



## UKRAINE IN THE PROCESS OF FREIGHT MARKET GLOBALISATION

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### **Abstract**

For the entire period of state construction in Ukraine, the strategy of stable economical growth of country's freight potential has been practically ignored. The solution to this problem requires systematic study of mechanisms and methods of growth and operation of the most important sectors of international freight market. Despite world's freight statistics being systematic, there is practically no established methodology to assess its sustainable development in the times of globalization. Typically, all that is available are insights into certain aspects of freight market parameters formation. Thus, this article focuses on systematization of the general principles of world's marine trade development and evaluation of the most realistic directions for establishing Ukraine as a full-scale maritime state.

**Keywords:** global shipping industry, shipping company, freight market, goal structuring, positioning stability

### **Introduction**

Economic relations globalization and high economic growth rate of Asian countries drive up the demand for industrial products from the West. This conditions the demand for container technologies and products delivery to the place of consumption. Thus, the containerisation in shipping and port businesses remains the principal direction of the economical stability for the maritime transport as well as for world's sea trade.

It's worth mentioning that the globalization character was influenced by the changes in the political systems in a series of countries in the 80s – 90s of the twentieth century. In the complexity system, the focus resides on the priority of economic processes. Social objectives are considered as criterion limitations. Therefore at the end of the 20<sup>th</sup> century and at the

beginning of the 21<sup>st</sup> century there was a change in pace and management of the world's merchant marine<sup>[1]</sup>. The key factors of international development become the technical and production aspects. They are what shaped the development priorities of Japan, Germany and later China.

Meanwhile, growing international division of labour led to an increase in the role of maritime transport in providing stability of end goods consumption and productivity factors. Herewith, it is important to take into account the differences of global processes in certain countries, especially while implementing a strategy of establishing a maritime state.

## **1. Structuring stages of shipping companies development**

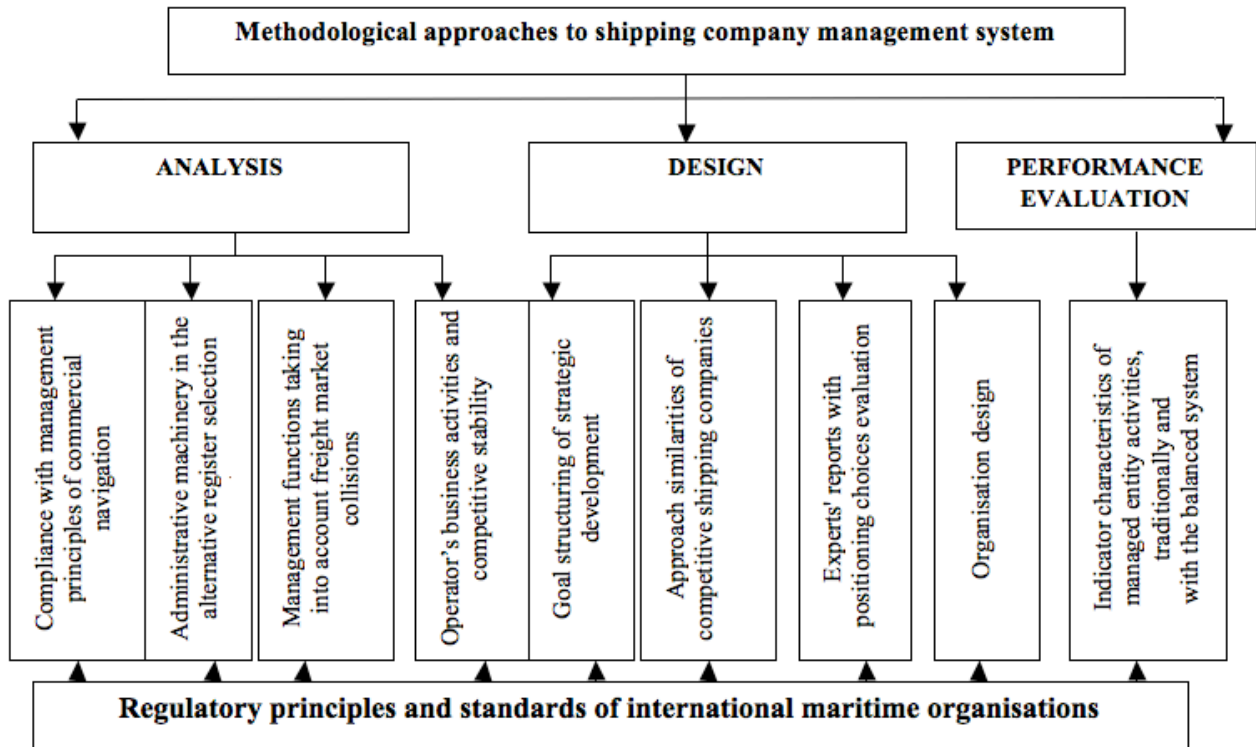
The defining value of the maritime transport for optimizing integration strategies of business structures imposes practical objectives connected with the scale and conditions of increasing the freight and throughput capacity. A special meaning is attributed to the length of the shore line and compliance with transit cargo traffic processing conditions. The actual state of the merchant fleet must be conditioned by country's activity in global economic processes. In any case, the potential of sea shipping companies must be shaped strictly by the criteria of cost effectiveness (minimal expenses) and cargo traffic processing reliability. The choice of place for potentially productive extensions of port cargo terminals must take into account the potential cargo traffic and the total amount of all expense types<sup>[3]</sup>.

