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Patterns and trends in the formation of maritime trade market's parameters

Abstract: The maritime trade market is a complex and dynamic system shaped by various global factors. One of the critical patterns influencing this market is the growth of international trade, which directly affects demand for shipping services. Economic cycles, such as recessions and booms, also impact the supply-demand balance, leading to fluctuations in freight rates. Additionally, geopolitical events, like trade wars or sanctions, can disrupt shipping routes and affect market stability. Technological advancements, such as the digitalization of shipping and the introduction of autonomous vessels, represent another trend reshaping the market. These innovations aim to increase efficiency, reduce operational costs, and minimize environmental impact, in line with growing regulatory pressures on the industry to lower carbon emissions. Developing port infrastructure and integrating logistics systems also play a crucial role, as they enhance the ability to handle increasing cargo volumes and streamline supply chains. Moreover, shifts in consumer behavior, such as the rise of e-commerce, create additional demand for rapid and efficient shipping solutions. The study's object is the maritime trade market, focusing on the shipping companies operating within it. The study aims to investigate how shipping companies can maintain financial and strategic independence despite adverse market conditions, particularly by leveraging capital assets and innovative positioning strategies. The study's main methods include a comparative analysis of the most developed maritime transport countries according to various parameters. The works of prominent maritime economists and industry experts, such as M. Stopford, J. C. Coates, M. Photis, M. Shuo, found this study's theoretical framework. Additionally, industry reports from organizations like the International Maritime Organization and Clarkson Research are utilized for up-to-date market analysis. The authors conclude that economic, technological, geopolitical, and environmental factors influence the maritime trade market, all contributing to its evolving parameters. These elements create a dynamic landscape that industry companies must navigate to remain competitive.

Keywords: parameters, maritime trade market, sustainability, strategies, transport.



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Закономірності та тенденція формування параметрів ринку морської торгівлі

Анотація: Ринок морської торгівлі є складною та динамічною системою, сформованою різними глобальними факторами. Однією з ключових закономірностей, що впливають на цей ринок, є зростання світової торгівлі, яка безпосередньо впливає на попит на послуги з доставки. Економічні цикли, такі як рецесії та буми, також впливають на баланс попиту та пропозиції, що призводить до коливань фрахтових ставок. Крім того, геополітичні події, такі як торговельні війни чи санкції, можуть порушити судноплавні маршрути та вплинути на стабільність ринку. Технологічні досягнення, такі як цифровізація судноплавства та впровадження автономних суден, представляють ще одну тенденцію, яка змінює ринок. Ці інновації спрямовані на підвищення ефективності, зниження експлуатаційних витрат і мінімізацію впливу на навколишнє середовище відповідно до зростаючого регуляторного тиску на галузь щодо зниження викидів вуглецю. Розвиток інфраструктури в портах та інтеграція логістичних систем також відіграють вирішальну роль, оскільки вони підвищують здатність обробляти зростаючі обсяги вантажів і оптимізувати ланцюги поставок. Крім того, зміни в поведінці споживачів, такі як зростання електронної комерції, створюють додатковий попит на швидкі та ефективні рішення доставки. Таким чином, ринок морської торгівлі перебуває під впливом комбінації економічних, технологічних, геополітичних і екологічних факторів, усі з яких впливають на зміну його параметрів. Ці елементи створюють динамічний ландшафт, яким компанії в галузі повинні орієнтуватися, щоб залишатися конкурентоспроможними.

Ключові слова: параметри, ринок морської торгівлі, стійкість, стратегії, транспорт.



Abbreviations:

HAROPA is Havre, de Rouen et de Paris

IMO is the International Maritime Organization

M&A is mergers and acquisitions

Introduction

The relevance of the study topic. In the standard conditions of the global maritime trade market, the independence of a shipping company is the ability to optimize the enterprise's financial condition even under unfavorable conditions for other operators. Independence of positioning in merchant shipping means not only ensuring the stability of the company's economic condition based on the priority of capital assets but also not striving for unification of behavior in the maritime trade market. The latter is quite complex but reflects the principle of reaction to standards that change under many conditions (*Shuo, 2020*). Despite fluctuations in demand in many segments of the maritime trade market, the assertion of a position justifies the concentration of funds based on new approaches to prioritizing particular advantages of the shipping company's positioning. The independence of a shipping company within the global

