

Asymmetric Shocks Across European Monetary Union: Can Labor Mobility Act as an Adjustment Mechanism?

Mibai Copaciu

*Central European University
Budapest, Hungary*

Abstract

The paper looks at the degree of labor mobility across EMU member states, as according to OCA theory labor mobility has been emphasized as one of the adjustment mechanisms that can counteract the negative effects of asymmetric shocks that are still present inside EMU. Furthermore, the problem is considered also in the case of new acceding countries, since at a certain moment in time they must join EMU. The existing empirical results show that, at this stage, labor mobility does not act as an effective adjustment mechanism. However, continuous integration and labor market reforms might generate improvements on its functioning.

1. Introduction

The recently enlarged European Union (EU) is a heterogeneous area with different economic characteristics. For example, the productive structures and income per capita still vary a lot across EU, although a certain degree of convergence has been observed throughout time. This heterogeneity makes the area more vulnerable to asymmetric shocks, shocks that impact on regions differently. To counter the negative effects these shocks may have, adjustments mechanisms should be put in place. However, countries that already joined European Monetary Union (EMU), gave up their national monetary policy, a common and independent one under European Central Bank's (ECB) coordination being implemented. Thus, the exchange rate, used frequently as an adjustment mechanism in the face of asymmetric shocks between nation states, lost its power, other mechanisms being considered.

The paper looks at the degree of labor mobility across EMU member states, as according to Optimal Currency Areas (OCA) theory labor mobility has been emphasized as one of the adjustment mechanisms that can counteract the negative effects of asymmetric shocks that are still present inside EMU. Furthermore, the problem is considered also in the case of new acceding countries, since at a certain moment in time they must join EMU. The existing empirical results show that, at this stage, labor mobility does not act as an effective adjustment mechanism. However, continuous integration and labor market reforms might generate improvements on its functioning.

The paper is organized as follows: next section presents an overview of OCA theory while Section 3 provides an assessment of the existence of asymmetric shocks inside EMU. Section 4 investigates the main adjustment mechanisms, focusing on labor mobility. In Section 5, migration patterns from Central and Eastern European Countries (CEECs) are investigated taking into account their future EMU membership. Section 6 concludes.

2. Optimal Currency Areas (OCAs) – An Overview

The start of the OCA theory is represented by the seminal contribution of Mundell (1961) through its paper "The Theory of Optimum Currency Areas". The theory has been developed widely afterwards, the existence of European Monetary System and its more recent follower, namely EMU, acting as an extra catalyzer through time.

Before proceeding in analyzing the features an economic area should have before joining a currency area, it worth looking first at benefits and costs associated with joining. Usually, it would be beneficial for a country to join a currency area in expectation that benefits exceed costs. However, most of benefits and costs have different profiles, both across countries and across time. Therefore, their measurement is most of the time subject to hard assumptions, different results being obtained. But, this heterogeneity in the results concerning the size of costs and benefits disappears when it comes to discuss their nature.

In the literature (e.g. Krugman and Obstfeld, 2003) it is stressed that benefits refer mainly to the monetary efficiency gain from joining the fixed exchange rate/common currency¹. More precisely, the monetary efficiency gain comprises mainly the following three types of benefits: benefits from increased macroeconomic stability and growth; benefits from improvements in microeconomic efficiency and those resulting from positive external effects.

¹ Throughout the paper I will refer more to the case of adopting a common currency as this is the case for EMU. However, where the case, difference will be made.

The first category of benefits mentioned above arises from improved overall price stability. Besides other positive effects, price stability can also induce reputational gains for members with a history of higher inflation that benefit from an anti-inflationary anchor. Furthermore, there is easier access to broader and more transparent financial markets increasing the availability of external financing. The second type of benefits results principally from the increased importance of money functions (usefulness of money as a unit of account, medium of exchange, standard for deferred payments, and store of value). There will be greater price transparency that will discourage price discrimination, decrease market segmentation, and foster competition. The last type arises from savings on transaction costs resulting from a wider international circulation of a single currency, the reduced need for foreign exchange reserves and simplified international coordination².

Meanwhile, the costs refer to the economic stability loss from fixing the exchange rate/adopting a common currency. These costs can be generated, under certain circumstances, by the above mentioned sources of benefits. Thus, there can be distinguished costs from decreased macroeconomic stability, costs arising from possible deterioration of the micro efficiency and those implied by negative external effects.

Deterioration of macro stability refers mainly to the reduced possibility the country that joins the currency area faces in using monetary policy to perform real adjustments when confronted with asymmetric shocks. Furthermore, if a common currency is adopted, as it is the case for EMU members, the responsibility for setting monetary policy and exchange rates is transferred to a supranational central bank, ECB in this case. Moreover, fiscal restraints, as is the case with the Stability and Growth Pact and its Excessive Deficit Procedure, although imposing fiscal discipline might be inefficient in some areas. Coricelli and Ercolani (2002) point out two of these areas: first, to avoid a procyclical fiscal policy in good times, the automatic stabilizers should operate symmetrically over the cycle, which is not the case now³; second, public investments are considered as any other expenditure. This last point is inconvenient in the case of new acceding countries where high levels of public investment are needed. Giving up sovereign monetary policy makes one country loosing the right to inflate away the debt, a policy solution that might be also considered under certain circumstances.

