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MACROECONOMIC POLICY AND EMU ENLARGEMENT

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On 1 May 2004, ten states (mostly from Central and Eastern Europe) became members of the European Union. Fears have been expressed that the accession of the CEEC (Central and Eastern European countries) might increase economic divergence within the EU and result in more asymmetric shocks acting on European economies. In particular, some observers regard the membership of former Communist countries as a threat to the macroeconomic stability of the EU as the political systems in some of them are seen to have only a weak tradition of macroeconomic policies for stability and growth.

In this article, we discuss some possible consequences of CEEC membership in the euro area (EA) for the design and the effects of macroeconomic policies. To do so, we study scenarios both with and without the CEEC being members of the EA. For the European Central Bank (ECB), we consider several alternative intermediate targets. For fiscal policy, we assume that the governments of both incumbent and new EA members may either refrain from pursuing active stabilization policies or follow either non-cooperative or cooperative activist fiscal policies.

Policy analysis with the MSG2 Model

To date, there exist many publications focusing on several aspects of monetary unions, especially on EMU. See, for example, Hughes Hallett et al. (1999); Hughes Hallett and Mooslechner (1999); Eijffinger and de Haan (2000); Neck (2002; 2002a); Neck and Holzmann (2002); Buti and Sapir (2003); Allsopp and Artis (2003); De Grauwe (2005). These authors arrive at different conclusions as to the “best” strategy for the ECB and/or the fiscal policy-makers. Some are

specifically devoted to assessments of the effects of an enlargement of the EA; for instance, Fidrmuc and Maurel (2004); Dabrowski and Rostowski (2006). In earlier work (Haber et al. 2002), we gave some hints concerning the choice of intermediate targets and the desirability of macroeconomic policy coordination in a European and global context. More recently, we analysed a greater variety of scenarios, focusing on the results of different policy arrangements after an EA enlargement (Neck et al. 2004, 2005; Haber and Neck 2005).

For these calculations, we used the MSG2 Model (McKibbin-Sachs Global Model), in its European version MSGR44A. This is a dynamic, intertemporal general-equilibrium model of a multi-region world economy. It exhibits a mixture of classical and Keynesian properties: partly rational expectations in combination with various rigidities to allow for deviations from fully optimizing behaviour. In particular, nominal wages are assumed to adjust slowly in the major industrial economies (except in Japan). Nevertheless, the model solves for a full intertemporal equilibrium. The model is described in full detail in McKibbin and Sachs (1991); additional resources are available on the web (<http://www.msgpl.com.au/>).

The MSGR44A version of the MSG2 Model consists of models of the following countries and regions: the United States, Japan, Germany, the United Kingdom, France, Italy, Austria, the rest of the EA (REA), the rest of the OECD, Central and Eastern European economies, non-oil developing countries, oil-exporting countries, and the former Soviet Union. For the last three regions, only foreign trade and external financial aspects are modelled whereas the industrial countries and regions are fully modelled with an internal macroeconomic structure. The basic theoretical structure for all industrial regions is the same but institutional differences are taken into account, especially when modelling labour markets.

In order to analyze the welfare effects of different strategies followed by the ECB and the fiscal policy-makers, we define a normative measure of the economic outcomes of different simulation runs. We cal-



What are some possible effects of EMU enlargement on macro-economic policies?

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culate economic welfare losses caused by various shocks by assuming an additively separable quadratic welfare loss function, where losses in each period are the sums of the weighted quadratic differences between the actual values and the optimal values for each of the target variables. Welfare losses in each future period are discounted to their present values and summed up over an infinite time horizon to obtain the measure of total welfare loss. Such a welfare loss (objective) function is specified for Germany, France, Italy, Austria, REA, and CEEC. The assumed target variables are the rate of inflation, real GDP, the current account and the budget deficit of the public sector. All target variables are given equal weight. The baseline values of the target variables (simulated values without any shocks) are considered to be their optimal values, because this reference simulation run represents a stable path towards a long-run equilibrium of the model. European objective function values are calculated as weighted averages of the relevant country-specific values, with weights derived from the values of GDP at market prices.

