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**A Fundamental Interpretation of the  
2009-2012 Crisis of the Eurozone**

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## **A Fundamental Interpretation of the 2009-2012 Crisis of the Eurozone**

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### **Abstract**

Extreme volatility and high uncertainty characterized European financial markets between 2010-2012. In addition to the ‘financial contagion’ effects of the 2007-2009 Subprime Mortgages crisis, the European financial markets’ turbulence was also related to a more fundamentally economic reality: structural heterogeneity among the Eurozone countries which was aggravated by the introduction of the euro in 1999. During the first decade of the Monetary Union there was a productive specialization among Eurozone countries that, contrary to the expectations of public policy designers, resulted in an increased differentiation of the member countries. That process resulted in a deepening gap; there are some countries which have been exceptionally good performers in several dimensions, and there are others that have lagged in most. More specifically, we aim to explain why several European countries were subject to a more adverse reaction from the financial markets than others, pushing them to the brink of illiquidity and making the default on their governments’ obligations a close possibility..

To illustrate the increased heterogeneity observed among EU members since the introduction of the euro, we analyze a representative sample of eight countries: the four largest economies in the Eurozone, Germany, France, Italy and Spain; and a four smaller economies, of which two are relatively successful exporters, Ireland and The Netherlands; and two more, Greece and Portugal, which have recently undergone serious fiscal and debt problems, so as to need a bailout from the EU, the ECB and the IMF.

**Keywords:** Structural Heterogeneity, Eurozone countries, Financial Turbulence.

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## Introduction

Different attempts to explain the financial turbulence episodes that rocked the financial markets of several Eurozone countries between 2010 and 2012 have related the crisis in Europe with the “contagion” (psychological) effects of the subprime mortgages crisis of the United States between 2007 and 2009. No wonder, a number of European financial intermediaries held American subprime mortgage-backed securities in their portfolios and, when those securities became “toxic”, they were exposed to significant risk. As the portfolios of large banks recorded important losses, affecting the banks’ equity base and creating the threat of a systemic effect, national governments finally decided to intervene. The possibility that several large European banks were affected by the collapse in value of different types of CDOs and ABSs justified the intervention, and eventually the bailout coordinated efforts of the EU, the ECB and the IMF.

In this work we postulate that in addition to the unquestionable importance of the pure financial contagion effects, which were aggravated by the psychological overreaction of many investors, there are other possible explanations to the many complex episodes that followed. In the next sections, we present some of those possible explanations which do not pretend to be alternative but complementary of what has already been said in many other studies in regard to the causes of the Eurozone 2010-2012 financial turbulence.

We intend to present some hard evidence that supports the argument that the intensity with which the 2007-2009 financial turbulence was transmitted to different individual Eurozone countries was related to fundamental economic reasons.

Krugman (1993) and Artus & Gravet (2012) postulated that a new division of labor precipitated by the elimination of barriers to international trade would result in increased productive (and economic) heterogeneity among countries, not in a greater homogeneity, as proclaimed by the official propaganda of the European Union (EU), and highlighted as one of the main benefits of monetary union. An explanation of the increased heterogeneity that has resulted from the adoption of the euro was presented almost two hundred years ago by David Ricardo, in his *Theory of Comparative Advantage of Countries in International Trade*, which we will briefly discuss below.

To illustrate the increased heterogeneity observed among EU members since the introduction of the euro, we analyze a representative sample of eight countries: the four largest economies in the Eurozone, Germany, France, Italy and Spain; and a four smaller economies, of which two are relatively successful exporters, Ireland and The Netherlands; and two more, Greece and Portugal, which have recently undergone serious fiscal and debt problems, so as to need a bailout from the EU, the ECB and the IMF.

A basic macroeconomic analysis of the sample countries identified two sub-groups of countries: one first subgroup that may be characterized as internationally competitive, including global leaders in certain productive activities; and a second subgroup that includes countries which are

significantly less industrialized and have experienced a reduction of the relative importance of their manufacturing exports in time. The countries in the latter group lagged behind those in the former group in important aspects like fiscal stability and public debt, but more worrying is the fact that, instead of improving their condition, they seem to experience an increasing deterioration after the 2008-2009 international financial crisis.

### **The nature of Financial Contagion and its role during the recent Financial Crisis**

The 2007-2009 Subprime Mortgages crisis was a privileged laboratory to study the role that contagion effects may play in financial markets. As discussed by Longstaff (2008), the issue of contagion in financial markets is of fundamental importance, and there is an extensive literature addressing its causes and effects. Some of the most recent works focused on a description of the contagion mechanisms include Allen and Gale (2000, 2004), Kyle and Xiong (2001), Kodres and Pritsker (2002), Kiyotaki and Moore (2002), Kaminsky, Reinhart, and Vegh (2003), Brunnermeier and Pedersen (2005, 2007).

Beyond the financial turbulence associated to the direct financial contagion and negative psychological effects of the Subprime Mortgages crisis, we insist on the fact that the roots of the recent European financial crisis lie on the real sector of the economy. This analysis will serve its purpose if it contributes to a better understanding of the limitations and mistakes of different economic policies that were implemented in the Eurozone in the past, and motivates an interest to revise the economic plans and policies of EU members in the future.

### **The adoption of the euro and the increased specialization of countries**

There are powerful economic reasons that explain why during the first ten years after the creation of the Eurozone in 1999, there was an increasing economic heterogeneity among the member countries. Heterogeneity may be explained as due to a perfectly normal process of active productive specialization and an international division of labor, making each national experience different from the others. But it is important to highlight that that process was also, to some extent, the outcome of incorrect domestic economic policies.

Some countries specialized in productive activities that are more stable in time, create more economic value and are capable to reap the benefits of economies of scale like, for example, advanced manufacturing in the automobile and the aeronautics industries. In most instances, manufactured goods produced by those countries are exportable and internationally competitive.

