Credibility, inflation and coordination in the post–ERM period

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Abstract

This paper formally analyses the alternative arrangements for monetary policy–making in the post–ERM period. The ERM as a fixed exchange rate regime is usually suggested for the high inflationary countries as a way of importing credibility from the Bundesbank which has a reputation for being very tough on inflation. This paper argues that the ERM is not the best mechanism for reducing inflation. The alternative suggested in this paper is monetary policy coordination which takes the form of creating a single central monetary authority (not a central bank) involved in joint monetary policy–making. This arrangement proves to be beneficial both in the short term and in the long term. Although it is mainly suggested for the high inflation countries of the system, it has stabilising effects for all participants.

1. Introduction

Since the formation of the "European Monetary System" in 1979 the member countries have experienced a fall in their inflation rates (See Table 1). In 1980 the lowest inflation was in Germany with 5.4 % and the highest in Italy with 21.2 %. In time, inflation rates converged at the bottom of the
scale and in 1992 the average rate within the EMS was as low as 3.5%.

There has been a considerable attempt, mainly in the theoretical literature to explain the effects of the exchange rate arrangement in such a disinflationary process experienced by the participants of the EMS. The main argument put forward has been that it could provide extra discipline to the participant countries. The discipline is defined in the tradition of time-inconsistency literature which was initiated by the seminal paper of Kydland and Prescott (1977), and followed by Barro and Gordon (1983), Backus and Drifill (1985), Canzoneri (1985), Horn and Persson (1988), Vickers (1986), Rogoff (1985). Melitz (1987) and Krugman (1990) use the discipline argument in the ERM framework. The basic result from these studies is that the ERM is a way of committing to the exchange rate targets when the policymakers in the high inflationary countries find it difficult to credibly commit themselves to monetary targets. Therefore, the ERM is seen as a way of importing credibility to the high inflationary countries of the system by reducing price expectations and thus inflation. Although the system seemed to have worked quite well as there have been no realignments since 1987, the ERM came to a virtual collapse in July 1993 after surviving the September 1992 crisis. Both the British Pound and the Italian Lira left the system in September 1992 with no prospects of going back in the near future. The recent crisis in July 1993 was the last straw and the exchange rate band was widened from 2.25 to 15% which effectively meant a move back to flexible rates. The effect of recent developments on inflation rates is yet to be seen.

This paper argues for "monetary cooperation" among the member countries as an alternative arrangement for monetary policy-making for high inflationary countries of the system. It is a different arrangement in that there will be a central committee which will advice upon monetary decision making for each country. This arrangement is suggested on two grounds: Firstly, it may have inflation reducing and welfare improving effects. Secondly, it may prevent the destabilising effects of country specific shocks which was actually the reason for the collapse of the ERM. The pressure on German interest rates exerted by the German unification, which was a domestic shock for Germany, proved fatal to the ERM.

The outline of the paper is as follows. Section 2 introduces the basic model. In Section 2.1 the case of ERM as a fixed exchange rate regime is

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1 The European Monetary System is an arrangement among the central banks of the European Community to manage intra-community exchange rates to finance exchange rate interventions. Therefore the exchange rate mechanism (ERM) of the system is only one aspect of it. Although all countries of European Community are members of the EMS only some countries joined the ERM. However we will use EMS and ERM terms interchangeably henceforth.
Table 1
The EMS Participants’ Inflation Rates, 1980–1992

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<td>8.7</td>
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<td>10.1</td>
<td>6.9</td>
<td>6.3</td>
<td>4.7</td>
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<td>France</td>
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<tr>
<td>Germany</td>
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<td>Ireland</td>
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<td>Italy</td>
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<td>17.8</td>
<td>16.5</td>
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analyzed with reference to the pre–ERM period which was characterised by flexible rates. Section 2.2 introduces the suggested alternative the so-called "monetary cooperation". The case of a single central bank is analyzed in Section 2.3 which is seen as the final stage of the ERM rather than as a separate alternative on its own. In Section 2.4 a simulation analysis is carried out on the basic model used in this paper. Finally, the main points of the paper are summarized in Section 3.

