

THE FAILURE OF OCA ANALYSIS

BOGDAN GLĂVAN

The theory of optimum currency areas (OCA) is widely used, at present, by professional economists to defend a system of independent fiat currencies. “In deciding whether and against whom a country should adopt a fixed or a flexible exchange rate, one should consider the various criteria that are familiar from the literature on the determination of optimum currency areas”(Frenkel 1985, p. 126).¹ Mainstream economists maintain that there are benefits to be derived from a system of fiat fluctuating currencies, although not necessarily from the present international monetary order. The OCA theory is supposed to provide the basis for the preservation of flexible exchange rates between regions that have to be determined using the various criteria proposed by the theory.

In this paper the OCA thesis is presented, and then I will attempt to prove:

1. The OCA theory is nonoperational and irrelevant in dealing with the present international monetary situation.
2. The basic postulates of OCA theory are internally inconsistent and incompatible with economic theory.

Although Austrians have addressed the problem of the international monetary system, they have considered Friedman as their main opponent. Friedman’s (1953, pp. 157–203) case for floating fiat money, which laid out the theoretical foundation for OCA theory, has come under strong criticism from Rothbard and other important Austrian writers. Austrians, however have never focused on the subsequent developments in mainstream international economics on fiat money. The objective here is to fill this gap and show that

BOGDAN GLĂVAN is a teaching assistant in economics at the Romanian-American University in Bucharest. The author would like to thank Guido Hülsmann, Walter Block, Jeffrey Herbener, Diana Costea, Nikolay Gertchev, and an anonymous referee. All remaining errors are my own.

¹These kinds of clear and authoritative statements about what I consider to be the essential relation between OCA and the case for freely fluctuating fiat currencies are increasingly easy to find. Also, see Larrain and Velasco (2001, p. 10).

despite these later refinements, the advocacy of independent fiat money is no sounder today than it was before the advent of OCA theory.

The first section puts the OCA theory in historical perspective and attempts to provide an interpretation of the theory's strong ascension in mainstream economics. The basics of OCA theory will be presented here. In Section 2, Mundell's theory is shown to be irrelevant, because of the nonrealistic assumptions used by its argumentation. Section 3 elaborates the claim that OCA theory is wrong on its own terms by pointing out many inconsistency errors. Section 4 concludes the paper.

THE OCA THEORY IN HISTORICAL PERSPECTIVE

Before presenting the weaknesses of OCA theory, it is both interesting and relevant for the subsequent discussion to evaluate the Mundellian contribution from the history of thought perspective.

The first question that must be elucidated is, why did the concept of optimum currency area not arise sooner? To answer it correctly, we must bear in mind clearly the goal of the theory. Mundell's ambition at the moment of the theory's conception was to improve the theoretical basis of independent fiat currencies. Such a foundation was by and large inconceivable before the advent of World War Two. At that time, most professional economists advocated the gold standard. In fact, the great majority of economists regarded the unification of national monetary systems as a normal stage in the development of division of labor and monetary exchanges at a worldwide level. The international gold standard was the spontaneous offshoot of an increasing all-encompassing market economy. This entire framework has been overturned by the fulminating ascension of the revisionist Keynesian paradigm. This paradigm stressed the possibility of "tuning" the economy by means of anti-cyclical government policies or, in modern scientific jargon, macro-stabilization policy. In order for this policy to be implemented, old monetary arrangements had to be destroyed; especially the "barbarous relic" had to be thrown away. Policymakers needed flexible exchange rates to practice interventionism.

No one has ever disputed the fact that floating fiat money allows the state to pursue an independent monetary policy, that is to arbitrarily change, i.e., raise, the supply of money independent of the rest of the world, and to regulate the money growth rate so as to respond to various political constraints. But no important economist recognized the usefulness of macroeconomic policy before Keynes's *General Theory* was published.

In the light of this intellectual background, Friedman's "Case for Flexible Exchange Rates" published in 1953, had, in retrospect, a foreseeable and unavoidable success. In his paper, Friedman attempted (and has largely succeeded) to convince academics of the "benefits" of flexible exchange rates.

