

Monetary Union: A Theoretical Perspective *

1. Introduction

According to the absolutist approach to the history of economic analysis (Pantaleoni 1898; Schumpeter 1954; Stigler 1969), changes in institutions and in the structure of the economy may give rise to a demand for theories, although such factors do not shape the theories themselves as the relativist approach maintains. Monetary union seems a case in point, since the research on the subject has been stimulated by various proposals for monetary unification in Europe in the last half-century. In fact, the present outgrowth of literature is but the last stage of a debate which goes back to the end of the Second World War when the spread of federalist ideals prompted early analyses of the implications of supranational institutions and of an extended currency area (Einaudi 1945; Hartland 1949; Meade 1953, 1957; Scitovsky 1957, 1958). In 1970, the Werner Report gave new momentum to these studies after the contributions to the theory of optimum currency areas in the 1960s, pioneered by Robert Mundell (1961). However, despite the number of publications of the last three decades, no consensus has been reached and, as Niehans puts it, "optimum currency areas are still a concept in search of a theory" (1984, p. 294). This is reflected in today's debate among academic economists on EMU, widely echoed in the financial press. Indeed, the controversial nature of the effects of monetary union does not allow

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any hard and fast answer to the sundry questions it raises. The present paper revisits the issues at stake and sets them in the perspective of monetary theory. Monetary unification is just a case study in the theory of money so that its treatment is intimately related to the state of advancement of the latter. In the absence of substantial progress in the field, different emphasis on certain assumptions brings contrasting results, especially with regard to the basic question of the welfare implications of participation.

2. Effects of Monetary Union

The introduction of a common currency poses problems that fall into two main classes, concerning respectively the transition towards monetary union and the operation of monetary union. While the former come to an end once the common currency starts to circulate, the latter span the entire life of the union. Transition is thus a once-and-for-all type of process which brings about a variation in the rate of growth of high-powered money in the countries involved. The effects of these changes in money, whose magnitude is related to the initial range of the base growth rates, are strongly debated especially with regard to the timing of transition. The dispute between the gradual and the immediate approach mirrors, albeit hinging on different arguments, the controversy of the 1970s between the so-called "economists" and "monetarists" (Giovannini 1990, pp. 217-18). The problems of transition are momentous from a policy standpoint. Yet, on theoretical grounds, their analysis is closely related to the key assumptions that also explain the smooth operation of a monetary union, *e.g.* the rationality of expectations and the absence of frictions in macroeconomic adjustment.

The factual implication of monetary union is the loss of monetary sovereignty, and thus of the conduct of monetary policy, by each member country. This proposition can also be viewed from an international economics perspective since monetary union is analogous to the adoption of irrevocable and perfectly fixed exchange rates. In such a monetary regime, the single country cannot pursue an independent monetary policy insofar as it does not control the total size of the monetary base but only its composition. This statement is

of course purely abstract since a currency area and a fixed exchange rate system differ in kind rather than in degree. Indeed, however narrow is the exchange rate band, a system of fixed rates is, as it were, an agreement that sovereign states may break at any moment. Hence, the current argument according to which the EMS is already a *de facto* monetary union should be handled with the greatest caution.

In his seminal paper on the theory of optimum currency areas, Mundell (1961) identified labor mobility as the criterion which maximizes social welfare. Other factors, *i.e.* the share of tradables (McKinnon 1963) and product diversification (Kenen 1969), were also put forward to account for optimality. The immediate objection to these approaches is their lack of generality, since they make optimality depend on different criteria, thus posing the question of choosing between them. In order to overcome these difficulties, a more general approach (Ishiyama 1975) considers the overall welfare costs and benefits of a monetary union. The benefits essentially stem from the savings in transaction costs involved in the enlargement of the area where the same means of payment is used. The modern literature on the foundations of monetary theory (Ostroy and Starr 1990) views money as an information-producing mechanism which allows the decentralization of exchange and, hence, enables agents to exploit the gains from trade without violating the budget constraint. The establishment of the union brings about sundry welfare gains repeatedly illustrated in the literature. First, the quotation of prices in several units of account is avoided. Second, no resources need to be employed in order to convert the different monies of the formerly independent countries. Third, no forward markets for foreign exchange are necessary within the union. Besides, there will be economies of scale in foreign exchange reserves (Meade 1957). These benefits are closely related to the threefold classification of the functions of money – unit of account, medium of exchange, and store of value – and increase with the openness in trade and capital movements (Corden 1992, pp. 2-3). The welfare benefits must be set against the welfare costs which are mainly related to the adjustment problem. While the nature of the benefits is widely accepted, the analysis of the costs is less straightforward.

