University of Piraeus

SPOUDAI
Journal of Economics and Business
Σπουδαί
http://spoudai.unipi.gr

Financial Crisis & Passenger Shipping: Evidence from Greece

Evangelos Sambracos[a], Marina Maniati[b]

[a]*The University of Piraeus, Department of Economics, 80 Karaoli & Dimitriou Str. 18534, Piraeus, Greece, email: sambra@unipi.gr*
[b]*The University of Piraeus, Department of Economics, 80 Karaoli & Dimitriou Str. 18534, Piraeus, Greece, email: marinamaniati@gmail.com*

Abstract

The world financial crisis has resulted in the slowdown of Greek economy leading to the recession of certain sectors, like Passenger Shipping. Factors, such as the decrease of private consumption and GDP, have negatively influenced Passenger Shipping, resulting in the reduction not only of the relevant demand, but also of the sector's financial results. The paper examines the current situation of Greek Passenger Shipping during this "crisis" period. Financial analysis of the sector has indicated that companies face many problems; annual turnover decreases, reduced profit margins and deteriorating liquidity ratios, while the relevant financial ratios are worse than the corresponding ones of the Greek Economy on average. Considering the role of passenger shipping in combination with the particularity of the Greek insular area (many islands connected primarily with mainland and among them through sea transport), the paper examines and evaluates possible solutions, in order for the passenger companies to survive and keep providing their vital services.

JEL Classification: R11; G01.

Keywords: Financial Crisis; Passenger Shipping; Financial Analysis.

1. Introduction

International and national economic developments determine the operating environment of the passenger shipping services market, reflecting that the relevant demand is derived (Rodrigue 2006; Sambracos and Rigas 2007). More specifically, the analysis of the factors affecting the economy as a whole (macroeconomic indicators), and the tourism sector - which is the strongest demand source for passenger shipping services (Duval 2007) - leads to more accurate conclusions about the passenger shipping market and to - positive or less positive - expectations for its future. The relevant data illustrate the widening, in recent years, negative growth rate of the market, as well as the problems encountered by the Greek passenger shipping

industry both at supply level (oversupply in specific lines) and at the demand level (seasonality, demand reduction). These problems are more obvious while analysing the industry's financial results: Annual turnover decreases, reduction of profit margins, worsening of liquidity ratios, while the relevant financial ratios are worse than the corresponding ones for the Greek economy on average. Considering the role of passenger shipping (Sambracos 2001, Polydoropoulou et al 2007) in combination with the particular traits of the Greek insular area (many islands mainly connected with mainland through sea transport), it is vital to suggest appropriate solutions, in order for passenger shipping companies to survive and continue providing their services. This paper examines and evaluates possible solutions, involving the Greek passenger shipping in order for the industry to acquire a developmental character, a perspective and the ability to respond to current requirements.

2. Methodology

The analysis of the data concerning the current international and national financial developments, as well as the passenger shipping market, is based on official statistical sources. The passenger shipping market is analysed in relation with changes in demand and in financial analysis level. In order to quantify seasonal variations of the relevant demand, a seasonality index (Walsh 1981) is used in this paper:

$$SI = \frac{\sum_{n=1}^{n=12} \left| x_n - \frac{\bar{R}}{12} \right|}{\bar{R}} \qquad (1)$$

