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The Eurozone: An Optimal Currency Area?

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In 1961 Robert Mundell published his famous article "A Theory of Optimum Currency Areas"[1] presenting his idea of an optimal monetary area in which there should be perfect internal mobility of factors and external immobility of factors.

Nearly 40 years later, in 1999 the European Union founded its monetary area with the common currency the Euro. At first it was used as bank money, but in 2002 the Euro was finally introduced as banknote and from then on it has been used as the EU's means of payment.

From the beginning on there were discussions if the Eurozone could actually be classified as an optimum currency area and if the decision of unifying various EU member states under one common currency has been right. Lately, facing the current monetary crisis, this scepticism has even intensified and for this it seems to be the right moment to throw a light on the EU-OCA discussion once more and to examine the factors for founding the common currency area.

At first this paper will introduce Robert Mundell's theory of an Optimum Currency Area (OCA) and briefly discuss the more general points of view of his theory. From Mundell's OCA-theory we will move on to a cost-benefit analysis of monetary integration. Afterwards several influence factors on integration quality of monetary areas will be explained and examined it the face of the Eurozone. This part of the paper will be based on Paul Krugman's and Maurice Obstfeld's case study "Is Europe an Optimum Currency Area?", where they enlist four OCA-criteria which will be applied in this paper for the analysis of the Eurozone. Finally we will raise the question if the European Monetary Union (EMU) really is an OCA and answer this question in the light of the EMU-founding-fathers' decision basis.

1. A theory of an optimum currency area

Robert A. Mundell applied the common definition of a currency area as a "domain within

1 R. Mundell (1961): "A Theory of Optimum Currency Areas," in: *The American Economic Review* 51(4), pp. 657-665.

which exchange rates are fixed"[2], he was the first to question the appropriate domain of a currency area, however. For him the optimum currency area is the region and not the nation, and he strikes the vital importance of a high degree of factor mobility (e.g. capital mobility, labour force mobility,...) within a single currency area. Mundell defines the optimal region in terms of "internal factor mobility and external factor immobility"[3]. This means that within a single currency region there should be perfect mobility of factors and that in-between two distinct regions there should not be any factor mobility. According to Mundell the world ought to be divided into monetary regions – not nations – with a common currency along to factor mobility. There should not be a currency division along to geographic and national borders.

2. Cost-benefit-analysis of monetary integration

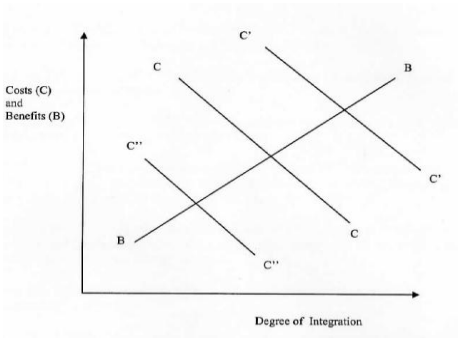

Figure 1: Costs and benefits of participating in a Monetary Union[4]

Following Paul Krugman, Michael J. Artis created the above depicted figure of "a country facing the option of joining with a partner or group of countries in a currency union"[5]. The vertical axis measures benefits or costs of monetary integration and the horizontal axis gives the degree of openness of the country with respect to its potential partner(s). Graph B represents a currency-integration's benefits, which are the loss of transaction costs of currencies and the loss of insecurity derived from the exchange rate. B is an upwards bending slope, because the higher the openness and level of economic integration between the potential partner countries is, the higher the benefits of a monetary integration

2 Mundell: A Theory of Optimum Currency Areas, p. 657.

3 Mundell: A Theory of Optimum Currency Areas, p. 661.

4 Figure 1: M. Artis (2002): *Reflections on the optimal currency area (OCA) criteria in the light of EMU*, Working Paper 69, Wien: Österreichische Nationalbank - OeNB, p. 16.

5 Artis: Reflections on the optimal currency area (OCA) criteria in the light of EMU, p. 2.

are. Cost-curve C indicates costs of undergoing a currency integration, like the country's loss of an independent monetary policy and the loss of the economic shock-absorbing potential of an individual exchange rate. It is a downwards sloping curve since the value of an independent monetary policy, and therefore also of an exchange rate, declines with the openness and economic interaction between economies. In the figure there is a point of intersection between the cost and benefit curves expressing the point from which on benefits outrule costs and from where on the country profits from joining the currency area.

