The Enlarged Eurozone: Can it Survive?

Paul De Grauwe

NIAS

NIAS
Netherlands Institute for Advanced Study
in the Humanities and Social Sciences

Institute of the Royal Netherlands Academy
of Arts and Sciences

Meijboomlaan 1, 2242 PR Wassenaar
Telephone: (0)70-512 27 00
Telefax: (0)70-511 71 62
E-mail: NIAS@NIAS.KNAW.NL
Internet: http://www.nias.knaw.nl

The second Jelle Zijlstra Lecture was held in Amsterdam on 24 November 2003

NIAS, Wassenaar, 2003/8

ISBN 90-71093-44-1
ISSN 1570-9140; 2

The Jelle Zijlstra Lecture series, established by the Jelle Zijlstra Professorial Fellowship Foundation for the furtherance of economic research in the Netherlands, is given by the holder of the NIAS Jelle Zijlstra Fellowship. This lecture is generously hosted by the Free University, Amsterdam.

Jelle Zijlstra Fellowship

NIAS Jelle Zijlstra Professorial Fellowship Stichting

The Enlarged Eurozone: Can it Survive?

1. Introduction

The introduction of the Euro is without doubt one of the greatest achievements in the process of European unification. A decade ago, few, if any, predicted that a common currency, the Euro, managed by a common central bank, the European Central Bank (ECB), would be in existence. Especially economists, myself included, were very sceptical about the feasibility of a monetary union in Europe.

Despite the successful launch of the Euro, important challenges still await us. They have to do with the fact that a large number of countries are expecting to join the Eurozone. Provided, they satisfy the Maastricht convergence criteria (and most of them will) they could join the Eurozone as soon as 2006. It is also conceivable, but less likely, that the UK and Denmark will also enter before too long.

I will focus on two main themes. First, I will analyse the question of how the enlargement of the monetary union to the whole of the European Union will affect the optimality of such a union. Presumably, not all the EU members will be in the Eurozone by 2006, but it is not unlikely that the enlargement of the Eurozone could be completed by the year 2010. The current twelve members will have to look at the question of whether a monetary union of twenty-seven members can be considered an 'optimal currency area'. This may seem to be an academic question, but as I will argue, such enlargement will most definitely have extensive practical implications for the functioning of the Eurozone.

Second, I will take a long-term perspective and ask the following question. Suppose, this enlarged Eurozone-27 turns out to be an 'optimal currency area', will it remain so in the future? The theory of optimal currency areas has a script very much influenced by the Hollywood tradition of a 'Happy End'. Arguing that all the (possible) member countries can form an optimal currency area is like adding a 'Happy End' to the analysis. There is no need to think any further about what happens after the union. Like in the Hollywood movies where lovers marry and live happily everafter, countries that form an optimal currency area will, according to the script, also live happily everafter. But is this really so? We know that many marriages are turbulent and end in divorce. Why would such misfortune not befall countries entering a monetary marriage? Surely they are not exempt from this unhappy ending? I will analyse which factors can lead to turbulence in a monetary union and to a possible 'divorce'. I will, however, end on a positive note, arguing that divorce can be avoided.

2. Is a Eurozone of twenty-seven countries an optimal currency area?

With up to twenty-seven members instead of the present twelve, the challenge for ensuring a smooth functioning of the enlarged Eurozone will be daunting. The reason is that in such a large group the probability of what economists call 'asymmetric shocks' will increase significantly. This means that some countries may experience a boom and inflationary pressures while others experience deflationary forces. If too many asymmetric shocks occur, the ECB will be paralyzed, not knowing whether to increase or to reduce the interest rates. As a result, member countries will often feel frustrated with the ECB policies that do not (and cannot) take into account the different economic conditions of the individual member countries.

This leads us to the question whether the enlarged EMU will, in fact, be an optimal currency area. There is a great deal of literature on the factors that affect the optimality of monetary unions. Here I will concentrate on two factors, openness and asymmetry of shocks[1]. I will first present a simple model (*Figure 1*) that has become popular in analysing the optimality of monetary union.

[1] There are other dimensions to the optimality of monetary unions. One important dimension is the degree of flexibility of labour markets. We return to this issue later. For the classical papers see Mundell (1961), McKinnon (1963) and Kenen (1969).

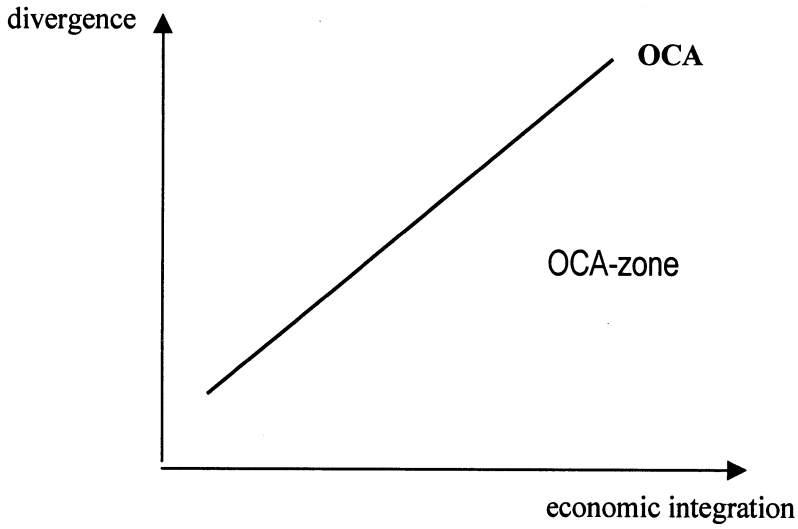
On the vertical axis, I set out the degree of economic divergence between groups of countries, i.e. the degree to which countries are subjected to asymmetric shocks (e.g., due to the fact that business cycles are not synchronized). The horizontal axis shows the degree of trade integration between the same groups of countries. The upward sloping line (called the Optimal Currency Area or OCA) represents the combinations of divergence and trade integration that make monetary union a break-even operation (costs equals benefits). It is derived as follows. As trade integration increases, the gains of a monetary union increase. At the same time, when economic divergence increases, the cost of a monetary union increases. Thus an increase in divergence must be compensated by more integration to make a monetary union worthwhile (in terms of costs and benefits). The OCA reflects this idea. All points on the OCA-line are then combinations of divergence and integration for which the monetary union has a zero net gain. It follows that all the points to the right of the OCA-line are points for which the benefits of monetary union exceed the costs. We call it the OCA-zone. This is the zone in which countries experience the monetary union to be optimal. Conversely, points to the left of the OCA-line are points where the costs of the monetary union exceed its benefits. If countries are located in that zone, it is not optimal to form a monetary union.

