

# The Impact of Euro in the Balance of Trade (BOT): *the Iberian case, Spain-Portugal*

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## ABSTRACT

This contribution analyses the balance of trade (BOT) between Spain and Portugal, during the period 2000-2014, since the implantation of euro and the simplification of commercial-administrative relations. Initially, trade relations between both countries were clearly positive, essential due to the economic growth, almost fully globalized. This allowed the consolidation of both countries in the European Union, within the single market and common currency. Nevertheless, the economic crisis in the last years motivates a dissimilar decline of trade relations and BOT. A methodology measuring the Trade Openness, through the ratio of exports and imports of goods in relation to GDP, is implemented. Also, the nature of the traded goods is evaluated and the impact of the geographical proximity of both country regions' is studied. As a major conclusion, the performed analysis point out that the geographical closeness cannot be considered a core reason to explain the observed trade indicator values'.

**Keywords:** Import-export, Balance of Trade, Trade Openness, Iberian Trade, Geographical impact, Product impact.

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## **1. Introduction**

Portugal and Spain have a long historical tradition in sharing space and related memories, moving between periods of convergence, meetings and approaches, and moments of discrepancies, distances and divergences. Strategic trade policies of the two countries come a long path, till an almost alignment, marked by the integration of both countries in the common European Union and by the new worldwide order.

Focusing this integration scope, it is important to recall the challenges introduced in the common European policy since the *Treaty of Rome*. A special emphasis is turned into the creation of a common market among the European members of the European Community (now European Union, EU), in order to allow the free movement of goods, persons, services and capital. Accordingly, great defies were brought to Portugal and Spain concerning the consolidation of their economies within the single market and common currency.

The consideration of these new trends in the proposed research are normatively marked by the importance of encouraging the free movement of goods trade and tax policies to help meeting targets, as well as by the use of a unit change in the emission of a common currency. These developments have even further impact, if the focus is placed in the Iberian context. In here, it is important to notice that Portugal is the first commercial partner of Spain and Spain is the leading investor in Portugal. Both countries are aware that working together in the Iberian Peninsula can allow greater advantages concerning the overall weight in Europe. Also, the inclusion of Portugal and Spain to the European Economic Community, in the same year (1986), provided greater control of inflation and many of its regions have received more European regional development and social funds’.

On the other hand, the state of art in this area demonstrates that, apart from the large amount of contributions related with trade studies, a limited number of them focused the scope of trade liberalization and even few deals with the Iberian context, marked by the scenario of European Customs Union and by the single currency. Thus, important research opportunities arise from there. Particularly, the evidences on the trade relations between Portugal and Spain require future research namely, the development of empirical models and robust indicators to support and improve the insight that can be launch from macroeconomic data. Besides those motivations, the impact of euro in the *Balance of Trades* (BOT) and its relation with the economic growth presents significant research challenges. Here, the analysis of

macroeconomic data can allow great improvements concerning trade relations and its influence in the economic growth.

Moreover, future opportunities arise from the analysis of the geographical closeness and its impact in both country's economies. The advance of research lines focusing novel approaches to deal with the tendencies embedded in macroeconomic data between Portugal and Spain can raise important results concerning the overall knowledge of trade indicators and, subsequently, with its impact in the economic growth.

Particularly, in last years, the economic crisis strengthening dissimilar impacts in trade relations and, specifically, in the balance of trade between both countries. Therefore, the impact of these dissimilarities and the overall influence captured by each country economies' outcomes an interesting research challenge.

Following these historical trends and scientific advances, while accounting for the overall consolidation of outcomes brought from there, a set of objectives were defined for this contribution. Firstly, the analysis of the global evolution of imports and exports that take place between Spain and Portugal were considered a core purpose. This will drive assess to performances within the scenario marked by the European Customs Union and the single currency. The period investigated goes from 2000 till 2014, while distinguishing between the periods of economic growth, until 2007, and that of economic crisis since then. Secondly, based on the general neoclassical idea that the global *Gross Domestic Product* (GDP) and the *Worldwide Merchandise Exports* (WME) have a parallel progress (being WME a multiple of GDP growth), the influence of these indicators will be studied and the variation of its impact on the level of countries' development is evaluated. To attain this objective an indicator, often used to describe the degree of openness of an economy, is used. This focus on the ratio between exports and imports of goods relatively to GDP (determined by the ratio of foreign trade/GDP). While considering the controversial positions on the relationship between trade openness and economic growth, this indicator is implemented to measure the differences between the two countries.

In there, a particular emphasize is placed on the standpoint of Santos-Paulino and Thirlwall (2004) who argue that greater openness influences growth, capturing both static and dynamic gains from trade. This behaves like the relation between the more efficient use of resources and the increase of competition, of the flow of knowledge and productivity, and also with the promotion of capital accumulation rates, with higher technical progress and, finally, with the increasing of the variety of goods. Emphasizing a similar idea, Winters (2004) notes that

openness is a useful tool against inflation and it stimulates investment, thus, a greater degree of openness increases the production, exchange and consumption possibilities, allowing subsequently, the improvement of living standards. Also, following a common perspective, the *World Bank* and the *World Trade Organization* stressed the importance of free trade.

In conclusion, the presented outcomes were a major driving force for the developed research work, which is organized and will be presented as follows. In the next section, *Literature Remarks*, an overview of the characteristics and influences involving the launch of the euro as the single currency (physically in January 2002), within the scenario set by the European Union, is presented.

Also, some highlights over the main scientific contributions proposed so far, in this area, are presented and discussed.

Then, in the third section, the theoretical framework for measuring the openness is discussed and the related variables (exports, imports and GDP) are detailed for the countries being analysed. The empirical study developed is based on the macroeconomic data available for the whole years of this century and were collected for both countries. A detailed formula to measure trade openness (an indicator of flows based on trade intensity) is proposed and the empirical model used to evaluate trade relations and economic growth is also appreciate.

In the fourth section, *Data Analysis and Results*, the total foreign trade data are analysed for each country as well as the commercial transactions in between and the percentage raised for the global commercial balance is determined and examined. Also, the evolution followed by exchanges between Spanish and Portuguese neighbouring regions is valued and, finally, the type of goods traded are observed, using the European nomenclature (TARIC) for the classification of goods.

The main conclusions on the results obtained are presented in the fifth section, *Conclusions and Future Research*. These are generally consistent with the economic theory, having arguments confirming that exports and imports can have a beneficial effect on economic growth, if monetary and administrative burdens are reduced and simplified, as it follows from the European Customs Union and the introduction of a common monetary policy.

Also, some further remarks on the performed analysis are stated on the conclusions' section. These focus on some uncertainty investigation of causality between the analysed variables, especially in Portugal. The single European currency, the euro, has favoured, particularly, the trade between Portuguese and Spanish bordering regions, with trade liberalization reducing gradually the existing differential between both countries.

As a future work, a research extend to incorporate the geographical details of Portuguese bordering regions, is proposed. Future understandings on the impact of trade relations in the balance of trade and, especially on local economies, are expected. Besides that, the proposal of novel indicators to enhance the performed measures and the improvement of the empirical model are also core objectives to be attained in future research developments.

## **2. Literature Remarks: *Historical Marks and Scientific Developments***

In this section a literature overview is presented. This highlight both, general historical marks and main scientific contributions proposed in the paper core area. A former synthesis of the chronological marks characterizing the Commercial, Fiscal and Monetary European system is presented. This summary places a special focus on trade relations between Portugal and Spain, within the scenario of the common currency launch by the integration in European Union (physically in January 2002).

Driven by the scope of trade relations and openness, a literature review over the scientific contribution is then conducted. Different contributions focusing an also great multitude of approaches in trade analysis, trade indicators, measures, control and economic impacts, were analysed. Those making a special reference to trade liberalization, since the introduction of euro, and those focusing on the Iberian Peninsula details are particularly emphasized, to enhance the insights brought from those approaches to the current study.

### **2.1. *Commercial and Fiscal European System***

Commercially, since the integration of both countries to the EC, imports and exports should be subject to liberalized trade regime (eliminating quotas and quantitative restrictions) and bringing a thorough reform of the tax system, with the advent of VAT. Also, the adjustments in border protection instruments related with imports and export subsidies were suppressed. Consequently, this dismantling of tariffs and tariff adjustment to the Common External Tariff of Community, are significantly smaller than the existing tariff rates.

With the ratification of the *Maastricht Treaty*, the Community developed a common foreign policy (PEC) after removing tariff barriers and borders within a customs union. The PEC is a cornerstone of external relations of the EU based on a set of uniform rules under the Customs Union and the Common Customs Tariff and it is regulated by the commercial relations between Member States and third countries.

Customs duties on imports and exports as well as other charges having equivalent effect, are forbidden between Member States. At the external borders, goods from third countries are taxed at a common customs tariff completed by the *Integrated Tariff of the European Communities* (TARIC). Goods move freely in accordance with the rules of the internal market and the common commercial policy. In addition, there are instruments such as the *Community Customs Code* to ensure uniform application of the rules by the customs administrations of the Member States. The customs union, which began with the *Treaty of Rome* in 1957, was completed on July 1, 1968. The Customs Tariff is part of the so-called own resources of the EU, becoming a basic tool in the regulation of international trade, not only for tax collection proposal, but as a tool for the implementation of trade policy in the economic zone of the EU. All these measures make Europe the world's leading trading power.

## ***2.2. European Monetary System***

The Treaty establishing the *Economic and Monetary Union* (EMU) is another step in coordinating the economic policies of the Member States at European level and the obligation to avoid excessive budget deficits (the Stability and Growth Pact). The most immediate antecedents are the so-called "*European Monetary Snake*" created in 1972 and the European Monetary System, created in 1979, replacing the previous one, to make Europe an area of exchange rate stability, while trying to achieve steadiness in prices and costs in the European Economic Community.