In some other countries, however, specialization was focused in more traditional activities, which didn't make those countries more competitive internationally.

Two decades ago, De Grauwe argued that, in the case of the EU, increased market integration would lead to and increased specialization of economic activities.... "this is likely to lead to regional concentration of industrial activities". He also discussed the possibility that shocks in demand would be more likely to have asymmetric effects, "with some and countries being affected more severely than others" (De Grauwe 1993).

Other implications anticipated by De Grauwe for the "future" EMU were that the macroeconomic adjustment problem would be complicated by the fact that countries would no longer be capable "to use the exchange rate as a policy instrument", but at the same time, would be subject to more frequent asymmetric shocks. He also argued that "the only way this adjustment problem can be made less severe is by centralizing a significant part of the national budgets" (De Grauwe 1993), a challenge which has, in effect, represented a major feat to the political class in the Eurozone.

Long before the constitution of the European Monetary Union, the Nobel Laureate, Robert Mundell, explained that a geographic zone with multiple countries could have a single currency as long as the individual countries' economic cycles were somewhat coordinated (Mundell 1961). In that sense, any external shock that affected all member countries at any moment could be managed with a unified monetary policy. For example, if a high level of economic activity caused the prices and wages of some sectors in the economy to experience inflationary pressures, the Central Bank of the area would be well placed to enforce a restrictive monetary policy by raising interest rates and other measures to disincentive consumption and investment, and reduce the demand-pull component of inflation. That was the sense in which Mundell wrote about the possible existence of an Optimal Currency Area (Mundell 1961).

During the years that followed the adoption of the euro, the economic development of each adopting country was characterized by a perfectly normal mechanism of international distribution of labor in the purest sense of David Ricardo's classical writings' specialization process that results from each country's natural endowment of productive factors (David Ricardo 1821).

In this study we find evidence to support the argument that monetary union, contrary to what many believed, instead of creating more a more homogeneous pattern of economic development across Eurozone nations, has resulted in an increasing heterogeneity.

After the euro was introduced in 1999, all Eurozone countries increased their specialization because the exchange rate risk, which was one of the few remaining obstacles to a total freedom of movement of goods, services, labor and capital, was eliminated. Until that time, full specialization had not been attained only because of the existence of currency exchange rate risk and by the frictions associated to the bid-ask spread that were paid in every currency exchange transaction.



In many cases, productive activities, for which some countries were well endowed, were operated below their optimal scale because of weak demand, while potential demand from other EU countries existed but did not become effective because of the frictions of currency exchange risks and bid-ask spreads.

Besides trade barriers, cultural barriers or transportation costs, international trade is usually subject to currency exchange rate exposure. In a world with freely-floating currency exchange rates, the potential benefits derived from an optimal scale of operations, which would result in lower per unit costs of production and maximize potential profits, may not be enough to convince a producer. The potential losses due to unexpected exchange rate fluctuations on commercial transactions like, for example, suppliers' credit or commercial credit granted to foreign customers, represent implicit frictions.

In the face of potentially unfavorable exchange rate fluctuations, both the producers and the consumers end-up in suboptimal levels of profitability and satisfaction. Additionally, the relative scarcity of the product in question is likely to result in higher target market prices even before any currency exchange rate fluctuations, further aggravating the suboptimal situation faced by both the producer and the consumer.

An alternative strategy open to the producer would be to install a complete productive facility in the target market and eliminate any remaining operating currency exchange rate exposure. But that strategy would work only in those cases where the depth and breadth of the market justifies the investment, once all technological and logistic constraints are considered, leaving out of the scope a number of potential but fragmented markets.

### **Economic Integration and the adoption of the euro**

During several decades and previous to the adoption of the single currency, European countries underwent a dynamic economic integration process that dates back to the creation of the European Common Market with the Treaty of Rome (1957), and the formalization of the European Union with the Maastricht Treaty (1993), which practically eliminated all the institutional barriers to international trade.

Removing tariffs and other impediments to the free movement of goods and services, allowed member countries to specialize in producing those commodities for which they had a comparative advantage, and to give up other lines of production in which, by comparison they were at a disadvantage. The abolition of trade barriers induces a movement of resources from the relatively less efficient to the relatively more efficient industries (Liesner 1958). Greater specialization permitted economies of scale and made countries more efficient in what they produced, increasing investment, employment and the well being of the population.

The only remaining non-explicit barrier to trade among the European Union countries was, precisely, the existence of different currencies. As long as

“transaction” and “economic” exposure existed, there was a motivation for countries to produce domestically some of the goods in which they were not internationally competitive, but in which they preferred to avoid the transaction costs associated with currency exchange. With the adoption of the euro (1999), currency exchange rate risk was also eliminated and the conditions for a fully integrated economic area moved ahead significantly.

The main benefit expected from the elimination of that last barrier to trade was, precisely, the final specialization of countries. That was the strongest possible argument to the adoption of a single currency for the Eurozone member countries.

But, instead, at least two groups of countries resulted from that specialization process. In order to explore the different economic model prototypes, we focused our attention on a limited sample of countries which included the four largest (Germany, France, Italy and Spain), two smaller successful exporters (Ireland and The Netherlands) and two countries that were severely affected by the recent financial turbulence of 2009-2012 (Greece and Portugal). While we do not claim that a strict classification can be established for Eurozone countries, there is enough evidence to support the argument that there are, at least, two possible specialization models.

The first group includes the more industrialized countries in Northern Europe (Germany, Ireland and The Netherlands). Those countries reinforced their manufacturing base, made significant progress in their productive capacity and grew as strong exporters. A second group, which includes Portugal, Spain, Ireland, and Greece, had more similarities than differences among themselves. However, the case of France, a significantly developed country with a strong manufacturing sector seems to be a middle-of-the-road case. France is not as indebted as its Southern neighbors (Italy and Greece), but it has been losing competitive edge, and its exports are increasingly insufficient to finance its imports.

