The Role of Heterogeneity in Creating Imbalances in the Euro Area

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Abstract: The aim of this paper is to assess the importance played by economic divergences in the current crisis of the euro area. Since the introduction of the single currency there were many debates regarding the heterogeneity of the countries that adopted it. Heterogeneity represents an impediment for the smooth adjustment in the event of asymmetric shocks. The optimal currency theory was the first to present the adjustment mechanisms. In order to quantify the influence of structural diversity on the disturbances in the euro area, we have analyzed the evolution of standard deviation for some of the key indicators. This study will provide a clear understanding of the factors that caused imbalances in the euro area. It is common to draw conclusions upon isolated factors that led to the present financial crisis and to find extreme solutions like the collapse of the monetary union in Europe. This article shows that analyzing the structure of the union gives an appropriate understanding of the mistakes that have been made.

Keywords: OCA theory; endogeneity; structural convergence; heterogeneity

1 Introduction

The process of creating a monetary union in Europe triggered many debates. Some believed that it will not happen and some believed that if it was to be implemented, it will not work. This view was based on the fact that euro area was not an optimal currency area and, therefore, the costs of the monetary integration were likely to outweigh the benefits. The euro advocates responded by sustaining the idea that labour market reform would provide the needed flexibility or that the euro area would not face large asymmetric shocks.

The introduction of the euro happened despite all the debates against it. In 2009 it was celebrated the first decade since the creation of the currency union in Europe and it was considered a success by many enthusiastic economists. Overall, the opinions converged that the performances were satisfactory even though they were lower than the estimated values.

It all felt apart when the crisis came and brought instability and concerns. The recent evolutions of the economic situation in the European Monetary Union trigged a higher interest on the optimum structure of a currency area. Therefore, the literature ex ante the introduction of euro talked about asymmetric shocks. They forgot about them. Now we are there again: there have been raised questions about the role played by national policy-making and by cross-national differences in institutions. Thus, persistent divergences of Euro Area member state economies represent a challenge to the single monetary policy that targets union-wide developments.

The crisis has exposed the issue of a wide diversity of experience across different parts of the whole. Euro area member states experienced considerable variation regarding the negative effects caused by the crisis and the capacity to recover from it. Our study is a contribution to that debate.

This paper is organized as follows: Section 2 summarizes the theoretical fundaments of the role of heterogeneity in the functionality of a currency union. Section 3 analyses the degree of heterogeneity and its impact on the current crisis and Section 4 investigates the measures that should be taken in order to assure the future of the European Monetary Union.

2 Literature Review

The adoption of euro trigged plenty of debates on the theoretical costs and benefits of the new created monetary union. There was an asymmetry regarding the importance conferred to the empirical research of the principal benefits of EMU and the measurement of the costs. The benefits, mainly the reduction in the cost of transaction between member countries have been emphasized.

The approach of establishing a monetary union through Maastricht treaty was accompanied by a lot of scepticism by the economic profession. The costs imposed by asymmetric shocks under European Monetary Union could be higher than the expected benefits. The nominal criteria defined by the treaty cannot assure the viability of the union in the presence of structural divergences among member countries.

The theory of optimum currency areas focused on the asymmetric shocks. Mundell, McKinnon and Kenen proposed the structural criteria that can abolish the sources of asymmetric shocks. Mundell (1961) argued that shock absorption within a heterogeneous group of countries is easier if monetary and exchange rate policies remain independent. He emphasized the role of labour mobility as an adjustment mechanism in the face of asymmetric shocks. Thus, countries with rigid labour markets and low international labour mobility need monetary autonomy. It is generally accepted that the OCA framework remains the most important theoretical tool to analyse the pro-and-cons of EMU enlargement (Schnabl, 2007).

The theory of optimum currency area was a justification for those who had a sceptical view regarding the prospects of a European monetary union. Based on the criterion of labour mobility, they demonstrated the lack of optimality of the new currency area. But Jovanovic (2011) points it out that Mundell reconsidered his position towards the concept of a currency area in Europe by writing an article in 1973. He sustained the idea of a single currency in Europe by showing that entering a monetary union does not imply a cost in terms of loss of the exchange rate adjustment mechanism but a benefit thanks to the abolishing of a source of asymmetric shocks (Jovanovic, 2011).

