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Sustainable Price Stability for Europe: Prospective Effects of a European Central Bank on Long-Term Growth and Employment*

Lessons from the Past: The EU Countries and the EMS.

By Georg Erber** and Harald Hagemann***

Summary

The article discusses the implications of the emerging EMU on long-term growth and employment. As a methodological framework it applies game theory and considers the monetary policy of the ECB as part of a macroeconomic policy game. The experiences from monetary policy of the Bundesbank to accomplish a sustainable price stability in Germany and the effects on the member countries of the EMS are taken as references to identify possible obstacles which a future ECB will face. Special attention is given to the recent period of the EMS and the role of the Bundesbank since German unification. Credibility of the ECB resting on an appropriate institutional design of the bank and her monetary policy instruments are elements of outstanding importance for a successful beginning of the EMU in 1999. Without a credible ECB to maintain price stability for the EMU members the cost to enforce it against national governments and trade unions will be quite substantial. The fiscal criteria of the Maastricht Treaty are just one part to encourage an economic environment where price stability can be obtained at low social costs showing up in higher output and employment growth. Therefore the authors suggest some kind of a joint wage and employment pact in the EMU which should help to facilitate a successful introduction of the Euro as a common currency.

1. Introduction

With the signing of the Maastricht Treaty the members of the European Union set the ambitious target to establish a common monetary policy by creating a European Central Bank (ECB) which — following the example of the Bundesbank of Germany — should establish a sustainable price stability, shelter the EU countries against high exchange rate volatility with the rest of the world, and eliminate the exchange rate mechanism between its members. The European Monetary Union (EMU) is set to start in January 1999, as was confirmed again by the recent meeting in Madrid of the heads of governments for the fifteen member countries of the EU. The *Euro* should become the common currency unit. Agreements on a tight time schedule for the necessary decisions and implementations of the system of the EMU together with the setting up of the ECB in Frankfurt replacing the European Currency Institute (ECI) in 1999 have been reached by the governments involved. Thus the whole process is underway and seems to be irreversible (see the Green book of the European Commission, 1995). Otherwise a crisis in confidence and credibility of the institutions, i.e. the EU governments, the

European Commission and the EU central banks will be unavoidable with unpredictable consequences for globalized financial markets. Furthermore the *sunk costs* of financing the — explicitly for this purpose increased — budgets of the EU regional, structural, and cohesion funds to facilitate the convergence process of the EU countries would have to be written off by those countries, in particular by Germany as its biggest net financial contributor. All in all some kind of historical lock-in situation already emerged, represented by all kinds of material and immaterial investments, which makes a late dismissal of the EMU quite unlikely, even if currently only Luxembourg meets all the criteria of the Maastricht treaty for EMU membership. In the

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light of sometimes painful decisions considered necessary to meet the Maastricht criteria, the sunk costs will increase over the course of the next few years and by this reduce the temptation to opt out.

We will not join the public debate peculiar to Europe and to the United States as well, which speculates whether the EMU finally will emerge as it is announced or have to be postponed or fail to emerge at all. Most of those arguments hardly ever try to make a well founded cost-benefit analysis to give up or postpone the EMU at the present state but more or less present arguments why the EMU might be harmful or point to particular problems which do not cover the whole agenda. However, one should be aware that during the years until 1999 there will be substantial waves of speculation in world financial markets related to the introduction of the common currency.

Instead of dealing with issues related to the introduction of the EMU we want to deal with the more fundamental question: What are the obstacles facing such a system, once it emerges? We perceive the major obstacles of the EMU not to be its introduction — in the sense of a one shot game — even if they might be substantial, but instead we focus on the issue of sustainability of the EMU to fulfill its goals, i.e. we perceive the EMU as a stochastic supergame with a long-term time horizon (see, e.g. Blackburn, Christensen, 1989, p. 7).

However, there should at least be identifiable benefits from an EMU outweighing the costs which can be expected, otherwise the whole undertaking will lack legitimacy. On the one hand, in theory the benefits of an EMU are given by decreasing transaction costs in the EU area because uncertainties due to the variability between EU currencies are removed, a leaner ECB system and respectively lower costs compared to the current system of national central banks, the impossibility of a beggar-my-neighbor policy to undervalue a national currency with respect to others in the EMU area aiming to increase domestic output and employment growth in single member countries, the elimination of financial market speculation leading to unwarranted volatility in the European exchange rate system thus hampering the further development of a single EU market, as it happened in the crises of September 1992 and August 1993.

On the other hand, the question arises whether the politically established EMU will create something close to an optimal currency area (see Mundell, 1961) after a transition period in the long-run which will increase the social welfare of the people in the EU. A necessary condition for such an optimal currency area would be a sufficient degree of homogeneity between the member states. Otherwise substantial costs will occur exceeding at least for some countries in the EU the benefits summarized above. Looking at the historical trends of convergence between the member countries might help to assess if anything close to an optimal currency area for at least a significant part of the EU member countries is likely to emerge in the near future. It might also be suitable as a measuring rod to assess

whether a core of countries will be able to commit themselves to a permanent EMU membership.