The second category involves mostly costs associated with the switch to a new currency that have different natures like administrative, legal, psychological or a hardware one (e.g. costs such as re-denominating contracts and adapting vending machines). Furthermore, the choice of nominal exchange parity might influence the relative competitiveness of the country in relation with other members. The imbalance of the external account will persist until the structure of wages and prices are changed to accommodate the situation.

Last but not least, negative external spillovers might arise as some countries should breach the agreement by unilaterally devaluing their currency. The EMU crisis from 1992 is just one example of such negative external spillovers.

Krugman and Obstfeld (2003) connect the benefits and costs with the degree of economic integration, summarizing the above ideas. They argue that benefits/costs are higher/lower the higher is the degree of economic integration between the country and the fixed exchange rate/common currency areas it joins.

² These benefits loses magnitude if there is no a common currency but a system of pegged exchange rates inside the currency area.

³ The recent increasing debate inside EMU concerning reforms might generate a change in the fiscal rules. For an overview of the proposed reforms, "The Communication from the Commission to Council and the European Parliament" No. 668/2002 should be consulted.

Figure 1 from the Appendix shows the diagram associated with the later relation, known as the “Krugman diagram”⁴. Based on this, they define optimal currency areas as “groups of regions with economies closely linked by trade in goods and services and by factor mobility” (Krugman and Obstfeld, 2003).

However, reaching this target takes time. A currency area might not be an optimum one once it is formed⁵. Many of the joining decision are political and do not take into consideration the full and dynamic economic perspective. Therefore, to deal with the inherent problems and to minimize the costs, the region should aim in reaching properties mainly related to factor mobility and thus be able to deal with the inherent shocks. Before clearly stating these properties, I will emphasize them by presenting the options a country, which is member of a currency area, has when dealing with asymmetric shocks, according to Mundell’s model.

In investigating his model, I will be guided by the example offered by De Grauwe (1997). Assume two countries, France and Germany, which are initially in their equilibrium defined as full employment and balanced trade. Both countries maintain own currencies; thus each country can alter its monetary policy if necessary. Now consider the shift in demand⁶ away from the French products to German ones (in fact an asymmetric shocks). If there is no use of policy, there will be a decline in price level and output in France. Opposite is valid for Germany. If the domestic spending does not suffer a similar decrease the probable result will be a twin deficit, both budgetary and current account ones. Part of the burden can be taken from France by Germany if prices increase at a higher speed in the later one. If monetary policy is tightened instead in Germany, the burden on France is even higher. If there are flexible exchange rates, France can solve by its own the problem by devaluating its currency. Now, let’s analyze the options available for the countries when they are part of the same currency area, having pegged exchange rates or a common currency under a single monetary policy, which is the case now inside EMU.

Basically three options are available for the countries members of a currency area faced with an asymmetric shock. First, there is wage/price flexibility. Wage claims in France are reduced and the opposite is valid for Germany. Second, there is labor mobility. Workers can move from France to Germany. They do this in order to eliminate the excess labor demand occurring in Germany. There is no change on the wages. Moreover unemployment and inflation disappear. Third, there is a fiscal policy. Faced with a surplus the German authorities can raise taxes to decrease German aggregate demand and transfer part of this surplus in France to finance the French current account deficit. Depending on the nature of the shock the transfer will be permanent (in the case of a permanent shock) or temporary in the opposite situation.

Therefore, according to Mundell’s theory, in order to minimize the costs associated with relinquishing control of national monetary policy, the area in question must aim in achieving the following properties:

- high degree of labor mobility – laid off employees from a country hit by a negative real demand shock, shock that pushes up unemployment and reduces output, can move to regions within the currency union that were not subject to idiosyncratic shocks and therefore provide an automatic adjustment mechanism;

⁴ However, depending mainly on the role given to monetary policy and its influence, a monetarist and a Keynesian view can be distinguished.

⁵ Reference to “endogenous” and “specialization” hypotheses will be made throughout the next section.

⁶ To follow Mundell’s approach, a demand shock is used as an example. Supply shocks, as opposed to demand ones, have a permanent effect on output.

- flexible wages and prices - within the framework of OCA theory, price (and wage) flexibility is studied in the context of adjustment to real shocks such as labor demand shifts or employment growth shocks; thus, for instance, if relative prices are flexible, a positive labor demand shock in a country should translate into an increase of its relative price level,
- budgetary transfers - if the above mechanisms do not work, government/union-level transfers can be made to depressed regions/countries; the purpose of the transfers in turn may be either stabilizing (i.e. to offset temporary shocks) or redistributive (i.e. to counter permanent shocks).