EMU is the result of progressive economic integration and is designed in order to promote sustainable economic growth and a high level of employment by taking appropriate economic and monetary policies. The desired objectives are the full functioning of the so-called "*four freedoms*": freedom of movement of goods, services, people and capital. This emphasizes the requirements of both, the economic policies development and the implementation of the monetary policy, with the objective of price stability, coordination of economic plans between Member States and the proper functioning of the single market.

EMU made it possible, through a common monetary policy where the introduction of a common single currency, the euro, was turned feasible. It aims to harmonize the economic and monetary policies of free movement of capital between Member States, the strengthening of cooperation between national central banks and, since 1999, the progressive introduction of the euro (physically in circulation since 2002) and the implementation of a

single monetary *European System of Central Banks* (ESCB), consisting of the national central banks and the European Central Bank (ECB). Among the advantages of euro, as a single European currency, a particular focus is placed on the reduction of costs related with financial transactions. These helps to realize prices more efficiently, helping to control inflation (not the beginning) and, therefore, to strengthen the role of Europe internationally. The euro is the second reserve currency and the second most traded currency in the world after the US dollar.

### ***2.3. Scientific Developments***

The review of the existing literature meeting trade and economic growth evidenced that there is not a clear definition of trade openness. For many authors trade openness implicitly refers to trade policy orientation and the core scope is placed in assessing the impact of trade policy or trade liberalization on economic growth.

Nevertheless, it is convenient to adopt an even more global view of trade openness covering not only the dimension of economic policy but also all other non-regulatory factors that clearly have an impact on trade and on the outward orientation of countries. The factors of geographic proximity, idiomatic knowledge and good infrastructures of communications, for example, play a very important role in commerce, particularly, when the qualitative and quantitative barriers are no furtherly applied to the incorporated trade integration policies (Pritchett, 1996; Harrison, 1996; Edwards, 1998, Yanikkaya, 2003).

With the creation of the euro in 1999, the literature on the common currency effects on trade has been growing rapidly. By reducing trade costs and eliminating exchange rate volatility, monetary union is expected to boost trades among member countries. In there, an important issue is: which is the right magnitude and nature of the Euro's trade impact? (Baldwin, 2006). Moreover, trade liberalisation and currency union may provide an incentive for small and medium firms of peripheral countries with lower productivity to enter international markets by lowering export costs.

The recent European sovereign-debt crises have exacerbated the difference between core and peripheral economies in the EU. Specially, peripheral countries suffer from the high level of current account deficits and government debts. Such negative economic outcomes ignite intense political debates to questioning the existence of the Euro.

Concerning this scope, it can be argued that the creation of EMU and the subsequent introduction of the euro may correspond to the start of deterioration of current accounts for

peripheral countries (e.g. Jaumotte and Sodsriwiboon, 2010), while the integration of the EU, in general, and the euro, in particular, have driven the total within trade flows.

The studies realized by Gunella, V., Mastromarco, C., Serlenga, L. and Shin, Y. (2015) suggest that the similarity in country terms, helps to facilitate the integration process by capturing the trade ties between the countries. Also, the Euro traded effect is equivalent to 7-10 % only and that the customs union effect is substantially reduced to 10% of 31 % (without accommodating cross-section dependence). These modest effects of both currency and custom unions provide a support for the thesis that the trade increase within the Euro area may reflect a continuation of a long-run historical trend, probably linked to the broader set of EU's economic integration policies and institutional changes.

One of the first contributions studying the impact of common currencies on trade was been proposed by Rose (2000), who added a common currency dummy to a gravity model of bilateral trade. By including dependencies, territories and colonies in his sample of 186 'countries', the author was able to get 300 country pairs with common currencies, allowing for the estimation of the currency union effect. The results proposed so far suggest that the EMU had a moderate while statistically significant effect on trade. Rose (2002) concludes, while accounting the literature analysis, that the currency unions approximately double a nation's trade. The euro boosts bilateral trade.

Rose and van Wincoop (2001) addressed also that problem. Authors presented a study based on a model of bilateral trade proposed by Anderson and van Wincoop (2001). In their contribution, Rose and van Wincoop estimates the potential effect of euro on trade, using data on pre-EMU currency unions. According with the theory, bilateral trade between a pair of countries depends on their bilateral trade barrier relative to average trade barriers with all partners (i.e. their multilateral trade barrier or 'multilateral resistance'). Once reducing barriers vis-à-vis to an important trading partner, also reduces multilateral resistance considerably. Thus, the impact of the currency union on trade should be smaller when dealing with large while close countries. The implemented methodology allows the authors to estimate the trade effect of different potential currency unions. Particularly, for the case of the euro, the estimated effect is about 60%. Although, it is important to notice that this estimate depends crucially on a number of performed assumptions, such as the elasticity of substitution between goods.

As final remark, the analysis of the Iberian case in terms of macroeconomic behaviour as well as the embedded relations with the commercial activities are concisely summed up in

this proposal. Furthermore, the economic outcomes point out that Spain achieved an extremely important real convergence of its per capita income with the EU average, while Portugal's convergence stands below that level. Also, Spain rose from 71% of the average income of the EU 17 in 1985 to more than 97% in 2012 and Portugal registered only 75%. These evidences underlie the interest of investigating how divergent are the economic performances of the Portuguese and Spanish economies.

### **3. Theoretical framework: *Methodology and Measures***

As it has been formerly pointed out, there is a large number of literature contributions aiming the study of the relationship between trade openness and economic growth. Apart from the common scope, different thesis are used to support also different conclusions about the effect of the degree of openness in the economic growth, measured in terms of standards of living. Whether some authors admit a negative impact, other defend a positive influence of the degree of openness in the increase of production, exchange and consumption possibilities and thus, the possibility of achieving higher standards of living.

In the present contribution the scope is placed on the interpretation of trade and economic real data of Portuguese and Spanish economies, while analysing the tendency observed in between, during the last years. As a final purpose, it is expected to identify if the benefits of trade liberalization have or not a significant influence on the level of development of countries.

The macroeconomic variables used in the analysis are the *Gross Domestic Product* (GDP) at current prices, imports of goods valued at CIF (*Cost, Insurance and Freight*) prices and exports of goods valued at FOB (*Free On Board*) prices, table 1.

A special mention is marked for the official data used in the performed developments and which arise from the obligation to register and declare shipments or entries of goods made between areas within the customs territory of the EU. These flows are excluded from any customs duty and there is an obligation to declare traffic between countries through the *Intrastat system*. Thus, are natural or legal persons who are subject to VAT, when involved in a trade that exceeds the exemption thresholds established. By 2015, operators are required to register acquisitions or intra-Community supplies (i.e. arrivals and dispatches) for an amount equal to or greater than € 400,000, in the previous year. Accordingly, the volume of goods traded between end users, resident in the neighbouring country, are not subject to VAT and, thus, does not have any type of stat.

Table 1: General description of Macroeconomic Variables of Commercial Openness.

| Variables              | Economic Data at    | Description                                   | Sources                  |
|------------------------|---------------------|---|--------------------------|
| Gross Domestic Product | Current prices      | Total of goods and services produced per year | INE Spain and Portugal   |
| Export of Goods        | <i>Incoterm FOB</i> | Total of goods sold abroad                    | External Trade Datacomex |
| Import of Goods        | <i>Incoterm CIF</i> | Total of goods purchased from abroad          | External Trade Datacomex |
| Total External Trade   | Import + Export     | Total Trade Volume                            | External Trade Datacomex |
| Trade Balance          | Export - Import     | Superavit or deficit                          | External Trade Datacomex |
| Coverage Rate          | (Export/Import )    | %   | External Trade Datacomex |

Based on the previous description of macroeconomic data and variables of commercial openness, the following nomenclature is proposed to describe the problem.

### Indices

$$i = 1,2 \quad \text{with } 1 \equiv \text{Spain}; 2 \equiv \text{Portugal}$$

$$k = 1,2,3 \quad \text{with } 1 \equiv \text{Spain}; 2 \equiv \text{Portugal}; 3 \equiv \text{Other Countries}$$

$$t = 1, 2, \dots, 15 \quad \text{with } 1 \equiv 2000; 8 \equiv 2007; 15 \equiv 2014$$

In order to differentiate between the period of economic growth and that of crisis, some specific time-based values, called *period boundaries* (i.e. 2000, 2007 and 2014), were defined.

$$H_{pb} = \{t: t \text{ is a period boundary}\} = \{1, 8, 15\}$$

The consideration of *equally spaced* intervals is done to avoid any miss interpretation resulting from the dimension of those intervals. Thus, 2007 is part of both time-based periods, the growth and crisis periods.

