

THE APPLICATION OF OPTIMUM CURRENCY AREA CRITERIA TO EUROPEAN MONETARY UNION

CRISTIAN SOCOL^{*}
MARIUS-CORNELIU MARINAȘ^{**}
AURA-GABRIELA SOCOL^{***}

Abstract

Debt crisis in several Member States of the euro area has reopened discussions regarding the sustainability of European Monetary Union. Adoption of the single currency has proven to be more costly for the economies which are structurally divergent from the core euro area economies (Germany, France, Italy). In this study I analyze the opportunity of a country to be part of the European Monetary Union on the basis of optimum currency area criteria. According to them, the euro area is characterized by an increase in trade and financial integration between member States, by emphasizing differences in competitiveness and lack of automatic fiscal transfers. If monetary union will not be completed by a fiscal union, the European monetary construction will be one vulnerable and benefits of joining to this will decrease.

Keywords: euro area; monetary integration; fixed exchange rate; trade integration; fiscal transfers

Introduction

The objective of this study is to analyze the sustainability of European Monetary Union with specific criteria of the optimum currency area theory. At first glance, this theory has played a secondary role when it took the decision of the European monetary integration. The experience of first exchange rate mechanism showed that maintaining fixed exchange rates between trading partners is not the best option in terms of high capital mobility. Therefore, creating a monetary union was a solution to reduce currency volatility risks. However, the theory of optimum currency areas is extremely important now, because it describes accurately the risks of being part of a monetary union and the conditions for its sustainability. According to this theory, the existence of a monetary union in the context of the absence of a fiscal union and political union, as in the case euro area, will lead to the persistence of asymmetric shocks between Member States and some of them might decide to return to its own currency. Probably it would have been the scenario for Greece and Ireland, if these countries would have not been supported through the financial mechanism established within the euro area. Its role was to complete European monetary construction in the context described by the theory of optimum currency area.

The analysis is structured in two parts in which we will provide answers to two specific questions to the topic analyzed. The first question relates to the specific criteria of an optimum currency area, which explain the risks caused by adoption of a single currency. As an element of originality, we present these criteria according to the stages of the theory of optimum currency areas in the economic literature. Thus, in the seventh decade, Mundell, McKinnon and Kenen believed that labor mobility, trade openness and export diversification were the main criteria for the analysis the costs and benefits of common currency. Over the past fifteen years, has been developed the theory of endogenous optimum currency area and were made analysis related to correlations between economic shocks and business cycles of euro area member states. Once identified these criteria, we made their application for European monetary union, to answer the question whether the euro area is

^{***} Lecturer at Department of Economics from Academy of Economic Studies, Bucharest; (email: auragabriela.socol@gmail.com).

an optimal currency area. This research allowed us to identify sufficient arguments for the euro area is not an optimal monetary union, in agreement with the theory analyzed in this project. Most studies consider that EMU is too heterogeneous to be characterized an optimal area from monetary point of view – labour flexibility is low, there is not a fiscal discipline at European level, not working the automatic fiscal transfers between countries and the common monetary policy has emphasized the divergence of the peripheral economies. This conclusion must be tempered by launching of the common currency, because increasing trade and financial linkages between countries have contributed to more symmetry of shocks. Thus, according to the approach of endogenous optimal currency area, the economic divergences between countries of euro area will diminish over time. The monetary integration process will boost trade, especially intra-industry trade, which will generate an increase in the degree of synchronization of business cycles. Thus, the sustainability of a monetary union can grow despite the existence of significant divergences between the levels of development and between economic and social systems.

What are the criteria of an optimum currency area (OCA)?

The first approaches of the OCA focused on the choice of exchange rate type, highlighting the economic adjustment mechanisms in the context of shocks induced by economic integration. According to Mundell (1961), increasing the mobility of production factors in a group of countries requires the use of a single currency by them. All other criteria of an OCA arose from the need to explain the costs and benefits associated with the decision to adopt a common currency. If the first researchers believed that a common monetary area should not include extremely heterogeneous economies, recently, other researchers claimed that there are not very important initial conditions – adoption of the same currency will induce an increase of trade and financial exchanges, enhancing benefits and for the most divergent countries.

