

The impact of the economic crisis on exports of greek sea bass and sea bream

Abstract

The aim of this study is to identify the main impacts of the recent economic crisis, regarding one of the most dynamic export aquaculture products of Greece, such as the sea bass and sea bream. Greek export market shares in the main importing markets of the European Union are estimated by implementing the Export Share index (XS). Subsequently, the same index is estimating regarding the main competitors for Greek exports. Results clearly demonstrate a downward trend of the XS for Greek exports, indicating the negative impacts of the economic crisis on Greek exports of sea bass and sea bream.

Keywords: Sea bream, Sea bass, Export competitiveness, Greece, European union

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Introduction

Over the last years aquaculture is considered among the fastest growing sectors in the global economy. The contribution of aquaculture to global fisheries production has increased from 3.22% in 1950 to more than 50% in 2015 FAO.¹

Sea bream (*Sparusaurata*) and sea bass (*Dicentrarchuslabrax*), are the main fish species, contributing to more than 95% of the total farmed fish production in Greece, since the last two decades. Greece plays a key role in the production of aquaculture products in Europe and particularly in the production of sea bream, since its production ranges over the half (54%) among the other European producing countries. In addition, Greek exports dominate in the EU market, by supplying more than 70% of the total EU imports in sea bass and sea bream.² However, aquaculture sector as one of the most important sectors of the food industry, is facing the continuously increasing competitive market environment and therefore it seems to be a very interesting issue for further research.

In recent years the term of competitiveness has been widely used from different perspectives as a term in economic research and economic policy, although its definition has not been commonly agreed yet. Competition involves a number of traders in a particular market, as well as the market share, the sustainability of that share and profitability. Competition is dynamic and constantly evolving, as new products, new methods of marketing, new production processes and new markets appear.³ In this paper a comparative approach among the main exporters in the EU market is made in order to investigate the export competitive performance and to provide more insights regarding the impacts of economic crisis in the Greek exports of sea bass and sea bream during the last 5 years. The paper is organized as follows: next section describes the data and the methodology approach, in section 3 we analyze the results and in section 4 we present our conclusions and discussion.

Materials and methods

According to the literature different indices have been used by many researchers to investigate the level of competitiveness of national economies, industries, companies and products. The index of the Revealed Comparative Advantage (RCA) has been used to describe whether or not a country has a comparative advantage in a particular industry sector or product through trade, without analyzing

the main sources of this comparative advantage.⁴⁻⁷ Defined as the ratio of the share of exports of a product or an industry sector of a country in the global market, to the share of total exports of all products or industry sectors of the country in the same market, RCA index imprinted as follows

$$RCA_{ij} = (x_{ij} / X_j) / (x_{iw} / X_w) \text{ where,}$$

RCA_{ij}: revealed comparative advantage index for product or sector of country

x_{ij}: the exports of the product or sector of country

X_j: total exports of country

X_{iw}: the exports of the product or sector i worldwide

X_w: total exports worldwide

Whether or not a country has comparative advantage within a product category depends on the value of the index. Therefore, when value of the Revealed Competitive Advantage index is greater than 1, then the product has a comparative advantage, whereas for lower values it has a comparative disadvantage.

Similarly, the index of Export Share (XS), examines a country export share for a product, sector or branch in relation to world exports of a specific product, sector or industry, expressed as follows:

$$XS_i = X_i / \sum_j^n X_j$$

Where X indicates the export values, I indicates the countries and j indicates the product.

The values of the above index range from 0 to 1. When the index is 0, the country (i) has no exports of the product under study, while when it gets the maximum value of 1, the country (i) is the unique exporter of the product. The above indicator is used to describe the advantage of a product and the degree of its specialization in a specific market.

Results and discussion

According to previous relevant studies, Greece plays an important role in the EU trade of aquaculture products.⁷⁻⁹ In particular, exports of

Greek aquaculture products seem to dominate in the EU-27.^{1,10-12} The comparative results of this research which is the analysis of the XS index in sea bass and sea bream, for Greece and its main competitors during the decade from 2006 to 2015, are analyzing below.¹³

Results for sea bass

In 2011 Greek exports of sea bass in France reaches 20 million euros, in Italy 86 million euros and in Spain 18 million euros.

The Greek export share for sea bass ranked first presenting either an increasing or a stable trend until 2012, into the five main EU markets and in particular in France, Italy, Spain, Germany and Great Britain. However, from 2012 to 2015 there is remarkable decline of Greek index XS in almost all markets. (Figures1-5).