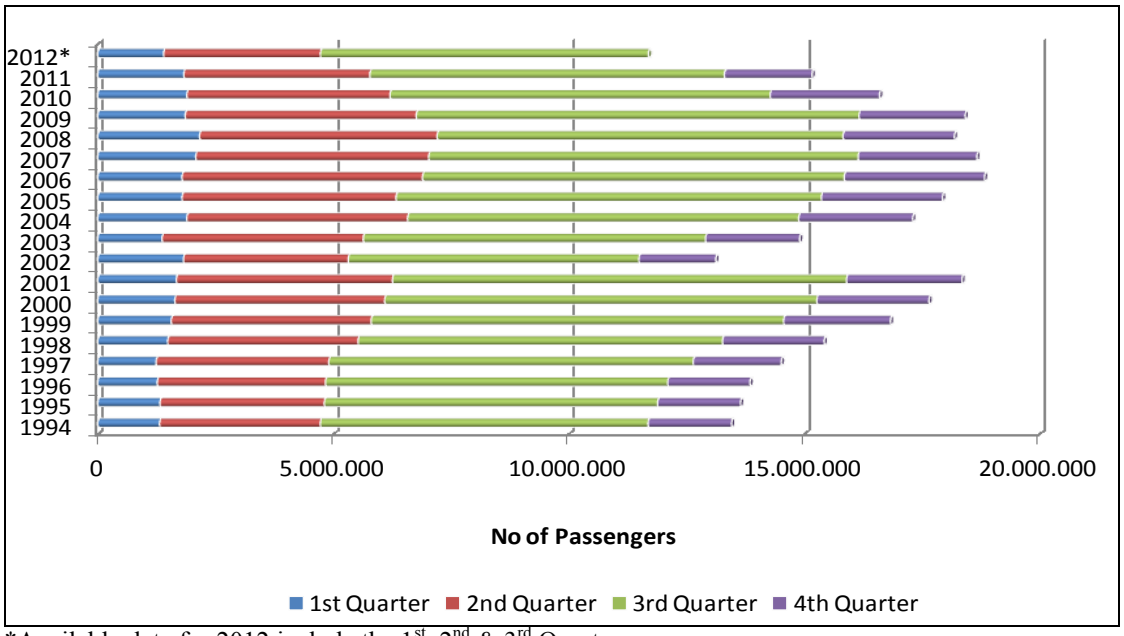
where SI denotes seasonality index, x_n means demand for passenger transport of month n, and R is the mean annual demand. The seasonality index takes into consideration all months of the year.

Also, a representative sample of companies is used for market financial analysis. The analysis of the quantitative and qualitative research findings has been used as a basis for the implementation of the most appropriate policy for both the industry and the public interest, focusing on achieving necessary changes, allowing sustainable growth and the maximisation of both private and social benefits. The paper ends with conclusions of a financial character, based on current developments in passenger shipping and the economy as a whole.

3. Demand for Passenger Shipping Transport: High Growth Rates & Seasonality

Based on the latest official data of the Hellenic Statistical Authority (EL.STAT.), total demand for passenger shipping transport is being studied here from 1994 until 2012. Demand analysis refers to the "disembarked passengers" from passenger ships of total capacity bigger than 100 register tons (RT). The market evolves upward in the years 1994 – 2001 (Figure 1), with an average annual increase of 4.56%, while in 2002 there was a significant fall of the passenger shipping traffic with a reduction reaching 28%. The upward trend resumed in the period 2002 - 2006 (average annual increase of 9.58%), while in 2007, the market enters a gradual decline at a -1.71% average annual decrease in demand. In the years 2009 - 2011, lower tourism demand internationally and the gradual fall of purchasing power at national level have negatively affected passenger shipping services growth as well (average annual decrease of -5.70%).