The main researchers of the optimum currency area criteria are Mundell (1961), (McKinnon, 1963), (Kenen, 1969), Corden (1972), Mundell (1973), Krugman (1993), Frenkel și Rose (1997), de Grauwe (2005). The optimum currency criteria include: *the mobility of production factors, price and wage flexibility, economic openness, diversification of production and consumption, similarities between inflation rates, fiscal integration, political integration, the correlation of business cycles.*

- *Mobility of production factors.* The choice of this criterion of analysis has been influenced by neo-classical perspective on the effects of economic integration. If there is a perfect mobility of capital and labour, then certain shocks may be reversed immediately. According to Robert Mundell's theory, the problem of asymmetric shocks can be solved if there is a high mobility of production factors between member countries of the monetary union. In general, countries are quite susceptible to such shocks, and their existence compromises the stability of the exchange rate between them. But, a higher mobility of labour and capital factors facilitates such adjustment process, reducing the need for an own exchange rate.

- *Wage and price flexibility.* According to this criterion, prices in the economy (including wages) are flexible, so that the economy will adjust automatically, no need for government intervention. Thus, when the economy is in recession, reducing incomes and rising unemployment will lead to lower prices of production factors and reducing production costs, inducing increase aggregate supply and return the economy to its potential. Therefore, if nominal wages and prices are flexible within an optimal currency area, the manifestation of a shock will not generate a persistent unemployment rate. Their flexibility will reduce the need of flexible exchange rates.

- *The degree of economic openness and country-size.* In 1963 year, Robert McKinnon proposed another important criterion in choosing the exchange rate. He was referring to the economic openness and country size, as factors that facilitate integration in a monetary union. He argues that in open economies, the gain of competitiveness achieved by currency devaluation is reduced, because the price of imported inputs and the final goods will increase immediately. A higher degree of

openness of the economy undermines the real exchange rate changes and increases the benefits of a single currency. Thus, the higher the degree of openness of the economy, then more economic agents will benefit from exchange stability.

- *Diversification of production and consumption.* Peter Kenen (1969) showed that the diversification of production and consumption can also be an important feature of optimal currency areas. Countries whose exports are diversified and have the same structure of production form an optimum currency area. In this situation, there are few risks of asymmetric shocks occur, if indeed occur, would be reduced in size. Although the economy has a diversified structure of production and of exports, however there is the risk of symmetric shocks within the monetary union if its economic structure is divergent from that of advanced economies in that area.

- *Divergence between inflation rates.* Differences in economic policies promoted and different inflation preferences of the countries forming a monetary union affect the terms of the exchange and require the nominal exchange rate adjustments. Substantial differences between the rates of inflation may cause external imbalances. Fleming (1971) has shown that similar rates of inflation ensure stabilization of trade, which sustain the current account balance and reduces the role of the exchange rate. A potential cost of introducing a single currency is determined by the fact that countries may have different preferences for inflation - some countries have a stronger aversion to inflation than others.

- *Fiscal integration.* A monetary union requires the existence of a supranational authority that can make transfers to areas affected by asymmetric shocks. This would eliminate the need for flexible exchange rates. Countries that have a supranational fiscal transfer authority may redistribute funds to a partner affected by asymmetric shocks. This property requires however a high degree of political integration and willingness to accept risk sharing between the states involved. A component of this property can be considered fiscal stability introduced by the Maastricht criteria and strengthened by the Stability and Growth Pact.

- *Financial market integration.* This criterion can be considered a variant of "capital mobility". If financial markets have a high level of integration, then, removing restrictions on the movement of capital, resolve the differences between interest rates and exchange rate fluctuations. Therefore, countries may adopt a common currency. Financial integration allows temporary disruption depreciation of the financial flows, for example by raising loans from surplus areas.

- *Political integration.* This criterion is seen by some economists as being the most important condition for the adoption of a single currency, the history of monetary unions showing that they were preceded by political Union. The success of Monetary Union is dependent on the compatibility preferences for growth, employment and price stability, as well as the ability to achieve compromise between those objectives. In these circumstances where there is political consensus for common goals of economic policy, Monetary Union would suffer. In circumstances where there is not political consensus for common goals of economic policy, Monetary Union will not be a sustainable construction.

