Container Shipping Operators As Integrators of Global Logistics Supply Chains

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The subject of this study refers to the analysis of business activity of shipping operators on the global market of maritime container transport constituting a link in the logistics supply chains and networks. The author attempts to evaluate the efficiency and effectiveness of their operations in the global supply networks indicating their functions and role in the integration process of those chains. The analysis also covered widely perceived economic results arising from their activity, as links connecting global logistics network relations. Moreover, the said results were also analyzed by evaluating them in the view of the impact of the activity of maritime container operators on global commodity markets.

Keywords: shipping operators, global supply chain, containerization, supply chain integration, maritime con-tainer markets.

1. INTRODUCTION

The purpose of this article is to identify and analyze the behaviour and strategy of the container shipping operators as powerful and dynamic participants of the global logistics supply chains. They have got indispensable instruments and market force allowing them to influence effectively both transport and commodity markets. As a result, they can significantly affect the transport and trade processes conducted within the supply chains and networks, and decisions made by their logistics operators. Therefore, their standing and power allows them to play important integration roles within those complex logistics structures and every now and then co-manage them.

The said functions and tasks they carry out in the global logistics supply chains are most accurately reflected, in real terms, by the container transport global market. Consequently, the analysis of the said market, as important element of freight and commodity markets, constitutes appropriate ground for evaluating the efficiency and effectiveness of their operations as elements integrating the supply chains on a global scale and indicating basic tendencies and processes which occur within this area.

2. MARKET OF MARITIME CONTAINER TRANSPORT AS SEGMENT OF GLOBAL ECONOMY AND LINK IN SUPPLY CHAIN

Maritime transport plays an important role in today's global economy and the development of global supply chains and networks co-defining the effectiveness of the world trade. Nowadays, already over 80% of the world trade volume is carried by sea. As far as units of transportation measurement are concerned, the shipping operators carry out over 90% of the world trade.[1] In 2011, 8,734bn tons of freight was transported by sea. The said volume of transport was 2.4 times higher than in 1990. Since 1970, trade by sea has been growing on average by 3.2% and the pace of that growth outstripped the growth rate of the world's GDP and the industrial output of OECD countries, but remained below the growth rate of the world's trade.

If the previous high growth rate of the world's trade and consequently maritime trade on a global scale remains on the preceding level, then in 2020,

[1] *Review of Maritime Transport 2012*. Report by the UNCTAD Secretariat. New York and Geneva 2012, p. 2

the volume of freight transported by sea will increase by 36-40% reaching 12.0 – 12.5bn tons, and in 2031, will be doubled compared to the volume of 2010. Consequently, the share of maritime transport in the total world's freight transport in tons may reach, in 2020, even up to 85% (in 2006, it totalled to 75%), at the cost of decreasing in share of land transport (rail, road and pipeline) from today's 24% to 14.6%, with the increase, at the same time, in the share of air transport in the world's trade from the current 0.3% to 0.4%.2

The maritime transport is also the dominant transport branch in the world's trade services, if we take into consideration its share in freight transport as per the units of value. It is estimated, excluding the intra-Community trade, that its today's share in transport amounts to approx. 76%. On the other hand, taking into account the intra-Community trade as an integral part of the world's trade, it is estimated that today's share of maritime transport in the world's trade in terms of export totals nearly 59%. [3] It means that land transport covers in total only 30% of the global export calculated as per the units of value, and air transport as much as approx. 12%. [4]

Taking into account WTO data indicating that the value of the world's export of goods in 2011 amounted to 18.2bn $, we can estimate the value of maritime trade on a global scale in amount of 10.19bn $. The value of transport by sea has been increasing gradually - faster than the volume of exported goods. It results, among others, from the increase in the price of goods and the change in their structure by type (share in high-value freight raises). The analysis of those tendencies results in the conclusion indicating that in 2020, maritime transport will cover goods valued no less than 16.6bn USD. [5]

