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TEN-T PROJECTS IN THEIR GEO-ECONOMIC CONTEXT: A CASE STUDY OF THE TRADE SHAPE OF THE SPANISH MEDITERRANEAN RAILWAY CORRIDOR

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1. INTRODUCTION

The Mediterranean Railway Corridor (MRC) is one of the priority projects of the Trans-European Networks of Transport (TEN-T) in their consecutive versions since 1996 (European Commission, 1996; European Commission, 2005; European Commission, 2013). At the same time this project has been included in the Spanish national planning documents (Ministerio de Fomento, 1994; Ministerio de Fomento, 2000; Ministerio de Fomento, 2005; Ministerio de Fomento, 2012) both as a high-speed line for passengers and an international gauge line connecting with the European market for freight. In Spain, it would be the first great railway axis circumnavigating Madrid, which is the centre of a very radial shape network. In this sense, the MRC is at the same time a transport issue and a political topic which implies all the institutional levels (European, national, regional and even local), which all try to take advantage of this macro-project to reach their own goals such as urban renewal at a local scale (Bellet et al., 2010), a higher degree of autonomy at a regional scale (Bricall, 2012) or a change in territorial governance by getting closer to the European institutions (Romero González, 2003; Farinós Dasí and Romero González, 2008).

As a trans-European project, the MRC is part of the “core network” as decided at the continental level by the European Commission in 2013 (European Commission, 2013). It is part of a trans-national or continental scale decision-making process involving different types of stakeholders –not only institutional but also economic and civil society actors– and mobilising a variety of discourses mainly based on economic arguments and especially on freight transport topics (Libourel, 2013).

The MRC outline (in bold green on figure 1) as it was presented in the latest version of the TEN-T documents in 2013 (European Commission, 2013), now called Connecting Europe Facility (CEF) (European Commission, 2012), is one of the nine core network multimodal corridors. It is quite different from the proposal of Ferrmed Great Axis (Ferrmed, 2009; CENIT, 2012) for an interoperable efficient freight network (in purple on figure 1). This economic actors’ lobby proposes a great axis form Casablanca to Saint-Petersburg considering it as the most important freight axis for Europe. If we consider the whole TEN-T network, there are connecting corridors which complete the same north-south shape as Ferrmed’s proposal. Nonetheless, the CEF settles one particular authority per corridor composed of representatives of each

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involved country. In that sense the implementation of a north-south corridor may need concordant actions of the different authorities.

