



INSTITUTE FOR WORLD ECONOMICS  
HUNGARIAN ACADEMY OF SCIENCES

# Working Papers

No. 199

January 2012

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Euros(c)epsis.

The theory of the optimum currency area and the history of the Euro



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## SUMMARY

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The article examines whether the euro crisis can be entirely attributed to factors such as regulatory failure or fiscal indiscipline, as opposed to the mechanisms built into the euro itself. It concludes that the euro contains a built-in bias that would result in the divergence of the path taken by the developed members on the one hand and the less developed ones on the other. The original the optimum currency area („OCA”) theory appears to have been valid, and the departure from it, as embodied in the Maastricht Treaty, amounted to an unjustified departure in light of the experience of the five weak countries of the eurozone (PIIGS). These experiences have proved that after the introduction of the common currency overcoming significant differences in initial conditions seems quite difficult. Only the countries having international companies with very strong positions on the world markets could take advantages of the euro, and the disadvantages resulting from the deterioration in competitiveness were left to the weaker ones. This also implies that the advantages for the stronger countries to the extent actually experienced were enhanced by the competitiveness of the weaker ones.

The euro area is in crisis. So far three countries have required massive rescue packages: for Greece even the second one was not enough, Spain and Italy are facing the risk of insolvency, their ratings from the rating agencies have seriously deteriorated. Indeed, it has become a matter of some doubt whether any of the eurozone countries will retain their current credit rating.

The sovereign debt of Greece exceeded 160% of GDP in 2011, and the country is compelled to cut domestic consumption significantly. The situation is similar, if not quite as dramatic in the other weak eurozone members. The only means available to them for the improvement of competitiveness is „internal devaluation”, but the measures imposed on them in the pursuit of this end only reduce the effective demand without any sign of the promised result, and, not unnaturally, meet with social resistance.

In autumn 2011 the 10-year Greek government securities were bought only with 17-18% CDS, the yield of the Portuguese bonds was more than 11%, the Irish 8.5%, and the Spanish government bonds was also more than 5%, which represents nearly three times more than the German yields. (Eurostat 2011) Moreover, the European Central Bank has sought to offset the weakening of the euro by raising the interest rates (April and July 2011), although it makes the borrowing more expensive. „Rescuing” Greece strengthens the euro and thus reinforces the real appreciation of the „Greek euro”, which increases the debt ratio and deteriorates the competitiveness of Greece, so further internal depreciation (cuts) is required. It is a vicious circle.

Euro zone countries in trouble would have to reach extremely high, for most of

them unattainable (4-6-8%) annual growth rates for more than a decade in order to be able to clear their debt.

We examine whether the euro crisis can be entirely attributed to factors such as regulatory failure or fiscal indiscipline, as opposed to the mechanisms built into the euro itself. Although we do not dispute the deleterious effects of mistaken national policies, we conclude that the euro contains a built-in bias that would result in the divergence of the path taken by the developed members on the one hand and the less developed ones on the other. It is a separate, and in this study unexamined question whether policy tools could be fashioned to counteract the centripetal dynamics of the euro. Instead, this article focuses on the original theory of the optimum currency area („OCA”), the history of the glosses and modifications in the service of policy thought to be appropriate for the realization of the „European Dream”, and the historic experience of the member countries since the introduction of the common currency with respect to the most commonly used economic indicators. We conclude that the original theory appears to have been valid, and that the departure from it, as embodied in the Maastricht Treaty amounted to an unjustified departure in light of the experience of the 5 weak eurozone countries, namely Ireland, Greece, Spain, Portugal and Italy, which are known as PIIGS.

## 1) THE THEORY

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The theory of optimum currency area (OCA) was established half a century ago by two seminal studies published nearly simultaneously, Balassa (1961) and Mun-

dell (1961). Both authors saw the primary conditions of a viable OCA in the similar reaction of the member countries to exogenous shocks, in the synchronicity of the business cycles and in the creation of policy instruments needed to manage the differences between these factors. If the reaction is more or less symmetrical, the factors decomposing the unity of the common currency can be kept under control. Although any asymmetric transient reaction may cause confusion, a serious problem arises from asymmetric shocks that are the consequences of *structural factors*. The last chapter of Balassa's 12 chapter book deals with the preconditions for creating the monetary union. These include the successful integration of an impressive list of economic institutions and phenomena – namely markets, prices and wages, the labour market, capital and financial markets, institutions, etc. – analysed in the earlier chapters. Balassa put a great emphasis on the order of integration processes and saw a serious threat if the integration takes place in the wrong sequence. According to his logic the common currency is not a tool of integration, but, rather the fruit of the already successfully implemented real integration, which can be the platform of further development. The importance of structural similarities was brought to the fore by Myrdal in 1957 and Káldor in 1966, and a similar position was represented in Peter Kenen's study published in 1969.

The first significant cracks were caused by Mundell himself, who in 1973 thought that the sequence problem could be managed with the help of „the interim solution“. If the members of the OCA invest their savings in each others' securities – according to Mundell's new theory – the asymmetric shocks can be compensated by the price movement of securities. In 2001

MacKinnon followed Mundell's theory, and claimed a similar intermediating role for diversified sources of income.

An even more serious departure from the original theory occurred in 1992 by Emerson's report entitled „One Market, One Money“, the debate on Phillips curve versus NRU (Natural Rate of Unemployment), and the growing number of literature on the longer-term ineffectiveness of monetary instruments (See Frankel 1998 and Frankel and Rose 2002). According to Emerson, on the basis of OCA theory, the advantages and disadvantages of entry into OCA cannot be sufficiently established. The two other papers aimed at minimizing the consequences of the abandonment of monetary instruments by states joining an OCA.

As so often, economists understood the changing requirements. The political will of Europe has decided on the rapid integration, and the original OCA-theory posing an obstacle as it did, required some restyling. The writings of Giavazzi and Giovanni in 1989, as well as of Goodhart in 1989 and of Rogoff in 1996 served to further pave the road to Maastricht. According to them price stability in the countries struggling against inflation can only be achieved if they give up their independent monetary policy, and peg their currency to a stable, low-inflation currency. Along this idea the theory of „nominal anchor“ has taken shape, whose role was enthusiastically assumed by the reunified Germany. To eliminate the risk of asymmetric shocks, instead of achieving the full integration, the discussions about the options for the management of shocks came into the fore. Kenen's warning [1969] that the countries with less diversified economies may face major shocks was sidelined, instead of a well thought out convergence path for the small, open, and insufficiently

diversified countries (such as Portugal or Greece) all EU members were to observe at all times the Maastricht criteria, which were thought to enjoy universal validity, and the elimination of indisputable differences was to be achieved by temporary aid instead of suitable economic policy instruments.

From the common currency point of view it is an issue of key importance that the treatment of different inflationary dynamics has remained, but the sufficiency of the significantly narrowed instruments with which such dynamics could be managed has not been examined. Those who gathered in Maastricht assumed with a noble simplicity that compliance with the fiscal indicators stipulated in the treaty can keep the inflation in the determined range (Issing 2008). But in reality, the reverberations of the institutionalized wage outflow (e.g. Italian *scala mobile*), the Balassa-Samuelson effect inevitably associated with convergence, the demand and supply shifts arising from the difference in structure, the competitive differences stemming from differing levels of technological development, the different reliability and efficiency of public and private institutions, the legal system and the judiciary, thwart the development of uniform prices and inflation dynamics, while the unified monetary policy forces single nominal interest rates on the member states of the OCA.

Since the introduction of the euro the expected convergence of prices and wages has not been achieved, the more advanced gained further competitiveness, and the less developed lost competitiveness, the convergence came to a halt. Different real interest rates developed. The countries struggling with traditionally higher inflation have had access to cheaper sources in real terms than the more advanced

economies. The associated cheaper source resulted in the development and the intensification of asset bubbles, especially in unbridled real estate development. The real value of the common currency increasingly diverged, which further worsened the competitiveness of the periphery. Confidence in the favourable endogenous effect of the OCA [Kenen 1969] – that the increased dynamics of trade due to the common currency successfully eliminates the still remaining structural difference – proved unfounded.

Why does the cure, namely the reduction of wages and the increase of productivity supported by theory and confirmed in practice in Germany, not work in the countries of the periphery? Why cannot the less developed economy regain its competitiveness without devaluation even with the most severe austerity measures? After all, the reunification of Germany on the basis of 1 DMark=1 OstMark resulted in a significant overappreciation of the DMark, that Germany successfully corrected by limiting the increase in real wages and boosting the efficiency.

In our view the answer lies in the original intuition of the OCA-theory. The common currency is not only inadequate tool to eliminate the differences inherent in the real sector, but makes the task even more difficult by limiting the range of instruments of economic policy. The limitation may mean increased challenges for the less developed countries. Although there are a number of overlaps between the levels of development and competitiveness, the two phenomena are not identical, because the access to high technology necessary to improve efficiency – i.e. the competitiveness – is primarily not an economic policy, but a development issue. The developed country can enhance the performance of its advanced technology – includ-

ing organizational and institutional culture (soft technology) – while the less developed does not have the technological stockpile, the better use of which would ensure the required result. In other words, the drop in the real wages of the employees in the production of primary and semi-finished goods, can improve the competitiveness of primary and semi-finished goods, but does not contribute to the development of the economy. If real wages are coupled with technology producing lower instead of higher value added goods, the yield of their reduction is obviously modest. The development gap is not filled, and this kind of improved competitiveness does not lead to real convergence. The introduction of the common currency, as the original OCA theory made it clear, does not affect the micro-level factors of the real sector, e.g. the development of technology, and does not serve actual convergence.