Convergence in monetary and fiscal policies is the foundation upon which the relative arbitrarily chosen criteria of the Maastricht treaty rest (see also Berthold, 1995). They will be used in 1998 to select future members of the EMU. However, convergence in inflation rates, in interest rates and in government deficit-GDP as well as in debt-GDP ratios might not be enough for establishing a sufficient convergence between the respective economies¹ They might signal a general commitment of the political institutions, i.e. national governments, parliaments, and central banks, to play by the same rules to accomplish price stability. But it is an open question how this commitment can be sustained under unsound behavior of economic agents the emergence of exogenous shocks not under control of the political institutions.

The EMU has to be established under unfavorable economic conditions. Globalization of economic activities is forcing the EU countries to rapidly adjust the structure of their economies. Rising unemployment in the West European countries since the mid-1970s have plagued nearly all countries of the EU (see, e.g., Erber, 1994). A rapid decline in the large number of unemployed seems quite unlikely and even a further dramatic increase in the number of unemployed in the next major recession in Europe, even exceeding the current high levels cannot be ruled out. The optimistic scenario of a significant decline in unemployment in the EU member states until the end of this decade (see Delors White Book, 1991) seems to be premature to us.

This raises the question of how fragile the EMU will be if it comes under pressure by unpredictable shocks, especially if they have unbalanced consequences for its members because significant differences still exist between them. Will there be sufficient coherence in the EU to master major real exogenous shocks which have asymmetric effects on its member states? What will happen to the EMU if it fails to create a consensus between its members under such circumstances? Will possible members opt out as Britain and Italy did from the EMS in 1992? What will be the costs in case the EMU will break apart under such circumstances? Will the perceived possibility of such an event work as an amplification to the volatility of exchange rates with countries considered to be

¹ There are doubts that especially those concerning fiscal debt and deficits have to be taken literally as the example of the Belgium and Luxembourg monetary union shows. What matters is the political commitment to fiscal stability and convergence in fiscal policy between EMU member states. Recently even a member of the Bundesbank board, Mr. Welteke, president of the Central Bank of Hesse, made a statement that he is favoring a flexible interpretation of fiscal criteria of the Maastricht treaty. He argues that if finally the decision about the ins and outs of the EMU is made in 1998 it will be the best possible alternative compared to those leading to a postponement of the start of the EMU in 1999 or that only very few EU countries could become EMU members from the beginning (see Financial Times, 11. September 1996).

safe havens, e.g. Switzerland or the U.S., against the high risks of an unsustainable EMU? What costs will occur from such an opt-in and opt-out process of member countries (see, e.g., Hefeker, 1995)? The set of questions outlines a new research agenda in monetary economics for the coming years.

The present paper just tries to scratch on the surface of some of them. Firstly, we study the historical long-term convergence between EU countries in major relevant variables. What are the implications of current performance in convergence? Need the convergence process be accelerated in the future? Is it politically feasible? Is a monetary union a motor for convergence or will it disturb its current process to create social resistance against fast track strategies as might be indicated by the recent strikes in France and by this reaching the opposite (see DIW, 1993) indicating that *convergence processes are path-dependent*.

2. Lessons from the past

In a recent paper Arestis and Sawyer (1996) reflect on the problematic nature of the ECB. In particular the authors study the extent to which the creation of an independent central bank for Europe will affect the levels and the distribution of unemployment and economic growth in the EU. The authors discuss the stringency of the Maastricht convergence criteria and emphasize that most countries, especially those of the southern periphery (like Greece and Portugal) will find them almost impossible to meet. Arestis and Sawyer criticize the total absence of any output and/or employment considerations from the convergence conditions and point out that an independent ECB pursuing deflationary monetary policy to achieve price stability (or low inflation) as its prime goal is likely to cause low growth rates and high levels of unemployment. However, this policy bias is not the consequence of central bank independence *per se*, but of an institutional design in which reference to growth or employment targets is avoided and price stability is the sole objective of monetary policy. This position is strongly at odds with the prevailing view in the debate on the transition to the EMU and the design of the ECB according to which the ECB should not only be politically independent (which is crucial to avoid that budget deficits will be financed by printing money)² but also the statutes of the ECB should explicitly declare that the only macroeconomic objective of the European monetary policy is price stability. Thus, reference to high employment as an objective of monetary policy should be avoided (De Grauwe, 1994, p. 187).

In a game theoretic framework the optimal solution in a macroeconomic policy game is not given by a strategy of a Nash equilibrium where the strategies of all others are given but could be substantially improved by cooperation or even a Stackelberg solution where the monetary authority is the dominant player (for some analytic results see e.g.