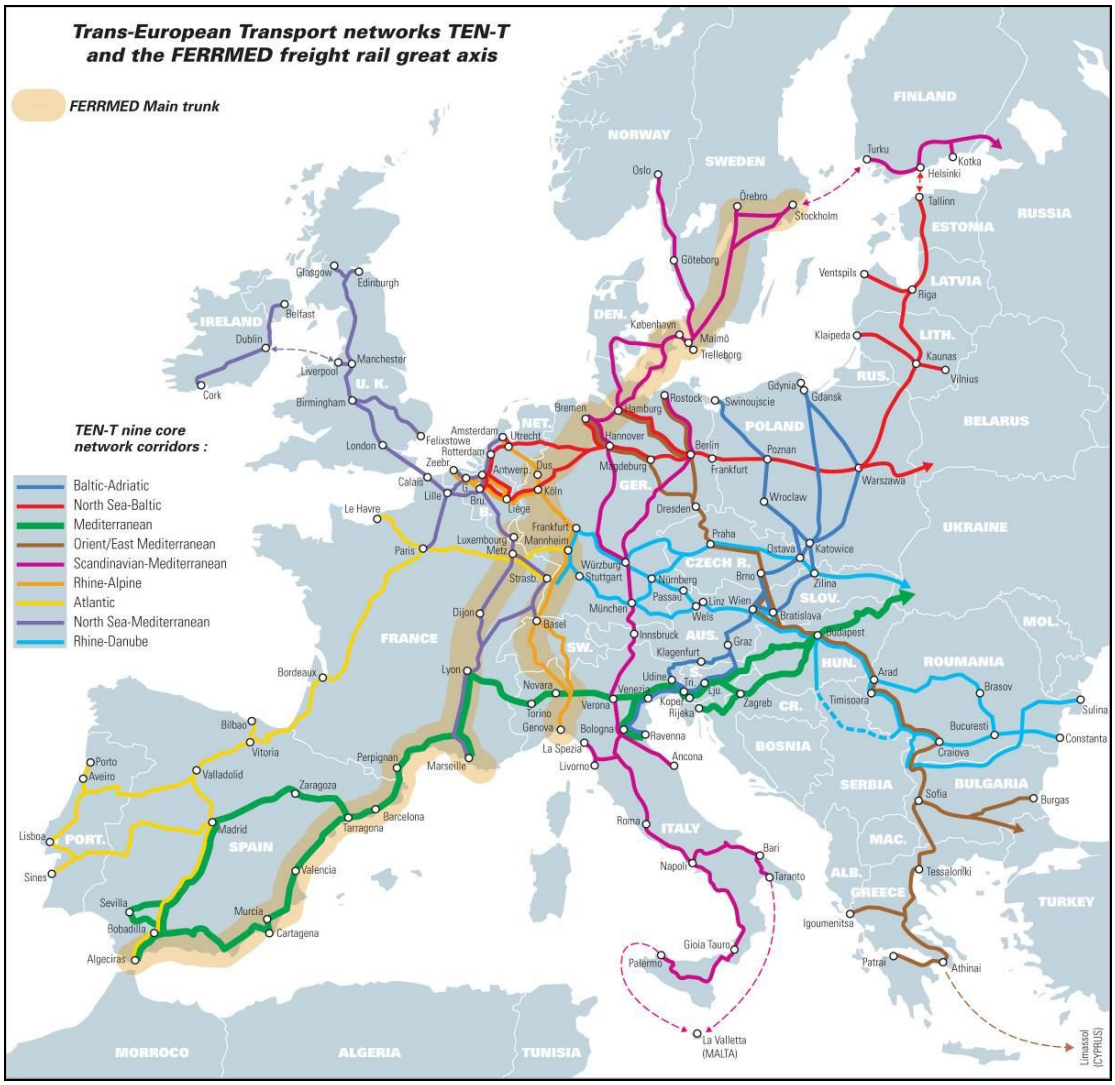


Figure 1: Different shapes of the Mediterranean Railway Corridor in the European Core Network

The discordance between both proposals based on economic arguments as well as territorial organisation stakes but leading to extremely different outlines is the starting point of this paper. As part of a currently in progress research work crossing an ongoing thesis on the Spanish Mediterranean Corridor and a project of GIS atlas on rail transportation in Europe, this paper aims to interrogate the discourses on the Mediterranean Railway Corridor through the prism of the commercial situation of the Spanish Mediterranean regions. It will also examine the relevance of the freight data assessment as a decision making instrument at a European level.

In this context, it seems relevant to use precise freight data in a medium or long term horizon in order to put the discourses on the Mediterranean corridor into perspective and to provide some key elements helping the decision making process thanks to the implementation of a Geographic Information

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System. In order to describe the freight profile of the Spanish Mediterranean regions at the level of provinces, we will use Datacomex, a national institutional database provided and managed by the Spanish Ministry of Economy (Ministerio de Economia, n.d.). It provides valuable information at a low level of geographical aggregation (provincial level, corresponding to the NUTS 3 European statistical classification) and with a high degree of detail regarding type of merchandise and transport mode.

2. THE SPANISH MEDITERRANEAN PROVINCES' TRADE PROFILE: A COMPARISON WITH QUALITATIVE ASPECTS

The Datacomex data base allows analysing the commercial exchanges of the provinces with countries or macro-regional groups of countries which enables mapping the main flows of merchandise between the provinces of the Spanish Mediterranean regions and the rest of Europe.

Datacomex database is very complete and provides a vast amount of information, which can be extracted by mode of transport and by type of merchandise and expressed in different units. For this paper, it was decided to focus on a few indicators in order to highlight the commercial profile of the Mediterranean provinces and their relationship with the European countries accessible by terrestrial modes of transport. The aim is to represent the main economic partners of these regions – which could potentially be well deserved by rail – in order to put the discourses of the different stakeholders into perspective.

The first step of this study was to identify the main actors of the MRC project and to analyse their discourses and their arguments to justify or criticise the project. This objective is achieved thanks to a set of 43 interviews conducted between 2011 and 2014 and to a media information analysis. The main results were presented in detail in previous communications (Libourel, 2011; Libourel, 2013). The necessity for the Mediterranean regions to improve their connection by rail to the rest of Europe in order to make their industry and economic sectors more competitive is the most important argument. This paper will concentrate on confronting this aspect of the discourse to the trade shape of the Mediterranean regions.

A panorama of the trade shape of the different Spanish Mediterranean provinces can be set by studying the data of Datacomex:

- from 1996 to 2012, which are the years of the beginning of the TEN-T projects and of their latest revision by the European Commission;
- comparing the terrestrial transport modes (rail and road), in order to evaluate the potential of a modal report on rail if the MRC is implemented;
- comparing the different types of transported goods in order to estimate the chances of a modal transfer up to their particular characteristics and to the economic shape of the different regions.

