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What Have we Learnt about Monetary Integration since the Maastricht Treaty?*

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Abstract

The present governance of the euro area has been devised assuming that the world fits the monetarist-real-business-cycle theory. But that theory is not a correct representation of the world. The European monetary union is a remarkable achievement, but remains fragile because of the absence of a sufficient degree of political union.

Introduction

The late 1980s and the early 1990s are turning points in the history of monetary unification in Europe. It was the time of the Delors report which provided the intellectual basis of the Maastricht Treaty. The latter was signed in 1991 and developed the blueprint for monetary union in Europe. At the end of the 1990s monetary union became a fact of life in a large part of the European Union.

What have we learnt since the Treaty was signed? This is the question I attempt to answer in this article. Let us first look at the views prevailing at the time of the signing of the Treaty. We will then return to the question of what we have learned since then.

I. Mundell I and Mundell II

At the time of the signing of the Treaty, the economic profession was still struggling with the pros and cons of monetary union. This is also evident

* I am grateful for the comments of Waltraud Schelkle and two anonymous referees.

from my textbook *The Economics of Monetary Integration* first published in 1992, which could not make up its mind whether a monetary union in Europe was a good idea. The reason is that at the time there were really two theories competing for academic attention, with very different policy implications. Following McKinnon (2004), I will call the first of these theories, Mundell I, and the second theory, Mundell II. Mundell I provided the basis for widespread scepticism about the desirability of a monetary union in Europe, while Mundell II was used by the proponents of monetary union.

Mundell I is the traditional theory of optimal currency areas (OCA) pioneered by Mundell (1961) in the early 1960s and further elaborated by McKinnon (1963), Kenen (1969) and others. The OCA theory determines the conditions that countries should satisfy to make a monetary union attractive, i.e. to ensure that the benefits of the monetary union exceed its costs. This theory has been used most often to analyse whether countries should join a monetary union. It can also be used to study the conditions in which existing members of a monetary union will want to leave the union. (I will come back to this aspect of the theory later.)

The conditions that are needed to make a monetary union among candidate Member States attractive can be summarized by three concepts:

- Symmetry (of shocks)
- Flexibility
- Integration

Countries in a monetary union should experience macroeconomic shocks that are sufficiently correlated with those experienced in the rest of the union (*symmetry*). These countries should have sufficient *flexibility* in the labour markets to be able to adjust to asymmetric shocks once they are in the union. Finally they should have a sufficient degree of trade *integration* with the members of the union so as to generate benefits of using the same currency.

One can summarize this theory in the form of graphical representations (see De Grauwe, 2005). This is done in Figures 1 and 2.

Figure 1 presents the minimal combinations of *symmetry* and *flexibility* that are needed to form an optimal currency area by the downward-sloping OCA line. Points on the OCA line define combinations of symmetry and flexibility for which the costs and the benefits of a monetary union just balance. It is negatively sloped because a declining degree of symmetry (which raises the costs) necessitates an increasing flexibility. To the right of the OCA line the degree of flexibility is sufficiently large given the degree of symmetry to ensure that the benefits of the union exceed the costs. To the left of the OCA line there is insufficient flexibility for any given level of symmetry.