According to Slanicay (2011), asymmetric shocks and structural differences represent the main causes of a potential sub optimality of common monetary policy. He defines these terms and tries to explain why they can create problems for the single monetary policy. First, he assimilates the asymmetry of shocks with differences in timing, magnitude or persistence of structural macroeconomic shocks. Then he defines structural differences as those differences that appear in propagation of a shock.

The single monetary policy, in a monetary area facing asymmetric shocks and structural differences, becomes suboptimal for some countries. Thus, the analysis of asymmetric shocks and structural differences plays an important role in evaluating the benefits and costs of a common currency.

The euro area is a currency union among 17 countries. Before the establishment of the EMU, the idea of a single monetary policy for 12 states encountered scepticism among the economic profession. This view was supported by the arguments of the theory of optimum currency areas, which recommended definitely fixing the exchange rate only among economies with flexible markets, free mobility of factors and limited incidence of asymmetric shocks. This was not the case for the euro area, which was characterized by significant rigidities in labour and product markets, limited labour mobility, differing national industrial structures and rates of productivity growth, lack of a significant centralised fiscal transfer mechanism, and decentralised responsibility for fiscal and other economic policies (Issing, 2005).

Based on the sub optimality of fulfilling these criteria, economists like Milton Friedman (1997), Eichengreen (1993), Krugman (1993), Feldstein (1997, 1998) and Mussa (1997) doomed to failure the functioning of the monetary union (Jovanovic, 2011).

Desmet (2002) stated that a single currency is not for the countries confronting with asymmetric shocks and labour immobility across borders. Considering that one country is in a boom and the other in a recession, a common monetary policy is unable to react adequately.

In an interview offered to the Radio Australia in 1998, Friedman warned about the risk of asymmetric shocks in the euro area. In his opinion, member states faced a high probability of being hit by shocks that will lead to different consequences. Trapped in a currency area, countries have fiscal and unemployment (pressure on wages, pressure on prices) as the only adjustment mechanism. “They have no way out. With a currency board, there is always the ultimate alternative that you can break the currency board. Hong Kong can dismantle its currency board tomorrow if it wants to. It doesn't want to and I don't think it will. But it could. But with the Euro, there is no escape mechanism. Suppose things go badly and Italy is in trouble, how does Italy get out of the Euro system?” (Radio Australia, 1998).

Known as a fierce euro sceptic, Professor Martin Feldstein also sustained that the lack of optimality of the euro area will trigger higher costs than the economic benefits: „ the adverse economic effects of a single currency on unemployment and inflation would outweigh any gains from facilitating trade and capital flows among the EMU members” (Feldstein, 1997).

Following the prospects of a breakup of the currency area, UBS researchers recently published a study on the consequences of such a decision. While exiting from the currency area seems to be a bad idea, the study points out that a monetary union is, economically speaking, a good idea if the membership constitutes an optimal currency area. In order to achieve the optimality, two conditions must be fulfilled:

- ✓ the area is so homogenous that the component economies all move in the same direction at roughly the same speed, at the same time. The need for homogeneity appears as a result of the design of the monetary union: only one nominal monetary policy. If different economies are moving in different directions, or at different speeds, monetary policy cannot be set optimally for the whole union. Some parts of the monetary union will have an inappropriate monetary policy. Homogeneity is hard to achieve. Under these circumstances, asymmetric and even common macroeconomic shocks are likely to induce divergent price developments. It is often argued that a single monetary policy implying a common interest rate in the currency union, combined with inflation differentials, leads to different real interest rates across countries. This may destabilize the currency union by contributing to strengthen inflation differentials further and by creating divergence in output growth (Issing, 2005).
- ✓ the economies are sufficiently flexible that any differences in economic performance can be relatively swiftly corrected. If nominal economic activity in one part of the union deviates from the monetary union norm, then some adjustment must happen to correct that and force normalisation. This adjustment can be through labour migration, nominal wage adjustments, price adjustments or (as is the preferred solution for the Euro given its circumstances) though fiscal automatic stabilisers (Deo, Donavan, & Hatheway, 2011).

