it is of great significance to further explore the legal issues related to shipping anti-monopoly regulation. Among them, the anti-monopoly theory of shipping alliance has its practical background. The development of China's shipping anti-monopoly regulation legal system needs comprehensive consideration and rational analysis based on the characteristics of China's shipping market and China's anti-monopoly position.

## 3 Methodology

### 3.1 Literature analysis method

This paper systematically reviews and analyzes the shipping anti-monopoly regulation in the context of the digital economy era based on extensive examination of relevant literature. Only by thoroughly understanding the relevant materials and gaining a

comprehensive understanding of the research subject, we can really find the problems and solve them.

## 3.2 Case analysis method

Case study method is based on actual cases, and through in-depth analysis of cases, practical conclusions and suggestions are drawn. China and other countries have some typical cases in the field of shipping antitrust. Combining with specific case studies, we can strengthen the analysis of this paper and provide practical suggestions.

## 3.3 Comparative analysis method

At present, the researches mainly focus on the competition law or industrial regulation system model of a single country, and analyze and evaluate the specific regulatory rules and actual effects, lacking systematic comparative thinking. Therefore, from the perspective of comparative study, this paper makes a comparative analysis of the anti-monopoly regulation systems of established shipping countries such as the United States and the European Union, which has certain theoretical and practical significance for further researches on the anti-monopoly regulation of international shipping under the background of digital economy.

# 4 Development trend of international shipping anti-monopoly legal system in the era of digital economy

## 4.1 Characteristics of global digital economic development

The productivity of innovations based on computer science, technology algorithms, and computing power, combined with the expansion of data and scene applications, including the scene openness and ecological diversity brought about by the increasing scale of internet platforms, has revolutionized the global digital economy (Yu and Feng, 2022b). The United Nations Conference on Trade and Development pointed out in its “2024 Digital Economy Report”, released in July 2024, that the digital economy should adhere to sustainable development in the process of vigorous development, reduce the environmental cost of the digital economy, and let more developing countries benefit from it. It should stimulate the sustainable and inclusive development of the digital economy (UNCTAD, 2024a).

In recent years, the global digital economy has demonstrated the following characteristics. First, the digital economy continues to develop rapidly. In 2024, China Institute of Information and Communication pointed out in its “2024 White Paper on Global Digital Economy”, released in July 2024, that the digital economy in the United States and China achieved rapid growth, while that in Germany, Japan and South Korea continued to develop steadily. Countries around the world have accelerated the development of key areas of the digital economy and actively seized development opportunities in

areas such as digital industrialization and data elements (China Academy of Information and Communications, 2024).

Second, the digital economy is characterized by economies of scale. Digital platforms have powerful technological, capital, and data aggregation effects, and they are responsible for the creation and distribution of social wealth in the new stage of development. Digital platforms affect social wealth, social welfare, and the fair distribution of society, so it has the characteristics of economies of scale.

Third, the competitiveness of the digital economy is different. In the era of the digital economy, in order to command new heights in the digital economy and continuously improve the competitiveness of domestic digital economies, the whole world has made strategic arrangements and oriented toward the digital field to varying degrees. Generally speaking, this will have a far-reaching impact on global economic and trade partners. At the same time, in the face of differences in the competitiveness of the global digital economy, the development of the digital economy in various countries is imbalanced. According to the United Nations Conference on Trade and Development’s report, China and the United States together hold more than 75% of the global market share of cloud computing, accounting for 90% of the global market value of digital platforms, while the European Union only accounts for 4% of the global market share in the field of digital platforms (UNCTAD, 2021).

However, because big data is the precondition for platform operators to provide services, there are huge barriers to entry in the digital market, and there is a tendency toward monopoly and oligopoly. This also shows that the digital economy will bring great benefits to society and consumers on the one hand, but on the other hand, it will also create various uncertain risks for national security, personal privacy protection, consumer rights protection, and other issues. It is worth emphasizing that in the digital economy era, enterprises often hold a monopoly or have market dominance, leaving the market with increasingly less competition. In addition, these enterprises may exclude and restrict competition in order to maintain their market dominance. Therefore, on a global scale, the anti-monopoly voice in the field of the digital economy is rising (Wang, 2021).

## 4.2 The significance of the digital economy to the development of China’s international shipping anti-monopoly legal system

The shipping industry is a pillar of China’s national economy, accounting for over 90% of the global international trade and transportation (UNCTAD, 2024b). The international shipping has played an important role in ensuring the transportation of materials and the stability of the global industrial supply chain. At the same time, the digital economy is having a broad and far-reaching influence on the global shipping market. In the past, most international shipping was limited by the development of digital technology. However, with the rapid development of the digital economy, the digital and intelligent development of the global shipping industry has ushered in unprecedented opportunities.

