

## Current Market Trends Maritime Transport Services

Florin Dan Puscaciu<sup>1</sup>, Rose Marie Puscaciu<sup>2</sup>

**Abstract:** Maritime transport services is a fundamental component of international logistics, given that approximately 80% of world trade is carried by sea. Also, considering the spatial distribution of resources according to the processing sites and disposal of finished goods and the fact that nearly two thirds of the globe is covered by water, has led a Norwegian ship-owner, Erling Næss, to claim that "Divinity has been very generous with ship owners."<sup>3</sup> In the 3rd millennium, when this study was done, there were a number of trends representing some sequels of a prior period and also a series of phenomenon of the current period. We aim to address key market segments of shipping. In order to carry out the graphs and determine the indicators we used Matlab software.

**Keywords:** world's merchant fleet; types of vessel segments; the average age

**JEL Classification:** L91; L90

Shipping services market is compounded of many segments that are based on a specialized type of ship as cargo, the method of ships operations, consequently in line mode or random, limited or unlimited navigation system according to a certain area, etc. This market segmentation shipping services is not only analyzing the global market, but these segments also generate independent markets that can register divergent trends in certain periods of time. Also, these segments of maritime transport services market are influenced by both general and specific factors. Among the general factors we can identify:

- the global economy;
- evolution of marine commerce;
- cyclical events;
- transportation costs.

---

<sup>1</sup> Professor, PhD, Danubius University of Galati, Faculty of Economic Sciences, Romania, Address: 3 Galati Blvd, Galati, Romania, tel: +40372 361 102, fax: +40372 361 290, Corresponding author: fdpuscaci@yahoo.com.

<sup>2</sup> PhD in progress, Danubius University of Galati, Faculty of Economic Sciences, Romania, Address: 3Galati Blvd, Galati, Romania, tel: +40372 361 102, fax: +40372 361 290, e-mail: rosemarie.puscaciu@univ-danubius.ro

<sup>3</sup>"God must have been a shipowner." (Stopford, 2009, p. 417)

In turn, the transport services market is displayed by a series of indicators such as:

- evolution of the world fleet;
- productivity in fleet operation;
- production of ships;
- market development for scrap (of ships for dismantling and melting);
- freights evolution, etc.

Market-specific factors refer to:

- the evolution of commodity prices;
- utilization of productive capacity for a type of goods for which transport fleet is specialized;
- evolution of final good market, etc.

Although, transportation is not an end itself, but is only a marketing support, transport activity generally responds differently to its influencing factors. Thus, the global maritime fleet recorded during the first decade of the current millennium a continuous upward trend, despite the global economical crisis (see Figure 1). The explanation for this trend of continuous growth consists in both temporary differences between the order of completion of a vessel and time of entry into exploitation, and also the qualitative improvement of world fleet, i.e. descending the exploitation period of the ships designed with lower fuel consumption and shipbuilding responsible for higher regulations on navigation safety and environmental protection measures, etc. (Puscaciu, 1999)

Registered world fleet trend can be modeled as following:

$$y = 4.916 + -2.682 * t^2 + 743.9 \quad (1)$$

where coefficients with 95% probability located between:

$$a1 = 4.916 (4.555, 5.277);$$

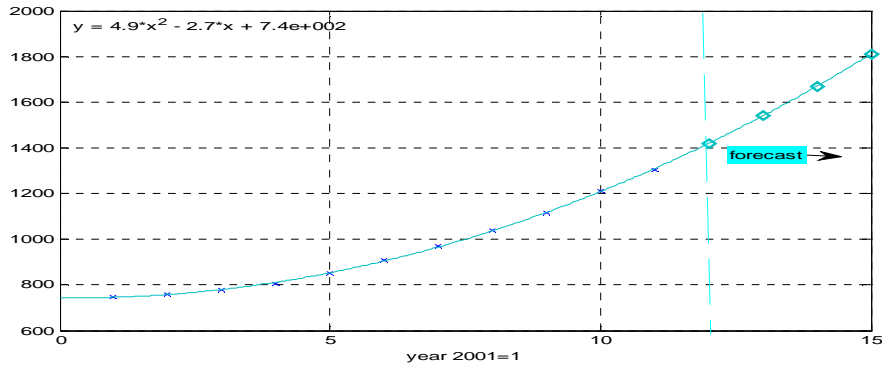
$$a2 = -2.682 (-7.128, 1.765);$$

$$a3 = 743.9 (732.3, 755.5)$$

y = million tons dwt fleet in the world, t = time 2001 = 1.