Depicting three different cost-curves (C, C' and C'') Artis emphasizes the fact that various points of view on the cost level exist. Depending on an economist's perspective on the necessary degree of integration between member states, he/she might share a Monetarist's point of view (graph C'') and see the costs of integration lying on a generally low level; or share a Keynesianist's perspective, generally valuing the costs as being high.

For Monetarists a low level of economic integration is sufficient to reach the positive cost-benefit-crosspoint. Keynesianists however, have a more sceptical, cautious and conservative position and demand a high interaction-level between partner countries to assure the profitability of the monetary integration.

There are two ways to raise the efficiency of monetary integration: raising the economic integration in-between the currency area or eliminating the rigidity of integration costs – making labour market, resource movement, or capital flow more flexible, for example. Countries with similar production structures, with similarly functioning labour markets and with a common way of overcoming economic shocks do have lower integration costs and are therefore better suited for a currency union, this will be explained in more detail in the following paragraph, however.

3. Is Europe an Optimum Currency Area?

Adopting Krugman and Obstfeld's case study on Europe as an OCA, we will raise the question if the Eurozone really fulfils the criteria of an optimum currency area. For this Krugman and Obstfeld's four OCA criteria will be enlisted, examined and interpreted in the perspective of the Euro and will then be evaluated as reasons for the foundation of the Eurozone.[6]

According to Krugman and Obstfeld a fixed exchange rate area will serve the economic interests of each of its members best if the degree of output and factor trade among the included economies is high. They define OCAs

6 Compare: P. Krugman, M. Obstfeld (2009): "Case Study: Is Europe an Optimum Currency Area?," in: *International economics: theory & policy*, Boston, Mass.: Pearson, Addison-Wesley, pp. 582-587.

as "groups of regions with economies closely linked by trade in goods and services and by factor mobility"[7]. When they examine Europe's suitability for being an OCA the authors discuss the extent of intra-European trade, mobility of Europe's labour force, similarity of economic structure and the amount of fiscal federalism within the EU.

The extend of **intra-regional trade** is the first OCA criteria to illuminate. A country is more likely to benefit from joining a currency union if the union's economy is closely linked to its own. Economic integration can be valuated looking at both, the integration of product and factor markets – so looking at the extend of trade between the currency area and the potential new member, as well as at the easiness of movement of labour and capital between the joining-country and the currency area. In 1999 EU intern trade amounted among 10 and 20% of the EU member states' total trade. This is a fairly high number, but still smaller than the amount of trade between regions of the United States.

Summing up, the volume of intra-EU commerce has not been high enough to have a clear argument for forming the European Monetary Union (EMU) in 1999.

Labour mobility is the next OCA criteria to discuss. Since the formation of the EU's Single Market with freedom of movement of goods, capital, services, and people in 1993, national border controls have not been a major barrier to labour mobility any-more. Still labour is by far not moving as freely as in the United States, however. Differences in languages, cultures, social security systems, etc. are discouraging EU residents in their labour movement. Even within European countries labour mobility appears limited and this partly because of governmental regulations.

Due to the limited labour mobility, there is a risk of high unemployment rates in the case of product market disturbances; since there is no way of balancing economic shocks via labour migration within the Union. For this reason labour mobility is no indicator in favour of the foundation of the EMU either.

Similarity of Economic Structure is a further OCA criterion to evaluate. Extensive trade with the rest of the Eurozone makes it easier for a member state to adjust to output market disturbances that effects itself and its currency partners differently. A key element in minimizing such disturbances is similarity in economic structure, and here especially similarity in the types of produced products. Members of the EMU are not entirely distinct in their industrial and manufacturing struc-

7 P. Krugman, M. Obstfeld (2009): "Optimum Currency Areas and the European Experience," in: *International economics: theory & policy*, Boston, Mass.: Pearson, Addison-Wesley, p. 581.

ture, in fact they have a high volume of intra-industry trade – which is trade with the same product variants. There are vital differences in economic structure, however. Looking at production structure, labour force qualification and capital stock, there are considerable differences between northern and southern Europe. While the north is in general highly equipped with skilled labour, capital and a high-quality production structure, the south disposes from a less innovative and specialized manufacturing structure, from less capitalization, as well as from a smaller number of qualified labour.

