Regional Trade on the Portugal-Spain Border

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Introduction

Portugal and Spain are two countries with all the natural conditions for the emergence of very significant trade flows among them. Their past history has many similarities. From countries formation, passing the crusades, a period of common administration in the 16th and 17th centuries, to similar political situation in the 20th century with Franco and Salazar, finally to a joint EU accession in 1986. However, there has not been significant trade levels until the last decade of the 20th century. An explanation for this lack of trade between what should be natural partners can be trade on the political system in both countries. For centuries they have seen each other as enemies. More recently, up to the third quarter of the 20th century, both have based their development strategy on their relations with the colonies. Only recently, an European approach has emerged, from which the conditions to develop trade among each other rose. This series of historical events has lead to a very interesting subject to study. The evolution of the trade relations between to neighbour countries which have been artificiality separated, being suddenly included in common market.

Our line of research has been centred in the trade relations between the regions of both countries. From the Common Market, it is expectable that relations between neighbour regions may develop, even if they are located in different sides of the border. Therefore, our main focus has been to work on the trade flows between all the regions of the Iberian Peninsula regardless of their nationality. On this presentation we will focus on the crossing border trade flows, more precisely on the relations between neighbour regions on different sides of the border

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Methodology

The major problem to analyse the interregional trade in the Iberian Peninsula is the absence of official data. Neither one of the Statistical National Institutes has developed procedures to generate values of the trade flows between regions. Neither flows originated and destined to regions in the same country, nor flows between regions located one in each country. Thus, the basis of our research had to be to generate estimations for those values.

We have thus computed a set of Origin/Destiny (O/D) matrices for the 20 NUT II regions in the Iberian Peninsula, 15 Spanish and 5 Portuguese. Both countries archipelagos and the Spanish enclaves in North Africa have not been included. These matrices have been computed for the period 1990-2000, being the matrices 1990-93 and 2000 incomplete due to lack of data.

To establish a methodology to generate these matrices we first had to separate different types of flows according to existing data types and sources. Our matrices are thus composed by four different sub-matrices according to the nationality of the regions which flows they include. We can see that difference in table 1:

Table 1 – Sub-matrices

	Portuguese Destiny	***Spanish Destiny***
Portuguese Origin	M1 Flows between Portuguese regions	M2 Flows from Portuguese regions to Spanish regions
Spanish Origin	M3 Flows from Spanish regions to Portuguese regions	M4 Flows between Spanish regions

This division was unavoidable due to the existence of different data sources and data according to the nature of the trade considered. Thus, for the trade crossing national borders (corresponding to M2 and M3) there are available, as a basis, the international trade statistics, with a regional classification, but not with a regional correspondence on the other side of the border. For example, Portuguese statistics tell us how much a Portuguese region, say Alentejo, has exported to the entire Spain, but not how much it has exported to a specific Spanish region, say Catalunia. On the other hand, the Spanish statistics show how much Catalunia exports to Portugal, but not how much it exports to Alentejo. As for the flows inside one country there is no possibility to use international trade as a basis the only available data was on merchandise transports between different regions.

To estimate matrices M2 and M3 we have used the available international data as a basis. Having the flows originated in, and destined to, each region in the relations with the other country, the totals in line and in column were already available. What remained to be done was to distribute those totals between the different cells of the matrix. For such we used a double-restrained gravity model. Restrained on the origins because total origins from region *i* had to correspond to total exports from that region to the other country. Restrained on the destinies because total flows destined to region *j* had to correspond to the known imports from the other country to this region. The model was based on the formulation from Bjurklo 95:

$$T^{rs} = A^r . B^s . O^r . D^s . f(c^{rs}) \quad (1)$$

$$A^r = \left[\sum_s B^s . D^s . f(c^{rs}) \right]^{-1} \quad (2)$$

$$B^s = \left[\sum_r A^r . O^r . f(c^{rs}) \right]^{-1} \quad (3)$$

To estimate M1 and M4, this is trade flows between regions inside the same country[2], we have used goods transports data as a proxy to trade flows. We used the statistical official data on these freights, which are classified according to origin and destiny region. Then, a valuing procedure was followed using for such the implicit prices in exports for the neighbour countries. For the trade between Portuguese regions the implicit price in the Portuguese exports to Spain, and for trade within Spain we used the implicit prices in the Spanish exports to Portugal and France. These method was used because we assume that the trade patterns inside a country are more similar with its exports to neighbour countries than with imports, or with trade with further countries.

Not entering in detail into these model[3], we must also refer the sector classification we used. We used two different sets of data, one for the international trade, classified according to the NC; the other for the transport data classified according to the NSTR. The problem was that these classification schemes only have correspondence at a very high level of disaggregation, at which data was not available. From this reason we had to generate a new set of sectors, allowing for compatibility for both sets of data. This includes11 different sectors of activity.