This, in turn, means that the average value of one ton of cargo transported (exported) by sea totals today (2012) approx. 1,200 USD and reveals – in particular during the previous decade – steady rate of growth. In accordance with the calculations of UNCTAD still in 2000, the value of one ton of cargo transported by sea was nearly 90.5 times lower than the value of one ton transported by air (at that time 56.624 USD), whereas already in 2006 the said relation totalled 1 : 67, and today it totals 1: 58. When we compare it to the value of one ton of cargo transported by land, the relation as per data from 2010 totals already as 1: 2. Consequently, the average value of one ton of goods of the global maritime transport constitutes already today nearly 84% of the average value of such unit of volume of the world trade in goods transported globally by various means of transport (in 2006 it amounted to 72.4%, and in 2009 78,3%). [6]

One of the strong stimuli for growth in maritime trade contributing at the same to the increase in the value of freight market on a global scale involves containerization. It also indicates the highest rate of growth. The said growth was estimated between 2000 and 2010 at approx. 10% annually, whereas between 1990 and 2010 it amounted on average to 8.2%. As a result, between 1985 and 2010, the share of this technology in maritime transport services increased threefold, and between 2000 and 2011 doubled. In 2000, the use of this technology in maritime trade cargo handling constituted only 8.5%, and in 2011, already over 17% of the world's volume of maritime transport was transported in containers. Therefore, the commodity transported by sea in containers constitute already over 62% within a group of the so-called other dry bulk cargo (in 2011 it amounted to over 2.2bn tons). It means, in turn, that globally the use of containers for the service of general cargo broken down into cargo

[2] Shipping and world trade. International Chamber of Shipping. 2012, p. 16-17, A. Stachniol, The expected overall impact on trade from a maritime Market Based-Mechanism (MBM). March 2011, p. 2,

[3] A. S. Grzelakowski, Globalizacja i jej wpływ na rozwój transportu morskiego i globalnych łańcuchów dostaw. Prace i Materiały Instytutu Handlu Zagranicznego 2012, no. 31, p. 778

[4] European Commission, MEMO/09/16, p. 3-5, Hauke L. Kite-Powell, Marine Policy: Shipping and Ports. Marine Policy Center, Woods Hole Oceanographic Institution, Hole, Massachusetts 2010. p. 35-38, Grzelakowski, Mechanizm regulacji sektora transportu morskiego w skali globalnej i w UE Międzynarodowa regulacja versus rynek frachtowy. Przegląd Komunikacyjny 2012, no. 6, p. 8-9 and Insight& Analysis. World Trade Service Brochure Global Insight. 2011, p. 2

[5] TWN Info Service on WTO and Trade Issues. 09.12.2012, p. 2 and Shipping and world trade. ICS. Op. cit., p. 16

[6] Insight& Analysis. Op.cit., p. 2 and International Chamber of Shipping, op.cit., p. 5

units increased from 28.6% in 2000 to nearly 59% in 2011. [7]

In 2011, 151 million TEU (per export) was transported by sea globally, carrying in total over 1.4bn tons of commodities in containers. It meant that globally, on average, 1 TEU transported by sea contained nearly 9.27 tons of cargo. In the past, this indicator was higher, i.e. even above 12 tons/TEU, indicating higher supply in goods, smaller number of empty containers in trade and better economic situation in the segment of global freight market than in the previous two years. However, the economic situation is not getting better, and according to the preliminary estimates of the Container Trade Statistics, in 2012, due to growing economic recession, in many regions of the world, which also affected this segment of the market, the world container transport by sea dropped by more than 0.5% compared to 2011 and reached in imports only 127m TEU.[8] Therefore, the rate of container 'load' failed to increase. However, in 2013, as per preliminary information of Drewy Maritime Research, global demand for container transport will increase by only 4.6% compared to rather weak 2012, which so to speak shatters beforehand the possibility to obtain significant improvement in this respect.[9]