Owing to the varying intensity of technology in the production process, due to the differing levels of education and because of the discrepancy in labour markets between northern and southern Europe there is little reasoning for the formation of the EMU in the geographical extent we are experiencing nowadays. The high intra-industry trade is a pro-argument of course, but it seems to be outweighed by the number of contra-arguments proving dissimilarities in economic structure.

The last OCA criterion to mind is **fiscal federalism**. Fiscal federalism is the "European Union's ability to transfer economic resources from members with healthy economies to those suffering economic setbacks"[8]. When an U.S. federal state is having economic problems in contrast to the rest of the nation, it automatically receives support from public authorities in Washington like welfare benefits or other federal transfer payments which are financed through tax payments. Financial federalism can help to balance a loss of economic stability due to fixed exchange rates.

The European Union has limited fiscal powers, however. It has only very small taxation capabilities – the EU only has 1% of the member states' GDP at its disposal. For this reason there is no EU budget to carry out fiscal federalism or to rescue a member state in economic difficulties.

4. So is the EMU an Optimum Currency Area?

Looking at our analysis of the European economic structure we can conclude that the EU economies are open to trade and that capital is highly mobile. Likewise however, we must agree that labour is largely immobile for linguistic and cultural reasons, as well as for personal and social costs of migration.[9] There is evidence that national financial markets have become better integrated with each

8 Krugman, Obstfeld: Case Study: Is Europe an Optimum Currency Area?, p. 586.

9 Compare: M. Demertzis et al. (2000): "Is the European union a natural currency area, or is it held together by policy makers?," *Review of World Economics (Weltwirtschaftliches Archiv)* 136(4), p. 659.

other as a result of the Euro, and that the Euro has promoted intra-EU trade. As we have seen the volume of intra-European trade is fairly high, but still away from American quantities. In the United States labour force is significantly more footloose – in the case of economic shocks workers are willing to migrate to other federal states to avoid unemployment. On the other hand in Europe, the low labour mobility between and within the EU countries implies a high risk of economic stability loss from Eurozone membership. Additionally, the European Union is because of its limited fiscal powers not able to support a European country in economic difficulties. The Union has no budgetary capabilities to transfer support payments from tax-earnings to the single member state.

Taking those influencing factors on the functionality of an Optimal Currency Areas one may have to conclude, that looking at the economic and structural factors there were no clear and steadfast arguments for the EMU at its founding moment in 1999. We should not forget though, that there are never only economic, but also political reasons to mind. Discussing the complex political reasons for the EMU foundation would go beyond the scope of this paper, their crucial influencing power is not to neglect however.

What is more, one should not forget the positive cohesiveness effect of the EMU itself. By forming a monetary union, although it may not have been an OCA at its founding moment, the member states might have triggered a momentum for becoming one in the course of time. Andrew K. Rose, for example, surveyed 26 studies on the effects of the EMU on European trade and comes to the conclusion, that depending on the conservativeness of interpretation, the EMU has raised trade inside the Eurozone by at least 8% and up to 23%. He also also identifies effect of trade on the synchronization of business cycles, which suggests in total according to him that the EMU has created a virtuous circle: by increasing trade and the synchronization of business cycles the EMU is reducing the need for national monetary policy and therefore is creating a momentum in favour of being an OCA.[10]

Even though the EMU may not have been created as an Optimum Currency Area, it might be argued that it is moving in that direction ever since. One of the few unquestioned effects of the EMU is its trade-promoting effect. Also minding the from Rose postulated trade-synchronization effect and the therefore sinking need for national

10 Compare: A. Rose (2008): "Is EMU Becoming an Optimum Currency Area? The Evidence on Trade and Business Cycle Synchronization," http://faculty.haas.berkeley.edu/arose/EMUMetaECB.pdf (acceded: 30/01/2012).

monetary policy, one may not be able to speak of the Eurozone as being an OCA ex ante, but maybe of becoming one ex post.

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