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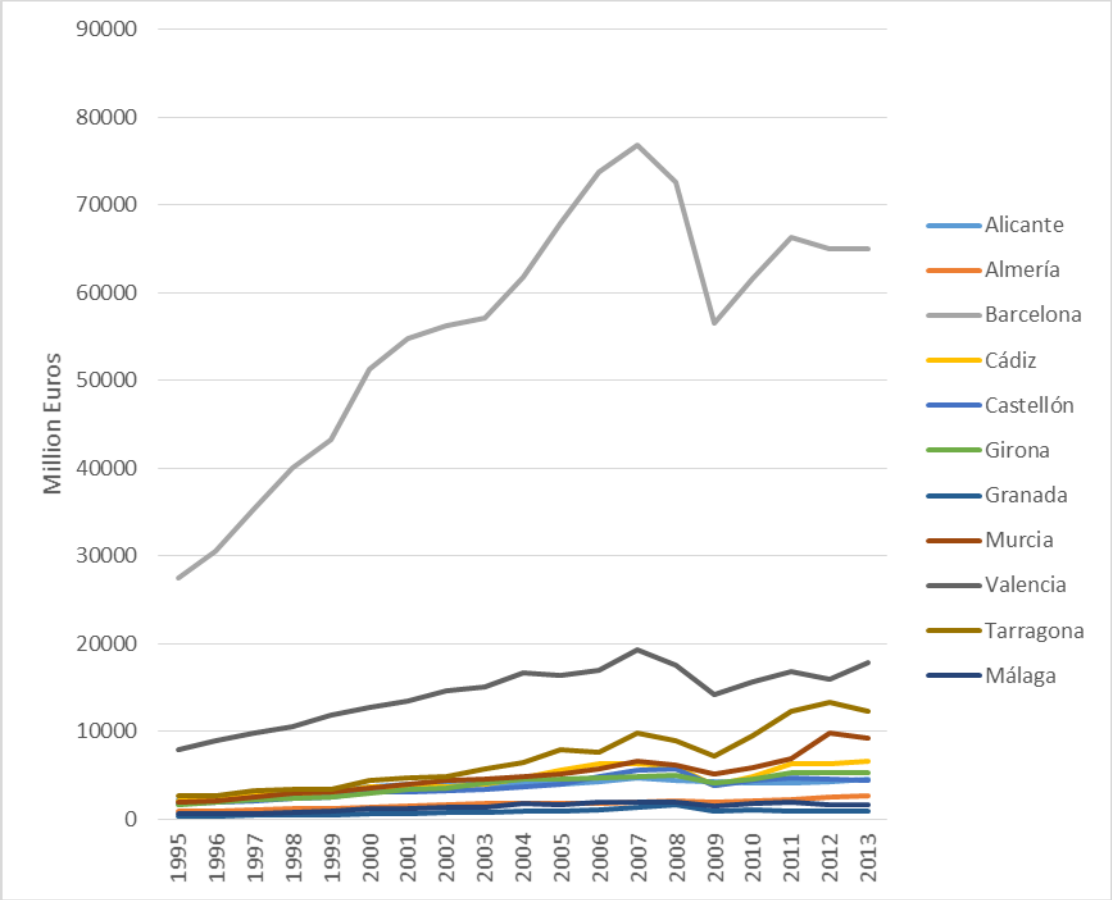


Figure 2: Mediterranean provinces' trade with Europe (million Euros)

The trade profile of the Spanish Mediterranean provinces to Europe (figure 2) shows a strong imbalance between Barcelona and the other provinces. The first one has very important commercial links with Europe. Valencia has the second rank very far away and the other provinces show a lower profile. The growth trend of the period has an exception around 2008-2009 at the worst period of the economic crisis.

By using Datacomex, a statistical panorama can be proposed including the analysis of the modal share and of the load share. A Geographic Information System integrating localised data can be implemented. The maps will use aggregated data at the level of the regional institutional frames and show therefore the main foreign trade relationships with European countries. It would also be interesting to draw the maps with disaggregated data, but as this work would not be easily legible it should be implemented as an interactive atlas of rail transport in Europe.

Nonetheless, GIS are more and more used by public and private actors as a powerful tool for decision making, particularly in the field of planning and territorial topics (Jankowski, 1995). The GIS should allow comparing the trade shape with the different proposals for the MRC freight axis and be considered as a good decision making instrument.