So, much of the OCA analysis consists in finding out where countries in a monetary union are located. If they are located in the OCA-zone (to the right of the OCA-line) (see *Figure 1*) everything is fine; we have a 'Happy End'. If, however, they are located to the left, there is a problem. So where should we locate the Eurozone-27?

Much empirical analysis has been and is still being undertaken to answer the Eurozone question. One has to admit that it is very hard to come up with a precise answer. I will be brave, though, and argue that on the basis of the empirical evidence that is available today we should probably put the Eurozone-27 to the left of the OCA-line. The main reason is that the degree of divergence between the countries forming the Eurozone-27 is quite high, and that for some of the members, the degree of economic integration is insufficiently advanced (see De Grauwe (2003) for a survey; see also Korhonen and Fidrmuc (2001)). So, I will stick my neck out and put Eurozone-27 on the left hand side of the OCA-line.

Thus, we are faced with a problem. If my interpretation is correct, it would be unwise to go all out for an enlarged Eurozone. Fortunately, this is not the end of

Figure 1. The Optimal Currency Area (OCA)

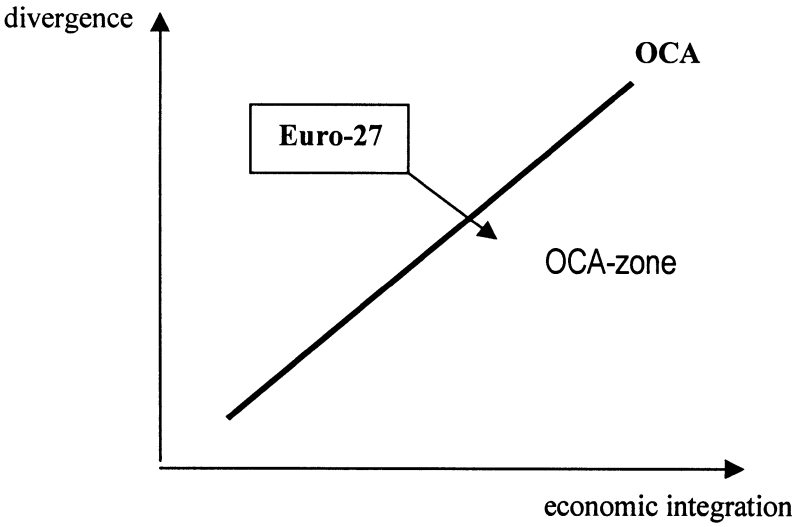


the story. Thanks to the so-called endogenous OCA theory we have an optimistic idea of what will happen to the Eurozone-27 if the twenty-seven countries decide to form a union (see Frankel and Rose (1995)). The story is portrayed in *Figure 2*.

The story has two components. First, the fact that twenty-seven countries decide to form a monetary union sets in motion a cycle of more intense economic integration. The use of a common currency reduces transaction costs and price transparency increases leading to even more integration. Second, this integration, in turn, further reduces the degree of divergence among the member countries. (This may seem an obvious process but, in fact, it is not as I will discuss later.) The two components ensure that because the twenty-seven countries are in a monetary union, they move towards the OCA-zone, which they will eventually reach one day. Thus, there is a self-fulfilling dimension to the optimality of a monetary union. By doing it, that is establishing a monetary union, countries create the conditions that make the union optimal.

What a nice story! Even if the member countries are not yet ready today (or in 2006 when this story will unfold) for a monetary marriage, the decision to go ahead will

Figure 2. The good news about the Eurozone-27

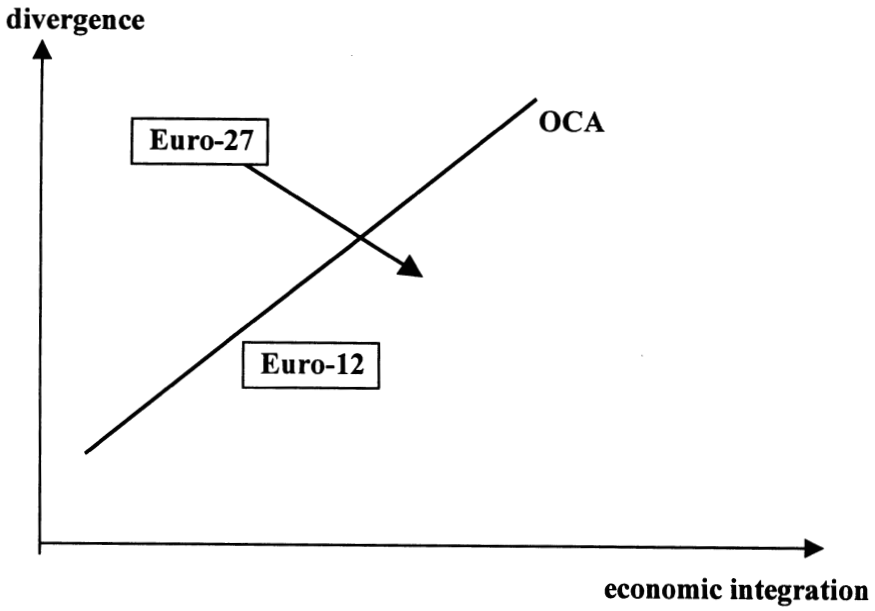


create the conditions to make such a marriage successful: A 'Happy End'. In contrast to the Hollywood tradition, I want to pursue the analysis of what may happen once the Euro-27 zone has reached the monetary nirvana of the OCA. Before doing this, however, I want to analyse how the enlargement to a Eurozone-27 will affect the present twelve members (*see Figure 3*).

For the sake of argument I have put this group of twelve countries in the OCA-zone. (This may or may not be true, and the present Eurozone-12 may still be outside the OCA-zone. All I need for my argument to hold is that the Eurozone-12 is closer to the OCA-zone than the Eurozone-27.)[2] One of the implications of such a happy state of affairs is that the members of the Eurozone-12 who face relatively few asymmetric shocks are satisfied with the monetary policies of the ECB most of the time. In contrast, as I argued earlier, the Eurozone-27 group is likely to be located outside the OCA-zone, reflecting the fact that the Eurozone-27 will have to deal with more asymmetric shocks than Eurozone-12.

