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Development of the Optimum Currency Areas theory – some issues

Abstract: This paper gives a sketch of some theoretical foundations, showing the development of the Optimum Currency Areas theory. It presents OCA properties, the fulfillment of which is a precondition to consider a chosen geographic domain as an optimum currency area. It provides a background on some issues of cost and benefit analysis derived from participation in a currency area and from relinquishing monetary policy autonomy. The paper also shows the influence of theoretical and economic phenomena on reconsidering some of the OCA theory's elements.

Keywords: optimum currency area, currency union, monetary policy, economic and monetary integration, international monetary arrangements and exchange rate regime.

JEL codes: E42, E52, F02, F15, F 31, F 36.

1. Introduction

The Optimum Currency Areas theory (hereafter: OCA theory) is usually concerned with determining the optimal size of a region of the countries that form a currency area and with evaluating benefits and costs arising from creating such an area. The OCA theory tries to identify the conditions under which a given country can benefit from establishing, with another country or a group of countries, a geographic domain as a currency area. It has to be noticed, however, that one important methodological issue still remains unresolved – there is no commonly used and accepted definition of a currency area.

A currency area is often defined as a geographic domain of countries whose exchange rates are irrevocably fixed and might be unified. In the latter case national currencies can be replaced with common currency. This definition refers to what R. A. Mundell (1997, p. 214) calls a "true" currency area. It includes many different models for currency areas. The tightest form is a single currency monetary union, involving a high degree of political cooperation and sharing of sovereignty. Dollarization (or euroization) represents a hegemonic approach to a sin-

gle-currency monetary union. Multiple-currency monetary unions could include currency board arrangements, and a parallel currency system, both of which could be treated as stages toward a more complete single-currency monetary union (Mundell 2000, p. 225).

Not all economists share R. Mundell's point of view, however. Some argue that the definition of a currency area should also include a model in which a group of countries undertake to contain their bilateral exchange rates within narrow bands, defined in respect of agreed central rates, which cannot be changed unilaterally (Kenen 1997, p. 211, Mussa 1997, p. 217). In practice, this wider definition covers the Bretton Woods system and the European Monetary System (until 1993) as well. However, in this article a currency area is identified with the first, narrow definition.

By this definition, the domain of a currency area must include countries that chose to irrevocably peg their currencies with each other. It is their consideration, whether they want to replace an exchange rate agreement within the area with common currency or not. Thus, an optimal currency area can be defined as a region that is neither so small and open that it would be better off pegging its currency to a neighbor, nor so large that it would be better off splitting into subregions with different currencies (Frankel 1999, p. 14). In other words, currency area can be regarded as optimal only if countries forming this area improve the welfare of their citizens above the level achieved if each country acted separately (Grubel 1970, p. 319). This definition appears to be rather vague, as it does not specify which measure should be taken into account in order to measure such a broad category as "welfare". However, the OCA models that were presented in the literature referred almost exclusively to economic welfare.

Optimality of a currency area is defined in terms of several OCA properties – they are also called "prerequisites", "characteristics", or "criteria" (Mongelli 2002, p. 8) – that have been introduced into the literature since the 1960's. According to the OCA theory, only functioning as an optimal domain allows countries to gain net benefits from creating and participating in it.

The paper is organized as follows: origins of the so-called "old" OCA theory, including OCA properties as well as benefits and costs arising from participation in a currency area, are presented in section 2. Section 3 reviews rediscovery of the OCA theory, especially emphasizing reconsideration of cost-benefit analysis and assumptions about independent and stable character of OCA properties. Section 4 presents conclusions.

2. The "old" theory of Optimum Currency Areas

Origins of the OCA theory date back to the 1960's, when seminal contributions were presented by R. A. Mundell, P. B. Kennen and R. I. McKinnon. It has to be underlined that the malfunctioning Bretton Woods System of fixed exchange rates characterized the early 1960's. The OCA theory emerged from the debate on merits of fixed versus flexible exchange rate regimes. These three authors formed the first criteria, the fulfillment of which allowed acknowledging a currency area as optimal; they also initiated the debate on costs and benefits of participation in a currency area.

2.1. Properties of Optimum Currency Areas

Before starting the presentation of criteria, some assumptions have to be made. Suppose that two countries – A and B – are struck with an asymmetric shock. This shock results in the shift of demand from goods produced by country A to goods produced by country B. Assume also that both countries are committed to maintaining the system of fixed exchange rates and authorities of both countries act to prevent inflation. Necessary adjustment and the restoration of equilibrium can then be accomplished through changes in nominal prices and wages or through inducing employment drop in country A and inflationary pressures in country B.

