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## **Geographic Labor Mobility as an Element of Adjustment Process in the Eurozone Countries and the USA States**

### **Abstract**

The aim of the article is to compare geographic labor mobility (the migration channel of adjustment) in the eurozone and the USA since the 1990s. The first part of the article contains a review of selected literature on migration in Europe and the USA. In the second part three hypotheses are formulated on the basis of this review. The third part of the article presents the methodology and data used to verify these hypotheses. That methodology rests on analyzing how net emigration rates in the period 1992–2011 in eurozone countries and various states in the United States (plus the District of Columbia) reacted to unemployment rates. The fourth part of the article presents the results of the analysis, together with an explanation of the intensity and dynamics of the migration channel of adjustment in both monetary unions. The analysis confirms that migration has been less supportive for the functioning of the monetary union in the eurozone than in the USA. It also shows that visible strengthening of the migration channel in the eurozone seems to have taken place only after 2004, which suggests an association with the European Union enlargement in 2004. For the eurozone, the analysis does not provide convincing evidence that the migration channel strengthened after the outbreak of the financial crisis. For the USA the analysis suggests that the financial and economic crisis significantly weakened the migration channel. The article ends with concluding remarks.

**Keywords:** migration, adjustment process, monetary unions

**JEL:** F220

## Introduction

Political entities forming currency unions like the eurozone countries or the individual states that comprise the United States have a limited potential of balancing their economies in comparison to entities that have chosen an exchange-rate regime with a separate currency whose price expressed in other currencies is allowed to change. When an asymmetric shock hits an economy participating in a monetary union, any adjustments have to proceed wholly through channels other than the exchange rate one, which could otherwise operate swiftly and strongly. In particular, when subjected to an asymmetric shock, an entity that is part of a currency union cannot expect that the competitiveness of its economy will improve quickly due to currency depreciation. Instead, that entity can follow the difficult path of “internal devaluation,” which means driving down nominal wages and prices. But rigidities in wages and prices make such adjustment painful in terms of lost GDP and unemployment. The entity can alternatively hope that the situation will enable it to follow the softer equivalent of “internal devaluation,” i.e. to adjust at an inflation rate that is still positive, but lower than the one experienced by the rest of a monetary union. The problem here is that members of a monetary union should not expect monetary policy to be well-tuned to minimize the pain in their economies.

A struggling entity can also be provided with external financial assistance through automatic fiscal transfers, international loans, or debt forgiveness, which may be conditioned on implementing economic reforms. It could also resort to introducing restrictions on transactions recorded in its balance of payments to stem off capital flight and restrict imports, but such a policy would effectively mean the reversal of economic and thus possibly political integration in the eurozone/European Union and, in case of the USA, is hardly imaginable.

And, last but not least, a high unemployment rate resulting from a negative asymmetric shock could be alleviated through geographic labor mobility, i.e. the migration channel of adjustment. Apart from reducing unemployment in a crisis economy, the migration channel also encompasses filling in vacancies in the economies to which labor immigrates. It also facilitates the external rebalancing of entities recording a balance-of-payments deficit or surplus. When people leave a deficit economy, its demand for imports should fall, while demand for its exports from countries attracting migrants should increase. When people, in turn, come to a surplus economy, its demand for imports should increase, while demand for its exports from emigration countries should fall. The migration and other above-mentioned channels of adjustment can operate more or less efficiently, which translates into the course of the adjustment process. The adjustment that is prolonged and painful bears political risks that in case of the eurozone may lead to reversing the process of European integration.

**Why focus on geographic labor mobility?** Apart from the fact that it is an aspect of the adjustment process stemming from important decisions in people’s lives about whether to stay or leave, geographic labor mobility is also the cornerstone of the theory of optimum currency areas. In line with the reasoning presented by Mundell in his seminal article on

optimum currency areas [Mundell, 1961], the higher the level of geographic labor mobility between regions of a monetary union is, the more stable the economies of these regions are in terms of inflation and unemployment. In accordance with the logic of this article, the decision to establish a currency union within the EU contained an implicit agreement to sacrifice the ability of individual national economies to attain internal stability through exchange rate fluctuations in return for the expected benefits stemming from the broad use of a single currency, taking note that the more mobile labor is, the easier it will be to stabilize individual national economies.

The practical importance of geographic labor mobility for the functioning of fixed exchange rate systems (a currency union being one of them) is illustrated by an analysis of the functioning of the pre-1914 classical gold standard and the gold-exchange standard of the interwar period, presented by Khoudour-Castéras [2006a, 2006b]. He argued that for countries participating in the pre-1914 gold standard, which was characterized by freedom to trade internationally and high international mobility of capital, the key mechanism of equilibrating the balances of payments was labor mobility, whereas other countries could rely on the adjustment of exchange rates as a correction tool [Khoudour-Castéras, 2006a]. Examining the fall of the gold-exchange standard in the interwar period Khoudour-Castéras posited that the strengthening of border controls after World War I and the development of social policies in European countries did not allow labor mobility to play its role in the adjustment process in countries following fixed exchange rate policies, which – in connection with limited wage elasticity and capital mobility – made countries that suffered from the Great Depression abandon the policy of fixed exchange rates [Khoudour-Castéras, 2006b].

**Why compare the eurozone countries with the USA states?** The USA is often presented as a well-functioning monetary union that is a role model for the eurozone. Relatively recently, the situation in Europe and the USA in the context of the eurozone systemic crisis was compared in this fashion by Feldstein [2011], Krugman [2012], and Kawalec and Pytlarczyk [2012]. It seems reasonable and practicable to inspect developments in the functioning of the adjustment process in the eurozone and the USA together in order to assess the prospects of the eurozone in comparison with a recognized benchmark, but also to try to verify whether the USA should actually be considered as a proper benchmark for currency unions, especially in recent years. For purposes of this comparison, within the USA, individual states have been chosen as counterparts for the eurozone countries, as being roughly equivalent in a political and economic sense to the eurozone/EU countries as elements of an integrating entity. One may ask whether the eurozone is the right area for comparison with the USA as far as migration is concerned. Ester and Krieger [2008] identify several issues that make it problematic to compare cross-border mobility in Europe with interstate mobility in the USA: the EU, in contrast to the USA is not a federal state; the EU is composed of many countries whereas the USA is a single nation; freedom of movement is a relatively new phenomenon in the EU, while in the USA it is as old as the USA itself; labor regulations in the EU and USA differ; individual EU countries vary concerning labor legislation, language, culture; and social barriers to

mobility are significantly greater in the EU than in the USA. Nevertheless, because this article compares geographic labor mobility as an element of the adjustment process in the eurozone and the USA as currency unions under the theory of optimum currency areas, the above-mentioned differences do not invalidate the choice of political entities being compared, but rather constitute a list of potential obstacles to mobility in the eurozone.

The article compares geographic labor mobility in the eurozone and the USA since the 1990s. The first part of the article contains a review of selected literature on migration in Europe and the USA. In the second part three hypotheses are formulated on the basis of this review. The third part of the article presents the methodology and data used to verify these hypotheses. The fourth part of the article presents the results of the analysis, together with an explanation of the intensity and dynamics of the migration channel of adjustment in both monetary unions. The article ends with concluding remarks.