While it is true that Friedman represented a very prominent—and, thus, easy to attack—target, and he is entitled to the dubious honor of defending

the domestic scope for Keynesian policies emphasizing the importance of fluctuating exchange rates, I claim that it is wrong to assume that he is the main figure behind the modern advocacy of flexible rates. The real mastermind who laid out the modern foundation of a multiple fluctuating currency system is Robert Mundell.²

The Mundellian contribution can be seen as an attempt to provide a more balanced view on the issue of international monetary arrangements. Unlike the arguments of Friedman (1953) and Johnson (1970), which focused almost exclusively (and uncritically) on the supposed benefits to be derived from monetary independence, the Mundellian theory also acknowledges the advantages of a common fiat currency. It attempts to determine by means of a cost-benefit analysis whether or not an area would be better off with its own currency.³ Therefore, it provides the profession with a comfortable middle ground position between the advocacy of sound money and the defense of the mercantilist-Keynesian stance.

THE OCA THEORY EXPOUNDED

Mundell's analysis argues, in essence, that political borders should not coincide with monetary boundaries. It is appropriate to quote from Mundell:

A system of flexible exchange rates was originally propounded as an alternative to the gold standard mechanism which many economists blamed for the world-wide spread of depression after 1929. But if the arguments against the gold standard were correct, then why should a similar argument not apply against a common currency system in a multi-regional country? Under the gold standard, depression in one region would be transmitted, through the foreign trade multiplier, to foreign countries. Similarly, under a common currency, depression in one region would be transmitted to other regions for precisely the same reason. . . . Today, if the case for flexible exchange rates is a strong one, it is, in logic, a case for flexible exchange rates based on regional currencies, not on national currencies. The optimum currency area is the region. (Mundell 1961, p. 660)

Mundell started from the simple idea that two or more regions sharing a common currency face a demand shock that affects them differently. In response to this phenomenon, prices and wages across the regions need to

²At present, Mundell is an advocate of a world gold-targeting system. He changed his earlier views soon after the publication of "The Theory of Optimum Currency Areas." For an interesting account of this transformation, see McKinnon (2000, pp. 312-18).

³A not so accurate explanation, but nevertheless useful by its emphasis on the essential contribution of Mundell is made by McCallum (1999, p. 3): "The crucial tradeoff identified by Mundell is that an extension of the area which a single currency prevails enhances [microeconomic] efficiency but reduces the possibility of monetary policy responses to shocks [or conditions] that affect various sub-areas differently."

change to reflect the new pattern of spending. Following the Keynesian scenario, if prices and wages were (downward) sticky, the supposed demand shock would lead to huge stocks of unsold goods in the region where the aggregate demand decreased, reducing companies' income and increasing unemployment. The final result could be a general reduction of economic activity.

Depression could be avoided if labor was highly mobile and wage earners could leave the depressed region looking for jobs elsewhere. Alternatively, a regional government issuing fiat currency could rescue the economy by creating money and increasing aggregate spending. This shift in spending offsets the initial negative impact of demand's decline and causes output and employment to expand back to their previous level. Because in Mundell's view, labor mobility and monetary policy are substitutes, the more mobile the labor factor, or the more flexible the wages, the less the need for monetary policy. According to his definition, the OCA is a region characterized by a strong mobility of labor within its borders. Postulating that factors' mobility is limited to small areas, Mundell concluded that large currency areas couldn't efficiently handle economic disturbances. The number and size of OCAs should be determined by weighing the benefits of currency unification against the costs resulting from labor immobility and wage rigidities.

A few years later, McKinnon and Kenen contributed extensively to the theory by adding two alternative criteria for defining an OCA. According to Kenen (1969, pp. 41-60), highly diversified economies are good candidates for this status, because diversification helps them to adjust rapidly to negative external shocks. An economy with a diversified production does not run the same risk of facing a substantive demand shock as an economy with a very specialized industry. McKinnon (1963, pp. 717-25) argued that highly open economies also qualify for OCA since a common currency is very important for their stability and prosperity, essentially because of two reasons. On the one hand, the benefits of monetary unification in terms of reducing the uncertainty related to exchange rate variations are more significant for areas that trade extensively with foreign regions. On the other hand, a greater volume of trade implies that a larger share of foreign goods is brought on the domestic market. Thus, as the author pointed out, in two economically integrated regions, each possessing its own currency, the variation of the exchange rate is strongly correlated with the dynamics of domestic prices. In the extreme situation in which all goods are inter-regionally tradable, prices in one region are heavily influenced by the level of prices in the second region. Therefore, expansionary monetary policy in one region cannot be used as a tool for influencing the terms of trade between the two regions. In a word, the gains of having an independent fiat currency in terms of "tuning" the economy are small.