## 2) THE VALIDITY OF THE THEORY IN FIGURES

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### 2.2. Inflation

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The Eurostat data clearly show that since the introduction of the euro the expected harmonization of inflation dynamics did not materialize, the „nominal anchor” did not work. Whether this failure can be attributed entirely to fiscal indiscipline – as it is now claimed in the context of revising the requirements for membership – is a complex question that is not addressed in this paper. We are concerned only with the validity of the original claim to the ef-

fect that a nominal anchor would *in and of itself* bring about this end, and find that the evidence invalidates this expectation. Entrusting responsibility for price stability exclusively to monetary policy under the exclusive mandate of the European Central Bank not only failed to bring about the hoped for harmonization, but posed very serious challenges for the peripheral economies. Whether some sort of combination of the existing monetary tools with enhanced fiscal discipline would fare better is not examined in this paper, but our intuition guided by the evidence compiled here suggests caution.

The countries in question became more expensive compared to the strong euro-zone countries, especially to Germany, which – of course – meant a decline in their competitiveness. In this respect Ireland got into the worst situation (despite a slight improvement after 2002), but the others also registered significant deterioration compared to the situation in 1999. (*Figure 1*)

While between 1996 and 1999 the consumer prices of PIIGS, with the exception of the Greek Drachma essentially were in line with the eurozone-12 and Germany, the trends subsequently diverged at an accelerating rate: between 1996 and August 2008 (last month before the collapse of Lehman Brothers) the prices in Germany and the consumer prices of the PIIGS increased by 21% and 31-54% respectively. (*Figure 2*) Compared to the price levels of 1996 the base inflation index of Ireland, Portugal, Spain and Italy in early 1999 was only 2-3% higher than that of Germany, and 8.5% higher in Greece. However, the gap has increased to 10-25% by the last months before the crisis.

Naturally, this has affected the export performance and the external balance of these countries.

### 2.3. Balance of trade

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As the data show, Kenen's thesis (1969), namely that the common currency eliminates the structural differences by encouraging the dynamics of trade did not find empirical confirmation.

The accession to the eurozone, instead of improving the foreign trade position of the inherently weaker eurozone economies, that became the focal point of the crisis by now, showed a worsening trend. As *Figure 3* and *4* shows, between 1999 and 2007 the deficit in external trade (*i.e.* trade with the non EU27 countries) has increased significantly in the case of Spain and Greece, it stagnated in Portugal, the growth of Ireland's trade surplus came to a halt, and in Italy the surplus turned into a deficit. As for the intra-EU trade the loss of positions is more marked, since in this relation the balance has deteriorated in all countries. Only Italy could improve the balance somewhat and achieve a modest surplus in 2007–2008, but this success quickly faded. The export surplus of Germany, however, showed a dynamic, and constantly increasing trend in the intra-, and a slower rate in the extra-EU trade.

Between 2000 and 2007 Germany's total exports in goods (intra- and extra-EU) tripled, while the most successful exporter of PIIGS, namely Ireland's surplus increased by less than 20%. (See also *Figure 5*)

### 2.4. Income balance

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*Figure 6* clearly shows how the income balance of PIIGS (further) deteriorated as well after the eurozone entry, while the balance of Germany rose steeply upward from 2002.

### 2.5. Balance of payments

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After the accession to the eurozone all five countries' balance of payments (goods, services, incomes, balance of current transfers and capital) declined compared to Germany, whose balance changed from a deficit into a briskly rising surplus. (*Figure 7*)

### 2.6. Debt

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However, the difference in inflation rates and low interest rates at the same time, as well as financial instruments mushrooming after the end of the information technology boom in the world, led necessarily (and on the basis of the borrowers' rational decisions) to a real estate boom and the indebtedness of the households. We note that without this the crisis would have appeared earlier, though probably in other forms (such as stagnation), since the by now obsolete production structure of the periphery, competitive disadvantage could be concealed with the help of higher consumption. All the countries involved in the transatlantic economy were participants of the processes leading to the crisis in 2008,

though not with the same consequences due to their various national economic, political, historical features and most importantly their different levels of participation in the hierarchical division of labour of the world economy.

The debt has been incurred, above all, by the population, rather than the public sector. After eurozone entry, until the crisis, among the countries we examined, only Portugal's, Greece's (and Germany's) public debt to GDP increased, in the case of other countries a decline can be witnessed. The current rise in public debt is largely due to the bailout of the banks.

In the 2000s, the financial obligations of the households and the nonprofit institutions serving them (briefly called „population“) sector of PIIGS increased at a rapid pace. The indebtedness of the PIIGS' population relative to GDP increased already before the creation of the eurozone, but a similar trend can be seen in Germany as well. After 1999, however, the situation changed: while the indebtedness of the PIIGS' population to GDP continued to grow, at an accelerating rate with the exception of Portugal having already a high level of population's debt portfolio, the German population's financial obligations began to fall, and this trend persisted until the crisis. (*Figure 8*) Before 2000 (as for Portugal 1998) even the PIIGS population's net assets to GDP increased, but subsequently, began to fall, while the net assets of Germany's population – after a few years of hesitation – showed a continuing upward trend. (*Figure 9*)

On the basis of the Eurostat data we have looked into the financial position of the population in other eurozone countries during the credit boom period (2002-2007) until the crisis. We found that, although the population's net financial assets

of some advanced countries declined (Belgium) or financial obligations increased significantly (Finland and France, more than 27%), one can say that only the population of the PIIGS countries were in both groups, namely their net assets diminished, while their liabilities increased significantly. Between the strong and weak eurozone countries' population a rearrangement in the financial positions has occurred in favour of the strong countries.

## 2.7. REER (Real Effective Exchange Rate)

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All of these above processes are explained by changes occurred in the real effective exchange. On the first chart below we can see the Eurostat base REER index compared to the eurozone 16 partner countries. A small circle indicates the year of the exchange rate fixing in the case of countries that entered into the eurozone after 2000. It is clear that after the fixing, the REER line breaks in all countries: the decline turns into growth, or the growth is accelerating. It can be seen as well that the real exchange rate of the strong economies, albeit at different rates, has further improved after 2000, in some cases such as Finland, at a better rate than in the period before 1999. (*Figure 10*)

The deflated real effective exchange rate of the eurozone 40 partner countries is published monthly by the European Central Bank. Besides the five examined countries we have formed a control group consisting of Germany, France, Finland and Austria. The data clearly show that the situation of the PIIGS markedly worsened the one of the control group improved in the 2000s. Before the eurozone entry, the REER of the PIIGS with the 40 partner

countries is more favourable than in the control group, but thereafter the situation is clearly reversed. (*Figure 11*)

## 2.8. Catching up (Convergence)

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Convergence came to a standstill just at the time of the euro area membership in the countries in question. Previously, Ireland rapidly approached the average of eurozone-12, but the rate of convergence has slowed down after 1999. It is worth drawing attention to Greece, now seen as a bad manager, who produced the most spectacular catching up trend in the 2000s besides the Irish. The catching up of Greece was particularly strong up to 2003 (the GDP grew by 5.9% in that year), most probably under the influence of the early years of the euro and the impact of the Olympic preparations, but after that period the trend breaks in Greece, too. Similarly, the catching up of Spain also lost momentum. In Portugal, the former trend of catching up reversed, lagging behind the stagnating Italy. As a mirror image, Germany's position shows an improving trend throughout of the period. (*Figure 12*)

One can raise an objection that the comparison to the average of eurozone-12 includes an autocorrelation as the per capita GDP growth of the members increases the average as well and thus inevitably lessens the convergence percentage rate. Therefore, we investigated the trend of the PIIGS' per capita GDP compared to the German data. In *Figure 13* the base index of each of the 13 countries' GDP/capita compared to Germany's GDP/capita is shown. The downward trends clearly emerge; the halt of the initial spectacular catching up is clearly visible in the case of Greece after 2003.

Finally, we investigated the standard deviation of the GDP/capita of the eurozone-12. It turned out that the standard deviation of both the nominal and the real values increased over the years of the eurozone membership. Only the crisis has brought a temporary change of the trend, but it proved to be also short lived. (*Figure 14*)

## 3) DETERIORATION IN COMPETITIVENESS

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As for the unit labour cost, the competitiveness of the PIIGS has unquestionably worsened over the past decades. And not just outside the euro area, but within it as well. We could state that the euro has been the catalyst and the amplifier of the deteriorating competitiveness of the PIIGS.

In consequence of the tendency to inflation, characteristic of the weak countries, the euro appreciated for them, while the low euro interest rates induced a boom in demand. The boom in the economy pushed up the wages (Balassa-Samuelson effect) and – as a result – the public welfare expenditures as well.

The change in the real effective exchange rate reflects the change in the value of the national labour as a function of change in price levels. Thus, social welfare may increase, but this does not cause the deterioration in competitiveness only if strong efficiency and productivity that raise better than the wages and the competitors' productivity, or even – and often – a kind of historical monopoly situation is behind. The PIIGS has increased „welfare“ in such a way that the latter conditions were unfulfilled, so the REER declined in their case.