Eichengreen, 1987; Spahn, 1996b). There seems to be even an inherent tendency that in an international monetary system of independent countries symmetric solutions of the adjustment processes in the exchange rate system are unsustainable. Even when initially intended to function as a symmetric system between the member countries of the European Monetary System (EMS) a leading currency emerged and, by taking the position of an international reserve currency in the EMS, changed the rules how the other participants had to act. The dominance of the DM in the EMS is based on its credibility to ascertain higher long-term price stability than all other members. The credibility of the German currency emerged from its past performance created by a monetary policy of the Bundesbank always repressing domestic inflationary processes in their early stages. This gave the DM the necessary reputation relative to the other EMS currencies to become the anchor of the EMS. In contrast to the importance of the British pound from the 19th century until the end of the second world war or the central position of the US Dollar in the Bretton Woods System, the credibility of the German currency is based on a long-term tendency of the German economy to create and maintain substantial trade surpluses. Since expectations of international financial markets up to now give trust to the German economy that long-term current account deficits will not emerge, the Bundesbank was able to put her major emphasis in monetary policy on the control of domestic inflation so that Germany became the leader in international price stability. Major recessions in Germany generally tended to be overcome by export-led growth. The ability of the German industry to maintain and sometimes to improve its international competitiveness without major currency devaluations gave the Bundesbank freedom to pursue their monetary policy, creating a virtuous circle of growing credibility in the German currency.

This view is represented by authors who center their analysis on the notion of credibility and reputation of central banks (see, e.g., Blackburn, Christensen, 1989). Credibility refers to the general standing of the central bank as a social institution. An important feature of credibility is that it is accumulated gradually like a capital good. Investment in reputation may involve large economic and social costs, like those of disinflation strategies in the short- and medium-run, whereas its future benefits are far more difficult to determine. One important benefit of credibility is that the interest rate of a currency area possessing a high reputation for its price stability is lower than interest rates in other currency areas without such a reputation where higher inflation risks lead creditors to demand a risk premium. Price stability has not just the implication of a constant price level but also that the price level is not volatile. The latter implication might be even more important than the first, because it makes rational expectation for-

² See e.g. Cukierman (1992) and Alesina, Summers (1993), who show that, in general, the higher the degree of independence of central banks the lower the rate of inflation.

mation a less successful strategy for economic agents with a finite life expectation even if certainty equivalence would hold for a player with an infinite life-expectation (the Petersburg paradox would create a bias to prefer less uncertain to more uncertain environments even if the pay-offs would be the same under certainty equivalence). Investment and thereby output and employment growth is influenced positively by a credible monetary policy of price stability. This effect is neglected by the critics of a monetary policy of price stability who base their arguments on a downward sloping Phillips curve.

In a multi-country environment like the EMS it might be even exactly this high reputation of the leading central bank as a dominant player of the whole system which endangers it. The currencies of the other countries are pegged more or less closely to this leading central bank as followers in a Stackelberg monetary game. The leader became the leader because he accumulated higher credibility than the others. The leading central bank, however, will have the target to maintain price stability for its country and not for all other members of the EMS or those countries with a peg on their currency. Therefore, if a divergence in inflation rates is emerging between the leading country and his followers, this will lead to a divergence in the desirable optimal monetary policy for them. The central bank of the country with the key currency will adopt a policy of high interest rates aiming to reduce inflation at home. However, because of its credibility it is not forced to act as rapid as the others. This strategy, which will be optimal at the country level, will be costly for its followers. To sustain the value of their currencies, they have to raise interest rates as well, despite the fact that their internal economic situation would require a less restrictive monetary policy. If liberalized money markets exist between all countries, e.g. like in the EMS, money would flow from the followers to the leader because of the interest rate differential. As a result, interest rates will move up in the follower countries as well. In a system with fixed exchange rates and free money markets any attempt to lower interest rates in the follower countries would have triggered inflationary processes there. Since the credibility of the central banks in the follower countries to fight inflation is much lower — the reason to peg their currencies to the key currency was just to borrow credibility from that bank — inflation would accelerate much more rapidly than in the leader country. If inflation in the follower countries would rise more rapidly as in the leading country then fixed exchange rates would cause damage to trade balances of the followers if the leading country is not only the one with the highest credibility for its currency but the major trading partner of its followers as well. This would make a realignment or a floating of the exchange rates unavoidable after a while. Since fighting inflation in the follower countries is more costly than in the leading country, it might be even rational to depress their economies because the costs of inflation, loss of credibility, trade imbalances, exchange rate fluctuations might exceed the costs of lower output and employment growth. Without a sufficient convergence bet-

ween the economies the different objective functions of the national central banks to maintain the price stability of their countries can create substantial tensions.