In his groundbreaking paper, R. A. Mundell (1961) argues that if nominal prices and wages are not flexible – especially downwards – (and this is the usual state of affairs), and both countries tend to maintain fixed exchange rates of their currencies, the shift in demand must cause sustained unemployment in country A. To the extent that prices are allowed to rise in country B, the change in terms of trade will relieve country A of some of the harmful adjustment of employment. On the other hand, the extent to which country B fights against inflation determines the level of the reduction in country's B real income. According to assumptions, such reduction can only be achieved via decline in country's A output and employment. Summing up, necessary adjustment can be achieved only via structural changes in employment in country A and in inflation in country B. Of course, this solution is very costly to both countries. So, the only plausible alternative is "to break the rule" and to realign exchange rates, that is – to devalue currency of country A and revalue currency of country B. But is realignment the only possible solution?

According to R. A. Mundell (1961), necessary adjustment can be accomplished if factors of production markets of both country A and B are well integrated. In this case allowing factors of production to reallocate across borders can be used instead of nominal exchange rate changes. Using such a tool tends to protect country A from unemployment growth and country B from inflationary

pressures that would have occurred otherwise. Hence, only countries that create conditions for free factor mobility can successfully form a currency area. Otherwise, maintaining a currency area (i.e. a system of fixed exchange rates) under an asymmetric shock can become too costly and temptation to change the central (official) exchange rate in order to allow the exchange rate adjustment – impossible to overcome.

R. I. McKinnon (1963) introduced the second criterion determining the scope of a currency area. This was the degree of economic openness measured by the ratio of tradable goods to non-tradable goods. R. I. McKinnon argues that the higher degree of economic openness, the faster changes in international prices are likely to be transmitted to the domestic cost of living. This reduces wage earners' money and exchange rate illusion and causes effectiveness of the exchange rate adjustment to fall. The larger the share of tradable goods in the consumption basket, the more likely nominal wages would rise after devaluation. Hence, costs of relinquishing the exchange rate mechanism as the adjustment tool for small, high trading countries are negligible. This implies that the more open the prospective members of a currency area, the more incentive they have for joining. Referring this to the example presented above, if economies of country A and B were open enough, an asymmetric shock would have been less harmful to them. It should be noted, however, that this criterion is valid only under the assumption that prices of tradable goods are set at the international level.

Distinct from R. A. Mundell and R. I. McKinnon, P. B. Kenen focused on the diversification in production and consumption. According to him, a high diversification of these items implies high diversification in imports and exports. This reduces probability of negative effects occurring while being struck with an asymmetric shock. Having diversified the structure of production and consumption, countries A and B would be less vulnerable to an asymmetric shock, because probability of being struck with the disturbance at the same time in both countries would be negligible. Moreover, the diversified production structure means that aggregate production need not change in the country which suffers from a negative asymmetric shock. This reduces the need for using the exchange rate as an adjustment tool, so the cost of forsaking nominal exchange rate changes by countries A and B would then be relatively small. P. B. Kenen noticed that large economies were likely to be more diversified than smaller economies, so shifts in fortunes of particular industries would likely offset each other and would not affect the economy as a whole. Thus no depreciation or appreciation would be needed. Hence, large countries can form a currency area without a serious cost of losing their exchange rate instruments (Appel 2002, Bień 1988, Corden 1994).

Aside from these three criteria, many other properties of optimum currency areas were formulated in the literature. The following properties have been identified as relevant for choosing suitable participants in an optimum currency area: price

and wage flexibility, financial market integration, similarity of inflation rates, fiscal integration, political integration and low exchange rate variability.

Downward flexibility of nominal prices and wages can reduce the need for exchange rate adjustments when an asymmetric shock occurs. Necessary changes in terms of trade are less likely to be associated with sustained unemployment in country A and inflation in country B as they would be accomplished following the adjustment of nominal prices and wages (Mongelli 2002).

Such a need can also be limited in the case in which financial markets of countries that form a currency area are highly integrated. Negative effects of disturbances can be cushioned through capital flows by borrowing from surplus of country B and decumulating net foreign assets of country A. Under a high degree of financial integration even modest changes in interest rates would induce capital movements between countries A and B. This would foster an efficient allocation of resources and financing of external imbalances (Ingram 1969, Mongelli 2002).

Similarly, the need for nominal exchange rate changes is limited also if countries that form a currency area have similar rates of inflation. If that condition is fulfilled, terms of trade also remain fairly stable. This facilitates trade between countries and fosters financing of external imbalances. It also lowers probability for countries in a currency area of being hit by an asymmetric shock. Disturbances tend to be more symmetric, as economic conditions in members of a currency area converge. Moreover, going back to our example once again, divergent inflation rates would eventually cause the purchasing power of currencies of countries A and B to differ, which would have to be corrected by a change in the exchange rate. This would cause the collapse of the fixed exchange rate regime (Fleming 1971, Mongelli 2002).