The development of the shipping industry is inseparable from the guarantee of the international shipping legal system. In the international shipping market, the development of anti-monopoly systems is at the core of shipping legislation. Creating new advantages for the digital economy in the field of shipping, promoting the construction of the international shipping blockchain standard system, and improving the anti-monopoly legal system for shipping are all necessary for the following reasons.

First, the digital economy will effectively promote the efficient operation of the international shipping market. In the digital economy era, the shipping industry and digital technology will be further combined. At the present stage of development, technologies such as the Internet of Things and intelligent warehousing are integrated with the production, logistics, and distribution links of digital platform enterprises to realize the intelligent management of cross-border logistics transportation and warehousing and promote the efficient operation of the international shipping market.

Second, the digital economy is helpful for the reconstruction of China's current legal system as it applies to shipping antitrust. As the world's largest trading nation and the third largest shipowner, the trade deficit in shipping services is serious for China. International shipping's current anti-monopoly system does not conform to China's overall national interests, especially with regard to the survival and development of many small and medium-sized foreign trade enterprises (Zhu, 2022a). The integration and development of the digital economy in the shipping industry is an irresistible trend. With the development of the digital economy, it would be helpful to improve China's existing anti-monopoly legal system for shipping.

Third, the digital economy is conducive to promoting China as a shipping powerhouse. In recent years, China has continuously opened up its shipping market and innovated its shipping policies. In particular, its digital trade facilitation measures, such as electronic certification, "single window" and paperless trade, and a series of digital technology measures implemented in the Pilot Free Trade Zones have greatly improved the intelligence level of customs information and shortened the overall customs clearance times for imports and exports (Shi, 2024a). The application of digital technology in the field of international shipping plays an important role in enhancing the global competitiveness of China's shipping and ports and promoting the construction of China's shipping power.

### 4.3 Cases of antitrust in international shipping in typical maritime countries

In recent years, in the international shipping sector, liner companies' consortium operations have become an important model, occupying a significant position in the global shipping industry. Various countries have initiated antitrust regulations on shipping consortia. For example, the U.S. Federal Maritime Commission has investigated the three major alliances, namely 2M (Mediterranean Shipping Co. and

Maersk), Ocean Alliance<sup>1</sup>, and THE Alliance (Hapag-Lloyd, Yang Ming, and ONE)<sup>2</sup> imposing the strictest scrutiny, if necessary it will prohibit alliance agreements. The EU has been discussing whether to extend the exemption regulations for shipping consortia. In the early years, typical cases in the EU's regulation of international shipping antitrust issues included: the Transatlantic Conference Agreement case, the Far Eastern Freight Conference case, the Transatlantic Liner Conference case, the Far Eastern Freight and Surcharges Shipping Agreement case, among others (Wang, 2015). These cases all revolve around the traditional anti-competitive practices in the shipping industry. It can be observed that the EU has maintained strict definitions for shipping antitrust exemptions. In South Korea, an investigation was launched into the "Yellow Sea Agreement", probing whether shipping companies were colluding to create a monopoly and manipulate market prices. The investigation resulted in hefty fines. This marked the first time South Korea's antitrust authorities penalized shipping companies for anti-competitive behavior, signaling that shipping alliances are now subject to scrutiny by regulatory bodies (Souhu Network, 2022). Based on current practical experience, shipping alliances carry certain risks, and how to effectively regulate them deserves the attention of all parties involved.

## 5 Exploration of the development of China's international shipping anti-monopoly legal system in the digital economy era

### 5.1 Exploration of China's international shipping anti-monopoly legal system in the digital economy era

#### 5.1.1 Development and change of the international shipping monopoly pattern

Forming a shipping alliance is considered the best way to achieve economies of scale and scope in the shipping industry, and it is the inevitable choice for the shipping industry to pursue efficiency and optimize resource allocation (Han and Lin, 2020). However, on the whole, the development of shipping alliances is not stable, and it has been undergoing integration and reorganization in recent years. Since April 2017, the original four shipping alliances—2M, O3, G6, and CKYHE—have been integrated into three shipping alliances. On January 25th, 2023, Maersk Shipping announced that shipping company and Maersk Shipping both agreed that the——2M Alliance, the world's largest shipping alliance, would terminate its operation in January 2025.