A recent report by Natixis (2010) compares the situation of the European Monetary System breakup in 1992-1993 with the prospects of euro area disintegration. Crises often reveal the heterogeneity of countries in a currency area, which can lead the currency area to break up. This is the case of the current crisis that reveals the heterogeneity of the euro zone. The study shows that the solution for the euro area imbalances is not the break-up which will most probably trigger costs that will outweigh the advantages for all countries. The scenario is different for the two categories of member countries: the core and the peripheral ones. For the core countries the cost of an appreciation of the exchange rate today would be even more dramatic than in 1992 and for the weak countries, the cost combined with the rise in interest rates would outweigh the advantage of devaluation (Natixis, 2010).

In order to address properly the heterogeneity issue, we have to know which sources are causing it. According to Jondeau and Sahuc, there are three main sources of heterogeneity (Jondeau & Sahuc, 2008):

- ✓ s*tructural heterogeneity,* corresponds to differences in preferences, technology, and constraints of private agents across countries or, more generally, in the propagation mechanism of shocks within the economy;
- ✓ *policy heterogeneity,* the asymmetry in the conduct of country-specific policies;
- ✓ *stochastic heterogeneity,* the asymmetry of shocks across countries.

3 Measuring structural differences

Various studies following the current crisis in the euro area pointed out the differences in the economies of the euro area member countries. According to the majority, the peripheral are Greece, Ireland, Italy, Portugal and Spain, and the so-called core European countries are those like Austria, Belgium, France and Germany. Analysts, academic and the media often refer to the peripheral countries as PIIGS. Initially, the acronym was PIGS, without Ireland. It changed when Ireland fell into recession in 2008.

The negative effects of the crisis and the capacity of recovering from it are varying consistently among the countries of the euro area. Some countries of the union have been trigger special attention since they confront with significant imbalances.

The official position of the European Central Bank towards the divergences between the economies of some member states is clearly stated. The representatives consider that the existent inflation and output growth differentials between the euro area countries are moderate and broadly in line with other large currency areas such as the US. The sources of these differentials are represented by differences in demographic trends, long-term catching-up processes, or ongoing adjustments leading to a more efficient allocation of resources (ECB, 2011).

This fist part of the ECB statement suggests that the dispersion in inflation and growth is structural and normal. Thus, heterogeneity in the euro area is not necessarily harmful and it does not automatically call for policy intervention.

Moreover, Axel Weber, the President of the Deutsche, recently declared that heterogeneity is not a problem *per se*; it is a problem neither for the single monetary policy nor for the individual member states. Rather, what we should be concerned about is heterogeneity in terms of the member states' ability to cope with − and to live up to − the challenges of a common monetary policy (Weber, 2011).

The second part of the statement refers to persistence of inflation and growth differentials of individual euro area countries over longer periods of time. This side of the dispersion worries the officials. When the divergences are caused by structural inefficiencies or misaligned national policies they require national policy adjustments. Thus, when slow adjustment process is due structural rigidities or if adjustments to common shocks differ across individual countries due to different structures, this leads to long lasting undesirable economic differentials (Eickmeier, 2006).