Asymmetric shocks can be smoothed out with fewer difficulties when participants in a currency area are characterized by fiscal integration. This occurs because the higher the level of fiscal integration, the greater the ability to carry out transfers from low-unemployment regions to high-unemployment regions. Moreover, some form of political union in which members of a currency area participate usually accompanies fiscal integration (Mongelli 2002, Tavlas 1993).

Political integration appears to be one of the most important OCA properties. Unfortunately it does not play any role in the OCA analysis. This is due to difficulties with measuring such a factor as e.g. “political will”. However, it remains beyond discussion that it is the political will to integrate among prospective members that **really** matters in practice. Political will fosters cooperation on various economic policies and encourages institutional development. It also cushions working out reasonable compatibility in preferences referring to growth, inflation and employment (Corden 1994, Tavlas 1993). Forming a real currency area is (and has to be) a political process. Economic considerations are important, but they are in the background. While it is very hard (even if possible) to incorporate political

aspects in the OCA models, they are of limited use for a discussion of the existing currency areas.

One more OCA property is worth underlining as it gave rise to a new class of criteria, originally introduced by R. Vaubel (1976). He proposed the idea that the variability of the real exchange rate was an important condition determining the suitability of countries for a currency area. R. Vaubel argues that a stable real exchange rate between two countries gives evidence that in the past there were not too many shocks which required exchange rate adjustment. If so, it can be assumed that this state of affairs would last in the future. Hence, there would be a low need for the nominal exchange rate adjustment and the cost of giving up an exchange rate tool would be negligible. It is worth emphasizing that the real exchange rate variability says nothing about the reasons for this variability. Therefore, this OCA property is often referred to more generalized class of criteria – the so called "proxy" or "meta" criteria.

The "old" OCA theory introduced a handful of properties defining optimality of a currency area, but it lacked a unifying analytical framework. Two important problems appeared, namely the "problem of inconclusiveness" and the "problem of inconsistency".

The first problem occurred as OCA properties gave inconsistent clues whether a given country should join a currency area or not. For example, a country could be quite open taking into account reciprocal trade with a group of other countries, but at the same time it could be distinguished by low mobility of factors of production vis-à-vis trading partners. So, according to one criterion the country should join a currency area, but according to another one it should not. The second problem arose while analyzing a particular type of economy. For example, small countries tend to be more open than large countries, but on the other hand they are likely to be less differentiated in production than the larger ones. Once again, according to one criterion small countries should join a currency area, but according to another they should not (Tavlas 1994, p. 211-230).

The difficulty resulting from these two problems stems from the lack of the OCA properties' rankings. Despite many ideas presented in the literature, there is still no widespread agreement in this matter. Only individual countries can overcome limitations of defining an optimum currency area based on a handful of properties. In other words, each country should estimate cost and benefits emerging from participation in a currency area, taking into account its own self-interest and welfare (Mongelli 2002, p. 12).

2.2. Benefits and costs from participation in a currency area

The "old" Theory of Optimum Currency Areas concentrated almost entirely on analyzing whether costs of giving up the exchange rate mechanism as a stabiliza-

tion tool would be small enough to encourage countries to form a currency area. It rather omitted positive effects arising from creating such an area.

According to the early literature, two main costs were linked with creating a currency area, namely: cost of the loss of the use of the exchange rate tool and cost of losing monetary policy autonomy. The first cost was considered to be dangerously high, if the economy of a given country was susceptible to asymmetric shocks. However, fulfillment of the OCA criteria to some extent could protect from divergent disturbances and their negative effects. The second cost arose because offsetting asymmetric shocks through shifts of factors of production across borders or through transfers between high- and low-unemployment regions would reverse effects of an internal monetary policy. Under such circumstances conducting an effective national monetary policy was hampered. Assuming that the short-term Phillips curve was stable, this meant that economic authorities could not choose a desired combination of inflation and unemployment any longer (Corden 1994, Tavlas 1993).

The main benefits related to a currency area were identified as the elimination of the exchange rate uncertainty and the cost of currency conversion. It was considered to help trade and investment fostering, as a result of decreasing the risk premium on interest rates. Creating a currency area would also allow economies of scale to appear as well as expanding the foreign exchange market would decrease the volatility of prices and speculators' ability to influence prices. This in turn would reduce the need for storing reserves for transactions with other members of a currency area and speculative capital flows within the area (Fleming 1971, Grubel 1970, Tavlas 1993).

3. The "new" theory of Optimum Currency Areas

Since the 1980's, the OCA theory has lost some momentum. Problems of inconclusiveness and inconsistency and the lack of strong empirical support induced some economists to argue that this theory was a purely scholastic discussion with no practical applications.The OCA theory was "consigned to intellectual limbo" (Tavlas 1993, p. 663). Apart from that, it was not of any importance that European monetary integration slowed down.