With the advent of this era of grand alliance, there will be more cross-alliance cooperation among shipping companies. Also, there

<sup>1</sup> Ocean alliance is composed of CMA CGM, Evergreen, OOCL, and COSCO Shipping.

<sup>2</sup> THE Alliance will be dissolved in January 2025.



will be more existing alliance members withdrawing from alliances, which will result in the reorganization of existing alliances (Li, 2022). In short, shipping alliances concentrate the container shipping market. On the one hand, they pose great challenges to port construction and shipping market order; on the other hand, they also cause the shipping companies that have not joined an alliance worry about their survival. Because some small and medium-sized shipping companies do not have the corresponding capital conditions and competitive advantages of larger companies, such as their operation network coverage, they are faced with the huge threat of being eliminated.

### 5.1.2 The development logic of an international shipping anti-monopoly legal system in the digital economy era

This century's digital economy era is an important historical opportunity for the shipping industry to improve its resource allocation ability and achieve high-quality development. At this stage, a series of large-scale digital shipping organizations have emerged, among which TradeLens and GSBN are the most famous. The two blockchain alliances are intertwined with the existing three traditional shipping alliances, forming a huge monopoly power (Zhu, 2022b). Great importance is attached to the competition of global shipping. In addition, the grim situation of the global pandemic has forced countries to develop online technology, which has led to rapid progress being made in global digitalization and informatization. Thus, the digitalization of shipping is urgently needed to establish the right of international discourse. Although the International Maritime Organization has not set up a special digital shipping committee, it can be seen from a series of measures—such as the Maritime Reform Act promulgated by the United States in June 2022—that it is further revealing its hegemonic ideology and trying to expand the favorable conditions for occupying the international shipping market. Set against the background of the digital economy, China's shipping industry urgently needs to lay out and plan for the innovation and improvement of its shipping legislation with international shipping anti-monopoly at its core before future patterns are determined.

## 5.2 Achievements of China's international shipping anti-monopoly legal system in the digital economy era

### 5.2.1 Initial improvements made to the freight rate filing system in the shipping market

In China, the freight rate filing system, as a system to regulate the freight rate of the shipping market, has played an important role in stabilizing the freight rate and regulating the shipping market order. As early as 2009, Shanghai Shipping Exchange abandoned the original paper-based submission method in the process of freight rate filing and fully transitioned to the electronic submission system. Moreover, it applied information encryption upload technology to meet international liner companies'

transmission requirements. At the same time, it also improved the inspection, analysis, and statistics functions of freight rate records, which provided certain conditions for the government to strengthen its market supervision (Central People's Government of the People's Republic of China, 2009). In the same year, in order to regulate the business activities of international container liner shipping enterprises, curb unhealthy competition, and safeguard the legitimate interests of all parties in the market, the Ministry of Communications issued the Announcement of the Implementation Measures for the Filing of International Container Liner Freight Rates in 2009, formally established the freight rate filing system, and stipulated that international container liner shipping enterprises should file their routes and freight rate agreements with the Ministry of Transport. In the following year, the Announcement on the Measures for the Implementation of the Freight Rate Filing of NVOCC operators further clarified that the freight rate filing of NVOCC operators should be carried out in accordance with the provisions of the International Shipping Regulations. In 2013, the General Office of the Ministry of Transport issued Several Opinions on Promoting the Transformation, Upgrading, and Healthy Development of the Shipping Industry in which it clearly stated that "it is necessary to strengthen the supervision of the domestic and foreign shipping markets, adopt an accurate reporting mode for the price filing of international container liner shipping, and further standardize the order of the international container liner shipping market." Shortly after establishing the Shanghai Pilot Free Trade Zone, the Ministry of Transport announced the Implementation Measures for Refined Declaration of International Container Liner Freight Rates, which made it clear that the freight rate declaration should adopt a refined mode. The record adjustment is also an important measure to promote the innovation and development of shipping policies.

However, for a long time, many entities in China's international container shipping market have experienced nonstandard operation and unfair competition. For example, the vicious competition of "zero freight rates" and "negative freight rates" by shipping market players, such as international container liner shipping companies and NVOCC operators, has occurred on some routes from time to time, and it has been repeatedly prohibited. During the actual course of operations, some shipping market entities fail to record the freight rates according to the relevant regulations or they engage in some illegal behaviors, such as inconsistency between the actual freight rates and the recorded prices. For example, in November, 2022, the Ministry of Transport published the Notice on Penalties for Illegal Business Practices of seven international container liner shipping companies and NVOCCs and imposed administrative penalties on the behaviors of seven shipping companies, including CMA Shipping, for the actual freight rates being inconsistent with the recorded prices (Ministry of Transport of the People's Republic of China, 2020). At this stage, in the period of the digital economy's rapid development, it is of great significance to further standardize and maintain a healthy and strong shipping market competition environment by taking the freight rate filing system as the starting point and using effective means to improve it, such as digital technology.