When a country is assumed to pursue an “active” optimizing economic policy, the four economic target variables mentioned above enter the objective function of its government. In these cases, the policy variable is a fiscal instrument (nominal government consumption) for each “active” country. EA monetary policy is set independently by the ECB according to some assumed intermediate monetary target. The CEEC are assumed not to implement active monetary policy in scenarios in which they do not belong to the EA. First, it is assumed that the other non-EA countries and regions in the model do not pursue “active” fiscal or monetary policies, i.e. they are assumed not to react to shocks and European policies.

Six European “institutional scenarios” are considered for each of the shocks and each of the assumptions about ECB policy rules. “No-policy” scenarios are regarded as baseline scenarios for the different types of shocks, while the other four scenarios are combined with the different ECB policy rules. The no-policy scenarios assume no active policy, neither monetary nor fiscal, for the present EA and the enlarged EA, respectively, i.e. the values of the fiscal and monetary instrument variables are kept at their baseline values. Enlargement of the EA always means that all the CEEC are members alongside the present EA members. The non-cooperative scenarios assume non-cooperative strategic economic policy-

making in Europe in the sense that none of the policy-makers (the ECB and fiscal policy-makers in the EU) cooperate. On the other hand, the cooperative scenarios assume full cooperation between all these policy-makers. No intermediate constellations (coalitions) are considered.

For each of the institutional scenarios, alternative ECB strategies (intermediate targets or policy rules) are studied. First, five different policy rules for the ECB are considered: the no-policy rule leaves the monetary instrument (money supply) of the ECB at its baseline values. This policy is identical to monetary targeting. Inflation targeting, income targeting, exchange rate targeting (a unilateral peg of the EUR to the USD) and price level targeting are alternative strategies of the ECB considered.

In the non-cooperative scenarios, the ECB and the governments of the five countries/regions minimize their own welfare loss functions subject to the dynamic model and given the optimizing behaviour of the other players. This leads to a Nash-Cournot equilibrium of the dynamic policy game. In the cooperative scenarios, a joint welfare loss function, which is a weighted sum of the individual objective functions, is minimized subject to the dynamic model. This can be interpreted as the result of an agreement between the policy-makers of the five countries/regions. Under full cooperation, the ECB gets a weight in the joint objective function that is equal to the sum of the weights of the European countries/regions, which implies a rather strong central bank. In our view, assigning equal weight (“power”) to the ECB and the total of the EMU countries’ governments is a realistic model for cooperative policy design in Europe, given the difficulty of arriving at an agreement between the fiscal policy-makers of five or six (in reality: twelve or up to 22) countries. To avoid time inconsistency, all non-cooperative simulations are carried out by calculating a closed-loop feedback (Markov-perfect) equilibrium solution of the dynamic policy game under consideration.

For all scenarios considered, we calculate the effects of a temporary negative supply (total productivity) shock and a temporary negative demand (autonomous consumption) shock. A productivity shock can be interpreted as a temporary inward shift of the production possibility frontiers of the countries affected. A negative demand shock shifts the aggregate demand curve to the left. Here, we simulate the consequences of a temporary exogenous decrease in real private consumption. For both types of shocks we can distin-

Six institutional scenarios are considered for each of the shocks and ECB policy assumptions

guish between a shock affecting the CEEC block in the model, a shock affecting the present EA, a shock affecting the present EA and the CEEC block alike, and a world shock for all fully modelled regions in the model.

Policy results for Europe

Negative supply shocks cause the well-known stagflation dilemma: GDP decreases while the price level increases. Dealing with this type of shock is non-trivial, as expansionary policy measures would also increase inflation while restrictive economic policy would further reduce real output. The demand shock does not raise this issue as the price level decreases in this case. These effects occur fully only in the reference (baseline) simulation where policy-makers abstain from any action beyond “business as usual”. The scenarios examined differ with respect to the interventions of the policy-makers who try to counteract lower output and higher prices.

First, consider an asymmetric demand shock affecting only the CEEC. As expected, there are only very small welfare effects for the current EA when the consumption shock is limited to the CEEC. For the present members of the EA, we find that active fiscal policy is desirable while neither the institutional setup (EA enlargement vs. no enlargement) nor the choice of a specific intermediate target for monetary policy matters that much. A completely different picture arises from the point of view of the CEEC for this shock. A monetary union reduces the ability of the CEEC to counteract their domestic shock as it abolishes the possibility of adjusting exchange rates between the CEEC and the euro. Therefore all scenarios with an enlarged EA show higher welfare losses than their counterparts with the present EA. The difference is most notable for the baseline simulations where no other accommodating policy instruments are available that might be substituted for the protective effects of adjustable exchange rates.