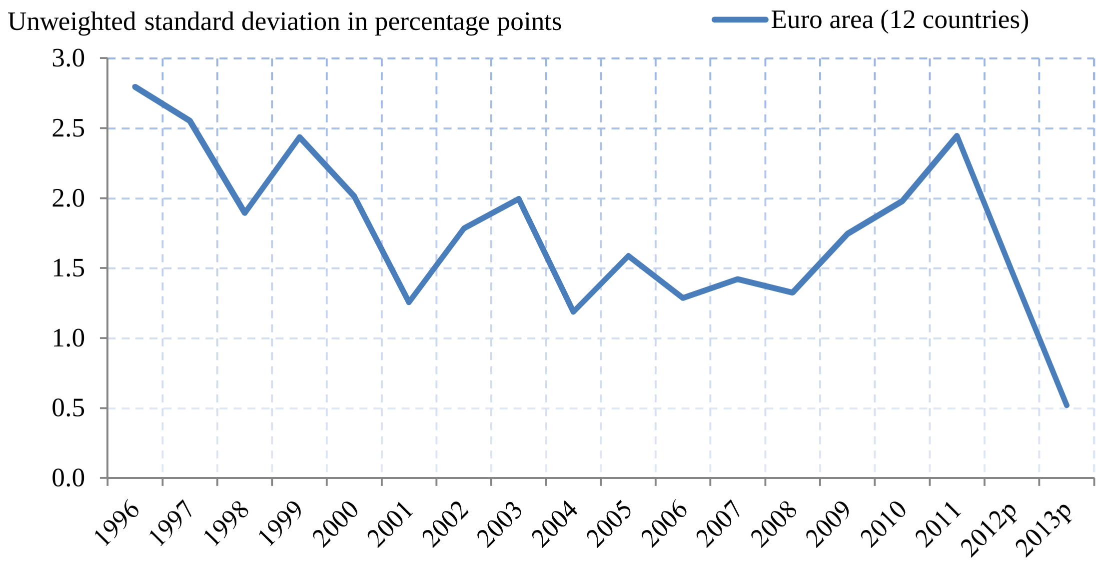
Regarding the relation between the shocks and heterogeneity, the best response is the one offered at a conference of the European Central Bank, held in 2005. Giannone and Reichlin stated that the persistent differences within the Euro area are generated by small country specific shocks rather than heterogeneous responses to area wide shock (Giannone & Reichlin, 2005).

Nevertheless these official opinions that seem to underestimate the role of degree of diversity among euro area member states, we find it necessarily to quantify it. In order to assess the magnitude of heterogeneity in the European monetary area we need to take a look at the dispersion of some of the key indicators.

The evolution of the dispersion of GDP growth in euro area countries has been broadly stable since the late 1990s until the crisis; the dispersion of growth rates was around 2% (Figure 1). During the crisis it can be observed an increase in GDP growth dispersion in the euro area with a peak in 2011. The divergence mainly resulted from the ongoing rebalancing processes within the euro area, being the mirror image of unsustainable growth patterns observed in some countries before the crisis (European Central Bank, 2010). The predictions of the European Commission show a decrease of the dispersion in the next two years.

The officials report of the ECB consider that the growth of dispersion during the crisis remained broadly in line with pre-crisis patterns overall and that current euro-area heterogeneity with regard to growth rates is not significantly greater than in the first years of EMU (Trichet, 2011). While Germany has emerged as one of the fastest-growing economies in the euro area, countries that were growing quickly earlier still haven't emerged from recession (Weber, 2011). Germany is an example of how big the dividends of reform can be if structural adjustment is made a strategic priority and implemented with sufficient patience (Trichet, 2011). On the other side, peripheral countries remained in recession in 2011. Those countries that have yet to implement more far reaching structural reforms also have relatively low growth prospects after the crisis.

The data provided by the Eurostat shows very low levels of GDP growth rate for the peripheral countries: Portugal (-1.9%), Ireland (1.1%), Italy (0.5%) Greece (-5.5%) and Spain (0.7%), while the core countries started somehow to recover: Germany (3%).