The shipping companies are the most important part of a country's transportation system. Thereat, they are forced to work in the conditions of competition with other domestic and foreign companies, using alternative routes than other transportation means. Herewith, the results of a shipping company activity are influenced by numerous and not always favourable factors of internal and external environment, the problem of timing for overage ships renewal stays acute. The problem is not only in the level of voyage profitability and lowering production and finance indicators of shipping company activities, but also in the possible disruption of stability of the current state of the priority activity.

The efficiency of shipping company activity, its competitiveness, is largely determined by the quality of the management system and all of its components. Changing the factors of internal and external environment, revision of goals and objectives of company's activities must be adequately reflected in the organisation management system and represent a process of reorganizing the management forms, technologies, means and methods which proved inefficient in the new situation, as well as thorough research and implementation of new ones. A scientifically grounded formation of management systems and their improvement are the top priority objective for adaptation of certain shipping companies to the requirements of freight market volatility and competitive environment, by successful activity criteria.

In the process of designing the strategy of establishing a maritime state, it is necessary to create such a management system that would reflect as fully as possible the goals of a national shipping company, i.e. the newly created structure should allow the organisation to interact with the external environment in the best possible way. A special place is held by productivity and practicality of resources distribution and client demand satisfaction while achieving normalized results<sup>[2]</sup>.

In general, the process of designing new management systems and making changes to the existing systems, consists of three main stages: analysis of shipping company management system, design, performance evaluation (Figure 1).



**Figure 1** Principal stages of management system designing

Source: Compiled by the authors on the basis of the work material [7,8]

All the work for designing the management system for the maritime transportation system of Ukraine comes down to designing the directions for its improvement. It is described as one of the most important means of increasing the efficiency of company's management activity. However this process in merchant shipping is defined by the system of navigation regulation and safety control by international maritime organisations.

The purpose of analysis of the existing system of freight market parameters formation is to determine to what degree it complies with the requirements for the shipping companies, i.e. it is determined how rational it is from the point of view of the established evaluation criteria characterising its quality. Therefore, the main directions of analysis are the following:

- influence of the degree of compliance with management principles (e.g., centralisation and decentralisation balance, including the analysis of decisions acceptable for operators and owners in the conditions of navigation safety priority);
- administration machinery (subdivisions, their interconnections, authority and liability distribution in the conditions of alternative forms of fleet registration);
- management functions (strategic planning, strengthening of the shipping process quality control);
- business activities (operational procedures, financial flows etc. taking into account logistics limitations).