According to Eurostat, between 2000 and 2007 the productivity (GDP per hour worked) virtually stagnated (increased only by 1.1%) in Italy, and increased in all other 4 countries. The productivity stepped up the least in Spain (by 6.3%), but the influx of cheap labour compensated this backwardness and ensured the increase of competitiveness (the drop in ULC). In the examined period, Portugal showed a productivity growth of 7.8%. These rates, however, lagged behind Germany's productivity growth (11.8%). However, at the same time Ireland and – despite any surprise – Greece has considerably improved their position compared to Germany. Between 2000 and 2007 the Irish GDP per hour worked and the Greek's as well increased by 17.5% and 19% respectively and the high rate continued even until 2009! (It is also less known that in the eurozone between 2000 and 2007 the Greeks worked the most, an average of 42-43 hours per week). But the rate of increase in wages and social benefits has exceeded the productivity, therefore their competitiveness slowed as shown below.

First, we examine the change in wages and other compensations (collectively „wages”) of labour. Figure 15 shows that between 1999 and 2007 the wage/GDP ratio in the eurozone increased only in Greece, Italy, Ireland and Portugal. Among the PIIGS the ratio of labour in the GDP has declined only in Spain, but less than in most other eurozone countries (Belgium, Finland and France). (*Figure 15*)

The combined ratio of pension and other social expenditures in the examined period is a much more eloquent proof. Again, Germany is at the top in the reduction of expenditures and PIIGS lead the increase. (*Figure 16*)

The income of the people living on salary, aids (*i.e.* not on capital) consists of two factors, namely labour compensation („wages”) and social benefits. The ratio of this amount to GDP in the eurozone between 1999 and 2007 declined only in Germany, Austria and Luxemburg, while the largest increase (5-10 percentage points) is observed in Ireland, Greece, Portugal and Italy, and with a slight drop, so to say remained unchanged in Spain. The relatively favourable indicators of Spain are explained to a large extent by the immigration between 2000 and 2007, when three and a half million people arrived in the country increasing greatly not only the labour supply, but also the social security payments. As the immigrants' wages are about 30% lower than the ones of the natives, the unit labour cost was positively affected (Éltető 2011).

It should, however, be added that the ratio of wages and social benefits to GDP, together and separately was the lowest in the PIIGS among the eurozone 12 member states between 2000 and 2007. The only exception is wealthy Luxemburg in this group. It is to be noted that inside the eurozone, outstanding real GDP/capita of Luxemburg is followed by Ireland, while the ratio of Irish wages, social benefits is lagging far behind of Luxemburg. The Irish attempt to „trickle down the welfare” is difficult to question, or to call causeless. Yet, in relative terms it has worsened the country's international competitiveness.

#### **4) WHOSE INTEREST IS SERVED BY THE EURO?**

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The euro is the final decisive stage of the European economic integration: its fall

threatens that the integration progress gets bogged down, and if it does so, it can turn back. But the condition of the common currency itself is the integrated market either under a common government and/or consisting of equally advanced and developing parts. The eurozone does not meet these criteria.

The positions of the stakeholders interested in the global economy are illustrated by an example of vital importance, namely by the outstandings of the banks.

According to the Bank of International Settlements in December 2010 nearly half of the outstandings of the European banks are claims on debtors within the eurozone, and more than a quarter of this (12.1% of all their claims) are in the examined 5 countries. At the same time the foreign claims of German and French banks within the eurozone together exceeded USD 6,100 billion (about EUR 4,300 billion). The European banks were involved in the five countries with a total amount of approximately 1,500 billion Euros. The total claims of the German and French banks together represent 53% of all claims of the PIIGS! At the end of 2001, the five weak eurozone economies represented 17.8% of the total foreign outstandings of the German, and 20.6% of the French banks respectively. (BIS 2010-2011)

Due to the secrecy of the banks only sparse data are available about the involvement of the individual banks. It is known for example that the German Hypo Real Estate Holding placed more than 80 billion euro in loans in the 5 countries in question, and the Deutsche Bank purchased Greek government bonds in an amount of 500 billion euro. (Ewing 2010)

It is no coincidence that Germany and France, though it was difficult, but finally agreed to a hidden restructuring rescue

package for Greece in the summer of 2011. Strong economies of the euro area protect their own banks and companies, when the weaker countries are bailed out from public money. The limit of the financial rescue is ultimately determined by the protected value.

The weak countries could have been „released” from the eurozone, if the costs of keeping them in are more expensive than the losses of their quitting. Leaving the eurozone would be promoted if the claims of the banks diminished on the unproven markets. Such a process also took place in the recent years.

Between March 2008 and December 2010 the outstandings of the banks in the PIIGS countries were reduced as follows: German banks by 378 billion dollars and French banks by 326 billion dollars, *i.e.* totally by 704 billion US dollars (about 490 billion Euros), *i.e.* by more than 26% in one and a half year. (*Figure 17*) All of the European banks reduced their outstandings more quickly, until December 2010, 30% of their share was withdrawn from the countries in question.

Under the influence of the crisis, the companies in the real economy turn away from the countries in trouble. According to UNCTAD WIR the stock of foreign direct investment has diminished between 2007 and 2010 in three countries of the PIIGS (in Greece, Portugal and Italy).

## 5) LESSONS TO LEARN

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We have shown above that the current problems of the euro-area integrating countries of different development level – according to the original theory of OCA –

do not originate solely from mistaken macroeconomic policies, but are the results of the misdesigned and prematurely created currency zone. The inflation rates diverged, the real effective exchange rate of the inherently less developed countries became „overvalued”, their population became heavily indebted, their external balance deteriorated and their catching up stopped. They have suffered a drop in competitiveness primarily because of this and the associated increase in the wage ratio, but it would not have taken place (or not to this extent) on the one hand, and not have caused problem similar to the present on the other hand, if their equilibrium problems due to their position in the euro area had not fallen apart. Developments over the past decade show that in contrast to intentions and expectations, the introduction of the common currency served neither the micro-level factors of the real sector, nor promoted the technological progress in the weaker economies and thus, did not bring about real convergence.

Only the countries having international companies with very strong positions on the world markets could take advantages of the euro, and the disadvantages resulting from the deterioration in competitiveness were left to the weaker ones. This also implies that the advantages for the stronger countries to the extent actually experienced were enhanced by the competitiveness of the weaker ones.

These findings carry some disturbing implications.

First, the current emphasis on fiscal retrenchment as a means for closing the competitive gap seems not to reckon with the historical evidence, which suggests that fiscal difficulties and growing indebtedness may be at least as much the result of a loss of competitiveness, as the cause of that

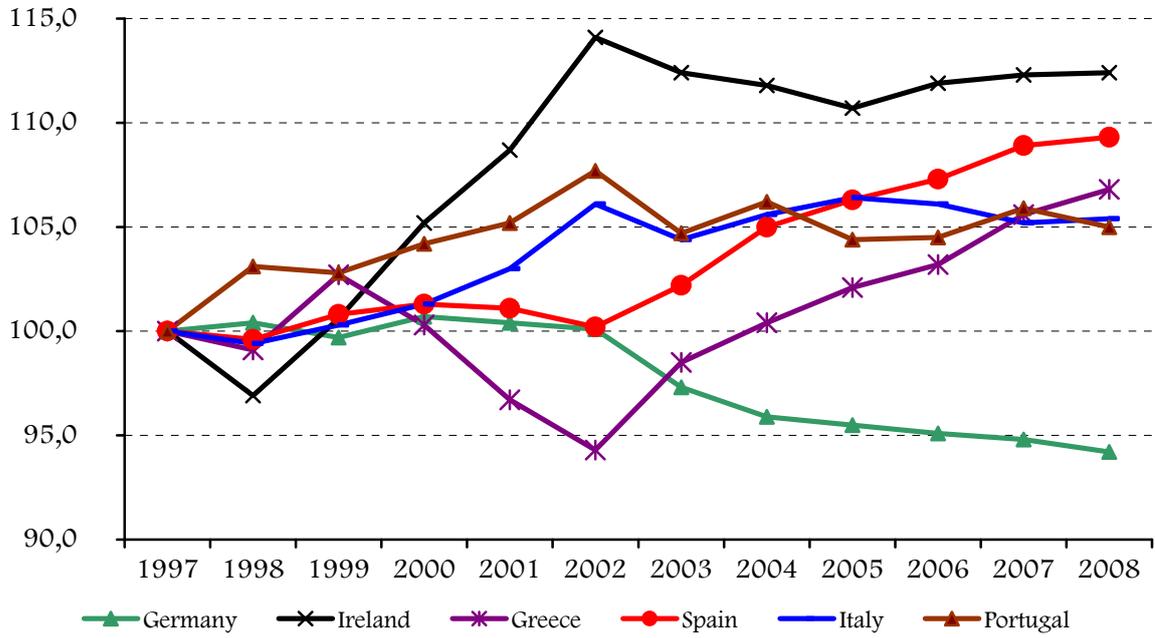
loss. It may well be, that we are facing here a Myrdal-type circular cumulative effect that condemns the less developed to a downward spiral.

Second, it does not seem feasible to formulate a monetary policy with similar consequences for all if the initial conditions of the members significantly differ.