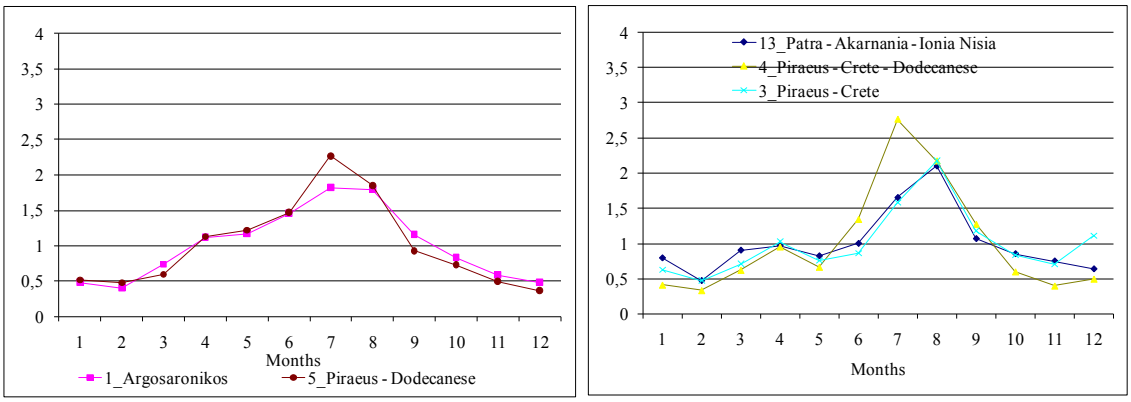
Figure 1: Demand for Passenger Shipping

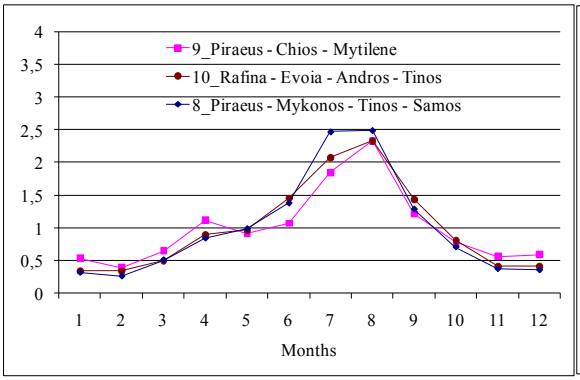


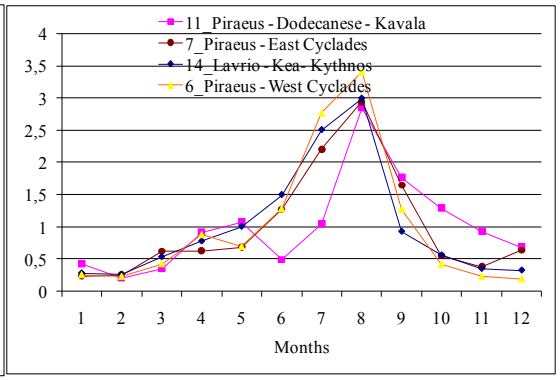
*Available data for 2012 include the 1st, 2nd & 3rd Quarter
Source: Hellenic Statistical Authority (EL.STAT.), 2013

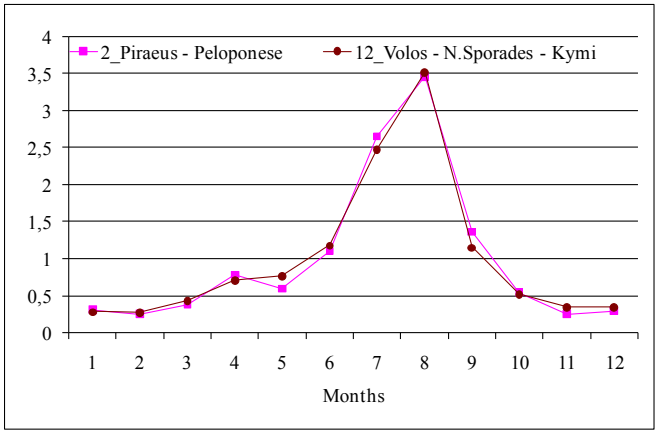
A main characteristic of the demand for passenger shipping services is seasonality (Lekakou et al 2004, Polydoropoulou et al 2007, Rigas 2012). Figure 2, shows the seasonality index for each main line, which depicts a stronger seasonality when moving to levels higher than 1.

Figure 2. Seasonality Index of main shipping lines









Source: Based on data by Hellenic Statistical Authority (EL.STAT.), 2013

According to Figure 2, all the main shipping lines present seasonality. A more marked seasonality appears on islands that are more dependent on imported and domestic tourist trade (Zwier et al 1994).

The demand for passenger shipping services presents considerable variability over the last decade, being characterised by an upward trend during the 90s and a downward trend over the last four years. The strong seasonality observed in all main and other passenger lines also makes the development of the economies of scale difficult. The basic factors that affect passenger shipping demand are analysed below, aiming at illustrating the environment where passenger shipping companies operate in.