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3. THE MEDITERRANEAN WAY TO EUROPE: MAPPING UNBALANCED SITUATIONS

In order to map the trade flows of the Spanish Mediterranean regions with European countries, it was chosen to group the provinces by Autonomous Communities in order to make it more legible. The maps are interesting to compare the geographical profile of trade to the different proposals of Mediterranean corridor. They show the main partners of the Spanish Mediterranean regions and also the intensity of the trade relations thanks to the choice of homogeneous thresholds in the legend both for export and import and for the different studied regions.

3.1 Catalonia and Valencian Community: improving a well-established link to Europe

Barcelona and Valencia are the main metropolises in Spain after Madrid and they both are touristic and industrial capitals as well as important harbours in the Mediterranean. Furthermore, they have good connections to Madrid and to France as far as time-space and infrastructure are concerned.

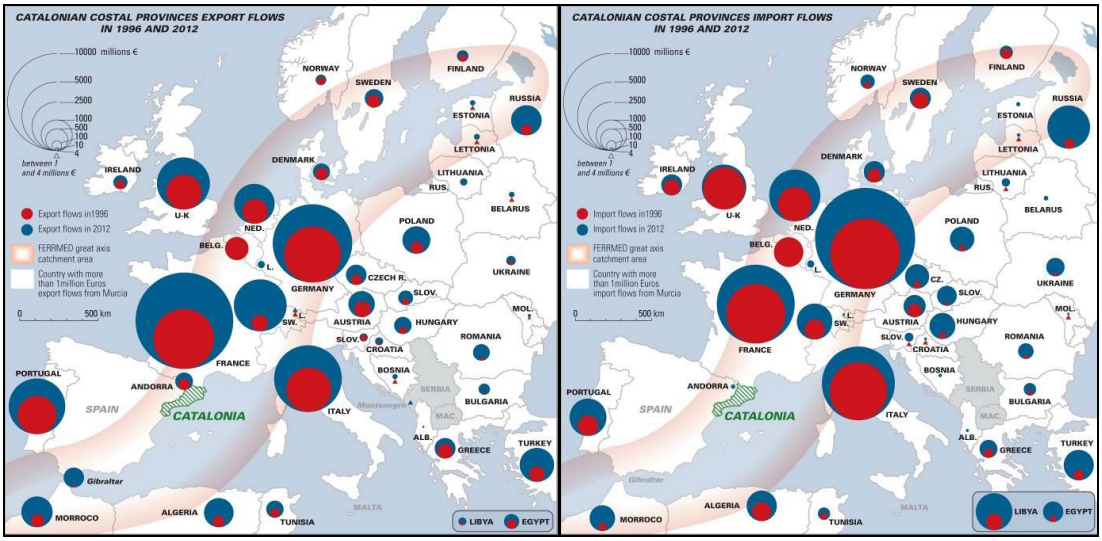


Figure 3: Catalonian coastal provinces' export (a) and import (b) flows in 1996 and 2012

Catalonia is the most important region in Spain after the region of Madrid as far as GDP (Gross Domestic Product) and trade are concerned. Barcelona is important as well as one of the main Spanish ports. Furthermore, the proximity of the French border and a long history of cultural and political alikeness between Spanish and French Catalonia reinforce the links of Catalonia to its European neighbourhood. It is significant that the main pro-MRC lobby, Ferrmed, was created by Catalonian entrepreneurs and that the new EU Core Net Cities platform was inaugurated in Barcelona.

As far as trade is concerned, the coastal provinces – which are first concerned by the implementation of the Mediterranean corridor – export nearly 10 billion

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Euros to France and more than 6 billion Euros to Germany in 2012. The main import flows also come from these two partners. The third most important partner is Italy, another country concerned by the TEN-T Mediterranean corridor outline. Both import and export flows increased during the 1996-2012 period. Finally, it is interesting to note the huge increase of the exportation flows between 1996 and 2012. They progressively became more important than importation flows, except from Germany. Catalonia seems to be well integrated to the European core market and is therefore an actor which cannot be circumvented in the debate about the MRC project.