The result of analysis determines the “bottleneck” issues in shipping company activities. Management system design, depending on the combinations of methods used, can be constructively divided into four groups:

- similarities – implicates using the experience of management system design in similar competitor organisations in the global shipping industry system;
- experts – based on studying the proposals of experts designing versions of management system and organizational framework;

- goal structuring – involves elaborating a goal system for shipping companies and its subsequent adjustment to the conditions of operator’s activity;
- organisational modelling – allows to draw up the clear criteria for evaluation of organisational decisions efficiency. Its essence is in designing formalized mathematical, graphical or machine-level descriptions of the distribution of authority and liability in a company.

## 2. Characteristics of shipping industry development in Ukraine

The end result is establishing management functions for each organisation department, information flow, interconnections and document flow. Thus, while designing a new management system, one cannot forget the requirements for it and its design principles, taking into account the strengthening of global (international) maritime organisations role. Precisely, the standardisation principles based on navigation safety conventions and conventions on social and economic conditions of crew’s work and life<sup>[5]</sup>.

Evaluation of management efficiency can be made by the level of fulfilment of targets, reliability and organisation quality of management system. It is to be taken into account that in most cases the state and efficiency of a system is evaluated via the indicators characterising the managed entity activities. In this case, it is the freight and throughput capacity of the fleet and ports, as well as their realisation (Table 1) under the actual conditions of Ukraine’s integration into the world economic space.

**Table 1** Cargo turnover of the sea ports of Ukraine, in thousand tons

Indicators	Years							
	2000	2005	2006	2007	2008	2009	2010	2011
Total cargo	91943	138986	140610	157919	169595	157169	148177	155025
Export	42704	70698	68391	63860	76261	88136	84094	84881
Import	6840	13331	15232	18784	21139	12809	17426	19400
Transit	37351	50556	53198	69167	66286	52132	44182	47599
Coastal	5048	4401	3790	6108	5909	4092	2471	3145

Source: Statistical Yearbook 2011

The data in Table 1 leads to certain conclusions on the characteristics of Ukrainian shipping companies’ activities:

- increasing irregularity of cargo traffic by shipping directions;
- high dependency of shipping companies workload on world trade;
- insignificant cargo traffic in coastal trade;
- loss of positions in transit technologies due to the problems in using modern technologies and cargo traffic processing organisation.

Among the balancing factors of the global freight market a special place is held by the irregularity of merchant marine freight capacity distribution among the countries defining the system of the international division of labour. In any case, the new maritime states oriented towards the fleet development priorities must take into account the role of the developing countries supplying the natural resources and the limited capacities of the national marine trade. This problem has a specific accent in the general globalisation processes, but it does not have an

efficient solution in the light of International Maritime Organization conventions. At the same time, the global experiences show that developing countries implementing the strategy of priority development achieve certain success in the freight market system.

Achieving adequate operation environment for national shipping companies on the global shipping market while maintaining the uniformity of matrices and methods of price formation will require implementing the uniform principles of taxation of the main money flows. Herewith, this conclusion needs to be taken into account: “Fixed costs do not influence the optimal price, but they determine the long-term lower price threshold”<sup>[6]</sup>. Such a threshold had formed under the influence of constant improvement of foreign commercial fleet by the leading shipping companies, the result of which is a displacement of Ukrainian operators from the global freight market.