The criteria set forth by the theory serve to highlight certain advantages and disadvantages of monetary independence. The main advantage of monetary integration, according to neoclassical economists, is the enhancement of

the usefulness of money.⁴ Monetary unification allows international businessmen to save the currency conversion costs. It also reduces the uncertainty over currency exchange rates and supposedly enhances worldwide trade. The presumed benefits of monetary independence were already known to the profession from Friedman's and Johnson's work, and OCA theory did not change anything (neither did it bring anything new) in this respect. The main advantage of floating (fiat) currency is related to the ability of government to smooth the business cycle and to shield the economy against adverse asymmetric trade shocks.⁵ It rests with the OCA supporters to weigh the pros and cons of monetary independence on a case by case basis. In conclusion, "an optimum currency area is a region for which it is optimal to have its own currency and its own monetary policy" (Frankel 1999, p. 20).

In practice however, in order for the theory to become operational, economists need a unit with which to measure factor mobility, or openness, or diversification, in order to draw the physical borders of the OCA. The two best known measures (in mainstream literature) are the extent of trade among the members of a region, and the correlation of their incomes. The higher these two parameters are, the more convenient it is to pursue monetary unification.

⁴Besides this, mainstream literature lists other advantages, but all of them pertaining to the state rather than to the individuals. See, for example McCallum (1999, pp. 3-4), Kwan (1998, p. 556) and Obstfeld and Rogoff (1996, pp. 633-34).

⁵For example, Johnson (1970, p. 210) states:

The fundamental argument for flexible exchange rates is that they would allow countries autonomy with respect to their use of monetary, fiscal and other policy instruments, consistent with the maintenance of whatever degree of freedom in international transactions they chose to allow their citizens, by automatically ensuring the preservation of external equilibrium. . . . Flexible exchange rates would allow each country to pursue the mixture of unemployment and price trend objectives it prefers, consistent with international equilibrium, equilibrium being secured by appreciation of the currencies of "price-stability" countries relative to currencies of "full-employment" countries.

Also, Broda (2001, p. 50) declares:

one of the most important benefits commonly attributed to fully floating exchange rate regimes is that they allow smooth adjustment to real shocks. When domestic prices are sticky and thus change at best slowly in response to shocks, a negative real shock—say, a fall in export demand or in the terms of trade—leads to a depreciation of the nominal exchange rate. This depreciation in the exchange rate, in turn, reduces the price of the tradable goods at precisely the moment that demand for them has fallen and therefore partially offsets the effect of the negative shock. That is, the exchange rate acts as an automatic stabilizer in flexible-rate regimes.

There are a variety of reasons that prompt us to claim that Mundell and his followers added to neoclassical thinking a completely misleading theoretical instrument. In what follows, we will analyze some of its weaknesses closely.

THE IRRELEVANCE OF OCA ANALYSIS

One major drawback of OCA theory is its abundance in fictitious assumptions, the final consequence of which is to make the theory nonoperational. Mundell's model is built on the assumption of factors' immobility. But there is no such thing as factor immobility. In fact, one can wonder how much harm the arbitrary division of goods in terms of tradable (or transportable) and nontradable (or immovable) has done to the proper understanding of international monetary relations. For the neoclassical economist who thinks in these terms, the OCA theory is (more) comprehensible, or at least it seems to identify a problem with the functioning of the market economy. By definition, some goods are immovable beyond certain regional borders. For the OCA theorist, the principal issue is to define the region within which goods are mobile, and outside of which there is "immobility." Then, Keynesian theory teaches him that there is little scope for monetary discretion within the region, because markets will react to solve all the adjustments made necessary by a potential change in domestic demand and supply conditions. Instead, monetary policy is needed to help the regional economy adjust to external shocks, because in this case markets do not work.

But if we realize that such a distinction has no place in economic theory, since it obscures the truth that any good, i.e., an economic means, is the object of human action, and therefore only individuals can decide what means (and in what quantities) they will use to reach their ends, then the whole OCA theoretical significance evaporates. Indeed, from the fact that I do not presently exchange my used underwear on the market, one cannot say that these items are intrinsically nontradable. Every good is tradable; the only issue is the exchange ratio at which its owners will be ready to sell it, or inversely, the price at which other individuals will become interested in buying it. As Salerno (1994, pp. 107-08) reminds us, the experience of the past decades should have sent a message to mainstream economists that their tools are useless in explaining real life.