Figure 1: Symmetry and Flexibility as OCA Criteria

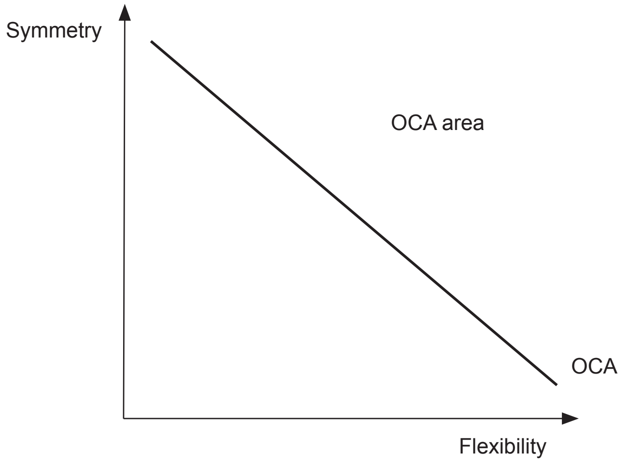


Figure 2: Symmetry and Integration as OCA Criteria

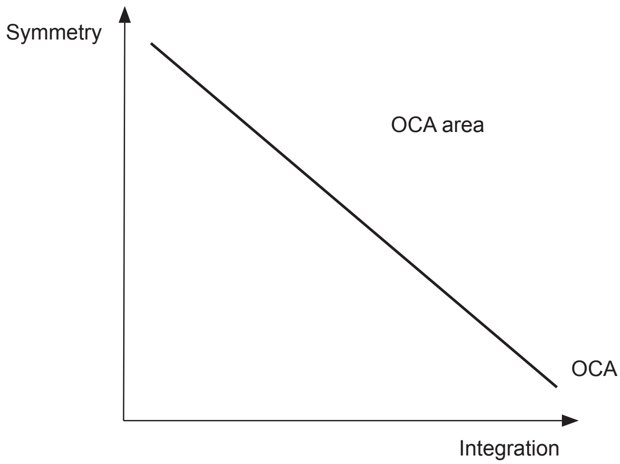


Figure 2 presents the minimal combinations of *symmetry* and *integration* that are needed to form an optimal currency area. The OCA line represents the combinations of symmetry and integration among groups of countries for which the cost and benefits of a monetary union just balance. It is downward sloping for the following reason. A decline in symmetry raises the costs of a monetary union. These costs are mainly macroeconomic in nature. Integration is a source of benefits of a monetary union, i.e. the greater the degree of integration the more the member countries benefit from the efficiency gains of a monetary union. Thus, the additional (macroeconomic) costs produced by less symmetry can be compensated by the additional (microeconomic) benefits produced by more integration. Points to the right of the OCA line represent groupings of countries for which the benefits of a monetary union exceed its costs.

The presumption of many economists at the end of the 1980s was that the EU countries should be located to the left of the OCA lines in Figures 1 and 2, i.e. given the degree of integration achieved in the EU there was still too much asymmetry and too little flexibility for the EU to form a monetary union whose benefits would exceed the costs.

There was another intellectual tradition, however, going back to a relatively obscure paper of Mundell published in 1973 (Mundell, 1973). Its main insights can be summarized as follows. The new Mundell (Mundell II) starts from the situation of a world of free mobility of capital; a situation that was emerging in the 1970s but that seemed remote at the start of the 1960s. In a world of free mobility of capital, the exchange rate ceases to be a stabilizing force. Instead, according to Mundell II, the exchange rate becomes a target of destabilizing speculative movements and thus a source of large asymmetric shocks. Thus, the view of Mundell I implying that the exchange rate could be used to stabilize the economy after an asymmetric shock should be abandoned. In the world of Mundell II joining a monetary union should not be seen as a cost arising from the loss of the exchange rate as an adjustment mechanism, but as a benefit of eliminating a source of asymmetric shocks. For most countries, the exchange rate does not provide a degree of freedom but uses up a degree of freedom in their economic policy since they have to stabilize this asset price. Needless to say, this view is not very popular among the crowd of believers in the efficiency of the foreign exchange markets. In fact, the view expressed by Mundell II is based on the idea that foreign exchange markets are not efficient and should not be trusted to guide countries towards macroeconomic equilibrium.[1]

[1] This view has received increased empirical backing. There is now substantial empirical evidence that the exchange rate is disconnected most of the time from its fundamental value and that its volatility cannot be explained by underlying fundamental volatility (see De Grauwe and Grimaldi, 2006, for evidence and implications of these findings).

There is a second insight in Mundell II. This is that only in a monetary union can capital markets be fully integrated so that they can be used as an insurance mechanism against asymmetric shocks (see Asdrubali *et al.*, 1996). When countries remain outside a monetary union they cannot hope to profit from insurance against asymmetric shocks provided by capital markets in the rest of the world. The reason is that the large and variable exchange risk premia prevent these capital markets from providing insurance against asymmetric shocks.

Thus the world of Mundell II is one in which countries that stay outside a monetary union will have to deal with large asymmetric shocks that arise from the instability of international capital flows. In addition, these countries' ability to insure against traditional asymmetric shocks is severely restricted when they stay outside a monetary union. With such an analysis it should not be surprising that Mundell II became a major promoter of monetary union in large parts of the world, and in particular in Europe.

At the time the Maastricht Treaty was signed, most academic economists' minds were framed by Mundell I and scepticism about the prospects of a monetary union was widespread. In the end Mundell II prevailed. Why did this happen?

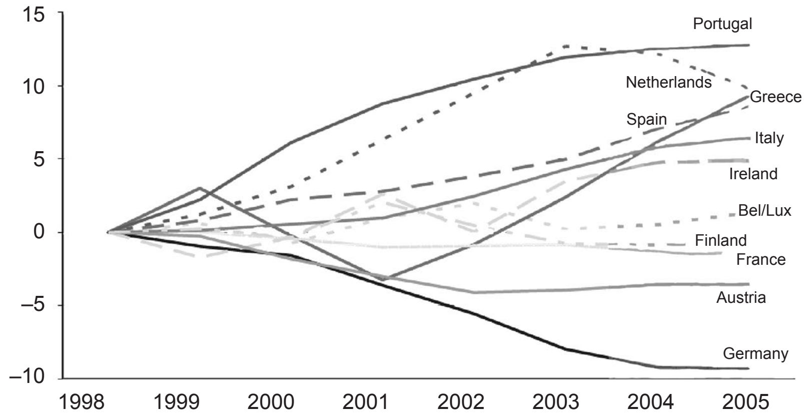
There was first the collapse of the EMS in 1992–93. This historical episode made clear that in a world of free mobility of capital, fixed exchange rates were unsustainable as long as central banks maintained their own independent monetary policies. The EMS-crisis convinced many continental European economists that a choice had to be made for one of the two 'corner solutions' in exchange rate regimes, i.e. full flexibility of exchange rates or monetary union. Many decided that the latter would be the least bad choice. Mundell II triumphed on the European continent.