At a high level of generality, the structural heterogeneity observed in Europe is the outcome from the choice of different productive inclinations at the individual countries’ level. The choice of different economic development models was, most certainly, influenced by the natural endowments of productive factors enjoyed by the different nations. However, several other factors were at play, including their cultural and political preferences, the existence of important differences in the way the labor markets work, the efficiency and depth of credit and capital markets and, most importantly, the vast spectrum observed in the design and implementation of government policies from one country to another.

The choice of different economic development models and the effects of the ensuing economic policies derived from that choice, had an important influence. Instead of minimizing productive heterogeneity, they favored it.

Some of the euro zone countries consolidated an advanced manufacturing industry, and positioned themselves as world leaders in the design, production and distribution of sophisticated products. Their exports to the rest of the world represent a source of significant foreign trade surpluses, and their economic

potential, as well as their institutional framework, attract significant amounts of Foreign Direct Investment (FDI). At the same time, that group of countries also generates significant flows of FDI towards other Eurozone member countries, as well as towards the rest of the world.

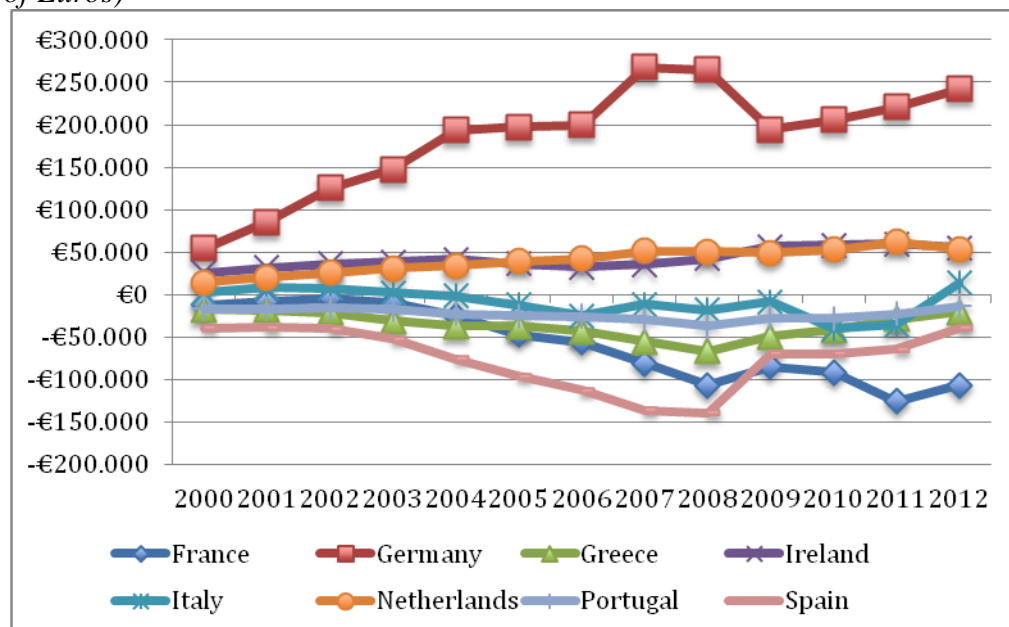
Other Eurozone countries have, instead, opted for a portfolio of productive activities that is more closely related to the primary sector (agriculture, mining) and to the services sector (trade, transportation, tourism), and have experienced large, chronic foreign trade deficits. The foreign-sector deficits and low levels of fiscal income have forced those governments to increase public debt levels in order to respond to higher standards of living expectations of their population. Finally, that higher indebtedness represents an increasing weight, as well as a risky bet in times of uncertainty, as was evidenced by the recent financial crisis.

### Empirical Evidence on the Structural Heterogeneity of the Eurozone

#### a) International Competitiveness

In what follows, we undertake the comparison of the eight countries in our sample comparing some of the characteristic macroeconomic variables that configure a fundamental diagnosis of any country's economy, for the period that goes from the introduction of the euro, in January 1999, and until December of 2012.