## 5.2.2 Continuous strengthening of the anti-monopoly shipping alliance

From the Ministry of Commerce's rejection of the P3 Alliance to its conditional approval of Maersk's acquisition of Hamburg South America's equity, China has shown its determination to vigorously maintain fair competition in the shipping market and strengthen its anti-monopoly stance on shipping alliances. Digital blockchain is also introducing structural changes to the shipping industry and its global value chain. Like other multinational companies, Maersk also took part in this revolution and established some alliances to seek business efficiency and cost savings, aiming to achieve long-term growth and expansion of corporate performance (Anwar, 2020). Take the case of Maersk Line's acquisition of Hamburg South America's equity as an example. In November 2017, the Ministry of Commerce published an announcement on approving the decision of the antitrust examination of the concentration of business operators in the case of Maersk's acquisition of Hamburg South America's equity group with additional restrictive conditions. According to the proposal of additional restrictive conditions submitted by Maersk to the Ministry of Commerce, Maersk is required to fulfill four obligations. According to Article 27 of China's Anti-Monopoly Law, the Ministry of Commerce assessed the impact of the concentration of competition in the shipping market mainly from the following aspects: the share of the operators participating in the concentration in the relevant market, the control power of the shipping market, the difficulty of entering the market, and the impact on consumers or other market entities. The anti-monopoly investigation showed that the possible impacts of a concentration of operators include restricting and excluding competition in the general or refrigerated international container transportation market of the east coast route from the Far East to South America and the west coast route. In the investigation, the Ministry of Commerce conducted several communications and interviews with Maersk on whether the additional restrictive conditions could reduce the adverse effects of this concentration of operators. After that, Maersk submitted some suggestions on additional restrictive conditions according to the requirements of the Ministry of Commerce. Once again, the Ministry of Commerce made a detailed evaluation of the effectiveness, feasibility, and timeliness of the additional restrictive conditions. Finally, Maersk Line was allowed to acquire Hamburg South America Co., Ltd (Ministry of Commerce of the People's Republic of China, 2017). In the future Maersk Line and Hamburg South America will integrate the global route network through customs clearance, benefiting customers by offering broader market coverage and more attractive services.

## 5.2.3 Continuous improvements made to relevant shipping laws and regulations

The good and orderly operation of the international shipping market depends on the support and guarantees of shipping laws and regulations. In China, the international shipping market has grown from weak to strong. The continuous improvement of shipping laws and regulations has played a positive guiding role and helped China

become a shipping power. The Anti-Monopoly Law is a general law of anti-monopoly regulation in the international shipping market, which systematically stipulates the scope, types, composition, and investigation procedures of monopolistic behavior. The law specifies that there are three types of monopolistic acts: monopolistic agreements, abuse of market dominance, and concentration of business operators. On August 1, 2022, the newly revised Anti-Monopoly Law came into effect. Article 4 of this law puts forward that "the state should strengthen the basic position of competition policy" and emphasizes that the implementation of the fair competition review system is an important element of strengthening the basic position of competition policy. In addition, Article 9 of the newly revised general provisions of the Anti-Monopoly Law clearly stipulates that "operators shall not engage in monopolistic acts specified in this law by using data, algorithms, technology, capital advantages and platform rules." In Chapter III, "abuse of dominant market position," it adds that "operators with dominant market position shall not use data, algorithms, technologies and platform rules to engage in the acts of abusing dominant market position specified in the preceding paragraph." This shows that the newly revised Anti-Monopoly Law has absorbed the Opinions on Promoting and Standardizing the Healthy Development of Platform Economy and Digital Economy, which also provides an important legal guarantee for effective competition in China's international shipping market in the era of the digital economy. In terms of strengthening legal liability, Article 56 of the newly amended Anti-Monopoly Law adds that "if the legal representative, the principal responsible person and the directly responsible person of an operator are personally responsible for reaching a monopoly agreement, they may be fined not more than one million yuan." Article 67 also specifies that "if a violation of the provisions of this law constitutes a crime criminal liability shall be pursued according to law." These new provisions on legal liability will effectively enhance the deterrent force of the Anti-Monopoly Law. In terms of shipping, shipping market players will also strengthen their initiative and enthusiasm for compliance management.