maritime trade market is a sign of financial stability and a strategic advantage that allows it to withstand unfavorable conditions faced by other operators. This independence becomes critical in globalization, where volatility in demand and supply chains is frequent. When positioned independently, shipping companies demonstrate resilience by optimizing capital asset management and responding flexibly to changing market standards without merely adhering to industry-wide trends. This ability to maintain a unique market position is especially relevant today, as the maritime trade market experiences disruptions from global economic shifts, technological innovations, and regulatory pressures to reduce carbon emissions. Thus, the relevance of this topic stems from the increasing challenges facing maritime operators, including fluctuating freight rates, regulatory demands for sustainability, and the rapid development of new technologies in shipping. Understanding how shipping companies can maintain independence and avoid standardized responses to market pressures is crucial for ensuring long-term profitability and competitive advantage (UNCTAD..., 2022).

The study's object is the maritime trade market, focusing on the shipping companies operating within it.

The study aims to investigate how shipping companies can maintain financial and strategic independence despite adverse market conditions, particularly by leveraging capital assets and innovative positioning strategies.

The study's main methods include a comparative analysis of the most developed maritime transport countries according to various parameters.

The works of prominent maritime economists and industry experts, such as M. Stopford in "Maritime Economics" (2008), J. C. Coates in "Mergers, Acquisitions, and Restructurings" (2014), M. Photis in "The Routledge Handbook of Maritime Management" (2020), M. Shuo in "Maritime Economics Business" (2020) found this study's theoretical framework. Additionally, industry reports from organizations like the IMO and Clarkson Research are utilized for up-to-date market analysis.

The results of the study

Sustainability of development and balance of the maritime trade market

Suppose the significance of assessing the indicators of the economic efficiency of the development of maritime transport enterprises from the standpoint of business structures and effectiveness from the standpoint of macroeconomic and global interests is not disputed. In that case, the violation of any position of market equilibrium and the principle of using absolute and relative advantages in the international division of labor predetermines the totality of economic losses.

Even if one does not consider the strategy of sanctions directed against the economic advantages of competitors, the strategy of using the effect of scale is expanded, which is regarded as one of the forms of limiting the activities of competitors. Thus, the principle of M&A to scale up the share of the maritime trade market is based on:

- elimination of competitors;
- improving your financial situation.

However, neither of them guarantees optimization of the consumer segment's state. Unfortunately, only the role of ignoring the leading operators' approaches to the symmetry and balance of the position of all participants in economic relations is expanding.

From the viewpoint of internal state optimization, attention should be paid to the unification of seaport administrations of the same region, both within and between states. This demonstrates the interaction between Copenhagen (Denmark) and Malmö (Sweden) seaport administrations. The association of the ports of the Netherlands and Belgium is being formed.

In France, the HAROPA association was created – Le Havre, Rouen. Paris. This is significantly different from the principle of removing the independence of the administrations of ports of Ukraine, in which the new administrative structure has no influence on the parameters of port activity except for the withdrawal of port fees. Cargo turnover did not increase due to such management (*Katerna, 2018*).

Attention should be paid to reducing contradictions between the forms of ownership of capital assets. The assessment by the authorities of the priority of the development of the sea transport potential of the region remains fundamental. When the attention of municipal authorities is focused on the control of share capital, there are cases of restrictions on the acquisition of shares by private individuals. The management of the maritime transport enterprise concentrates on optimizing the financial condition based on the growth of capital assets of three ownership structures: the state, the region, and entrepreneurs. In this way, the solution to the employment problem is under the control of the regional government (*Branch, 2004*).

This, in turn, determines the complexity of forming standards for forming the wage fund. The problem lies in the need to consider the role of sailors in ensuring the stability of the world economy and in solving problems of balance, like evaluating the ratio of this indicator in the subsystems that form cargo flows. Therefore, shipping automation should be based not on reducing labor costs but on meeting system security requirements.

The complication of external conditions limiting the achievement of a balanced position implies the need to develop planning standards depending on the nature of implementing adequate competitive strategies. According to the destruction of a single maritime transport space, the latter reflects the concentration of entrepreneurial and macroeconomic efforts. Moreover, as the events 2022 show, environmental restrictions will be leveled. However, simultaneously, the requirements for achieving optimization efficiency and utilizing production potential are increasing.