Accordingly, variables can be detailed as:

$$GDP_{i t} \equiv \text{Gross Domestic Product of } i \text{ in year } t; \quad \forall i, \forall t$$

$$EXP_{i k t} \equiv \text{flow of exports from } i \text{ to } k, \text{ in year } t; \quad \forall i, \forall k: k \neq i, \forall t$$

$$TExp_{i t} \equiv \text{total flow of exports from } i \text{ in year } t; \quad \forall i, \forall t$$

$$TExp_{it} = \sum_{k:k \neq i} EXP_{ikt} \quad \forall i, \forall t \quad [1]$$

$IMP_{ikt} \equiv$  flow of imports to  $i$  coming from  $k$ , in year  $t$ ;  $\forall i, \forall k: k \neq i, \forall t$

$TImp_{it} \equiv$  total flow of imports to  $i$ , in year  $t$ ;  $\forall i, \forall t$

$$TImp_{it} = \sum_{k:k \neq i} IMP_{ikt} \quad \forall i, \forall t \quad [2]$$

$TET_{it} \equiv$  Total External Trade of  $i$  in year  $t$ ;  $\forall i, \forall t$

$$TET_{it} = TExp_{it} + TImp_{it} \quad \forall i, \forall t \quad [3]$$

$TB_{it} \equiv$  Trade Balance of  $i$  in year  $t$ ;  $\forall i, \forall t$

$$TB_{it} = TExp_{it} - TImp_{it} \quad \forall i, \forall t \quad [4]$$

$CR_{it} \equiv$  Coverage Rate of  $i$ , in year  $t$ ;  $\forall i, \forall t$

$$CR_{it} = \frac{TExp_{it}}{TImp_{it}} * 100 \quad \forall i, \forall t \quad [5]$$

A time-based investigation of the macroeconomic variables is attained. This focus on the analysis of chronological data followed by the evaluation of the time-based tendencies. Concerning this scope, different experiments were tested while deciding for the polynomial and linear approach, accordingly with the quality of the adjustments achieved for the focal variable being studied, the balance of trade, BOT.

Moreover, given the difficulties that arise when finding the most appropriate relation to measure the trade openness, it has been decided to use an indicator based on the annual trade flows (exports and imports to GDP), once this allows the integration of variables in the regression as a measure of openness dimension, concerning both, the operations of trade in goods, the exports on GDP, the rate of import penetration and the growth rate of imports and exports. To help those interpretations, the correlation between trade variables and GDP were also appreciated.

Concerning trade indicators, the usual practice is to express them in percentages in order to allow compares across countries. In here, low numbers are indicative of a poor openness of the country concerned.

Table 2: Description of openness indicator for exports and imports.

| Indices             | Calculations        | Description                  | Sources                  |
|---------------------|---------------------|------------------------------|--------------------------|
| Openness Indicators | $EXP / GDP * 100$   | Openness measured by exports | External Trade DataComex |
|                     | $IMP/GDP*100$       | Openness measured by imports | External Trade DataComex |
|                     | $(EXP+IMP)/GDP*100$ | Trade Openness*/GDP          |                          |

\*Openness measured by the Commercial activity.

Again, the consideration of country and time details results into the following relations to translate openness indicators:

$$\begin{aligned}
 OExp_{it} &\equiv \text{Openness measured by Exports of } i \text{ in year } t; & \forall i, \forall t \\
 TO_{it} &= \frac{TExp_{it}}{GDP_{it}} * 100 & \forall i, \forall t \quad [6]
 \end{aligned}$$

$$\begin{aligned}
 OImp_{it} &\equiv \text{Openness measured by Imports of } i \text{ in year } t; & \forall i, \forall t \\
 TO_{it} &= \frac{TImp_{it}}{GDP_{it}} * 100 & \forall i, \forall t \quad [7]
 \end{aligned}$$

$$\begin{aligned}
 TO_{it} &\equiv \text{trade Openness of } i \text{ in year } t; & \forall i, \forall t \\
 TO_{it} &= \frac{(TExp_{it} + TImp_{it})}{GDP_{it}} * 100 & \forall i, \forall t \quad [8]
 \end{aligned}$$

Particularly, to describe the requirements arising from the consideration of the flows between Spain and Portugal, some further details were introduced to the openness indicators in order to translate those specific flows between the two countries. The following relation are then proposed:

$$\begin{aligned}
 RTO_{ikt} &\equiv \text{Relative Trade Openness of } i \text{ to } k, \text{ in year } t; & \forall i, \forall k: k \neq i, \forall t \\
 RTO_{ikt} &= \frac{(EXP_{ikt} + IMP_{ikt})}{GDP_{it}} & \forall i, \forall k: k \neq i, \forall t \quad [9]
 \end{aligned}$$

Subsequently, for a specific pair of countries (e.g. Spain  $\equiv$  1 and Portugal  $\equiv$  2) the difference between equations [8] and [9] results into:

$$\frac{(TExp_{it} + TImp_{it})}{GDP_{it}} - \frac{(EXP_{ikt} + IMP_{ikt})}{GDP_{it}} \Leftrightarrow \frac{(TExp_{it} - EXP_{ikt})}{GDP_{it}} + \frac{(TImp_{it} - IMP_{ikt})}{GDP_{it}}$$

Therefore, a relative indicator translating the openness measured by the commercial activity of  $i$  to the overall countries, except from  $k$ , can be obtained:

$$RTO_{i3t} = \frac{\sum_{k':k' \neq i, k' \neq k} EXP_{ik't} + \sum_{k':k' \neq i, k' \neq k} IMP_{ik't}}{GDP_{it}} \quad \forall i, \forall t \quad [10]$$

In equation [10], the value 3 in the second indices represents, accordingly with its former definition, other countries except from  $k$ , having activity with  $i$  (e.g. the relative trade openness of Spain to Portugal is measured by  $RTO_{12t}$  for all the year  $t$  and thus,  $RTO_{13t}$  will measure the openness of Spain to other countries ( $k=3$ ) except from Portugal).

On the other hand, to achieve the yearly variation, a percentage measure relative to the oldest time-based point has been implemented, for each macroeconomic variable  $X$  and period  $t$  to  $t'$ , as follows:  $Var_{tt'} = \frac{X_{t'} - X_t}{X_t} * 100$ .

Apart from the yearly variation of variables and indicators some macro analysis are developed concerning the growth and crisis periods'. Again, the overall evolution of variables and indicators is contrasted with the values achieved for *period boundaries*.

## 4. Data Analysis and Results

In this section, the macroeconomic data of Spain and Portugal are analysed using the methodology previously discussed while implementing the empirical measurement of trade liberalization in both countries. Therefore, in the second subsection, the individual study performed for each country is extended and a particular focus is placed on trade relations between Spain and Portugal. These are valued and discussed.

Moreover, due to the geographical closeness, the former trade analysis are developed in deep in the third subsection, for the bordering regions between the two countries. Following the purpose of a detailed argue, in subsection four, trade relations are studied based on the nature of goods traded in between.

### 4.1 Empirical measurement of trade liberalization in Spain and Portugal

In this section the data collected for Spain (SP) and Portugal (PT) are analysed in order to present a global characterization of both country economies', for the period 2000-2014. This is based on the observation of macroeconomic variables with a particular focus on those related with foreign trade.

As previously discussed, the major motivations behind the chosen period are related not only with the representation of the “century tendencies”, expressed in terms of macroeconomic variables, but also with the importance of a comprehensive investigation of the impact of euro in the international trade. Recalling that 2000 and 2001 were the last years of full functioning of national coins (e.g. peseta and peso in Spain, and escudo in Portugal). From there on, national coins disappeared, giving place to the introduction of euro into circulation, on January 1, 2002. In both countries the crisis that began in 2008 influenced their foreign trade and it is important to check how comparable and how depth is the impact in the economies of both countries.

Concerning the Spanish macroeconomic data, the observations pointed out an important differentiation between the period of economic growth (i.e. 2000 to 2007) and the crisis (i.e. from 2007 to 2014), figure 1.

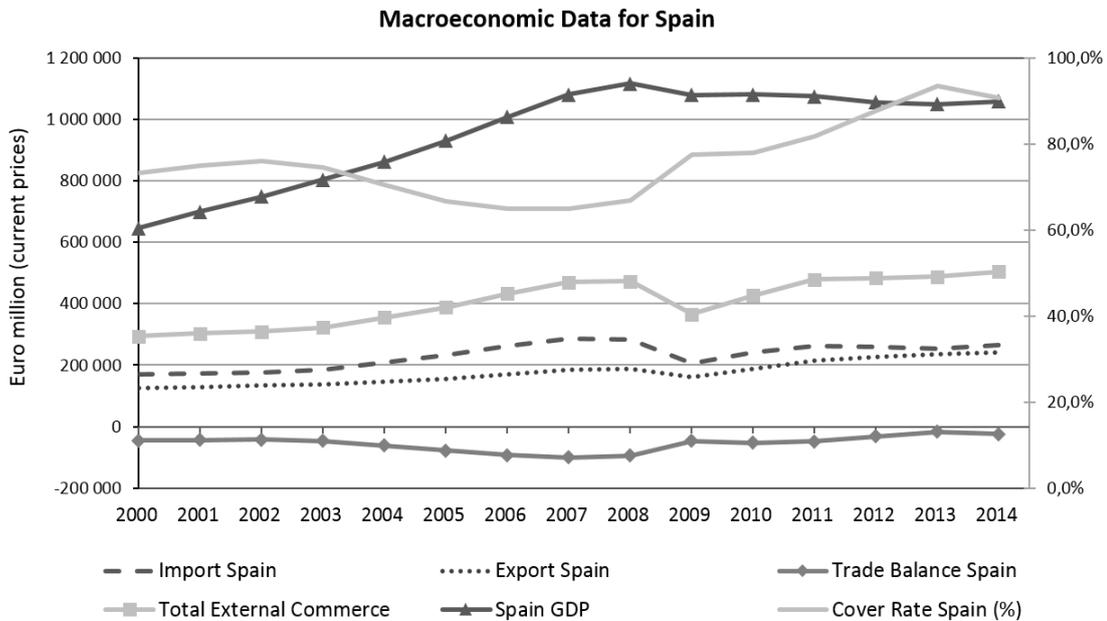


Figure 1. Macroeconomic data for Spain (EUR million, current prices).

The continuous growth of Spanish GDP suffers the greatest decrease in 2008-2009 and a smooth recuperation starts from there on, with the 2014 values reaching quite closely those ending the growth period. The total external commerce follows an almost similar behaviour, positively correlated with GDP (i.e. correlation coefficient about 0,888). An uneven tendency of imports and exports, with the imports pondering further than exports is registered in both economic periods, figure 1.