If a negative demand shock is limited to the present EA, the choice of the intermediary monetary policy target for the ECB is no longer irrelevant. Exchange rate targeting and nominal income targeting produce higher welfare losses than the baseline simulations without active policy-making; inflation targeting and price level targeting appear to be reasonable strategies in most scenarios. The best result is achieved in the cooperative scenario for an enlarged EA under

price level targeting by the ECB. The spillovers to the CEEC are not negligible for this shock. Non-cooperative scenarios always dominate the cooperative scenarios. This can be attributed to the fact that the CEEC can use their fiscal instruments to pursue their own objectives in the non-cooperative case while cooperation causes this instrument to be used for optimizing the joint welfare loss function in which the CEEC objectives enter with a small weight only.

Under a symmetric demand shock affecting the present EA and the CEEC, exchange rate targeting and nominal income targeting produce high welfare losses, and inflation targeting and price level targeting are the most acceptable strategies. Monetary targeting is always better than the baseline but inferior to the inflation and price level targeting strategies. Here, cooperation dominates non-cooperation for the present EA countries, and the enlarged EA always produces better results than the original one. For the CEEC, the enlargement is advantageous in most cases, but no general judgment can be made for them on the issue of cooperation. The best results for both the EA incumbents and the CEEC are obtained in the price level targeting scenario with an enlarged EA and full cooperation. The qualitative results for a global consumption shock are very similar to the results for the symmetric European shock.

Next, we consider the effects of transitory supply shocks on the results of macroeconomic stabilization policies. For an asymmetric CEEC supply shock, the spillovers to the EA are very small. For an asymmetric supply shock to the present EA, results are mixed with respect to the advantages or disadvantages of cooperation versus non-cooperation and with respect to the present versus the enlarged EA for the present EA members. Again, the no-policy scenarios dominate all scenarios with active policies of the ECB and/or the governments. Spillovers of the asymmetric supply shock are present but not very substantial for the CEEC. Under a symmetric European supply shock, the fixed-rules no-policy scenarios are again the overall winners. Income targeting again turns out to be unsustainable. The cooperative inflation targeting scenarios give the best results among active policies, regardless of the size of the EA. For the CEEC, no clear decisions can be made, apart from the dominance of the fixed-rules policy. Again, the worldwide symmetric supply shock provides no significant further insights over those obtained from the symmetric European shock.

Given a negative demand shock, the best result is achieved in the cooperative scenario under price level targeting by the ECB

To summarize, the analyses show that the advantages and disadvantages of different institutional setups strongly depend on the nature of the shock the economies are faced with. Fixed rules can be recommended as an answer to supply shocks, more active (flexible) policy rules as a reaction to demand shocks. Exchange rate targeting and income targeting by the ECB can lead to instability. For demand-side shocks, inflation targeting and price level targeting mostly produce acceptable results. In most of the scenarios, the EA enlargement does not lead to significant welfare effects on its present members. Thus, additional macroeconomic noise resulting from CEEC membership does not seem to be too much of a problem for the EA incumbents. On the other hand, no significant advantages can be identified for them either. For the new EU members, introducing the euro causes reductions in macroeconomic welfare losses in some cases.

Global effects of an EA enlargement

An enlargement of the euro area, which will eventually create a full monetary union of a size comparable to the United States, may have non-negligible consequences on the world economy. Policy-making in other parts of the world may be affected and will possibly have to adapt to the changing environment of world trade and finance. Therefore, we examined possible consequences of CEEC membership in the EA on the welfare effects of macroeconomic stabilization policies in a similar way also under alternative assumptions about fiscal and monetary policies of the United States. The US government and the Federal Reserve Board are regarded as one single decision-maker. US macroeconomic policies are considered either as passive (no reaction on shocks and on policy changes abroad) or as actively stabilizing according to an objective function. In order to keep the analysis as simple as possible, no other countries are assumed to pursue active policies.