There was also the effect of an intellectual revolution that was started in the 1970s in the academic world and that reached the policy world during the 1980s. This was monetarism. Mundell I is very much a Keynesian theory, stressing that in a world of price and wage rigidities monetary policies, including exchange rate policies, can be used effectively to stabilize the economy. Monetarism, instead, stressed that activist monetary policies become sources of instability and that central banks should focus on their core business which is to maintain price stability. The logical consequence of monetarism was the view that central banks do not lose their capacity to stabilize their national economies when entering a monetary union, since they did not have such a capacity in the first place. In this monetarist vision (and Mundell II was also an outgrowth of monetarism) the costs of a monetary union are small. In terms of our Figures 1 and 2, the OCA line is located very close to the origin. The OCA-region is a vastly expanded one.

These developments explain why EMU became possible on the European continent. One of the paradoxes, however, is that as the Mundell II framework that explains the successful start of the euro area will be pushed into the background and will increasingly be forgotten, the Mundell I analysis will gain in importance again. This is already evident in a number of countries that have recently experienced large losses of competitiveness (an asymmetric shock). We show the real effective exchange rates in the euro area since 1998 (see Figure 3). The striking fact is the extent to which yearly inflation differentials have led to sustained changes in these real exchange rates. As a result of these trends, some countries (Portugal, Netherlands, Spain and Italy) have lost a significant amount of price competitiveness. Others, like Germany and Austria have gained a significant amount of price competitiveness.

This phenomenon will lead to the need to adjust in many countries.[2] In particular, the countries that have lost competitiveness will have to restore it. In a monetary union this can only come about by having lower rates of price and wage inflation than the average of the euro area. However, since the ECB is targeting a rate of inflation below 2 per cent, the countries that have lost competitiveness will find it very difficult to lower their inflation rates below the euro area average without introducing outright deflation, and large increases in

Figure 3: Intra-Euro Area Real Effective Exchange Rates (Based on Unit Labour Costs)



Source: Commission (2005).

[2] Since the real exchange rates used here are based on unit labour costs, they take into account differential productivity growth. As a result divergent movements in these rates cannot be the result of the Balassa-Samuelson effect (see also Gros *et al.,* 2005).

unemployment. As a result of the low inflation target, the whole process is costly in terms of output and employment.[3] This is Mundell I with a vengeance.

What have we learnt since the Treaty of Maastricht? I would like to focus on two ideas. The first one is the idea, first elaborated by Frankel and Rose (1998) of the endogeneity of the OCA criteria; the other idea relates to the governance of the monetary union.

II. Endogeneity of the OCA Criteria

Frankel and Rose (1998) came up with the idea that the OCA criteria are endogenous. By that they meant that these criteria are affected by the very decision to start a monetary union. Thus countries that before the start of the union fail to satisfy the OCA criteria may, by the very fact that they form a monetary union, change economic conditions in such a way that these conditions get satisfied. As a result the decision to start a monetary union has a self-fulfilling property. By starting the monetary union the conditions that are favourable for a monetary union get satisfied, making the decision to form a monetary union the right one. Conversely, a decision not to start a union when the conditions are not satisfied helps to maintain unfavourable conditions so that the negative decision also appears to have been the right one.

There are different mechanisms that can make the OCA criteria endogenous. First, monetary union can affect trade flows and intensify trade integration, thus increasing the benefits of the monetary union. Second, monetary integration leads to more intense financial integration thereby facilitating the emergence of insurance mechanisms. The latter reduce the costs of asymmetric shocks. Third, a monetary union affects the functioning of the labour markets and can potentially increase their flexibility, thereby reducing the costs of adjusting to asymmetric shocks in the monetary union.[4]

We show the effects of these mechanisms in Figures 4 and 5 which are the same as Figures 1 and 2. We have now put the euro area to the left of the OCA line, taking the view that when the euro area was started its members were not yet ready to form a monetary union. We do this not because we are convinced that this was necessarily the case, but rather because it allows us to show that even if this is the case, the future looks good for the union.

The endogenous mechanisms have the effect of moving the euro area towards the OCA area in Figures 4 and 5. This happens because monetary union increases the degree of economic (trade) integration (Figure 5). The spectacular

[3] It can be argued that, by making it more difficult for countries to restore their lost competitiveness, the low inflation target of the ECB introduces a powerful rigidity in the euro area. Thus paradoxically a higher inflation target would introduce more flexibility. It would also lead to less tension within the euro area.
[4] For a detailed discussion of these different mechanisms, see De Grauwe and Mongelli (2005).