3. Asymmetric Shocks inside EMU – An Assessment

The properties mentioned in the earlier part are necessary for a region to deal with the negative effects of asymmetric shocks. This section tries to assess the (in)existence of such shocks across EMU.

The nature of shocks that affect EMU matters since the effects on output and prices are different. Moreover, in the case of EMU, it is really important whether the shocks are common or country specific.

In the case of a common shock, the macroeconomic policy can act as a stabilizer. More exactly, if the common shock is a demand one, a counter-cyclical policy may reduce the output and inflation gap. The policymakers will face a tradeoff between inflation and output stabilization if the shock is a supply one (e.g. cost push). A productivity shock, one example of permanent supply shocks, puts pressure on the policymakers which should decide on the convergence speed towards the new potential level of output⁷ (Gali et al. in Sapir, 2004).

If the shocks are country specific they are not accommodated through the single monetary policy conducted by ECB and if alternative adjustments mechanisms are not put in place, the costs of being inside EMU can be considerable. In fact, when talking about EMU, these country specific shocks are equivalent with the asymmetric shocks across EMU.

The nature of the shocks affecting the EMU is influenced also by the structure of the economies from this region. Similar economic structure may decrease the probability of asymmetric shocks, since the existent shocks will affect all the areas in a similar manner; thus they can be accommodated through ECB's monetary policy strategy.

However, similarity in economic structure might be enhanced by continuous economic integration. Frankel and Rose (1996), referring to EMU, argue that judging the suitability of one country in joining EMU based only on historical data might not be appropriate since "the structure of these economies is likely to change in the event of EMU". They take this as one example of the well known "Lucas critique", according to which joining a currency area can be considered a policy shock that changes the expectations of agents in the economy.

A common currency, as it is the case of EMU, will generate an impetus on the long term economic relationships among members and might over time encourage forms of political integration. This will in turn promote even more reciprocal trade, economic and financial integration and business cycle synchronization among the countries sharing a single currency. These results could result from the increasing propensity of partner countries to import from each other, from productivity shocks spilling over via trade, or the disciplining effect of a monetary arrangement. All these imply that

⁷ The additional econometrical debate regarding the correct measurement of potential level of output, a more acute problem in the case of new acceding countries still faced with rapid and important structural reforms, are not discussed here.

although countries may not satisfy the requirements for joining a monetary union *ex-ante*, they can satisfy them *ex-post*. This is known in the literature as the “endogeneity hypothesis”

As opposed to the above idea is Krugman’s specialization paradigm. It postulates that as countries become more integrated (and their reciprocal openness rises) they will also specialize in the production of those goods and services for which they have a comparative advantage. Members of a currency area would become less diversified and more vulnerable to supply shocks. Correspondingly their incomes will become less correlated. His hypothesis is based on trade theory, according to which increasing returns to scale are encouraged by the adoption of a single currency that removes some obstacles to trade and encourages economies of scale.

It seems that reciprocal trade is the most important proxy in assessing the degree of economic integration a certain group of countries has achieved. Figure 2 from the Appendix shows the intra-EU trade as a percent of EU GDP from 1986 until 1998. It can be observed that there was no significant increase after the 1992 moment, when compared with the previous levels.

However, what is important in assessing the validity of one of the above two mentioned hypothesis is not the intra-EU trade as a percent of EU GDP, but the level of intra-industry trade. While the endogenous hypothesis assumes a high level of intra-industry trade to enhance the economic similarity, Krugman’s specialization paradigm assumes lower levels that are consistent with the specialization of countries/regions in industries they have a comparative advantage.

The usual measure for the intra-industry trade level is the Grubel - Lloyd Index. It is reproduced for pairs taken from 11 EU countries for 2002 in Table 1 from the Appendix. A mixed pattern could be observed. Intra-industry trade is more intense in the more industrialised “north”. But, it is not the case that more intensive intra-industry trade leads all the time to more synchronized business cycles and therefore to more symmetric shocks. A difference should be made between horizontally differentiated goods (two-way trade in varieties) and vertically differentiated products (two-way trade in different qualities). Fontagne and Freudenberg point out that growth in the latter process is not necessarily associated with more symmetric shocks (in Horvath, 2000).

Another way at looking at the level of integration and similarity of economic structure is to investigate the correlation of supply and demand shocks across the investigated countries/regions, to assess the degree of similarity between the business cycles.