Thus, the concentration of efforts on implementing national economic tasks predetermines the demand for an additional labor force, forming new directions for balancing local economic subsystems.

Globalization and regulatory policy

Global economic processes should be considered the coordinated development of the international economy based on the rational division of labor between countries. This process manifested in the late 1980s and continued until 2022. This period was distinguished by a particular regularity of the connection between world trade and the use of sea transport concerning overall economic growth.

However, the change in the role of individual countries in forming the global economy caused contradictions due to the significant redistribution of cash flows. Therefore, particular approaches to reassess the situation appeared despite the tendency to correspond to world regulators such as the WTO. Even if the negative impact of Covid-19 is not considered, the economic growth rate has decreased. This predetermines allocating individual states' development priorities without considering others' interests. With the growth of the unemployed population in developing countries, the flow of social assistance increases. In the system of transformation of globalization relations, a situation has been created that requires the formation of uniform rules for the market activity of maritime trade market operators. The partnership in the global maritime trade market system is based on the joint use of transport potential. The direction of Asia-Northern Europe occupies a special place in this strategy. The companies remain independent in determining costs, marketing, and concentrating resources for business programs.

The global strategy for improving economic relations forms effectiveness based on optimizing the interaction of individual macroeconomic structures. At the same time, individual entrepreneurial components of the country's production potential, including the maritime transport industry, form integration relations. As a rule, they determine the complexity of creating a set of economic efficiency and synergistic results. Such structures, implementing investment projects, counteract requests for monopolization of the position on the stock market. In the interests of sustainable development of enterprises, it is significant to avoid a situation that opposes standard forms of integration.

Therefore, it is necessary to consider the system security (*Katerna, 2018*) of investment and functional activity as a criterion for forming new business structures in the maritime transport system. The standardization of shipping and the strengthening of the role of uniform norms and rules predetermine the unity of conditions for adequate positioning of shipping companies and commercial ports. At the same time, it is necessary to consider that these requirements limit the ability to establish new business structures. Therefore, servicing cargo flows in countries with limited resource productivity remains a problematic issue.

It is worth noting that maritime global administrations once considered labor levels in the system of measures to increase the efficiency and sustainability of the merchant fleet's functional activity.

Thus, two problems with the sustainable positioning of maritime transport enterprises should be distinguished. One is related to managing the enterprise's technical and economic level concerning the competitive position's requirements. It depends on managerial approaches and freedom of investment activity. The second reflects the influence of external conditions and requires a timely response to adverse changes (*Photis, 2020*). It depends on the reality of the state's maritime transport policy that the stability of the positioning of the transport system based on the priorities of the transit space is achieved.

In the equilibrium state of the maritime trade market, the level of tariff rates plays the role of cost reimbursement criteria for standard business structures. Therefore, the conditions for normalizing the technical solution while optimizing the most critical parameters of the maritime transport industry are guaranteed to some extent. Otherwise, the shipping company or the commercial port will not be able to reach a competitive technical and economic level regarding

the sustainability of functional activity. At the same time, the fleet or terminals conflict with the direction of global regulation according to the criteria of environmental restrictions (*Stopford, 2008*).

Thus, considering the above, it is significant to train crews capable of ensuring safety in specific seafaring conditions in addition to commercial tasks. Given the importance of shipping, the tax burden should reflect the strategy of stimulating the export of services and not negatively impact the competitiveness of prices and the demand for the services of a specialized fleet.

Differentiation of development parameters of individual maritime states

The above transformation processes decisively predetermine the requirements for implementing the differentiation mechanism of the maritime transport strategy implemented by the state. The multifaceted nature of achieving sustainability of merchant shipping positioning predetermines the focus of maritime states on the most significant indicators. Thus, Japan is distinguished by a strategy of reducing the life cycle of ships and building new ones. This ensures its sustainability in terms of the priorities of competitive, innovative technologies.

At the same time, ship owners, such as Greece, replenishing the fleet at the expense of secondary market vessels demonstrate their sustainability priorities based on reducing the cost of capital assets. In the second case, the scale and cost-effectiveness of positioning according to the current parameters of the maritime trade market are highlighted as a priority.