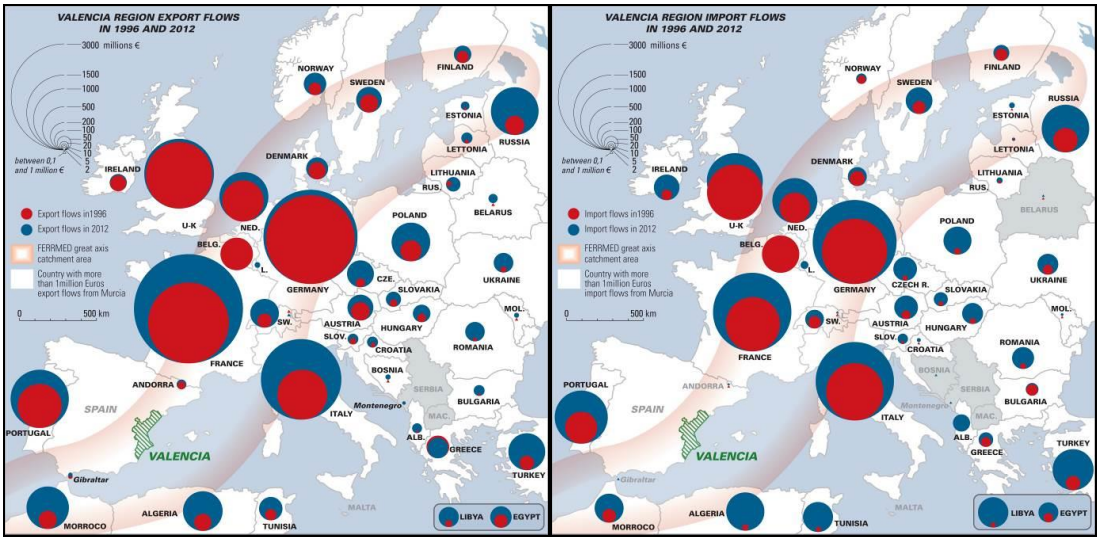


Figure 4: Valencian provinces' export (a) and import (b) flows in 1996 and 2012

Valencian Community has a quite similar profile marked by a strong trade partnership with France, Germany and Italy. The United Kingdom is also a key partner. Even if the general trend is the increase of the trade flows with all Europe (except with Greece), this increase is lower than in Catalonia. Furthermore the levels of trade in million Euros are much lower than those of Catalonia. The exchanged volumes are also lower but in a less important way, which means that the value of the exchanged products is lower in Valencia than in Catalonia.

Nevertheless, Valencia is nowadays the main Spanish harbour in terms of containers which means that it certainly has a great potential of modal shift from road to rail. The boxes are very easy to transfer from road to rail and to carry in case of offloading. The province of Valencia is already well connected to Barcelona by rail, even if some improvements are necessary to make rail competitive, the port of Valencia is connected to the railway network and could easily upgrade its connection to the European standards. At the same time, an important actor as Ford automotive industry built its own railway connection to the network and participates actively to the claim of a Mediterranean corridor.

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3.2 Murcia and Andalusia: connecting peripheral regions to the core network

South, Murcia Region and Andalusia present quite different profiles in terms of trade to Europe. They are far less present in the exchange flows with the European economic core countries. Their railway and rod connections are mainly oriented to Madrid as centre of the national economy. Therefore, the construction of the MRC infrastructure would be more difficult and is for now delayed because of the economic crisis.

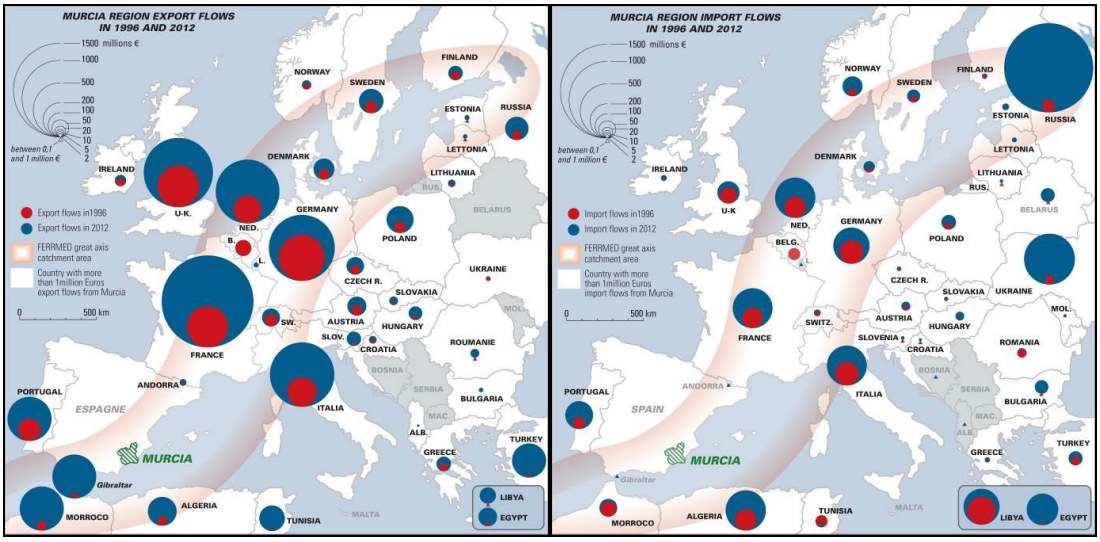


Figure 5: Murcia Region export (a) and import (b) flows in 1996 and 2012

Murcia Region is an Autonomous Community made of one single province. Therefore the thresholds of the legend were adapted to this particular situation. It is also important to notice that the harbour of Cartagena is not the regional capital and that Murcian industries are mainly looking to Alicante and the southern part of the Valencian Community.