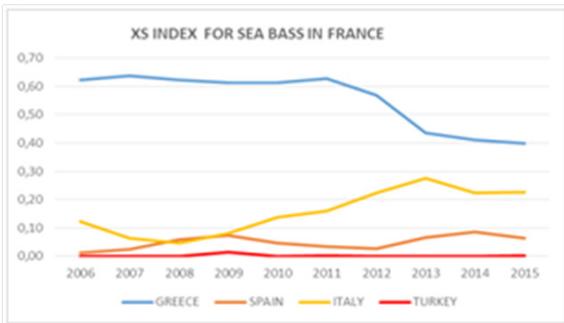


Figure 1 XS index for sea bass in France.

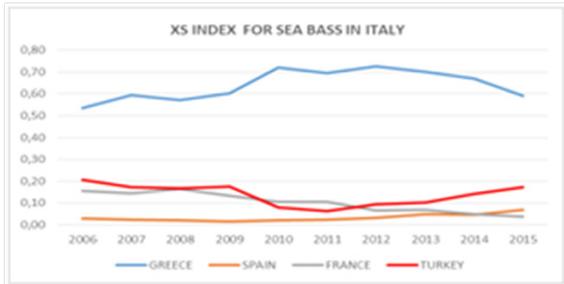


Figure 2 XS index for sea bass in Italy.

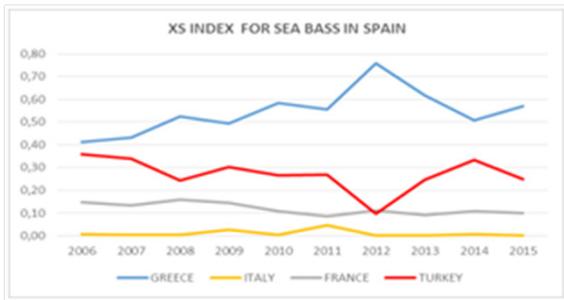


Figure 3 XS index for sea bass in Spain.

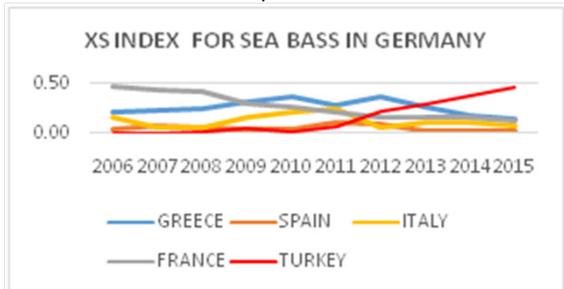


Figure 4 XS index for sea bass in Germany.

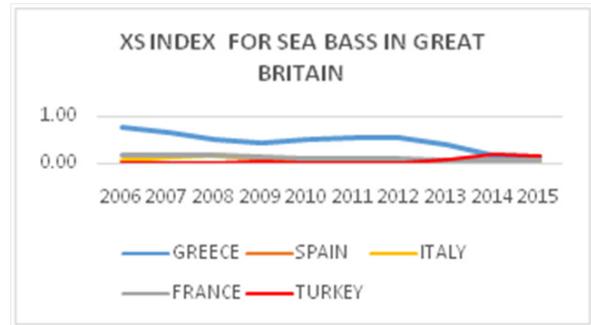


Figure 5 XS index for sea bass in Great Britain.

On the contrary, the XS index of Turkey has risen since 2012 in most markets exceeding the share indexes of the remaining competitors and specifically in France, Italy and Spain. Since 2011, the significant increase of the Turkish ratio in all the relevant markets (except France) demonstrate that Turkey to became the number one leading competitor of Greece, especially in the German market with an index of 0.47. As a result, Greece is losing its domination of sea bass exports in Germany and in Great Britain but not in the other countries.

Results for sea bream

The Greek sea bream exports reached 23 million euros in France, 86 million euros in Italy and 25 million euros in Spain, in 2011. These values describe the high benefit exports of Greece despite the economic crisis; however there is a significant decrease from 2011 to 2015, in these markets (Figures 6-10). The Greek XS index for sea bream clearly holds the first position, into the five major importing markets of EU market. From 2006 to 2011, Greek sea bream portrays either an ascending or a stable XS index. High values from 0.60 to 0.75 are observed in 2011 in all markets, although there is a significant decline from 2012 until 2015.