Such a situation developed after German unification. A restrictive monetary policy was pursued by the Bundesbank when it faced a severe test of its anti-inflationary credibility after German unification (see Spahn, 1996a). The Bundesbank particularly intended to send warning signals to employers and trade unions in Germany to agree on less inflationary wage settlements, and to the German government to curb its spending or take at least care of a tax based financing when it raised the key discount and lombard rates up to a maximum of 8 per cent and 9.75 per cent, respectively, after the Maastricht summit in December 1991. This policy of high interest rates clearly was enacted for national reasons. It was required to maintain credibility because otherwise inflationary expectations would have started to rise in the wake of the German unification shock. However, after July 1 1990, when the German monetary union started, the increase of the monetary base in Germany exceeded the output growth potential of a unified Germany substantially because of a false calculation of the output capacity of the East German economy, (the former) German Democratic Republic (GDR). This together with a too favorable conversion of assets and incomes of former GDR citizens led to demand-pull inflation in Germany. While growth in other European countries and the United States was rather weak, the West German economy boomed and thus was in an exceptional position after the fall of the Berlin Wall. The Bundesbank's restrictive monetary policy, together with stagnation of exports of the German industry, led to an end of the German *Sonderkonjunktur* about two years later. The Bundesbank's policy of high interest rates indirectly also raised interest rates in those EMS countries which — with the exception of the UK's withdrawal from the EMS in September 1992 — tried to keep their exchange rates stable against the DM: Following the Bundesbank they raised their interest rates, thus affecting growth and employment negatively.

There is a widespread belief that the Maastricht convergence criteria function as a straitjacket strengthening the disciplining features that support disinflationary trends already present in the EMS arrangement since its institutionalization in 1979 (see e.g. Giavazzi, Giovannini, 1989).

However, until the mid 1980s, countries like France and Italy devalued regularly and thus imported only little inflationary discipline from Germany. After that, France, in particular, committed herself to have a more restrictive monetary policy to maintain a fixed exchange rate of the franc with the DM as the key currency of the EMS. Comparisons between EMS and non-EMS countries within the OECD show a remarkable difference in the development of unemployment after 1983. Whereas in non-EMS countries unemployment declined substantially, unemployment in EMS countries stabilized at about 10 per cent until 1988, declined in the boom period between 1989-91 only to in-

crease substantially again afterwards. It is clear that the policies of disinflation after the second oil price shock coincided with a strong increase in unemployment rates. It is, however, less evident whether the EMS increased or reduced the costs of disinflation compared to alternative arrangements of the international monetary system (see also De Grauwe, 1994, pp. 133-140).

Things look different for the period 1992-93. Shortly after the Maastricht Treaty in December 1991 regulated the way which should lead to an economic and monetary union Europe experienced one of its worst post-war recession which destroyed the EMS. On the one hand, it can be said clearly that the EMS monetary policies deepened the recession in its member countries whereas the Federal Reserve in the U.S., where recession had started earlier, eased its monetary policy and lowered its short-term interest rate significantly. The EMS countries followed exactly the opposite policy and managed to raise their short-term interest rates enormously in the midst of a deep recession, thereby aggravating their recessions. The instability and finally the disintegration of the EMS resulted from a fundamental conflict between Germany, on the one hand, and most other EMS countries, on the other hand, about the appropriate monetary policy to be followed. The Bundesbank refused to follow a more expansionary monetary policy and her priority to keep its anti-inflationary stance got under severe attack, particularly by the British and French governments. Even *neutral* economists specialized in the economics of monetary integration today raise the following issue:

"It is useful to ask the question what would have happened if a European central bank had been in existence during the recession. Such a central bank would have cared, not about monetary conditions in Germany, but rather about the monetary conditions in the whole system. Thus, suppose that the European central bank would have followed a Friedman-type rule of targeting the European money stock. Such a European central bank would have targeted the sum of the money stocks of Germany and of all the other EMS countries. Thus, while there might have been reasons for restrictions in Germany, there was no reason to follow restrictive monetary policies in the other EMS countries. Put differently, a monetarist policy rule applied by a European central bank during the recession would have allowed for a more expansionary monetary policy in Europe than the one that was applied in the EMS. It is in this sense that the EMS led to an excessively deflationary monetary policy and intensified the recession in Europe." (De Grauwe, 1994, p. 142).

Whereas this argument is very convincing one should not overlook the following: First, the Federal Republic of Germany transformed from one of the greatest net exporters of capital in 1989 to a net importer of capital from 1991 onwards, thereby contributing to a global shortage of capital. Without doubt higher interest rates in the wake of

German unification slowed down growth in the EMS countries trying to keep their exchange rates stable against the DM. In contrast to this, there was a *locomotive effect* countervailing this *brakeman effect* (for more details see Hagemann, 1993). Germany's trade partners benefitted from rapidly rising imports which resulted in an equivalent swing in the balance of payments in current accounts from a historical record surplus of about 107 billion DM in 1989 to a deficit of about 30 billion DM in 1991.

Second, there can be no doubt that high interest rates have taken their toll in Germany in the years 1992-93 as well by lowering investment, growth and employment. However, the Bundesbank argued that the diverging development of falling long-term (with the real rate reaching its historical peak already in the summer of 1990, as result of the tremendous amount of capital required for the rebuilding of the East German economy became aware to financial markets) and rising short-term interest rates directly affected by monetary policy signaled afterwards that the Bundesbank could keep its anti-inflationary reputation leading to an inverse structure of short and long-term interest rates which influenced investment positively.