Figure 4: Symmetry and Flexibility as OCA Criteria

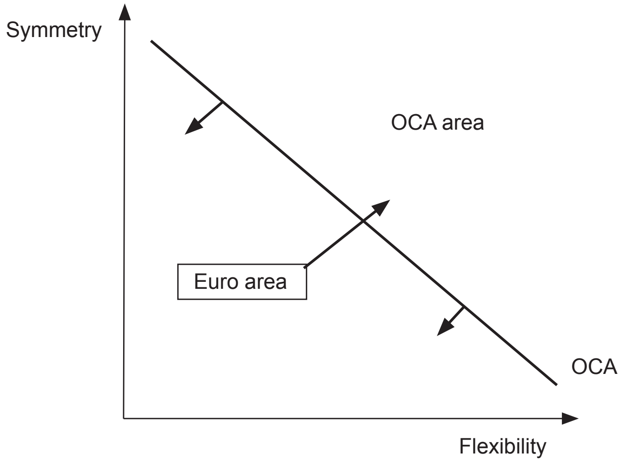
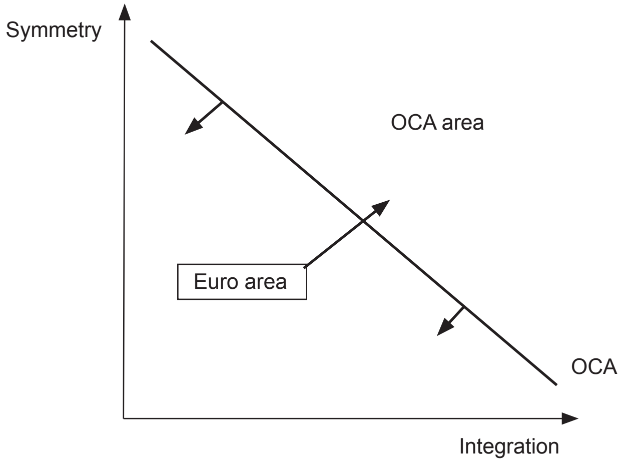


Figure 5: Symmetry and Integration as OCA Criteria



studies of Rose (2000), Rose and van Wincoop (2001) suggest that this effect may be quantitatively very strong. Although later econometric studies have scaled down this 'Rose effect' substantially (see, e.g., Mélitz, 2001; Bun and Klaassen, 2002; Micco *et al*., 2003; and Baldwin, 2005), so that it is safe to conclude that a monetary union has a significant positive effect on economic integration, thereby moving the euro area towards the OCA area.

What about flexibility? If monetary union increases the pressure for labour markets to become more flexible, the decision to enter a monetary union also improves the OCA criteria tending to shift the euro area upwards towards the OCA area. It must be admitted that there is no consensus about this flexibility effect. Some authors (Bertola and Boeri, 2002; Blanchard and Giavazzi, 2003) argue that monetary union tends to increase the degree of flexibility of labour markets, while other authors (Sibert and Sutherland, 2000; Soskice and Iversen, 2001) conclude that a monetary union may not lead to more labour market flexibility.

The effect of monetary union on symmetry has been heavily debated among economists (see De Grauwe, 2005). No consensus seems to have emerged here, although the empirical work of Frankel and Rose (1998) indicating that trade integration and output correlation go hand-in-hand has become quite influential.

On the whole the theory and the evidence seem to suggest that there is a dynamics of endogeneity that has the potential of moving the euro area countries towards the OCA area. How important this endogeneity effect is, however, cannot be determined at this stage of our knowledge.

III. The Governance of Monetary Union

There is a fundamental difference between the monetary union among the US states and the European monetary union. The US federal government has a monopoly of the use of coercive power within the union and will surely prevent any state from seceding from the monetary union. The contrast with the Member States of the euro area is a very strong one.[5] There is no supranational institution in the EU that can prevent a Member State of the euro area from seceding. Thus, for the euro area to survive the Member States must continue to perceive their membership of the area to be in their national interest. If that is no longer the case, the temptation to secede will exist and at some point this temptation may lead to secession.[6]

[5] For an insightful political analysis of monetary and economic integration, see Jones (2002). For a more general treatment of institutional and political dimensions of integration in general, see Wallace *et al.* (2005).
[6] Whether and when this happens also depends on the exit costs of the monetary union. If these are perceived to be large, the secession may not occur, or may take a long time to materialize. For a full analysis one would need to integrate the exit costs with the costs and benefits underlying the OCA analysis.

This leads to the following question. In the absence of a coercive power that can keep the Member States within the union, what kind of governance can ensure that countries willingly stay in the union? This leads to the matter of the political ties that are essential to achieve this goal. Put differently, what is the nature of the political union that can maintain the cohesiveness of the monetary union? We return to the OCA theory to answer these questions.