## 6 Problems with China's international shipping anti-monopoly legal system in the digital economy era

### 6.1 Typical case analysis of shortcomings in China's current shipping anti-monopoly system

Overall, the development trend of China's antitrust legislation and enforcement has been positive in recent years. A typical case in China's shipping antitrust sector is the P3 Alliance case. The Ministry of Commerce of China determined that the P3 Alliance could lead to excessive market concentration during its operations, thereby breaking away from traditional regulatory approaches and ultimately deciding to prohibit the merger. Prior to this, Europe and the United States regulated shipping alliances under antitrust agreements, with no

precedent for using merger control regulations to review shipping alliances (Zhu, 2015). In other words, before China's antitrust authorities intervened, both Europe and the United States had approved the formation of the P3 Alliance. The underlying reason lies in the differences in regulatory approaches. The Scholar has analyzed the distinct regulatory paths taken by the U.S., the EU, and China in the P3 case (Shi, 2024b).

In the P3 Alliance case, the parties involved established a network center that integrated all shipping capacity across global east-west routes, including Asia-Europe, trans-Pacific, and trans-Atlantic routes. Compared with traditional shipping alliances, the P3 Alliance differed significantly in terms of cooperation structure and operational procedures. The network center established in the P3 Alliance played a crucial role, as it exerted decisive influence over its members or gained actual control through the alliance agreement. Therefore, it constituted a merger-like behavior classified as a concentration of undertakings (Li, 2022a).

## 6.2 Specific aspects of the problems existing in the shipping anti-monopoly legal system

### 6.2.1 The legal application of the shipping anti-monopoly exemption is unclear

For a long time, the international shipping industry has been fiercely competitive. In order to gain a larger market share and earn more profits, shipping companies in various countries have been constantly improving their international competitiveness, and they have implemented mergers and acquisitions and strategic alliances. On the whole, the international shipping industry presents a multi-axis development trend of "cartel alliance merger." The formation of this situation has attracted the attention of anti-monopoly law enforcement agencies in various countries, and those in academic circles have also debated the application of the anti-monopoly exemption system (Li, 2022b). However, at this stage, it is unclear whether there is a real anti-monopoly exemption system for shipping alliances in China because China's laws and regulations have no specific provisions detailing the anti-monopoly exemption system. In addition, the International Shipping Regulations, which are applicable to international shipping anti-monopoly, have specific provisions on the filing of agreements. It is clear that shipping alliance agreements should be filed with the transportation authorities. However, this kind of filing system cannot be regarded as an exemption system for shipping anti-monopoly in China because the International Shipping Regulations do not clearly stipulate the content and scope of application of the shipping anti-monopoly exemption system or systematically stipulate the specific examination procedures of this system. Besides, there are contradictions in the application of the law. Although the International Shipping Regulations constitute an administrative regulation that directly regulates the order of the shipping market, the legal effect is less than that of the Anti-Monopoly Law. According to the principle of "the new law is superior to the old one," the Anti-Monopoly Law should be applied first to issues related to anti-monopoly. However, the Anti-Monopoly Law fails to take into account the particularities of

the international shipping industry and often encounters obstacles in the actual implementation process. Thus, even if the International Shipping Regulations make strict provisions, they can be invalid due to their violation of superior new laws, such as the Anti-Monopoly Law.

### 6.2.2 Government management system and mechanism need further improvement

In the digital economy era, digital technology is an important means for the government to improve its supervision and service capabilities. In August 2022, Guiding Opinions on Strengthening the Construction of Digital Government (hereinafter referred to as "Guiding Opinions") were officially released by the State Council (Central People's Government of the People's Republic of China, 2022). In 2019, the General Office of the State Council also issued the Notice on Printing and Distributing the Division of the Key Tasks of the National Video Conference on deepening the simplification and decentralization reform and optimizing the business environment, clearly proposing to promote the in-depth development of decentralization and further releasing vitality and detailing the specific measures to be implemented by various government departments. The specific measures that relate to shipping include "urging all localities to publish the list of port charges and rectify the phenomenon of arbitrary charges by ports, shipping companies, logistics stations, freight forwarders and shipping agents." This measure is implemented by the Ministry of Transport, the General Administration of Customs, the National Development and Reform Commission, the Ministry of Finance, the General Administration of Market Supervision, and other relevant departments and regions according to their respective duties (Central People's Government of the People's Republic of China, 2019).