### **3. Development objectives of marine trade in Ukraine**

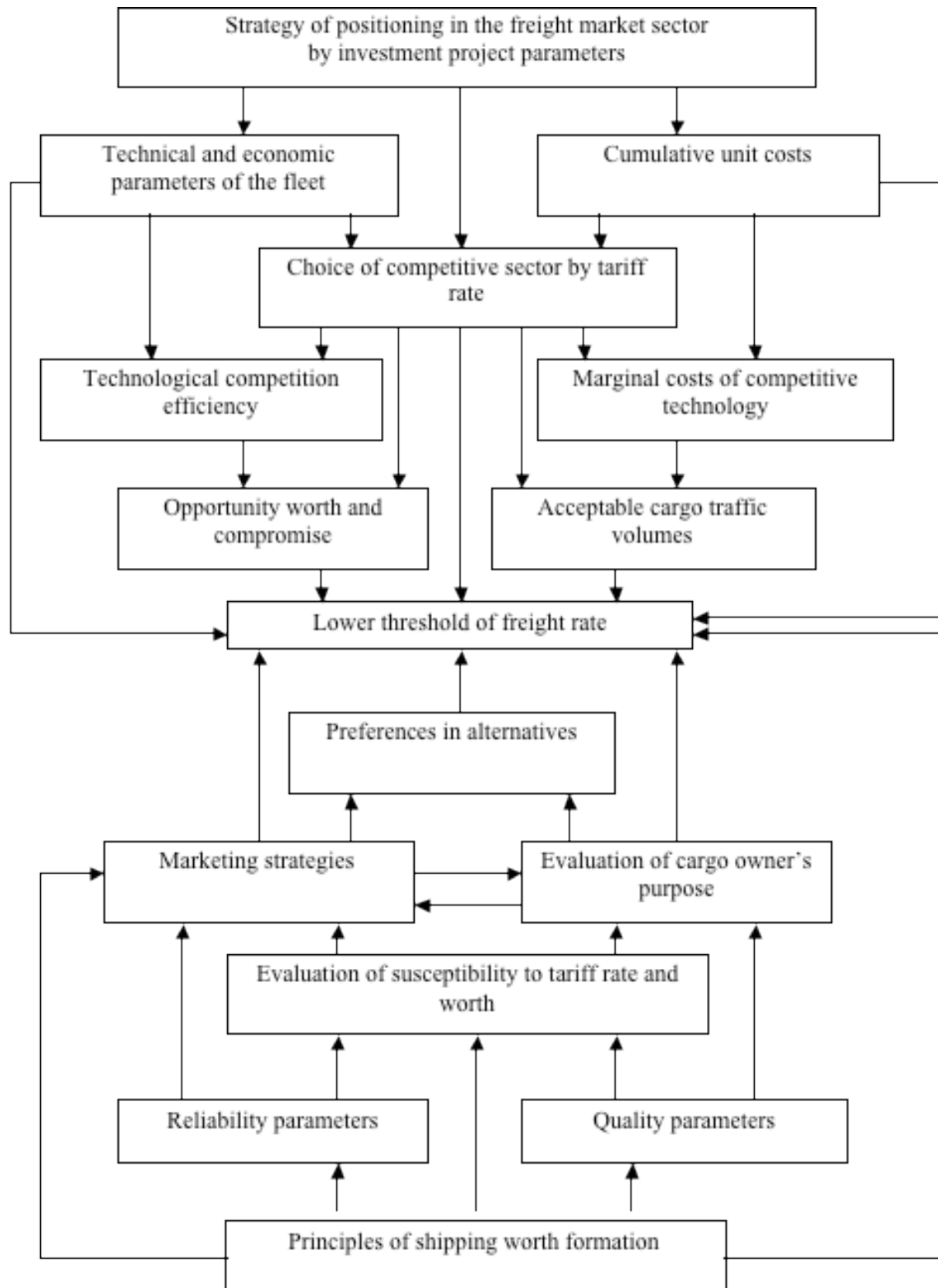
#### **3.1. Evaluation of the economic environment for the development of the national marine trade**

The most important indicator of freight market efficiency is the competitive environment reflecting the degree of each sector availability for the potential participants of the cargo traffic. Unfortunately, despite the integration process, the economical growth of the key shipping positions forms limited access conditions for new ship owners, especially to the high-paying sectors of the freight market. The process is practically not regulated at the level of international maritime organisations either. Thus, it is important, in the marine trade positioning strategies system, to take into account the statement, that during the heyday, the organization: “cannot achieve the state of stable balance”<sup>[7]</sup>. Such reality conditions the role of production potential and finances reserves in the crisis management system.

One of the most important principles of a shipping company fleet positioning on the global shipping market is “safety”. The system understanding of this term reflects such a state of technical means, engineering and organisation of the traffic, at which the risk to the staff or the damage to fixed assets and efficient results is limited to an acceptable level. It is the result of complex action of management quality and shipboard personnel, technical and economic level of the fleet, hydrographic support of navigation, the adequacy of service sector and maritime lines.