In any market, a state of disequilibrium brings about price and/or quantity changes that drive towards a new equilibrium. Monetary union, by fixing the "price of currency" in each member country, puts the burden of adjustment on quantities, *i.e.* on output

and employment. Therefore, a key prerequisite for the optimality of a currency area is a high degree of flexibility of certain quantities in the equilibrating mechanism. This is the core of Mundell's theory. The region of a monetary union hit by an asymmetric shock, say a fall in the demand for its product due to a change in tastes, suffers a trade imbalance. In order to restore equilibrium at an unchanged relative price, there must be an upward shift in the supply of the home-produced commodity through labor migration out of the region.

The disequilibrium could in principle be eliminated by a relative price instead of a quantity change. Since in a currency area a variation in the exchange rate is ruled out, the only way to affect relative prices is via a price level fall in the region hit by the adverse shock. Indeed, full price flexibility would do away with disequilibrium problems at once.

These two distinct adjustment mechanisms, which hinge on quantity and price changes respectively, may not operate since labor may not be mobile – owing to a variety of institutional, cultural, and social factors – and prices may be sticky. In that case, disequilibrium is going to persist and the region affected by an adverse shock will experience a drop in employment and output. Adjustment will be slow and entail a high social welfare cost. In such a state of affairs, the outcome of the traditional analysis is the call for flexible exchange rates between regions within which there is high labor mobility.

This sketch of the theory of optimum currency areas shows that Mundell's contribution relates to the solution of the adjustment problem in the particular case of price and wage rigidity. However, a more general approach can be pursued by framing the subject in the theory of monetary policy. Viewed from a broader perspective, the ultimate issues underlying optimum currency areas concern the effects of changes in money on social welfare. Various efforts in this direction seem to characterize the most recent work in the field. Dwelling on contemporary developments in monetary policy, some authors (Giavazzi and Pagano 1988) have emphasized the constraint that fixed exchange rates impose on the monetary authority thus enhancing the credibility of policy conduct and reducing the welfare costs of a deflationary policy. On the other hand, Canzoneri and Rogers (1990) follow a new classical macroeconomic approach and stress the fiscal revenue aspect of inflation. Hence, the possibility of pursuing an independent monetary policy outside the monetary union must be evaluated in an optimal taxation context in which in-

flation is one of the revenue sources. This provides a further criterion for defining optimum currency areas because the latter would include those countries that impose the same seignorage.

3. Optimum Currency Areas and Monetary Policy

In a well-known passage quoted by Mundell (1961, p. 662) and more recently by Sala-i-Martin and Sachs (1992, p. 1), John Stuart Mill refers to the existence of national currencies as a "barbarism". For the classical economists, the optimum currency area is the world. This is the natural outcome of the main hypotheses of their model. The classics pointed to the welfare benefits of a common currency, related to the savings in transaction costs, and did not even pose the adjustment problem. Indeed, in the frictionless world envisioned by the classics, the economy is self-adjusting and any shocks are equilibrated by market forces, *i.e.* the specie-flow mechanism. Furthermore, classical monetary theory hinged on metallism, relating the value of money to the value of the money commodity (Schumpeter 1954, p. 288), which entirely waved aside the modern conception of monetary policy. In a metallic standard, the unit of account must be kept equal to a given quantity of the money commodity and the principle of free coinage provides both a rule of behavior and a constraint for the monetary authority. Of course, even commodity monetary systems require some management activity by the central bank, but the chief objective remains the maintenance of parity so that those managing activities are quite distinct from the present-day use of policy instruments in a welfare optimizing framework.

Mill's quotation is evocative of Keynes's famous dictum that the gold standard was "a barbarous relic" (1923, p. 172). The clash between these two standpoints perfectly sums up the issues at stake. Keynes's main concern, in the *Tract on Monetary Reform*, was to put the level of economic activity at the center of the stage, and he accordingly called for the demise of the gold standard, whose chief goal was the stability of purchasing power. The crisis of the international monetary system after the First World War paved the way to theoretical developments leading to an "elastic" or "managed currency". In the 1920s, Keynes and several distinguished economists like

Cassel and Pigou overturned the classical stance and pioneered the modern conception of monetary policy.