As interest in the European monetary integration has increased, the OCA theory has started to attract the interest of economists and policymakers once again. As a result of such rediscovery, some elements of this theory have been reconsidered. This refers especially to the cost and benefit analysis and to the assumption about stability of OCA properties in time.

3.1. Reconsidering benefits and costs analysis

The main cost arising from creating a currency area was losing control over a national monetary policy. However, monetarists' criticisms of the Phillips curve have altered evaluation of this cost. In particular, the Phillips curve augmented by the expected inflation implies that a perfectly foreseen change in monetary policy has no effect on real variables like real GDP or unemployment. Going further, accepting the NAIRU idea means that monetary authorities can choose a desired rate of inflation rather than the mix of inflation and unemployment. And if the rational expectations assumption is sustained, in the long run a discretionary monetary policy is always ineffective (Belka 1993, Belka, Pruski 1988, Snowdon et al. 1998). But on the other hand, countries can have different short-run Phillips curves, even if they are in practice difficult to measure. This implies that short-term trade-offs still exist. Hence there can still be a cost of relinquishing an independent monetary policy, especially if countries have different policy tastes concerning inflation and unemployment. This occurs, as a possible "outcome" of inflation and unemployment in a currency area, which can significantly differ from policy preferences of particular countries (Corden 1994, p. 136-137).

Apart from theoretical developments, some economic phenomena and tendencies have undermined the costs-benefits analysis. Explosive increases in capital flows since 1970's have limited to a large extent the ability to conduct an independent monetary policy (Eichengreen 2000, p. 317-318). This gave rise to new ideas affecting the conduct of monetary policy, namely: B. Cohen's Unholy Trinity (known also as Impossible Trinity) and T. Padoa-Schioppa's Inconsistent Quartet.

According to the "Unholy Trinity" thesis, a government can achieve only two of the following: capital mobility, a fixed exchange rate, and monetary policy autonomy. As maintaining capital controls is getting harder and harder under the circumstances of rapidly increasing capital flows, only two solutions remain: introducing a floating exchange rate system and keeping monetary policy autonomy or pegging the exchange rate and relinquishing an independent monetary policy. The liberalization of capital controls thus forces a trade-off between the two upon the government. In other words, under every kind of pegged exchange rates system and free capital mobility it is impossible to pursue an independent monetary policy on a sustained basis. Current-account disequilibria and changes in reserves sooner or later must provoke an attack on the exchange rate. Countries that wish to maintain pegged exchange rates have then to give up their monetary policy autonomy[1]. This is the principal idea of "Unholy Trinity". "Inconsistent Quartet" includes a fourth factor – free trade – in the conditions under which it is not possible to conduct an independent monetary policy. According to "Inconsistent Quartet", while introdu-

[1] This result can be derived from the Mundell-Fleming model with perfect capital mobility as well. (Bordo 2003, Dąbrowski 2000, G. Tavlas 2003).

cing free trade and full capital mobility, the only solution to the inconsistency in the long run is to complement the internal market with a monetary union (Padoa-Schioppa 1991, p. 182; 2002, p. 2).

Consequently, while the increase in capital flows has increased the opportunity for trade, portfolio diversification and risk sharing, it has made functioning of the soft-peg exchange rate regimes very problematic (Tavlas 2000, 2003). In practice, these phenomena create conditions for economic and financial integration among countries. As a result, there is little (if any) middle ground between allowing the exchange rate to float, which implies maintenance of the independence of monetary policy, or fixing the exchange rate to a currency of another country or a group of countries, which creates strong monetary links between such countries or their groups (Fischer 2001). This means that, according to the IMF's classification, countries can choose between independent (pure) floating systems from one side and exchange rate arrangements with no separate legal tender or currency board arrangements[2]. So, the choice is actually between floating systems and the so called "firm fixed arrangements" (Hawkins, Mason 2003, p. 14). Interim regimes are expected to vanish – this is the main hypothesis that emerges form this regularity[3]. Such systems simply must run into trouble, as they are not credible enough. Speculative capital inflows or outflows are just an evidence of this incredibility (H.-P. Spahn 2001). The influence of increasing capital mobility on the choice of exchange rate regime is shown on Figure 1.

Foregoing arguments indicate that the costs of giving up monetary policy independence could be not as high as it was pointed out in the "old" OCA theory. In fact, only political and economic superpowers or poorly-developed countries that do not have links with the global economy can afford to maintain fully flexible exchange rate regimes. The majority of countries are becoming too vulnerable to international prices and exchange rates changes. In fact they are about to give up an independent monetary policy and link their economies to the economy of another stronger country or a group of countries via formal dollarization or euroization, via introducing a currency board regime or via forming a monetary

[2] Exchange rate agreement with no separate legal tender refers to the situation, when 1) the currency of another country circulates as the sole legal tender (for example formal dollarisation or euroisation), or 2) member belongs to a monetary currency union in which the same legal tender is shared by the members of the union. Currency board arrangement is an exchange rate regime based on an explicit legislative commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate. Managed floating with no predetermined path for the exchange rate means that monetary authority influences the movements of exchange rate through active intervention in the foreign exchange market without specifying, or recommitting to a regular preannounced path for the exchange rate. Independent floating refers to a system, in which exchange rate is market determined. (IMF 2004, p. 117).