- *Correlation between shocks and convergence cycles.* Under a common monetary policy, member countries can only use fiscal policy instruments. Thus, the asymmetry of shocks and business cycles divergences constitute the greatest threats of optimality of currency area. With asymmetric shocks, there must be other mechanisms of adjustment, like labour mobility, fiscal centralization or fiscal transfers to the countries affected by recession. Countries that are exposed to symmetric shocks tend to have more synchronized business cycles and therefore will promote similar economic policies. Not only asymmetric shocks generate costs of the monetary integration. If monetary union member countries must respond to symmetric shocks, the costs may result from the different ways they respond to these shocks.

Why euro area is not an optimal currency area?

Even if the OCA properties have not been taken into account when EMU was achieved, yet they are used when considering the potential manifestation of asymmetric shocks and their capacity of adjustment. However, if there is less progress on the OCA, then the costs of adopting a common currency will be higher. Economic researchers have found sufficient reasons for the euro area is not an optimal monetary union, in agreement with the theory analyzed in this project. Among member countries of the Economic and Monetary Union (EMU) there are sufficient divergences generated by different structural characteristics, by the different national policies promoted or ineffective internal economic mechanisms of shocks adjustment. Also, each rise in the euro area members increases the macroeconomic divergences in monetary union, which negatively influences the development of new entrants. In these circumstances, the most viable monetary area would be composed by economies with similar level of development, which have the same preferences and which are sufficiently interconnected financial and commercial. Although adoption a common currency is a risky option for some economies (eg Romania), however they hope to be validate the endogenous properties of the optimum currency area. A part of the criteria of an optimum currency areas support the sustainability of the euro area, while others deny. Within this study we made a summary of the five reasons why the euro area is not an optimal currency area.

Reason 1. Trading links between the Member States have increased (positive aspect), but persist divergences between commercial structures

The degree of economic integration between the euro area countries has increased from 52% during 1988-1996 years to 63% during 1997-2004 years. Joining to EMU has increased the degree of economic integration, while the share of inter-industry trade has declined. In the context of increasing share of the intra-industry trade, convergence of business cycles in the euro area has increased. Under these conditions, a shock that will affect one economy is transmitted symmetrically toward each other. However, the shares of the intra-industry trade in total trade are very dispersed across countries. Thus, the core of euro area has recorded more than 75% share of intra-industry trade and in addition a high degree of diversification of production (will be affected, therefore, less asymmetric shocks). Comparing the differences between the structures of bilateral trade in the euro area, it was noted that Germany and France had the lowest value of the divergence between trade structures (21%), while Germany and Greece are characterized by the highest divergence (95%). This is because Greece has the largest share of exports of food and beverages, while the proportion of machinery and transport equipment is the lowest. Moreover, the economy recorded six of the highest values of bilateral trade specialization, so that is the most divergent country with the euro area.

Reason 2. The adoption of the euro currency has generated increasing correlation between business cycles (positive aspect), but persist divergences between core and periphery

Joining to the euro area has led to increasing of trade relations, which positively influenced the convergence of business cycles. The adoption of a common currency has a positive effect on intra-industry trade, even if economic structures are not converging. Frankel and Rose (1998) estimated a positive influence of trade intensity on convergence of business cycles, so that the euro will lead to an increase in trade relations, which in turn will induce a greater synchronization of business cycles. Fidrmuc (2004) showed that the relationship described by the two economists is conditioned by the development of the intra-industry trade. It also predicted the existence of close links between Germany and new EU member states on intra-industry trade, which can reduce costs of common currency adoption. Artis and Zang (2001) have studied the properties of the optimum currency area for the euro area, according to criteria that influence the degree of synchronization of business cycles: volatility of real exchange rate, convergence of interest rates, degree of openness, the convergence of inflation rates and the flexibility of the labour market. According to estimates, France, Austria, Belgium and Netherlands are the economies that have the highest convergence

business cycles with Germany, while the northern and southern economies have registered the lower correlations. The difference between these groups of countries is given by the degree of flexibility of the labour market. Thus, the Nordic countries have a more flexible labour market, and it can mitigate the effect of asymmetric shocks, while southern economies cannot achieve an adjustment based on the functioning of the labour market.