Besides that, exports show a continuous growth (apart from 2008-09) while imports increase in the growth period (2000-07) and turn into an almost stabilized value, after the decline of

2008-09. Therefore, a slowdown of imports' impact in the external commerce balance, is observed.

Emphasizing the macroeconomic relation between exports and imports, the Balance of Trade (BOT) presents a negative values during the whole period, being 2005-09 the period of great differentiation, figure 1.

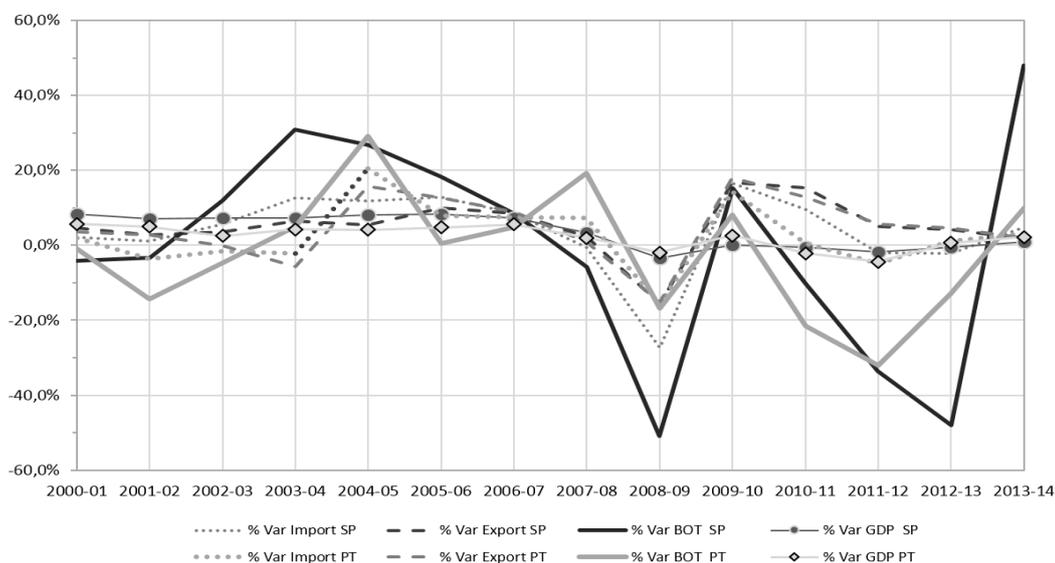


Figure 2. Variation of macroeconomic variables for Spain.

That behaviour can be explored in deep through the yearly variation of each macroeconomic variable. As it can be observed in figure 2, the Balance of Trade (BOT) is the variable reflecting the greatest yearly variations. This was particularly worsening for the periods 2008-09. Besides that, from 2006-07, the yearly variation of exports overcomes the variation of imports, keeping that tendency during the whole period of crisis.

Moreover, the time-based tendency of each macroeconomic variable is analysed through the evaluation of global variations observed for the whole years studied and also for each of the considered periods, table 3. For the case of Spain, the total trade of import and export of goods has increased by 72% (mainly exports grow by 93%) and thereby reducing the negative trade balance in a significant 46%. Also, the increase in GDP (at current prices) registers a smaller improvement, growing by 64%.

Table 3. Macroeconomic analysis for Spain in periods 2000-07 and 2007-14, € million.

| Variables                     | 2000    | 2007    | 2014    | Var. * | Var. * | Var. * |
|-------------------------------|---------|---------|---------|--------|--------|--------|
|                               |         |         |         | 00-14  | 00-07  | 07-14  |
| Imports of Goods, $TImp_{1t}$ | 169,468 | 285,038 | 264,507 | 56%    | 68%    | -7%    |

|                                     |                |                  |                  |      |      |      |
|-------------------------------------|----------------|------------------|------------------|------|------|------|
| Exports of Goods, $TExp_{1t}$       | 124,177        | 185,023          | 240,035          | 93%  | 49%  | 30%  |
| Trade Balance, $TB_{1t}$            | <b>-45,291</b> | <b>-100,015</b>  | <b>-24,472</b>   | -46% | 121% | -76% |
| Total External Commerce, $TET_{1t}$ | <b>293,645</b> | <b>470,061</b>   | <b>504,542</b>   | 72%  | 60%  | 7%   |
| Gross Domestic Product, $GDP_{1t}$  | <b>646,250</b> | <b>1,080,807</b> | <b>1,058,469</b> | 64%  | 67%  | -2%  |
| Cover Rate, $CR_{1t}$               | <b>73%</b>     | <b>65%</b>       | <b>91%</b>       | 24%  | -11% | 40%  |

Source: Spanish Institute Foreign Trade (ICEX, Instituto Español Comercio Exterior) and authors.

\* Time-based variation measured, for each variable  $X$ , in period  $t$  to  $t'$ , by  $Var_{t,t'} = \frac{X_{t'} - X_t}{X_t} * 100$ .

Also, the imports of goods are slightly higher than exports, with a rate of coverage ( $CR_{1t}$ ) over 90% in 2014. This is explained by the 30% of increase in exports over the years of economic crisis and a decline in imports from -7% in the same period.

In Spain, the foreign trade has grown slightly above GDP growth. This can be justified by the improvement of the trade openness indicator (10%) and the coverage rate (40%) during the crisis years'. Thus, it can be concluded, that imports grow more than the GDP in the years of economic boom and to a lesser extent during the crisis. Also, the reverse is perceived for the behaviour of exports.

Concerning now the Portuguese case, the global behaviour of macroeconomic variables for the studied periods is presented in figure 3, while the variation of the corresponding variables are shown in figure 4.

Globally, the tendency of macroeconomic variables exhibit a comparable behaviour with that observed for Spain but within different scale values (i.e. Upper scale of 1.200.000 for Spain against 200.000 million €, at current prices, for Portugal).

Similarly to the progress of Spanish GDP, an important decrease of Portuguese GDP was observed in 2008-2009. Although, the biggest yearly variation is registered in 2011-12, middle by two recuperation periods during the crisis, figure 3.

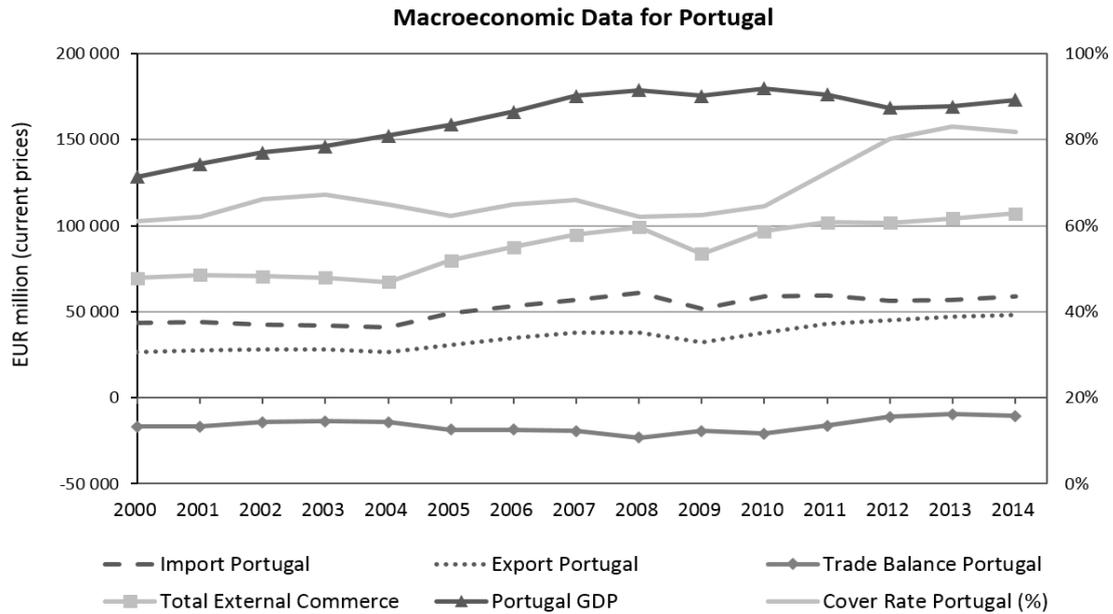


Figure 3. Macroeconomic data for Spain (EUR million, current prices).

Imports and exports follows a similar tendency, in the growth period, positively correlated, with the exports while presenting smooth variations than imports. Thus, the accentuated increase observed in the total external commerce is due to the cumulative effect of those similar tendencies observed for imports and exports in the growth period. During crisis, the recovery perceived for the external commerce, after the fall down of 2008-09, results essentially from the continuous improvement of exports, overcoming the observed reduction of imports. A great impact of exports is perceived in the external commerce balance.

Therefore, the Balance of Trade (BOT) even presenting negative values during the whole period 2000-14, starts a convergence tendency during crisis, which is particularly pronounced from 2010. For Portugal, BOT is also negatively correlated with GDP.

Concerning the yearly variation of macroeconomic variable, figure 4, a smooth behaviour is registered for Portuguese case (i.e. overall yearly variations between -30% and 30%) while compared with Spanish observations (i.e. overall yearly variations between -50% and 50%) previously presented in figure 2. The large variations in the Portuguese Balance of Trade (BOT) contrast with the slight variations of GDP. The later, registered positive variations during all the growth period, while oscillating between positive and negative variations during crisis.