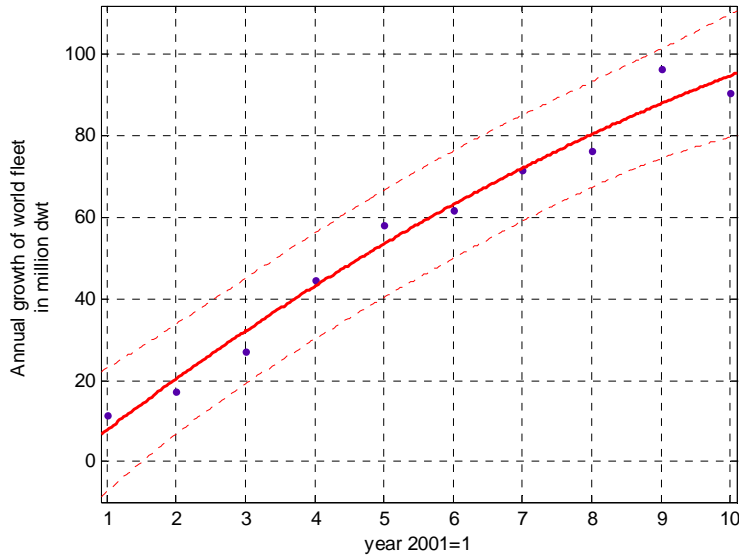
ESS: 168.1, R-square: 0.9995, Adjusted R-square: 0.9994, RMSE: 4.584.

It is estimated that in the next 4-5 years the world fleet will continue to grow. This increase is due to the global fleet growth, i.e. the difference between new constructions and exit from exploitation.



**Figure 1. Evolution world fleet between 2001-2011 mill dwt**  
 Data source: U.C.T.A.D. Review of Maritime Transport 2011

But it can be seen that growth is becoming less which will contribute to a more moderate growth of the world fleet, see Figure 2.



**Figure 2. Evolution annual growth of world fleet in million dwt in the period 2001-2011**  
 Data source: U.C.T.A.D. Review of Maritime Transport 2011

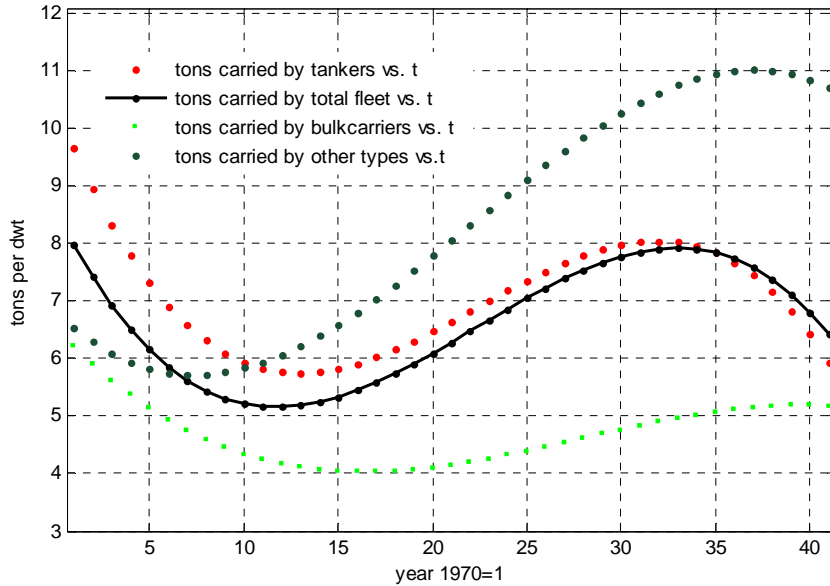
Shipping fleet transport offer is aiming to cover transport demand expressed by goods carried by sea. This dependence is expressed in Table 1.

**Table 1. Evolution and trade interdependence of world maritime fleet**

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
world fleet in million dwt	749	760,6	777,7	804,9	849,6	907,6	969,4	1040,8	1117,1	1213,3
Million tons maritime trade	6020	6.127	6.480	6.758	7.109	7.545	7.882	8.169	7.858	8.408
tonnes of freight / ton dwt	8,04	8,05	8,33	8,40	8,37	8,31	8,13	7,85	7,03	6,93

*Data source: U.C.T.A.D. Review of Maritime Transport*

As you can see, there is a tendency to reduce the tones of freight per unit carried, which shows an increase compared to the evolution of the global fleet of maritime commerce, or in other words, a decrease of productivity in world fleet exploitation. For a long period assessment of the main types of ships we can analyze Figure 3.