## Literature Review

Lower geographic labor mobility in the eurozone is broadly recognized as a crucial factor differentiating the eurozone from the USA (e.g. by Feldstein [2011] and Krugman [2012]). Some evidence suggesting that labor mobility in the USA is more supportive for the functioning of the monetary union was presented by Gáková and Dijkstra [2008], who based on 2006 data showed that 1.98% of working age residents moved to a different state within the USA in the previous year. By comparison, European data for 2005 and 2006 for NUTS2 level revealed that only 0.96% of EU working age residents moved to another region in the prior year (1.12% in the EU15), and over 85% of these flows took place between regions of the same country, meaning that cross-border mobility of working age residents in the EU was only about 0.14% [Gáková and Dijkstra, 2008]. A very interesting analysis was also provided by L'Angevin [2007], who compared the role of net migration in the adjustment process in the countries of the EA12, based on 1973–2005 data, with the situation in the states of the United States. Her analysis suggests that: (1) the reaction of labor mobility to asymmetric labor demand shocks was weaker in the EA12 than in the USA in the short and medium-term; and (2) 1990–2005 data indicated that EA12 and USA labor markets reacted to asymmetric labor demand shocks more similarly than before and movements of labor between the EA12 countries appeared to have become a stronger mechanism of adjustment [L'Angevin, 2007].

Recently, several interesting developments were noted by analyses of international migration in Europe in the context of the financial and economic crisis. Broyer *et al.* [2011] paid attention to a sizeable growth in dispersion of unemployment rates between the eurozone countries after the crisis broke out in comparison with the period when the common currency was being introduced. According to them this suggests a lack of labor mobility in Europe. They also took note that this dispersion grew rapidly and enduringly, while the dispersion between states in the United States remained relatively stable. They

assessed that low labor mobility in the eurozone was a significant barrier to necessary economic adjustments, which would result in sustained deflationary processes in countries with high unemployment rates. Bräuning and Majowski, in their analysis of migration in the eurozone both before and after the outbreak of the crisis, drew attention to the fact that due to the crisis net immigration to peripheral countries, which used to attract numerous immigrants, fell rapidly [2011]. They pointed out that Spain and Ireland recorded especially strong declines in immigration and rises in emigration, and noted that the crisis also resulted in less pronounced migration changes in Portugal and Greece. They also observed that these countries – excepting Ireland – still managed to record net immigration despite the crisis and took note that Germany in 2008 and 2009 drew relatively few migrant workers in relation to its size, perhaps due to relatively high taxes and contributions, relatively modest wages, and significant “red tape” that, in combination, made Germany a less attractive destination.

Let us now take a look at the situation on the other side of the Atlantic Ocean. In general, recent literature draws attention to the problem of falling geographic labor mobility in the USA. Partridge *et al.* [2010] compared data for counties in the USA in the 1990s and 2000–2007. From this data they concluded that migration in the first period was the main element of the supply reaction in the labor markets after spatially asymmetric demand shocks and, in the second period, it was predominantly the fall in local unemployment and/or growth in local labor force participation. They perceive this phenomenon as a possible departure from the characteristic pattern in the USA whereby labor market changes induced large migration. This departure, in turn, suggests that labor markets in the USA took on more European-like traits [Partridge *et al.*, 2010]. Molloy *et al.* [2011] analyzing a fall in internal migration in the USA from the beginning of the 1980s, emphasized that migration rates fell for almost all groups of the USA population and proportions exhibited by these groups did not change enough to significantly influence aggregated migration. Analyzing the fall in interstate migrations in 1991–2011, Kaplan and Schulhofer-Wohl [2012] came to similar conclusions: in their view the fall in mobility was not the result of the population changes with respect to age, education, marital status, number of labor force participants in households or real household incomes. According to them, the fall in the interstate migrations in the USA should be associated at least in one third with a fall in the geographic specificity of returns to various types of skills and more opportunities to collect information about other locations through improved information technology and decreased travelling costs [Kaplan and Schulhofer-Wohl, 2012]. In the context of the recent crisis it needs to be mentioned here that Kaplan and Schulhofer-Wohl [2011] note that the fall in interstate migrations in the USA from 2006 was overestimated due to an undocumented change in the imputation procedure used by the Census Bureau to deal with missing data. According to them after removing the effects of this change the interstate migration in the 1996–2010 period actually exhibited a smooth downward trend, and the 2007–2009 recession did not cause a meaningful fall in interstate migration relative to that trend [Kaplan and Schulhofer-Wohl, 2011]. Molloy *et al.* [2011] perceive

the issue similarly: in their view the fall in migration around the time of the crisis should be understood as an element of a long-term downward trend and the fall in GDP and the housing market in connection with the crisis were relatively insignificant to migration.

## Hypotheses

The literature review presented above offers a basis to propose three hypotheses on geographic labor mobility in the eurozone and the United States. The first hypothesis is that geographic labor mobility is generally less supportive for the functioning of the monetary union in the eurozone than in the USA. This hypothesis is based on the views presented by Feldstein [2011], Krugman [2012], Gáková and Dijkstra [2008] and L'Angevin [2007].

The second hypothesis is that after the euro introduction in 1999 the migration channel strengthened in the eurozone and weakened in the USA. This hypothesis is aimed at checking whether resignation from the exchange rate channel in the eurozone countries caused the migration channel to assume a stronger role in the adjustment process. It also corresponds to the results obtained by L'Angevin [2007], according to which the migration channel strengthened in the 1990–2005 period relative to the past, with the supposition that this reflected a trend of strengthening migration channel in Europe that may also be discernible when comparing data prior to and after the euro introduction in 1999. The USA “part” of the second hypothesis is based on articles by Partridge *et al.* [2010], Molloy *et al.* [2011] and Kaplan and Schulhofer-Wohl [2012].

The third hypothesis is that the financial and economic crisis brought a significant improvement in the migration channel in the eurozone, while in the USA it caused only a slight weakening. This hypothesis is based on articles by Broyer *et al.* [2011] and Bräuninger and Majowski [2011] for the situation in Europe and by Kaplan and Schulhofer-Wohl [2011] and Molloy *et al.* [2011] for the situation in the USA.

## Methodology and Data

A few more or less advanced methodologies have already been employed to check how the migration channel of adjustment operated in various economies. An example of a relatively simple one is that employed by Puhani [1999] in order to analyze the situation in Germany, France and Italy based on estimating how net migrations depend on unemployment rates and incomes. A relatively complicated one was used by L'Angevin [2007] (based on the methodology employed earlier by Blanchard and Katz [1992]) to compare labor mobility in Europe and the USA.