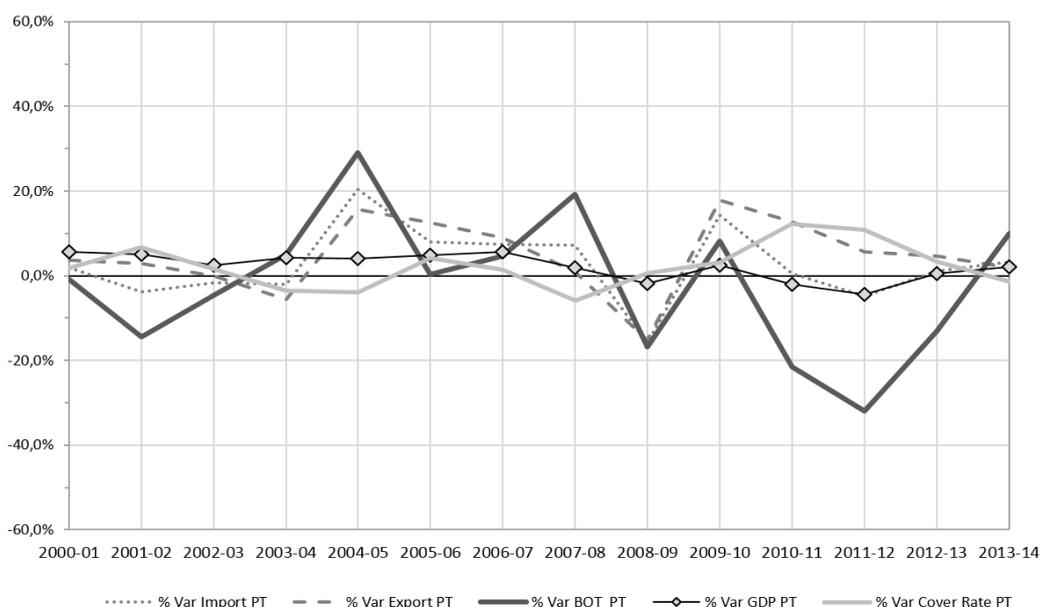


Figure 4. Variation of macroeconomic variables for Portugal (EUR million, current prices).

Table 4. Macroeconomic data for Portugal in periods 2000-07 and 2007-14, € million.

| Variables                           | 2000           | 2007           | 2014           | Var.*<br>00-14 | Var.*<br>00-07 | Var.*<br>07-14 |
|-------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Imports of Goods, $TImp_{2t}$       | 43,257         | 57,056         | 58,854         | 36%            | 32%            | 3%             |
| Exports of Goods, $TExp_{2t}$       | 26,379         | 37,589         | 48,177         | 83%            | 42%            | 28%            |
| Trade Balance, $TB_{2t}$            | <b>-16,878</b> | <b>-19,467</b> | <b>-10,677</b> | -37%           | 15%            | -45%           |
| Total External Commerce, $TET_{2t}$ | <b>69,636</b>  | <b>94,645</b>  | <b>107,031</b> | 54%            | 36%            | 13%            |
| Gross Domestic Product, $GDP_{2t}$  | <b>12,466</b>  | <b>175,468</b> | <b>173,044</b> | 35%            | 37%            | -1%            |
| Cover Rate, $CR_{2t}$               | <b>61%</b>     | <b>66%</b>     | <b>82%</b>     | 34%            | 8%             | 24%            |

Source: Portuguese National Institute of Statistics (INE) and COMEX databases

\* Time-based variation measured, for each variable  $X$ , in period  $t$  to  $t'$ , by  $Var_{t t'} = \frac{X_{t'} - X_t}{X_t} * 100$ .

Besides that and concerning the global tendency of macroeconomic variables, table 4, the total trade of imports and exports increased by 54%, mainly due to exports grow (by 83%) and also because of both, the reduction in the negative trade balance, by 37%, and the lesser increase of GDP (current prices), by 35%.

Moreover, the imports of goods are slightly higher than exports, with the rate of coverage ( $CR_{1t}$ ) registering 82% in 2014. This is due to the increase in exports, by 28%, during the years of economic crisis and a slight 3% rise in imports, in the same period.

In Portugal, the foreign trade has increased (+ 54%) significantly above the growth in GDP (+ 35%), table 4. This behaviour may be justified by the improvements observed during the

economic crisis. In there, the coverage rate was + 24%, while GDP fell by 1% during the crisis. Also, exports performed better than GDP in both periods, while imports range almost constant.

In order to detail in deep the behaviour of BOT for both countries, the data collected for the two studied periods (i.e. 2000-07 and 2007-14) were analysed using different data adjustments, figure 5. The linear tendency is contrasted with the best polynomial approach for both periods.

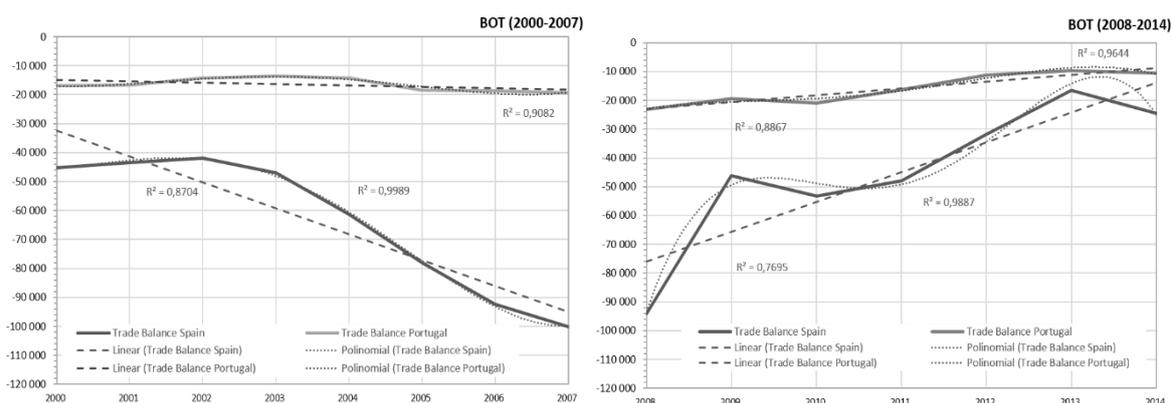


Figure 5. BOT for Spain and Portugal, for periods 2000-07 and 2008-2014. Representation of real macro data and tendency lines (linear and polynomial).

Source: Ministry of Foreign Trade and Foreign Investment and Spanish Ministry of Economy and Competiveness databases (*DataComex*).

As it can be seen, the balance of trade follows a common tendency for both countries and time-based periods. Nevertheless, the smooth linear behaviour of Portuguese BOT is quite dissimilar from that observed for the Spanish BOT, in both periods. This outline is particularly evident during the crisis, where the oscillatory shape of Spanish BOT is better described by the fourth level polynomial approach than by the linear adjustment. Although, for the Portuguese counterpart, the improvement reached while moving from the linear into the polynomial approach is not rather significant.

Finally, concerning the time-based behaviour of macroeconomic indicators it can be noticed that both countries have rather similar indicators of trade openness, characterized by almost parallel progresses. Also, the openness indicators measured by imports and exports behave similarly. The former are greater than the exports, during all the period of analysis, figure 6.

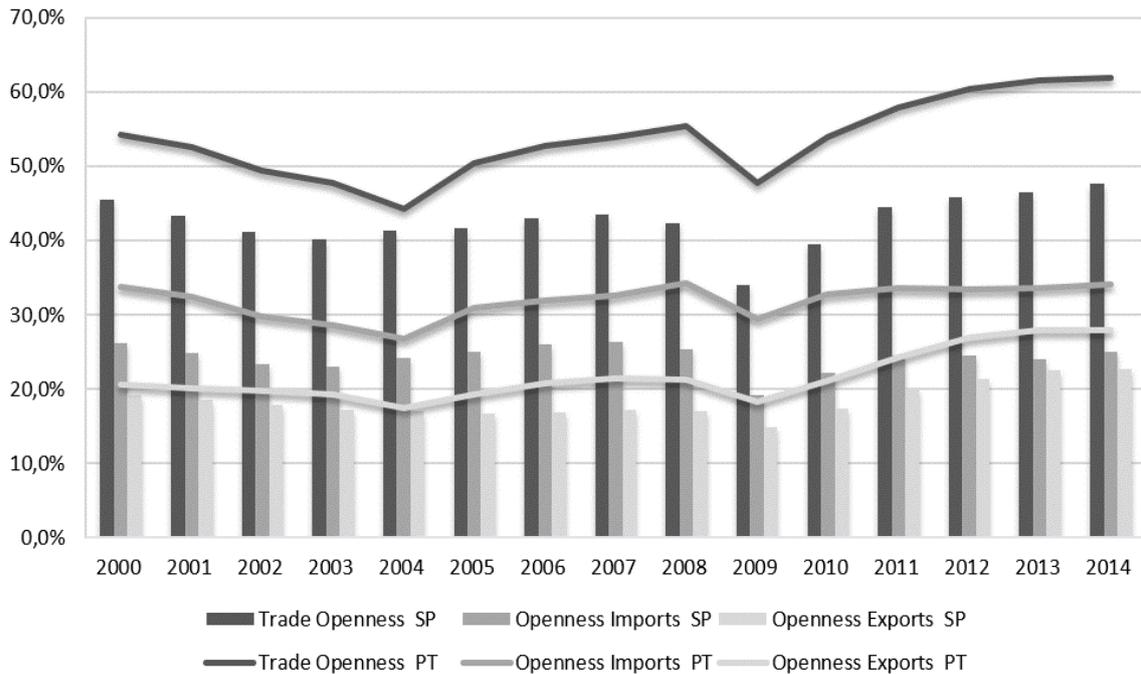


Figure 6. Macroeconomic indicators for Spain.