[3] This hypothesis is defined in the literature as so called "corners hypothesis" or "hypothesis of vanishing intermediate regime" (Frankel 2003, p. 14, 1999, p. 6).

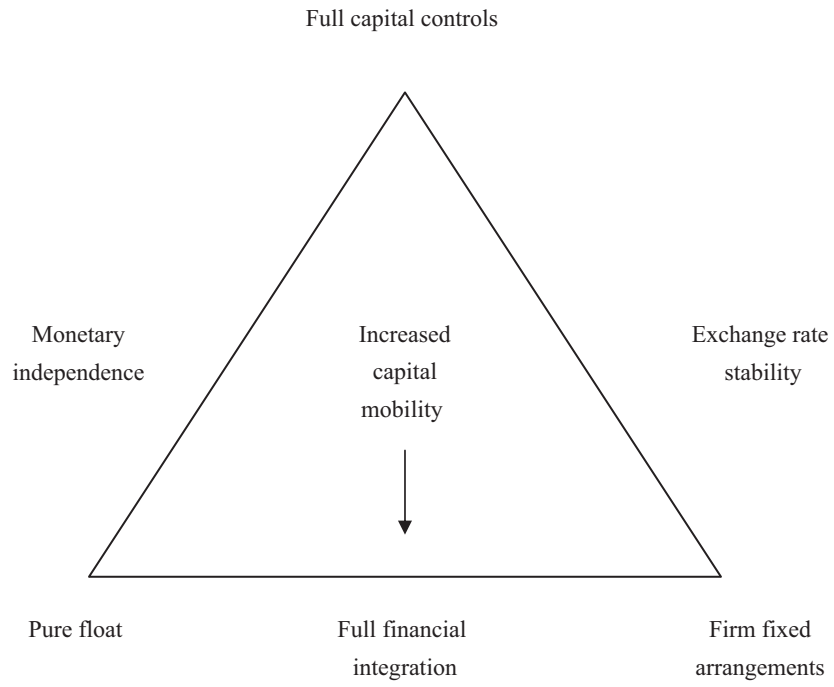

Figure 1. Consequences of increased capital mobility on a choice of the exchange rate regime

S o u r c e : own preparation based on Frankel (1999, p. 7)

union based on a common currency. Hence, for such countries the cost of giving up their national monetary policy in favor of creating a currency area is relatively small at present and it is likely to diminish in the nearest future.

While evaluating costs arising from giving up monetary independence, the so--called credibility issue has to be taken into consideration. A country with a "track record" of relatively high inflation rates and a reputation for breaking inflation target commitments can find it very difficult to build a reputation as a tough inflation fighter, as it requires a long-lasting and costly process of disinflation. Joining a currency area can become an easier way towards gaining low inflation, as it "ties hands" of an unreliable country and cushions overcoming the time-inconsistency discrepancy. The latter problem arises as public agents identify that economic authorities have a huge temptation to renege on low inflation promises in favor of different short-term targets. As a result, every commitment would be considered as time-inconsistent and it would lack the credibility (Corden 1994, p. 137-138 Tavlas 1993, 673-674).

However, "tying hands" would be an effective disinflation strategy only if there is a low inflation country within a currency area which can become the so-called

"inflation anchor" country. Such a country has to have strong track record of low and stable inflation rate and has to guarantee that it is not going to change its monetary discipline after establishing and enlarging a monetary union based on common currency. The inflation anchor country has to maintain the hegemony of an institutional setting in order to preserve the low inflation area within all currency area (Mongelli 2002, p. 16-17).

Granting such an environment can cause significant costs for the inflation anchor country, especially in asymmetric systems[4]. It is not clear what are the gains and why such a country should participate in a currency area. Possible benefits can result from a desire of the dominant country to promote its monetary leadership or from its attempts to decrease speculative capital inflows and outflows in order to facilitate the conduct of internal economic policy (Tavlas 1993).

Under the presented circumstances countries that displayed high and variable inflation rates can benefit form relinquishing monetary policy independence in terms of a quick disinflation without harmful costs. This line of reasoning implies that similar and low inflation rates are a possible outcome from participating in a currency area, but at the same time are not an OCA criterion! So, in other words, this overturns one of the fundamental OCA properties. It has to be noticed, however, that such quick disinflation can bring about some problems, especially connected with transition costs (Mongelli 2002, Tavlas 1993).