**Graph 1.** Total Current Balance of Trade in Constant Prices of 2012 (Billions of Euros)



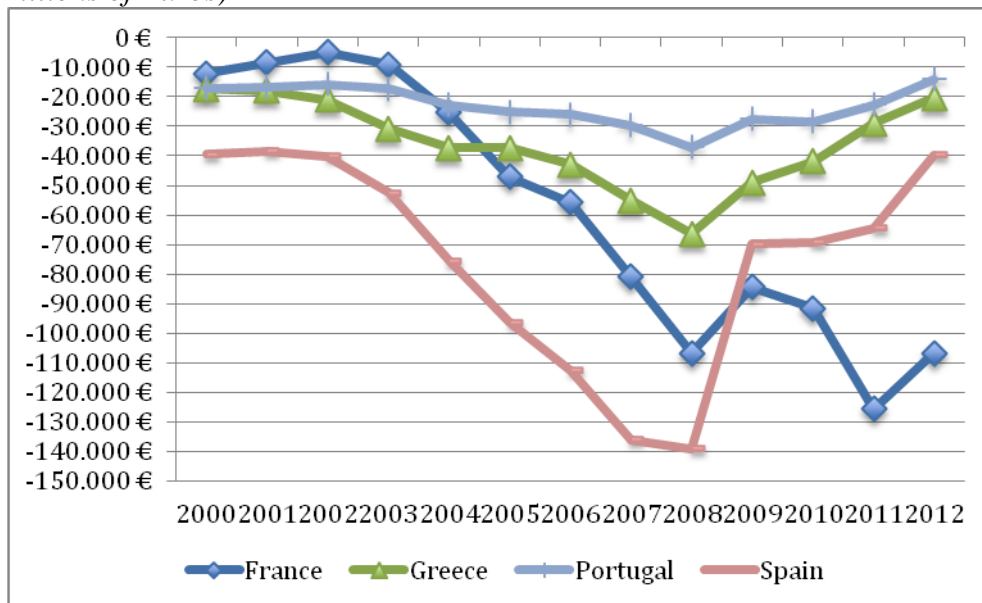
Source: © Euromonitor International

Graph 1 presents the Current Account Balance for the eight countries in the sample. While for the rest of the analysis we separated countries in two groups of four countries each, this first graph includes all eight to highlight the main argument of this work: economic heterogeneity is reflected in terms of the greater or lesser ability of countries to maintain a favorable external sector balance international competitiveness. In that sense, what Graph 1 shows is that, in terms of international competitiveness as an exporter, Germany is an outlier in terms of the absolute value of its International Current Account positive balance, and that during the last twelve years it only increased its distance from the rest of the Eurozone countries.

To obtain more precise conclusions from our graphical analysis, we grouped the sample countries in two subgroups. The first subgroup included those countries that by the end of the period of analysis, the year 2012, were ranked among the four “less favorable performers”, and denominated “Group A”. The second subgroup included the four countries revealed as the “best performers” in each of the dimensions we analyzed, and denominated “Group B”.

As a continuation of the analysis of the Current Account balance presented in Graph 1, Graphs 2 and 3 separated the sample countries in the two subgroups that were just described. Graph 2 presents the Current Account balance evolution for Group A, including those countries that had a less favorable Current Account balance during the period of analysis, while Graph 3 presents the results for Group B, including the more successful international traders, i.e., those that were able to achieve and maintain a more favorable (less unfavorable) Current Account balance.

**Graph 2.** *Group A: Total Current Balance of Trade in Constant Prices of 2012 (Billions of Euros)*

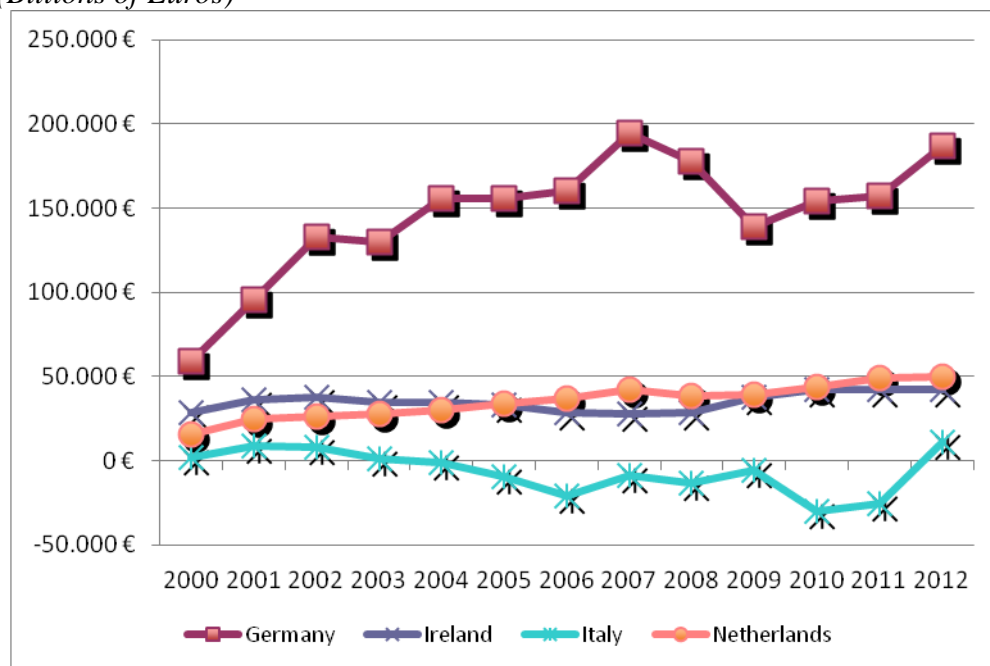


Source: © Euromonitor International

As mentioned above, there was a clear deterioration in the Current Account balance of these four countries, and Spain recorded the deepest deficit during the period, but experienced a fast rebound after 2008, most likely associated with the economic slowdown and the harsh austerity measures put in place by the Spanish government.

The Current Account balance of the four countries in Group B (Graph 3) was positive in 2012. While Italy experienced several periods of negative balance, it was never too large and, by 2012, had fully returned into the positive zone. Again, Germany's performance throughout the period can only be described as extraordinary.