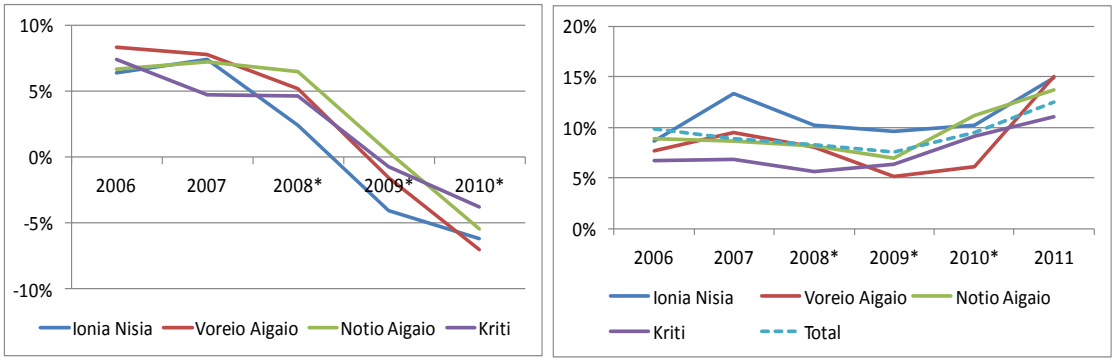
4. Factors Affecting Demand for Passenger Shipping

The demand for passenger transport services is derived (Rodrigue 2006; Sambracos and Rigas 2007). Amongst the main factors affecting demand for passenger shipping are financial developments, the relevant growth rates at regional, national, European and international level, as well as the demand for tourist services (Niininen et al 2007). Moreover, the quality of services provided (duration, benefits) in combination with the ticket price, as well as the existing port infrastructures may also affect the demand for passenger transport (Basdanis et al 1994, Sambracos et al 1997), especially in areas where sea transport competes with air transport.

4.1. The demand for passenger transport services & rate of growth at regional level

At regional level, both Gross Regional Product and Unemployment Rates are getting worse (Figure 3). The decrease of the Gross Domestic Product (GDP) in the areas studied between 2006 - 2010 amounts to -12.1% on average, while the corresponding increase of the unemployment rate was 13.92% and 50.01% between the period 2006-2010 and the years 2010-2011 respectively.

Figure 3. Growth Rate of the Gross Regional Product & Unemployment in the islands



Source: Data processing by ELSTAT (2013)

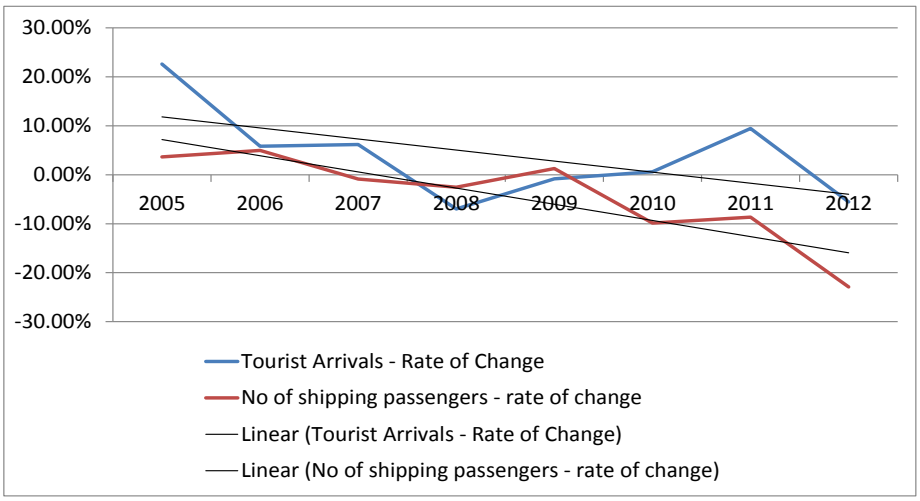
An additional factor determining the demand for passenger transport is the demographic growth (Sambracos 2001); the related growth increases the potential demand for passenger transport, given the need for transportation to the mainland or to other central islands where e.g. public services are founded. For this reason, we examine the growth rate of construction activity in the areas studied as an indicator for economic growth, but also as a determining factor of demand for passenger transport (house construction [new, holiday or non-holiday) and development of trade and services in the insular country]. Since 2006 a steady decline in construction activity is observed in the insular regions, which on average for period 2006 - 2009 stands at -10.03% for all building licenses and at 12.20% for building licenses regarding new constructions, while for period 2010-2012 stands at -23.66% and -25.82% for all building licenses and for building licenses regarding new constructions respectively.
The above description shows the limited potential of the regions examined, as well as the limited prospects for growth in the near future, which consequently affect the consumer behaviour, income, trade, tourism and hence the demand for passenger shipping transport.