[2] In the Appendix some more empirical information is provided on this issue.

Figure 3. The bad news for the Eurozone-12



The important insight we gain from the analysis in *Figure 3* is that the present members of the Eurozone (who are also part of Eurozone-27) have been thrown out of the OCA-zone. In practice, this means that since the shocks will be more asymmetric in the enlarged Eurozone, some of the members of the current Eurozone-12 will have a diffrent inflation and output growth than the average the ECB is focusing on. As a result, these unfortunate members will perceive the policies of the ECB as having become less receptive to their national economic conditions than they were before enlargement. Some of the original members of the Eurozone-12 may then find that the cost-benefit calculus for monetary union has become less favourable. While today most members of the Eurozone-12 would find that the interest-rate decisions of the ECB almost always fit in with their national economic conditions, this may no longer be true when there is an enlarged Eurozone. It is inevitable that more and more often countries will be faced with an ECB monetary stance that is inappropriate for their specific economic situation at that moment. As a result, the perceived costs of the union will increase relative to the perceived benefits of the single currency. Such a

situation is bound to produce tensions both inside the decision-making process of the Eurosystem as well as outside the system when some countries feel that their economic interests are not served well by the ECB.

There is very little the ECB can do about this. By its very nature, a monetary union implies that the power to set interest rates is transferred to a common central bank which can only set one interest rate. Fine-tuning of the interest rate to cater to different national economic conditions is thus impossible. This is the price the members of the union pay for the benefits obtained from the existence of a single currency.

But as I argued earlier, this is only a temporary state of affairs. As time goes by, the increased economic integration of the Eurozone-27 will allow its members to move into the OCA-zone. There should eventually be a happy ending.

3. Life in an optimal currency area

What could go wrong after the Eurozone-27 reaches the OCA-zone, i.e. the zone of monetary happiness? As an economist I have been trained to think that if the Eurozone is an optimal arrangement, nothing can go wrong with it. Except, of course, if some non-economic force, like a war or another calamity crops up to destroy the beautiful monetary fabric. However, I will not concentrate on these extra-economic variables here. Instead, I will argue that there are basic economic mechanisms that can undermine the monetary union, and that it is important for us to be aware of these forces. From the outset I want to stress that I am not predicting that the Eurozone will collapse. Rather I will identify forces that could potentially lead to the destruction of the Eurozone-27, if we do not take the necessary steps to deal with the problem.

I want to start with a famous model of economic geography popularised by Paul Krugman (1991), (1993) which I present in the form of a picture in *Figure 4*. Suppose the world consists of two regions of equal size. These two regions produce the same good in equal amounts. They are initially separated by barriers, which impose costs of shipping goods from one region to the other. So, the world in which the production is realised is in equilibrium, albeit inefficiently. Now, all of a sudden, some free market economist convinces the politicians to open up the markets. Trade barriers are gradually removed and economic integration

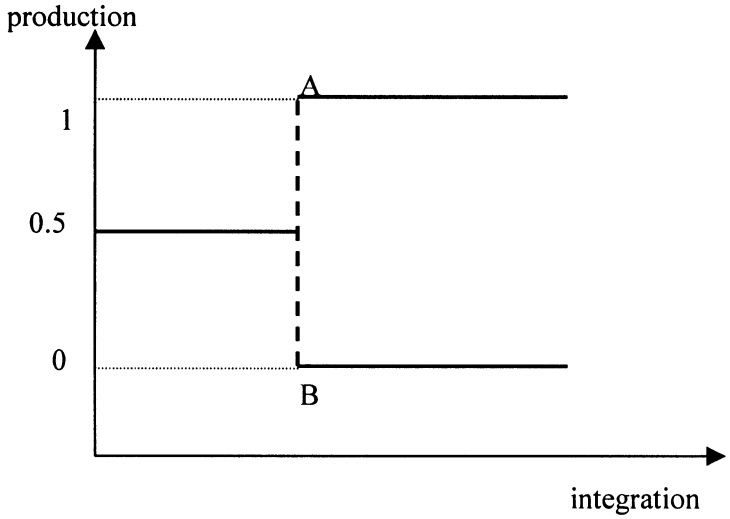
advances. In *Figure 4* we move along the x-axis to the right. What will happen to the distribution of the production in these two regions? The crucial element in the analysis is the existence of economies of scale, both internal and external to the firms. Take the latter. When firms cluster together they are able to profit from a larger pool of specialised workers, than if they were to stay in their own little region. This, in turn, gives incentives to these workers to move to the region where firms tend to cluster. In addition, while firms cluster they create incentives for other firms specialising in delivering intermediate goods and services to settle close to the clustering firms. These clustering effects create gains (for the firms) that can only be exploited when markets become more integrated. Thus while we move along the horizontal axis there will come a point, a so-called bifurcation, in which firms overcome the trade barriers and decide to cluster in one of the two regions. In *Figure 4*, I present the output in one region. As a result, in the bifurcation point, production will either be concentrated fully in that region (point A) or will leave the region altogether (point B). There is an element of indeterminacy here because of the self-fulfilling nature of clustering. It can be sufficient that one firm moves to create a cascade effect whereby more and more firms and workers follow suit. The result is that one region attracts all the firms and the other region gets depopulated.

Clearly the world is more complicated than this simple model. Nevertheless it is a powerful model. One characteristic feature of the distribution of the world's output is the fact that it is regionally extremely uneven with large concentrations in relatively few areas and emptiness in vast regions of the world. Of course, this unequal distribution of the world's output is not only caused by economies of scale and clustering effects, but a significant part certainly is.

What are the implications for the monetary union? How can this clustering lead to a disruption of idyllic life in the OCA-zone? The answer is that if such clustering effects occur among the members of the Eurozone, integration would not make them more alike, but instead more different from each other. Economic integration would then make their economic structures increasingly dissimilar where one country specialises in one production and others in another.