Figure 2 represents the implementation of the principle of the efficient use of national maritime transport production potential. The main thing to be considered is not the maximum potential load, but the orientation towards the normalized profitability<sup>[5]</sup>. The importance of this theoretical aspect in the structure of the national merchant shipping is aggravated by approaching the balanced correspondence between the freight capacity and cargo flow parameters.

According to the rapid innovation strategy<sup>[8]</sup>, the initial entry of new freight market participants is oriented towards capital performance indicators. The subsequent competitor’s capacities lower the profitability of shipping company’s assets. The base companies of the segment may experience shrinking of market share and profitability cycle length of fleets and ports, which entered the cargo traffic service system later than others. It is corroborated by the instability of greater Odessa ports due to intense development of free terminals.



**Figure 2** Informational logical approach to determining the lower threshold of the tariff rate for a shipping company development project.

Source: Compiled by the authors on the basis of the work material [1,4,6]

### 3.2. Systematization of development principles for the fleet of Ukraine

Despite the multitude of formation factors for world and regional shipping rates, the following statement remains true: “axiomatic price formation starts with the better understanding of the economics of expenses and worth”<sup>[6]</sup>. Unfortunately, in the conditions of freight market intense development, basing ship building on the stock of orders is not practically oriented towards achieving worth, but is defined by the objectives of profit maximization. Subsequently, while shaping imbalance between fleet’s freight capacity and cargo flow strength, it lowers not only the worth of a shipping company, but also the profitability level as the result of a cyclical fall of tariff rates.

A complex combination of the principles for achieving the efficient stability of shipping companies on the global freight market is represented in Figure 3.

The choice of a set of principles while implementing a development strategy for the maritime transportation system based on the objectives and conditions establishing Ukraine as a maritime state must also take into consideration the pattern of appearance of certain factors requiring corrections to the system of typical solutions.

Among the problems of efficient positioning of the maritime transportation system of Ukraine in providing for transport safety of participation in the international division of labour, one problem stands out – it is the absence of active maritime transportation policy and insufficiency of investment resources. Using the normalization principle<sup>[4]</sup>, taking into account the correlation of Ukrainian residents’ external trade volumes (Table 2), one can deduce the ceiling value of the required freight capacity of the national marine.