Source: *Author's calculations based on the information from Eurostat*

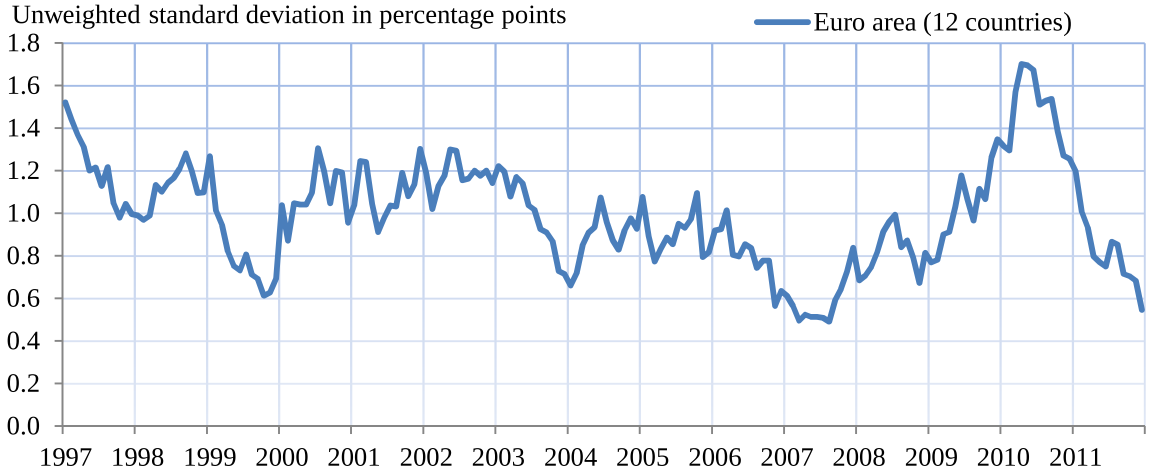
Figure 1 Dispersion of Real GDP Growth

These divergences regarding the GDP growth rate appeared as a result of the lack of homogeneity. The European Monetary Union comprises regions that experienced a significant boom over the past decade and also contains regions that are facing significant structural challenges of a more long-term nature. For example, Portugal has experienced growth persistently below the euro area average for the past decade due the delay in approaching structural issues.

Regarding the inflation indicator, before the crisis, the dispersion of inflation rates in euro area countries had remained broadly stable (Figure 2). During the crisis we have seen an increase in the inflation dispersion with a peak in 2010. The values stared to drop in 2011, when the dispersion registered a value of 0.5.

In 2011, the highest level of inflation rate was registered in Estonia (5.1%), while the lowest inflation rate value was in Slovenia (2.1%).

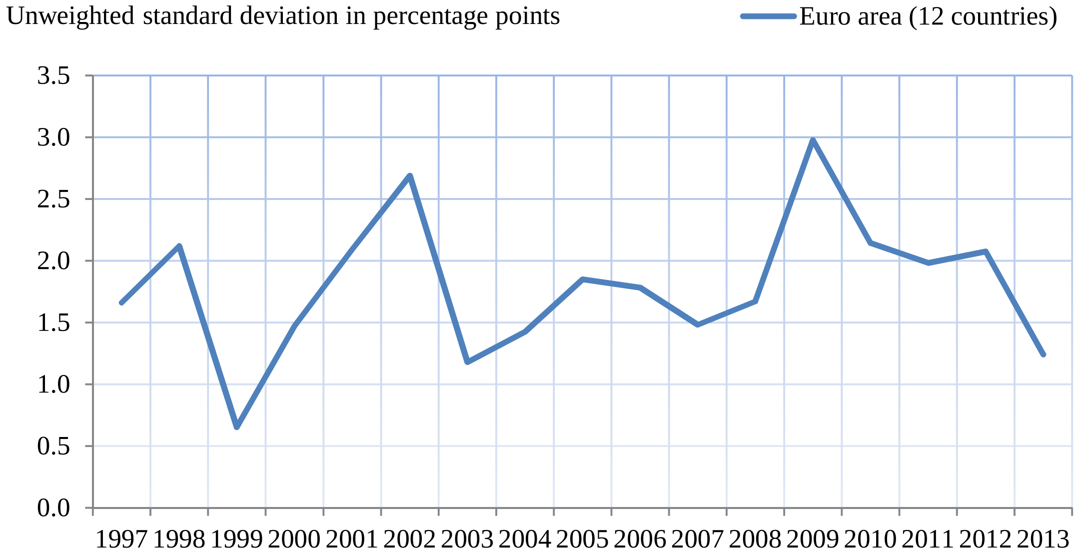
The problem with inflation dispersion is that the ECB sets the nominal interest rate according to the euro zone inflation rate; persistence in inflation differentials would imply that 'one size does *not* fit all' (Gregoriou & Kontonikas, 2011).