The upshot of all this is that as the Eurozone-27 becomes more integrated, the divergence among its members would tend to increase. More asymmetric shocks occur, rather than less. Instead of moving along a downward sloping path as we showed in *Figure 3*, the integration dynamics induced by the monetary union,

Figure 4. Krugman model of regional agglomeration



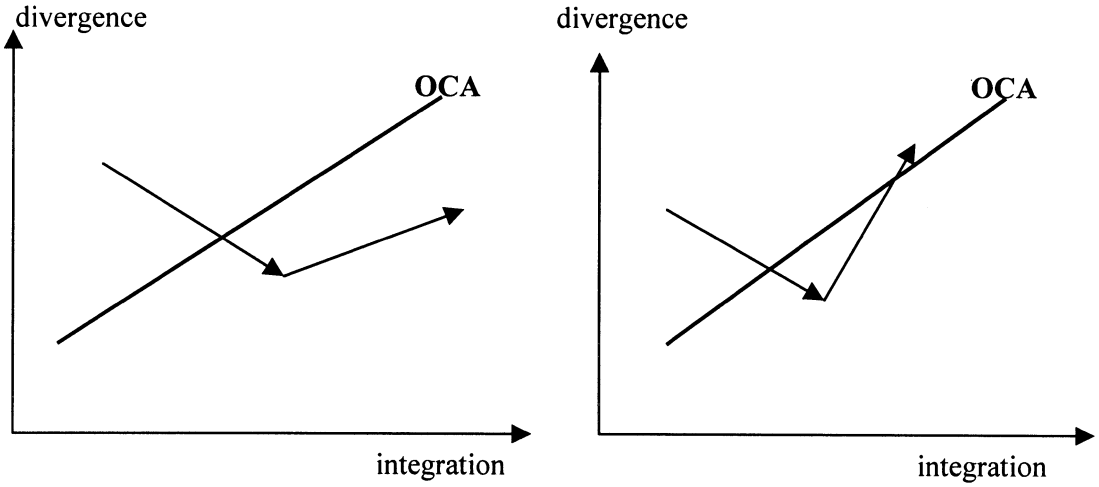
introduce a turnaround in this path. I show this in *Figure 5*, offering two possibilities.

In the first graph the upward sloping arrow is less steep than the OCA-line. We stay within the OCA-zone despite the fact that member states of the union become more and more divergent as integration proceeds. In this case however, the costs of increasing divergence are lower than the additional benefits of increasing integration. Monetary union remains attractive for the member states.

The more interesting model, however, is the second. I say 'more interesting' because of my obstinate character, not because this is necessarily a desirable outcome for the monetary union. To the contrary, in this case, the additional costs of the increasing divergence brought about by integration outweigh the additional benefits of integration. The result is that we move outside the OCA-zone. The 'Happy End' was an illusion; the monetary marriage has turned sour.

Before going into the question of how likely such an unhappy scenario is, it is useful to study its implications for the functioning of the monetary union.

Figure 5. Agglomeration effect in monetary union



Let us see what actually happens when the Eurozone-27 moves outside the OCA-zone? When that happens, some countries will have experienced negative output shocks, while others will have experienced positive ones. Unemployment declines in one country and increases in another. Since social security continues to be organised at the national level, the budget situation of the country losing output deteriorates and unemployment goes up. As a result, the authorities of this country are forced to cut back on spending and to hike taxes. All this makes the economic condition even more precarious. Some of the countries hit by a negative shock may decide to let the budget deficit increase and may end up in an unsustainable debt situation leading to debt crises. Undoubtedly, the monetary union would be put under great strain. Some countries at the losing end would blame the union for their misfortunes, creating political tensions and crisis. If this were to go on, a disintegration of the union would not be inconceivable.

How likely is this pessimistic scenario? Many analyses have been produced suggesting that this scenario is relatively remote. There is, for example, the empirical work by Frankel and Rose (1998) showing that, in the past, increasing integration among European countries coincided with less asymmetry of shocks in output. Moreover, up to now, economic integration in Europe does not seem to have led to the large agglomeration effects that we analysed in our model. But,

will this continue into the future? Let us hope so. We cannot, however, be absolutely certain. The enlargement of the European Union creates the potential of large movements of capital towards Central Europe precipitating the decline of the industry in Western Europe and leading to large asymmetric developments in the business cycles between East and West.

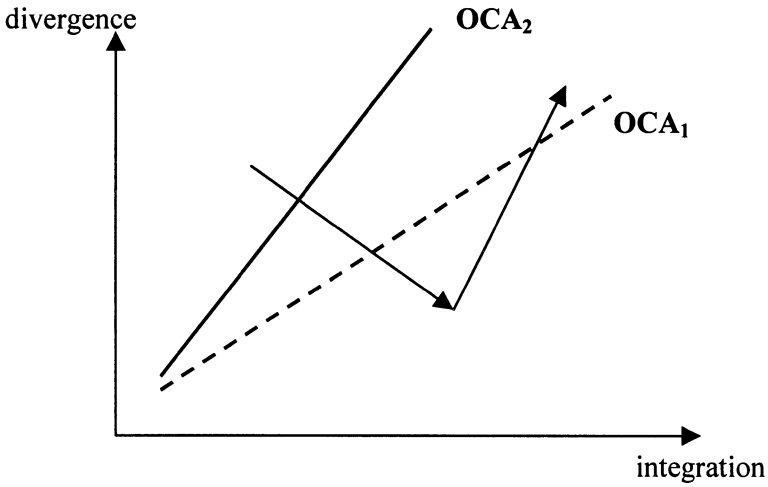
Although I believe that the probability of the negative scenario sketched in *Figure 5* may not be very high, it is certainly not zero. So, let us continue with this scenario and ask the question what countries could possibly do to avoid the dire consequence of the disintegration of the monetary union. I distinguish two kinds of measures that can be introduced to avoid this.

4. Structural reforms

There is much talk these days of the need to introduce structural reforms in Europe. More specifically this means that labour markets must be made more flexible. How in our pessimistic scenario can this be used to prevent the monetary union from blowing up? Take the country facing a negative shock. Flexibility then means that workers are willing to accept a wage cut so as to keep firms in the country, and/or that workers are willing to move with the exiting firms to the countries that experience an economic expansion. Graphically, we obtain *Figure 6*. The OCA-line now rotates upwards. The reason is that with more flexibility the same asymmetric shocks can be dealt with at a lower cost. As a result, a given level of divergence creates fewer costs for the monetary union. The OCA-zone is expanded. If structural reforms are large enough, we may forever be in the now expanded OCA-zone.