4.2. The demand for passenger transport services and tourism growth rates

Regarding the development of tourism, any change in the tourist market (Duval 2007) has a direct impact on demand for passenger transport. Given the global financial crisis and particularly the national financial downturn, a significant turnover decrease from the tourism industry is observed. Specifically, in 2009 the turnover from the tourism industry decreased to 4.57% and amounted to 10.02 billion Euros. A significant reduction (-5.54%) occurred in all tourist arrivals in Greece, showing a downward trend which, according to data by the SETE (Association of Greek Tourism Enterprises, 2013), is expected to continue for at least the next few years. The extent of the decrease in demand for tourist services in the shipping market cannot be

accurately determined, given the lack of data on the percentage of tourists using the passenger shipping services and the lack of data on the percentage of tourist expenditure attributed to the use of passenger shipping services. However, certain conclusions can be drawn by comparing the rate of changes that occur between the arrivals of tourists and the corresponding changes in the demand for passenger transport. According to the available data (ELSTAT), as shown in the Figure below, the two figures (rate of change in tourist arrivals and in transported passengers) show similar behaviour, while the trend of both is negative.

Figure 4. Comparison of changes in tourist arrivals and passengers carried in shipping



Source: Data processing by ELSTAT & SETE (2013)

4.3 The demand for passenger transport services & growth rates at national level

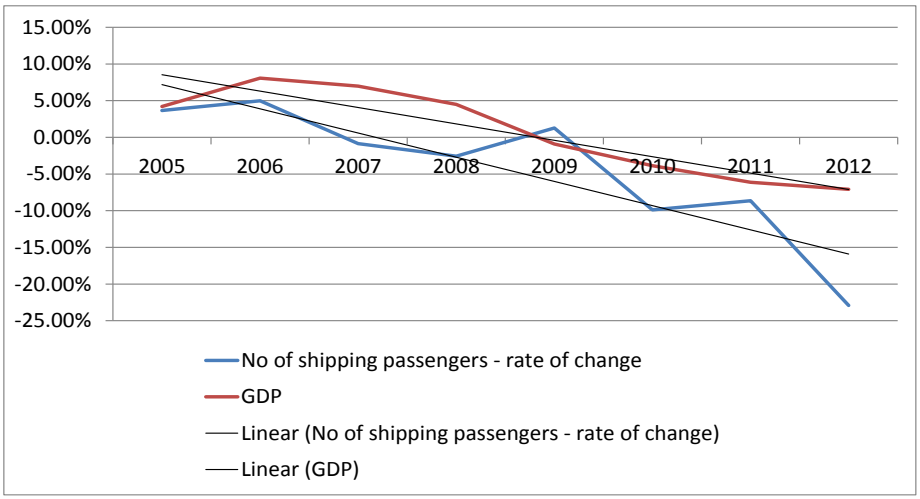
Both international and national financial developments directly affect the demand for passenger transport (Rigas 2011), since they affect the turnover and the purchasing power of the potential demand makers (Crouch 1994). Thus, they affect consumer demand, financial growth rates and hence the need to transport products to the consumption centres, as well as the demand for tourist transport services.

The analysis refers to the current position of the Greek economy, as well as to its position over the last decades, in order to show the influence of the Greek economy in passenger shipping.