Bayoumi and Eichengreen (1992) performed measurement of the incidence of shocks using a structural vector auto-regressive model in an effort to identify supply and demand shocks influencing output fluctuations in EC and some US regions in the period 1960-88. They measured how supply and demand shocks of different countries in the EC and different regions of the US correlate with benchmark regions (Germany for Europe and the mid-Atlantic for the United States). In differentiating between supply and demand shocks they use the restriction according to which the long term impact of demand shocks on output is zero. Regarding supply shocks, they found that these are highly correlated with the benchmark, for countries like Belgium, Denmark, France and Netherlands while for England, Ireland, Italy, Greece, Portugal and Spain the correlation is low. A similar pattern is observed across US. As for demand shocks, the correlation is much higher with the benchmark region for US, while for European countries it is very low. The magnitude of the shocks is higher for the first group of European countries when compared with the second one.

Based on these facts, they divide the European Union investigated countries into a “core” region,

formed of the above mentioned first group, and a “periphery” one, in which countries like England, Ireland, Italy, Greece, Portugal and Spain are included. The “core” region is much closer in their opinion in forming an optimum currency area.

In another paper, using more recent data, the same authors estimate an OCA index based on a model of exchange rate divergences, relative to Germany in 1987, 1991 and 1995. Based on the comparison of 1987 and 1995 indexes, countries are divided into three categories: those that already converged (Austria, Belgium, Netherlands, Ireland, and Switzerland⁸), those that are converging (Sweden, Italy, Greece, Portugal, Spain) and a group of countries that registered little convergence (UK, Denmark, Finland, Norway, France). Bilateral trade, together with the relative size of the countries, explain most of the cross country variation in the average level of OCA (Bayoumi and Eichengreen, 1997).

Chamie et al. (1994) decompose the shocks into real supply, real demand, and nominal shocks. Most of the countries (e.g. Greece, Italy, Norway, Portugal and Sweden) are not related with the common component of the shocks. Only Germany and Switzerland are strongly related to the symmetrical component of shocks. When USA is taken as benchmark, European regions face highly asymmetric supply and real demand shocks.

As it can be observed from the above mentioned evidence, at this stage, asymmetric shocks across EMU countries are still present. Thus, there is still the chance that at European level and mainly inside EMU, countries could face significant adjustment costs by joining the monetary union.

4. The Adjustment Mechanisms

The earlier mentioned properties a region must have to become an OCA are related to the adjustments mechanisms that should be used to cushion the effects of asymmetric shocks, shocks that as it was presented, are still present inside EMU. This part will focus on analyzing mainly labor mobility by investigating the existing empirical evidence and patterns across EMU/EU.

At least two major conclusions are common when the research on labor mobility across Europe is investigated. Namely:

- Labor mobility as a share of total population is generally lower in European countries than in the US, although in some cases the estimates differ significantly. For example, Piracha and Vickerman (2002) estimate that the mobility levels in the US are on average six times greater than in Europe. Approximately 2.4 percent of the population moves between US states on an annual basis. Comparing the dispersion on the unemployment rates, Mason and Taylor (1994) show that the dispersion is much higher for Europe when compared with US and Canada. They argue that is due to a much lower (roughly two or three times) migration among European countries. The result is similar with the one obtained by Obstfeld and Peri (1998).
- Labor mobility across European countries is lower than the one within countries. De Grauwe and Vanhaverbeke (1991) investigated regional and national labor mobility across several western European countries. The results indicate that the yearly flow of migrants among the investigated countries is less than 10 percent when compared with interregional migration. Inside

⁸ Switzerland is not a member of the European Union.

countries like Italy and Spain, interregional migration is less than half as large as in countries like Germany, UK or France.

The above facts may suggest that labor mobility across EU countries is low to act as an adjustment mechanism in the face of asymmetric shocks. However, as emphasized by Puhani (1999) if the cause of the low labor mobility resides in the lack of economic incentives to migrate the above conclusion might be wrong. The essential element then is represented by the elasticities of migration with respect to economic outcomes such as wages and unemployment rates.

Puhani (1999) offers an overview of the empirical studies that deal with the determinants of labor migration. Usually, it is found that high wages favor immigration while a high unemployment rate induces emigration. For example, Eichengreen (1993) investigated fifteen regions from UK, USA and Italy. He found that immigration is positively related to high wages and negatively to high unemployment rates. Moreover, the migration is more intensive in the USA than in UK and Italy.

Barro and Sala-i-Martin (1995) regressed net migration rate on per capita income, weather conditions, and population density for five European countries, US and Japan. The results indicate a much smaller effect of income on migration for Europe when compared with US and Japan. Moreover, migration has no significant effect on the convergence of income.

Puhani (1999) estimates the elasticity of migration with respect to changes in unemployment and income on the basis of regional panel data for three European countries Germany, France and Italy. Labor mobility is higher in Germany but even here it would take at least four years until more than half of a shock to unemployment is accommodated by migration. Decressin shows that for Germany the migration is lowest when the unemployment is high (in Puhani, 1999). This is just opposite to what is needed for the adjustment to take place through labor migration. Puhani (1999) concludes: "Labor mobility is extremely unlikely to act as a sufficient adjustment mechanism to asymmetric shocks in Euroland." However, there are some drawbacks of these results: the data do not allow distinguishing between internal and external migration⁹; the coverage of the data set is limited, there are no data regarding migration between regions belonging to different European nation states.