However, in the field of international shipping, the government's management system and current mechanism are not perfect, which manifests in the following. First, there are hierarchical management phenomena between the central and local governments, and there is also a tendency toward local protectionism in the process of supervising the international shipping market in China. Second, the linkage mechanism between the Ministry of Commerce, the National Development and Reform Commission, and other departments is not perfect, and a series of attempts to rectify anti-monopoly and unfair competition in international shipping still lacks the joint force of supervision. Third, the sharing of data and information among regulatory functional departments has not really been realized. For example, due to the failure of customs, national inspection, and other regulatory departments to fully share data on the goods entering and leaving the area, and because the goods cannot be classed by different regulatory departments for risk management purposes when entering the area, the complexity of entering the area for filing purposes is increased.

### 6.2.3 There are weak links in the anti-monopoly supervision of the shipping market

On the one hand, in the digital economy era, the anti-monopoly supervision of China's shipping market needs to be further strengthened. Some scholars believe that the digital economy era

has and will continue to influence the global economy. However, although China's anti-monopoly laws provide a legal basis for dealing with some unfair competition, in the actual process of doing so, the government's supervision is insufficient (Wu et al., 2021). Besides, with the reform of the government mechanism, there are more and more social supervision organizations involved. China's shipping market should avoid the phenomenon of single supervision, give full play to the ability of social supervision, and strengthen the diversified shipping supervision market system. On the other hand, compared with the penalties imposed by the European Union and the United States on shipping companies' violations, the penalties imposed by China are weaker. In order to effectively maintain order in the international shipping market, the FMC and the European Commission have taken strong supervision measures on the international shipping market, mainly through the cancellation of shipping qualifications and high fines, which have a great deterrent effect. However, although China has established and gradually improved the freight rate filing system, the penalty for violating the freight rate filing system is mainly a fine, and the cost to enterprises for breaking the law or seriously violating the rules is low. In the digital economy era, due to the long industrial chain of international shipping and the significant government supervision and inter-enterprise cooperation involved in each link, attention should be paid to the supervision of the authenticity and accuracy of data and information related to international trade and transportation.

#### 6.2.4 The legal system of shipping anti-monopoly is imperfect

Establishing and perfecting China's shipping laws and regulations system is an important guarantee for the supervision of international shipping market access. However, at present, China's shipping supervision laws and regulations are not perfect, and they need to be improved. First, the main shipping laws and regulations are imperfect. At present, the main reason for the lack of anti-monopoly legislation in the Chinese shipping market is the lack of a key shipping law. As one of the four leading laws in the field of shipping, the Shipping Law has not yet been issued. China's current anti-monopoly legal system as it applies to shipping mainly consists of the 1974 United Nations Convention on the Code of Conduct for Liner Conferences, the Anti-Monopoly Law, the International Shipping Regulations, and the Detailed Rules for the Implementation of the International Shipping Regulations. Relatively speaking, the International Shipping Regulations and Detailed Rules for the Implementation of the International Shipping Regulations are highly targeted administrative normative legal instruments. However, as the International Shipping Regulations constitutes an administrative regulation, rather than separate legislation to regulate shipping competition, its legal effect is low, and the shipping market lacks in-process and post-event supervision, so the supervision of new formats in the digital shipping field, such as shipping blockchain, lags behind. Therefore, the Shipping

Law should be promulgated as soon as possible to regulate the activities of China's shipping market.

In the legislative concept, establishing the core value position of the legislation of the shipping market economy plays an important role in standardizing shipping economic behavior and resolving shipping economic disputes. At the same time, it is also conducive to coordinating the overall balance between shipping safety supervision and the goal of developing the shipping market.

Second, the supporting laws and regulations on port and shipping supervision are imperfect. At present, the International Maritime Transport Regulations and the Detailed Rules for the Implementation of the International Maritime Transport Regulations have been revised, and the corresponding shipping regulations have been gradually improved. However, it also exposes some problems, and other supporting laws and regulations on shipping supervision need to be further improved. For example, some scholars have proposed formulating regulations on the supervision of derivatives trading on the shipping freight index. As China is a big container exporter, the container freight rate fluctuates violently, so the market needs hedging tools to avoid risks. However, at present, there is no legal basis for shipping derivatives trading, and supervision is insufficient (Zhen, 2015).