Third, the idea, that a more centralized fiscal regime will reduce the divergence in the Real Effective Exchange Rate and thereby contribute to closing the gap in competitiveness seems ambitious. The formation of the German Zollverein in 1818 was followed by fifty three years of real integration, including institutional convergence before the common currency was introduced in 1871. By contrast, the Italian lira was introduced almost immediately after the unification of Italy, without regard to the dramatically different initial conditions between the North and the South of the country. The contrast between these two historical precedents is entirely consistent with the findings above.

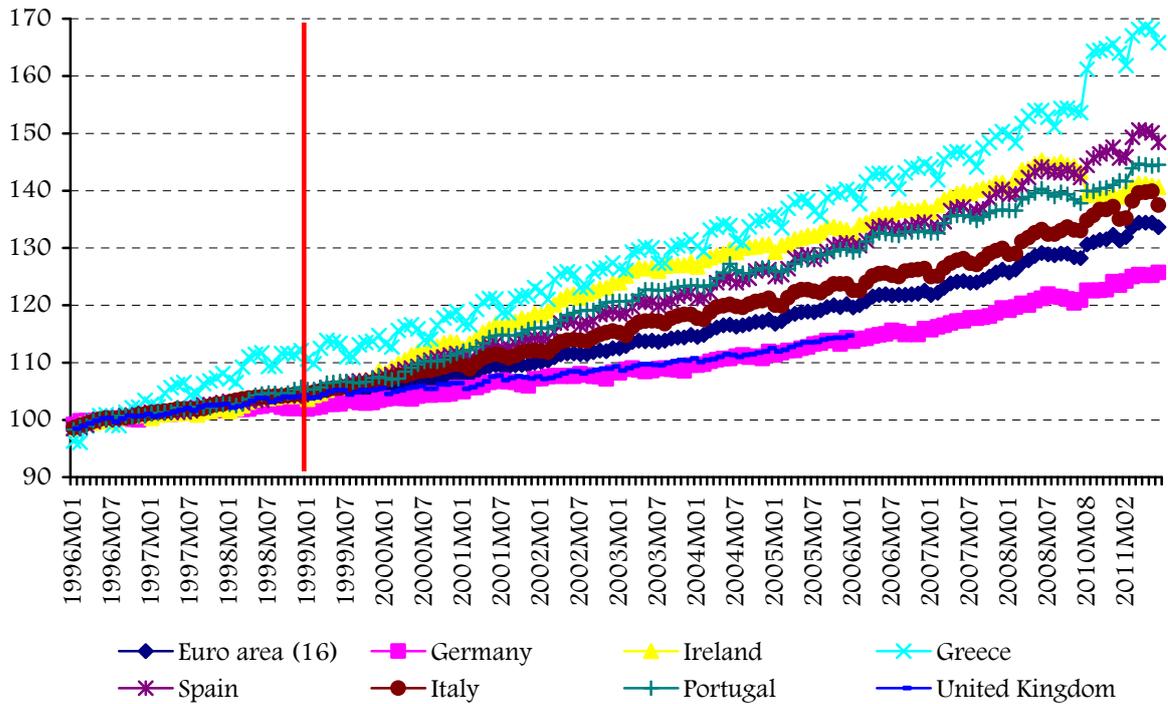
After the introduction of the common currency overcoming significant differences in initial conditions seems quite difficult. Accordingly, fiscal centralization may improve sentiment in the capital markets, particularly if coupled with centralized bank supervision, but there seems to be a lack of empirical evidence to suggest that it would enhance real convergence.

Figure 1  
 Base index of national comparative price levels of final consumption  
 by private households including indirect taxes  
 (Relation to euro12 in 1997=100)



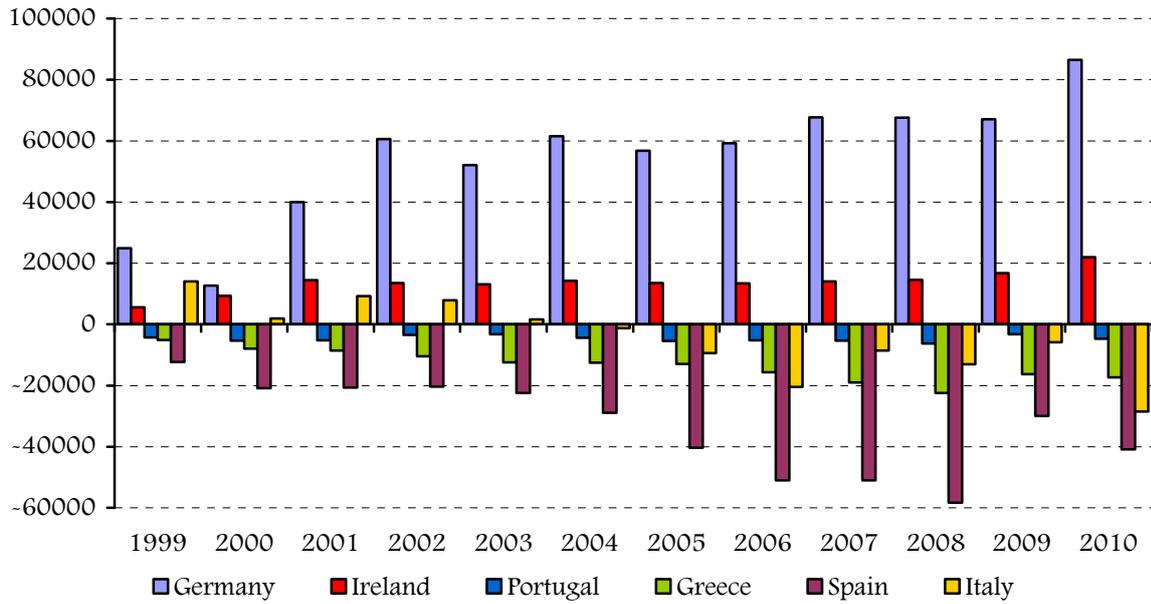
Source: Eurostat Online Database

Figure 2  
 HICP  
 (1966=100)



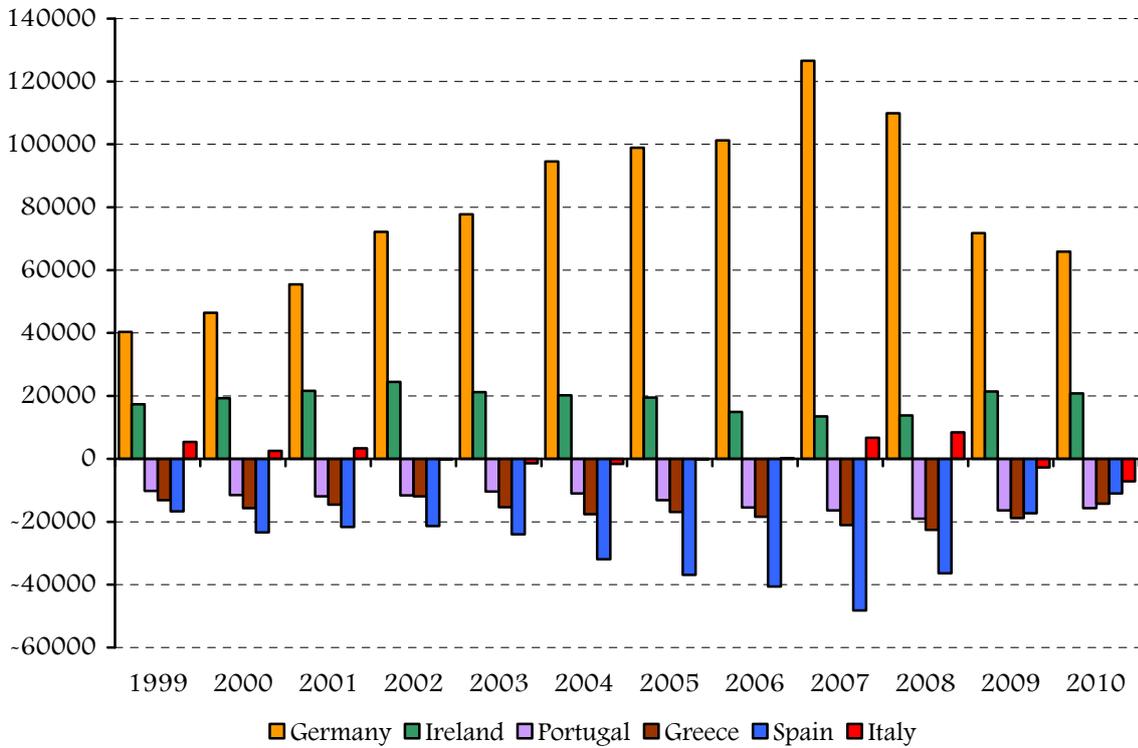
Source: Eurostat Online Database

Figure 3  
Balance of non-EU27 trade 1999–2010  
(Millions of Euro)