After decades of unconditioned reasoning in terms of "stickiness," "rigidity," and "immobility," it is time for the mainstream economists to realize that government is the only source of factor immobility. Through its trade policy—imposing different regulations and technical specifications, customs duties, quotas, voluntary export adjustments—immigration laws, regulations concerning capital movement, etc., the state is the only source of barriers for trade and international integration. In addition, the pricing process is also indirectly influenced by the government policy. State intervention is the object of individuals' anticipations, and it consequently changes the behavior

of economic agents. If market participants expect a change in government policy, they will act in order to capture all the benefits and minimize the losses arising from that policy. For example, much of the so-called wage and price rigidities, which plague modern economies, are due to the overestimation of the future loss of the monetary unit's purchasing power. Therefore, far from being an exogenous variable, the immobility of certain factors should be considered as dependent on the political institutions governing the market process (Hülsmann 2003, p. 42).

Leaving aside the criticism outlined above, let us see if the tradeoff supposedly identified by OCA theory is relevant when we address the present world situation. According to the theory, this "optimization problem" arises because of the occurrence of asymmetric shocks, i.e., changes of market conditions that impact two regions differently.

First, it can be argued, based upon the experience with the functioning of the gold standard, that important asymmetric shocks are unlikely to exist. Against the popular misconception (based on an extreme interpretation of Hume's specie-flow mechanism) that during the gold standard any shift in trade patterns was accompanied by symmetrical inflations and deflations in the countries affected, many important studies have shown that in general, prices tended to move together throughout the world (Triffin 1964 and Cooper 1982).

The hypothesis of different countries subject to different economic trends is again falsified by empirical experience, at least as far as developed economies are concerned. As many historical studies have shown, developed countries exhibit similar synchronized cycle patterns.⁶ Production and trade are positively correlated among countries, reflecting the strong mutual dependence arising from a developed international division of labor. As an empirical fact then, these countries are not vulnerable to asymmetric trade shifts requiring different monetary policies and variations in the exchange rates. Put differently, the synchronization of business cycles implies that whatever macroeconomic objectives policymakers pursue, they can attempt to achieve them using a common (or, at least coordinated) monetary policy (Kwan 1998, p. 557).

Besides, it is important to stress that one cannot properly speak of the business cycle as an undetermined phenomenon, that is, one that occurs spontaneously and randomly. As the Austrian theory of the business cycle demonstrates, economic booms are always the consequence of credit manipulation by the central bank. By increasing the quantity of money, central banks create the illusion that more resources are available for investment purposes than actually exist. When entrepreneurs escape the monetary illusion

⁶See, for example, Backun, Kehoe and Kydland (1995) and Baxter (1995) who document the high degree of co-movement in output across developed countries after World War II. Also, for a detailed discussion, see IMF (2002, pp. 104-31).

trap, unsustainable investment projects are brought to a halt, and a period of genuine economic recovery begins.

Therefore, the asynchrony business cycle across countries at a certain point in time is irrelevant for the issue of the case for monetary independence. When what were once previously autonomous regions join and form a larger monetary area (with a common central bank), there will be only one, not many, business cycles.⁷ Thus, given the political origin of the business cycle, and starting from Mundell's definition of optimum currency areas, we cannot avoid the conclusion that OCA is eventually the region of the money issuer!⁸ This should be enough to convince the reader of the OCA theory's inability to handle the real problems it is supposed to handle.

Second, neoclassical economists have for a long time overestimated the benefits of having an independent monetary policy. The significant turn in economic thinking that occurred in the last decades, not to mention the traditional Austrian insights into monetary economics, should convince those for whom the advantages of monetary independence sound very appealing, that they should refrain from overstating the case for fiat currencies. The previous interpretation was that under a floating system each state could target its desired trade-off between inflation and unemployment. The evidence suggested that policymakers can stimulate an artificial expansion of employment by surprising economic actors with a higher than expected inflation rate. Against that, subsequent research has shown that government "cannot fool all of the people all of the time." In fact, as Mises rightly pointed out, all the drawbacks of exchange rate flexibility became obvious long before the modern arguments for floating were developed.⁹ Bad experiences with paper money and the unavoidable wealth redistribution that ensue currency overissue have changed people's minds on the merits of allowing government to manage the currency. Today, even if the loss of monetary independence is generally perceived in the neoclassical literature as a cost of any fixed exchange rate system, mainstream economists doubt how important this cost is, given the bad record of all governments in refraining from inflating the money supply (Alesina and Barro 2001, p. 14 and Dornbusch 2000, p. 3). Moreover, since people everywhere learned about the incentives underlying government policy, they started to defend themselves against government-engineered monetary illusion, incorporating an inflation premium into their contracts. In fact, "the decline in money illusion" and the increasingly dominant idea that

⁷For a somewhat similar position, see Rose (2001a, p. 3).