The "old" OCA theory put special emphasis on the costs arising from relinquishing exchange rate changes as a stabilization tool. However, effectiveness of this instrument has been highly criticized in recent years. It is emphasized that exchange rate changes operate with longer lags due to the slow adjustment of financial asset prices. There is also a doubt about performing the stabilization function through exchange rates, especially because of distortionary financial shocks that influence an exchange rate. Moreover, exchange rate changes can become per se a source of economic disturbances, which lowers their utility as a stabilization tool (Buiter 2000, De Grauwe 2002, Wojnecka 2002). Although this issue still remains unresolved, there is a high likelihood that the costs of giving up an exchange rate tool would be significantly lower than these foreseen in "the old" OCA theory.

In the"old" OCA theory exchange rate was considered to be an effective tool that could be used while offsetting negative results of the so-called asymmetric shocks. The early and more "Keynesian", R. Mundell, regarded such disturbances as external and demand shocks arising when consumers' preferences suddenly shift away from country A goods in favor of country B goods. This view was then repeated and taken for granted, as many OCA's epigones were thrall to the father of the OCA theory. But in practice it is hard to imagine such a shock, especially among

[4] Asymmetric system means that there is one hegemonic country that pursues an independent monetary policy, while other countries adjust to it their monetary and exchange rate intervention policies.

diversified industrial economies. One could – perhaps - imagine a shift away only from particular groups of products. This implies, that "Mundellian" demand shock could arise only in a less-developed, small country with homogeneous export. Only such a country could need the exchange rate flexibility to offset volatility in consumption preferences (McKinnon 2002).

For the present purposes, asymmetric shocks can be referred to an unexpected disturbance in the national output that affects one country differently from another. However, such macroeconomic shocks are not "asymmetric", rather region- or country specific. Doubts arise, whether such shocks can be external , as in the European context the need for using an exchange rate as a stabilization tool was almost exclusively caused by internal shocks, resulting mainly from high inflation rates. After low inflation rates were achieved, there was no necessity to devalue or to revalue. These problems have been introduced to the OCA debate only recently. Moreover, it is rather the common monetary policy that can provide internal shocks resulting with asymmetric impacts on employment and output due to asymmetric transmission of monetary policy impulses (Buiter 2000). However, the OCA models incorporating this problem have not yet been formulated.

While reassessing the cost and benefit analysis, the "new" OCA theory has undermined one more crucial assumption. As it was mentioned before, a currency area is often defined as a geographic domain of countries whose exchange rates are irrevocably fixed and might be unified. The "new" OCA theory has raised a question whether pegged exchange rates can remain irrevocably fixed. As G. Tavlas (1993, p. 677) points out, in order to meet this requirement, two conditions have to be fulfilled: monetary authorities have to eliminate all price risk by guaranteeing a fixed price at which they buy and sell foreign exchange and they have to eliminate the risk of liquidity by permitting all economic agents to buy or sell unlimited quantities of foreign exchange at that price. In practice, such conditions are unlikely to be fulfilled and hence the expression "irrevocably fixed exchange rates" has no practical significance in the long run. Hence, establishing an optimum currency area must, sooner or later, end up with introducing common currency.

3.2. Specialization versus endogeneity of OCA properties

Before starting this section, one more OCA property has to be introduced. This is another "meta" property, covering interactions among several other properties, like size and openness of potential currency area members' economies, diversification of their production and volatility of the bilateral exchange rate between these countries (Eichengreen, Bayoumi 1997). This criterion that catches almost all-important OCA properties is the similarity of shocks. That is if supply and demand shocks and the speed with which the economy adjusts are similar within a group of countries, then the need for monetary policy independence is limited and net

benefits from establishing a currency area are higher. The "old" OCA theory took various criteria as being unchanging exogenous variables. This opinion has been questioned in the recent years and as a result it has been turned upside down. J. A. Frankel and A. K. Rose (1996, 1998) first suggested that OCA properties were jointly endogenous and that they evolved over time. An especially big influence on the values of these variables has an establishment of a currency area.

Majority of economists would agree till this point. However, there is disagreement whether forming a currency area induces a rise or fall in the correlation of shocks among members of that area. Two opposite hypotheses with different implications were formulated, the specialization hypothesis and the endogeneity hypothesis.

The first hypothesis postulates that as countries establish a currency area and become more integrated, their reciprocal trade increases, mainly due to an exchange rate risk minimization that in turn brings about economies of scale and network effects. Firms choose one region that is most appropriate for their activities and concentrate production facilities there. This results in a higher degree of openness and encourages specialization in the production of goods and services for which particular currency area members have comparative advantages. This means that such countries will become less diversified and more exposed to asymmetric shocks, as correlation of shocks among their economies will tend to lower (De Grauwe 2002, Mongelli 2002). This process is illustrated on Figure 2.