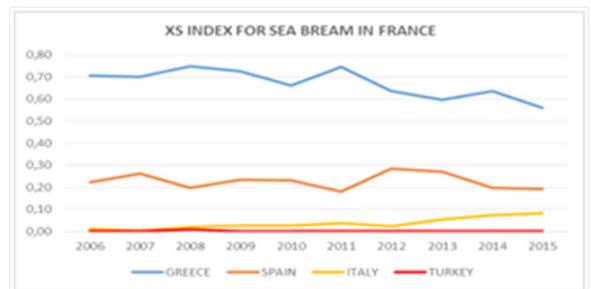


Figure 6 XS index for sea bream in France.

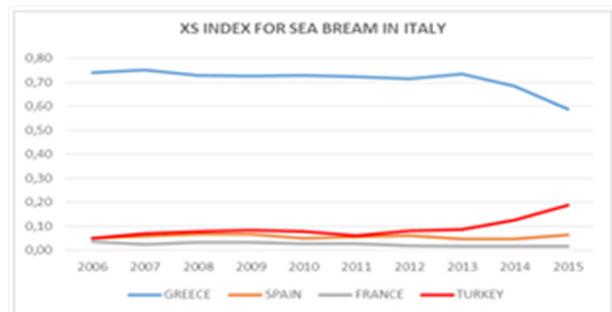


Figure 7 XS index for sea bream in Italy.

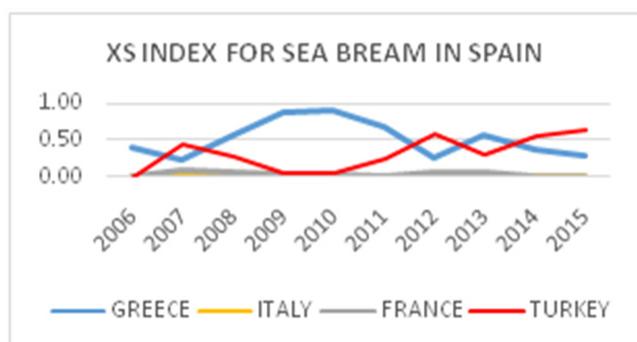


Figure 8 XS index for sea bream in Spain.

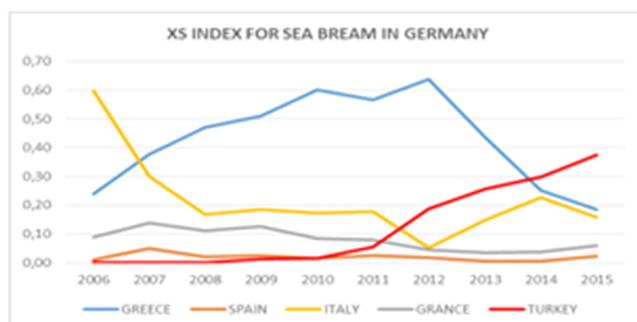


Figure 9 XS index for sea bream in Germany.

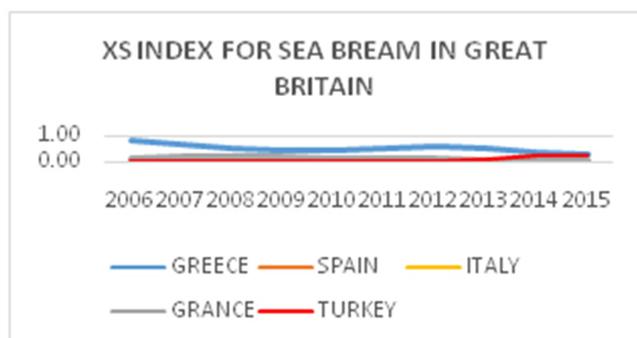


Figure 10 XS index for sea bream in Great Britain.

On the contrary, the Turkish XS index significantly increases in most markets (except France) since 2012 and exceeds the indexes of competitors, which are France, Italy and Spain. Also, the Turkish ratio increases significantly in all markets (except France) since 2011. So, Turkish exports seemed to be the number one leading competitor of Greece, especially in the Spanish market with an index values of 0.64 and in German market with an index values of 0.38.

Conclusion

As a conclusion, we could state that the economic crisis has affected the exports of Greek sea bass and sea bream into the five main importing markets of the EU, presenting a significant decline since 2012. However, despite the decline into the importing markets of France, Italy and Spain, Greece still keeps the first position in exports towards the Germany's and Great Britain's market. In these

two countries the Turkish index is dominant in exports of sea bass. Regarding sea bream, Greece still keeps the first position in exports into the importing markets of France, Italy and Great Britain, while the Turkish XS index presents a remarkable increase achieving the first position in the market of Germany and Spain. Therefore, we could conclude that Greek exports in sea bass and sea bream have seriously affected by the recent economic crisis in the Greek economy.

Acknowledgments

None.

Conflicts of interest

None.

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