⁸Machlup (1977, p. 71) essentially arrived at the same conclusion: "Pragmatically, therefore, an optimum currency area is a region no part of which insists on creating money and having a monetary policy of its own."

⁹"The enthusiasm for devaluation vanished quickly. In the years of the Second World War, hardly more than a decade after the day when Great Britain had set the pattern for the flexible standard, even Lord Keynes and his adepts discovered that stability of foreign exchange rates has its merits," Mises (1998, p. 785).

governments should observe the rule of monetary stability, whatever this might be, renders the “advantage” of flexible rates all but useless.

It is nevertheless true that any governmental arrangement enhances the welfare of some individuals, while making other people worse off. Following Mundell, modern neoclassical economists have traditionally approached the fixed-flexible exchange rate debate using a cost-benefit analysis.¹⁰ The great disadvantage of flexible exchange rates consists in their volatility and the subsequent uncertainty introduced in the development of international businesses.¹¹ The main disadvantage of fixed rates is expressed by the inability of policymakers to pursue domestic objectives and in the exposure of the economy to asymmetric shocks. Economists have made strenuous efforts to find a measure for these costs and benefits in order to be able to determine whether a country should stay on flexible rates or move to a “hard peg.”¹² Concerning benefits, they have made some progress employing different econometric techniques and coming up with, for example, estimates of how much the EU gains because of monetary unification.¹³ But as far as costs are concerned, they have ultimately arrived at a dead end. How to measure the “frictions” originating from an external disturbance, (a fall in the demand for some key exports, for example), due to “sticky wages” and “nominal rigidities”?¹⁴

But the drawbacks of OCA supporters’ attempts to balance the costs with the benefits of different exchange rate arrangements do not end here. Another difficulty is that mainstream economists cannot weigh the advantages and disadvantages of flexible rates in the same way they pretend to balance the inflation and unemployment rate. One could not say that a region should stay on flexible rates because “the costs are too high” as one could say, for instance, that we should drive slower and less because gas is more expensive. What is important to grasp is the following point: the benefits in terms of lower transaction costs are permanent, while the costs associated with the lack of domestic monetary autonomy are only temporary, following a specific shock. While economic uncertainty will decrease as a result of a reduction in the number

¹⁰Krugman and Obstfeld (1991) have taken the idea to the extreme, treating the costs and benefits of an OCA as a function of its size. Then the OCA is exactly that area for which marginal costs equals marginal revenue, of course!

¹¹Despite some opinions that exchange rates volatility does not harm international trade because the costs of hedging are relatively small, it is doubtful whether investors and merchants could bypass this problem when they enter long-term contracts. See Hefeker (2000, p. 165).

¹²Many mainstream economists recognize the impossibility of applying OCA theory in practice. See, for example, McCallum (1999, pp. 4-7).

¹³The EU Commission estimated in 1990 the reduction in transaction costs as under one-half of one percent of GDP on average in the EC. See Melitz, (1995, p. 495).

¹⁴Well, one could say, do not ever underestimate the ability of econometricians to get a figure out of anything! See, *ibid.*

of national currencies, we cannot say anything about the number and the amplitude of shocks a certain region will experience in the future. So we cannot compare these benefits and costs and see if it is “profitable” to have fiat currencies or not.

There are ultimately still two problems with the application of the OCA theory, which emphasize even more the fundamental insignificance of the theory. The more fundamental one, familiar to Austrian economists, is the implicit interpersonal comparison of utility, which must be conducted in order to evaluate the welfare increase, when the political momentum for monetary unification or secession has come (Rothbard 1979, pp. 91-96). The attempt to calculate the net effect of monetary (dis)integration, and to base the case for the latter on this result is impossible, because there is no scientific method of comparing individual (that is, purely subjective) utilities. Instead, the fundamental criterion for evaluating monetary institutions should be the respect of property rights. Unlike all neoclassical attempts to evaluate the optimality of monetary institutions, only this criterion makes the analysis consistent and thus is able to deliver sound implications (Hülsmann 2003, p. 9). Monetary institutions which do not observe the private property rights-based criterion decrease society’s welfare, acting only to the benefit of some economic agents. Their effects in terms of the distribution of wealth differ from those which would have prevailed on a free market.