As far as GDP is concerned, Greece has had some very productive years, especially over the period 1996 to 2007 with high levels of annual growth; such rates can be observed in the case of passenger demand growth (Figure 5). In the following years (i.e. after 2007), Greece shows a significant fall in GDP; this is also observed for passenger shipping demand. The percentage change of GDP in 2011 had fallen to -6.13% from -3.86% in 2010 while an extreme -7.06% had been observed in 2009.

The predictions for Greece's Real GDP for the forthcoming year are moderately optimistic given that they predict a slower % change in GDP reduction but, still, a reduction, which will continue to be indirectly affecting passenger shipping demand.

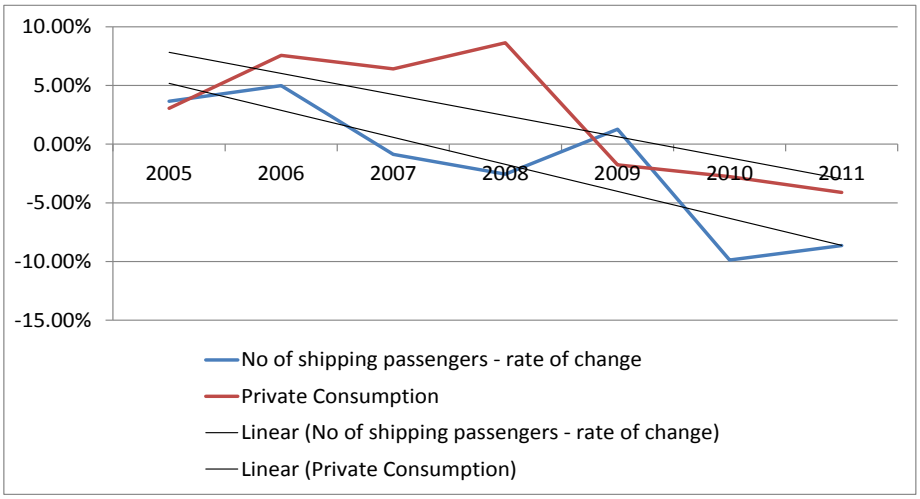
Figure 5. Real GDP percentage change from previous year & Passenger Shipping Demand Change



Source: Processing of ELSTAT & SETE (2013) data

Figure 6 shows a distinct decreasing trend of private consumption expenditure, which holds from 2005 until today. The OECD predictions are not that optimistic for Greece, since they predict a steady decrease for the forthcoming years expected to affect passenger shipping demand, considering the main characteristic of the latter (derived demand affected by private consumption trends).

Figure 6: Private Consumption Demand percentage change from previous year & Passenger Shipping Demand Change



Source: Processing ELSTAT & SETE (2013) data

Another important and useful index that is related with passenger shipping demand is the Domestic Demand. For the period 1985 to 2006, Greece shows an increasing percentage change in its total domestic demand from year to year (1.7% the average from 1985 until 1995, 1.8% the average percentage change in the next period 1996-2005 and 5.8% in 2006). On the contrary, from 2006 Greece's total domestic demand

growth is decreasing and from the late 2008 until 2010 the real total domestic demand is decreasing (5% in 2007, 1% in 2008, -2.5% in 2009, -8% in 2010 and -5.3% for 2011).

Considering the aforementioned, factors, such as the decrease of private consumption and GDP, these have negatively influenced passenger shipping, resulting in the reduction not only of the relevant demand, but also of the sector financial results, which are presented in the next section in detail.

5. Financial Analysis of the Passenger Shipping Market

The significant fall of both demand for passenger shipping and regional growth rates is reflected on the sector's financial results (Rigas 2011). Financial analysis is based on the analysis of a representative sample of 14 shipping passenger companies for which financial data were published for the period 2009-2011. The largest percentage (42.85%) of the sample companies have a turnover of more than 10 million €, showing the concentration of the market. The 16% of the sample presents a turnover of between 3 million € and 10 million €, while the remaining percentage has a turnover of less than 3 million €. Additionally, the 78.5% of the companies in the sample showed a reduction of their annual turnover, indicating the decline of the industry over the last three years.