In 2011, the container ports worldwide handled 572.8m TEU in total (increase by 5.9% compared to 2010). On average, therefore, on a global scale, because of the existing model of organizing the container transport market - *hub and spoke* - the rate of turnover of 1 container (TEU) amounted to 3.79. It means that 1 TEU transported by sea participated, on average, in 3.79 cargo handling cycles in the ports worldwide. This rate has been gradually decreasing. It results from the increasing concentration of cargo handling in the biggest container terminals in the world (container hubs). This modern logistics direction (market strategy), forced by the increasing competition and the standing of market situation far from the expected one, inspires major container mega hubs as global logistics platforms to try and take more and more control over the directions of container movement in the region (logistics operator strategy). Upon implementing the said strategy they tend, on the one hand, to simplify the excessively developed (dispersed) supply chains on the outskirts, and as a result to reduce the significant today number of feeder connections (supplies by larger vessels from smaller number of *spoke* ports), and, on the other, to improve the connection with the major system of production and consumption in the interior through network of container block trains. In effect, container terminals can gradually be divided into: 1/ mega hubs, 2/ regional hubs and 3/ terminals of feeder type services for regional hubs with significant increase in container transportation to major container hubs in the region by land (intermodal rail and road, and water-inland transport).

As a result of such organization of container supply, and therefore the container market, we may observe relative decrease in the number of transshipments and the volume of feeder transport compared to the number of containers transported by land through intermodal transport. This process may develop fairly slowly on a global scale; however, its rate of growth may be different in particular regions of the world.

This new phenomenon reflects visible today aggressive actions of global container hub operators and also the biggest maritime container carriers. It results from the requirement to rationalize the container transport by sea and determination to reduce global logistics costs within land and maritime supply chains and networks. The said process can have significant impact on the existing traditional model of container transport market and also the system of logistics supply chains on a global scale.

Therefore, the gradual process of breaking down cargo into units and, first of all, the containerization and changes occurring in this segment of freight market exert significant impact on the said area of the world maritime transport. As a result of its gradual development related, within the contemporary model of operation and development of logistics supply chains and networks, to the increase, to a higher and higher degree, in speed, punctuality and security of transport, the percentage of high-value goods in maritime transport is steadily increasing. Today, their share in the world trade is estimated at

[7] *Trade growth to ease in 2011 but despite 2010 record surge, crisis hangover persists. World Trade 2010. Prospects for 2011,* WTO 2011. Press Releases/6287, April 2011. and ISL International Shipping Statistics and Market Review. 2010, no. 9, www.isl.org (05.03.2012).

[8] Namiary na morze i handel. Dodatek specjalny. *Kontenery*. Transport kontenerowy i multimodalny. 2013, no. , p. 4

[9] Ibidem, p. 4

already min. 72% of the value of the world export, i.e. 13.2bn $. Assuming as per data of UNCTAD and WTO that at present, at least 55% of the maritime trade by value is transported globally in containers, it is estimated that the said technology made it possible to transport, in 2011, goods of total value amounting to at least 5.83bn USD.[10] Assuming, in turn, as per Container Trade Statistics that in 2012, as much as 127.7m TEU was transported by sea as import, we can calculate that the average value of 1 ton of cargo transported in 20" container amounted to 4,565 USD. It means that the average value of 1 ton of imported cargo in containers by sea globally is 3.8 times higher than the average unit value of cargo in maritime trade.

The value, from the logistics point of view, can be compared with the value of the world production. The said comparison reveals that it has its share amounting to 1.2USD in each 14USD of the obtained production.[11] The said values constitute grounds for evaluating the impact of containerization on the level of costs in this segment of transport, and also global costs of maritime transport, and consequently their impact on the prices of goods transported by sea in the centres of consumption – wholesale and retail prices.

3. ADJUSTMENT SCHEMES AND STRATEGIES OF MARITIME CONTAINER OPERATORS FACING HIGH RATE OF CHANGES IN GLOBAL SUPPLY CHAINS

Fundamental directions and tendencies in operation and development of container transport by sea, as elements in the global supply chains, reflect partial freight markets for this segment of transport. The world markets of container transport handle the majority of container transport directions distributed within global supply chains and networks, distinguished, like no other type of freight markets, by very low degree of fragmentation. Nowadays, they are characterized by strong integration which, on the one hand, results from high unification of intermodal technology of transport and its development on a global scale, and, on the other, increasing due to the competition, the international economic pressure towards further concentration of entities and capital in this segment of shipping, and consequently higher and higher concentration of container traffic in geographical and spatial aspect. Thanks to the level of activity and well-thought out strategy of global operators of logistics supply chains and the shipping container operators themselves the said markets are subject to regular strong pressure from the adjustment processes.