Third, whereas the Bundesbank thereby paradoxically contributed to the disintegration of the EMS, it has to be added that the collapse of the EMS in the two crises of September 1992 (with the withdrawal of the UK who from then onwards followed a more expansionary monetary policy with the consequence of a strong devaluation of the British pound) and August 1993 basically reflects the problems of any rigidly fixed exchange rate system which the EMS in fact had become since 1987 when no realignments were made despite greater differences in the inflation rate between, e.g., Germany on the one hand and Italy and Spain on the other. The globalization of financial markets and the tremendous increase in international capital movements have made it far more difficult than under the Bretton Woods system to maintain fixed exchange rates against speculative attacks. The unsustainability of the exchange rates within the EMS therefore came as no surprise.

It is often argued that the convergence criteria, in particular those two limiting the budget deficit to 3% of GDP and the government debt to 60% of GDP, cause a deflationary bias in the policy of the countries who try to qualify for the EMU. The heavy costs of such a policy are illustrated by the case of France where the attachment to a strong Franc has brought the inflation rate down, only at the expense of high unemployment, thereby contributing to the social disruptions at the end of 1995. Thus France plays the role of the prototype for countries suffering from the pains of the Maastricht criteria. Whereas the plans of the French government to cut social benefits will not help to make EMU more popular among the French, it has, however, to be mentioned that the Maastricht treaty should not be blamed for the faults and loose fiscal policy of earlier governments and that the social system has to be reformed in France as

in other countries of the EU, with or without EMU and the institutionalization of an ECB.

In the context of interest rates and public debt criteria some important differences between the prospective member countries of the EMU have to be pointed out. It has always been an essential characteristic of the Bundesbank's monetary policy to use short-term interest rates to influence long-term rates. The link between both varies over time, with the German financial system becoming more exposed to globalization. This has been demonstrated by the development after the signing of the Maastricht treaty when the Bundesbank policy led to an inverse interest rate structure in Germany between 1991 and 1993. One major reason that the Bundesbank came under severe criticism from other EU countries is the great difference existing in the financing of private investment as well as of public deficits. Contrary to Germany where long-term financing plays a far greater role in many other, particularly Southern European countries, short-term financing is more important so that they suffered more from high short-term interest rates. Another important difference is the stability of the long-term demand function for money in Germany which is the basis for the Bundesbank's monetary control over bank lending and also for her belief in the minimum reserve requirements as a policy instrument. No other country, notably the UK with a far more rapid pace of financial innovations in the 1970s and 1980s³, shows a similar stability in the demand function for money so that it is quite unlikely that the demand for the Euro, at least at the beginning, will be as stable as the demand for the DM in the past. This causes doubts whether the ECB should take over the complete design of monetary policy operations from the Bundesbank, whose instruments are also related to the universal banking system in Germany.

3. Prospective effects of the ECB on long-term growth and employment

Turning now to the question of the prospective impact of an ECB on long-term growth and employment we have to deal with the question to what extent it will fulfill its goal to maintain price stability. There is a body of literature presenting evidence that independence of the central bank is an important precondition to reduce the costs of a monetary policy to maintain price stability if a Phillips curve like trade-off between price stability and output growth exists (see Grilli, Masciandaro, Tabellini, 1991, Cukierman, 1992, Alesina, Summers, 1993, Eijffinger, Schaling, 1993). This insight has also attracted the attention of those who drafted the statute of the ECB and emulated part of the Bundesbank charter by designing price stability as its primary objective and giving it even greater legal independence than the Bundesbank (see also Goodhart, 1994). As Friedman (1977) has already pointed out — without making any reference to monetary game theory — under ideal conditions of a full information equilibrium for

private agents one would observe a rational expectation formation based on a credible prior announcement of a policy targeting price stability which leads to a vertical Phillips curve. Money illusion would be non-existent. Therefore the possibility of a "free lunch" exists to obtain price stability without depressing output and employment growth if a general consensus forming such an equilibrium emerges. The behavior of individual agents and the inclination of the associated Phillips curve, however, rests significantly on the credibility of the monetary authority to act according to its aims.

The credibility of the monetary policy is an important asset. Confidence in a monetary system and its standard of value is crucial to providing stability to the system's level of prices and its economic activity. Any monetary system is a human institution which is run by imperfect people. If not checked, that institution might abuse its authoritative power. There is no reason to trust and endow any form of monetary authority with unchecked power. This was clearly pointed out by Hicks who analyzed the discipline and confidence requirements of a country's currency in a polycentric model (Hicks, 1989; see also Hagemann, Hamouda, 1990). The loss of confidence in the U.S. monetary policy during the Vietnam war led to a breakdown of the Bretton Woods system in the late 1960s and early 1970s.