**Graph 3. Group B: Total Current Balance of Trade in Constant Prices of 2012 (Billions of Euros)**

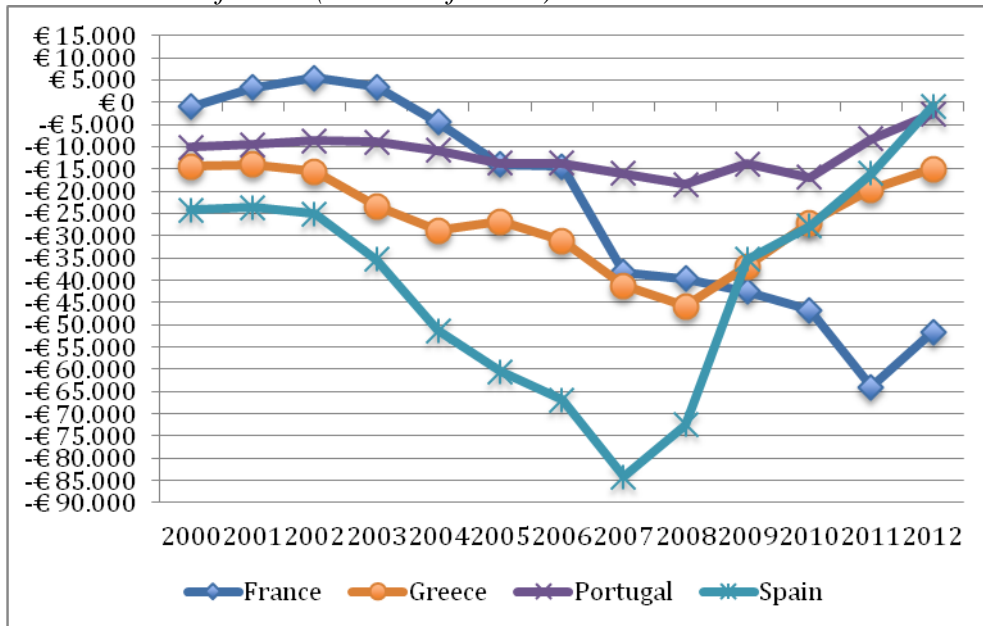


Source: © Euromonitor International

At a more disaggregated level, statistical data on the different components of EU members' foreign trade with all countries suggests that there is a clear differentiation between those countries that have achieved a manufacturing superiority and those that have specialized in a more traditional (and less competitive) portfolio of activities.

Graph 4 shows the Manufacturing Current Balance for the four countries that had a less successful performance in terms of balancing their manufacturing imports with manufacturing exports, again classified as Group A. This time, Group A included France, Greece, Portugal and Spain. It is interesting to notice the extraordinary recovery of Spain from a serious imbalance close to 85 billion in 2007 to achieve almost a breakeven balance in 2012. France, by contrast, only achieved a tepid inflexion in 2012.

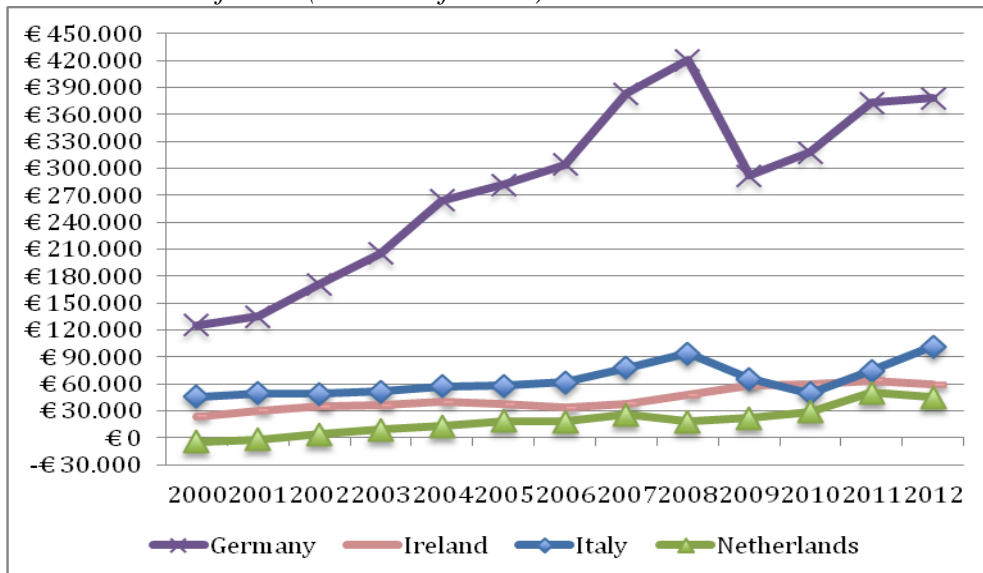
**Graph 4. Group A: Current Trade Balance in Manufacturing Products at Constant Prices of 2012 (Billions of Euros)**



Source: © Euromonitor International

As illustrated in Graph 5, the manufacturing trade better performing group of countries (Group B) included Germany, Ireland, Italy and The Netherlands. The amazing performance of Germany's manufacturing sector trade balance performance was only briefly interrupted in 2009, as a consequence of the serious economic slowdown of the Eurozone.