Apart from this turnover reduction, the overall ratios of the industry are lower than the corresponding ones for the economy. Furthermore, the overall ratios of the passenger shipping companies in 2011 differed from the respective ones of the five largest companies in the industry (Anek, Minoan Lines, Hellenic Seaways, Blue Star Ferries, Maritime Company of Lesvos). In both cases – of the 5 biggest companies and of the industry as a whole - most ratios worsened through 2010 -2011.

The Total Debt ratio is estimated in the case of the five biggest companies to be equal to 71%, indicating their high dependence on the total borrowed funds (compared with the 59,43% of all passenger shipping companies examined). This ratio is attributed to the high investments made by these companies mainly based on debt, aiming at their annual turnover increase, as a result of enhancing the quality of services supplied (fleet renewal, modern ships). The Return on Equity (ROE) of these companies is much higher (63.3%) than the average of the passenger shipping companies as a whole (30.50). In addition, the EBITDA margin for the 5 biggest companies is also very low (-16.0%), while the corresponding percentage for the passenger shipping companies is -4.58. The net profit margin is negative, having a direct impact on ROE, which is also negative, given the accumulating losses of the last years examined (2009-2011).

Table 1: Basic Financial Ratios of passenger shipping industry (Published, 2012)

Basic Financial Ratios	Passenger Shipping		5 Biggest shipping companies *	
	2011	Trend**	2011	Trend
Total debt ratio	59.43%	-	71%	-
Gross profit margin	8.50%	-	3.80%	+
EBITDA margin	-4.58%	+	-16.00%	-
Net profit margin (before tax)	-37.82%	+	-29.25%	-
Return on assets (ROA) before tax	-9.62%	-	-16.75%	-
Return on equity (ROE) before tax	-30.50%	-	-63.33%	-

** Anek, Minoan Lines, Hellenic Seaways, Blue Star Ferries, Maritime Company Of Lesvos carry the 92,8% in terms of turnover on all the 14 companies examined*

*** +: Better than last year / -: sharper than the previous year*

Source: Balance Sheets, Hellastat (www.bbi.gr, 3.06.2013)

According to the aforementioned data, the financial results of the industry regarding the profit margin levels and the relevant profitability ratios, show constant reduction, which endangers the companies sustainability, especially if the predictions about the development of the demand for passenger shipping services – as significant reduction is expected - are confirmed. Moreover, industrial financial ratios raise credit risk that banks face while financing the sector, which reduces the relevant available capital taking into account BASEL III requirements. Considering the role of shipping transport in an area with strong insularity, taking measures is required in order to offer uninterrupted transport service for the benefit of the social and economic development.

6. Conclusions

In the past decade, the demand for passenger shipping services in Greece has shown significant variability, its main characteristic being the decreasing trend observed during the 2008-2011 period, with further decline in 2012, as suggested by provisional statistical data. Another important characteristic of Greek coastal shipping is that all coastal shipping lines are intensely seasonal, with periods of increased demand and periods of excessive offer. The factors affecting coastal shipping movement are related to the macroeconomic developments in Europe, the reduction of the buying capacity of European and Greek consumers, the inability to contain the costs of coastal shipping companies, the non-rational organization of the market and the disjoined way of dealing with institutional issues affecting economic results, resulting in the inability to create a viable and competitive market. Thus, there is a noted inability to achieve viable economic results by the sector, as well as an inability to serve capital costs of important investments.

The shrinking demand for coastal shipping services, the financial condition of the sector, the economic condition of Greece in general, as well as the lack of flexibility on behalf of credit institutions, due to liquidity problems, reflect the need for immediate measures aimed at maintaining the level of service to the islands of Greece to the maximum degree possible.Within this framework, the main factor that can and must be activated immediately is the financial institutions' adaptation to the new conditions, so that the market is rationalised and conditions of reversal of the environment are created. This could be achieved for example in case Greek banks offer credit to Greek Passenger shipping companies through mortgaging the revenue coming from routes financed through contracts with the State (marginal routes).