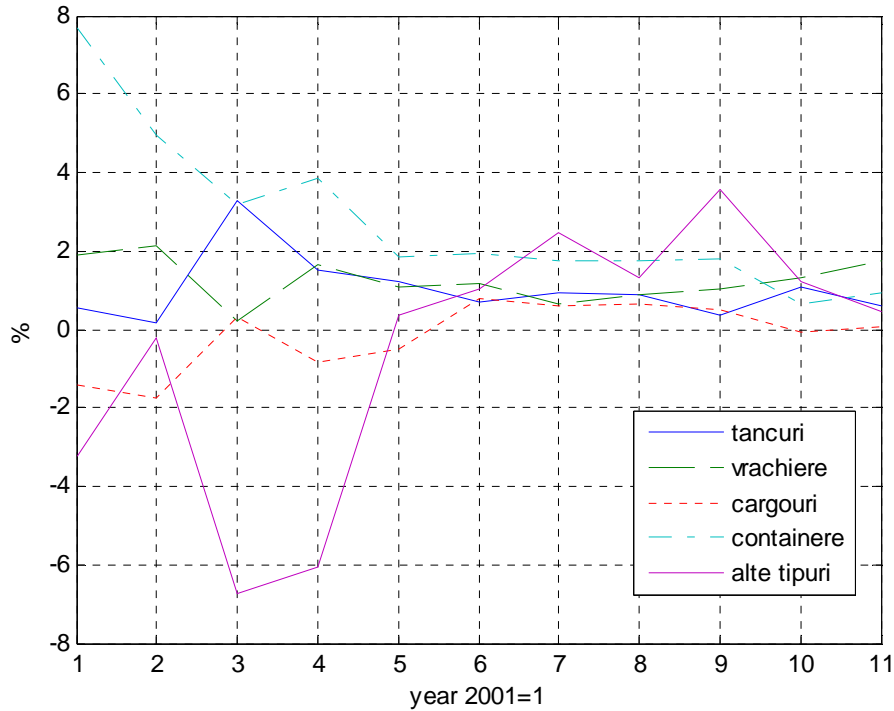


**Figure 3. Evolution tonnes of cargo transported per unit dwt adjusted sizes during 1970-2010**

*Data source: U.C.T.A.D. Review of Maritime Transport - various numbers*

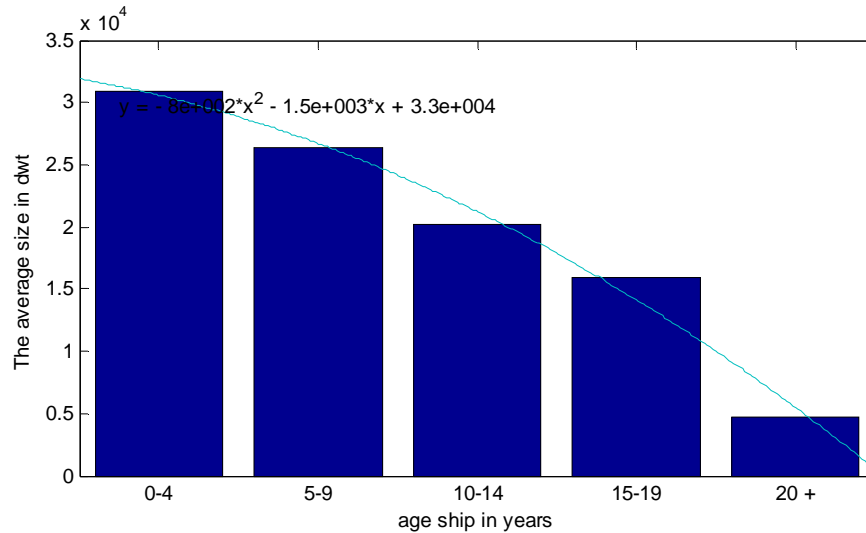
It follows that the phenomenon of productivity in world fleet exploitation is registered in all major types of ships, but with different intensities. The highest productivity is occurring in other types of ships and cargo vessels including container vessels, while the lowest are registered on bulk carriers and tankers. The explanation is that these vessels are exploited only in one direction, usually returning empty.

The world fleet has developed in a divergent structure in the early 2000s while towards the end of the period there is a general trend of convergence. This trend can be expressed by indices signifying changes brought forward by a segment of the world fleet if it would increase by 1%, see Figure 4.



**Figure 4. Indices of brought forward types of ships to the total fleet**

Another phenomenon of the world fleet that has contributed to its growth is the increase in transport capacity per unit, i.e. of dwt. As shown in Figure 5 this tendency is outstanding in new ships, in other words, naval greatness is more pronounced amongst new ships. It is an embodiment that takes into account the benefits of scale economies and its future increase.



**Figure 5. Dependence of average age and size of ship**

*Data source: U.C.T.A.D. Review of Maritime Transport 2011*

We believe that this trend will be a reaction of the fleet to the current global crisis, even if larger vessels are more vulnerable to shifts on the transported goods market

## Conclusions

The analysis above has proved that despite the global economical crisis, the worlds maritime transport fleet capacity has not been affected, but in the future it will not register significant growing tendencies. In terms of ships types, the reactions of the world fleet independent segments are different. Both cargo fleet and post containers ships seem to be affected by the crisis and it is expected so since both are goods transporters .Meanwhile, tanks and bulk carriers are less sensible to the crisis because they transport industrial goods. We consider that in the future the transport capacity will result in an exploitation productivity growth and not an increase in capacity through new constructions.

## **References**

Stopford, Martin (2009). *Maritime Economics*. 3rd Edition. Routledge Taylor & Francis Group Publishing.

Puscaciu, Florin Dan (1999). *Management services in transport*. Galati: Latin Publishing House.

\*\*\*Platou Report 2011.

\*\*\*UNCTAD Review of Maritime Transport 2011.