The methodology employed in this paper is of a different kind. The first part is an inspection of unemployment rates and their regional differentiation in the eurozone

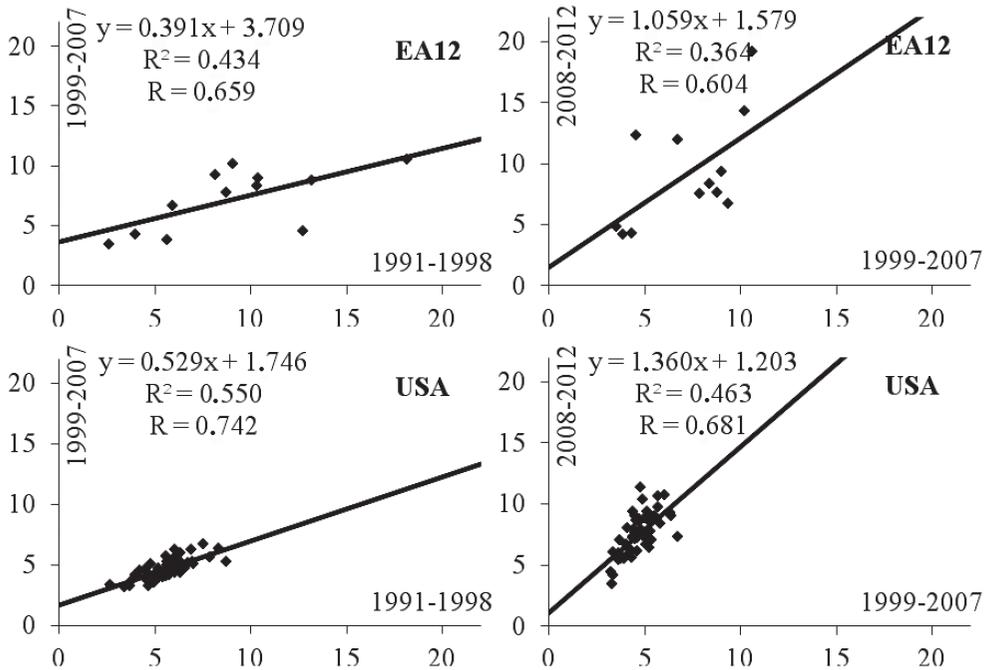
and the USA since the beginning of the 1990s in the context of the data on economic growth rates and their differentiation. This resembles the approach employed by Broyer *et al.* [2011]. The decision to begin the analysis this way was driven by the need to nest the migration issue in the broader context of the functioning of labor markets and GDP dynamics in order to provide a basis helpful in the verification of the hypotheses. The crux of the analysis is a thorough investigation of how net emigration rates treated as a proxy for geographic labor mobility in the period 1992–2011 in eurozone countries and states in the USA plus the District of Columbia (hereinafter, “D.C.”) correlated with unemployment rates. The purpose in doing so is to check developments in both currency unions by assessing a key relationship that speaks to the effectiveness of the migration channel as articulated by Mundell [1961]. The method is intended to be both transparent and well-suited to verifying the three hypotheses.

In the case of the eurozone, the analysis is restricted to the EA12 countries, i.e. the countries that have been the eurozone members since its inauguration in 1999 (Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain) and Greece, which joined the club in 2001. Most EA12 countries have also been members of the European Union/European Communities since at least the 1980s (Austria and Finland joined the EU only in 1995). What is more, all countries that joined the eurozone after Greece accessed the EU in 2004, which then markedly changed migration prospects for their citizens. Restricting the analysis to EA12 countries allows for focusing on the eurozone countries in which the mobility prospects of their citizens did not (for the most part) change markedly as a result of joining the EU in the 1990s. This restriction therefore seems most able to capture the effects of the euro introduction and the financial and economic crisis on the strength of the migration channel of adjustment in the eurozone countries.

Data on unemployment and GDP growth was either taken from or computed based on the data from AMECO for the EA12 and the Bureau of Labor Statistics or the Bureau of Economic Analysis for the USA (for unemployment and GDP growth respectively). Net emigration rates were estimated based on population levels at the beginning of a given year and the next year, and the numbers of live births and deaths in a given year. For the EA12 that data was obtained from Eurostat. For the USA data on population at year’s beginning was estimated as an average of the midyear population level in a given and the preceding year taken from the Bureau of Economic Analysis, while data on live births and deaths was taken from Centers for Disease Control and Prevention periodic publications (the publications’ list is presented in the references). Taking net emigration rates computed using this method and these data sources permits a solid comparative analysis of the strength of the migration channel of adjustment in the eurozone and the USA to be performed, though an imperfect one. Net emigration rates may not accurately reflect geographic labor mobility because they measure flows of people irrespective of their age and whether they are economically active or not. What is more, since the data

sources for the EA12 and USA states are different, definitional differences may impair data comparability. This reservation seems especially pertinent for unemployment data. These caveats should be borne in mind when interpreting the results.

**CHART 1. Path dependence of unemployment rates in the EA12 countries and the USA states plus D.C. in 1991–2012\***



\* Data presented are the average unemployment rates (%) for indicated periods.

Source: own preparation based on the AMECO and Bureau of Labor Statistics data.

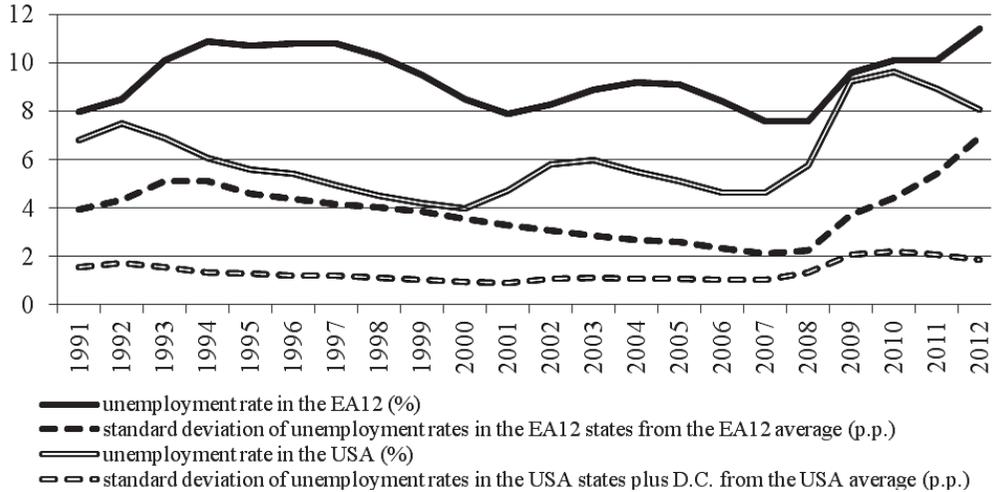
The methodology foresees that net emigration rates are being correlated with unemployment rates lagged by a year. It is obvious, however, that unemployment rates are correlated over time (this path dependence for EA12 countries and states in the USA plus the D.C. is presented on Chart 1 as evidence of a strong correlation of unemployment rates). Thus, correlations using a one year lag in order to capture a short term response of net migration to unemployment in fact capture a more general relationship, and it is difficult to distinguish net migration changes in response to unemployment rates from the same year or one, two, or more years before. Some lag, however, must be chosen and the choice made seems optimal for analyzing the migration channel of adjustment.