For the Spanish case, the commercial openness indicator stood about 44% in 2007 and grows about 4% in the crisis period, while the Portuguese openness indicator, even following the same tendency, presents a greater evolution, increasing about 8% during the same period.

Table 5. Comparative analysis of openness indicators for Spain and Portugal.

| Variables                                 | 2000           | 2007             | 2014             | Var.*<br>00-14 | Var.*<br>00-07 | Var.*<br>07-14 |
|---|----------------|------------------|------------------|----------------|----------------|----------------|
| Gross Domestic Product, $GDP_{1t}$        | <b>646.250</b> | <b>1.080.807</b> | <b>1.058.469</b> | 64%            | 67%            | -2%            |
| Trade Openness, $TO_{1t}$                 | <b>45,4</b>    | <b>43,5</b>      | <b>47,7</b>      | 5%             | -4%            | 10%            |
| Openness measured by exports, $OExp_{1t}$ | 26,2           | 26,4             | 25,0             | -5%            | 1%             | -5%            |
| Openness measured by imports, $OImp_{1t}$ | 19,2           | 17,1             | 22,7             | 18%            | -11%           | 32%            |
| Gross Domestic Product, $GDP_{2t}$        | <b>128.466</b> | <b>175.468</b>   | <b>173.044</b>   | 35%            | 37%            | -1%            |
| Trade Openness, $TO_{2t}$                 | <b>54,2</b>    | <b>53,9</b>      | <b>61,9</b>      | 14%            | 0%             | 15%            |
| Openness measured by exports, $OExp_{2t}$ | 33,7           | 32,5             | 34,0             | 1%             | -3%            | 5%             |
| Openness measured by imports, $OImp_{2t}$ | 20,5           | 21,4             | 27,8             | 36%            | 4%             | 30%            |

Finally, summarizing the outlines observed for openness indicators, table 5, it can be noticed that openness measured by imports presented biggest absolute variations than exports, for both countries, in all periods. These differences between trade variables marked the overall tendency of trade openness with imports impacting rather than exports.

These goes accordingly with the previously presented results (tables 3 and 4) for both countries, outlining higher increases in trade volumes than in GDP. These differences were more directly perceived in the case of Portugal, where the growth rates of its foreign business are higher than GDP growth.

Moreover, for the Spanish case, a positive value is reached when correlating between foreign trade and GDP, while fully covering yearly based values (i.e. 2000-14). A detailed observation based on data split for the periods of growth and crisis showed a dissimilar tendency for the crisis period. Concerning the Portuguese counterpart, an overall (i.e. 2000-2014) positive correlation is observed, but marked by a contrasting tendency for the crisis period, as observed previously for the Spanish case. Trade openness indicator follows accordingly, for both countries.

## 4.2 Trade between Spain and Portugal

The analysis of the evolution in the trade between the two countries of the Iberian Peninsula (Tables 6 and 7) allows the following core appreciations.

Table 6. Commercial data between Spain and Portugal. EUR million (current prices).

| SPAIN   | 2000           | 2007             | 2014             | Var.<br>00-14 | Var.<br>00-07 | Var.<br>07-14 |
|---|----------------|------------------|------------------|---------------|---------------|---------------|
| Exports from Spain to Portugal, $EXP_{12t}$                   | 11,855         | 16,003           | 18,014           | 52%           | 35%           | 13%           |
| Imports of Spain from Portugal, $IMP_{12t}$                   | 4,609          | 9,268            | 10,008           | 117%          | 101%          | 8%            |
| Trade Balance Spain → Portugal, $TB_{12t}$                    | <b>7,246</b>   | <b>6,735</b>     | <b>8,006</b>     | 10%           | -7%           | 19%           |
| <b>Total trade relations for Spain, <math>TTR_{1t}</math></b> | <b>16,464</b>  | <b>25,271</b>    | <b>28,022</b>    | 70%           | 53%           | 11%           |
| <b>Coverage Rate Spain → Portugal, <math>CR_{12t}</math></b>  | 257%           | 173%             | 180%             | -30%          | -33%          | 4%            |
| <b>GDP of Spain, <math>GDP_{1t}</math></b>                    | <b>646,250</b> | <b>1.080.807</b> | <b>1,058,469</b> | 64%           | 67%           | -2%           |
| Relative Trade Openness, $RTO_{12t}$                          | 2.5            | 2.3              | 2.6              | 4%            | -8%           | 13%           |
| % Exports from Spain to Portugal                              | 9.5%           | 8.6%             | 7.5%             | -21%          | -9%           | -13%          |
| % Imports of Spain from Portugal                              | 2.7%           | 3.3%             | 3.8%             | 39%           | 20%           | 16%           |

Source: ICEX, INE and Comex databases.

*In Spain, table 6:*

- Trade relations with Portugal have improved very slightly, mainly because of all exported goods having that country as final destination. These have increased 52%, while imports registers more than doubled, up 117%. The trade surplus has risen by only 10%

and, since the recession phase, has offset the reduction in the trade balance occurred during the period 2000-2007.

- However it has worsened the coverage rate to 30% (export / import or the percentage of imports that are financed by exports) going from 257% to 180%. The rate of trade liberalization has increased a slight 4%, rising from 2.5 to 2.6. This was mainly because the trade between the countries grew in a greater extent than GDP.
- The percentage of exports to Portugal down from 9.5% to 7.5% of total exports and imports grow 2.7% to 3.8% of the total.

Table 7. Commercial data between Portugal and Spain. EUR million (current prices).

| <b>PORTUGAL</b>  | <b>2000</b>    | <b>2007</b>    | <b>2014</b>    | <b>Var.<br/>00-14</b> | <b>Var.<br/>00-07</b> | <b>Var.<br/>07-14</b> |
|--|----------------|----------------|----------------|-----------------------|-----------------------|-----------------------|
| Exports from Portugal to Spain, $EXP_{21t}$                      | 5,084          | 10,058         | 11,353         | 123%                  | 98%                   | 13%                   |
| Imports of Portugal from Spain, $IMP_{21t}$                      | 11,205         | 16,827         | 19,128         | 71%                   | 50%                   | 14%                   |
| Trade Balance Portugal → Spain, $TB_{12t}$                       | <b>-6,121</b>  | <b>-6,769</b>  | <b>-7,775</b>  | 27%                   | 11%                   | 15%                   |
| <b>Total trade relations for Portugal, <math>TTR_{1t}</math></b> | <b>16,289</b>  | <b>26,885</b>  | <b>30,481</b>  | 87%                   | 65%                   | 13%                   |
| <b>Coverage Rate Portugal → Spain, <math>CR_{12t}</math></b>     | 45%            | 60%            | 59%            | 31%                   | 32%                   | -1%                   |
| <b>GDP of Portugal, <math>GDP_{2t}</math></b>                    | <b>128,466</b> | <b>175,468</b> | <b>173,044</b> | 35%                   | 37%                   | -1%                   |
| Relative Trade Openness, $RTO_{21t}$                             | 12.7           | 15.3           | 17.6           | 39%                   | 21%                   | 15%                   |
| % Exports from Portugal to Spain                                 | 19%            | 27%            | 24%            | 22%                   | 39%                   | -12%                  |
| % Imports of Portugal from Spain                                 | 26%            | 29%            | 33%            | 25%                   | 14%                   | 10%                   |

Source: Instituto Nacional de Estatística Portugal and Comex databases.

As for Portugal, table 7:

- Despite the fact that imports increased by 71% and exports have done 123%, the trade deficit has worsened by 27%.
- The coverage rate improved from 45% to 59%, representing an increase of 31% and the rate of trade openness makes 39%, going from 12.7 to 17.6. So the influence of foreign trade of Portugal with Spain on total GDP, is higher than in the Spanish case.
- The share of exports to Spain have increased from 19% to 24% of the total imports increase from 26% to 33% of the total. The weight of import and export trade between Portugal and Spain is more important than that obtained for the trade Spain to Portugal. It is three times higher for exports and nearly ten times higher for imports.

In Figure 7, the evolution followed by trade relations between these countries, shows Spanish imports of Portuguese goods grow further, reflecting a rate of exports most beneficial to Spain coverage, but it has been shrinking.

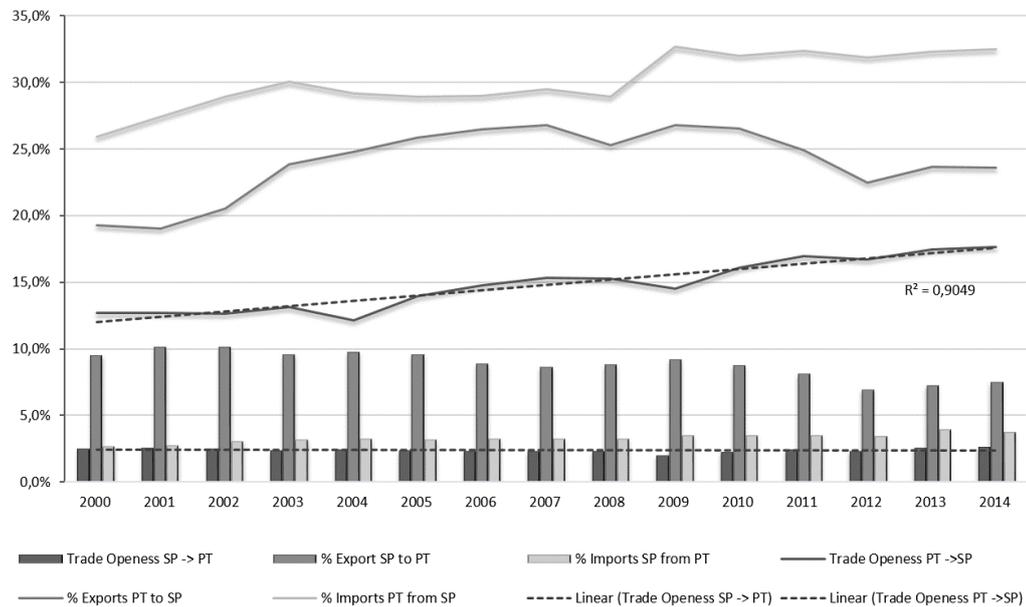


Figure 7. Evolution of foreign trade between Spain and Portugal, from 2000 to 2014.