Reason 3. The labor market is not flexible, what lead to a limited adjustment of asymmetric shocks

In the first studies on optimum currency area, the labour market flexibility was analyzed in particular in the light of the degree of labour mobility. According to this criterion, the EU is characterized by a reduced integration of national labor markets, given that less than 1.5% of the population had changed residence. In addition, migration process was not the answer to economic shocks (such as Mundell's theory), but was motivated by other factors. Therefore, an increase in unemployment in a particular region/country tends to become persistent, in the absence of interregional migration. Within the EU there is not only a low mobility of workers between countries but within them, at regional level. Thus, interregional mobility is lower in southern Europe compared with central and northern countries. This situation contradicts the new economic geography approaches, according to which the existence of high regional disparities involve migration of a large part of the workforce to the developed regions. On the contrary, according to European reality, economies with lower domestic regional inequality (such as northern countries) are characterized by high mobility of the population.

Differences in the labor market institutions within the euro area are a source of asymmetric shocks. Studies confirm the existence of a very low speed of adjustment in real wages to certain economic shocks. A lower wage flexibility is reflected in a higher price rigidity in the economy. Even in times of recession there is a higher unemployment pressure, which affects the employment rather than wage levels. Therefore the costs of the firms will not lower costs than a smaller extent, and the recovery of those economies will be more difficult. Some causes refer to certain specific labor market institutions such as the degree of strictness of the labour legislation, the power of union or the existence of the minimum wage. If the differences between labour markets are more significant, then both wages and prices will move divergence within the euro area, even in the presence of symmetric shocks. Therefore, countries whose labor market institutions are different (either because they are too flexible compared to average or too rigid compared to it), will consider the decision to adopt a single currency is costly.

Reason 4. There is not fiscal transfers between countries

Even if the theory of optimum currency area has described in detail the main features that generate sustainability of a monetary union, though not all were given equal importance in the literature. For example, the criterion of the existence of a fiscal union has been neglected so long as certain internal vulnerabilities have been underestimated in the context of high rates of economic growth. While there is the EU Community budget, it has no role in stabilizing the European economies, because it has a different role than the federal budget, both in terms of collection of resources and their spending. The main resource of the community budget is equivalent to about 1% of GDP in each economy, followed by a national VAT rate applied to national revenues. Most funds are targeted for cohesion policy and Common Agricultural Policy, resulting that they not have a damping effect of asymmetric shocks in Europe.

Also, funds are allocated for seven year financial program, the allocation being influenced only by the development degree of the region/economy at a time and not by the business cycle phase in which there is. However, there may be situations where funds could support the recovery of regions faced with high unemployment or characterized by a low potential for growth, but in this case, the effects are conditioned by the absorption capacity. Studies show that financial resources are

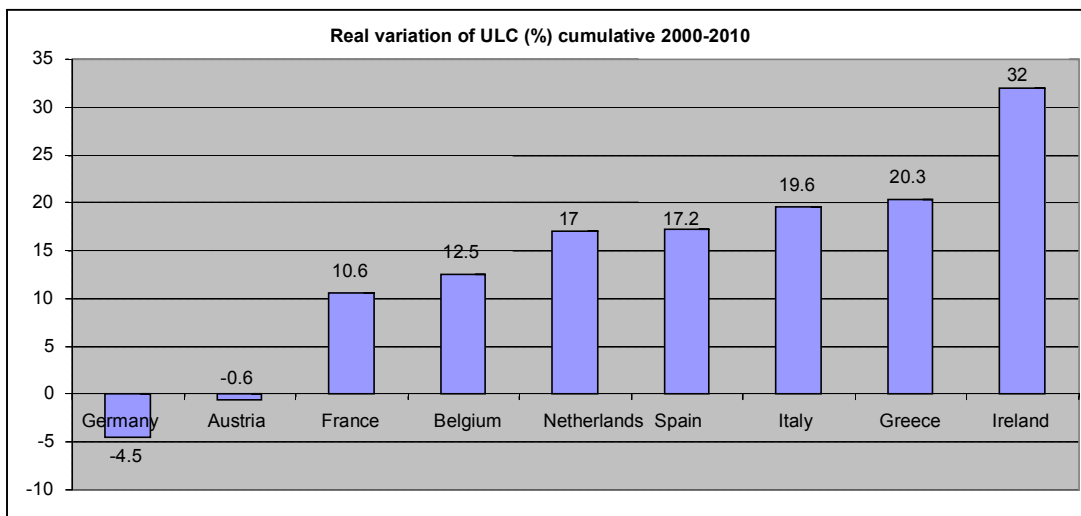
attracted to a greater extent by economic agents belonging to the more developed regions, because these regions have the ability to attract both investment and labour. All these arguments confirm the ineffectiveness of the current EU budget to mitigate the risks of participation in the euro area. Therefore, European monetary union has not one of the essential properties that ensure its sustainability, in Mundell's view. As long as economic growth (even unsustainable) allowed easy payment of state debts, the need for a fiscal union, including transfers between countries, has been neglected. Even if the monetary union was not an optimum currency area, however, it was thought that divergences between countries tend to be less important in context of increasing trade and financial integration (endogenous hypothesis).