## Results and Their Explanation

As evidenced on Chart 2, unemployment rates in the EA12 were higher and more differentiated than in the USA for each year in the 1991–2012 period. Particularly noteworthy there is that in 2009 the unemployment rate rose more in the USA, but its differentiation increased more in the EA12. Chart 2 also shows that even when the unemployment rates were similar in the EA12 and the USA (1991–1992 and 2009–2011), differentiation was markedly higher in the EA12 than in the USA. While a plausible explanation for the differences between the EA12 and the USA is the possibility that the EA12 economies were more exposed to asymmetric shocks, Chart 3 indicates this was not the case, as GDP growth rates in the period 1992–2012 were more often than not differentiated to a higher degree in the USA than in the EA12. The stronger differentiation in unemployment rates in the EA12 countries therefore seems to be the result of less intensive geographic labor mobility and/or less marked changes in the local populations' labor market participation. As this article is focused on geographic labor mobility, the analysis is restricted to the relationship between unemployment and net migrations. However, the unemployment rate also influences movements of local populations into or out of the labor force.

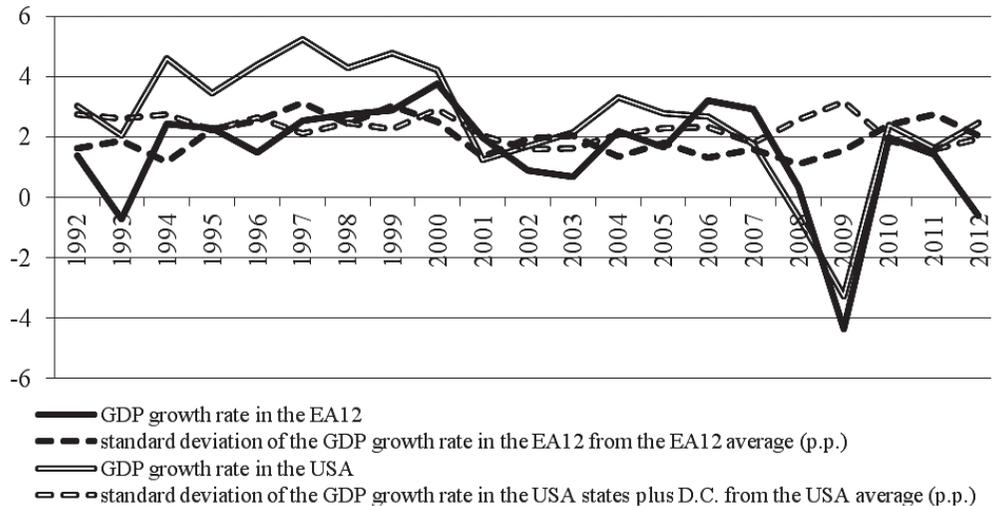
Chart 4 shows the relationships between net emigration rates for the EA12 countries and states in the USA (plus the D.C.) in 1992–2011 and differences between their unemployment rates and the average rates for the whole EA12 and USA, lagged by one year. The periods for Chart 4 were chosen to facilitate verification of the three hypotheses. The Pearson's product-moment correlation coefficients shown there ( $R$ ) indicate that unemployment rates were not a decisive factor explaining net migrations, but nevertheless do seem to have strongly influenced them, especially during the 2008–2011 period when the coefficient value reached 0.388 for the EA12 and 0.241 for the USA. Chart 4 evidences that the migration channel of adjustment worked better in the USA than in the EA12 for all periods considered, i.e. for 1992–1998, 1999–2007 and 2008–2011. Chart 4 also shows that the developments on both sides of the Atlantic Ocean were similar, i.e. the situation in both areas deteriorated for the period 1999–2007 relative to 1992–1998, but then improved for the 2008–2011 period. What do the developments presented on Chart 4 mean when one wishes to compare net migrations in the EA12 countries and states in the USA (plus the D.C.) in absolute numbers? Table 1 offers such an interpretation of the data on Chart 4. In the bottom row it presents changes in the average annual number of net emigrants from the EA12 countries and states in the USA (plus the D.C.) in the periods considered per 1,000,000 of their population in relation to a 1 p.p. change in the unemployment rate relative to each area's average, lagged by one year. It reveals that for the period 1992–1998 the number was 200 for the EA12, decreasing for the period 1999–2007 by 70, and then rising by 470 for the 2008–2011 period, while in the USA it was 1130 for the first period considered, then fell by 250, recovering by only 170 for the last examined period.

**CHART 2. Unemployment rates in the EA12 and USA and standard deviations of unemployment rates in the EA12 countries and states in the USA (plus the D.C.) from the areas' averages in 1991–2012**



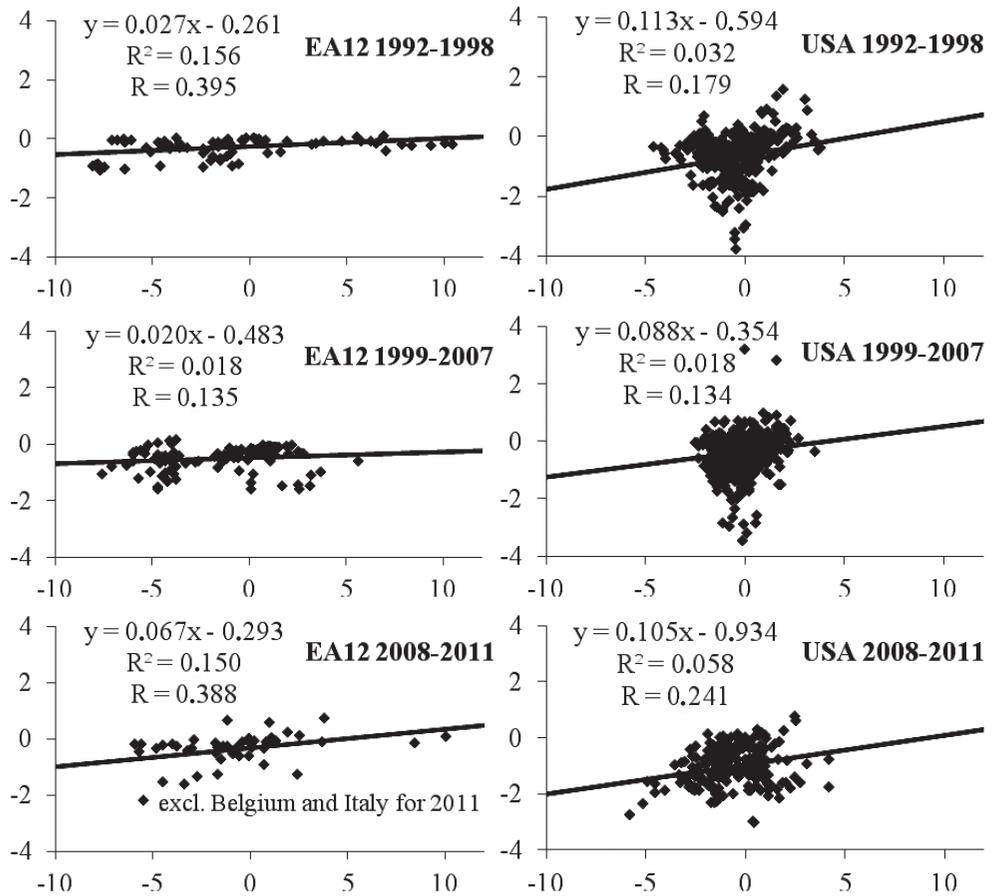
Source: own preparation based on the AMECO and Bureau of Labor Statistics data.