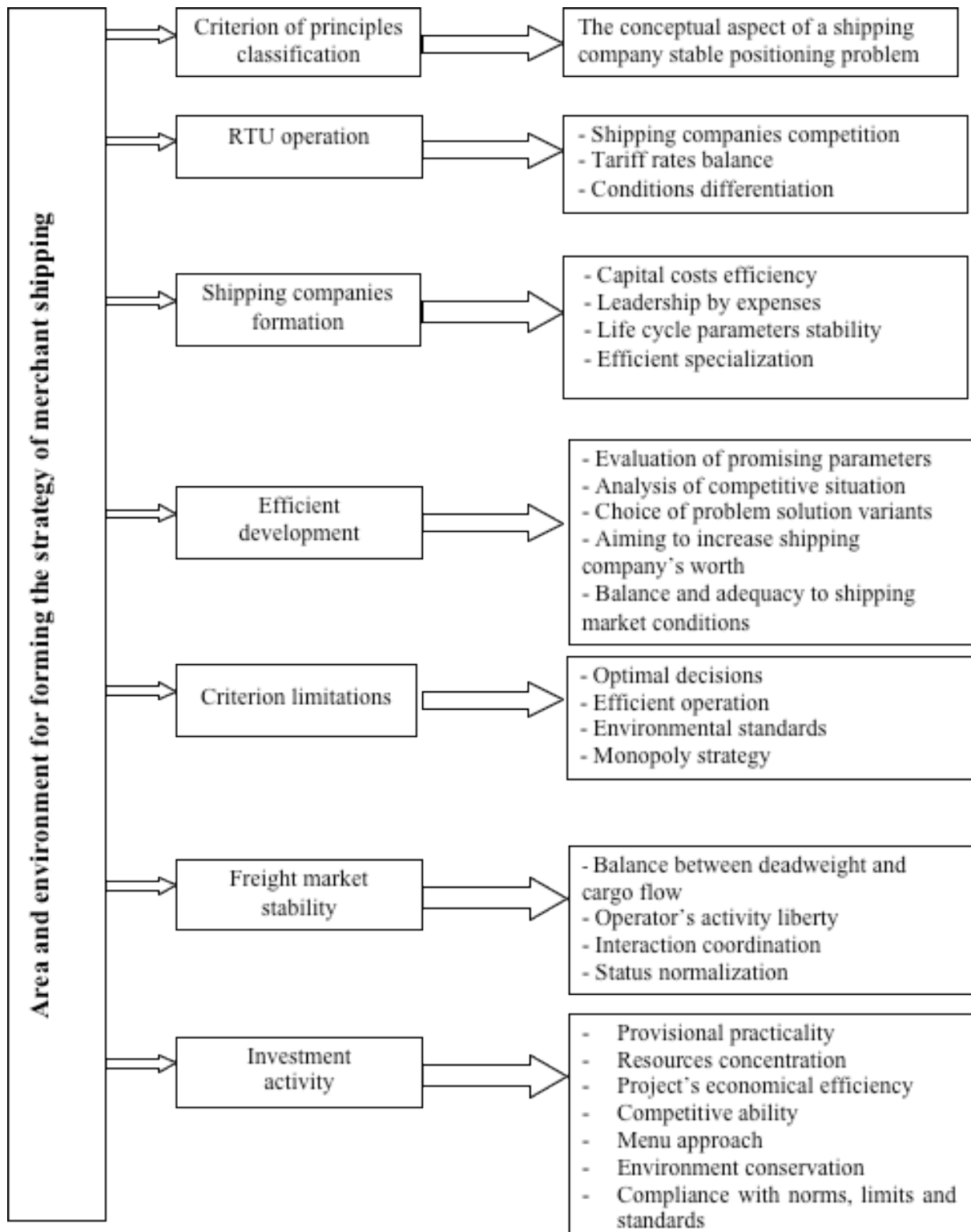
**Table 2** Dynamics of the main factors of forming the transportation segments of Ukraine

Indicators	Years						
	2000	2005	2007	2008	2009	2010	2011
GDP, billion \$.	170	441,5	720,7	948,1	913,3	1082,6	1316,6
Export, billion \$	18,1	40,4	58,3	78,7	49,3	63,2	82,2
Import, billion \$	15,1	39,1	65,6	92	50,6	66,2	88,8
Cargo transportation, million tons	1529	1805	1990	1972	1625	1765	1888
Cargo transportation by sea, million tons	6,3	8	9	8	5	4	4

Source: Compiled by the authors on the basis of the work material [9]

According to the data presented in Tables 1 and 2 one can draw a series of conclusions. The first one – with a marked increase in foreign trade, cargo transportation by sea falls sharply. At the same time through the ports of Ukraine passes at least 1% of cargo shipping. Merchant fleet tonnage share of Ukraine in world tonnage does not exceed 0.01%. If we use the principle of balance, the fleet under the national flag may reach 2.7 million tons, currently stands at 0.9 million tonnes, which determines its transport dependence on external conditions.

The second one – the deficiency of country’s transportation fleet can also be deduced from the correlation between the external trade turnover or the gross domestic product and the corresponding world level. Judging by the character of Ukraine participation in the export of grain, metal and other commodity groups, the deficiency of the freight capacity exceeds the actual availability two or three times. Therefore the credit balance of the current accounts.