Structural reforms have a similar character of a 'Happy End'-story to that of our OCA-story. If Europe were to introduce such reforms, everything would be fine. It is important, however, to stress what the implications of structural reforms would be in the context of our discussion of the survival of the monetary union. If a country is hit by negative shocks brought about by agglomeration effects, the wage cuts necessary to deal with these shocks will inevitably be very large. To give an example: If Ford Motor were to close down a plant in Belgium and to invest in Poland instead, the wage cut of Belgian workers that would convince Ford Motor not to make this move would have to be 50% or more given that the wage costs in Poland are less than 50% of the Belgian wage costs. If such wage cuts are

Figure 6. Structural reforms and the OCA



not feasible, then flexibility dictates that the Belgian workers be willing to move. Thus, if agglomeration effects are large, mobility has to be increase as well. The effect would be a relative depopulation of countries experiencing negative shocks.

Most countries would not accept the consequences of this kind of flexibility. In the 'good old days' when governments had no responsibility for social security, they let this happen, and we have seen how regions and countries depopulated as a result of economic integration. Today, governments perceive their role differently. Rather than face depopulation, governments may choose to exit the union instead. While structural reforms of the labour market are often heralded as being necessary for a proper functioning of the monetary union, they can also become the cause of the demise of the monetary union if the asymmetric shocks are severe enough.

Having said this, I do believe that structural reforms leading to more flexible labour markets are important to sustain the monetary union, and we should try to implement reasonable reform programmes. We should, however, not forget that flexibility is painful for those subjected to the treatment. Getting a pay cut is painful and having to move is also not much fun for most people. That is why I get nervous when I have to listen to central bankers in Frankfurt who have never

faced the prospect of salary cuts, but do not miss an opportunity to lecture to the rest of us on the need to be more flexible.

5. Mutual insurance against shocks

There is another road we could take towards preventing a future disintegration of the Eurozone-27. This consists in providing for better insurance against asymmetric shocks. Such an insurance mechanism allows for income to be transferred from the countries enjoying an expansion of their output to those countries hit by a negative output shock. This alleviates the pain of the shock, and reduces the cost of the monetary union. Graphically, we have the same result as in *Figure 5* where we showed the effect of structural reforms. The existence of insurance mechanisms shifts the OCA-line upwards, and enlarges the zone of optimality of the monetary union. Thus, in principle, insurance mechanisms make it possible to prevent the Eurozone from disintegrating. We can distinguish two broad insurance mechanisms that are important to alleviate countries that have been hit by negative asymmetric shocks. The first one is organised by governments, the second by private markets.

5.1 Public insurance systems

There are essentially two ways to put public insurance systems into operation. The first is by centralising a large part of the government budgets of the member countries at the European level. Thus, let us suppose that a European government exists that levies its taxes (including social security taxes) directly and transfers its revenues (e.g. pensions, unemployment benefits) directly to residents in the member countries. Let us call the country that is hit by a negative shock country D (declining) and the country enjoying a positive shock, country E (expanding). As a result of the budgetary centralisation, the output decline in country D leads to a reduction of tax revenues of the European government from that country, while the tax revenues from country E increase because of an output increase. At the same time, however, the European government increases its spending (unemployment benefits) in country D and reduces these in country E. The net result of all this is that the central budget automatically redistributes income from country E where output has increased to country D where output has declined. Put differently, this budgetary centralisation allows the citizens of country D to smooth consumption following a negative output shock. Note that there is also

consumption smoothing in country E, but then in the other direction. As a result, the cost of the monetary union is reduced, i.e. E- and D-citizens can stabilise their consumption over time despite asymmetric shocks in output.

The main problem of this insurance scheme is that it often leads to a moral hazard problem. This is made clear by how it operates within certain countries. In many countries (e.g. Belgium, Germany, Italy) the national budget automatically transfers income from regions with high output growth to regions with low growth. These transfers tend to reduce the pressure on regions to adjust. As a result they become permanent. The use of such schemes at the European level would certainly be problematic. There is, however, no danger of this happening soon. The European budget amounts to only 1.4% of EU-GDP, while national budgets typically absorb 40 to 50% of GDP. There is also no prospect for a centralisation of national budgets at the European level in the foreseeable future. As a result, the insurance mechanism through budgetary centralisation will simply not be available if the Eurozone-27 gets into trouble.

The second way public insurance mechanisms can operate is described as follows, again using the example of the asymmetric shock affecting countries D and E. Suppose that despite the existence of a monetary union the national budgets have not been centralised. The asymmetric shock is then likely to have the following effects. In country D the decline in output reduces the government's tax revenues. At the same time it increases the government's spending on unemployment benefits. Thus the government budget deficit increases, and so does the government debt. Exactly the opposite happens in country E, where the increased tax revenues and reduced social spending reduce the government budget deficit. These budgetary changes occur automatically. They have the effect of smoothing consumption in both countries. Thus, the operation of automatic stabilizers in the budget allows the asymmetric shocks to be absorbed with lesser cost. As a result, the cost of the monetary union declines. Note that in this case the transfers are inter-generational and not interregional, i.e. the consumption smoothing in country D is made possible because the citizens of that country have now increased consumption relative to the current output knowing that in the future they (and their children) will have to do the opposite.

The advantage of this automatic stabilizing force of national budgets is that it reduces the risk of moral hazard. The reason is that if the D-government keeps its deficit high indefinitely, its debt would keep increasing and would become

unsustainable. As a result, the pressure to adjust to the shocks is greater. This advantage, however is also the source of a new problem. The nationally based insurance mechanism is not always available. In particular, governments with a high debt who face a negative asymmetric shock cannot easily allow their budget deficit to increase. Thus, the insurance mechanism will often not function properly when countries need it most.

5.2 Private insurance schemes

As I mentioned earlier there is a second way to organise an insurance scheme in a monetary union. This private insurance scheme operates through the financial markets. Suppose that the financial markets of countries D and E are completely integrated. Thus, there is one bond market, one equity market, and the banking sector is also completely integrated. Surely a monetary union could provide for a powerful mechanism leading to such a unification of the financial markets.