## 7 Suggestions for improving China's international shipping anti-monopoly legal system in the digital economy era

### 7.1 International experience and comparison of current shipping anti-monopoly legal regulation

Since the enactment of the first antitrust law, the Sherman Act, antitrust law has been a crucial tool for governments to maintain market order and combat unfair trade practices. Typically, when countries formulate antitrust laws, they consider various factors such as market conditions, social factors, and other elements, and in special circumstances, they grant antitrust exemptions to certain industries (Li and Chen, 2021a). The core of shipping antitrust legislation lies in its exemption system. This article primarily outlines two typical models. The first is the U.S. model. Currently, U.S. shipping antitrust exemption regulations mainly rely on the Federal Maritime Commission's classification review of filed agreements, known as "individual review". Although this review system is more rigorous, it increases the burden on regulatory authorities, making pre-emptive reviews prone to being formalistic. Moreover, the design of the service contract system appears inadequate in addressing new types of shipping alliances (Han and Lin, 2020). The second is the EU model. The EU enacted Regulation 1419/2006, which abolished the collective exemption



system for liner conferences starting in 2008. At the same time, it issued the “Regulation on the Application of Article 81 of the EC Treaty to Liner Shipping Company Agreements” to assist businesses in assessing whether their agreements comply with Article 81 regarding anti-competitive behavior. The guidelines stipulate that certain types of agreements and shipping consortium agreements are still protected under collective exemptions. Furthermore, Regulation 906/2009 made some amendments to the conditions for antitrust exemptions for shipping consortia.

In summary, at present, international shipping legislation is still based on strictly limiting exemption conditions. The EU’s traditional shipping antitrust regulatory system is characterized by providing a comprehensive exemption from antitrust rules within the context of special maritime competition regulations. The United States has a longer history of shipping antitrust regulation compared to European countries, and in many respects, it employs different approaches from the EU. The U.S. places particular emphasis on using domestic policies to regulate the shipping industry, effectively addressing monopolistic issues in the shipping market through a series of special regulatory systems, such as tariff filing and agreement registration.

## 7.2 Suggestions on further improving China’s international shipping anti-monopoly legal regulation system

### 7.2.1 Coordinate the development of the digital economy and shipping management mechanism

Transforming government functions through digitalization requires a deep integration of the reform of systems and mechanisms and the application of digital technology, along with improvements to the government responsibility system that is compatible with digital development (Central People’s Government of the People’s Republic of China, 2022b). In the field of shipping, the coordinated development of the digital economy and the shipping management mechanism is an inevitable trend. Throughout the world, developed countries all pay attention to the coordination and consistency of their own international shipping management systems. Shipping regulatory agencies, shipping legislative bodies, and law enforcement agencies are independent of each other, and their functions and powers are unified, which provides important guarantees for the smooth operation of the entire shipping management system. According to the development status of domestic shipping markets, shipping management agencies in developed countries employ a structure that conforms to the domestic system and the characteristics of shipping markets. For example, the FMC was established in the United States to supervise and manage the international shipping market. The Ocean Shipping Reform Act newly promulgated in June 2022 in the United States expanded the FMC’s supervisory power over container carriers.

Although China has not yet established an independent international shipping market management organization, it should actively explore the effective linkage between

comprehensive market supervision and management organization and coordinate them to build a harmonious shipping market management mechanism. However, China established the State Administration of Market Supervision and Administration in 2018, which is an important measure for China to continuously deepen its reforms, integrate the market supervision team, and strengthen market supervision. In addition, in terms of its shipping management system, China should learn from the beneficial experiences of foreign countries and, on the basis of full authorization, high efficiency, unification, simplification, and convenience, promote the development of China’s shipping management system to take a systematic direction. At the same time, China should pay more attention to the connection and effective coordination between functional departments and improve the management system and mechanism of China’s international shipping industry. Efforts should be made to standardize the supervision procedures for examination and approval and improve the efficiency of shipping supervision overall.

Against the background of the digital economy era, China should develop a shipping management mechanism and gradually use digital technology to realize the integration and sharing of resources in ports, shipping enterprises, warehousing, and other shipping links, and promote the synchronous and coordinated development of the digital economy and shipping management mechanism.

### 7.2.2 Improve the freight rate filing system in the shipping market

In the era of the digital economy, China should pay attention to the following aspects to improve the freight rate filing system in the shipping market. First, it should continue to improve the procedural rules of the freight rate filing system. In the actual process of reviewing the specific conditions of freight rate filing, the transportation department should fully grasp and effectively use the information of freight rate filing and review the authenticity and rationality of the filing price and filing materials submitted by the filing person on the basis of scientific and reasonable procedures and rules for freight rate filing. In addition, China should collect relevant evidence of possible violations of laws and regulations by shipping companies in a timely manner and provide corresponding support for supervision and law enforcement activities. Second, China should continue to improve the content of the freight rate filing system and improve the efficiency of its shipping regulations. This requires a clear positioning of the contents of the freight rate filing system so as to truly reflect the charging levels of liner companies under different liner shipping terms and then understand the real situation of the charging levels of major domestic routes. Perfecting the content of the freight rate filing system is conducive to giving full play to its role as a regulatory basis for shipping supervision and improve the efficiency thereof (He, 2016). Third, China should continue to improve the transparency of the supervision of the freight rate filing system. Set against the backdrop of the digital economy, the transparency of freight rates with regard to the main contents and basic information of freight rate agreements can guarantee shippers’ access to corresponding information and improve the transparency of the freight rate filing