**Graph 5. Group B: Current Trade Balance in Manufacturing Products Constant Prices of 2012 (Billions of Euros)**

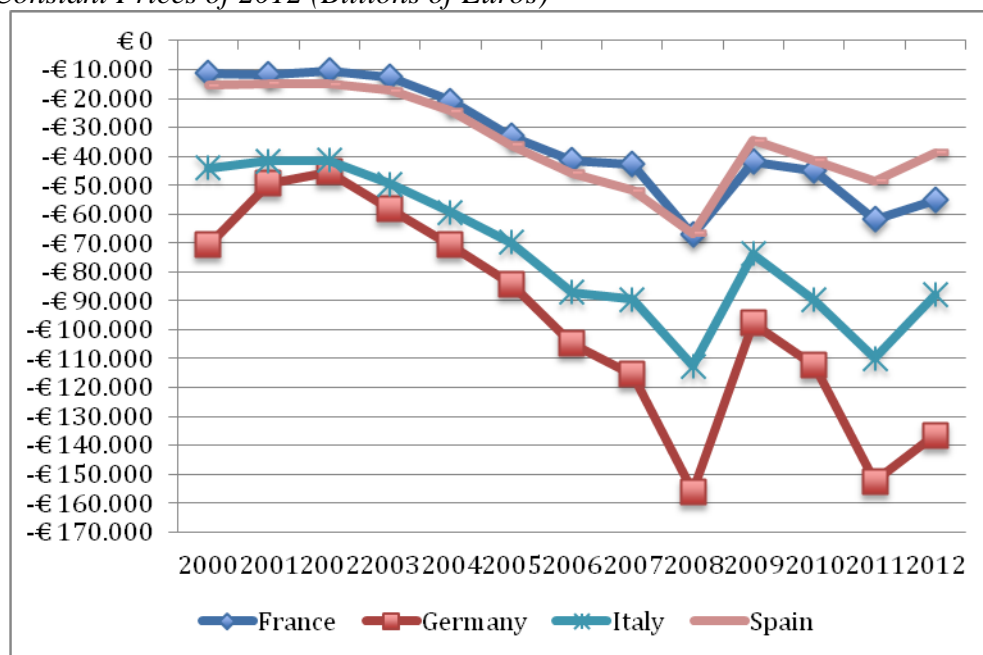


Source: © Euromonitor International

The performance of the Current Account for products different from Manufacturing shows that, by contrast, the best performers were the less industrialized countries and France.

Graph 6 presents the Current Account balance in non-manufacturing goods for the group of countries that did not perform well during the period of analysis. The case of Germany as the worst performer of the sample in this dimension is in no way a coincidence. That country has specialized in high level manufacturing and most of its consumption of raw materials and food is imported from the rest of the world. However, its specialization as a manufacturer has been fruitful, as discussed above.

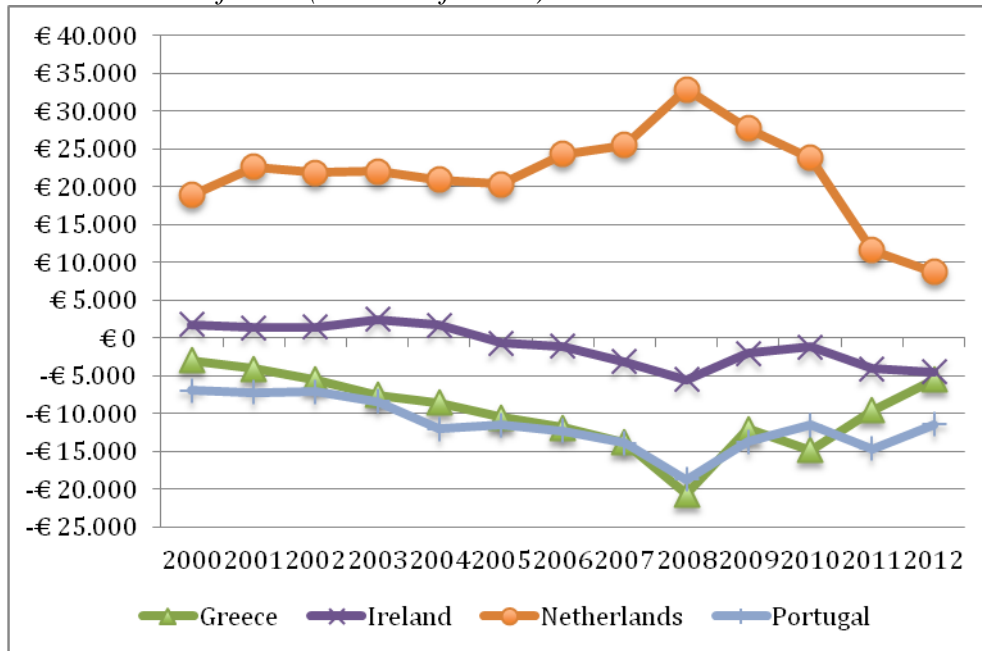
**Graph 6.** Group A: Current Trade Balance in Non-Manufacturing Products in Constant Prices of 2012 (Billions of Euros)



Source: © Euromonitor International

Group B, the better performing countries in terms of the non-manufacturing imports and exports were Greece, Ireland, The Netherlands and Portugal. Greece and Portugal had a negative non-manufacturing goods Current Account balance, but they seemed to recover during the last four years of the period, as can be seen in Graph 7.

**Graph 7. Group B: Current Trade Balance in Non-Manufacturing Products in Constant Prices of 2012 (Billions of Euros)**



Source: © Euromonitor International

### Public Finances and Public Indebtedness

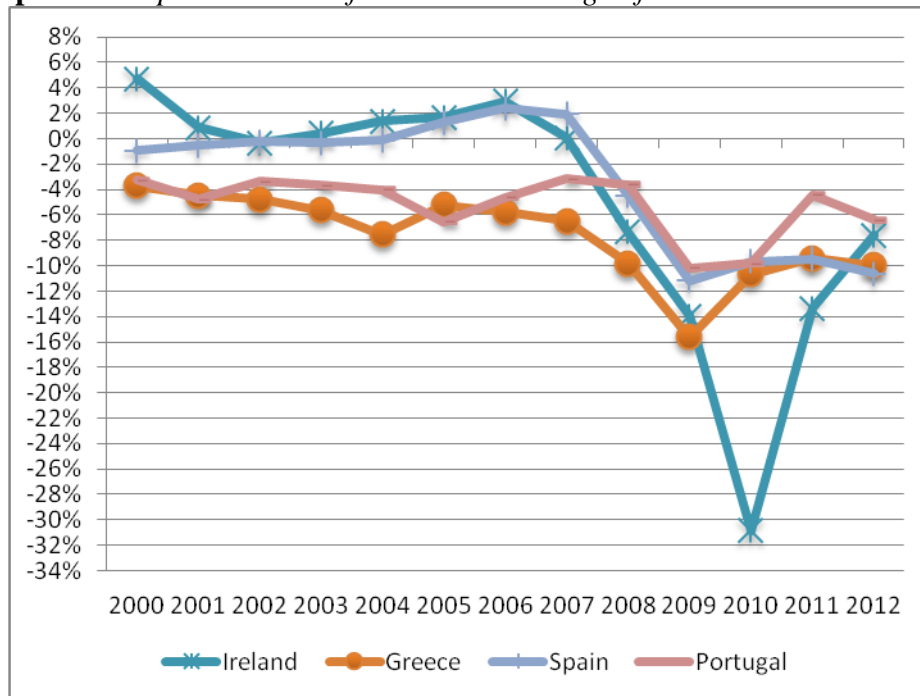
Following the same methodology as before, to analyze the fiscal implications of the different economic development models followed by the Eurozone members, we classified our sample of countries in two groups.