Since the entry into the crisis of European economies the previous optimistic vision was denied, because enhancing the economic integration has generated a faster transmission of shocks within the euro area. Thus, the budgetary difficulties of some countries (Greece, Ireland) influencing through the financial system countries less vulnerable which generates a drop in confidence in the sustainability of the euro area. To avoid such a scenario, the European authorities consider that will be necessary of a fiscal Union in the euro area, which oversees more strictly economic policies of the member states. In conclusion, the membership decision is costly without a convergence and a strict regulation of national preferences in the field of taxation or of the labour market.

Reason 5. There are significant divergences of the competitiveness between countries

The member states unable to find internal tools to adjust the economic shocks will record a lower dynamic structural changes and loss of competitiveness in the monetary union. Therefore, the economic recession will extend and will be accompanied by increasing structural unemployment. Studies for the euro area economies have shown that it is composed of a heterogeneous group of economies, both in terms of development level, economic structure or the level of labor market flexibility. Empirical data suggest that the core EMU (Germany, France, Italy, Belgium, Netherlands) evolves symmetrically with the euro area economy and the periphery (Ireland, Spain, Greece) has a custom development in this area compared with the core countries.

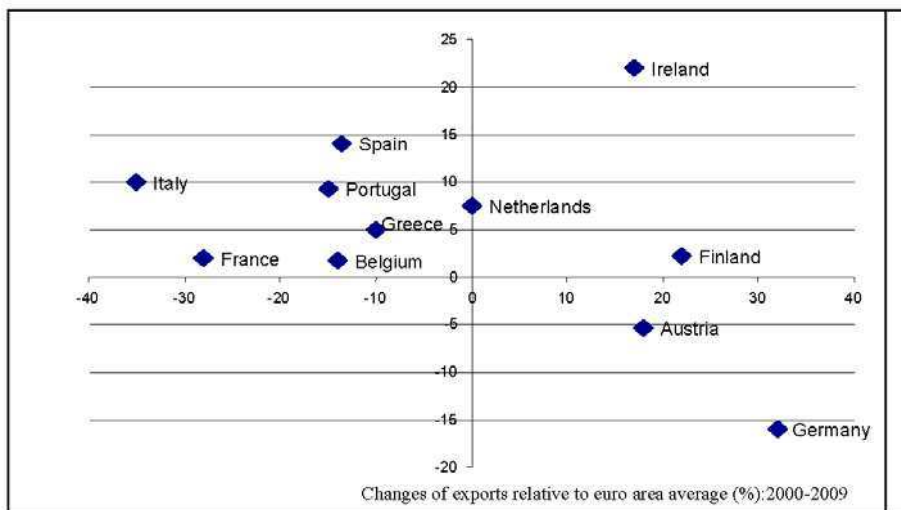
The inflation differential between the euro area countries generate divergences of external competitiveness and of real interest rate. Thus, the economies characterized by a higher inflation rate compared to euro area average recorded both a demand reduction caused by relative loss of competitiveness and an increase in demand due to lower real interest rate (Walter's critique). In the first decade of the euro area existence, countries which currently have problems with debt financing (Spain, Ireland, Greece and Portugal) showed a loss of competitiveness for some 20% compared with Germany. In other words, unit labor costs have increased by approximately 20% less in Germany than in the peripheral countries of the EU. In these circumstances necessary adjustment of this countries require a decrease of labor costs, in direction of regaining competitiveness. Spain and Ireland have recorded the largest reductions in competitiveness after 2003, in the context of the housing boom, while Germany had the largest improvement in competitiveness since 2000, as evidenced by decreasing aggregate real unit cost of labor (Figure 1).