### 4.3 Trade between bordering Spanish communities and Portugal

In this subsection, the trade balance between Spain and Portugal is detailed accordingly with the exchanges in the Autonomous Communities (AC) behaving as source and destination of imports and exports, figure 8. Particularly, those regions bordering the two countries (*Trade in Autonomous Bordering Communities, TABC*), will be examined.



Figure 8. Spanish Autonomous Communities.

These analysis allows the discussion of the impact of the geographical proximity in the improvement of trade relations and whether they behave in the period considered. Again, we reiterate that the volumes of transactions that take place between residents of border regions are not listed. These occurs regularly and are explained by the opportunity of residents to enhance competitive advantages of the products sold in each country, due to tax reasons or for better production costs.

Table 8. Import and export data from Spain to Portugal, related with Spanish autonomous communities bordering Portugal and overall values.

|                            |               | %              |               | %              |               | %              | Var.         | Var.         | Var.         |
|----------------------------|---------------|----------------|---------------|----------------|---------------|----------------|--------------|--------------|--------------|
| <b>ABC Exports</b>         | <b>2000</b>   | <b>s/total</b> | <b>2007</b>   | <b>s/total</b> | <b>2014</b>   | <b>s/total</b> | <b>00-14</b> | <b>00-07</b> | <b>07-14</b> |
| Galicia                    | 1,418         | 12%            | 2,379         | 15%            | 2,455         | 14%            | 73%          | 68%          | 3%           |
| Castile and Leon           | 843           | 7%             | 939           | 6%             | 930           | 5%             | 10%          | 11%          | -1%          |
| Extremadura                | 278           | 2%             | 394           | 2%             | 510           | 3%             | 84%          | 42%          | 29%          |
| Andalusia                  | 914           | 8%             | 1,372         | 9%             | 2,064         | 11%            | 126%         | 50%          | 50%          |
| <b>TOTAL for ABC</b>       | <b>3,453</b>  | <b>29%</b>     | <b>5,085</b>  | <b>32%</b>     | <b>5,959</b>  | <b>33%</b>     | <b>73%</b>   | <b>47%</b>   | <b>17%</b>   |
| remaining AC Exports       | <b>8,402</b>  | <b>71%</b>     | <b>10,918</b> | <b>68%</b>     | <b>12,055</b> | <b>67%</b>     | <b>43%</b>   | <b>30%</b>   | <b>10%</b>   |
| <b>Total Exports</b>       | <b>11,855</b> | <b>100%</b>    | <b>16,003</b> | <b>100%</b>    | <b>18,014</b> | <b>100%</b>    | <b>52%</b>   | <b>35%</b>   | <b>13%</b>   |
|                            |               | %              |               | %              |               | %              | Var.         | Var.         | Var.         |
| <b>ABC Imports</b>         | <b>2000</b>   | <b>s/total</b> | <b>2007</b>   | <b>s/total</b> | <b>2014</b>   | <b>s/total</b> | <b>00-14</b> | <b>00-07</b> | <b>07-14</b> |
| Galicia                    | 783           | 17%            | 2,121         | 23%            | 1,870         | 19%            | 139%         | 171%         | -12%         |
| Castile and Leon           | 343           | 7%             | 575           | 6%             | 571           | 6%             | 66%          | 68%          | -1%          |
| Extremadura                | 151           | 3%             | 371           | 4%             | 390           | 4%             | 159%         | 147%         | 5%           |
| Andalusia                  | 438           | 9%             | 996           | 11%            | 911           | 9%             | 108%         | 128%         | -9%          |
| <b>TOTAL ABC</b>           | <b>1,714</b>  | <b>37%</b>     | <b>4,063</b>  | <b>44%</b>     | <b>3,742</b>  | <b>37%</b>     | <b>118%</b>  | <b>137%</b>  | <b>-8%</b>   |
| remaining AC Exports       | <b>2,895</b>  | <b>63%</b>     | <b>5,205</b>  | <b>56%</b>     | <b>6,267</b>  | <b>63%</b>     | <b>116%</b>  | <b>80%</b>   | <b>20%</b>   |
| <b>Total Imports</b>       | <b>4,609</b>  | <b>100%</b>    | <b>9,268</b>  | <b>100%</b>    | <b>10,008</b> | <b>100%</b>    | <b>117%</b>  | <b>101%</b>  | <b>8%</b>    |
|                            |               | %              |               | %              |               | %              | Var.         | Var.         | Var.         |
| <b>ABC Trade Balance</b>   | <b>2000</b>   | <b>s/total</b> | <b>2007</b>   | <b>s/total</b> | <b>2014</b>   | <b>s/total</b> | <b>00-14</b> | <b>00-07</b> | <b>07-14</b> |
| Galicia                    | 636           | 9%             | 258           | 4%             | 585           | 7%             | -8%          | -59%         | 126%         |
| Castile and Leon           | 500           | 7%             | 364           | 5%             | 359           | 4%             | -28%         | -27%         | -1%          |
| Extremadura                | 127           | 2%             | 23            | 0%             | 120           | 1%             | -6%          | -82%         | 419%         |
| Andalusia                  | 477           | 7%             | 377           | 6%             | 1,154         | 14%            | 142%         | -21%         | 206%         |
| <b>TOTAL ABC</b>           | <b>1,739</b>  | <b>24%</b>     | <b>1,022</b>  | <b>15%</b>     | <b>2,218</b>  | <b>28%</b>     | <b>28%</b>   | <b>-41%</b>  | <b>117%</b>  |
| remaining AC               | <b>5,506</b>  | <b>76%</b>     | <b>5,713</b>  | <b>85%</b>     | <b>5,788</b>  | <b>72%</b>     | <b>5%</b>    | <b>4%</b>    | <b>1%</b>    |
| <b>Total Trade Balance</b> | <b>7,246</b>  | <b>100%</b>    | <b>6,735</b>  | <b>100%</b>    | <b>8,006</b>  | <b>100%</b>    | <b>10%</b>   | <b>-7%</b>   | <b>19%</b>   |

Source: Spanish Institute for Foreign Trade (ICEX, Instituto Español de Comercio Exterior) and Spanish Ministry of Economy databases (DataComex).

Accordingly with the data collected in Table 8, the following highlights can be stated:

- The *TABC* behaviour for the autonomous communities bordering with Portugal has been uneven. Exports as a whole increased by 73%, a figure slightly lower than imports that have been 118%.

- In detail, Andalusia is the community that reached the highest increase in exports about 126%, followed by Extremadura, with 84%, and Galicia with 73%, against Castile and Leon that registered the smallest increase, about 10 %. Besides that, imports in the autonomous community of Extremadura registered the highest increase, by 156% and Galicia closely, with 139%, while Castile and Leon reached only 66%.
- In the remaining autonomous regions, mainly Madrid, Catalonia and Valencia, the volume of exports has increased by 43%, while imports increased 116%.
- The trade surplus presents the highest increase, 142%, in Andalusia, going from 477 to 1,154 mill. €, while in the remaining autonomous communities a decrease is obtained: Castile and Leon -28%, Extremadura and Galicia -6% -8%. Also, it is important to notice that the trade surplus presents an important increase during the years of crisis, especially in Extremadura where it reaches more than 400%.
- The weight of exports to neighbouring autonomous territories have grown from 29% to 33% of Spain to Portugal and imports continue around 37%.
- Also the higher trade volumes in bordering regions were observed between Galicia and Portugal with 4,325 million € followed by Andalusia with 2,975 million €, Castile and Leon with 1,501 million € and, finally, 900 mil € for Extremadura.

#### **4.4 Trade analysis based on the nature of goods: Spain-Portugal focus**

Next, the nature of the goods imported and exported based on TARIC codes (tariff and statistical nomenclature of the *Customs Union Integrated Tariff of the European Communities*), will be detailed in order to raise future understandings concerning the nature of goods traded between Spain and Portugal.

Some coincident key figures on exports and imports were observed, both in favour of Spain, mainly in industrial products such as clothing and textiles, the automotive industry and motor vehicles, manufacturing iron, mechanical and electrical and plastics, table 9.

As for total exports, Portugal acquired mainly from Spain: electrical machinery and mechanical appliances, automobiles and other vehicles, fuels, articles of iron, metals and plastics.

Regarding imports, Spain acquires to Portugal: automobiles and other land vehicles, vehicle parts and accessories, followed by clothing, garments and accessories in clothing, fuel, electrical machinery, plastics and related articles.