We first look at Public Deficit data and then we extend our analysis to Public Debt. It is to be expected that a fundamentally healthy Fiscal Balance would maintain Public Debt levels under control. If, by contrast, the Fiscal Balance is unfavorable, one would expect that Public Debt levels increased through time.

For Group A countries, Public Deficit data as a percentage of GDP shows that Ireland was a notable outlier, reaching a -30% value in 2010. It is interesting to notice that even when Ireland was one of the better performing countries in terms of international competitiveness, its public finances deteriorated drastically when, in 2008, the country was forced to deal with a severe banking crisis, as a result of a real estate properties bubble that burst at almost the same time as the Subprime Mortgages crisis occurred in the United States. The other countries in the group were also among the worst performers in terms of international competitiveness.



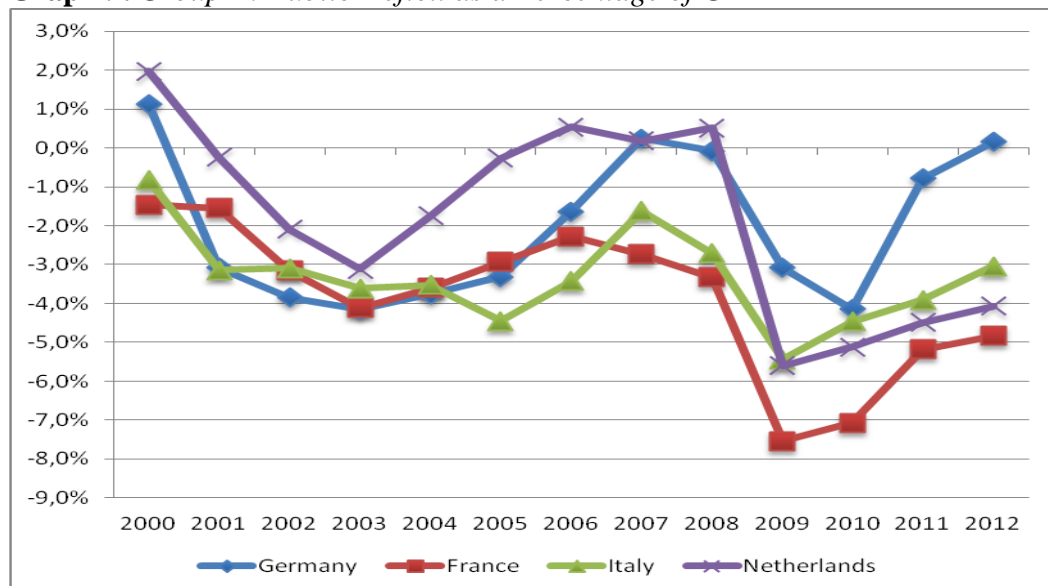
**Graph 8. Group A: Public Deficit as a Percentage of GDP**



Source: © Euromonitor International

The 2007 downturn also affected (augmented) the Public Deficit of all countries in Group B, and in all cases there was a turnaround either in 2009 (France, Netherlands and Italy) or in 2010 (Germany). The worst performer in this group was France, that attained a deficit of almost 8% of GDP in 2009, but had recovered to only -5% by 2012.

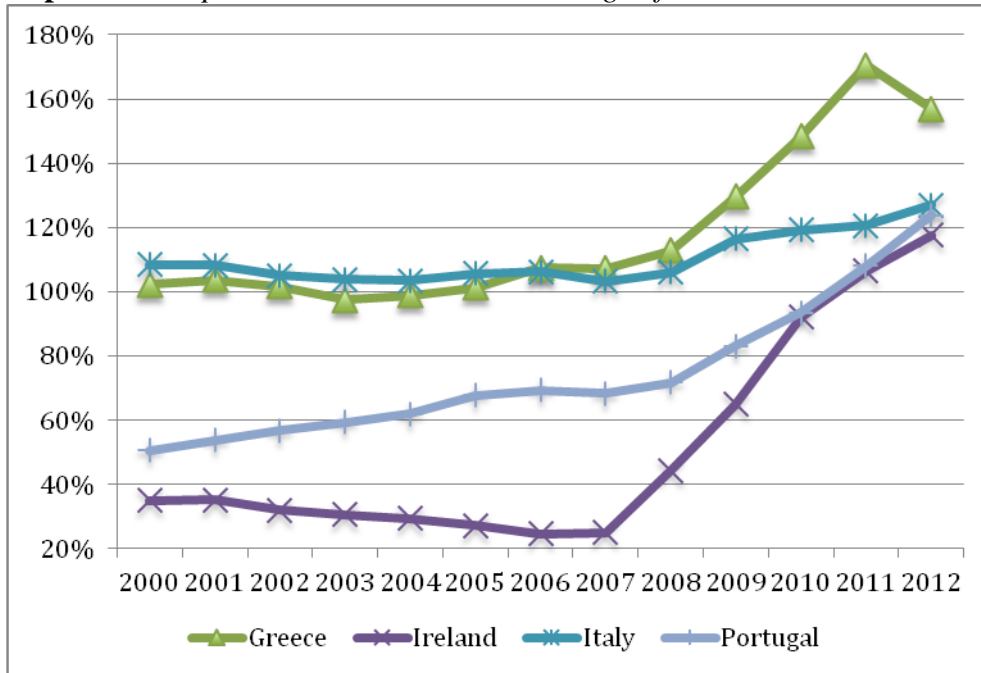
**Graph 9. Group B: Public Deficit as a Percentage of GDP**



Source: © Euromonitor International

Graph 10 presents those countries whose Public Debt as a percentage of GDP was the highest by December 2012, including Greece, Ireland, Italy and Portugal. Both Italy and Greece started the period with already high levels of debt, and did not reduce them. By contrast, Portugal and Ireland were more conservative in their utilization of debt but the prevailing conditions during the last years of the period forced them to borrow significantly to overcome the serious challenges they faced.