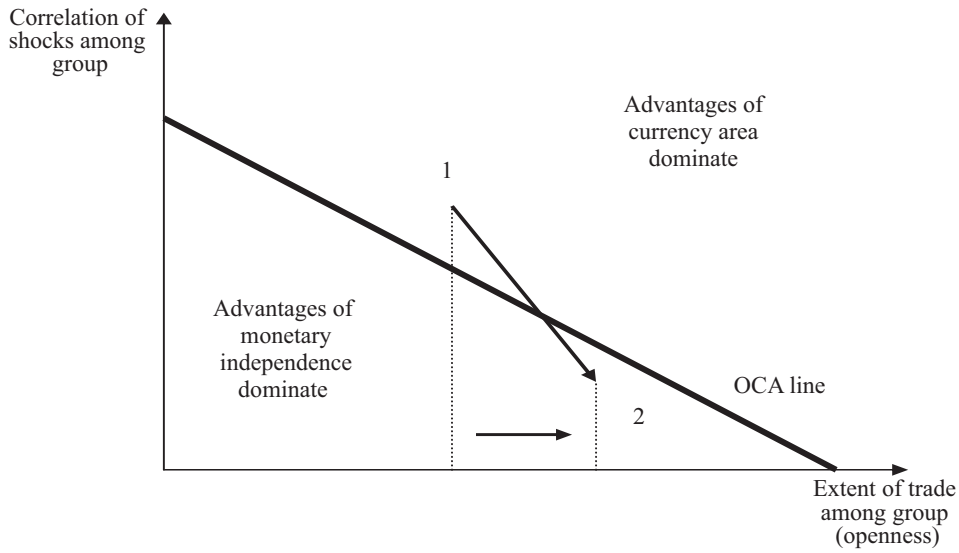

Figure 2. Influence of specialization on fulfillment of OCA properties
S o u r c e : own preparation based on Mongelli (2002, p. 28)

According to Figure 2, an increase in economic integration shifts a chosen country to the opposite side of the OCA line. This line represents such combinations of correlation of shocks and openness among the prospective members of a currency area that result in zero net benefits from relinquishing monetary policy autonomy. Moving from point 1 to point 2 means that the currency area members are more open, but shocks to which they are exposed become less correlated.

The second hypothesis – endogeneity – assumes that there is a positive relationship between economic integration and correlation of business cycles resulting in high correlation of income as well as shocks among the countries that are a part of a currency area. The endogeneity hypothesis stems from the idea that integration reduces trading costs through the elimination of costs arising from exchange rate volatility. Fixing an exchange rate imposes serious restrictions on a domestic economic policy; especially it precludes the possibility of competitive devaluation or currency dumping. At the same time it fosters supranational transactions and foreign direct investment. This in turn intensifies reciprocal trade, economic integration and business cycle synchronization. The result is an increasing propensity to import from other currency area members, and in shocks spillover due to trade and disciplining effect of a firm exchange rate arrangement (Frankel, Rose 1996, 1998; Rose, Engel 2003). The assumption by which this reasoning is driven is that the process of integration is gradual, as shown on Figure 3.

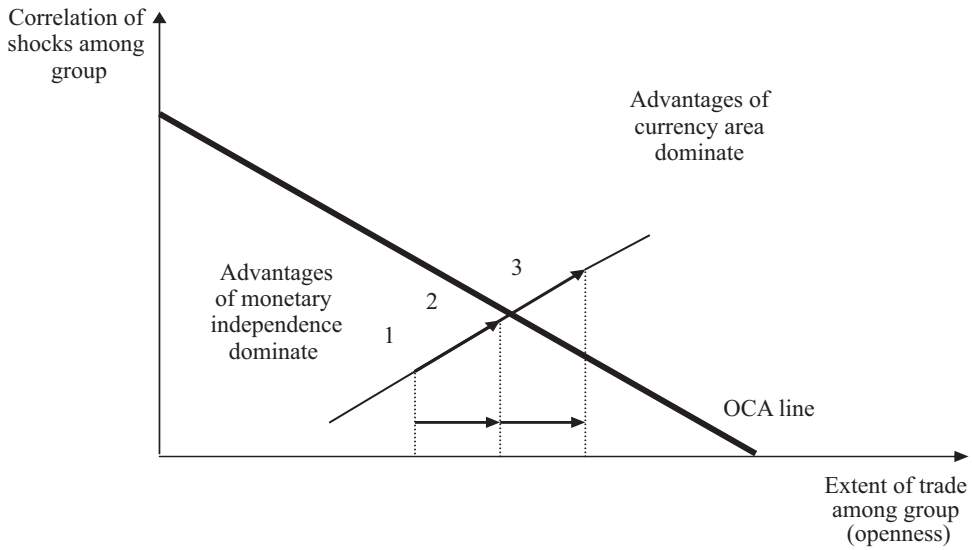

Figure 3. Influence of endogeneity on fulfillment of OCA properties
S o u r c e : own preparation based on Mongelli (2002, p. 29)