This brief reference to Mill's and Keynes's viewpoints illustrates the relevance of the key hypotheses of the model of the economy for the role and effectiveness of monetary policy. In this regard, there is as yet no consensus. New classical macroeconomists and new Keynesians are but the last example of dissenting schools that go back centuries. Schumpeter's authoritative account (1954, pp. 281 ff.) shows how the classical approach prevailed and became the orthodox view. Nowadays, there is a resurgence of the classical school and, in the rules *vs.* discretion debate, the pendulum has swung back in the direction of rules. Given the tight relationship between monetary policy and the exchange rate, these developments have reinforced the case for monetary union. A metallic standard or fixed exchange rates in a fiat money system is the institutional counterpart to a monetary policy based on rules. In principle, a rule fixing an equal rate of money growth in a given number of countries is analogous to the introduction of a common currency in those countries. The theoretical foundations of a monetary rule in the new classical macroeconomics, however, are quite distinct from Friedman's (1960) analysis. The latter hinges on the lack of knowledge of the model of the economy and on long and variable lags in the effectiveness of policy actions. The new approach, instead, is based on the rational expectations hypothesis or on the strategic behavior of agents, which in any case incorporates rational expectations, *vis-à-vis* the monetary authority. In fact, the rational expectations hypothesis postulates that the agents know the "true" model of the economy which, together with the relevant data, is an element of the agents' information set. This hypothesis implies monetary policy ineffectiveness even in the short run and, thus, excludes discretion since monetary policy only raises the inflation rate with no impact on output and employment. Hence, while both Friedman and rational expectations theorists favor a policy rule, their arguments differ sharply in that the former stresses short-run policy efficacy as a powerful source of income fluctuations.

The case for rules has been further strengthened by the well-known argument of the time inconsistency of central bank behavior. As mentioned above, the call for flexible exchange rates on the part of new classical macroeconomists may rest on the pursuit of an inflationary policy within an optimal taxation framework (Canzoneri

and Rogers 1990). Otherwise, the modern classical approach lends itself to the case for monetary union; for one thing, its reliance on the Walrasian general equilibrium model does away with any concern for permanent disequilibria in the labor market. It is only when rigidities of various types are introduced that the classical paradigm fails to yield an optimum solution. The main rigidity regards prices and wages and has been emphasized in the traditional Keynesian model. The new Keynesians have put forward some original hypotheses, *i.e.* menu costs and efficiency wages, which explain these rigidities in a context of rational behavior. In this theoretical framework, an active monetary policy may play a key role in tackling the adjustment problem.

The efficacy of monetary policy, however, does not necessarily stem from strictly Keynesian assumptions, *i.e.* rigidity of labor contracts (Fischer 1977) or menu costs (Mankiw 1985), but may be equally derived from an alternative hypothesis based on the optimal use of information (Stigler 1961). While Friedman emphasizes the lack of knowledge of the economy, the rational expectations hypothesis assumes that individuals know the "true" model of the economy. Most plausibly, information is neither wholly lacking nor complete but is just a scarce commodity and is then used optimally by rational agents. The resort to monetary policy, then, allows the country hit by an adverse shock to reduce the adjustment cost in terms of employment and output. This policy of course cannot aim to raise income beyond its natural level but may smooth out fluctuations in economic activity. If the magnitude of policy actions is small enough, rational agents do not revise expectations because the net benefit of processing information is negative. Exchange rate flexibility associated with this policy conduct leads to an optimum solution if the area affected by the disequilibrium coincides with the nation. This is, in fact, recognized by Mundell in his discussion of a shock affecting the Eastern regions of both Canada and the United States, which illustrates his original hypothesis.

"The preceding example does not destroy the argument for flexible exchange rates, but it might severely impair the relevance of the argument if it is applied to national currencies. The logic of the argument can in fact be rescued if national currencies are abandoned in favor of regional currencies" (1961, p. 660).

Indeed, if the case for short-run monetary policy effectiveness can be made via either new-Keynesian assumptions or the optimal use

of scarce information by rational agents, then monetary policy, and possibly a variation of the exchange rate, may bring about adjustment when shocks hit the entire nation. This is the "flexible price" solution. Alternatively, if the exchange rate is fixed and shocks occur only in a limited area, labor mobility is needed to re-establish equilibrium. This is the "flexible quantity" solution. Therefore, the theory of optimum currency areas can be viewed from a different perspective inquiring about the effects of changes in money on social welfare so that monetary policy efficacy may provide an alternative criterion for defining optimality. In the prevailing intellectual climate of the time, Mundell stressed price rigidity and relied upon quantity variations in order to restore equilibrium. Ultimately, Mundell's main contribution was to point out the possible lack of correspondence between the region hit by shocks and the nation. His suggestion of the need to make the two coincide follows from, or is an application of, the classical assumption of full input mobility within the nation and total absence thereof outside (Mundell 1961, p. 661). Yet research on a general solution of the optimum currency area problem should be directed to the relative effectiveness of the different adjustment mechanisms working their effects through both prices and quantities. Admittedly, there is little to recommend this suggestion on theoretical grounds. But this may after all explain the soundness of Jürg Niehans' skepticism concerning the theory of optimum currency areas (see p. 1).