Porta and Scazzieri (1996) emphasized the central role of *trust* for the development of civil societies on a national as well as an international level. The two authors explain the superiority of horizontal relationships in a society of trust and contract over vertical relationships of command and obedience. Focussing on the essential role of money as a trust-reinforcing institution, a very solid bridge is built by them from the monetary arrangements of pre-modern Europe to the actual discussion of the EMS and the introduction of a common European currency. The authors argue convincingly that international money, if considered from the point of view of its trust-reinforcing features, is not essentially connected to the sovereign of individual states. The gradual replacement of gold as a standard of value emerged quite slowly during the industrial revolution. It was just the process of breaking up the link between a real commodity like gold or silver and the standard of value in modern states (see, e.g., Knapp, 1921) which introduced trust, credibility or reputation of state institutions as new factors in the game to maintain price stability.

Since credibility for private agents is established in a stochastic environment with informational uncertainties, private agents have to build up credibility to a policy of an institution according to its past performance. The German Bundesbank built up its credibility over nearly four decades. This helped, for example, to keep adjustment costs low under the shock of the German unification beginning in July 1990 with the monetary union. The reputation of

³ See Biefang et. al. (1995) for a comparison of the long-run demand for money in the UK and in West Germany.

the past performance of the Bundesbank helped to keep long-term interest rates during the first half of the 1990s below those of other European countries like France, with a less favorable tracking record on inflation in the past, even if the latter actually had lower inflation rates in the 1990s. Since a newly established ECB cannot build up a comparable record in the beginning, it has to gain trust from private agents without it. Cukierman lists four important credibility enhancing measures:

"First, the objectives of the ECB should be clearly defined in the law with primary emphasis on price stability. Second, the final authority over monetary policy should be given to the Bank. Practically this means that the Bank should be allowed full technical control over at least some nominal aggregate which could (but does not necessarily have to) be the monetary base. A byproduct of these recommendations is that the Bank will also have full control over short term nominal interest rates. Third, there should be clear and strict limitations on lending to governments and to other public and private organizations. There also should be clear guidelines concerning the distribution among member countries of the seignorage that may accumulate in the Bank as a byproduct of its activity... Finally, appointment procedures should shield the high officials of the Bank from potential political pressures." (Cukierman, 1995, pp.4-5).

The idea is that some of the credibility of the Bundesbank might be inherited if the institutional and legal frameworks are very similar. But even this will not give immediate credibility to the ECB similar to the Bundesbank. Without accompanying measures of sound fiscal policies and a community wide wage policy to keep the two major internal inflationary pressures in the EU area under control, a short run Phillips curve like trade-off might be still tempting to politicians or trade unions in some member countries to act as free riders in the EMU. Only if there would be sufficiently severe penalties for those who attempt to cheat concerning their commitment to keep price stability as a central target after becoming members of the EMU, a rational expectation formation of private agents could avoid an output and employment depressing bias of a monetary policy of the EU (see e.g. Arestis, Sawyers, 1996). The ECB could establish credibility of the price stability target without cooperation if it is sufficiently independent but this will be accomplished at much higher social costs.

Instead of coming to agreements to enact penalties for single member governments and/or on what measures have to be taken if governments fail to follow a sound fiscal policy, one should leave this to the ECB. By using open market operations to discipline unsound fiscal behavior of single governments it could accomplish an interest rate differential between assets of governments behaving well and not so well. This would give the ECB sufficient room for reacting to unsound fiscal behavior of some governments in the EMU in a timely manner. The governments pursuing unsound fiscal policies would have to pay a risk premium

when selling their assets to the market because the ECB would intervene in the market accordingly. This perspective of handling open market operations by the ECB is the exact opposite of the conflict assumed by Cukierman (1995) who sees an unwarranted political bias emerging from open market operations. Here the ECB would obtain a warranted instrument of monetary policy to create the desired distributional effects between different governments. Instead of an unwanted competition of governments to obtain indirect benefits from the ECB it will create a desired competition between governments for a sound fiscal policy.

The monetary policy of the ECB together with the still persisting national differences in the wage formation process will create a particular shape of a Phillips curve relation for the EMU area. The initial credibility of the ECB together with the associated behavior in the determination of wages at the national level constitutes the environment how much her monetary policy will have to depress economic and employment growth while trying to sustain a desired level of price stability. The more economic agents in the EMU anticipate a monetary policy that accomplishes price stability — even if it is costly with respect to output and employment growth — the less economic agents are encouraged to test her commitment. Depending on the credibility of its monetary policy the macroeconomic policy agenda for the EMU governments and the ECB is set. The temptation for governments or trade unions to deviate from long-term time-consistent fiscal or wage policy behavior (see Blackburn, 1992) under internal or external shocks, will be hard to overcome in a setting where a short run trade-off between price stability and employment exists. As game-theoretic analysis of monetary and fiscal policies have demonstrated (see Blackburn; Christensen 1989), a variety of sources to produce an unwarranted behavior exists. Private agents are unable to discriminate between the strategic and the stochastic element of a policy action. Activist policies are superior in a stochastic environment, because they can aim to compensate those exogenous shocks (closed loop policy control solutions) while a conservative rule based policy (open loop policy control solutions) will not. Therefore, the possibility for governments to cheat private agents with respect to their hidden policy intentions might emerge. The strategic component of a policy can only be learned by the public from historical experience. Thus for example, the American people learned from the failure of past U.S. governments to consolidate their fiscal deficits according to their pre-announcements that governments and the congress were repeatedly cheating them (see, e.g., Krugman, 1994). Even worse, it seemed that nobody was or is accountable for these results. This led to the current crisis to set up a budget plan, because the credibility that the government will keep its promises has widely been lost and the Republicans are now starting to enact a fixed-rule policy to consolidate the federal budget.