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2 M1corresponding to Portugal and M4 corresponding to Spain

3 For such detail please refer to the original research in Ferreira (2005)

Regional trade on the border

The analysis we present on the regional trade is now based on the trade Origin/Destiny matrices we have generated using the procedure above. Though we have computed data for the entire period of 1990-200, we will use only the values for the period 1997-1999, in order to detect the most accurate image[4]. In most cases we will use only the means for that three-year period.

The first issue that we analysed, was the influence of the border on the Peninsula regions trade. For such we start by presenting, on table 2, the weight that the sum of the regions from each of the countries represent on one region total trade with other regions in the Iberian Peninsula:

Table 2 – Weight of regions from each country each regions total trade 97-99

	Trade to the same country	Trade to the neighbour country
Lisboa V. Tejo	82,7	17,3
Norte	88,1	11,9
Centro	93,5	6,5
Galicia	95,0	5,0
Alentejo	95,2	4,8
Extremadura	96,4	3,6
Algarve	96,9	3,1
Cataluña	97,2	2,8
Andalucia	98,1	1,9
Castilla y leon	98,4	1,6
Madrid	98,5	1,5
Pais vasco	98,5	1,5
Asturias	98,6	1,4
Comunidad Valenciana	98,6	1,4
Aragon	98,8	1,2
Navarra	98,8	1,2
Cantabria	99,1	0,9
La rioja	99,2	0,8
Castilla la mancha	99,4	0,6
Murcia	99,5	0,5
Average Spain	**98,27**	**1,73**
Average Portugal	**91,3**	**8,7**

Values in percentage
Total trade is the average 1997-99 of each regions imports plus exports.
Portuguese regions are right aligned, Spanish are left aligned

From this data we draw the first of our major conclusions: though the border is not an official barrier to trade, due to the existence of a common market, it still is a very strong barrier. For all

4 Do not use the 2000 matrix because, due to lack of data in some sets, some of the matrices are incomplete.

regions, most of their trade within the Peninsula, is still highly concentrated inside national borders. This fact is particularly significant for the Spanish regions. Clearly there is a dimension factor on these values. Being Spain much larger than Portugal, with 15 regions facing 5, it is expectable that Spain appears more important for a Portuguese region, than Portugal to a Spanish one.

Looking from this perspective, we observe a uncommon reality. Most research that has been performed on the Portugal-Spain trade flows in the past decades has been centred on the international trade, without a regional perspective. And the conclusions are generally similar: a great increase in trade after the EU accession, being actually Spain the most important trade partner for Portugal, while this last is in the top five partners for Spain. However, not contradicting such fact, we point here a different view of the same reality: though there has been a very significant increase, trade between regions from one and the other country is very low in comparison with its potential when we observe the relations between regions in the same country.

On this paper we focus on the relations between regions on the border between these countries. In fact we can theoretically foreseen a stronger relation between neighbour regions, even if those are located on different sides of the border. Some evidence of that has already been presented in Caetano, Gonzalez and Ferreira (2005). Our idea is to clarify, based on the OD matrices estimated, in what aspects, and how deep, these tendency is really present or not.

We are dealing in this research with NUT II regions. Portugal is composed by only five, four of which have a border with Spain. In Spain from a total of fifteen regions, four have a border with the neighbour country. This way the border regions on which we will focus the following analysis are: Norte (Pt); Centro (Pt); Alentejo (Pt); Algarve(Pt); Galicia (Sp); Castilla y Leon (Sp); Extremadura (Sp); Andalucia (Sp). There is however a great limitation in this classification: NUTII regions are too large to isolate border effects within them. All the four Portuguese ones included in this set occupy territory from the sea coast to the Spanish border. As for the Spanish ones, two of them (Castilla y Leon (CL) and Andalucia (And)), do not have a clear strong border characteristic. A deeper analysis on the border effects should be done using NUT III regions. However the trade matrices could not be computed on such level. For these reasons, we will give more emphasis to the Spanish border regions, in particular to Galicia and Extremadura.

The first data that must be analysed are the weights that the trade with Portugal has on total trade of spanish border regions. We present on table 3 those values, in comparison with the averages for all the other Spanish regions.

Table 3 – Weight of trade with Portugal in Spanish border regions

	Andalucia	Castilla y leon	Extremadura	Galicia	Average for non-border regions
Norte	0,31	0,42	0,46	3,15	0,36
Centro	0,23	0,29	0,66	0,53	0,21
LisboaVTejo	1,15	0,81	2,17	1,21	0,65
Alentejo	0,19	0,04	0,26	0,08	0,03
Algarve	0,06	0,01	0,03	0,02	0,01

Values in percentage, computed from each regions total exports plus imports, averages 1997-99

Several aspects can be highlighted from this figures. The first is the low value of all these percentages, which reinforces our conclusion above that the border still represents a strong barrier to trade. The second, and probably the main one, is that there is clearly a higher openness to the Portuguese market in regions which are on the border: all values[5] for these border regions are higher than the averages for the non-border regions. However, the values which are significantly higher, are those on the relations among regions which have a border with each other (represented in blue). The one which is more evident is clearly the relation between Galicia (Sp) and Norte (Pt), with 3,15% of total trade of Galicia in the Peninsula. This is nine times higher than the average weight of Norte (Pt) on the trade of non-border Spanish regions. Also the Alentejo (Pt) importance for the Spanish region Extremadura reaches 0,26% of its (Ext.) total trade, around nine times the average importance of Alentejo to the non-border regions.