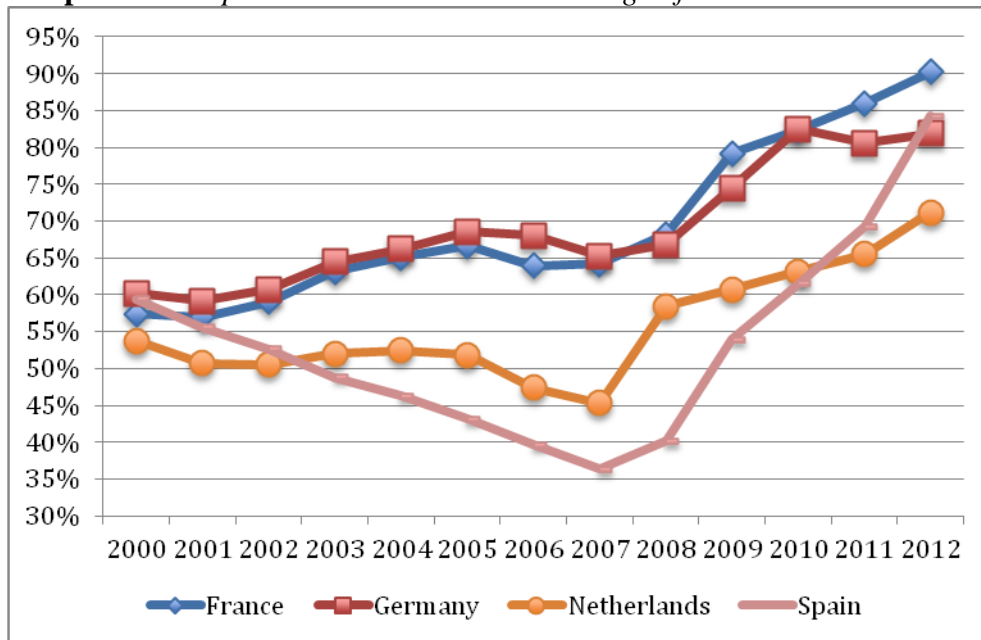
**Graph 10.** *Group A: Public Debt as a Percentage of GDP*



Source: Eurostat Database

Graph 11 presents the less indebted countries from the sample: France, Germany, The Netherlands and Spain. It is noticeable how the 2007-2009 financial crisis had a negative effect on the Spanish economy, forcing its government to abandon a debt reduction trajectory, as economic slowdown, unemployment and serious financial institutions problems forced it to use more public debt. In some ways, the Spanish experience resembles that of Ireland because both were disciplined and careful in the utilization of Public Debt, but at some point were forced to significantly increase its utilization to face the disastrous consequences of the real estate bubble burst that was, again a common trait. France was the country with highest public debt as a percentage of GDP in this Group, almost 90% of GDP.

**Graph 11. Group B: Public Debt as a Percentage of GDP**



Source: Eurostat Database

### Insights from the Analysis

At the risk of being over-simplistic, we have presented evidence to support that the structural heterogeneity presently observed among the sample of eight EU member countries derives from:

a) Pre existing different models of development and different productive orientation due to the specific sociopolitical context and the natural endowments of each country; the former differences are of a historical nature and the economic differences are spontaneous and congruent with an optimal utilization of their resources (David Ricardo’s Theory on the Comparative Advantage of Nations).

b) Structural differences, associated with inefficiencies or frictions at the level of specific factors’ markets (e.g., labor, capital), that exist because of regulatory or policy distortions which should not prevail, but that require a proactive approach to minimize their adverse effects and their permanence.

Unfortunately, the EU’s economic heterogeneity is not widely recognized neither in the public domain nor in the discourse of ranking officers of Pan European institutions. On the contrary, there seems to be a tacit agreement that the simple adoption of a common currency will make all EU member countries more even. Logically, European institutions are not prepared to deal with those challenges, nor were designed to do so because this is an emerging reality that was not contemplated by the developers of the single currency model.

## Conclusion

The Eurozone countries face structural problems that deserve closer attention in order to recover fiscal stability, to reduce the extremely high levels of unemployment that prevail in several of its member countries and to reinstate a more consistent economic growth based on the clear identification of the many different and potentially rich complementarities that exist. The nearsighted belief that convergence will result automatically from the adoption of the euro is distracting the attention from fundamental issues that need to be addressed if economic integration is to be taken to its ultimate consequences. Rejection of Fiscal Federalism by several members of the EU blocks any solidarity measures. The only possible solution if the euro is meant to last, is to contemplate a Fiscal integration, similar in conception to the already existing Monetary Union. Undoubtedly, the implementation of a Fiscal Union faces many severe challenges, not the lesser of which is the nationalistic view of most political actors.

The debt expedient will no longer be feasible after the crisis. Private and public debts which detonated the crisis were only the means to artificially fix the structural problems of the real economy. It is necessary to fix the external accounts because, in the absence of a Federalist solution, fiscal equilibrium and external sector equilibrium are essential conditions for long term growth. This would be a relatively simple problem if each country preserved its own currency and could simply devalue its exchange rate to make its exports more competitive.

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