**CHART 3. GDP growth rates in the EA12 and USA and standard deviations of GDP growth rates in the EA12 countries and states in the USA (plus the D.C.) from the areas' averages in 1992–2012**



Source: own preparation based on the AMECO and Bureau of Economic Analysis data.

**CHART 4. Emigration and unemployment in the EA12 and the USA in 1992–2011\***



\*Y-axes: net emigration rate in year t (%), X-axes: the difference between an EA12 country or a state in the USA (plus the D.C.) unemployment rate and the average for the whole area in year t-1 (p.p.)

Source: own preparation based on Eurostat, AMECO, Bureau of Economic Analysis, Bureau of Labor Statistics and Centers for Disease Control and Prevention data.

**TABLE 1. Interpretation of results for the EA12 countries and the USA states plus D.C.**

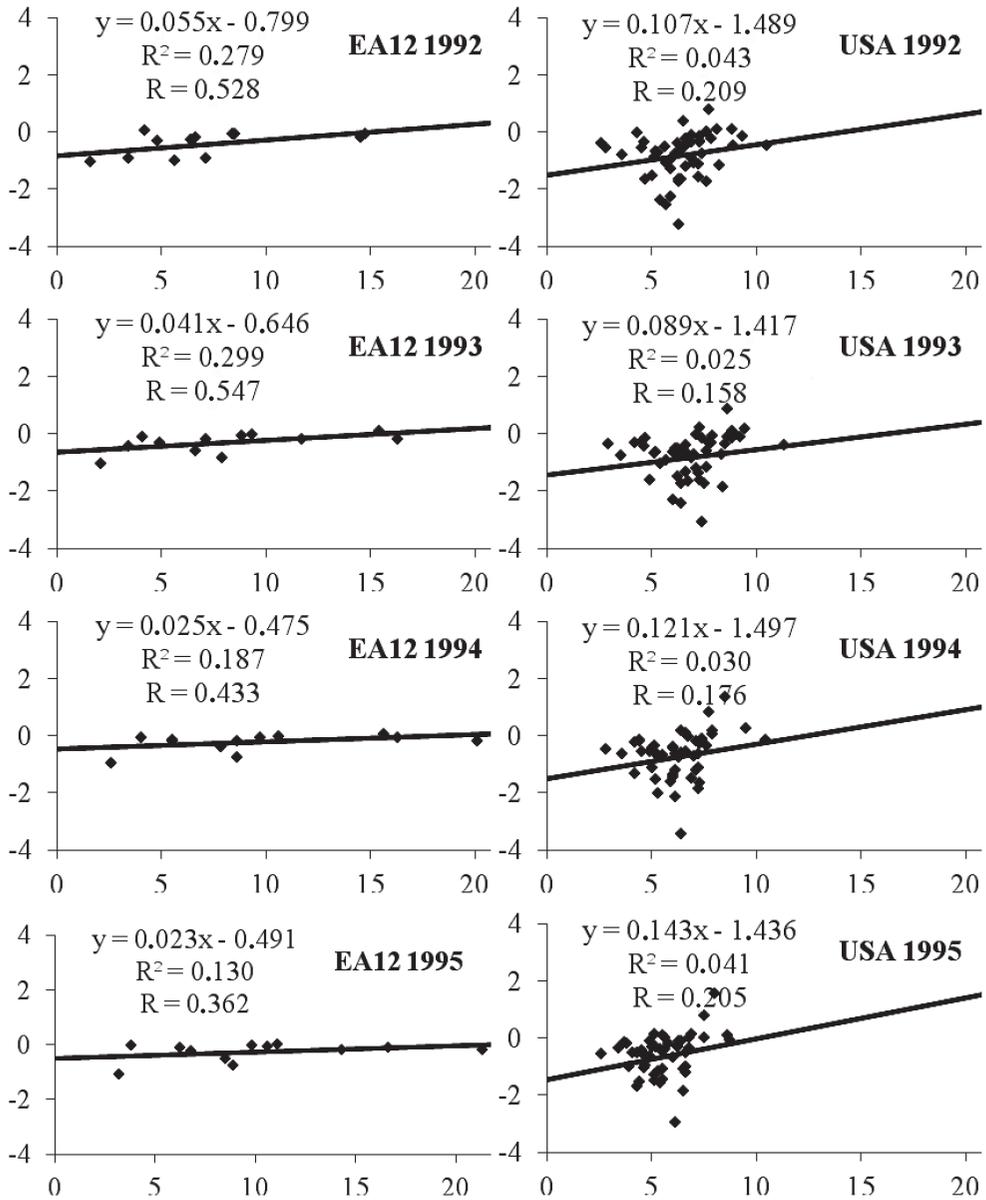
	1991–1997		1998–2006		2007–2010	
	EA12	USA	EA12	USA	EA12	USA
an average annual civilian labour force (% of population)	44.6	50.2	47.0	50.4	48.3	50.3
an average annual rise in a number of unemployed per 1 000 000 of population corresponding to a 1 p.p. rise in unemployment rate	4461	5019	4702	5044	4830	5027
	1992–1998		1999–2007		2008–2011*	
	EA12	USA	EA12	USA	EA12	USA
an average annual rise in a number of net emigrants per 1 000 000 of population corresponding to a rise in unemployment rate by 1 p.p. relative to the area's average in the previous year	270	1130	200	880	670	1050

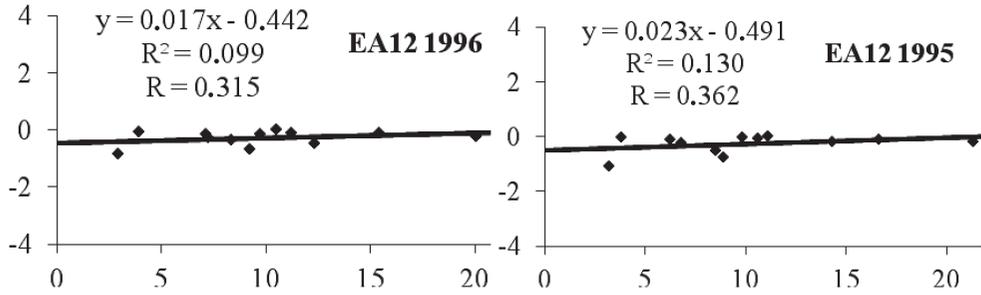
\* excluding Belgium and Italy for 2011.

*S o u r c e*: own preparation based on the Eurostat, AMECO, Bureau of Economic Analysis, Bureau of Labor Statistics and Centers for Disease Control and Prevention data.