system and its supervision process, which is of great significance to maintaining the fairness and justice of the entire international shipping market and promoting the sustainable development of the shipping industry.

### 7.2.3 Enhance the regulatory capacity of the shipping market in the digital economy era

Deepening the “streamline administration, delegate power, strengthen regulation and improve services” reform is an important measure to promote the transformation of government functions, optimize the business environment, and stimulate market vitality in China. The key is to put the tube in place. The Guiding Opinions put forward that digital technology should be used to support the construction of a new supervision mechanism, digital means should be used to improve the level of supervision precision, integrated online supervision should be used to improve the level of supervision coordination, and new supervision technology should be used to improve the level of regulatory intelligence so as to realize whole-chain and whole-fields supervision before, during, and after the event and maintain fair competition market order through effective supervision (Central People’s Government of the People’s Republic of China, 2022c).

In the field of shipping, the development of shipping digitalization puts forward brand-new requirements for the content and methods of anti-monopoly supervision, and it is necessary to strengthen the government’s ability to supervise the shipping market. First, it is necessary to further clarify the subject of supervision with regard to anti-monopoly in shipping. Especially in the supervision process of shipping alliances, China should fully consider the competition among carriers to prevent vicious competition. Second, regulators should balance the relationship between shipping and freight. China should deeply understand and study the influence of digital technology, such as blockchain and other digital technologies, on the legal operation of the shipping market and its actual situation. While the Ministry of Transport exercises its right of examination and supervision, other relevant regulatory authorities should also assist. Third, China needs to achieve data-based supervision and governance through digitalization and unified shipping market supervision.

### 7.2.4 Accelerating the improvement of the legal system of shipping in the Chinese context

With the rapid development of the digital economy, the requirements for shipping legislation are being raised. Only by establishing a perfect shipping legal system can China strengthen the anti-monopoly of the international shipping market against the background of the digital age and ensure its smooth running order. Therefore, China should further improve its shipping anti-monopoly legal system both substantively and procedurally. In essence, it is necessary to clarify the substantive rules of shipping antitrust exemption, such as the conditions and scope thereof, and it is necessary to create comprehensive and detailed provisions for the specific rules of the shipping anti-monopoly exemption system in the Shipping Law. In terms of procedure, administrative and

judicial remedies should be improved. In response to monopolistic behaviors that damage the market competition order, there are usually penalties involved, such as stopping illegal behavior, revoking anti-monopoly exemptions, and imposing fines. The injured party affected by the monopoly agreement may claim damages through civil action. For the administrative counterpart affected by the review and decision of the competent authority, according to Article 53 of the Anti-Monopoly Law, they can obtain relief through administrative reconsideration and administrative litigation (Li and Chen, 2021b). However, due to the unreasonable administrative and judicial remedies offered under the current shipping anti-monopoly system, the best way to specify them would be in the Shipping Law. In short, promoting the promulgation of the Shipping Law as soon as possible to meet the needs of the rapid development of shipping digitalization will help to ensure the sound and orderly development of China’s international shipping market in the digital era and enhance the international competitiveness of China’s shipping industry.

## 8 Conclusion

At present, the digital economy provides a strong impetus for the healthy and sustainable development of the overall social economy. In the digital era, the challenges facing international shipping anti-monopoly regulation require innovative strategies. Some maritime nations are actively reviewing and reforming their legal frameworks, particularly focusing on anti-monopoly exemption systems in shipping. As China progresses from being a major shipping nation to a leading maritime power, the need to accelerate the improvement of its shipping legislation has become more critical and urgent. Therefore, it is suggested that on the one hand, we should continue to carry out in-depth basic research on the theory and practice of shipping anti-monopoly regulation, and find out the existing problems and development bottlenecks; On the other hand, we should learn from international beneficial experience, base ourselves on China’s position and our own development needs, and comprehensively build an anti-monopoly exemption system for international shipping by formulating shipping law to safeguard the overall interests of China’s shipping industry.

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## Conflict of interest

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