Monetary unification enhances the welfare of individuals only if it springs naturally from the voluntary actions of the money users. To say that a smaller number of currencies (at the extreme, a single currency) encourages unconditionally the development of trade, and supports an increasing of economic welfare, is to treat mechanistically human actions. It is true that the existence of more than one currency makes the result of human activity more uncertain than it would be in a world of a unified monetary system. It is equally true that a reduction of the existing number of currencies decreases uncertainty, because businessmen do not have to pay attention any more to the fluctuation of exchange rates. But following similar reasoning, an extension of the number of commodities exchanged on the market—that is, a deepening of the division of labor—increases uncertainty. Yet, as it is absurd to consider that a reduced diversity promotes society’s welfare just because, by decreasing uncertainty, it simplifies trade and production, it is no more reasonable to assume that monetary unification brings an increasing of welfare. Individuals do not wish unconditionally to avoid uncertainty by eliminating the variety of economic means. Rather, as history illustrates, people want diversity even if, as a consequence of their choice, the world becomes more “complicated.” On a free market, entrepreneurs will try to respond properly to the demands of their customers, providing goods—including money—of the type, quantity, and quality desired. Therefore, only on a free monetary market would it be possible to discover what is the “optimum” circulation of a certain currency. Since political action is not a substitute for voluntary cooperation, a discretionary intervention on money cannot bring any benefits to the community of money

users. OCA theory fails to acknowledge this, precisely because it conflates the proper nature of money, focusing exclusively on a single type of money, namely fiat government-produced money.

The other problem, perhaps more relevant for the mainstream economists, because it explodes any practical relevance of the Mundellian theory, arises because of the lack of independence of the criteria set forth by the theory to establish the proper size of an OCA. These criteria are not permanent, but change over time. Technical progress and changes in individual preferences cause the relative prices of goods to vary permanently. The share of foreign commodities sold in a certain region, as well as the region's exports, change continuously. The degree of specialization of an economy and the mobility of labor are also determined by the concrete array of relative prices. All this makes the attempt to circumscribe OCAs illusory, because as Block rightly objected, "The regions so defined continually change. . . . This however, appears more as a recipe for chaos than a serious suggestion for a new monetary policy" (Block 1999, p. 12).

Arguing for the empirical determination of optimal currency areas,¹⁵ Mundell seems not to realize the full implications of his theory. Indeed, one has to contemplate the possibility that OCA must be continuously redefined each time econometric calculations' results change. A country or region which met the criteria for integration into a monetary union in the past, could no longer satisfy OCA conditions in the present; and regions which are not proper candidates for forming a single monetary area now, could meet the standard in the future. It is obvious that OCA theory opens the gate for a continuous reshaping of monetary circulation and for a permanent change in the number of currencies. Thus, besides the political problems arising from the necessity to convince the inhabitants of a certain region to change the monetary system every time OCA supporters say so, the theory proves itself unable to deal with one of its main tenets, namely the uncertainty generated by the diversity of monetary systems.

It follows that the supposed trade-off OCA theory deals with cannot be identified in practice and consequently, the theory itself has no significant relation with reality.

THE INCONSISTENCY OF OCA CRITERIA

Now, after we have seen that OCA theory is to a large extent irrelevant, for the real world does not fit into its framework, I will show that it is equally inconsistent, i.e., its criteria point to different directions so that ultimately, it cannot yield precise conclusions.

¹⁵Mundell (1961, p. 660) states: "The concept of optimum currency areas helps us to see that the conflict between Meade, who sees the need for more currencies, and Scitovsky, who sees the need for fewer, reduces to an empirical rather than theoretical question."

First, mainstream economists argue that poorly diversified economies are supposed to draw great benefits from exchange rate flexibility.¹⁶ It would indeed seem that the less diversified an economy, the greater its exposure to adverse shocks. In order to understand how misleading and inconsistent the argument is, it is however, useful to examine for a moment the extreme case of a monetary independent region producing only one good, that is, lacking any diversification whatsoever.¹⁷ In this case, it imports almost all other goods and factors required in consumption and production. In fact, such a region is an extremely open one. Because international considerations have a decisive impact on the formation of domestic (regional) prices, the regional terms of trade do not alter in step with the exchange rate. If the foreign demand for its export decreases (or if its import prices increase), and policymakers expand the supply of fiat money to keep unchanged the aggregate demand, the resulting devaluation will bring about an across-the-board increase in prices (since the domestic prices of imported goods are dependent in a large measure upon the exchange rate). Eventually, there will be no “competitive effect” at all. Because the wage rate is so dependent on the level of internationally set prices, wages’ adjustment are inevitable. Thus, the demand shock cannot be mitigated by means of a “cheap money” policy. This consideration shows that, contrary to OCA theory, the expediency of monetary independence is not positively correlated with specialization. (Melitz 1995, p. 499 and Demopoulos and Yannacopoulos 2001, p. 22).