2. Basic model

The basic model which will be used here is a static two–country model from Canzoneri and Henderson (1988). The deterministic version of the model is laid down below. All variables are in logarithms and are expressed as deviations from their means.

\[
y = -(w - p) \left[ (1-\alpha)/\alpha \right]
\]

(1)

\[
y' = -(w' - p') \left[ (1-\alpha)/\alpha \right]
\]

(2)

Equations (1) and (2) are supply functions at home and abroad respectively where \( y \) and \( y' \) are the logarithms of output supply at home and abroad. In what follows, starred variables are used for the foreign country. Likewise \( w, p \) and \( w', p' \) are the logarithms of nominal wages and prices at home and abroad respectively. \((1-\alpha)/\alpha \) is the responsiveness of aggregate supply to real wages and \( 0 < \alpha < 1 \). Output supply is negatively related to real wage.
\[ y - y^* = \delta (s + p^* - p) \]  

Equation (3) relates the demand for products to the real exchange rate between the two countries where \( s \) is the price of foreign currency in terms of the domestic currency. \( \delta \) is a measure of the effect of a real appreciation on the distribution of demand between the home and foreign country.

\[ m - p = y \]  
\[ m^* - p^* = y^* \]  

Equations (4) and (5) are money demand functions where \( m \) and \( m^* \) are the logarithms of money supply at home and abroad respectively. Domestic and foreign money are the only assets in this model. And the only asset held by the residents of each country is their domestic money. Money demand is assumed to be a function of income only.

\[ q = p + \beta (s + p^* - p) \]  
\[ q^* = p^* - \beta (s + p^* - p) \]  

Equations (6) and (7) are consumer price indices, (CPI), in the two countries where \( \beta \) is the degree of openness of the two countries to international trade and is smaller than 1. For simplicity we assume \( \beta = \beta^* \). A real appreciation helps to bring down inflation at home.

\[ U = -\sigma (n - k)^2 - q^2 \]  
\[ U^* = -\sigma (n^* - k^*)^2 - q^{*2} \]  

Equations (8) and (9) are the objective functions of the central banks at home and abroad where \( n \) and \( n^* \) are employment levels and \( k \) and \( k^* \) are the employment targets for domestic and foreign countries, respectively. As defined above \( q \) and \( q^* \) are the consumer price indices at home and abroad, respectively. The deviations of output and inflation from their target levels are "bad" as represented by a negative sign in the two objective functions. In both countries target inflation is zero. A rise in inflation has two effects on welfare. One is negative since deviations of inflation from its target level is itself in the objective function with a negative sign and the target level of inflation is zero. It also has a positive effect on output and thus on welfare,
which is captured by $\sigma$ in this model. This is due to the fact that $k > n$ and $k' > n$. This wedge between the natural and the target levels of employment can be justified by the existence of various distortions in the labour market, such as income taxation and trade unions. Therefore an increase in $n (n')$ helps to close the gap $k-n (k' - n')$. The two countries are symmetric except for the fact that $k > k'$, i.e., the home country is more ambitious in terms of employment, and therefore it has a higher inflation rate.

The model defines a static one-period game between two players. These are the policymaker$^3$ and the wage setters. The timing of the game is such that at the beginning of the term the policymaker announces the planned money creation for the period. Then wage setters draw wage contracts. The policymaker then decides on a monetary policy action and implements it. This is not necessarily the same as the announced plan. Since this policy action is not known to the wage setters at the time of contract setting, wage setters have to form expectations about the monetary policy action that will be taken. Let us assume for simplicity that both wage and money supply increases can either be low or high. Now suppose that government announces that the rate of money creation will be low and wage setters believe it. Then if the wage setters go for a low wage increase, the government then has a temptation to go for a high money creation regardless of the initial announcement. This is because an unexpected inflation creates employment which increases the government welfare. This temptation which is known to the wage setters makes them always go for a high wage increase. In making monetary policy decisions, the government will then accommodate high wages by choosing high money creation. The nash equilibrium is attained with higher wages and higher inflation and with no employment gain.