Political Union in the OCA theory

The theory of optimal currency areas determines the conditions that countries should satisfy to make monetary union attractive, i.e. to ensure that the benefits of monetary union exceed its costs. This theory has been used almost exclusively to analyse whether countries should join a monetary union. It can also be used to study the conditions in which existing members of a monetary union will want to leave the union.

In this perspective, the OCA theory says that, if the benefits of the monetary union exceed the costs, member countries have no incentive to leave the union. They form an optimal currency area. Or, put differently, they are in a Nash equilibrium, and monetary union is sustainable. The same conditions of symmetry, flexibility and integration apply here, i.e. countries in a monetary union should experience macroeconomic shocks that are sufficiently symmetric with those experienced in the rest of the union (*symmetry*) and they should have sufficient *flexibility* in the labour markets to be able to adjust to asymmetric shocks once they are in the union. Finally, they should have a sufficient degree of trade *integration* with the members of the union so as to generate benefits of using the same currency. If these criteria are not satisfied, monetary union will not be sustainable.[7]

Two issues arise here concerning the usefulness of the OCA theory to analyse the conditions under which secessions can arise. The criticism of the traditional OCA theory, Mundell I, as I have outlined earlier, could be construed to imply nothing less than that it is defunct as an economic theory. Its reintroduction to study the secession from a monetary union, therefore, requires some justification.

We have hinted to such a justification in Section I. After a lapse of time Member States are likely to forget the reasons why they joined the union, i.e. to get rid of an exchange rate they found difficult to stabilize. Instead, the problems of adjustments to shocks that they are facing will get centre stage. We gave an example of the strong divergence in competitive positions observed during 1999–2005 as such an asymmetric shock to which member countries will have

[7] For illuminating insights on the link between monetary and political union, see Alesina *et al.* (2001).

to adjust. All the problems analysed in the framework of the traditional OCA theory will become topical again.

A second problem with the use of the OCA theory to analyse the issue of secession from the union comes from the fact that when multinational monetary unions have broken up in the past, this was often for reasons other than those underlying the cost–benefit calculus of the OCA theory. Most often these other reasons had to do with political conflicts within the union, or outright political disintegration. This is certainly true, but this does not mean that the OCA analysis loses its usefulness. Economic and political shocks can arise that change the willingness of political leaders to maintain the union, and that lead to a political crisis. It is our ambition here to study how a political union feeds back into the OCA analysis and vice versa.

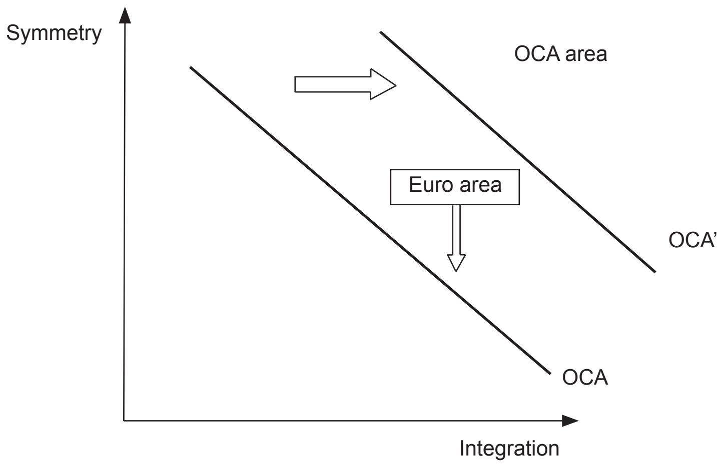
Let us return to the graphical analysis of Figures 1 and 2 to study how the nature of the political union can affect the cost–benefit analysis underlying the OCA theory. Let us now suppose that the euro area is safely located in the OCA area (to the right of the OCA line). How can political union be brought into the analysis? We take the view that the degree of political integration affects the optimality of a monetary union in several ways. First, political union makes it possible to organize systems of fiscal transfers that provide some insurance against asymmetric shocks. Thus when one member country is hit by a negative economic shock, the centralized union budget will automatically transfer income from the Member States that experience good economic conditions to the Member State experiencing a negative shock. As a result, this Member State will perceive the adherence to the union to be less costly than in the absence of the fiscal transfer.

Second, political union reduces the risk of asymmetric shocks that have a political origin. To give some examples that are relevant for the euro area: today spending and taxation in the euro area remain in the hands of national governments and parliaments. As a result, unilateral decisions to lower (or to increase) taxes create an asymmetric shock. Similarly, social security and wage policies are decided at the national level. Again this creates the scope for asymmetric shocks in the euro area, like in the case of France when that country decided alone to lower the working week to 35 hours. From the preceding it follows that political unification reduces the scope for such asymmetric shocks.