Second, according to Mundell, countries exhibiting similar production structures are prone to symmetric shocks, and they are proper candidates for a monetary union, while countries with markedly different production structures are supposed to be better off with independent floating currencies. Building upon the above discussion, we can demonstrate that this statement is equally untenable and contradicts previous OCA arguments. For countries with different production structures can join and create a wider, diversified area. A raw material exporting country and a finished products producing country can form a monetary union. Then, as OCA theory supporters are committed to saying, the union will be less affected by negative terms of trade shocks than each of its members (Dellas and Tavlas 2001, p. 336).

Moreover, the criteria used to define OCAs are dependent upon the existence of the optimum currency area itself. Consider for example, what happens if a foreign country decides to join a previous OCA, or if it simply

¹⁶Kenen (1969) argued that more specialized areas are not good candidates for monetary union. Eichengren and Krugman build upon this argument in various works. Larrain and Velasco (2001) make a comprehensive case for floating currencies with reference to developing countries.

¹⁷This country would be very much like an individual, who has only one good to supply, i.e., labor, but demands in exchange a lot of “foreign” commodities.

chooses to use its neighbor's money as media of exchange. This monetary unification eliminates the uncertainty associated with exchange rate fluctuations, and may enhance trade between the two countries. That is, one of the OCA criteria might be satisfied *ex post*, if not *ex ante*. Inversely, the dissolution of a monetary union may move the world back to barter and would discourage trade and investment. As a consequence, the criteria defining an OCA could be even less well matched by the new independent monetary areas.

A number of neoclassical authors have recognized the interesting idea that OCA criteria are self-enforcing. Famous economists like Krugman (1993) and Eichengreen (1992), building upon the old argument set forth by Adam Smith, have maintained that, as trade develops and the world economy becomes more integrated, the division of labor leads countries to become more specialized. They argue that as a result, the correlation of incomes among different countries tend to decrease, which makes the case for monetary nationalism.¹⁸ Such a keen remark helps us to understand better how weak are the intellectual roots of OCA theory. It does not advance the case for national money; it only makes more evident the weaknesses of a construct built to discover when and where a common currency should be utilized. In order to understand this, all one has to do is pursue to its ultimate logical consequences the assumption that specialization works against monetary unification.

Since any joining of an area to another will make the new region more diversified than each of the two old ones, it is reasonable to conclude that the new region is a good candidate for a common currency. By the same reasoning, we find that the final OCA is the whole world. But what if a region with a single currency is not as diversified as Eichengreen and Krugman think it should be? Then it should split into a number of separate monetary areas. Yet, each of the new regions is less diversified than the former one. According to Eichengreen and Krugman, they should then break up into still more monetary regions. As Frankel and Block notice, "the process of dissolution will continue until the world is down to the level of the (fully-specialized) individual" (Frankel 1999, p. 32) and "this would be the end of money as we know it . . . we would fall back to a situation of barter" (Block 1999, p. 13).

Such examples show the inconsistency of OCA theory in particular and an important flaw characteristic of all mainstream positivist economics in general. This is the tendency to analyze specific objective phenomena in terms of correlation, not causality; empirical facts are considered given, exogenous in relation to the actions of individuals, although it might be perhaps even better to say that human actions are expelled entirely from the analysis. As far as our subject is concerned, income correlation and trade patterns cannot be considered exogenous. They are not given once and for all. They depend upon

¹⁸They are refining the Kenen criterion of OCA. See Kenen (1969).

the preferences and actions of individuals, and in turn, upon the very political choice at stake.

Quite apart from this issue, there is another problem with the asymmetric shocks and the need for exchange rate adjustment. This problem follows from the special hypothesis the Mundellian analysis is built upon. The OCA theory assumes a two-country, two-goods model. Relaxing one of these assumptions, as done below (supposing that there are more than two countries or more than two goods involved), makes the analysis inconsistent on its own terms and challenges the validity of its conclusions.