The next stage in the formation of the monetary policy for an ECB is to come to a decision as to what type of monetary

policy — rule-based or discretionary — should be applied by its authority⁴. Taking the German Bundesbank as an example again, it seems quite likely that the ECB will choose a mixed strategy of a long-term rule based monetary policy control of some intermediate target as the quantity of money, M3, to give orientation but still keep the freedom to intervene in the money markets if actual stochastic shocks make it necessary to avoid a financial crisis. Otherwise it would lead to excessive adjustment costs of economic agents, if a monetary accommodation would be refused by the ECB in the short run. The success of the German Bundesbank rests on just this mix of orthodox rule based long-term policy and its ability to dismiss those rules in the short run because its credibility shields it against a dramatic shift in the formation of rational expectations of private agents. Even by violating its own rules in the short run, the bank does not risk its credibility. This pragmatism of actual Bundesbank monetary policy made it possible to internalize the benefits of both types of monetary policy. It seems likely that an ECB will inherit this pragmatic approach from the Bundesbank. This kind of policy mix will create speculations in the public if the ECB follows its target to sustain price stability or if it might compromise with governments, thus giving up its independence. It is just this delicate task to strike a balance between short-term activism and long-term strategy to maintain credibility which up to now is difficult to mirror in a mathematical model framework. Thus private agents will always face internal uncertainty about the next step the bank will take in the monetary policy game and "*ECB watching*" will be similar to that of the Bundesbank now. This is partly due to the fact that there will never be a general agreement between all agents as to how a stochastic shock works through the economy. The actual model on which the ECB decisions will be based, however, will never be completely revealed.

Returning to the central question of this paper, the impact of the ECB on output and employment growth, it is obvious that it is unpredictable in the stochastic environment of a monetary policy game. However, one could expect that the higher the credibility of the ECB will be, i.e. the actual Phillips curve approaches a vertical line, the lower its impact on output and growth will be. If credibility cannot be inherited from the Bundesbank as its predecessor or created by a sound institutional design and appropriate selection of governors for its board, the social costs of creating credibility for the ECB might be quite substantial in the beginning. The private agents and governments will always face the alternative to learn their lesson on maintaining price stability the easy or the hard way. It's part of the game.

Another uncertainty concerning the impact of the ECB monetary policy on output and employment growth is also given by the fact that no one knows in advance how often and to what extent the ECB will deviate from its long-term monetary policy rules to supplement real potential output growth for its member countries by a similar increase in

money supply in favor of counter-acting real monetary shocks. If the ECB does act under critical circumstances of real shocks to compensate it, it might increase its credibility, if it overdoes its activist stance, it will loose credibility and social adjustment costs to maintain price stability will increase. The hostility of the environment created by the other economic agents and represented in the actual slope of the Phillips curve determines the actual social costs to accomplish price stability or, if it is lost, how much it costs in foregone output growth and rising unemployment to return to it.

Pessimistic predictions on the output and employment depressing impact of the ECB monetary policy therefore always rest on the assumption that the other economic agents create a hostile economic environment where price stability can only be obtained at high social costs (see Arestis, 1993; Arestis; Sawyer, 1996). It might be an important task in the implementation process of the EMU and the ECB to dampen speculations about the credibility of its monetary policy to attain a sustainable degree of price stability. The initial endowment of credibility will be enhanced and the social acceptance for an independent ECB increased if the beginning of the system meets with a supportive environment, i.e. sound fiscal and wage policies. Under such circumstances, the ECB will be able to create a beneficial, fairly stable, historical lock-in equilibrium where adjustment costs to maintain price stability by using monetary policy instruments are kept low. Otherwise, if the design of the ECB is flawed and the environment is hostile, the life-expectation of the ECB will shrink dramatically. What is needed is a cumulative process to create a virtuous circle of rational expectation formation that price stability is feasible by the ECB at low social costs, which will then become self-enforcing. The history of the European Community with its fairly steady progress of economic integration, gives a good example that in spite of all obstacles which faced this development in the past, progress was possible. By this, the EU has become an attractor to its surrounding economies to become members, because the benefits of entry exceed the costs of staying or becoming an outsider.

Surely, one can design scenarios as many critics of the Maastricht process do, where the formation of the EMU becomes highly unattractive and rational agents would dismiss it as an option. On the contrary, however, one should ask oneself if this possible scenario could not simply be avoided by a better design of the EMU. The present state of the EU was never designed to be the final state of the European community, therefore we need an orientation how to improve the EU because we have not reached the end of its history (see also Issing, 1995).