Taking into account that the aggregation of data for individual years into periods on Chart 4 obviously conceals short-term developments from one year to another and actually may lead to false conclusions, it is reasonable to present developments for each year in the 1992–2011 period separately, which is done on Charts 5 to 8. Each chart is constructed analogously to Chart 4 and presents correlations between net emigration rates in the EA12 countries or states in the USA (plus the D.C.) and respective unemployment rates, lagged by a year. From these charts, it appears that the migration channel of adjustment was probably stronger in the EA12 than in the USA only for the years 2001, 2002 and 2011. Charts 5 to 7 show that the migration channel in the EA12 in the period 1994–2004 was rather insignificant, whereas in the USA it seems to have worked well in the period 1992–2000, then weakened significantly in the period 2001–2003 before strengthening again in 2004. Especially interesting is that the correlations presented on Charts 7 and 8 do not support the inference that after the outbreak of the financial and economic crisis the migration channel of adjustment improved relative to prior years in both the EA12 and the USA (which could have been drawn from Chart 4). For the EA12, Charts 7 and 8 show a strengthened migration channel after 2004, which then weakens in 2009 and 2010 before strengthening again in 2011. On these charts, the USA exhibits the pattern of a relatively strong migration channel in 2004–2008, which then significantly weakens in 2009, 2010 and 2011.

**CHART 5. Emigration and unemployment in the EA12 and the USA in 1992-1996\***

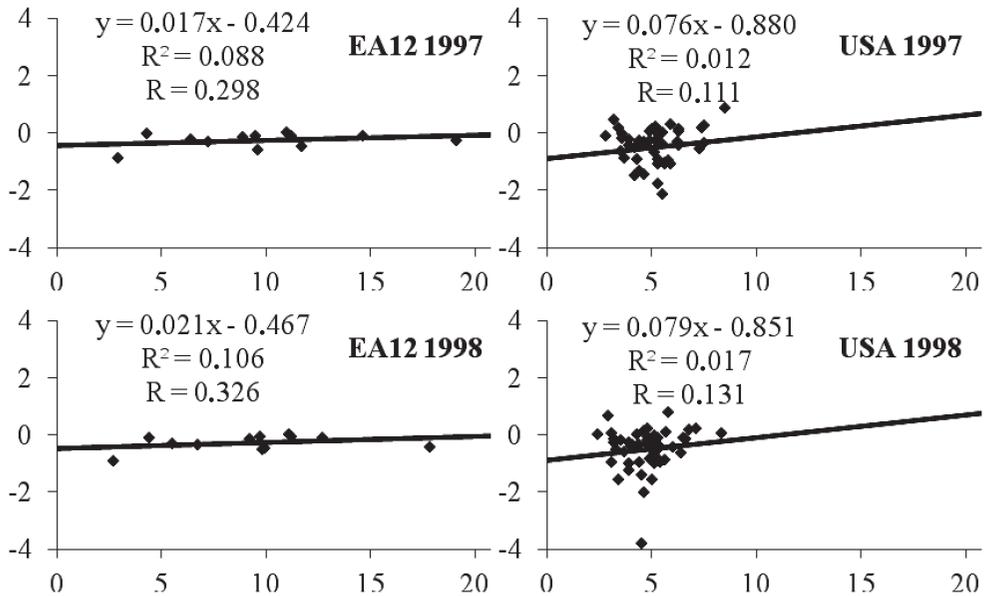


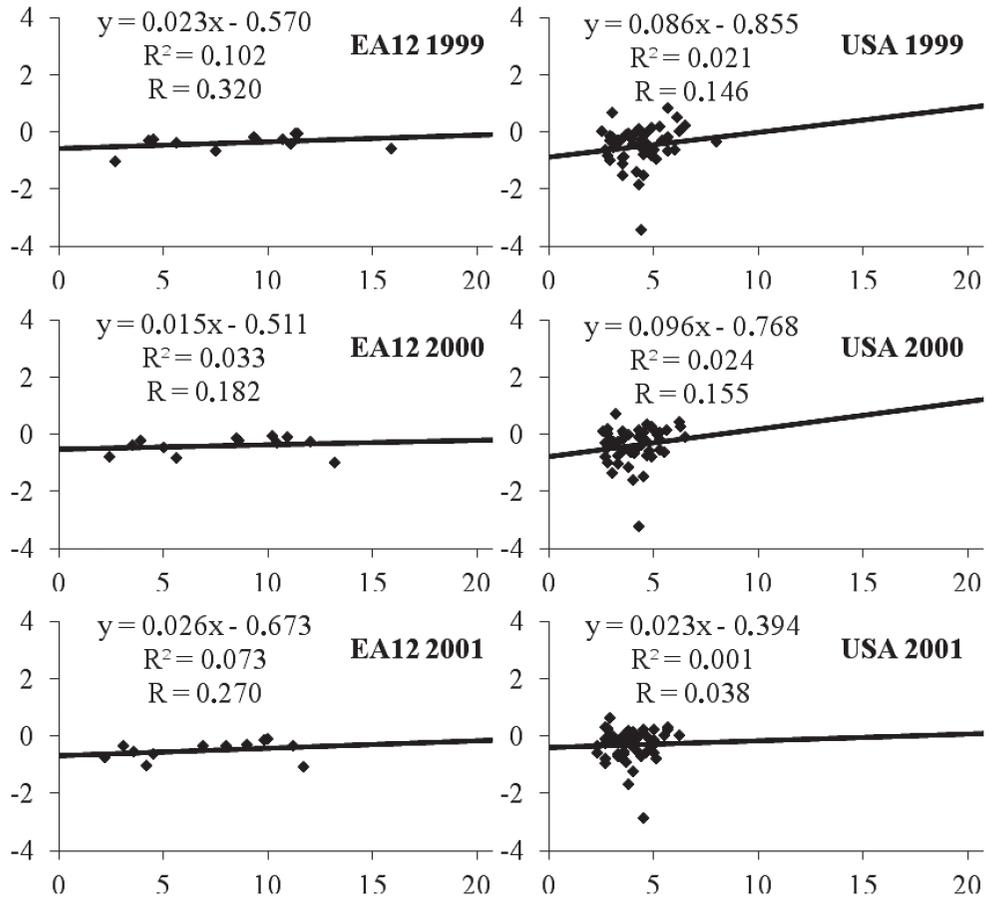


\*Y-axes: net emigration rate in year t (%), X-axes: unemployment rate in year t-1 (%)

Source: own preparation based on Eurostat, AMECO, Bureau of Economic Analysis, Bureau of Labor Statistics and Centers for Disease Control and Prevention data.