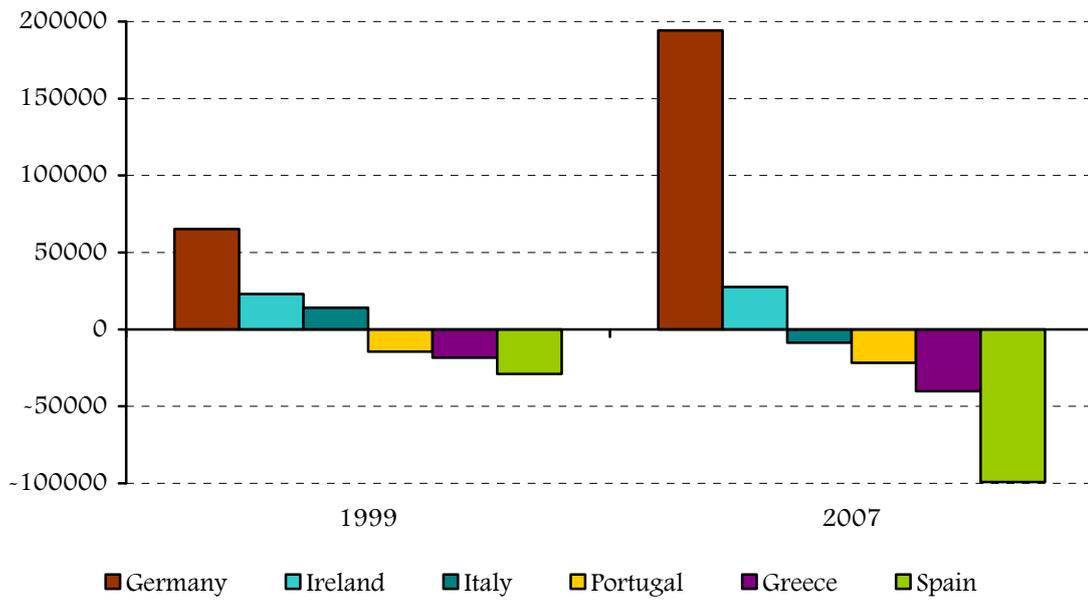
Source: Eurostat Online Database

Figure 4  
Balance of intra-EU27 trade 1999–2010  
(Millions of Euro)



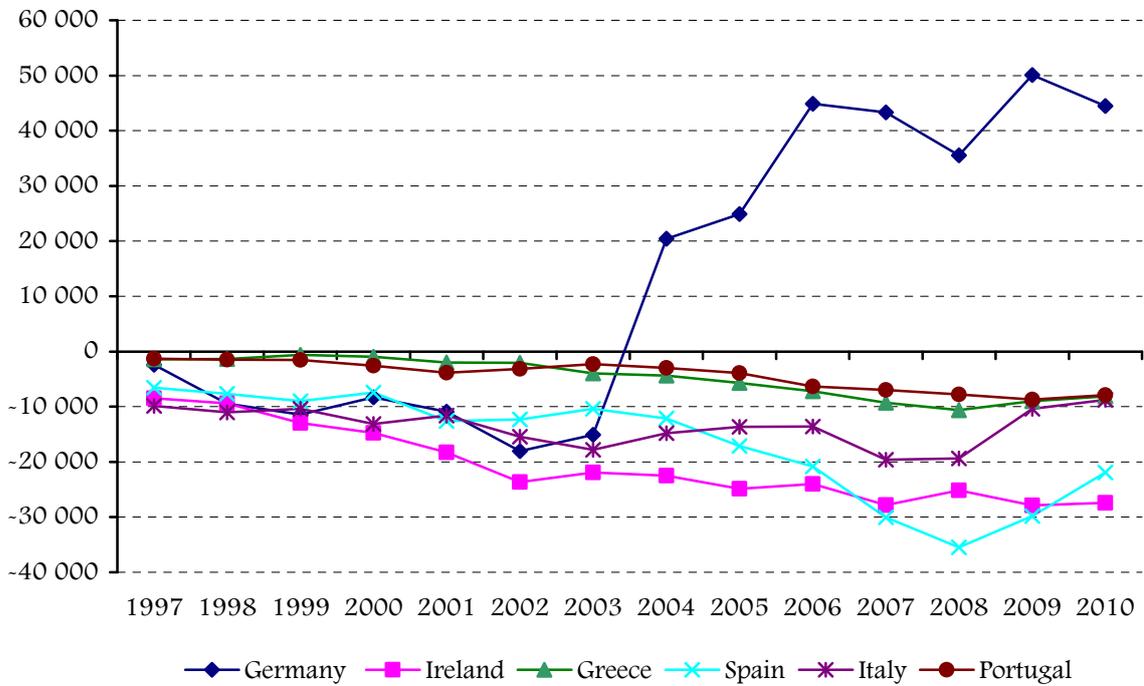
Source: Eurostat Online Database

Figure 5  
Balance of trade in goods and services (total) in 1999 and 2007  
(Millions of Euro)



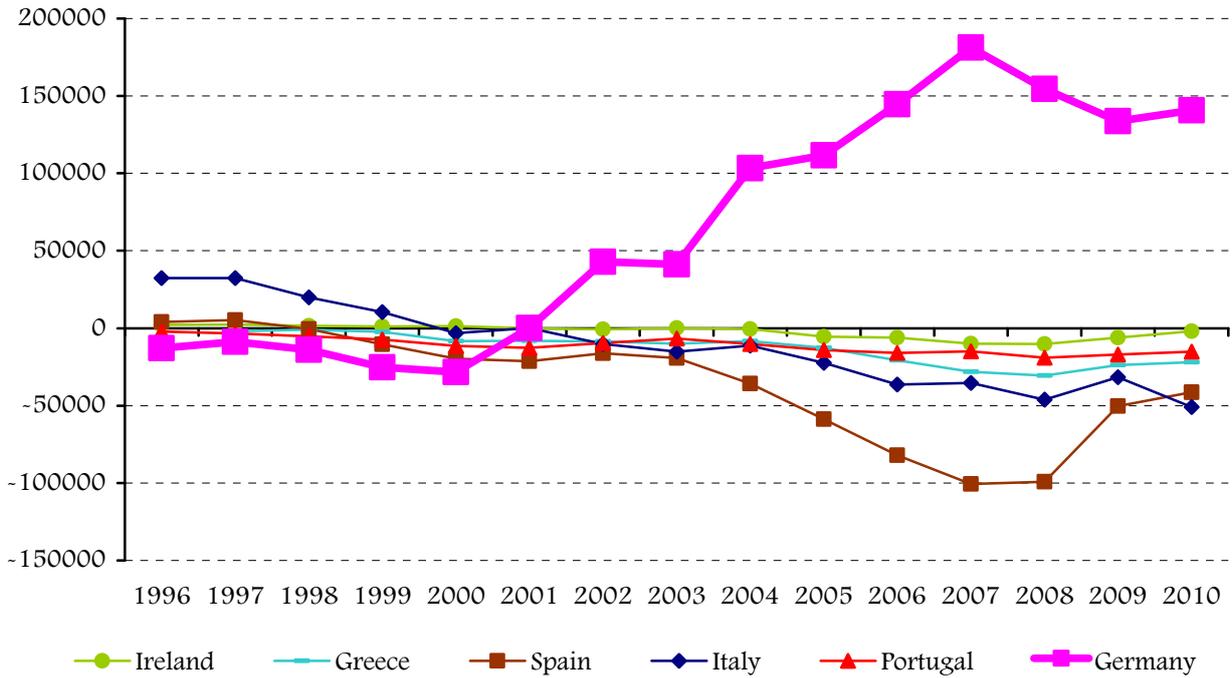
Source: Eurostat Online Database

Figure 6  
Current account, balance of income 1997–2010  
(Millions of Euro)



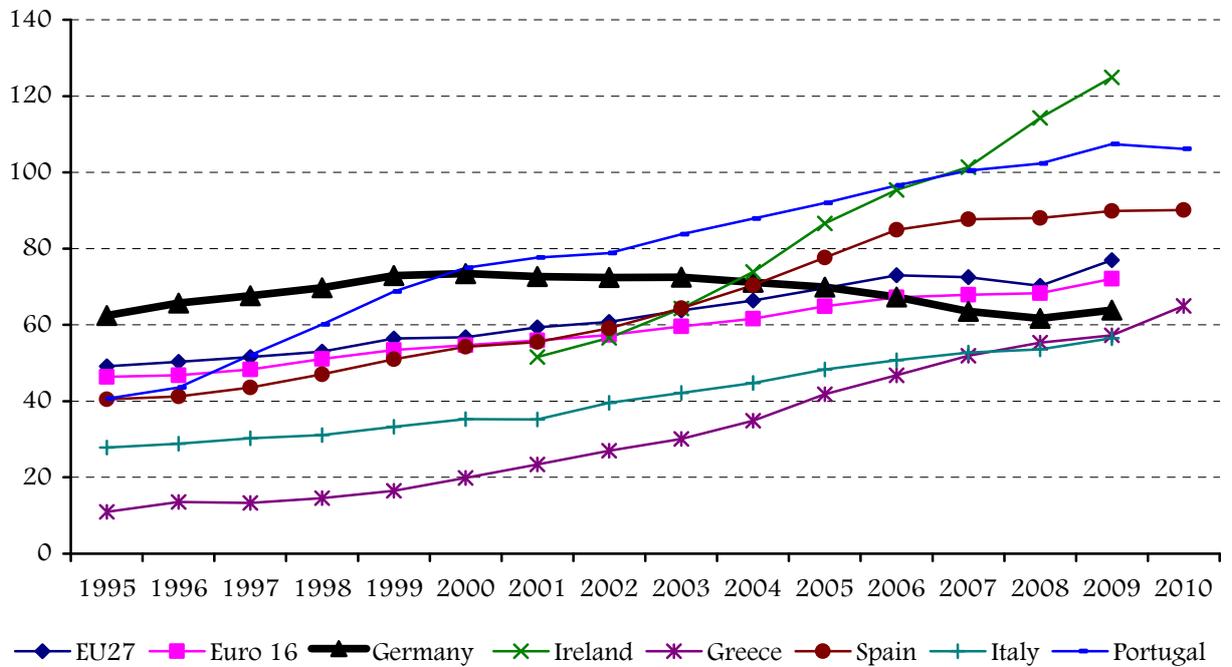
Source: Eurostat Online Database

Figure 7  
Balance of payments 1996–2010  
(Millions of Euro)