Similar research was done previously by Decressin and Fatás (1995) which investigated a panel data set for 51 US states and 51 EU regions from 1975-1990. A region specific employment shock is absorbed in the short run in a different manner. While in EU the participation rate is affected, in the US the migration between regions acts as an absorber. More exactly, inside EU a negligible proportion of the labor demand shock is absorbed by migration throughout one year after the shock occurred while for the US after one year the proportion is 52 percent. Only after four years, a significant proportion of the shock (82 percent) is absorbed through labor migration.

As regards the relation with capital mobility, the EU's current combination of highly mobile capital and relatively low labor mobility might have had increased the costs of adjusting to asymmetric shocks without exchange rate changes. If a country suffers a negative shift in output demand, the capital can fly outside accentuating the negative effect on unemployment. Capital controls would not generate these negative effects. Krugman and Obstfeld (2003) consider this an example of the theory of the second best, which implies that complete liberalization of one market might impact negatively on the efficiency of EU if the second market, the labor one, still functions poorly.

9 Italy is an exception.

Besides labor mobility, fiscal transfers and price and/or wage flexibility are other mechanisms that can be used to cushion the negative effects of asymmetric shocks.

In a currency union, absent individual monetary policy, the burden of adjustment usually lies on fiscal policy. To counter negative demand shocks, governments can use countercyclical policies to stabilize the economy. If deficits were used in stabilizing, taking into account the dynamics of debt and deficits, all these in the context of the Growth and Stability Pact, it might be the case that the future ability to use them will be diminished. The alternative option regards automatic transfers from fast growing regions to the depressed regions thus making a contribution to interregional risk sharing. However, it should be mentioned from the beginning that EMU lacks a supranational risk sharing arrangement that may assist its members in coping with asymmetric economic shocks, as it is the case in US. European Union's limited taxation power allows it to practice fiscal federalism only to a very small scale. Moreover, direct transfers from one country to another are, at least at this moment hard to imagine. There are more and more opinions favoring the adoption of a common fiscal policy, but the states have been reluctant in releasing more the control over this policy. However, greater budgetary and tax harmonisation may be needed to avoid distortions in resource allocation in single market.

A negative labor demand shock in a country should translate into a decrease of its relative price level provided that relative prices are flexible. Price and/or wage flexibility is another alternative that countries can use to cushion the effects of idiosyncratic shocks. Not only across countries members of EMU, but also across the ones outside EMU, but inside EU, there is a high degree of price and wage inflexibility, usually a downward rigidity being manifested. When compared with US and Japan, interregional relative prices are more rigid and wages settlements are highly unionized. The link between wages and employment is more direct at extremes: either in highly decentralised system or in the centralized ones. According to the non linear representation of Calmfors and Driffill (in Vickerman, 2004), presented as Figure 3 in the Appendix, the change in misery index, defined as the sum of the inflation rate and the unemployment rate, is highest for countries with an average index of centralisation of labour unions, while it is lower for the extremes. Most of the European countries are part of the former category.

As the above evidence shows, it is not clear that EU is an OCA, but continuous integration might lead, according to the endogenous paradigm, to more similar economic structures, thus reducing the possibility of having asymmetric shocks inside EU. However, at this moment these shocks still persist and the adjustment mechanisms do not perform very well. It seems that internal migration flows are not high enough to cushion asymmetric shocks and moreover to sustain the Single Market. Therefore immigration from outside the old EU countries seems necessary to sustain labour supply, accommodate shocks and keep/improve the dependency ratios. Central and Eastern European Countries (CEECs), most of which are new EU members by now, might be a solution. Moreover, the future EMU membership of new acceding countries raises again the problem of asymmetric shocks, in an enlarged context. The next section deals with these problems.

5. The CEECs' Migration Patterns

The core problem in explaining the various implications of recent enlargement of EU resides in the large per capita income differentials between the old members and the new acceding countries. Moreover, these differences are still going to persist for long periods of time. The Figure 4 from the

Appendix shows the time needed for CEECs countries in order to reach the income level of the low income EU countries (Spain, Portugal and Greece), assuming that the latter grow at a rate of 2 per cent per year. Boeri and Brucker (2001) used the approaches of Robert Barro (1991) and Levine-Renelt (1992), based on historical data. The average time span for convergence is about 30 years. However it should be noted that the results might be upward biased since there is no effect of integration on growth assumed. If integration's effect is taken into account, the GNP of the countries might increase with 1.5 percent, under conservative assumptions or 19 percent if the effect on capital accumulation and risk premiums is taken into account (Boeri and Brucker, 2001).