Nevertheless, the symmetry of the development of shipping potential according to the flags of maritime states remains a large-scale problem. This problem is not considered in the legal aspect and predetermines the system of tasks of a rigid imbalance in the distribution of resources and cash flows. A particular type of sanction has been formed concerning countries with no potential for carrying capacity and are subordinate to leading maritime operators.

Thus, an asymmetry is formed in the strategy of achieving transport freight security for residents that generate exports in the corresponding group of states. This situation is formed due to the limited capital resources needed to develop the national maritime transport industry. At the same time, modern maritime states limit the possibilities of entering the market for additional carrying capacity of ships to avoid a drop in price characteristics.

It is worth noting that the process of complicating the management of the development of modern entrepreneurial structures in the maritime trade market system is becoming more complicated. Forming an entrepreneurial structure requires considering the presence of restrictions that reflect the problems of balancing production and technological solutions regarding the growth parameters of transport work. Competitive contradictions arise with modern relationships between microeconomic, macroeconomic, and global processes of limited growth. They are difficult for new subsystems to overcome without state support (*Branch, 2004*).

At the same time, extra-systemic restrictions are formed to meet new, more stringent environmental requirements. Innovative strategies in these conditions are pretty complex for new operators to implement. That is why the Ukrainian merchant fleet did not provide export cargo transportation, for which the country had achieved significant characteristics. Using only the principle of chartering foreign tonnage predetermined the crisis in shipbuilding.

The transport security strategy can only be based on developing an adequate national maritime transport industry. At the same time, in the system of enterprises of the maritime

cluster, in the conditions of application of mutually agreed actions, the principle of achieving optimal results and costs is highlighted (*Shuo, 2020*). This approach, in turn, predetermines the need for coordinated interaction to maintain the systemic balance of regional subsystems of the maritime trade market. With the established cargo flow of the spot market of maritime trade, a certain amount of cash flow and profit mass is formed. Therefore, the profit margin is the most significant characteristic of the positioning of existing shipping companies and those implementing the development strategy of the national fleet. In this regard, a possible change in the economic effect of operator activity according to the factor of change in cargo flow is described by the condition:

$$\Delta E_{eq} = \sum [\Delta D_{vi} \Delta T_{ei} p_{di} (p_{ci} - c_{sai}) + C_{sai} \rho_f \Delta D_{vi} p_{di}] \gamma_i \quad (1)$$

where:

ΔD_{vi} is deadweight of the i -th vessel for which the corresponding transformation processes are noted;

ΔT_{ei} is aggregate change in the duration of ship handling in commercial ports due to development factors or crises;

p_{di} is a standard deadweight performance of the vessel;

p_{ci} is established price characteristics for the transportation of a specific cargo;

c_{sai} is the cost of transportation of one ton of cargo under normal conditions;

C_{sai} is ship daily standard costs in the estimated operational period;

ρ_f is the share of fixed costs in the cost structure of vessel maintenance;

γ_i is a coefficient reflecting the reaction of operators to changes in the time characteristics of the maritime trade market in terms of the intensity of tonnage servicing.

The dynamism of the conditions of operator activity in the modern features of changing the position of individual states complicates the tasks of making decisions on achieving financial stability. Therefore, controlling the nature of changes in the basic patterns is essential. Among the criteria for assessing the formation of corporate priorities in merchant shipping are:

- independence of operator activity based on competitive capital assets;
- management of the adequacy of the state with changing parameters (*Photis, 2020*);
- the ability to implement advanced strategies in the current contradictions;
- systemic orientation to regulatory standards and risks of variability of the parameters of the maritime trade market.

Implementing a corporate strategy for internal priorities ensures various aspects of independence. At the same time, a corporate response to global organizations' perception of administrative regulation is formed, such as the IMO, which considers environmental standards. Their innovative approaches to ensuring stability are selected within the norms and standards. This requires a thorough assessment of the possible change in the company's financial condition.

Creative work according to the standards of an independent approach to risk management characterizes the clarity of perception of natural changes. However, leading shipping brands typically implement the chosen strategy autonomously in stable positioning according to the parameters of the sea trade market. For standard operators, it is necessary to carefully control the conditions for participation in the selected segment of the sea trade market (*Katerna, 2018*).