The way one can represent the effect of political unification is twofold. First, the existence of a centralized budget makes it possible to alleviate the plight of countries hit by a negative shock. Thus the cost of the union declines for any given level of asymmetry. This has the effect of shifting the OCA lines downward in Figures 1 and 2.[8] Second, political union reduces the degree of asymmetry, thereby shifting the euro area upwards. As a result of these two shifts political unification increases the long-term sustainability of monetary unions. Conversely political disintegration shifts the OCA lines upwards, thereby shrinking the OCA area and shifts the euro area downwards, creating the risk that the EU-12 ceases to be an optimal arrangement.[9] We represent the latter scenario in Figure 6. A political disintegration shifts the euro area downwards and shifts the OCA line to the right to the new position OCA'. As a result, it becomes more likely that the euro area ceases to be an optimal currency area, thereby undermining its long-term sustainability.[10]

A warning note should be sounded here. When we argue that some form of budgetary centralization is necessary to allow for an insurance mechanism against asymmetric shocks, we should avoid the pitfalls of such mechanisms that have been observed within countries. These pitfalls have to do with moral

Figure 6: Political Disintegration and the Optimality of the Euro Area



[8] It is important that these transfers be reversible to maintain their insurance character. If these transfers attain a permanent one-way character, they are likely to become unpopular in the 'donator' country, leading to a perception of a high cost of the monetary union. This calls for the use of transfers only to alleviate the effects of temporary asymmetric shocks (business cycle movements) or, in the case of permanent asymmetric shocks, to make these transfers temporary allowing receiving countries to spread the adjustment cost over a longer time.

[9] For important additional insights into the link between monetary and political union, see von Hagen (1996), where it is argued that political unification can also lead to increased tensions between Member States. As a result, the link between monetary and political union is not a linear one.

[10] A similar analysis can be done using the symmetry-integration space of FIgure 2. For a similar analysis, see von Hagen (1996).

hazard. We observe that this is often a serious problem when the transfers reduce the incentives of the receiving regions to adjust to shocks. As a result, temporary transfers can become chronic, thereby losing their insurance character. This feature will often lead to conflicts within the country (e.g. in Belgium) that are difficult to manage.

These moral hazard problems arise from the fact that the transfers within centralized countries are sizeable and unconditional. The insurance schemes envisaged for the euro area would remain relatively small compared to the national schemes given that the European budget today amounts to only 1 per cent of GDP while national budgets are often close to 50 per cent. It is quite inconceivable today that the European budget could approach national levels. We will therefore have to develop schemes that are much smaller and that, in addition, attach some conditionality on its use so as to reduce the moral hazard problems (for a discussion of such schemes, see Mélitz and Vori, 1993; and Hammond and von Hagen, 1993). Such relatively small and conditional insurance mechanisms, however, are an important ingredient in an integration effort whose aim is to create a sense of community of purpose. A union in which Member States show zero solidarity for the plight of other states cannot hope to have a reasonable chance of survival.

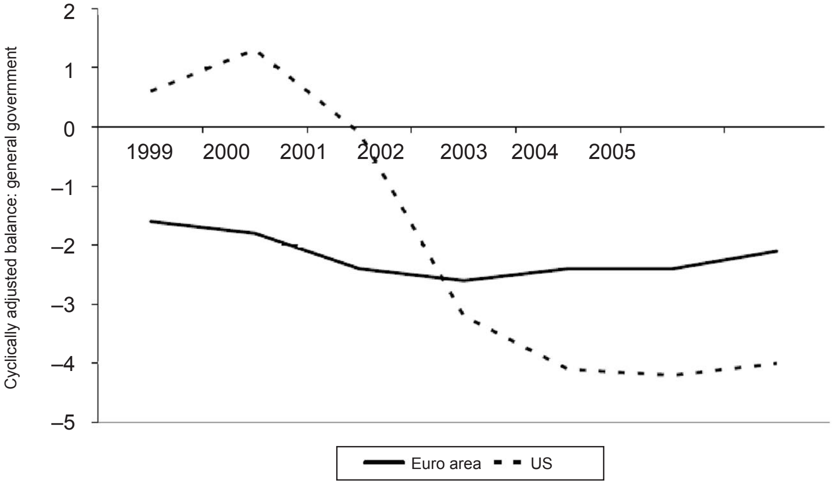
We conclude that, in order to enhance the sustainability of a monetary union it is important to have a central budget that can be used as a redistributive device between the Member States and it also matters to have some form of coordination of those areas of national economic policies that can generate macroeconomic shocks. The reason why this co-ordination is important is that these macroeconomic shocks spill over into the monetary union. For example, the decline in the working time in France was equivalent to a negative supply shock in France. This affected aggregate output in the euro area and thus the conduct of monetary policies by the ECB. This in turn influences all the other Member States of the euro area.

A central budget is important as a redistributive device. It also matters as a stabilizing instrument.[11] The absence of a central budget in the euro area implies that no budgetary policy aimed at stabilizing the business cycle in the union is available. The question that arises here is how important this is. In Figure 7 we show the contrast between the US and the euro area since 1999.