As for the other Spanish Mediterranean regions, the main export partners are the western European countries and especially France, Germany, Italy and the United Kingdom. Holland has a particularly elevated rank among the trade partners of Murcia, especially because of fruits and vegetables. The freight flows to these countries are quite stable even though they increased. A more interesting fact is the great increase of the flows to Northern Africa (mainly Morocco, Algeria and Tunisia) and to Turkey.

Murcia Region seems to have a privileged partnership with the Mediterranean countries. It is both due to a geographical and historical closeness, and to the nature of exchanges: the main port of Murcia, Cartagena, is specialised in oil products. This means that Murcia's main harbour is less likely to provide load for railway transportation, especially to other European countries.

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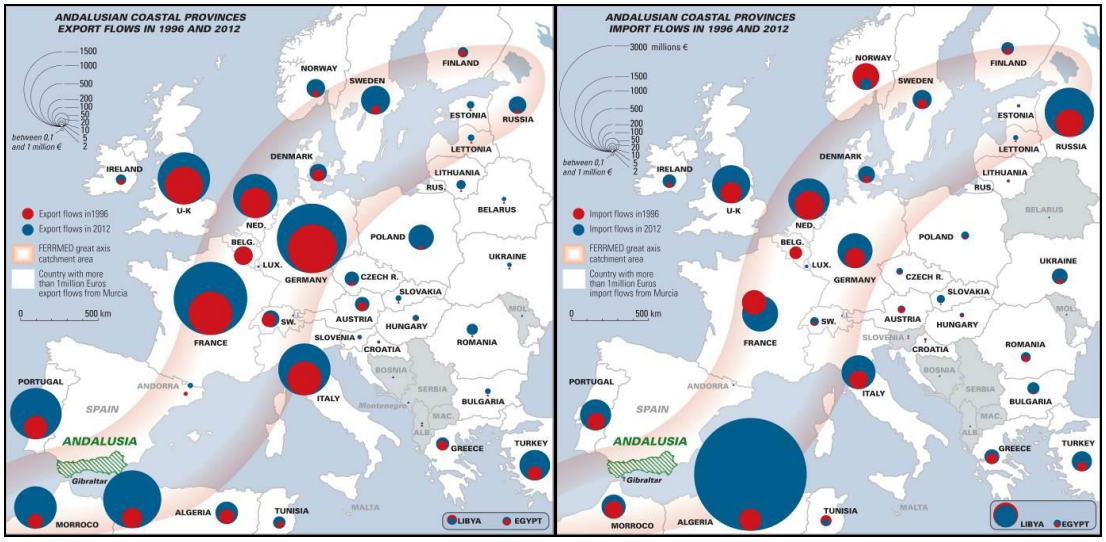


Figure 6: Andalusian provinces' export (a) and import (b) flows in 1996 and 2012

Andalusia is a very singular case study because it is a big region made of very different profile provinces. Some of them are Mediterranean (Almeria, Granada, Malaga and Cadiz) but the others are oriented towards the centre of Spain or even towards Portugal. This situation is reinforced by the lack of a coastal infrastructure because of the rugged terrain and the huge costs of construction and operation it implies. The port of Algesiras, one of the greatest in the Mediterranean, is well connected to Madrid and is no longer a member of Ferrmed.

The coastal Andalusian provinces have the lowest trade flows to Europe. Their main economic partners still are France and Germany for exportation but the levels are quite low around 1.5 billion Euros. The most noticeable fact is that Andalusia imports quite few from the rest of Europe but has particularly high importations from Algeria. This is mainly due to the commerce of oil and natural gas to be consumed in Spain.

Based on the analysis of a database on international trade, this study leads to two types of conclusions: the first family, related to the modal and load shares, confirms the arguments of the actors to a certain extent but could be controversial if we come into a detailed analysis. The second family, consisting on the findings from the GIS, shows that the new outline of the Mediterranean corridor drawn by the European Commission in 2013 (European Commission, 2013) doesn't fit with the trade shape of the Mediterranean regions.