Their supply side reacts relatively quick, as for the conditions within this segment of transport, to dynamic changes which occur on the demand side. It indicates at the same time sufficiently high level of adaptation to both, quantitative and qualitative – structural transformations in demand from freight and commodity markets.

It is reflected in the increasing volume of transport potential of the world's container fleet and its higher productivity, and also better and better correlation of its capacity and transport potential with the demand for such tonnage. Due to the fact that the rate of demand fluctuations (trade cycles) in this segment of the market is much higher than that of supply (investment cycles in the shipping industry), the reactions of shipping operators in this respect depend on the pace of changes in basic market parameters (demand, supply, freight and charter tariffs) and the tonnage oversupply. In the case of its significant oversupply, which occurred between 2008 and 2012, in view of the shipping operators, the only effective manner of adjusting the supply to the decreasing demand was to promote *slow steaming* practice. It was a reaction of big container operators towards: 1) first, rapidly increasing fuel prices, when facing the rate of changes of this element of costs, the application of BAF surcharge lost any sense, and then 2) quite rapid drop in demand and the existing overcapacity during the period of significant slowdown.[12]

[10] There are discrepancies between WTO, OECD and UNCTAD in relation to the valuation of goods transported in containers by sea. UNCTAD estimates the value of the so-called containerized maritime trade at 52-53% of its total value, whereas other international organizations estimate its share at 57% and 60% respectively. Compare *Review of maritime transport 2012*, op.cit., p. 19 - 21

[11] Compare Shipping and world trade. International Chamber of Shipping. 2012. p. 7 and WTO 2011 *Trade growth to ease in 2011 but despite 2010 record surge, crisis hangover persists. World Trade 2010. Prospects for 2011,* Press Releases/6287, April 2011., p. 5

[12] Between 2010 and 2011 container lines trying to reduce expenditure for the purchase of bunker and reduce negative effects of the existing tonnage oversupply continued the strategy of reducing the

The container shipping is characterized, in particular, by high level of energy consumption, which due to the development of logistics and logistics concepts of managing the supply chain on a global scale, results from the necessity to maintain high standards related to high-value cargo time of transport. In the container shipping, clear positive correlation between the level of fuel prices and freight tariffs is hardly noticed. The increase in the price of bunker fails to correlate, as per results of market analysis from the previous fuel crisis, with the increase in the level of freight tariffs. It means that the mechanism of compensations for the increase in fuel prices and consequently total operating costs of tonnage through the increase in income generated from the increasing freight tariffs in that period failed to be functional in the container shipping. In such situation, ship-owners had to look for new ways and forms of reacting to such operating challenges created by the arrangement of the supply markets - energy markets which not for the first time proved their significant impact on freight markets (market integration).

However, the slow steaming practice involves numerous drawbacks which, in many cases, due to the scale of indirect costs and economic and financial effects, make such activity harmful for all participants of the container supply chain, and consequently for the ship-owners themselves. As a result of such strategy the time of voyage extends, and consequently the number of production cycles on vessel drops annually, which in turn reduces the income from the sale of transport services. Moreover, the said practice leads to additional, very often high indirect costs resulting from extended time period of freezing the capital in goods transported by sea and the increase in logistics costs in the entire land and sea supply chain. The said effects – in their nature are similar to those generated by port congestions – they accumulate in the supply chain and are usually reflected in the increase in commodity prices. Therefore, they can cause inflation threatening the stability of the world trade and further development of globalization.