⁴ For a discussion about a detailed design of monetary policy instruments for the ECB see, e.g., Jarchow (1995), v. Hagen; Neumann (1995), Currie (1995), Rich (1995).

4. Conclusions and perspectives

Sustainable price stability for Europe accompanied with low social cost with respect to output and employment growth will crucially depend on the credibility of the ECB. Independence of the ECB seems to be a fundamental precondition given the tendency of most governments to have an inflationary bias in their fiscal policies. Therefore it seems to us an important issue whether the ECB should be allowed to act as a dominant player to counterbalance unsound fiscal behavior of governments by open market operations to create interest rate differentials to penalize them. There are, however, further credibility enhancing measures which have to be considered in the introduction process beside a very careful design of the monetary instruments and institutions. The success of the ECB will depend significantly on a sufficient degree of convergence between fiscal and wage policies in the member countries in the beginning. The Maastricht treaty clearly recognized the importance of sound fiscal policy, but neglected the other major source of divergence between members, namely differences in productivity levels and in the wage-formation process between potential member countries. It would be very useful to encourage a coherent wage-formation scheme in the EU countries which recognizes differences in productivity and wage levels. The strongest form would be a European wage and employment pact between entrepreneur and trade union organizations as it has recently been considered by German trade unions for Germany. If such a harmonization in wage formation could be accomplished, this would support the introduction of an EMU and the establishment of a low social adjustment cost equilibrium because rational expectations in the EU would settle to a state where the Phillips curve would be close to a vertical line.

If a cooperative equilibrium of this kind emerges its pay-off in the monetary union would benefit all economic agents in a sense to be Pareto-optimal compared to a Nash equilibrium solution. If a noncooperative equilibrium emerges, the social costs of price stability will increase and under insufficient convergence between member countries there will be substantial distributional effects across the EMU area as well. This will have to be considered by those countries whose convergence until 1998 looks inappropriate when final commitments to enter the EMU have to be made.

However, everyone has to be aware that all uncertainties emerging from the formation of the EMU are not completely assessable in advance. It is in some way like deciding about a marriage⁵. There always will be good reasons and high expectations that it will be a successful relation, otherwise one would not marry. If one would try to make it a perfect rational decision one would never marry because there are uncertainties which are not accountable in advance. Therefore success or failure of the EMU, like in a marriage, will heavily depend on the commitment and evolutionary learning of its partners to maintain and develop the relation to give it a bright future beneficial to all of its members. On the one hand, like in a marriage, the EMU will lead to a loss of freedom for all members to act independently to maximize their personal or national benefits, respectively, without endangering the relation. On the other hand, the returns from such a relation might exceed the costs, even if we do not know precisely the magnitude.

⁵ We thank Ronald E. Bodkin for this analogy illustrating that humans from time to time make decisions about their life transcending what is feasible to rational calculus.

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Zusammenfassung

Nachhaltige Preisstabilität für Europa: Voraussichtliche Wirkungen einer europäischen Zentralbank auf das langfristige Wachstum und die Beschäftigung

Der Artikel diskutiert die Implikationen der geplanten EWU hinsichtlich ihrer Auswirkungen auf das langfristige Wachstum und die Beschäftigung. Als methodischer Rahmen wird dabei die Spieltheorie verwendet und die Geldpolitik der EZB als Teil eines makroökonomischen Politikspiels interpretiert. Die Erfahrungen mit der Geldpolitik der Bundesbank, eine nachhaltige Preisstabilität in Deutschland zu erreichen, und deren Auswirkungen auf die Mitgliedsländer des EWS werden als Bezugspunkt herangezogen, um mögliche Schwierigkeiten für eine zukünftige EZB zu identifizieren. Besondere Aufmerksamkeit wird dabei der Periode des EWS und der besonderen Rolle der Bundesbank seit der Wiedervereinigung Deutschlands geschenkt. Die Glaubwürdigkeit der EZB, die wesentlich auf einem angemessenen institutionellen Rahmen der Bank und ihrer geldpolitischen Instrumente beruht, ist von herausragender Bedeutung für einen erfolgreichen Beginn der EWU im Jahr 1999. Ohne Glaubwürdigkeit der EZB werden die Anpassungskosten, die Preisstabilität in den Mitgliedsländern gegen die nationalen Regierungen und Gewerkschaften durchzusetzen, erheblich sein. Die fiskalischen Kriterien des Maastrichter Vertrages sind nur ein Teil des ökonomischen Umfeldes, das erforderlich ist, um zu einer Situation zu gelangen, in der Preisstabilität zu niedrigen sozialen Kosten — gemessen an höheren Wachstumsraten von Sozialprodukt und der Beschäftigung — erreicht werden kann. Daher schlagen die Autoren eine Art gemeinsamen Lohn- und Beschäftigungspakt in der EWU vor, der eine erfolgreiche Einführung des Euro als gemeinsame Währung unterstützen sollte.