Source: Author's calculations based on the information from Eurostat

Figure 2 Dispersion of Annual Inflation

Another important indicator for assessing heterogeneity in the euro area is the unit labour cost (Figure 3). Ahead of EMU, unit labour costs converged in the euro area. The values of the nominal percentage change in the unit labour cost shows for 2011 very different values. Some of the PIIGS countries experienced low levels: Portugal (0.9%), Ireland (-3.1%), Greece (-2.9%) and Spain (-0.8%), while the core countries registered higher values - Germany (1.5%).



Source: Author's calculations based on the information from Eurostat

Figure 3 Dispersion of Unit Labour Cost

Considering that the most recent countries to join the euro area are steel facing a catching up countries, the attention should be focused o Greece, Portugal, Ireland, Italy and Spain, which have strongly affected by the crisis. The core countries, which seem to recover slowly, have to be used in the analysis in order to understand the gaps existing between the economies of the euro area member states.

4 Dealing with heterogeneity

At the beginning of the euro's existence, many economists looked optimistically about the chances of a higher convergence among countries. It was the so-called phenomenon of endogeneity. Even though there are divergences when countries form the currency area (ex ante), they can be diminished by the integration itself (ex-post) (Frankel & Rose, 1996). The empirical data on endogeneity shows that EMU did not have a major contribution on promoting the homogeneity among member countries. Thus, the probability of asymmetric shocks is still high since it depends upon the economic structures of the countries participating in the currency union.

Also, some believe that the historical patterns of susceptibility to shocks may not persist in the euro area. The reason towards such an opinion is that EMU has eliminated some of the major sources of asymmetric shocks: inconsistent national monetary policies and speculative attacks on national currencies (Soltwedel, Dohse, & Krieger-Boden, 2000).

The crisis showed that the endogeneity hypothesis is not strong enough to prevent asymmetric shocks with divergent impact on euro area member state. Thus, a solution is needed. Many opinions converged to the idea that fiscal measure will be the appropriate answer.

Since the creation of the monetary union in Europe there were concerns that the member states can experience asymmetric shocks that cannot be addressed only by the monetary policy. The only remaining instrument is of a budgetary nature (Mundell & Clesse, 2000).

The current crisis has proven that single monetary policy cannot respond to all the imbalances in the euro area. Policymakers have to find other measure to remove existing deficiencies and to ensure the ability of member states to respond to asymmetric shocks. Considering the public finances troubles that some countries have been experiencing, the best solution seemed to be fiscal consolidation. This solution has the mission to restore confidence in public finances. Along with this fiscal integration, Axel Webber calls for the improvement of the flexibility of product and labour markets and for better financial regulation to enhance the resilience of financial systems. Painful adjustment processes, including structural reform and budget consolidation, are essential to restore the ability of the countries concerned to live up to the demands of the single monetary policy (Weber, 2011).

The first step toward fiscal consolidation has been made. Recently, in January 2011, it has been released the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union. This treaty has the objective to support the achievement of the European Union's objectives for sustainable growth, employment, competitiveness and social cohesion (European Council, 2011).

The former President of Bundesbank, Axel Webber also thinks that heterogeneity becomes a real problem when members stop meeting their obligations to the currency union. Also, he states that "The real problem with heterogeneity – and that is a concern to me – is that a number of countries have obviously failed to meet the obligations and requirements of a currency union. The persistent problems of countries in refinancing their debt are only the symptoms of the problems, not the problem itself" (Central Banking Newsdesk, 2011).

5 Conclusions

Our study proposed another approach to the imbalances faced by the European Monetary Union. It is common to look at the effects of the crisis and to try to find solutions based on their magnitude. We consider that it is better to first understand the sources that brought euro area in such an undesirable situation.

The imbalances in the euro area were predicted. Many sceptical opinions based on the heterogeneity of the newly created currency area assumed that there will be a crisis that will lead to change in its structure. Starting 2008, the non-optimality of the euro area became very obvious. Some of the participants are confronting with more economic costs than benefits created by this membership. The main cause is the lack of homogeneity among euro area member states. In order to assure the further existence of the currency area, the rules have to be changed. Nominal convergence has to be joined by the structural convergence.