On the supply side of the global container transport market we also observed, during the crisis, another phenomenon harmful for the global supply chains, resulting directly from the strategy of slowdown applied by the shipping operators. The *slow steaming* practice resulted also in the increase in indirect costs arising from excessive absorption of fixed capital on the part of shipping operators, and as a result mainly returnable packaging – mostly containers. Their operating cycle in such conditions significantly lengthened the traditional standards defined in this field. Therefore, depending on the scale of the slowdown in operating speed where containers, from the form of unit packaging are in reality transformed into warehouses, the demand on them in the centres of production, distribution and consumption rapidly increases, which may lead – as it occurred during the previous crisis between 2010 and 2011, to shortage of reserves and lack of containers indispensable for loading the cargo.

Containers – their number, structure, and availability – considerably affect the possibility for disruption-free development of the world trade and effective operation of the container supply chains on a global scale. While still in 1991, there were only 7m containers (TEU) used in handling the maritime trade cargo, today, their number increased over fourfold and amounts to more than 30 million TEU. The rapidly growing number of containers is accompanied at the same time by the increasing effectiveness of their use, which is reflected in growing number of use cycles of standard container annually (loading and unloading). While at the beginning of 1990s, container was used on average 14 times, today, due to growing number of transshipments, higher speed of vessels, effective improvement in the pace of reloading operations in the port container terminals, and facilitation of customs clearance, its average number of production cycles increased to almost 20. The same tendency is observed, if we compare the total number of containers with the total number (capacity) of slots on container ships. This rate dropped from 3 (1991) to less than 2 containers per 1 slot (15.3m TEU in 2012). However, the rate fails to reflect in total the growing productivity of the container fleet and the increasing effectiveness of container use in maritime trade. Its level was determined to a significant degree: 1/ by the existing oversupply of the container fleet transport potential – in particular between 2009 and 2010 and 2/ by the

operating speed. Moreover, tankers universally applied the slow steaming practice reducing their operating speed from 24 knots even to over 50% - in particular when they returned without any cargo, which made it possible to save up to 22.000 $/24h. Compare *Review of maritime transport 2011*. Op. cit., p. 79

existing lack of empty containers (due to *slow steaming*). Those two factors led to serious disturbance on the container market because due to maladjustment of supply to the increased demand on containers the prices for packaging purchase considerably increased. At the end of 2009, standard TEU cost 1,900 USD on average. Its price was growing rapidly in 2010, and in the first quarter of 2011 it reached the level of 2,800 USD, which constituted the increase of nearly 50% and then it continued to rise exceeding 3,000 USD.

What is considerably strengthening the standing of the container shipping operators in the global logistics supply chains are currently very dynamic processes related to the concentration of tonnage, capital, and the market itself. The shipping is characterized by a very high level of concentration which results, on the one hand, from high capital-intensive nature of the sector and, on the other, from strong competition in this segment of transport. The concentration occurs in the form of physical integration of capital (mergers, acquisitions) and also in the operational and production form leading to establishing strategic and tactical shipping alliances on the main routes of container transportation.

Still in 2010, the 20 biggest container operators in the world had transport potential which constituted 67.7% of the container fleet world potential, and already in 2012, (as at 13.05) their share increased to 72%. In February 2013, the share of the 20 biggest operators went up to 83.5%. The first 10 of them, including as many as 4 ship-owners from Europe, gathered, already in 2008, as much as 52% of the container fleet potential; in 2012, their share increased to 63.6%. Only the three biggest of them, i.e. Maersk Line, MSC and CMA CGM constitute at present (2013) 37.1% of the fleet world capacity (in TEU), and still in 2008, their share amounted to 28%. However, another three biggest operators, i.e. Evergreen Line, COSCO and Hapag-Lloyd, constitute 'only' 12.30% of the market share. It is obvious that as a result of the increasing orders for new tonnage, the share of the biggest operators on the market will continuously increase, which is going to result in further increase in the concentration of supply in this segment of container transportation market and in significant improvement of their standing in the system of supply chain.