Table 9. Import-export data from Spain to Portugal by nature of the goods, in 2014. TARIC codes exceeding 10 bn. € (values in millions of euros)

| TARIC         | Goods or Products                              | Export        | Import        | Balance      | Coverage    |
|---------------|--|---------------|---------------|--------------|-------------|
| 1             | Live animals                                   | 201           | 84            | 117          | 239%        |
| 2             | Meat   | 496           | 236           | 260          | 210%        |
| 3             | Fish   | 257           | 149           | 107          | 172%        |
| 7, 8          | Vegetables and fruits                          | 482           | 155           | 328          | 312%        |
| 9, 10         | Coffee, tea, mate and spices, cereals          | 213           | 43            | 169          | 492%        |
| 12,13,14      | Seeds, oil seeds and various fruits            | 77            | 54            | 23           | 143%        |
| 15            | Oils and fats                                  | 388           | 138           | 250          | 281%        |
| 17, 18        | Sugar and cocoa                                | 116           | 91            | 25           | 128%        |
| 16,19, 20, 21 | Food preparations                              | 762           | 314           | 448          | 242%        |
| 22            | Beverages                                      | 251           | 81            | 170          | 309%        |
| 23            | Food preparations for animals                  | 176           | 44            | 132          | 401%        |
| 24            | Tobacco  | 38            | 363           | -325         | 11%         |
| 25, 26        | Salt, land, sulphur, plaster, cement, minerals | 75            | 57            | 18           | 131%        |
| 27            | mineral fuels                                  | <b>1.214</b>  | <b>864</b>    | 350          | 140%        |
| 28, 29        | Chemical products                              | 320           | 134           | 186          | 239%        |
| 30            | Pharmaceutical products                        | 294           | 43            | 252          | 692%        |
| 31            | Fertilizers                                    | 92            | 88            | 4            | 104%        |
| 34            | Soaps  | 202           | 37            | 166          | 554%        |
| 39            | Plastics and its manufactured products         | <b>1.056</b>  | 608           | 448          | 174%        |
| 40            | Rubber and its manufactured products           | 292           | 83            | 209          | 351%        |
| 41, 42        | Leather goods, travel products, handbags       | 196           | 44            | 151          | 440%        |
| 44            | Wood and charcoal                              | 314           | 218           | 96           | 144%        |
| 45            | Cork and its manufactured product              | 80            | 81            | -1           | 99%         |
| 48            | Paper and paperboard                           | 545           | 339           | 206          | 161%        |
| 52            | Cotton   | 73            | 38            | 35           | 190%        |
| 54,55,58,59   | Man-made fibres, special fabrics               | 206           | 155           | 51           | 133%        |
| 61,62,63      | Apparel and clothing accessories, clothing     | 904           | <b>1.021</b>  | -117         | 89%         |
| 64            | Footwear, gaiters and the like                 | 217           | 167           | 51           | 130%        |
| 68, 69        | Articles of stone and ceramics                 | 132           | 119           | 14           | 111%        |
| 70            | Glass and glassware                            | 189           | 227           | -38          | 83%         |
| 72,73, 83     | Manufacturing iron and other common metals     | <b>1.147</b>  | 673           | 474          | 170%        |
| 74, 75        | Copper, aluminium and other metals             | 662           | 220           | 442          | 301%        |
| 82, 83, 84    | Boilers, mechanical appliances                 | <b>1.378</b>  | 455           | 922          | 302%        |
| 85            | Electrical machinery, sound, image, record     | <b>2.151</b>  | <b>755</b>    | 1.396        | 285%        |
| 87            | Motor vehicles, other land vehicles            | <b>1.496</b>  | <b>1.109</b>  | 388          | 135%        |
| 90            | Optical instruments, photography etc.          | 314           | 132           | 182          | 238%        |
| 94            | Furniture, bed, lighting appliances.           | 264           | 314           | -50          | 84%         |
| 95            | Toys   | 203           | 15            | 187          | 1313%       |
|               | Miscellaneous manufactured articles            | 146           | 23            | 123          | 625%        |
|               | <b>subtotals</b>                               | 17.621        | 9.773         | 7.850        | 180%        |
|               | <b>other items</b>                             | 3393          | 235           | 156          | 167%        |
|               | <b>TOTAL IMPORT-EXPORT</b>                     | <b>18.014</b> | <b>10.008</b> | <b>8.006</b> | <b>180%</b> |

Source: Spanish Institute for Foreign Trade (ICEX, Instituto Español de Comercio Exterior)

Looking at the breakdown by type of goods, in the Spanish border communities, it can be seen that statistics collecting sales volumes between companies (mainly through the European Intrastat system) does not reflect the large volumes in cross-border trade between individuals and, at the same time, those amounts are not registered. Concerning this issue, it is interesting to remember the words of the president of trader hub, with commercial activity in Badajoz, explaining the influx of Portuguese citizens, saying: "*Badajoz is the third Portuguese city, after Lisbon and Porto, and Portugal does not work when our trade suffers.*"

Accordingly with public statistical data for neighbouring autonomous communities, the following highlights are considered:

- *Galicia*, is mainly an exporter of textile products, followed by the fish, then the articles of iron and metals, the automotive industry and the accessories and later wood and charcoal. As importing goods, garments are the most important items, followed by articles of iron and fish;
- *Castile and Leon* stands in exports vehicles and cars, meat, paper and cardboard, food preparations and rubber articles. Concerning the imports, vehicles and their components are the most important, followed by clothing and apparel, wood and food preparations;
- *Extremadura* exports mostly articles of iron and metals, beverages, cork and vegetables. Major imports are glass, articles of iron and metals and food preparations;
- *Andalusia*, exports majorly oils, mineral fuels, aircraft, copper and aluminium, and vegetables. It imports especially sugars, salt, sulphur and gypsum, oils, plastics and mechanical appliances.

## **5. Conclusions and Future Work**

In this paper the relationship between trade openness and economic growth was studied for Spain and Portugal, in the period 2000-2014. The results achieved are generally consistent with economic theory, as discussed in previous sections. There are arguments that trade liberalization and unification of monetary policies have a beneficial effect on the economic growth of countries. In turn, the common space of Iberian Peninsula and the different programs of cross-border cooperation between Spain and Portugal, in particular that of the 2007-2013 plan, intended to promote the development of border areas. This strengthening of economic relations and cooperation in the existing networks, mainly physical infrastructure projects to improve communications, has not been fully implemented due to

the economic crisis, that began in late 2007. This forced major adjustments and budget cuts on public finances in both countries.

Now, if considered all the years of this century, the indicators provide insight into the evolution followed regarding the improvement in trade liberalization and economic growth. In making estimates of the ratio of the volume of foreign trade to GDP (APERT), the two countries whose economies are both service-oriented, have a positive sign but with results that differ according to the development they have had over the years of economic boom and the degree of impact suffered by the current financial crisis. Both countries, as said, have an economy marked by the guidelines of the European economic space, both commercial and monetary policies.

In Spain, the rate of trade liberalization in the analysed period is stable at around 47% of GDP in 2014. This behaves difficult to improve, being at the beginning of the century in 45% and in the crisis years' stood at 43%. The weight gain of both trade flows in GDP, (with growth of 60% in 2000-07) was due largely to trade with the EU. This results from the integration that led improved access to technology, increase of market size, improve of internal competition, more investment and less distortion of prices and inflation. But the current economic crisis is having a particular impact on Spain to slow and even reduce imports and making production more competitive outward to increase exports significantly. Therefore, the coverage ratio increases by 91%, although trade liberalization grows only 5%. In the case of Portugal, the volumes of foreign trade to GDP are in a better position than the Spanish. The import and export trade is 4.7 times less than that of Spain as the economic difference measured in GDP is 6.1 times lower. In both countries, the overall trade deficit has decreased since the introduction of the euro, Spain has improved by 46% and Portugal 37%, experiencing both the benefits of international trade in general. The results researched show that there is a higher incidence of trade liberalization in the Portuguese economy, reaching for this indicator above 61% and a growth close to 14% compared to 47% and only 5% of Spain, as already mentioned.

Besides that, in both countries the increases in sales volumes are higher than the corresponding increases in GDP, but more directly perceived in the case of Portugal. For Portugal, the growth rates of its foreign business are higher than GDP growth and developmental consequences of liberalizing trade policies and changes in monetary policy, are accordingly observed as an attempt to overcome the impacts of the global crisis via substitution import and export promotion, without making adjustments devaluing the exchange rate of the national currency, to be a single one across Europe.

Moreover, one third of Portuguese exports have its destination Spain and a quarter of the imports come from this country, while compared with only 7% and 4% in the opposite direction. Therefore, the dependency of customer and supplier is greater in the case of Portugal, and the trade balance is favourable to Spain, approximately 8,000 million euros, and progressively increasing.

On the other hand, although all the regions bordering with Portugal have increased further exports to the whole of Spain, 72% versus 43%. Imports from Portugal have grown in the same proportions and close to 118%. These data have not been totally positive. The most favoured, commercially speaking, were for *Andalusia* region that has been growing its trade balance by 142%, while *Castile and Leon* behaves worse with 28%, and *Galicia e Extremadura* with 8% and 6%. It is important to notice, that the crisis years have managed to boost the foreign trade in *Extremadura* and *Galicia*, but have not offset the decline in trade competitiveness achieved during the years of economic growth. Therefore, the geographical closeness does not guarantee greater marketing products and depends greatly on the ability to produce factors both, agricultural, livestock, industrial and service, in each region.

The growth observed in trade volumes, of approximately the double, are consistent with the studies of Rose (2002), where the author states that the monetary unions increase the trade in that proportion.

Finally, as a future work, the geographical details of Portuguese bordering regions are planned to be studied in order to enhance some further insights concerning the impact of trade relations in the balance of trade and, specially, on local economies.

The analysis of the effect of monetary and fiscal policies on GDP are considered key extends to the proposed “century tendencies” and, particularly, to the comprehensive investigation of the impact of euro in the international trade. This will be considered as a major progress for the research proposed in this paper.

Besides that, the proposal of novel indicators to boost the performed measures and the improvement of the empirical model are also objectives to be attained in future research developments.

We believe that if the planned infrastructures in communications that unite both countries are finalized and public and private bodies with responsibility in this area continue with efforts to carry out more cooperation agreements: business conferences and trade shows, etc.

This will get increase trade volumes between the border regions in particular and of two countries in general.

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