As a further research, we consider important to study the degree of homogeneity between the economies of the candidate countries and euro area economy. This will be used as a key indicator for assessing the benefits and the costs of joining a currency area. The loss can be significant, thus adoption should not be based on endogenous forces that will lead to a greater integration.

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6 References

Central Banking Newsdesk. (2011, July 6). Weber says heterogeneity in euro area not an issue. *Central Banking, http://www.centralbanking.com/central-banking/research/2086098/weber-heterogeneity-euro-issue* .

Deo, S., Donavan, P., & Hatheway, L. (2011). *Euro break-up – the consequences.* Global Economic Perspectives-UBS.

Desmet, K. (2002). *Asymmetric Shocks, Risk Sharing, and the Latter Mundell.* Madrid: Bank of Spain.

Dohse, D., Krieger-Boden, C., & Soltwedel, R. (2000). *EMU Challenges Regional Labor Markets.* Barcelona: European Regional Science Association.

ECB. (2011). *Economic diversity.* Frankfurt: European Central Bank, http://www.ecb.int/mopo/eaec/diversity/html/index.en.html.

Eichengreen, B. (1997). *European Monetary Unification. Theory, Practice, and Analysis.* Cambridge: MIT Press.

Eickmeier, S. (2006). *Comovements and heterogeneity in the euro area analyzed in a non-stationary dynamic factor model.* Frankfurt: Discussion Paper Deutsche Bundesbank.

European Central Bank. (2010). *Annual Report.* Frankfurt: European Central Bank Publications.

European Commision. (2011). *Eurostat Database.* http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/.

European Council. (2011). *Treaty on Stability, Coordination and Governance in the Economic and Monetary Union.*

Feldstein, M. (1997, November/December). EMU and International Conflict. *Foreign Affairs* , pp. 60-73.

Frankel, J., & Rose, A. (1996). The Endogeneity of the Optimum Currency Area Criteria. *NBER Working Paper No. w5700* .

Giannone, D., & Reichlin, L. (2005). Trends and cycles in the Euro area: how much heterogeneity and should we worry about it? *What effects is EMU having on the Euro area and its member countries?* Frankfurt: European Central Bank.

Gregoriou, A., & Kontonikas, A. (2011). Euro Area Inflation Differentials: Unit Roots and Nonlinear Adjustmentjcms_2150 525.. *Journal of Commom Market Studies, Volume 49. Number 3.* , 525–540.

Issing, O. (2005). *One size fits all! A single monetary policy for the euro area.* Frankfurt: European Central Bank - Press Release.

Jondeau, E., & Sahuc, J.-G. (2008). Testing heterogeneity within the euro area. *Economics Letters 99* , 192–196.

Jovanovic, M. (2011). *International Handbook of the Economics of Integration.* Cheltenham : Edward Elgar Publishing.

Mundell, R., & Clesse, A. (2000). *The Euro as a stabilizer in the international economic system.* Norwell: Kluwer Academic Publisher.

Natixis. (2010). *The crisis caused the European Monetary System to break up in 1992-1993; why would it not cause a break-up of the euro zone today?* Special Report Natixis, http://cib.natixis.com/flushdoc.aspx?id=51149.

Radio Australia. (1998). *Interview with professor Milton Friedman.* Melbourne: Radio Australia, http://www.abc.net.au/money/vault/extras/extra5.htm.

Schnabl, G. (2007). *Exchange rate volatility and growth in small open economies at the EMU periphery.* Frankfurt: European Central Bank.

Slanicay, M. (2011). Structural differences and asymmetric shocks between the Czech economy and the euro area 12. *Review of economic perspectives* , 168-191.

Soltwedel, R., Dohse, D., & Krieger-Boden, C. (2000). *European Labor Markets and EMU Challenges Ahead* . Washington: Finance&Development.

Trichet, J.-C. (2011). *Two continents compared.* Frankfurt: European Central Bank.

Weber, A. (2011). *Heterogeneities within the euro area – a problem for the single monetary policy?* London: BIS Review.