CHART 6. Emigration and unemployment in the EA12 and the USA in 1997–2001\*

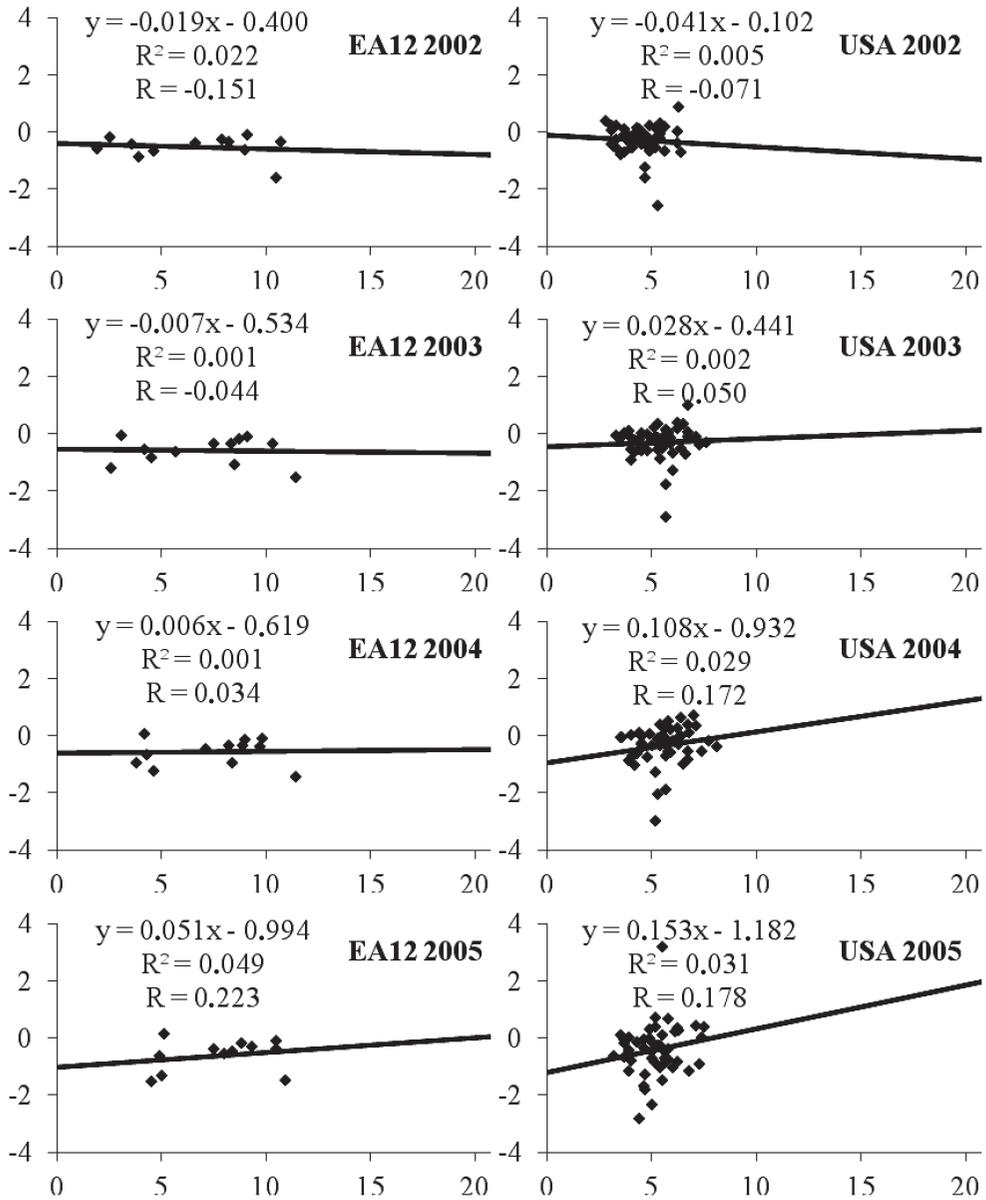


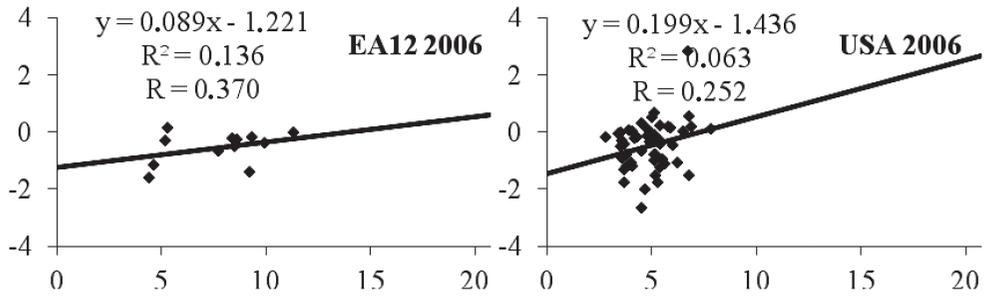


\*Y-axes: net emigration rate in year t (%), X-axes: unemployment rate in year t-1 (%)

Source: own preparation based on Eurostat, AMECO, Bureau of Economic Analysis, Bureau of Labor Statistics and Centers for Disease Control and Prevention data.