As a result of these discrepancies, migration pressures are feared due mainly to higher wages and higher levels of social welfare. Moreover, increases in FDI flows are expected in order to exploit the low labor costs from CEEC. As regards migration, at a first view, there are negative and positive impacts on both home and host regions. While there is a loss of productive potential, skill and demand in home region, remittances and skill acquisition in the case of temporary migration might compensate them. As for the host region, the increased competition¹⁰ and lower wages can be compensated by the gain of appropriate skills, increased demand and reduced wage inflation pressures.

According to the "An Agenda for a Growing Europe-Making the EU Economic System Deliver" Report, known also as the Sapir report, after the name of the chairman of the group, Andre Sapir, the present stock of foreign residents immigrated from the CEECs-10 to the EU is estimated at some 850,000 individuals, while the stock of foreign employees amounts to about 300,000 workers¹¹. The latter figure includes the full-time equivalent of temporary and seasonal workers. Such figures account for barely 0.2 per cent of the EU population and 0.3 per cent of the EU workforce, respectively (Sapir, 2004). Figure 5 from Appendix shows the across countries distribution. The last decade pattern was mainly characterized by a peak in-migration to EU in early 1990s. The distribution has been highly uneven, migrants being concentrated especially in Austria's and Germany's borders. However this was often strictly controlled (asylum) and followed by subsequent out-migration. The tendency has been for emigration to decrease in the latter part of the 1990s.

The recent accession of new members stimulated a great variety of empirical research designed to estimate the migration potential and its effects. The study of Boeri et al. (2004) offers a comprehensive review of this type of studies. Their estimates suggest that the propensity to migrate decreases with the number of those who have already emigrated from each accession candidate, thus the decreasing trend, above mentioned being confirmed.

The trend of net migration flows from the eight new members from CEE will have a peak between 250,000 and 450,000 persons during the first 1-2 years and falling to some 100,000-200,000 afterwards. One decade after the accession, the cumulative number of migrants might have amounted to between 1.5 and 4 million, i.e. 2-4.5% of total population in the eight newcomers or 0.4-1.2% of total population in the before May 2004 Union (Sapir, 2004). It seems therefore that the migration wave expected after the accession will not as large as often feared in the EU. The effects on wages and unemployment for the old EU members are likely to be rather moderate and will be focused mainly on unskilled labor area.

¹⁰ This factor might generate both negative and positive effects.

¹¹ Illegal migration, that is for most of the countries, higher than the official one is not taken into account.

However, it should be kept in mind that although the overall impact is forecasted to be small, the impact on individual countries might not be taking into account the above showed distribution of migrants inside old EU countries. Germany and Austria will be again the targeted countries. Sinn et al. forecast a net migration for Germany up to 200,000-300,000, but declining in the following years. In 15 to 20 years, migrants will account for 2-3% of the German population (in Sapir, 2004). These facts made Austria and Germany to opt for long transition periods (up to seven years) in giving full labor mobility rights to citizens from the new entrants.

Fidrmuc (2002) studies migration patterns and adjustment to regional shocks inside four CEEC's countries: Czech Republic, Hungary, Poland and Slovakia. He finds that migration appears to occur chiefly among relatively prosperous regions rather than from depressed ones to those with better economic conditions. The potential effect of migration on regional differences in unemployment and wages is economically small.

Thus, the power of labor mobility to cushion asymmetric shocks is limited. This pattern is explained by the large proportion of high wage earners inside migration. In the context of accession this might lead additionally to a "brain drain" from new acceding countries to old EU members.

It seems that the future EMU membership of the new EU entrants will not help, assuming that the above mentioned migration patterns are kept, in cushioning asymmetric shocks inside the future EMU structure. But are there going to be asymmetric shocks inside new EMU's structure? Continuous integration might lead to similar business cycles and thus to a similarity to the exposure to shocks inside the future EMU. However, in the recent period this is not yet the case.

Studies dealing with the investigation of shocks affecting the two groups of countries usually found a dispersed correlation of shocks. Fidrmuc and Korhonen (2001) found that correlation of shocks varies considerably between EU and accession countries, with Hungary being the most correlated when both types of shocks are taken into account. When taken individually, Hungary has the highest correlation in supply shocks (0.46), while Poland has the maximum correlation among the investigated countries for demand shocks (0.28). The least correlated are Lithuania for supply shocks (-0.11) and Lithuania and Latvia for demand ones (-0.49). Horvath (2000) found that the shocks that affect the transition economies (Vishegrad and Baltic countries) are largely uncorrelated with those prevailing in Germany. Hungary has again the highest correlation for supply shocks (0.28) and the lowest for demand (-0.40), while Lithuania has the lowest (-0.16) one, but the highest for demand shocks (0.33). However, the author points out that some of the correlations are similar with the ones of the actual EMU's members with Germany Horvath (2000).