Furthermore, the lack of adaptability of the national legislative framework to new competition conditions and to the European institutional framework have resulted into a regulated complex system, which lacks the intention to optimise and control the negative factors that comprise a hindrance of the entire national economy. Thus, certain measures should be taken in order for the market to become fully deregulated and competitive.

Other measures that could be adopted in order for the passenger shipping sector to survive are: The creation of clusters - partnerships between shipping companies to allow for economies of scale to be developed; the rationalisation of the routes based on both demand and on socio-economic needs, in order to offer services better tailored to passengers needs; the restructuring of the routes based on the hub-and-spoke principle, as well as the adoption of certain measures by the companies themselves, such as the reduction of speed, that may result in the cost reduction.

Otherwise, demand trends are likely to undermine the good relation between service and demand, at the expense of territorial cohesion and hence of the social cohesion

between the islands and continental Greece, resulting in the state having to take over the entire provision of coastal shipping transportation services.

References

Basdanis, E., Papadimitriou, S. and Thofanis, S., 1994. Trends in coastal shipping in Greece affecting the ship-port interface and their influence on port development, Proceedings of the 2nd European Research Roundtable Conference on Short Sea Shipping", Athens.

Crouch, I. G., 1994. The Study of International Tourism Demand: A Review of Findings, Journal of Travel Research, 33 1): 12-23.

Goulielmos A., Sambracos E. 2002. Passenger shipping & Short Sea Shipping, 1st Edition, Stamoulis, Athens.

Duval, D. T., 2007. Tourism and Transport: modes, networks and flows, Clevedon, Channel View Publications.books.google.co.uk.

Koukaki I. Th. 2006. Responsibilities that arise from the deregulation of passenger shipping lines, viewed 15 February 2011, http://www.hellenicnavy.gr/eue/arthra/ IOYNIOS 06/4.pdf.

Lekakou M., Papandreou N., and Stergiopoulos G. 2004. Setting the rules for the development of a national Maritime Transport System, Proceedings of the International Logistics Congress: 1061-1073, Izmir

Niininen, O., Gatsou, M., 2007. Crisis Management - A Case Study from the Greek Passenger Shipping Industry, Journal of Travel and Tourism Marketing, 23: 191-202.

Polydoropoulou A., Lytinas N., 2007. Chapter 9 Demand Models for Greek Passenger Shipping, Research in Transportation Economics, 21: 297-322.

Rigas K., Sambracos E., Gatzoli A., 2011. Air and Sea Transport: Competition Strategies under Normal and Economic Crisis Environments, SPOUDAI Journal, 613-4): 65-84.

Rigas K., 2012. Connecting Island Regions – A Qualitative Approach to the European Experience, SPOUDAI Journal, 62 3-4): 30-53

Rodrigue, J-P., 2006. Challenging the Derived Transport Demand Thesis: Issues in Freight Distribution, Environment & Planning A, 38 8): 1449-1462.

Sambracos E., Clomoudis K., 1997. Transport Infrastructure in Greece and its role to the regional development and European Unification, Review of Decentralization Local Governemnt and Regional Development, 7: 63-73.

Sambracos E., 2001. The contribution of coastal shipping in the regional development of the Greek islands. The case of the Southern Aegean region. Essays in Honor of Late Prof. Kodosakis, University of Piraeus, 895-910.

Sambracos E., 2001. Introduction in Transport Economics, 2nd Edition in Greek. Stamoulis, Athens, pp. 67.

Sambracos E., Rigas K., 2007. Passenger Reactions to Market Deregulation: First Results from the Experience of the Greek Islands Market, Journal of Air Transport Management, 13: 61-67.

Walsh, R.P.D and Lawler, D.M., 1981. Rainfall Seasonality: Description, Spatial Patterns and Change through Time. Weather, 36: 201-208.

Zwier, R., Hiemstra, F., Nijkamp P., van Montfort, K., 1994. Connectivity and Isolation in Transport Networks: A Policy Scenario Experiment for the Greek island Economy, Research Memorandum 1994-55, viewed 23 February 2011, http://dare.ubvu.vu.nl/bitstream/1871/ 1323/1/19940055.pdf.