We observe that the US allowed its budget deficit to increase significantly as a response to the recession of 2001. There is no central budget in the euro area, but the aggregate of the national budget balances could work in a similar stabilizing way. The evidence of Figure 7, however, shows that this aggregate did not respond to the worsening economic conditions in the euro area from

[11] Musgrave (1959) introduced the different functions of a government budget, as a distributive, a stabilizing and an allocative role.

Figure 7: Cyclically Adjusted Budget Balance in the Euro Area and the US



Source: Commission (2005).

2002 on. Thus there is an absence of a system-wide budgetary policy in the euro area capable of performing a stabilizing role at the level of the euro area.

The Brussels–Frankfurt Consensus

The previous analysis and its conclusion that further political union is necessary for the long-run sustainability of the euro area is very much disputed by the Brussels–Frankfurt consensus, which has also become the official view. This view can be summarized as follows.

First, the way to deal with asymmetric shocks is to increase flexibility. As we showed in Figure 1, an increase in flexibility raises the sustainability of a monetary union. Thus a monetary union can be made sustainable by introducing structural reforms.

Second, the Stability and Growth Pact (SGP) provides all that countries need to use national fiscal policies as an instrument to deal with asymmetric shocks that have a cyclical (temporary) component. By following the SGP prescription of a balanced budget over the medium run, countries have enough flexibility to allow their budget deficit to increase up to 3 per cent during an economic downturn. As a result, the euro area countries have the instrument to deal with business cycle movements.[12]

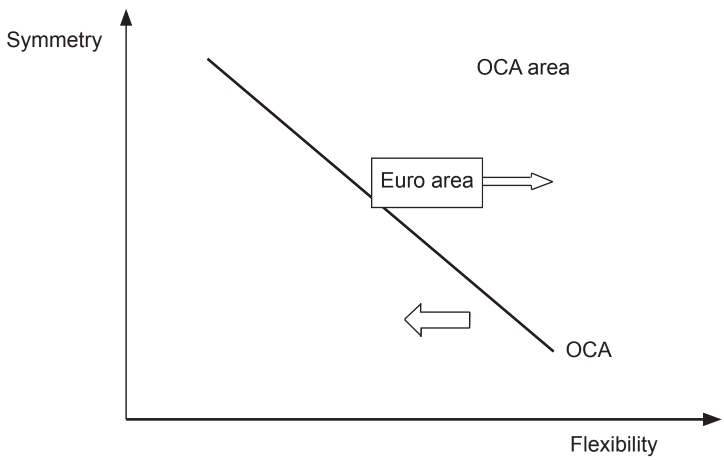
[12] One of the referees of this article pointed out that there is a certain coherence between the SGP and the need for flexibility. The SGP implements a fiscal framework for the monetary union that does not provide stabilizing transfers. As a result, not only does it put additional pressure on national budget consolidation, but it also increases the pressure to introduce more flexibility in the labour markets.

Third, there is no need to have a system-wide budgetary policy to stabilize the business cycle. ECB monetary policy is perfectly equipped to provide for macroeconomic stability in the euro area. By focusing on price stability the central bank does all that can be done to stabilize output movements at the euro area level. The reason is the following. If the output shocks are due to demand movements, inflation targeting will not only stabilize the rate of inflation but also the output movements. If these output movements are due to supply shocks they cannot be dealt with by monetary policies and/or budgetary policies.

The Brussels–Frankfurt consensus can be represented graphically in Figure 8. Structural reform has the effect of making the euro area countries more flexible, thereby shifting it to the right deep into the safe OCA-territory. At the same time the SGP rules allow for the use of national budgetary policies to alleviate the pain of asymmetric disturbances. This has the effect of shifting the OCA line to the left. The euro area can settle safely in the OCA area.

The conclusion from this analysis is that the present European institutions and their governance are appropriate to sustain the monetary union in the long run.[13] There is no need to increase the degree of political unification to make the monetary union sustainable. The euro area can survive in the long run without the need to create a European superstate.

Figure 8: The Brussels–Frankfurt Consensus



[13] See Padoa-Schioppa (2004) who as an insider develops a powerful criticism of this view which is implicit in the Brussels–Frankfurt consensus.

An Evaluation

What should we think of these two strongly opposing views? At the outset it can be interesting to focus on the underlying economic paradigms of these two views.

The Brussels–Frankfurt consensus is based on two academic theories. One is the monetarist theory which we discussed earlier, in which the central bank cannot do much to stabilize the economy. If it tries too hard to 'fine-tune' the economy it will end up with more inflation. Thus the best thing a central bank can do is to stabilize the price level. This will have the incidental effect of producing the best possible outcome in terms of stability of the economic cycle. The second theory that influences the Brussels–Frankfurt consensus is the real business cycle theory. This says that the sources of economic cycles are shocks in technology (supply-side shocks) and changes in preferences (unemployment being mainly the result of workers taking more leisure). There is very little the central bank can do about these movements. The best is to keep the price level on a steady course. This will minimize the effects of these shocks. In addition, a macroeconomic policy based on the objective of price stability is the best thing the central bank can do to promote growth. As Lucas has stressed, the central bank's contribution to economic growth by maintaining price stability is immensely more important than an ephemeral success in reducing business cycle movements.