Some modifications of the assumptions concerning the simulations are required. An objective function is defined for the United States in an analogous way to that for the European countries/regions. We introduce another distinction of scenarios: in scenarios called “only European policies”, we assume that no other non-EA country and region of the model pursues “active” fiscal or monetary policies, i.e., these countries are assumed not to react to shocks and European policies. In “US active policies” scenarios, US mone-

tary and fiscal policy-makers are assumed to jointly optimize an objective function of the same type as those for the “active” European countries. For the ECB, we confine ourselves to strategies of monetary targeting (or no policy) and inflation targeting.

In the “US active policies” scenarios, some arrangement is assumed between the European and the US policy-makers (for example, a binding agreement concluded at a summit of policy-makers). This may not seem to be a very realistic possibility at the moment, but it may serve as reference for comparisons with non-cooperative scenarios. In the “US active policies” scenarios, the US policy-makers (government and Fed) are always regarded as one player, i.e., full cooperation is assumed between the US policy-makers also in the (globally) non-cooperative scenarios.

The results of the demand shocks are mostly similar in the cases where the United States do or do not react upon European policies. Active policies in the EU are better than no-policy scenarios for both the EU and the US. For the asymmetric demand shock affecting only the CEEC, all scenarios with an enlarged EA show higher welfare losses than their counterparts with the present EA. The difference is most notable for the baseline simulations, where no other accommodating policy instruments are available that might be substituted for the protective effects of flexible exchange rates. Within an enlarged EA, cooperation is better than non-cooperation. Active policies of the US reduce the welfare losses of the US, and they reduce the welfare losses of the other blocks slightly in most cases.

Under a symmetric demand shock affecting the entire EU (including the CEEC), the smaller EA is slightly worse for the incumbents but better for the CEEC. On the other hand, with active fiscal policies, entering the EMU is advantageous for the CEEC. ECB inflation targeting is mostly better than monetary targeting for the EMU members but worse for the US. Active US policies reduce spillovers to this country without causing visible negative spillovers back to the old continent. Without active US policies, the regions of the “new” EA are better off under cooperation than under non-cooperative stabilization policies; but when the US reacts in an active way, cooperation is primarily advantageous for them only.

The qualitative results for the global consumption shock are similar to the results for the symmetric

In most scenarios, EA enlargement has no significant welfare effects on present members

European shock but imply higher losses for most regions (especially, of course, for the US). Here monetary targeting by the ECB gives particularly high values of welfare losses for the EA incumbents; it is also inferior to inflation targeting from the perspective of the CEEC. Under the global demand shock, the US can considerably improve its performance when combating the world recession of this case by countercyclical policies, especially when it cooperates with European policy-makers.

Under a supply shock, the following results are obtained: For the European regions, no-policy strategies (fixed rules) are best. For the United States, on the other hand, the reverse holds: active fiscal and monetary policies unambiguously improve the performance when compared to a strategy of benign neglect. Moreover, activist EU fiscal policy helps the US; activist monetary EU policies (ECB inflation targeting) hurt the US in terms of the welfare measure chosen. Cooperation is good for the “larger” player (the EA in the case of inactive US policies, the US in the case of active US policies). Differences between the present and the enlarged EA are small, except for the case where the EU governments and the ECB follow an activist policy – there it is definitely advantageous for the CEEC to be within EMU.

Altogether, there are important differences with respect to the international spillovers and feedbacks of shocks and policies. Previous results on the advantages of fixed rules in the case of supply shocks and more activist policies for demand shocks are supported by this analysis for the European countries, but not for the United States. Cooperation is not necessarily better than non-cooperative activist policy-making, and in most cases, cooperation comes at the expense of the “smaller” player and favours the “larger” one (on a global level, the US). Again, in most of the scenarios, the EA enlargement does not lead to significant welfare effects for the present members of the EA. For the CEEC, EA membership provides significant reductions of macroeconomic welfare losses only in a few cases. The results for the US are not substantially affected by including the CEEC in the EA, which may lead to the conjecture that global effects of the EA enlargement will be minor. It remains to be shown how robust these results are with respect to variations in the model used and to the assumptions about the objective functions. At present, it appears that the decision about EA participation of the new EU members need not primarily be influenced by macroeconomic policy considerations.

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