Brand independence reflects the ability to realize the company's production potential in various crises. For modern shipping brands, achieving this position is considered insufficient. This, in turn, limits the free development of the carrying capacity of other shipping operators. The main thing is to achieve and maintain the standard for realizing the potential in the current conditions. Implementing this strategy also indicates systemic independence from external factors since others are leaving the specialization segment.

In summary, the choice of the form for implementing the formed strategy is ensured by the ability to solve the positioning problem under the current restrictions. The criterion is the satisfactory result despite the presence of standard systemic risks. Owner and managerial approaches prioritize the efficiency of using standard technical characteristics of existing capital assets. Because the main thing is the sustainability of the use of the production potential created based on investment projects, the criterion worth considering is the timeliness of the payback of costs.

Discussion

The research topic explores the independence of shipping companies in the global maritime trade market, focusing on how these entities optimize financial and strategic stability despite external challenges. The study's relevance lies in that, in today's volatile global economy, maritime operators must adapt to fluctuations in freight rates, evolving regulatory demands, and technological advancements. The ability of a shipping company to position itself independently, without conforming to industry-wide behaviors, becomes a strategic advantage. This independence reflects financial stability and the flexibility to respond to market shifts and maintain a unique competitive stance.

Sustainability within the maritime trade market is critical, particularly when companies face disruptions from environmental regulations or geopolitical influences. M&A, while aimed at scaling market share and eliminating competition, often fails to optimize the consumer segment and risks undermining market balance (*Coates, 2014; Evans & Chris, 2010*). Moreover, the role of state and municipal authorities in managing port operations reveals that governance models, such as those observed in European port unions, significantly impact economic outcomes. In contrast, countries like Ukraine, where port administration restructuring has been less effective, have not realized improvements in cargo turnover.

Globalization has further complicated these dynamics, particularly as nations reassess their economic priorities post-2022 (*UNCTAD..., 2022; UNCTAD..., 2023*). Countries like Japan and Greece illustrate different strategies for achieving maritime competitiveness – one focuses on technological innovation through new shipbuilding, while the other leverages cost-efficiency by acquiring secondary market vessels. This differentiation highlights maritime states' various approaches to balancing cost, innovation, and capacity. However, the ongoing asymmetry in resource distribution between developed and developing maritime states poses a significant challenge to the global maritime trade balance.

Finally, regulatory policies, such as those of the IMO, continue to shape the operational environment, mainly through environmental standards. Shipping companies must align their business strategies with these regulations while innovating to remain competitive and resilient (*The past..., 2009*). The discussion highlights the need for a multifaceted approach to strategic

positioning, incorporating financial stability and environmental responsibility, to ensure long-term success in the highly competitive and regulated maritime trade market.

Conclusion

The study of the independence of shipping companies within the global maritime trade market underscores the importance of financial stability, strategic flexibility, and innovative approaches to asset management. The ability of a company to maintain its independence despite market fluctuations, environmental regulations, and technological advancements represents a critical competitive advantage. This research has highlighted how different maritime states, such as Japan and Greece, pursue diverse strategies to achieve sustainability – whether through technological innovation or cost-efficiency. The analysis of global economic and regulatory processes demonstrates that external factors, such as globalization and environmental restrictions, play a significant role in shaping maritime enterprises' operational and financial stability.

Furthermore, the balance between state intervention, ownership structures, and private capital in managing port operations reveals a nuanced dynamic where governance models directly influence economic outcomes. The significance of developing maritime transport policies that promote the independence and sustainability of shipping companies cannot be overstated. As external conditions evolve, particularly in light of global economic shifts and regulatory pressures, maritime operators must continue to innovate while adhering to international standards.

Thus, shipping companies' independence in the maritime trade market is a hallmark of financial resilience and a strategic imperative that requires careful planning, innovation, and alignment with global regulatory frameworks. By optimizing capital assets and maintaining flexibility in response to market changes, these companies can secure long-term profitability and sustain their competitive edge in an increasingly complex and interconnected global trade environment.

Conflict of interest

The authors declare that there is no conflict of interest.



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