Comparable phenomenon can be observed in the segment of port container traffic. One hundred biggest container ports constitute over 80% of the world turnover, and 20 of them almost 50% of the total transshipment (TEU), out of which only the Chinese ports handle today already over 32% of the world container turnover estimated at the end of 2011 at 572.8 million TEU. Each of the 11 biggest container ports in the world handles annually at least 11.500 million TEU. The characteristic feature of the processes of container turnover concentration in the world maritime ports involves also the increase in the concentration of transshipment in selected biggest container terminals managed by global port operators. Only until 2001, the global container terminal port operators controlled no more than 35% of handled containers, and shipping operators owned 19% of such terminals. In time, as a result of global processes related to both horizontal and vertical concentration of capital, the proprietary structure of port container terminals became more and more complex. Consequently, under equity-based throughput, the shares of the 10 biggest global container operators in the total container transshipment in the world amounted to 45% in 2011. Those were the following operators of 69 GCPO list, the transshipments of whom exceed 1 million TEU: PSA, HPH, DPW, APMT, SIPG, China Merchants, Cosco, MSC, SSA Marine/Carrix, Modern terminals. Today, five of the biggest of them have their share on the global market in amount of 33%.

4. DEMAND ON CONTAINER TRANSPORT MARKET AND ITS IMPACT ON THE SCHEME OF GLOBAL SUPPLY CHAINS

The costs of maritime transport are, on average, on a global scale, 2-3 times higher than customs charges of countries importing seaborne goods. The container shipping also remains the least expensive branch of transport, capable of transporting significant quantities of goods to large distances. The branch has also enormous adaptability to external requirements – supply chains and networks. Therefore, this segment of transport generates considerable value added for the operator of the supply chain and the final consumer of goods.

However, obtaining those effects is not simple, taking into account the scale of fluctuations of the demand for container operators services, and non-balancing of export-import commodity flows within the global supply chains, and in addition,

intensified furthermore by considerable irregularity of the commodity flows. The issue was presented in table 1.

The asymmetry has not only its own directional dimension (eastbound – westbound), but also quantitative (tonnage) one. It significantly reflects the asymmetry within the commodity exchange – within the global supply chains which container operators handling such relations from the supply side shall adjust to. [13] The asymmetry results, on the one hand, in the lack of possibility to use effectively the transport potential of container operators handling such relations (table 1), and, on the other, forced, due to non-balancing of cargo flows, high empty container traffic. Their relatively high share in the total container turnover transported through these routes statistically inflates the number of the container turnover on a global scale, which also directly affects the container load ratio (1 TEU).

Table 1. Container transport on major East-West trade routes between 2009 and 2011 (million TEU and percentage changes 2011/2010)

Year	Transpacific		Europe Asia		Transatlantic	
	Asia-North America	North America-Asia	Asia-Europe	Europe-Asia	Europe-North America	North America-Asia
2009	106	61	115	55	28	25
2010	128	60	135	56	31	28
2011	127	60	141	62	34	28
2011/2010 (%)	-0.9	0.9	4.6	10.6	8.3	1.0

Source: Review of maritime transport 2012, op.cit., p.21

The container transport markets - their system of operation and market momentum, which refers to the demand side, in particular – fundamentally differ from other types of freight markets. The system of those markets which developed these days with strong integration and concentration of the supply side, and their characteristic, relatively flexible capability of the supply side to adjust to variable demand conditions is definitely their strength. It ensures the container operators a chance to survive in the time of crisis and develop further, and the supply chain operators a possibility to create value added and market advantage.

The dynamic changes in demand on commodity and freight markets, including demand for container transport services, result in significant fluctuations in freight and charter charges. The charges define the level of costs of seaborne container transport and constitute element of total costs of transport in the system of supply chain and logistics costs. Detailed analysis indicate that the level of those costs is relatively low, which is indirectly reflected in fig. 1. Characteristic is that the share of this element of total transport and logistics costs in the value of seaborne goods is steadily decreasing (fig. 1). Moreover, during economic crisis 2008/2009 and after the crisis, when in the case of drop in demand, various types of freight surcharges were widely applied, clear tendency of the increase in the share of costs of maritime transport in the value of goods imported by sea is not observed.[14] However, the real cause of this can involve the fact that the rate of growth of imported by sea commodity prices is much higher than the rate of growth of costs of those commodities transported by sea.