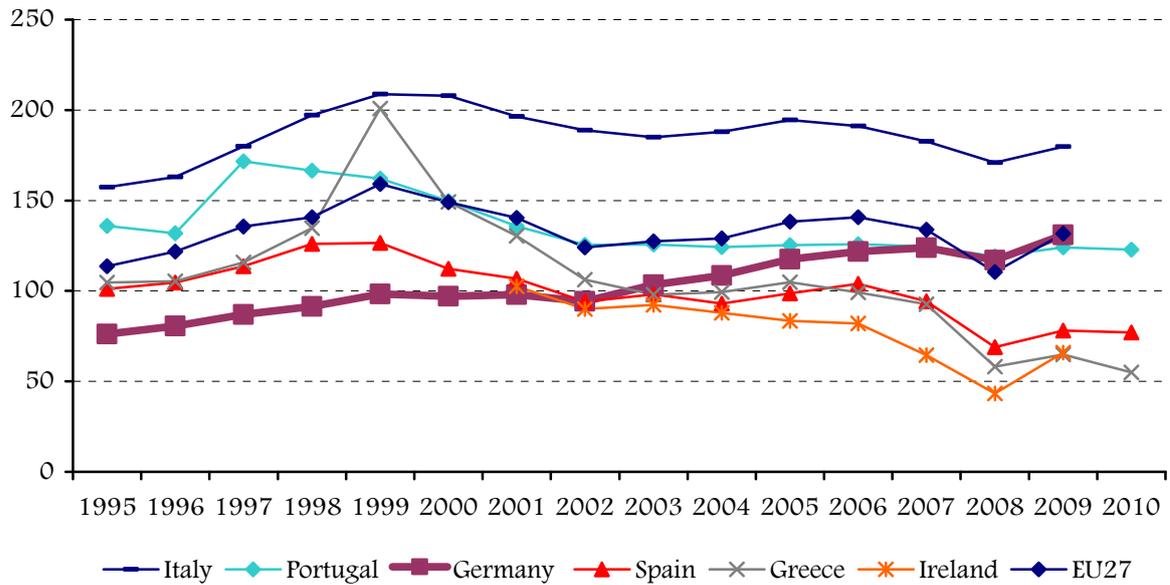
Source: Eurostat Online Database

Figure 8  
Financial liabilities of households; non-profit institutions serving households  
as a percentage of GDP 1995–2010



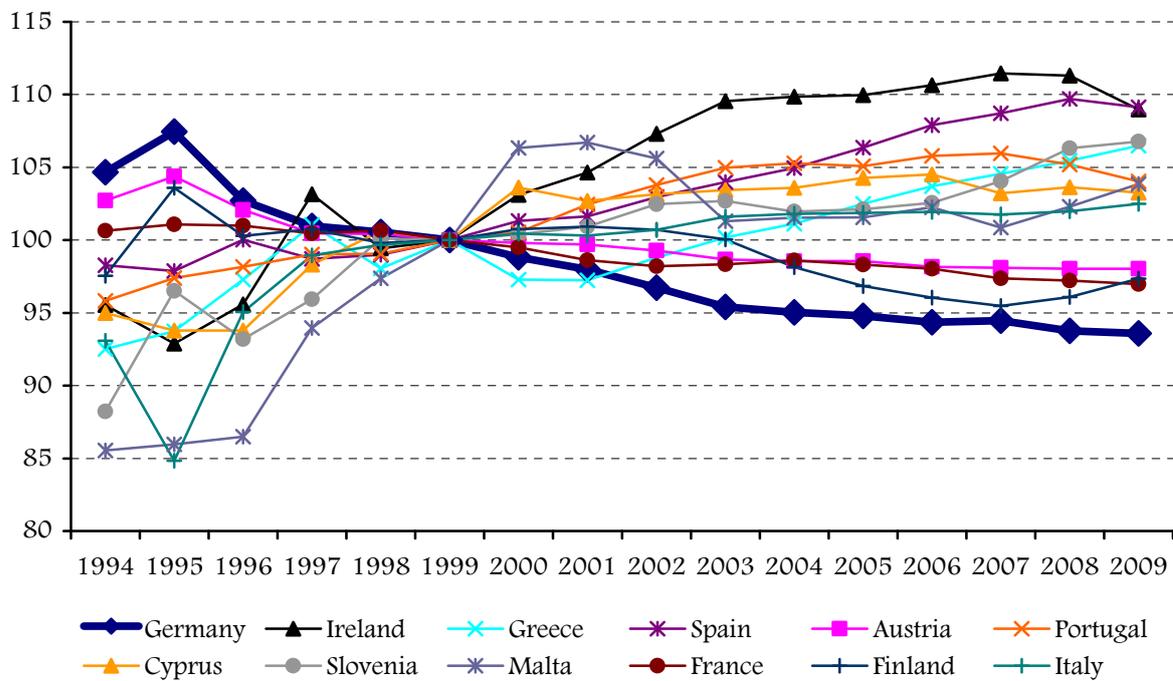
Source: Eurostat Online Database

Figure 9  
 Net financial assets of households; non-profit institutions serving households  
 as a percentage of GDP  
 (1995–2010)



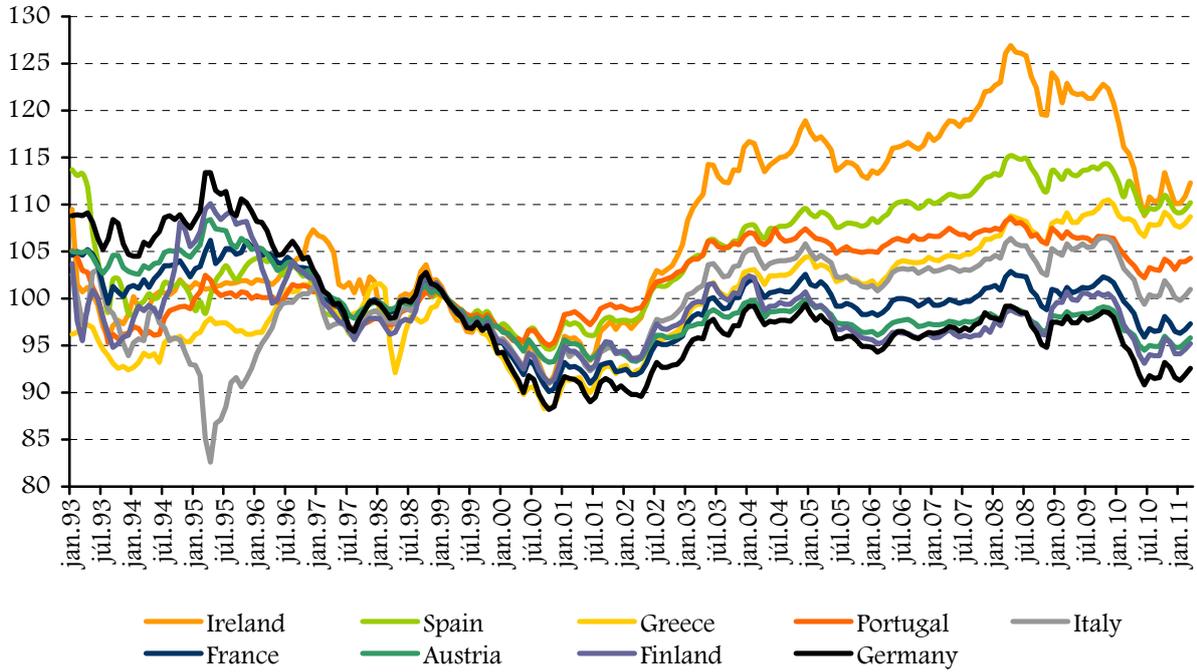
Source: Eurostat Online Database

Figure 10  
 Real Effective Exchange Rate  
 (Deflator: consumer price indices – 16 trading partners – Euroa Area)  
 (1999=100)