**Figure 3.** Classification of development principles for the national shipping system

Source: Compiled by the authors on the basis of the work material [1,4,8]

### 3.3. The nature of restricting conditions management for marine trade development

However, it is necessary to take into account that the model of monopolistic competition in the selected sector of freight market does not have to be based on the dynamics parameter of the



demand for freight capacity. Ship owners will form and realize a greater potential of freight capacity compared to other competitors depending on the reaction on the balanced tariff level. Of special significance in this process is the degree of economic efficiency of the shipping process. The positioning zone of a shipping company is largely determined by the average expenditures level and their difference from tariffs and prime costs levels of competitive ship owners. Therefore, the parameters of the cargo flow the operator can rely onto can be described by the following formula:

$$Q_{si} = Q_w \frac{W_i}{W_d} \frac{C_{sp}}{C_{si}} (1 \pm \beta),$$

where:

$Q_{si}$  is the possible quantity of cargo flow capturing by competitive indicators of the shipping company;

$W_i$  is the deadweight of the applicant shipping company;

$W_d$  is the total fleet deadweight of competitive positioning in the current sector;

$Q_w$  is the total cargo flow of the analyzed freight market sector;

$\beta$  is the constant reflecting the susceptibility of the shipping company to the level and dynamics of tariff rates;

$C_{si}$  is the prime cost of fleet keeping for the analyzed shipping company, dollar/tonnage-day.

The last indicator is based on the average fleet keeping costs of competitive shipping companies.

Its level, in turn, limits the size of the average traffic rate during the life cycle of the ship. To maintain a balanced level of rates conditioning the possibility of proportional use of the freight capacity, shipping conferences and alliances are formed. Thereat, it is important to notice the fact that cargo traffic in the global economic space is formed independently of the influence of transportation rates. That is, the market volume of maritime trade is formed on priority routes from ship owners' point of view, meaning that the tariff is created by Cournot point. Therefore the variances of fleet operation costs is what conditions the parameters of a shipping company positioning and its financial state.

## Conclusions

One of the characteristic trends of the development of global economic relationship is faster growth of maritime trade in comparison with other activities. The action of this trend, despite slowing down the rate of global industrial development, remains present. In the environment of economic resources use internationalisation, the prime importance for the stability of merchant shipping operation is gained by the seamen labour market.

Among the principles of the efficient positioning of shipping companies in cargo flows processed in the ports of Europe stands out the compliance with safety requirements corresponding to the criteria of the Paris Memorandum. It is a system of ship status control aiming to achieve navigation safety, reliability and compliance with environmental norms. Attention is also focused on the conditions of crew's work and life. Based on results of inspections for the last three years, the rating of a country's flag fleet is set: white, grey or black list.

One of the characteristics of development of modern freight market is the dominance of shipping corporations with high concentration of specialized fleet. They are forming the competition environment based on the use of innovative technologies. Under the influence of this process, a polarization of quality of the commercial fleet takes place across the shipping

companies. The limited capabilities for adequate development of the fleet in most countries participating in the international distribution of labour leads to ship owners looking for organizational forms of maintaining operator activity. Simultaneously with increase of capital concentration and use of the principles of external levelling of this process for substandard fleet, the scope of using state support is shrinking.

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## UKRAINA W PROCESIE GLOBALIZACJI RYNKU FRACHTOWEGO

### Streszczenie

Przez cały okres budowy państwa ukraińskiego, strategie stabilnego rozwoju ekonomicznego transportu morskiego były praktycznie ignorowane. Rozwiązanie tego problemu wymaga systematycznego badania mechanizmów i metod rozwoju oraz funkcjonowania najważniejszych sektorów międzynarodowego rynku frachtowego. Pomimo istnienia systematycznych statystyk światowych, praktycznie nie ma metodologii oceny zrównoważonego rozwoju rynku frachtowego w czasach globalizacji. Zazwyczaj wszystko to co jest dostępne, to tylko niektóre aspekty kształtowania parametrów rynku frachtowego. W związku z tym, artykuł ten skupia się na systematyzacji ogólnych zasad rozwoju światowego handlu morskiego oraz ocenie najbardziej realistycznych kierunków działań zmierzających do uczynienia z Ukrainy państwa w pełni morskiego.

**Słowa kluczowe:** światowy transport morski, przedsiębiorstwa żeglugowe, rynek frachtowy, strukturyzacja celów, stabilność pozycjonowania

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