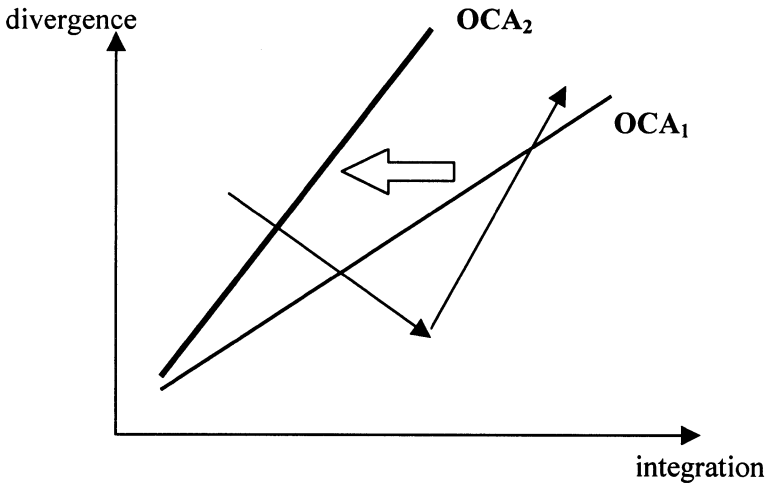
Let us concentrate here on how integrated bond and equity markets facilitate the adjustment. As a result of the negative shock, D-firms make losses, pushing down D-stock prices. Since the equity market is fully integrated, D-stocks are also held by E-residents. Thus, the latter pay part of the price of the drop in economic activity in country D. Conversely, the boom in country E raises stock prices of E-firms. Since these are also held by D-residents, the latter find some compensation for the hard economic times in their own country. Put differently, an integrated stock market works as an insurance system. The risk of a negative shock in one country is shared by all countries. As a result, the impact of the negative output shock in one country on the income of the residents of that country is mitigated.

A similar mechanism works through the integrated bond market. As a result of the negative shock, firms in country D make losses; some also go bankrupt. This lowers the value of the outstanding D-bonds. Part of these D-bonds are held by E-residents, so that they also pay the price of the economic duress in country D.[3]

Thus, to the extent that the Eurozone-27 will automatically lead to the creation of a unified financial market, it also automatically creates its own insurance

[3] For empirical evidence in the context of the US see Asdrubali, et al (1996). For Europe see Mélitz and Zumer (1999).

Figure 7. Monetary union and financial market integration



mechanism allowing countries that experience negative output shocks to obtain (temporary) compensation and to smooth their consumption. This is certainly good news. To celebrate it we show the effect graphically in *Figure 7.* Two things happen in the long run. Due to the agglomeration effects, the Eurozone-27 makes a turn to the left, but at the same time the financial market integration which itself is the result of the monetary union leads to a rotation of the OCA-line to the left, thereby allowing the Eurozone-27 to better absorb the increase in asymmetric shocks.

So, we have a 'Happy End' after all. This, however, would be a too hasty conclusion. There is also a serious drawback to the insurance mechanism provided by the financial markets. More than income, wealth is very unevenly distributed. Thus, the poor and unemployed in country D who do not hold financial assets issued in country E will obtain little compensation from this private insurance scheme. Instead the well-to-do residents of country D with large portfolios of assets are more likely to obtain most of the transfers. As a result, such a private insurance scheme without a public one to back it up is certainly going to provide insufficient coverage for a large majority of the citizens of the country hit by a negative shock.

There is another problem with privately provided insurance through the financial markets. This has to do with market efficiency. Financial market integration provides insurance if markets function efficiently, i.e. if the prices reflect underlying fundamentals. This has been our underlying assumption up to now. But, financial markets may not always work efficiently, and instead of being an equilibrating force, they themselves may be a source of disturbances. Bubbles and crashes are a chronic feature in economic history (see Kindleberger (1978)). They arise when the fever of excessive optimism about the future hits investors. Stock prices can then get carried away from fundamentals. This would not be much of a problem if such a bubble did not affect the real economy. But it typically does. Let us develop an example that has relevance for our discussion of the enlarged Eurozone. Suppose in the not so distant future, investors believe that Central Europe is full of new economic wonders that will lead to incredibly high rates of return of investment, something like what they believed of Southeast Asia in the 1990s. As a result, large amounts of capital move to Central Europe driving up share prices. This in turn leads to large capital investments in these countries. Central Europe experiences a boom. At some point when investors realise that they were too optimistic, the market crashes. We enter the 'bust phase'. Firms go bankrupt, the excess capacity has to be wound down, leading to a deep recession in the region. Financial market integration in this example has made it easier for a boom and bust to develop, leading to great volatility in investment, output and employment.

Science fiction? Not at all. It has happened quite often within the monetary union of the US. (Think of the Savings and Loan debacle that affected large parts of the Midwest of the United States.) Bubbles and crashes do not happen all the time, but once in a while they do. So, I continue to believe that financial market integration in normal times is important as an insurance mechanism. We should keep in mind, though, that financial markets sometimes fail to provide this insurance service, and then become a source of instability. In those times it is important to have a publicly provided insurance mechanism to back this up.

6. Conclusion

The enlargement of the Eurozone to potentially twenty-seven members creates risks for the future of the monetary union in Europe. The risks arise from the fact that such a large zone is likely to be hit by strong asymmetric shocks in the future.

These could arise because the larger Eurozone creates new opportunities for specialisation and agglomeration of economic activities.

It remains uncertain, however, how severe these shocks will be. Optimists will argue that these shocks will be limited in size. I like to be an optimist myself, but sometimes it is good to have a healthy dose of pessimism. This enables us to take the necessary steps to prevent tensions arising within the future enlarged Eurozone. There is no secret to the measures that have to be taken to minimise the risk of a future disintegration of the enlarged Eurozone. One series of measures should focus on making labour markets more flexible. I have argued, however, that although necessary, one should not expect wonders from these structural reforms. There is a limit to what citizens in Europe will accept in terms of flexibility. Let us not forget that flexibility is a euphemism for hardship for those people subjected to its miraculous effects. If monetary union implies the need for having one's wages cut once in a while or for having to move to another country occasionally, many people will stop perceiving monetary union to be a success. Such flexibility would ultimately destroy the monetary union. Thus, flexibility alone will not be sufficient to safeguard the continuing existence of Eurozone-27. The existence of insurance mechanisms is of great importance for the successful functioning of the enlarged Eurozone. These insurance mechanisms, however, will have to be a mix of privately and publicly provided insurances. Private insurance is likely to come about automatically by the very fact that monetary union will stimulate financial market integration. Although important, it will be insufficient and it will have to be supplemented by public ones. Unfortunately, there is very little political momentum today for creating such publicly provided insurance mechanisms. There is an integration fatigue in the European Union, which prevents the authorities from setting up such mechanisms. As a result, the European monetary union remains a fragile construction that could be endangered if shocks are sufficiently high.