As Figure 3 shows, initially a group of countries fosters integration of their economies by lifting restrictions on reciprocal trade, which results in higher openness and higher correlation of business cycles (move from point 1 to point 2). However, they do not meet a majority of OCA properties, hence they are reluctant to give up an independent monetary policy. But, if they decide to establish a currency area (move from point 2 to point 3), the extent of trade among members and correlation of their business cycles are going to grow subsequently. As a result, countries will find themselves on the right of the OCA line. So, establishing a currency area per se fosters fulfillment of the OCA criteria. This means that countries can meet the OCA preconditions ex post, even if they do not meet them ex ante. Hence, a country's suitability for entry into a currency area cannot be judged based only on ex ante analysis.

Both specialization and endogeneity hypothesis have not been verified unambiguously. This is due to the fact these any of these paradigms de suit do not all conditions at all times. They can only refer to specific countries and circumstances. However, some common conclusions can be drawn from both hypotheses. Namely, the fulfillment of OCA criteria is a dynamic process as the integration process itself can influence it. Hence, it cannot be evaluated based on static analysis. Another conclusion is that costs and benefits of entering into a currency area are changeable as time goes by.

4. Concluding remarks

This article gives a sketch of development of the OCA theory. This theory has changed significantly since its beginnings. The"new" OCA theory demolished crucial assumptions of the "old" one, but instead resulted in different and often contradictory models that gave practically no guide for deciding who should join a currency area and who should not. So, as the "new" OCA theory is not actually a properly established theory, it should be regarded rather as a set of loosely connected ideas.

The "new" OCA theory cannot identify whether the existing currency areas are optimum areas according to the theory or not[5]. Therefore, it is very hard to identify whether the expected benefits from establishing a currency area outweigh adjustment costs. There are still no clear-cut scoring OCA tests which allow measuring the readiness of prospective participants in a currency area and the level of OCA properties' fulfillment.

[5] For example, according to the most of empirical research based on the OCA theory, EMU of fifteen members was not an optimum currency area; only a subset of EU-countries appeared to be such area (De Grauwe 1993, 1996).

The main problem with the"new" OCA theory (as well as the "old" one) is that it omits completely political preferences and interests of the participants in a currency area which are absolutely crucial for its performance. Very often a conclusion derived from the economic analysis creates problems when confronted with the political analysis of costs and benefits of a currency area. It is unlikely that such an area will be decided on anything else but the political grounds.

Another "new" OCA theory's imperfection is that it does not pay enough attention to one of the most important currency area properties, which is fiscal and monetary stability. For the present purposes, especially strong public finances and a disciplined monetary policy are essential, while they allow reaching a necessary stage of economic integration. In the European context, it took several decades of intense bargaining over economic integration and mutual fiscal constraints before the stage was set for the European Central Bank to credibly issue a common currency. But, once again, such agreement would not be possible without the political will of the neighboring countries.

While the "new" OCA theory does not take these aspects into account, it is of rather limited relevance for the real-world problems. It remains rather a pure scholastic theory. But this does not mean that it is completely irrelevant. It can provide some guidelines when considering specific problems related to establishment of a currency area, e.g. whether the countries that adapt a fixed exchange rate agreement are able to maintain it[6]. Thus, it can be a helpful tool while deciding whether to join an existing currency area or whether to permit other neighboring countries to enter. Nonetheless, the "new" OCA theory still does not give a clear answer to the questions: whether to participate or not, nor do the existing currency areas bring their participants maximum benefits in terms of their economic welfare. This theory only presents a set of conditions under which a country stands the greatest chance of benefiting from participating in a currency area. In the real world the existence of a currency area signifies that it is optimal. In order to exist, it must bring its participants some economic and "noneconomic" benefits that they would not reach otherwise.

The development of the OCA theory combined with the exchange rate theory leads to one more important conclusion. Namely, if the assumption about a vanishing interim exchange regime hypothesis suits the current economic situation, then the definition of an optimum currency area has to be revised. A currency area can function in the long run only if it transforms into a monetary union based on common currency. From this standpoint the system of irrevocably fixed exchange rates can be considered only as a temporary solution that precedes establishing of a common currency.

[6] An example of such operationalizing of the OCA theory is OCA index created by T. Bayoumi and B. Eichengreen. They use exchange rate equation based on some OCA properties to predict which countries will be best able to support stable exchange rates. Such countries are likely to be best prepared for participation in a currency area (Bayoumi, Eichengreen 1997).

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