It will come as no surprise that if one adheres to these theories the present governance of the euro area is the right one: a central bank that cares about price stability and in so doing makes the best possible contribution to maintaining macroeconomic stability and to fostering economic growth; and national governments that keep budgetary discipline and do their utmost to introduce market flexibility. In such a world the productivity driven shocks can best be dealt with by governments keeping budgets in balance. Furthermore, in such a world the need to have an active budgetary policy at the euro area level does not exist.[14]

The theoretical underpinnings of the alternative OCA view are very different and are deeply rooted in Keynesian and neo-Keynesian ideas. In this view there are shocks in the economy that do not originate in the supply side but find their origin in the demand side. 'Animal spirits', i.e. waves of optimism and pessimism capture consumers and investors. These waves have a strong element of self-fulfilling prophesy. When pessimism prevails, consumers and investors alike hold back their spending, thereby reducing output and income, and validating their pessimism. Similarly, when optimism prevails, consumers

[14] It will also come as no surprise to those who have studied economic history that these were also the views that prevailed prior to the Great Depression.

and investors will spend a lot, thereby increasing output and income, and validating their optimism.

The corollary of this effect is the well-known savings paradox. When pessimism prevails and consumers attempt to save more, the ensuing decline in income will prevent them from increasing their savings *ex post*. These phenomena were analysed by Keynes long ago, but have been thrown in the dustbins of economic history. Yet these ideas remain powerful, and have important influences on the governance of the monetary union.

In the logic of these Keynesian ideas, a monetary union needs a central budgetary authority capable of offsetting the desire of consumers gripped by pessimism to increase their savings, by dissaving of the central government. In addition, to the extent that there are asymmetric developments in demand at the national level, the existence of an automatic redistributive mechanism through a centralized budget can be a powerful stabilizing force. Finally, in this view the responsibility of a central bank extends beyond price stability (even if this remains its primary objective). There are movements in demand that cannot be stabilized by only caring about price stability.

From the preceding analysis it appears that the present governance of the euro area has been devised based on the assumption that the world is one which fits the monetarist-real-business-cycle (MRBC) theory. If the latter theory is indeed the correct view of the world, there is little need to move on with political integration in the euro area, and the present political governance of the euro area is perfectly adapted to the world in which we live.

But what if the MRBC theory is not a correct representation of the world? What if there are large movements in optimism and pessimism that affect consumers' and investors' behaviour? If we live in a world where such large movements are possible, then the euro area may have the wrong institutional design.

Conclusion

What have we learnt about monetary unions since the Treaty of Maastricht? A first idea which may have helped to convince the critics of monetary union is that, even if the euro area countries do not yet satisfy the OCA criteria, they will in the future as the monetary union sets in motion a process of more intense integration. This good-news-theory suggests that the euro area may be moving safely into the OCA area by the very fact that the euro area was started.

The existence of the euro area has also led economists to think about the governance of monetary union. The central idea here is that the absence of a political union is an important flaw in the governance of the euro area. For example, the lack of political union has had the unfortunate effect during the economic slowdown since 2001, of putting all the burden of macroeconomic management in the euro area on the shoulders of the ECB. The ECB, however, is neither ready nor willing to carry this burden. Yet the European population and its politicians will continue to expect the ECB to take on this role. It is clear, however, that the ECB alone cannot fulfil this role. This contrasts very much with the US where we have seen that both the central bank and the federal government have used their respective instruments to stabilize the business cycle.

The European monetary union is a remarkable achievement. Yet it also remains fragile because of a flaw in its governance. This is the absence of a sufficient degree of political union which includes a central European government with the power to spend and to tax, and which is independent of national governments. Such a government is necessary to complement the macroeconomic management of the euro area which is now entrusted exclusively to the ECB. In addition, a central European government is the only institution that can fully back the ECB.

Finally, the absence of a minimal degree of budgetary integration that can form the basis of an insurance mechanism is another flaw in the design of European monetary union. Such an insurance mechanism does not have to be as large and unconditional as those that exist within centralized countries. It is important, however, as a mechanism of solidarity even if its size is limited. It is difficult to conceive how a union can be politically sustainable if each time a country of the union gets into trouble because of asymmetric developments, it is told by the other members that it is entirely its own fault and that it should not count on any help. Such a union will not last.

The flaw in the design of the governance of the system that we have identified will have to be fixed. It should be clear, however, that it will be very difficult to do so. There is a general 'integration fatigue' in Europe so that it is doubtful whether the European population wants to fix this flaw in the design of the euro system. At least it should be told that failure to do so implies that the European monetary union has no future.

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