Thus, my conclusion is bitter-sweet. The enlargement of the monetary union creates a new potential for welfare improvement in Europe. At the same time there are definite risks involved in such an enlargement; risks that cannot be ignored and necessitate resolute action. Let us hope that action will be taken in due time.

Appendix. Asymmetric shocks and integration in Central Europe

In this appendix we analyse the degree of economic integration of the enlarged Eurozone and the asymmetry of shocks within the zone.

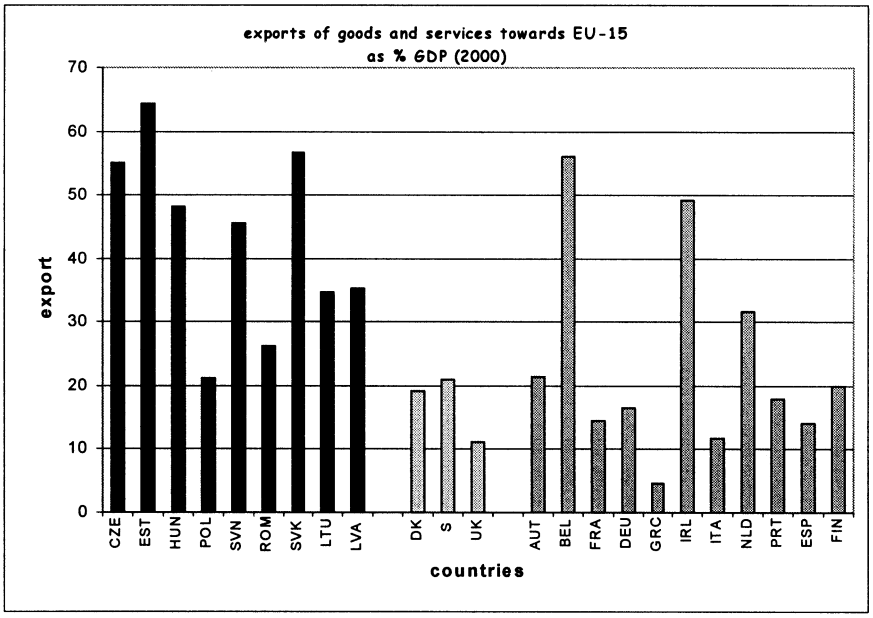
We start by comparing the degree of openness of the Central European countries towards the EU with that among already existing members. We show the results in *Figure A.1*. The most striking aspect of this Figure is that the Central European countries are at least as open towards the EU as the EU-countries themselves.[4] It is also surprising to find that the Central European countries appear to be more integrated with the EU than Denmark, Sweden and the UK, which today have opted out of the monetary union. Thus, if one concentrates on openness as a criterion of optimality for a currency union, the Central European countries would fit in quite well with the existing EMU.

A second factor affecting the optimality of currency unions is the degree of asymmetry of shocks. We analyse the asymmetry of shocks in the enlarged EMU using a recent study by Korhonen and Fidrmuc (2001). This study applied the methodology developed by Blanchard and Quah (1989) and implemented studies by Bayoumi and Eichengreen (1993) in the context of the optimal currency areas. It consists of extracting from the price and output data the underlying demand and supply shocks.[5] This has been done for all the prospective members of the monetary union, and the correlation of these demand and supply shocks with the average of the union is then computed. We show the result of such an exercise performed by Korhonen and Fidrmuc (2001) in *Figure A.2*. Each point represents the correlation coefficient of demand shocks (vertical axis) and supply shocks (horizontal axis) with the average demand resp. supply shocks in the Euro area. The results are quite instructive. First we find relatively high correlations of the larger countries (France, Germany and Italy) with the Euro area. This is not

[4] It should be pointed out that with the exception of Poland, the Central European countries are quite small. Small countries tend to be more open on average than large countries. Nevertheless, even when one compares the Central European countries to small EU-countries, (e.g. Belgium, Ireland, Finland, Denmark, Sweden) the former's openness is typically larger than the latter.

[5] In order to do so Vector Autogressions (VAR) are estimated. In order to identify demand and supply shocks it is assumed that demand shocks have only temporary effects while supply shocks have permanent effects on prices and output. For more detail see Blanchard and Quah (1989) and Bayoumi and Eichengreen (1993).

Figure A.1.

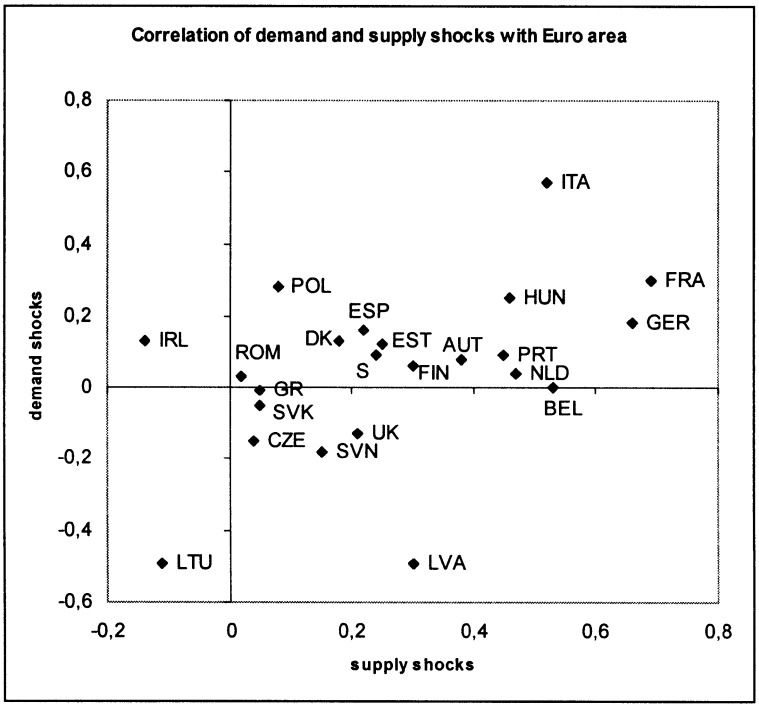


Source: European Commission (2001), and World Bank (2002)

surprising because these larger countries make up a significant part of the Euro area. Second, although some Central European countries (Hungary and Estonia) are well correlated with the Euro area, this is much less the case with others. A large number of them have negative correlations of their demand shocks (Lithuania, Latvia, Czech Republic, Slovenia, Slovakia). Such negative correlations undoubtedly are partly the result of the fact that these countries pursue independent monetary policies. Once they enter a monetary union, however, this source of asymmetry will disappear. A more troublesome feature is that the correlation of the supply shocks of the Central European countries with the Euro area is rather low. This source of asymmetry is unlikely to disappear in a monetary union.