4. The Role of Fiscal Policy

This analysis of the main issues underlying optimum currency areas suggests some general propositions concerning the process of monetary unification. Member countries maximize a social welfare function subject to a set of constraints which describe the model of the economy and are in turn related to the arguments of the social welfare function. Hence, the country's preferences must be set against the main hypotheses of the model in order to evaluate the net welfare effects of participation. The outcome may not be optimal but can nevertheless give rise to a monetary union if the countries follow a satisficing instead of a maximizing behavior (Simon 1955). Therefore,

a currency area, though not optimal, may yet be viable as long as each member's welfare does not go below a given threshold (Cesarano 1985).

In this regard, a most hotly debated issue is the necessity of federal fiscal policy for the success of the monetary union. Economists are divided on this point. In the early literature, Meade (1953, pp. 43, 45; 1957, p. 165), Scitovsky (1957, p. 98) and Lundberg (1972, p. 129) argued the case for federal fiscal policy. The removal of exchange rate variations from the policymaker's weaponry could be made up for other instruments and federal fiscal policy could then play a paramount role. Triffin (1972) and Lutz (1972) held the opposite viewpoint as well as Ingram (1959, p. 631), who stressed the role of capital movements in the adjustment mechanism. Recent works (Eichengreen 1991; Sala-i-Martin and Sachs 1992) have buttressed the case for fiscal union emphasizing not only the transfers in favor of the countries affected by adverse shocks but also the built-in redistributive mechanism provided by a federal fiscal system. In fact, an income fall in a region automatically triggers a decrease in federal taxes and an increase in transfers, mainly in the form of unemployment benefits, thus helping to smooth out adjustment. According to the estimates by Sala-i-Martin and Sachs (1992) concerning the U.S. economy, a one-dollar drop in income in a state brings roughly a 34-cent decline in federal taxes by residents of that state and a 6-cent increase in federal fiscal transfers. Besides, Eichengreen (1991) illustrates how the effects of the second oil shock on Michigan's economy were mitigated through the federal fiscal system. Even more telling empirical evidence is documented in Hartland's (1949) early article showing the substantial redistributive effect of the federal fiscal policies implemented in the inter-war period and especially during the Great Depression. Some of the contemporary studies have been criticized, and it has also been argued that the fiscal policy of the single states can attain the same redistributive goal (Bini Smaghi and Vori 1992). In any case, the main issue here is the confidence in a self-adjusting economy. Alternatively, the lack of this confidence suggests the use of policy instruments in order to foster the adjustment mechanism. It is worth observing that no less an enemy of government activity than Milton Friedman has emphasized the role of fiscal and monetary policy in a monetary union. In his classic article on flexible exchange rates, he contrasts the sterling area with the United States and, in a footnote, antici-

pates some essential elements of the theory of optimum currency areas.

"The key difference for present purposes between the different states of the United States, on the one hand, and the different members of the sterling area, on the other, is that the former are, while the latter are not, all effectively subject to a single central fiscal and monetary authority – the federal government – having ultimate fiscal and monetary powers. In addition, the former have, while the latter have not, effectively surrendered the right to impose restrictions on the movements of goods, people, or capital between one another. This is a major factor explaining why a central monetary authority is able to operate without producing serious sectional strains. Of course, these are questions of economic fact, not of political form, and of degree, not of kind. A group of politically independent nations all of which firmly adhered to, say, the gold standard would thereby in effect submit themselves to a central monetary authority, albeit an impersonal one. If, in addition, they firmly adhered to the free movement of goods, people, and capital without restrictions, and economic conditions rendered such movement easy, they would, in effect, be an economic unit for which a single currency – which is the equivalent of rigid exchange rates – would be appropriate" (1953, p. 193, footnote 16).

5. Conclusions

After a brief survey of the main issues concerning monetary union (section 2), the present paper has attempted to put the subject in a broader perspective, showing that the central questions concerning the optimality of currency areas are strictly related to the theory of monetary policy and, particularly, to the effectiveness of domestic monetary actions (section 3). In fact, participation in a monetary union is tantamount to the loss of monetary sovereignty and thus of the monetary policy instrument. The basic problem, then, is to evaluate the effects of this loss on social welfare. In this regard, federal fiscal policy can play a crucial role in the adjustment mechanism (section 4). Historically, the demise of the metallic standard after the First World War, eventually heading towards a fiat money system, paved the way for the modern conception of monetary policy. Yet, the other side of the coin of this development is the lack of rules which act both as a guideline and as a constraint for the monetary

authority. An alternative disciplinary framework may be difficult to set up and enforce. The provision of written rules, *i.e.* a monetary constitution, may not be an adequate substitute for the gold standard mythology if the various forces at work, not only economic ones, do not drive towards an equilibrium path.

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