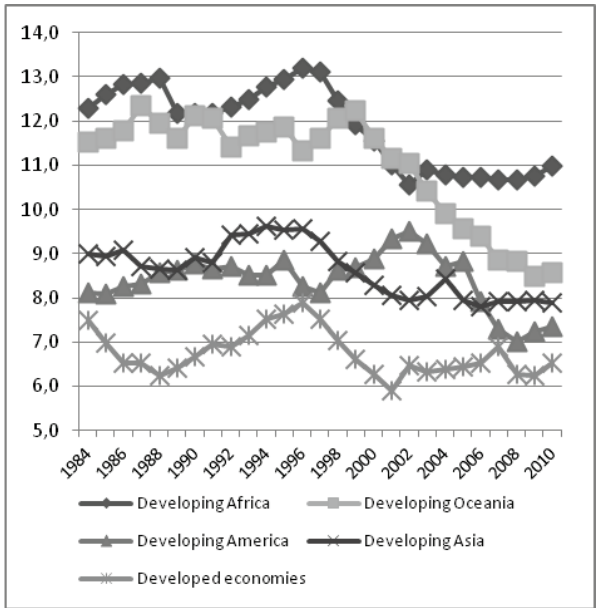

Fig. 1. Seaborne transport costs (paid freight) as element of maritime trade value (as per import; (average annual changes during 5 years)

Source: Review of maritime transport 2012, op.cit., p.74

[13] Compare. A. S. Grzelakowski, *Globalizacja i jej wpływ na rozwój transportu morskiego i globalnych łańcuchów dostaw*. Prace i Materiały ...., op. cit., 2012,p. 776.

[14] A. S. Grzelakowski, *Transport kontenerów drogą morską w gospodarce globalnej. Podstawowe wyzwania na przełomie I i II dekady XXI wieku*. Op.cit., p. 28

5. CONCLUSIONS

The volume and value of the world trade which handles maritime trade unambiguously indicates its significant importance and functions in the global economy system. Its dynamic development expressed in the form of constant increase in the world fleet transport potential and its high adaptation to quantitative and qualitative requirements of commodity markets, unambiguously proves that maritime transport and especially container one not only follows the needs and requirements of the world trade handling efficiently and effectively enormous commodity flows but also secures and creates, in technical and operational, and also economic and financial aspects, the transport and logistics potential indispensable for its further undisturbed development and thereby the increase in global economy stimulated by globalization processes. The said situation is considerably influenced by the segment of container shipping with their freight market constituting over 50% of the global freight market.

The importance of the said market for the effective operation of the global freight market and other transport markets and commodity markets, and thereby global supply chains and networks, results not only from the acquired level of its development and connections with global markets but also from the character of the technology itself and the organization of container transport. Since it generates relatively low transport costs. The cost of transport of 40" container with cargo to 1 nautical mile totals these days on average 0.10 to 0.12USD, which constitutes only a small fraction of its cost of transport by land. Since, as a result of growing pressure from the competition in the system of freight markets, and consequently better and better adaptation of the fleet transport potential to the volume and structure of demand for those services on a global scale, for more than 20 years we can observe a decrease in the share of world import transport costs measured by the value of freight paid by clients to shipping operators (they define the so-called value of the world's freight market) compared to the value of global commodity import). Therefore, with reference to the segment of container transport it is possible, under globally average data related to: 1/ value of 1 tone of cargo transported in 20" container (4,565 USD), 2/ container load ratio – 10t and 3/ level of freight rate *all inclusive* per TEU in amount of 1,500 USD to estimate that on average in container transport the share of seaborne transport costs totals these days only from 3.3 to 4.2% of the value of cargo transported with the use of this technology. As a result, their share fails to exceed 50% of the total transport costs per retail price of high-value commodity unit imported by sea.

The effectiveness and efficiency of container carriers and operators reacting in a flexible manner to any changes on the demand side of freight and commodity markets made it possible for them to integrate fully with the system of global supply chains and networks. As a result, the container maritime transport market also became the integral element of that chain. It is also an attractive element, not only because of the possibility to provide it with high flexibility but also high value added for the final client and logistics operator.

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