4. MRC: FROM ECONOMIC FACTS TO TERRITORIAL POLICIES

The trade shape of the Spanish Mediterranean regions shows an important gap between Catalonia and Valencia on the one hand and Murcia and Andalusia in the other hand. Nevertheless the Mediterranean corridor as it is presented both by the European Commission (European Commission, 2013) and in the planning documents of the Spanish government (Ministerio de

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Fomento, 2012) is supposed to reach Algesiras via the coast. We can assume that this project fits to new political priorities to connect the European peripheral regions.

4.1 Comparing the trade data with the MRC outlines

The MRC outline as it was drawn in the latest TEN-T document (European Commission, 2013) doesn't fit to the trade shape of the Spanish Mediterranean region. Nevertheless the European Union core network as a whole draws a more complete outline (Figure 1). Furthermore, the European Commission is partly guided by territorial cohesion and balance considerations, which may lead to choose a high potential shape for the corridor rather than an already well-known trade axis, in order to empower the trade relationships and infrastructure integration with Eastern Europe.

In fact, Italy remains one of the greatest trade partners of the Spanish Mediterranean regions. If the Eastern countries, among which Slovenia and Croatia, still are secondary partners, they experience the highest increase of their commercial relationships with Spain. One of the goals of the TEN-T networks is to improve dramatically the accessibility of the new member states of the European Union to the European market.

The mapping of the trade shape of the Spanish Mediterranean regions shows that the Ferrmed proposal for the Mediterranean corridor perfectly fits to the reality of the commercial partnerships. This is partly due to the analysis by Ferrmed of the economic structure of Europe (Ferrmed, 2009) and to a larger extent to the structure of the lobby which members are mainly important trade companies, port authorities and industries. The Eastern European countries are more represented in EU Core Net Cities, a new lobby created in June 2013 in Barcelona and focused on the European core network facilities as a mean to develop new economic perspectives.

It is also demonstrated that the highest increase potential is located in the eastern part of the European Union and this is where the MRC as it is drawn by the TEN-T documents finds its relevance. It is nonetheless suggested that the implementation of the European Union core network should be done in a synchronised way in order to avoid a lack of interconnection between the different corridors. The same logic leads to implement the MRC project to Murcia and Andalusia as an instrument to connect peripheral regions to the centre of Europe.

4.2 The conditions for a rail/road competition according to the types of load

By now, road transport along the Mediterranean axis represents nearly 96% of the total freight transport in this corridor (Serrano Martinez, 2012; Monzón et al., 2010). The aim of the MRC is to transfer a significant part of the flows to the railroad thanks to a well-connected interoperable high-level of service line.

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In this dataset, the modal choice is defined by the mode used to cross the Spanish border. Towards the continental European countries, we can assume that the same transport mode is used by the load during the major part of its transfer. The most noticeable fact is that the road transit dominates the cross border transport flows in a huge proportion. Rail has a little part of the modal repartition in Valencian and Catalonian provinces but it is insignificant in the other regions. Furthermore the modal part of rail tends to decrease between 1996 and 2012. This is partly due to the insufficient condition of the current railway network along the Mediterranean axis and also to the difficulties of interoperability.

It is also interesting to compare the flows according to the different types of load in order to be able to compare them to the ones highlighted by the dominant discourses. For example, the MRC very first project was proposed by the Federation of Orange Exporters (*Federación de Exportadores de Naranjas*, FEN) in the 1920's as a powerful axis for the exportation of their products. But nowadays the most interested sector is the industry (mainly the automotive industry) and many actors underline that railway is not suitable for agro-food products. It is said that it cannot be competitive with road which can deliver the products straight to their final destination and guarantee the arrival time as well as the continuity of the conservation system.