Source of data: AMECO database, 2010

Figure 1. Competitiveness changes in nine of the euro area countries (2000-2010)

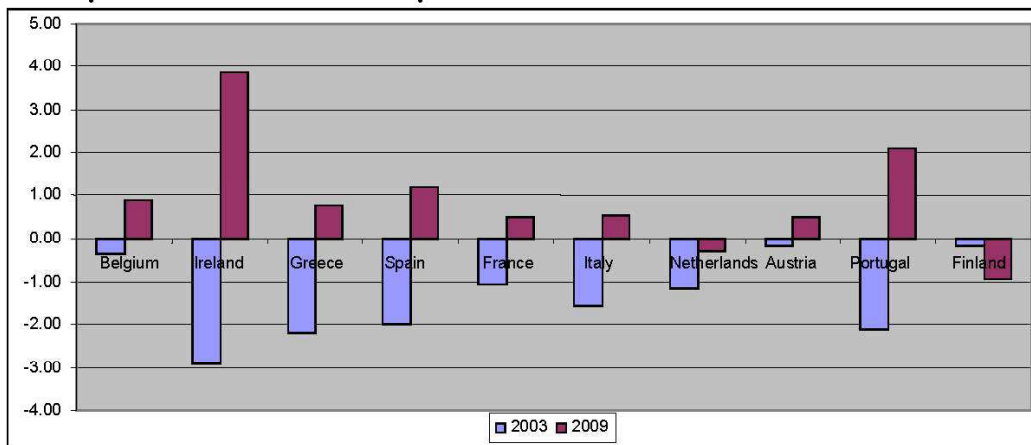
Differences in competitiveness are reflected in the divergent evolution of foreign trade. Thus, economies that have experienced a significant increase in unit labor costs relative to the euro area have generally a slower growth of exports compared with the euro area, the only exception being Ireland. The most significant increases of exports were recorded by Germany, Austria and Finland in the context in which the first two economies were characterized by relative gains in competitiveness. The consequence of this development was the increasing trade deficits of the southern countries in relation to Germany, given that before the creation of the euro area, there were close to equilibrium trade balances (figure 2). On the ordinate of the figure 2 is represented the unit labour costs changes relative to euro area between 2000 and 2009 years.



Source of data: AMECO database, 2010

Figure 2. Impactul modificării costului real al forței de muncă asupra exporturilor

The inflation differential in the euro area generates an asymmetric impact of the common monetary policy adopted by European Central Bank, because the real interest rates will be different. Thus, for economies whose real interest rates are lower than the reference value (such as Germany, the figure below), common monetary policy will be expansionary, while for others there is a restrictive effect of monetary policy. If in 2003 year the monetary policy was for all countries more expansionary relative to Germany, the situation was reversed in 2009. Thus, the southern countries were more expansionary relative to Germany until the outbreak of economic crisis, after which there was a tendency of restrictiveness induced by economic downturn.



Source of data: EUROSTAT database, 2010

Figure 3. The real interest rate changes relative to Germany

Conclusions

In this study we demonstrated that European monetary union does not have a specific institutional arrangement of an optimum currency area. This is not a fiscal or political union, so it did not have an automatic mechanism to support the economies with debt financing problems. In accordance with the features of OCA, we believe that now would be considered costs and benefits of remaining within the monetary union. With the emergence of the financial problems in the euro area, participation at monetary union will be more expensive both for economies with financial difficulties (which must take further austerity budget) and for creditors, which must cover the losses of others. But, the decision to renounce the euro currency is costly both for current borrowers and for more stable economies in financial terms. In economies with high outstanding debt, leaving the euro area would lead to financial problems – the cost of borrowing will increase, and some capital will leave the economy – which can cause re-imposing restrictions on capital movements. Their financial difficulties will spread quickly on the financial system in the relatively stable economies, causing losses for them.

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PNCD II, Program Ideas/ Exploring Research Projects program, 3 years, 3 stages, Project Manager Socol Cristian.

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