Finally, for our analysis, the position of the UK is noteworthy. This country's correlation of demand shocks is also negative, reflecting to a certain degree the fact that it pursues its own national monetary policies quite independently from

Figure A.2.



Source: Korhonen and Fidrmuc (2001)

what is happening in the Euro area. At the same time the correlation of the supply shocks with the Euro area is rather low.

From these results the following can be concluded. First it is not clear that all countries in the sample are part of an optimal currency area with the rest of the European Union. This is most evident for the UK. Its trade with the Euro area is rather low (*see Figure 2*) and it seems to be subjected to more asymmetric shocks than other large members of the union. One understands the hesitation of the UK to enter EMU.

Second, despite relatively large openness of the Central European countries vis-à-vis the European Union, many of these countries are subjected to relatively

large asymmetric shocks, so that it is not obvious that they would gain from entering the EMU. This conclusion should be handled with care, however. Some of these countries may still feel that entering the EMU is the best possible way to import monetary and price stability, so that the benefits of entering exceeds the costs. In addition, one should compare the degree of flexibility of labour markets in these countries to come to a final judgement on the optimality of their union with the present EMU.

References

Asdrubali, P., Sørensen, B., and Yosha, O. (1996) 'Channels of Interstate Risk-sharing: United States 1963 - 1990', *Quarterly Journal of Economics*, iii: 1081 - 110.

Bayoumi, T., and Eichengreen, B. (1993) 'Shocking Aspects of European Monetary Integration', in F. Torres and F. Giavazzi (eds.), *Adjustment and Growth in the European Monetary Union*, London: CEPR, and Cambridge: CUP.

Bayoumi, T., and Masson, P. (1994) 'Fiscal Flows in the United States and Canada: Lessons for Monetary Union in Europe', CEPR Discussion Paper, no. 1057.

Blanchard, O., and Quah, D. (1989) 'The Dynamic Effects of Aggregate Demand and Supply Disturbances', *American Economic Review*, vol. 79:4, 655-73.

De Grauwe, P. (2003) *Economics of Monetary Union*, Oxford University Press, 2003, 258 p.

Frankel, J., and Rose, A. (1998) 'The Endogeneity of the Optimum Currency Area Criteria', *Economic Journal*, vol 108:441, pp. 1009-1025. .

Frankel, Jeffrey A. and Andrew K. Rose (2002) 'An Estimate of the Effect of Currency Unions on Trade and Output', *Quarterly Journal of Economics* forthcoming.

Kenen, R. (1969) 'The Theory of Optimum Currency Areas: An Eclectic View', in R. Mundell and A. Swobodaa (eds.), *Monetary Problems of the International Economy*, Chicago: University of Chicago Press.

Kindleberger, C. (1978) *Manias, Panics and Crashes, A History of Financial Crises*, New York: John Wiley and Sons, 263 p.

Korhonen, I., and Fidrmuc, J. (2001) 'Similarity of Supply and Demand Shocks between the Euro Area and the Accession Countries', in *Focus on Transition*, Oesterreichische Nationalbank, no. 2, Vienna.

Krugman, P. (1991) *Geography and Trade*, Cambridge, Mass.: MIT Press.

Krugman, P. (1993) 'Lessons of Massachusetts for EMU', in F. Torres and F. Giavazzi (eds.), *Adjustment and Growth in the European Monetary Union*, London: CEPR, and Cambridge: CUP.

McKinnon, R. (1963) 'Optimum Currency Areas', *American Economic Review*, 53: 717 - 25.

Mélitz, J., and Zumer, F. (1999) 'Interregional and International Risk Sharing and Lessons for EMU', CEPR Discussion Paper, no. 2154.

Mundell, R. (1961) 'A Theory of Optimal Currency Areas', *American Economic Review*, 51.

About The Author

Paul De Grauwe is Professor of International Economics at the University of Leuven and a former Member of the Belgian Senate. He has received honorary doctorates from the Universities of St. Gallen and Turku. Professor De Grauwe was Chairman of the Task Force preparing the Belgian profit sharing legislation in 2000 and Chairman of the Task Force preparing the Belgian Corporate Governance legislation also in 2000. His research interests are international monetary relations, monetary integration, theory and empirical analysis of the foreign-exchange markets, and open-economy macroeconomics. His published books include *The Economics of Monetary Union*, Oxford University Press, and *International Money. Post-war Trends and Theorie*s, Oxford University Press.

JELLE ZIJLSTRA LECTURES

The *Jelle Zijlstra Lecture* is an annual event and is delivered by the holder of the Jelle Zijlstra Professorial Fellowship.

Previous *Jelle Zijstra Lectures* are:

1. 2002: Bruno S. Frey *The Role of Deterrence and Tax Morale in Taxation in the European Union*
   Published by NIAS, 2003.

The NIAS Jelle Zijlstra Professorial Foundation aims to further the study of economics in the Netherlands. To this end a special fellowship, named after the eminent Dutch scholar and statesman Dr. Jelle Zijlstra (1918-2001), has been established at the Netherlands Institute for Advanced Study (NIAS) in Wassenaar.

Zijlstra was Professor of Economics at the Free University of Amsterdam before becoming Minister of Economic Affairs, Minister of Finance, Prime Minister, President of De Nederlandsche Bank, and finally, Minister of State. Jelle Zijlstra was also a member of the Royal Netherlands Academy of Arts and Sciences.

The fellowship has received the generous support of the Dutch Minister of Finance, De Nederlandsche Bank, the Dr. Hendrik Muller's Vaderlandsch Fonds, the ABN AMRO Bank, the ING Group, the Fortis Bank (Nederland), AEGON Nederland and the Rabobank Group.

NIAS

vrije Universiteit amsterdam