However, the most interesting aspect to observe, may be the importance of the Lisboa region for Spanish border regions, as well as for the non-border ones. We must remember that Lisboa is the only Portuguese region which has no border with Spain at all. Nevertheless, it is the most important on the trade relations of every one of the Spanish regions here presented, except for Galicia due to its strong relations with Norte. This leads us to a conclusion, reinforcing a similar one presented on the original project[6]: Most of the trade crossing the border Portugal/Spain is still taking place between the main regions in each country. In the original paper we identified those as being Lisboa in Portugal and Madrid, Catalunia and Comunidad Valenciana in Spain. The corollary of this conclusion is that the trade relations between these countries is still based on a international trade orientation, not on a interregional trade one. This means that there is place for a significant growth in crossing border trade from a different nature. The type of trade, between SMEs which generally is kept inside national borders, but going to neighbour regions, still has a place for significant increase going to proximate regions on the other country.

We have seen above, in table 3, that the border regions have stronger trade relations with

5 Except the importance of Norte to Andalucia, which are significantly far away from each other.

6 See Ferreira (2005)

their neighbours on the other side of the border than the non-border regions. Question remains however to what extend that phenomena is influenced by the border. This is to say that we also expect those regions to have strong trade relations with other contiguous ones which are on the same country. How different can it be the Extremadura (Sp) flows with Alentejo (Pt) from the ones that Extremadura settles with other neighbour regions in Spain? To answer that issue we have computed those weights which we present in table 4:

Table 4 – Weight of neighbours on Spanish border region's trade

A – Region	B - Trading neighbour	Weight of B on A's Total trade (%)
Galicia (Sp)	Norte (Pt)	3,15
	Asturias (Sp)	8,91
	Castilla y Leon (Sp)	10,59
Castilla y Leon (Sp)	Norte (Pt)	0,42
	Aragon (Sp)	2,67
	Asturias (Sp)	3,28
	Cantabria (Sp)	3,63
	Castilla la Mancha (Sp)	5,36
	Extremadura (Sp)	1,04
	Galicia (Sp)	5,75
	La Rioja (Sp)	2,57
	Madrid (Sp)	42,81
	Pais Vasco (Sp)	11,08
Extremadura (Sp)	Alentejo (Pt)	0,26
	Centro (Pt)	0,66
	Andalucia (Sp)	23,83
	Castilla la Mancha (Sp)	9,05
	Castilla y Leon (Sp)	6,67
Andalucia (Sp)	Alentejo (Pt)	0,19
	Algarve (Pt)	0,06
	Castilla la Mancha (Sp)	8,42
	Extremadura (Sp)	4,14
	Murcia (Sp)	6,70

Based on 1997-99 average trade flows
In blue crossing border flows

The results shown on this table clearly show the difference in trade flows when these cross borders. All regions have, for obvious reasons, very significant trade levels towards their neighbours. We have seen above that the same occurs crossing borders, *i.e.*, from the crossing border flows those which are between to contiguous regions tend to be stronger than those between non-contiguous regions (except the case of the main regions). However, this neighbour effect turns out to be much reduced when the neighbour is in the other country. That is evident from the figures in table 4, all the flows crossing the national borders[7] are almost insignificant. This clearly leads us to the conclusion that though being neighbours, regions on different sides of the border have much weaker trade relations than they could have if were on the same country.

Final conclusions

We can summarise the main conclusions we reached on the regional trade on the border with the following:

1. Though trade between Portugal and Spain has increased very significantly in the end of the 20th century, there is still room for an enormous growth. Trade crossing national borders represents very low percentages of each regions total trade in the Peninsula
2. Trade between these two countries is still centred on the relations between the main regions. This means that on a regional level, facing proximate regions on the other side of the border, there is a great potential for increase.
3. Contiguous regions on different sides of the border present an higher openness to the other country. Nevertheless, this relations are almost insignificant compared to the relations between neighbour regions inside the same country.

Finally, one last word has to be said about researching on regional trade. This field is generally the poor brother of international trade. In many cases simply because there is no data on the relations between different regions. Neither if those regions are located in different countries, nor if they're located in the same country. However, the common market and the improvement in transports and communications are allowing for the emergence of new logics for interregional trade. We must start paying more attention to it, also to promote it, to allow the society to benefit from that potential development.

7 Lines in blue in the table.

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