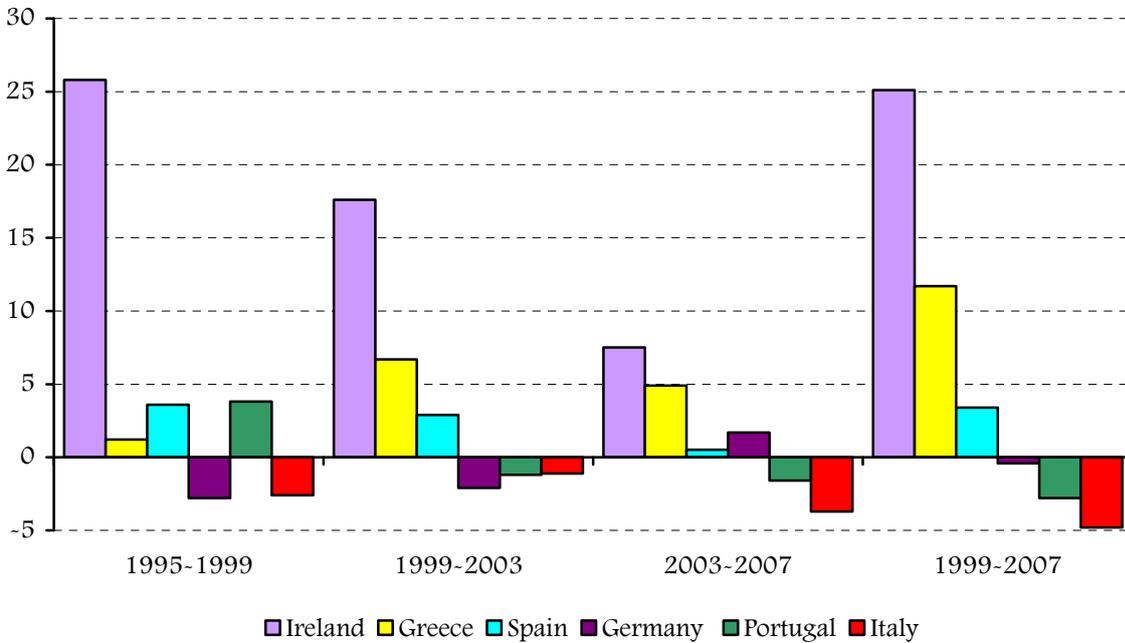
Source: Eurostat Online Database

Figure 11  
 REER (real harmonised competitiveness indicator CPI deflated,  
 ECB EER-41 group of currencies and Euro area 16 country currencies)  
 (1993–2010)



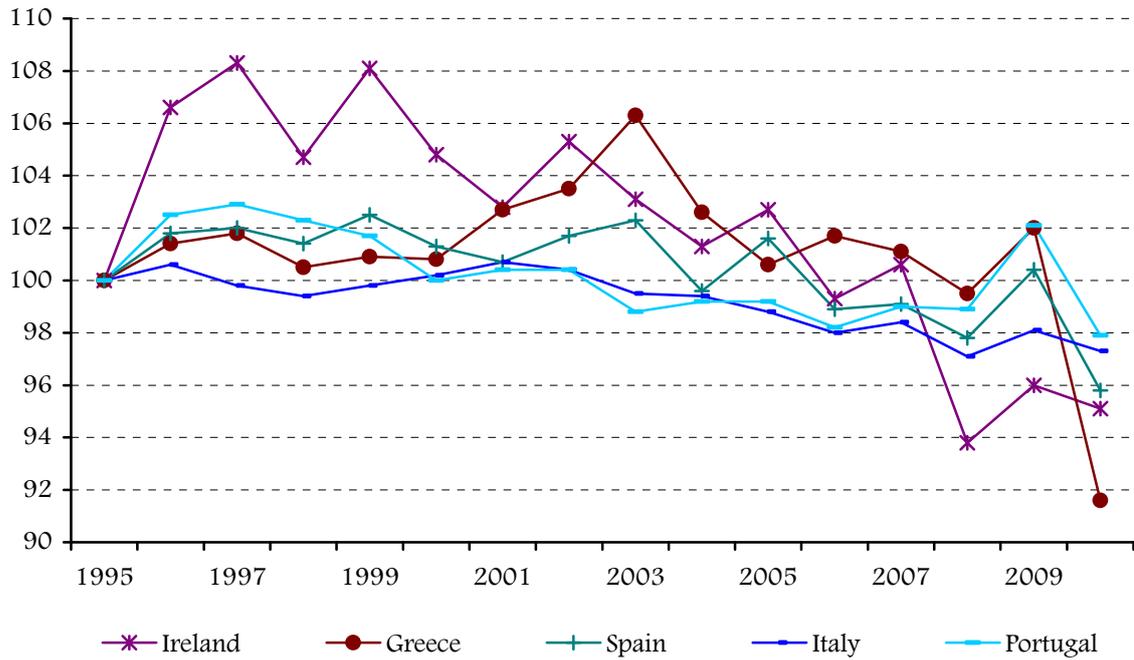
Source: ECB

Figure 12  
 Change in share of national GDP/cap to Euro12 average 1995–2007  
 (Percentage point)



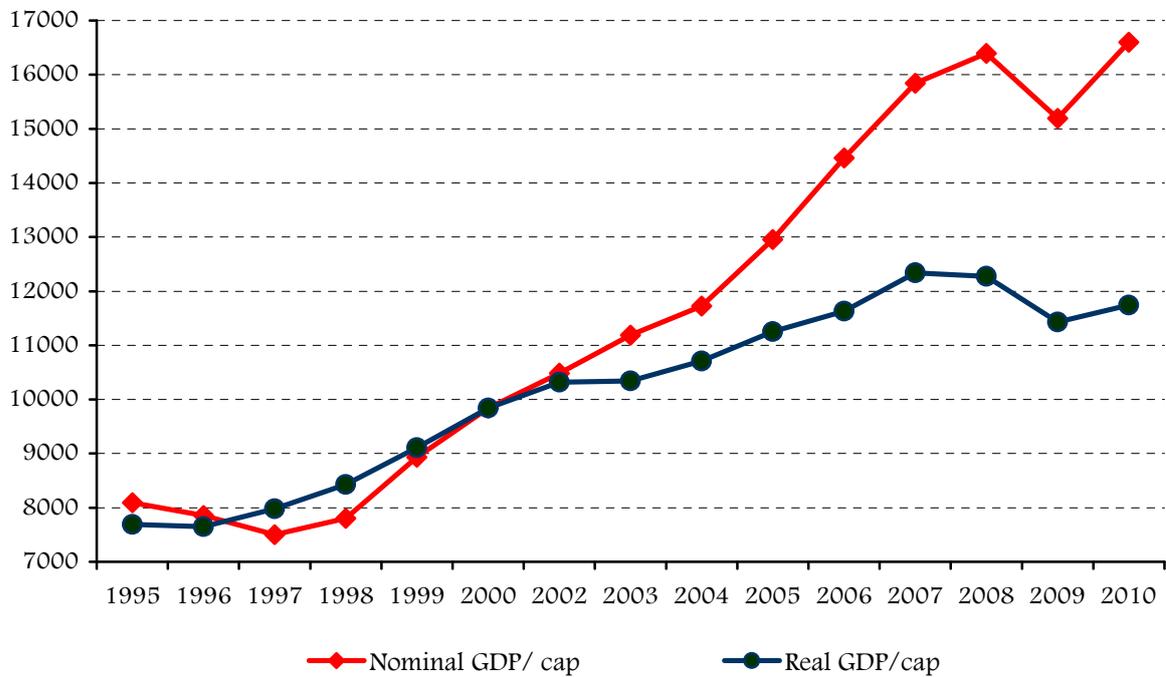
Source: Eurostat Online Database

Figure 13  
Base index of GDP/cap relative to Germany 1995–2010  
(The rate in 1995=100)



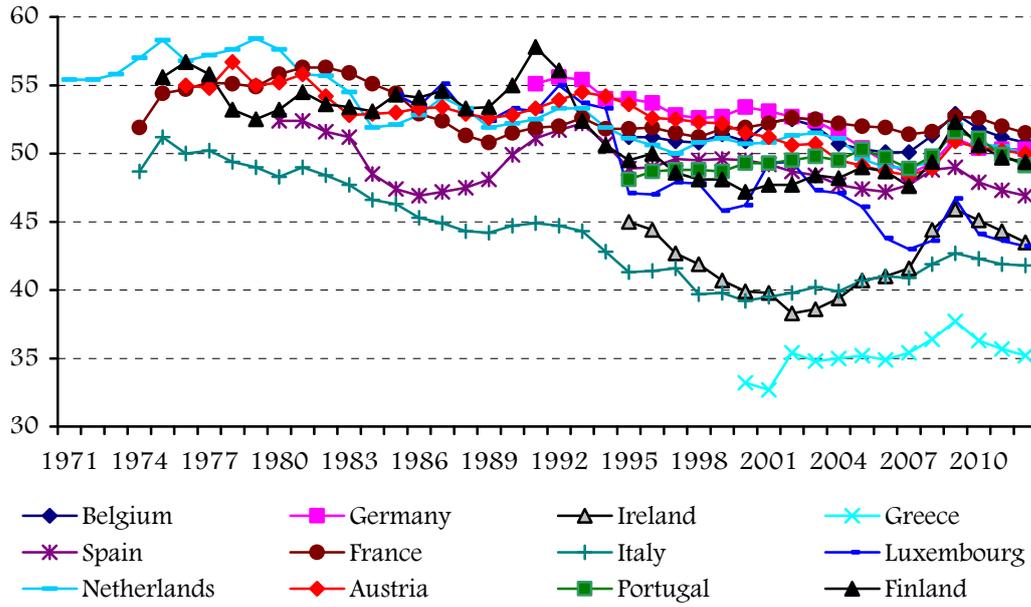
Source: Eurostat Online Database

Figure 14  
Standard deviation of GDP/cap in the Eurozone12 1995–2010  
(Euro er inhabitant)