Another study that investigates the correlation degree of business cycles between EMU (or old EU countries) and four new members (Czech Republic, Hungary, Poland and Slovakia) is the one of Boone and Maurel (1998). The procedure used assumes computing correlation coefficients between the cyclical components of industrial production and unemployment of the four countries against Germany and EU. The degree of correlation is higher between these countries and Germany than between some EMU countries (e.g. Portugal and Greece) and Germany. However, correlations with EU as a whole are not so high.

One could argue, based on the above mentioned evidence that the generally low correlation of shocks across the two groups of countries plus the low mobility of labor from CEEC's to old EU members and even within CEEC's give are strong arguments against Europe being an OCA and as a result

labor mobility being an instrument that cushion asymmetric shocks' effects inside (the future) EMU. However, as mentioned before, the endogenous hypothesis comes partially to contradict these facts. The switch to a common currency might have been, probably at a slower pace, the catalyst for further economic integration in Europe.

6. Conclusions

Labor mobility is one of the adjustments mechanisms that may cushion the negative impacts of the asymmetric shocks inside a currency area. Although the increased integration at EU level, asymmetric shocks are still present. However, none of the available mechanisms do function yet properly. Labor mobility across EMU countries is still low, when compared with a similar benchmark like US. The effects of shocks are eliminated through labor mobility during much longer periods than for US. An increased mobility within countries than between them may reflect market segmentation, cultural, legal and institutional diversity. Moreover, there are cases when migration is low when unemployment is high, just the opposite of what is needed to counter the effects of asymmetric shocks.

Migration from CEECs might be a solution for these problems, once the countries have joined EU/EMU. However, for this group the patterns are similar. Shocks are not strongly correlated at this stage with the ones of EU's members. Labor mobility is low and time lasting. Furthermore, it is concentrated in certain regions, making some old EU countries to still impose barriers for the new acceding group.

Further integration, although at a slower pace, might generate, in the spirit of endogenous hypothesis, more symmetric shocks across Europe. However, until significant results are obtained, major reforms focused on increasing inter-sectoral and inter-regional labor mobility are needed. More precisely, as Sapir (2004) emphasize, the earlier facts should be achieved through "a combination of incentives for individuals to search actively for jobs, lower employment protection, temporary unemployment insurance and more efficient systems of job-search assistance, training and life-long learning". Furthermore, transferability of basic provisions for health, pensions and unemployment should be achieved. All these combined with a more open policy for migration from other countries in the context of ageing population and decreasing fertility across European countries.

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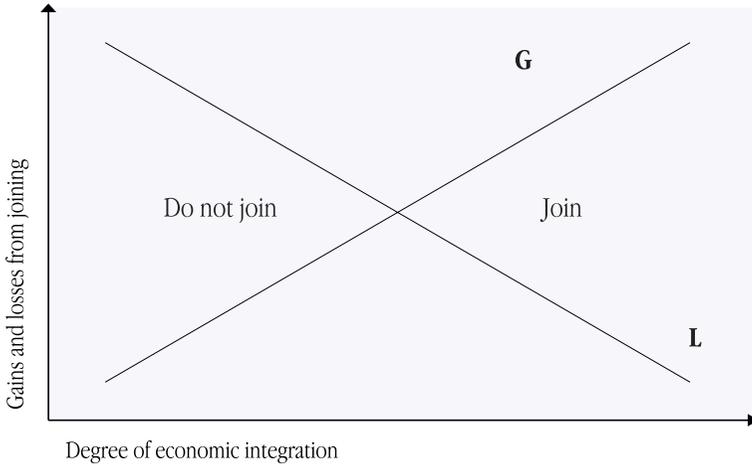
Appendix:

Table 1: Average Intra-Industry EU Trade Indices (2002, %)

	UK	D	B	F	NL	I	DK	E	IRL	P	GR
UK		73	73	79	77	64	63	57	70	40	41
D	73		74	74	63	58	71	58	59	36	35
B	73	74		72	77	54	55	59	50	40	36
F	78	74	72		63	63	50	63	48	39	37
NL	77	63	77	63		41	67	53	52	39	44
I	64	58	54	63	41		46	60	47	47	31
DK	63	71	55	50	67	46		39	55	29	28
E	57	58	59	63	53	60	39		40	46	19
IRL	70	59	50	48	52	47	55	40		25	25
P	40	36	40	39	39	47	29	46	25		31
GR	41	35	36	37	44	31	28	19	25	31	