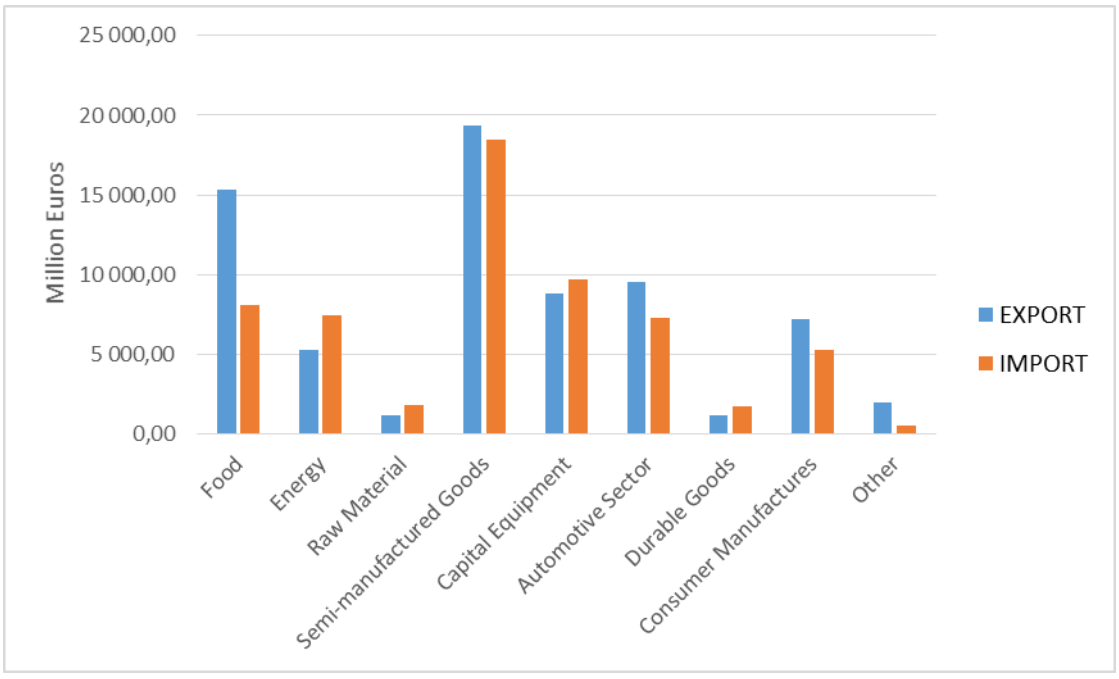


Figure 7: Freight trade on the Mediterranean axis according to the type of load

Spanish Mediterranean provinces mainly export semi-manufactured goods and import equipment goods. It is interesting to notice that food is the second sector in exportations. It is actually one of the most important sectors at stake in the discourses concerning the MRC project. According to the interviews realised in Spain, a certain number of the stakeholders (among which the economic lobbies and part of the political actors) highlight the fact that if the

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railway network offers shorter trips and more attractive prices for freight, it could become highly competitive for the fruit exporters. But at the same time, many entrepreneur associations and economists have the opposite opinion: they support the idea that point-to-point delivery is an essential factor that railway cannot offer and they underline the fact that the main agribusiness firms have their own transport service that they may not want to leave. Meanwhile, the automotive sector is growing and progressively becoming one of the most interested in the railway opening. For example, Ford connected its plant of Almussafes near Valencia to the conventional network through its own 40km railway line and argues that the quick rail connection to Europe is a heavy argument for the firm to stay in Spain in the future.

5. CONCLUSIONS

Freight data assessment is crucial in order to understand the territorial structures of production and trade flows between the Spanish Mediterranean regions and Europe. It allows us to assess, criticise and put into perspective the arguments used by the MRC project actors. We would like to underline three main findings.

First, the importance of the agrobusiness sector will be decisive for the use of the future MRC. The controversy on the possible interest of a railway axis to Europe for agro-food products is therefore interesting. If it is highly probable that a part of this load will remain on the road, but a significant improvement of the rail freight services could easily drain an important part of the productions to the main European cities.

Second, the very significant axis from Spain to France and Germany from a quantitative point of view underlines the Ferrmed proposal relevance. This axis could probably be immediately competitive when implemented. Nonetheless, the very few flows along the “Mediterranean corridor” TEN-T project as it is now shaped have to be nuanced by the huge increase of the trade flows between 1996 and 2012 which make this axis potentially highly competitive in the future. This idea joins the political assessment of the need to connect the new member states to the European market centres.

Finally, considering the trade shape region by region in Spain, it is shown that there is a gap in the trade flows to Europe between Valencia and the southern regions. This gap can be explained by a less industrial and competitive profile, but also by a higher distance to the centre of Europe.

In this context, it appears that the southern part of the TEN-T “Mediterranean corridor” should not be implemented in a separate way from the “North Sea-Mediterranean” and the “Scandinavian-Mediterranean” corridors up to Holland, Germany and the United Kingdom. Nevertheless, the huge increase of commercial flows with the eastern European countries between 1996 and 2012 is a determinant factor for the design of the MRC outline in the Trans-European Networks of Transport planning documents.

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GIS appears as a useful and powerful decision making tool. It allows producing competitive visions of the Mediterranean corridor as an axis for current freight flows. Without making a prospective study, it shows that there is a gap between the TEN-T planning document and the current main partners but it also highlights the coherence of a Mediterranean axis to Italy, Croatia, Slovenia and Hungary from a territorial development point of view.

As a final remark, we would like to notice that the trade flows with the North African countries also increased a lot in the period, to the extent that Algeria and Morocco can be considered as important partners as the main European countries. This observation highlights the need to include the European neighbourhood in the transport policies, particularly in an intermodal perspective.

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