CHART 7. Emigration and unemployment in the EA12 and the USA in 2002–2006\*

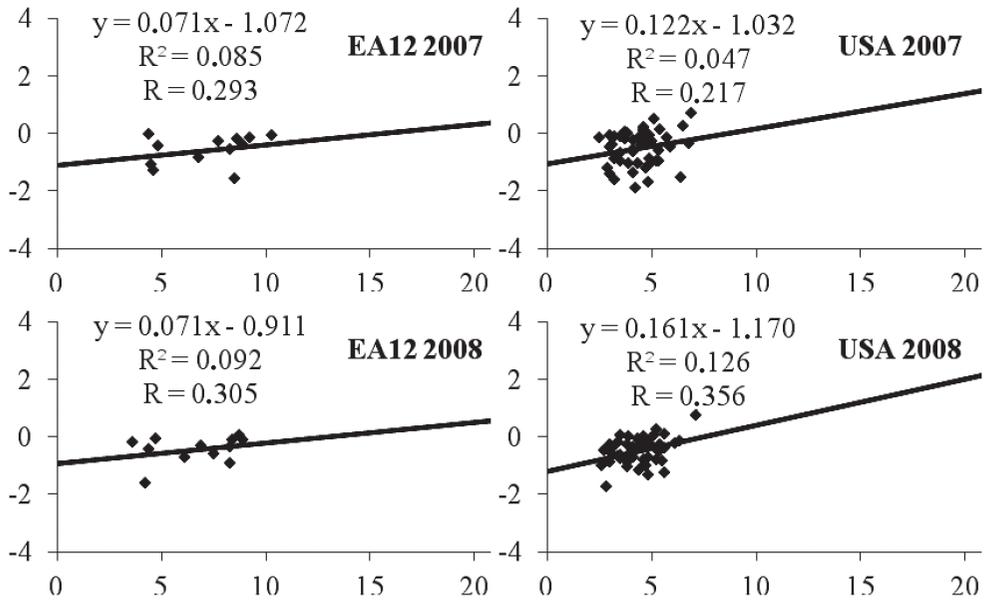


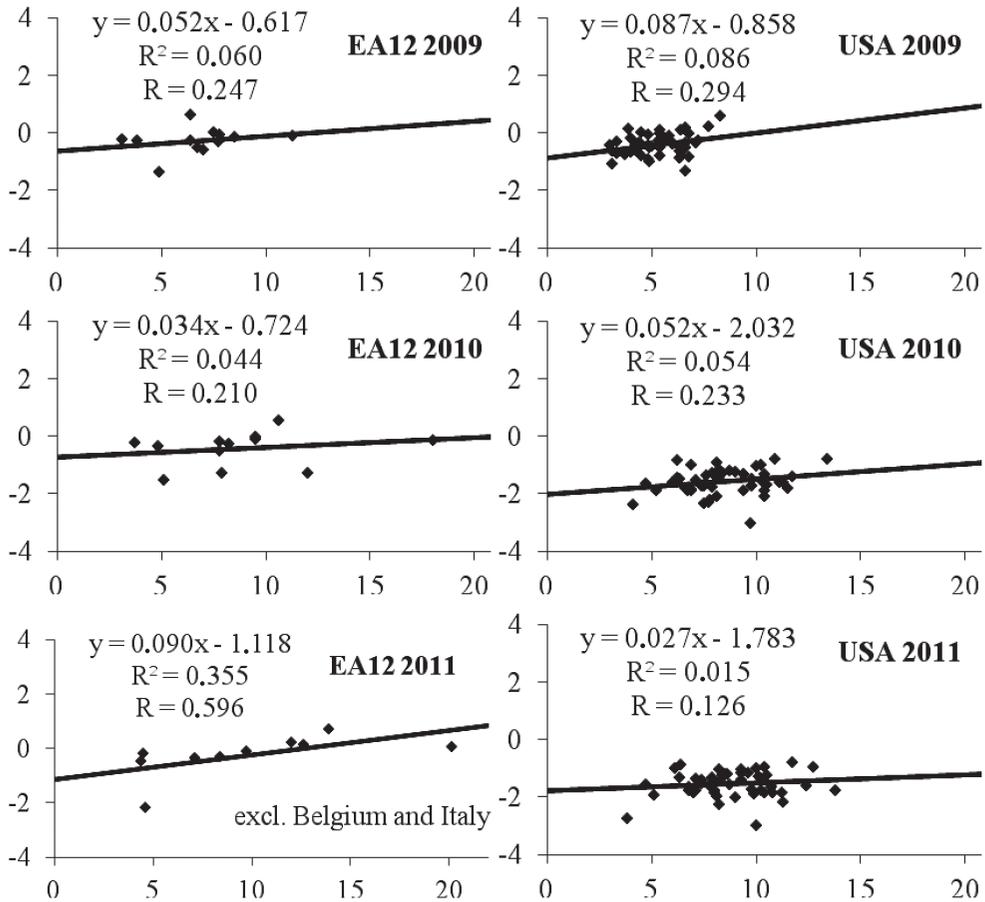


\*Y-axes: net emigration rate in year t (%), X-axes: unemployment rate in year t-1 (%)

Source: own preparation based on Eurostat, AMECO, Bureau of Economic Analysis, Bureau of Labor Statistics and Centers for Disease Control and Prevention data.

**CHART 8. Emigration and unemployment in the EA12 and the USA in 2007–2011\***





\* Y-axes: net emigration rate in year  $t$  (%), X-axes: unemployment rate in year  $t-1$  (%)

Source: own preparation based on Eurostat, AMECO, Bureau of Economic Analysis, Bureau of Labor Statistics and Centers for Disease Control and Prevention data.

The methodology and data employed to test the advanced hypotheses, with the caveats mentioned, seem to have provided sensible results. The first hypothesis – that geographic labor mobility is generally less supportive for the functioning of the monetary union in the eurozone than in the USA – has been confirmed. This result was expected and the reasons why it is so have already been suggested in the literature. In Feldstein's view the USA forms a single labor market in which people move from areas of high and rising unemployment to places where it is easier to find a job, while national labor markets in Europe are in reality separated, i.a. by language and cultural barriers and national social security systems [Feldstein, 2011]. Broyer *et al.* [2011] also point to a lack of information,

legal-administrative barriers, diploma recognition problem, and varying tax and social systems as factors hindering geographic labor mobility in Europe.

The second hypothesis – that after introduction of the euro in 1999 the migration channel in the eurozone strengthened, whereas in the USA it simultaneously weakened, weakly corresponds with the results. The visible strengthening of the migration channel in the eurozone seems to have taken place only after 2004 and not 1999, suggesting an association not with the euro introduction but rather with the EU enlargement in 2004. Increased unemployment in the eurozone at the beginning of the 21st century (see Chart 2), which made it harder for migrants to find employment in potential host countries, may also explain the apparently weak migration channel in the eurozone. In the USA, in turn, the migration channel indeed seems to have significantly weakened in 2001–2003, but then it strengthened again. One should similarly associate this 2001–2003 weakening with an across-the-board rise in unemployment, which hindered the prospects for migrant job seekers in the USA (see Chart 2).

The third hypothesis – that the financial and economic crisis brought a significant improvement in the migration channel in the eurozone, while in the USA it caused only a slight weakening – is also not confirmed by the data analysis. In the case of the eurozone, the analysis did not provide convincing evidence that the migration channel strengthened after the outbreak of the crisis. To the contrary, it seems to have weakened in 2009 and 2010, improving only in 2011 (although the analysis for 2011 omits data for Belgium and Italy). The situation in the USA shows that the crisis brought a significant weakening of the migration channel, which together with still relatively high unemployment and its differentiation in 2011 and 2012 (seen in Chart 2) might suggest a European flavor in the USA labor market. This could be associated with a more generous policy of unemployment benefits introduced in the USA after the crisis' outbreak. But the recent weakening of the migration channel in the USA should be associated first of all with a general rise in unemployment across the USA making it more difficult for migrants to find work (according to Levine [2013] the recent surge in unemployment in the USA seems more cyclical than structural in character). The weakening of the migration channel in Europe in 2009 and 2010 should also be associated with cyclical factors. It is worth noting that a less stark deterioration in the strength of the migration channel in Europe, in comparison to the USA, after the recent crisis' outbreak may be explained by the fact that the 2008–2009 GDP slowdown brought a significantly less pronounced surge in unemployment in the eurozone than in the USA. Thus, the migration channel in Europe might have been hurt less (see Chart 2).

## Concluding Remarks

The analysis suggests that the USA – treated so often as a benchmark for the eurozone – may actually not have served that function for Europe in the last few years regarding geographic labor mobility. Instead, labor markets in the USA may have begun functioning in a more European-like fashion, which does not bode well for the flexibility of the US economy. It remains to be seen whether the more European-like character of the USA labor market is of a permanent, or merely a temporary nature. It is too early to definitively answer this question.

In Europe the weak functioning of the migration channel of adjustment is one of the factors that hinders overcoming the systemic crisis in the eurozone. Lacking geographic labor mobility makes the pain of adjustment in the troubled southern economies more acute and increases the risk of the eurozone disintegration. Quick fixes to boost geographic labor mobility in Europe do not seem to be at hand. This, together with other challenges facing the eurozone (e.g. large private and public debts, as well as weak international competitiveness of economies in the south of the eurozone), render a stable functioning of the Economic and Monetary Union a distant – and potentially impossible – vision.

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