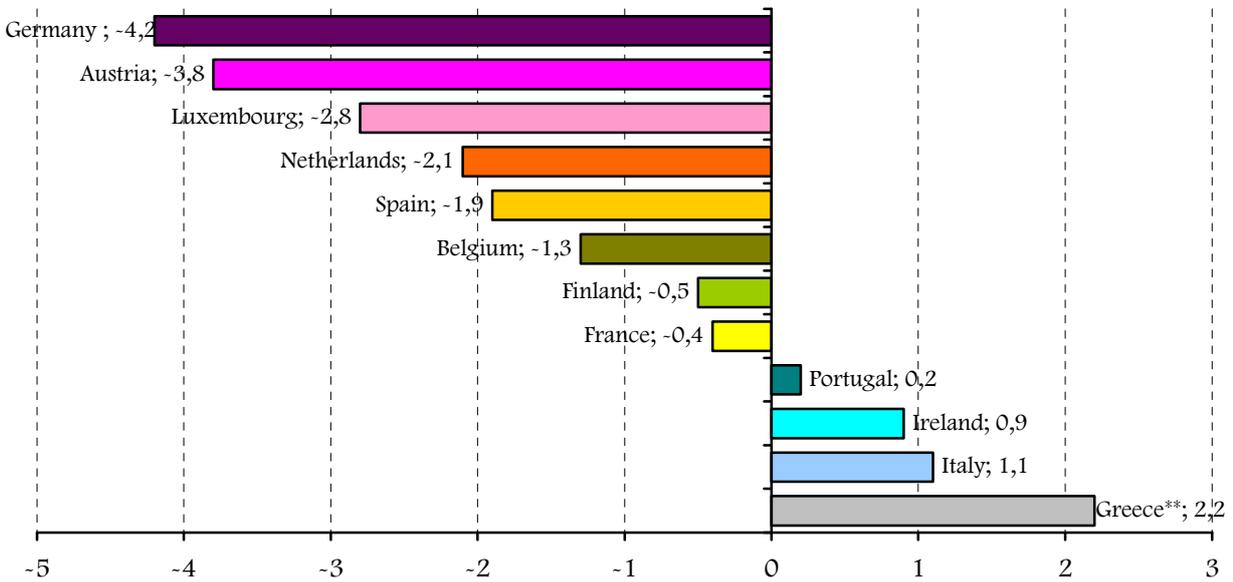
Source: Eurostat Online Database

Figure 15  
Wage share\* 1971–2012  
(Per cent)



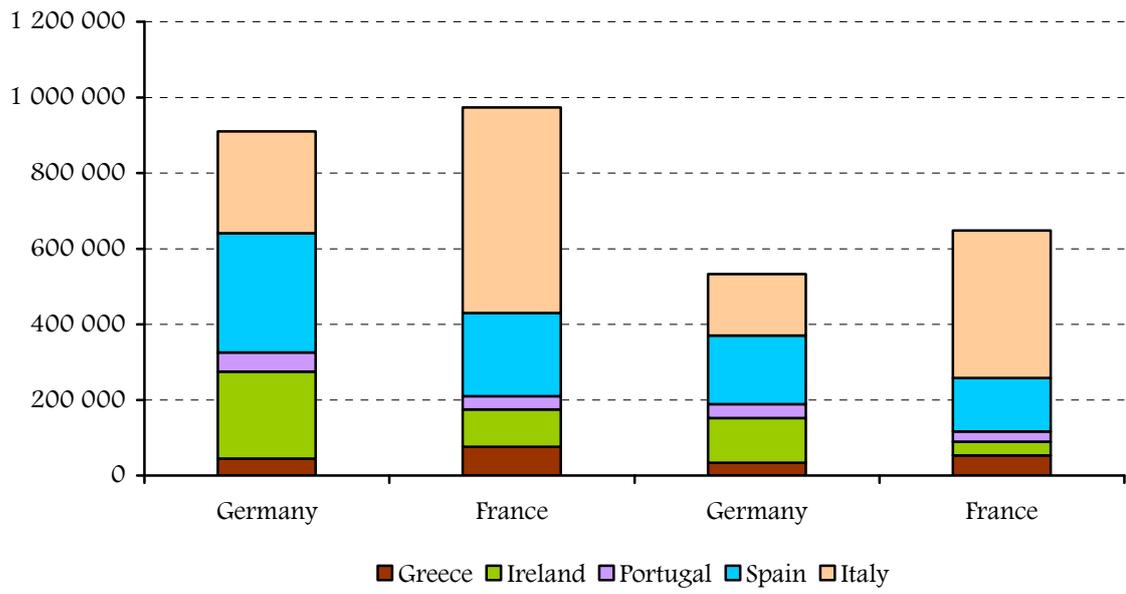
\* Compensation of employees  
Source: Eurostat Online Database

Figure 16  
Change in wage share\* between 1999–2007  
(Percentage point)



\* Compensation of employees/GDP  
\*\* 2000–2007  
Source: Eurostat Online Database

Figure 17  
 Consolidated foreign claims of German and French banks in PIIGS



Source: Bank of International Settlements

\*\*\*\*\*

## REFERENCES

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- [14/business/global/14eurobank.html?\\_r=1&adxnnl=1&adxnnlx=1303323781-KAynE/K7dCmX3ohKonoDZw](http://www.nytimes.com/2010/06/14/business/global/14eurobank.html?_r=1&adxnnl=1&adxnnlx=1303323781-KAynE/K7dCmX3ohKonoDZw)
- Balassa, Béla (1961): *The Theory of Economic Integration* London, Allen & Unwin
- BIS (2008): BIS Quarterly Review, September 2008, [http://www.bis.org/publ/qtrpdf/r\\_qa0809.pdf](http://www.bis.org/publ/qtrpdf/r_qa0809.pdf)
- BIS (2010-2011): BIS Quarterly Review, online [http://www.bis.org/publ/qtrpdf/r\\_qt1106.htm](http://www.bis.org/publ/qtrpdf/r_qt1106.htm)
- Éltető, Andrea (2011): Immigrants In Spain – Their role in the economy and the effects of the crisis. *Romanian Journal of European Affairs* Vol. 11, No. 2, pp. 66–81. [http://www.ier.ro/documente/rjea\\_vol\\_11\\_no\\_2/RJEA\\_2011\\_vol11\\_no2\\_1\\_MMIGRANTS\\_IN\\_SPAIN\\_-\\_THEIR\\_ROLE\\_IN\\_THE\\_ECONOMY\\_AND\\_THE\\_EFFECTS.pdf](http://www.ier.ro/documente/rjea_vol_11_no_2/RJEA_2011_vol11_no2_1_MMIGRANTS_IN_SPAIN_-_THEIR_ROLE_IN_THE_ECONOMY_AND_THE_EFFECTS.pdf)
- Emerson, M. D. Gros, A. Itailaner, J. Pisani-Ferry, H. Reichenbach (1992): *One Market, One Money: An Evaluation of the Potential Benefits and Costs of Forming an Economic and Monetary Union*, Oxford, New York, Toronto and Melbourne, Oxford University Press.
- EUROSTAT (2011): Eurostatistics Data for short-term economic analysis Issue number 10/2011. Eurostat – European Commission. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-BJ-11-010/EN/KS-BJ-11-010-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-BJ-11-010/EN/KS-BJ-11-010-EN.PDF)
- EUROSTAT: Statistics on line <http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes>
- Ewing, Jack (2010): Debt Burden Falls Heavily on Germany and France. June 13, 2010 [http://www.nytimes.com/2010/06/14/business/global/14eurobank.html?\\_r=1&adxnnl=1&adxnnlx=1303323781-KAynE/K7dCmX3ohKonoDZw](http://www.nytimes.com/2010/06/14/business/global/14eurobank.html?_r=1&adxnnl=1&adxnnlx=1303323781-KAynE/K7dCmX3ohKonoDZw)
- Frankel, J. & Rose A. (1998): The Endogeneity of the Optimal Currency Area, *The Economic Journal*, Vol. 108, No. 449.
- Frankel, J. (2002): An Estimate of the Effect of Currency Unions on Trade and Output, *The Quarterly Journal of Economics*, Vol. 117, No. 2, May.
- Giavazzi, F. & A. Giovannini (1989): *Limiting Exchange Rate Flexibility: the European Monetary System*, The MIT Press, Cambridge, Massachusetts.
- Goodhart, C: A: E (1989): *Money, Information and Uncertainty*, MIT Press, Cambridge, Massachusetts.
- Issing, Otmar (2008): *The Birth of the Euro*, Cambridge University Press, Cambridge.
- Káldor, Nicholas (1966): *The Causes of the Slow Growth of the United Kingdom*, Cambridge, Cambridge University Press.
- Kenen, Peter (1969): *The Optimum Currency Area: An Eclectic View* Mundell & Swoboda eds. Chicago, University of Chicago Press.
- Mundell, Robert A. (1961): A Theory of Optimal Currency Areas. *The American Economic Review* Vol. 51, No. 4, (Sep., 1961), pp. 657–665.
- Mundell, Robert A. (1973): *Uncommon Arguments for Common Currencies* H. G. Johnson and A. K. Swoboda ed. *The Economics of Common Currencies*, London Allen & Unwin.
- Myral, Gunnar (1957): *Economic Theory and Underdeveloped Regions*. New York, Duckworth.
- Rogoff, K. (1996): The Purchasing Power Parity Puzzle, *The Journal of Economic Literature*, Vol. 34, No. 2.
- UNCTAD World Investment Report. Annex Tables.

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