Neoclassical economists assume (wrongly) that devaluation is a substitute for relative price adjustment, and that the exchange rate can be used as a weapon against asymmetric shocks. The acceptance of the mainstream framework leads us into difficulty as soon as we want to apply the theory to more than two-country situations. In Mundell's hypothesis, the trade-off is clear. If the two monetary independent countries join to form a single currency area, then each will give up the capacity to oppose foreign (that is, neighbor-induced) disturbances and gain the benefits of possessing a single medium of exchange and account. Nevertheless, in the real world, the case is not so simple. Suppose for example,¹⁹ that an adverse external development requires a reduction of 10 percent in the level of wages in one monetary union member, and that this change could be mitigated by a 10 percent depreciation of the currency. Now, if the other union member is unaffected by the unfavorable foreign change, then, according to conventional wisdom, the country affected could issue its own fiat money and allow the currency exchange rate to drop in order to offset the rigidity of wages by monetary easing. But if the shock affects not only the country in question, but also the other union member or the rest of the world, and in different ways, then a 10 percent devaluation will not alleviate the need for relative prices to adjust. Such an asymmetric shock will require different movements of relative prices and wages between the union members affected and between them and the rest of the world. We can thus see that the problem of asymmetric shocks requires an analysis of relative prices, even in the mainstream framework, when the number of countries is more than two. Otherwise, the exchange rate adjustment will be misleading and will represent itself as an additional source of disturbance. It is then by no means obvious how much exchange rate adjustment the members of a currency union give up.²⁰ Or, to put it differently, it is not clear at all how much advantage flexible exchange rates provide.

The argument that devaluation helps the adjustment process encounters similar difficulties if we extend the analysis by taking into account the realistic hypothesis of two (or more) countries producing more than two goods (Lehment 1984, pp. 256-57). To illustrate this, let us imagine a model in which

¹⁹In what follows, I build our analysis on Melitz (1995, p. 494).

²⁰One could say that mainstream economists ignore the problem of relative prices by hypothesis, but finally are forced to admit its existence.

there are two countries, *A* and *B*. *A* produces corn and steel, while *B* produces corn and textiles. In this model, let us allow for a change in the demand from country *A*'s steel to country's *B* textiles. If the government of country *A* decides to devalue the currency to help the economy adjust to the new state of the market, then not only would this measure decrease the real wages of workers in the steel industry, but it would also affect the relative prices and wages in corn production. The production of corn is thus boosted in country *A*, and checked in country *B*. Under a system of separate fiat money, there is a need for prices and wages in a particular industry to change, even if that industry is not directly affected by the alteration of market participants' preferences.

This development modifies the original implication of Mundell's model. Relative to his model, it seems that devaluation has spillover effects that go against the welfarist's implicit assumption of his analysis. In fact, what happens is that in the real world of more than two goods, devaluation changes not only the relative price of the industry directly affected by the external shock, but also the whole relative level of prices. National structures of prices are moved against each other, a situation criticized heavily by Hayek for example, but unacceptable even in the mainstream's own framework.

It should be noted that in the real world with a multitude of goods, all possible changes of consumer preferences or supply conditions revolutionize the whole pattern of prices and redistribute wealth among the society's members. As such, the impact of various shocks can never be confined to certain individuals or to the region inhabited by these persons. Neoclassical economists offer a holistic definition to asymmetric shocks, assuming that only country-specific disturbances can occur. Yet it is not appropriate to assume that only shocks that impact a whole region can occur, if we try to explain real events. All shocks are specific, i.e., they influence differently each individual. And not only ordinary commodity price changes but also monetary changes represent such shocks. Therefore, it is meaningless to conceive that variations in the quantity of money can offset the impact of a fluctuating consumption demand.

CONCLUSION

In this paper I have tried to show that OCA theory fails to advance the case for independent fiat currencies. It does so both because of its empirical irrelevance, and because of its internal inconsistencies. Therefore, from the perspective of international monetary economics, there is no theoretical justification for the present monetary organization. Rather other factors, more related to political interests than to sound economics, should be held responsible for it. It is perhaps interesting to consider the mainstream economists' systematic reaction when they discover there is no scientific justification for a fluctuating fiat currency system.²¹ They simply throw away the whole analysis and return

²¹Frankel (1999, p. 33). "But it is disturbing to think that if governments did follow the 'correct' OCA criterion, the outcome must be either a world of one currency or a world

to “common sense” propositions. Some of them even go so far as to recognize the merits of a world currency, eventually pegged to gold, but then dishonestly dismiss the case on the basis of “beliefs,” or popular wisdom.²²

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of 5 billion. This would be an egregious departure from the economist’s belief (my emphasis) in interior solutions. It doesn’t sound right.”

²²Rogoff (2001, p. 7).

One could bypass many of the objections I have raised by adopting a world currency pegged to a commodity basket (or just, say, to gold). But I believe (my emphasis) the invention of the modern central bank has actually, on the whole, been a very good one, and certainly not worth abandoning for the uncertain gains of global currency unification!

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