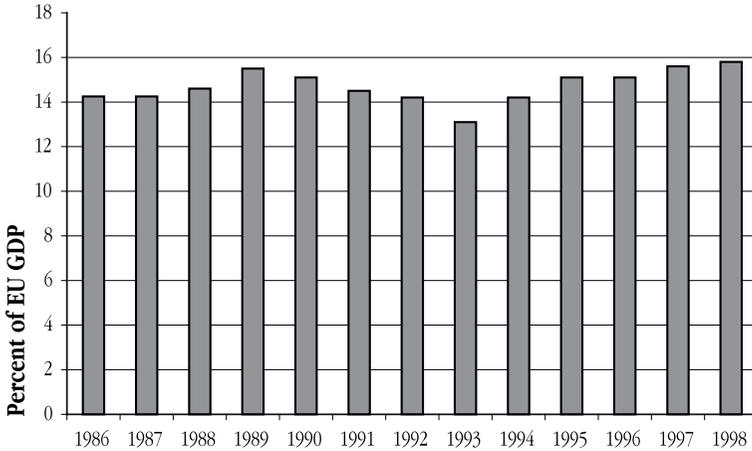
Source: Vickerman (2004)

Figure 1: Joining a Currency Area



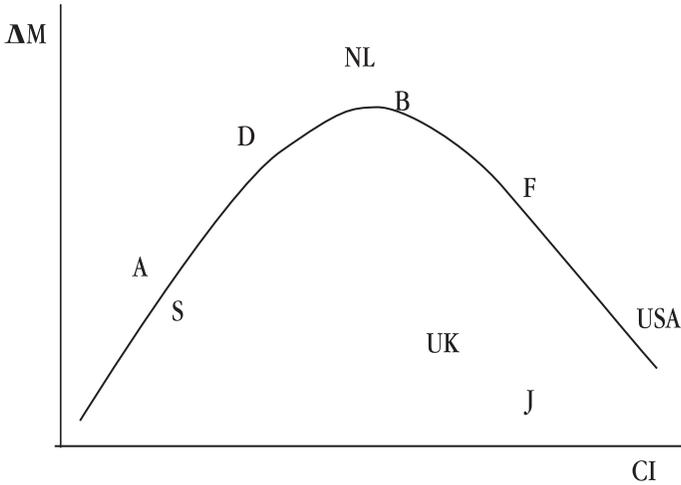
Source: Krugman and Obstfeld (2003)

Figure 2: Intra-EU Trade as a Percent of EU GDP



Source: Krugman and Obstfeld (2003)

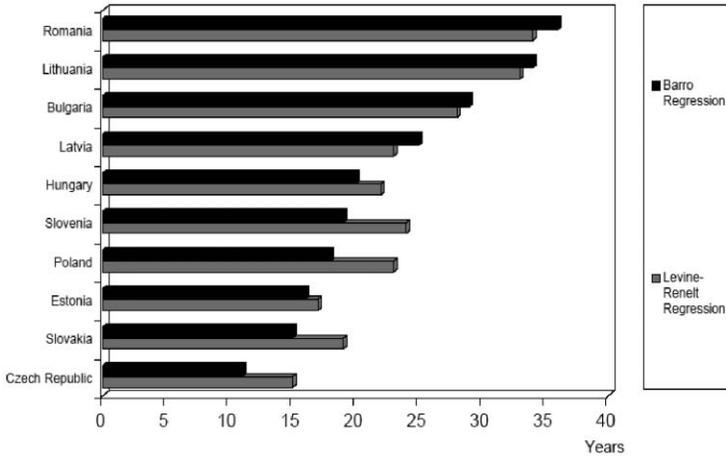
Figure 3: Misery Index and the Centralization of Labour Unions



ΔM is the change in the "Misery Index" defined as the sum of the inflation rate and the unemployment rate. CI is an index of centralisation of labour unions going from more to less left to right in the diagram.

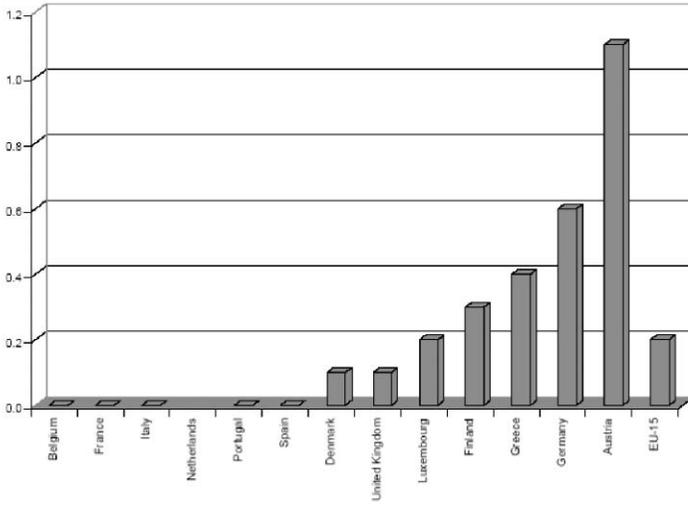
Source: Vickerman (2004)

Figure 4: Convergence to Low-Income EU Countries (Number of years needed for convergence)



Source: Boeri and Brucker (2001)

Figure 5: Nationals from CEECs-10 in Employment of the EU - 15 Members



Source: Boeri and Brucker (2001)