There are two main assumptions which are implicit in the structure of the game summarised above. First, wages do not fully and instantaneously adjust with respect to current information because of the fact that contracts are being drawn up at the beginning of the term. Therefore, the authority controlling the monetary instruments can affect real variables such as output and employment. Second, wage setters know the model of the economy and

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$^2$ However, this is possible as long as there is a divergence between the actual and expected prices. An unexpected increase in inflation increases $n$, which reduces the gap between $n$ and $k$, therefore a smaller term enters into the objective function with a negative coefficient, $-\sigma$, which results in a reduction in $U$.

$^3$ Here there is no distinction between the central bank and the government. There is only one policymaker. For the separation of monetary and fiscal authorities see Alesina and Tabellini (1987), Ozkan (1994), Lohmann (1993), on the other hand, by utilizing a similar version of Canzoneri and Henderson (1988) model, analyses the interaction between domestic politics and international policy coordination by incorporating the political identities of the parties in power.
understand the way it functions. They form rational expectations about the
monetary instruments which is the money supply here. Since wages are
pre–determined, the equilibrium crucially depends upon the type of the
exchange rate regime used whose different types are discussed in the
following section.

2.1. The ERM versus the flexible rates

In this section we will discuss the ERM as a fixed exchange rate regime
and compare it to the pre–ERM period which was characterised by flexible
exchange rates. Here we have a high inflationary and a low inflationary
country. In the related literature the high inflationary country is generally
taken to be either Italy or France and the centre country, i.e., the low
inflationary one almost always exemplifies Germany. To see how the ERM
affects equilibrium variables we will first analyze the case with flexible rates
to identify the pre–ERM period.

With flexible rates each country sets its own money supply given the
partner’s money supply. The exchange rate is then endogenous. The profit
maximisation rule in the labour market will equalise the real wage to the
marginal product of labour which is given by\(^4\)

\[ w - p = -\alpha n \]  \hspace{1cm} (10)

By using equations (10), (4) and (1) we get

\[ n = m - w \]  \hspace{1cm} (11)

On the supply side the trade union will try to minimise the deviations of
the employment level, \( n \), from a target level of 0. The trade union then
minimises the following loss function

\[ L = E(m - w)^2 \]  \hspace{1cm} (12)

where \( E \) is the expectations operator. It is clear from equation (12) that

\(^4\) Production function for the domestic country have the following form in levels, \( Y = AK^\alpha L^{1-\alpha} \)
where \( Y \) is the output, \( K \) and \( L \) are the quantity of capital and labour used in production
process respectively. For simplicity we set \( K = 1 \) and \( A = (1-\alpha) \). Marginal product of in this
case is \( N^\alpha \) which gives \(-\alpha \) in logs as in equation (10). Marginal product of labour abroad
can be derived similarly.
\[ w = m^e \]  

(13)

and

\[ w^* = m^{e^*} \]  

(14)

are the wage setting rules for home and abroad. Using these equations together with (3) and assuming perfect foresight, Nash equilibrium is achieved with

\[ n_i = n_{i^*} = 0 \]  

(15)

\[ q_i = [\sigma / (\varepsilon + \alpha)]k \]  

(16)

\[ q_{i^*} = [\sigma / (\varepsilon + \alpha)]k^* \]  

(17)

where \( \varepsilon = \beta (1-\alpha)/\delta \). Subscript 1 is used to represent the variables with flexible rates.

The natural rate of employment is attained with positive inflation rates. The rate of inflation is a function of the welfare gain from creating inflation (\( \sigma \)), the employment targets (\( k, k^* \)) and the incentive to export inflation to the rest of the world, \( \varepsilon \). \( \alpha/\alpha \) is the inflation rate for a closed economy obtained by Barro and Gordon (1983). International interactions themselves help both countries reduce their inflation rates since disinflation at home creates real exchange rate appreciation which in turn reduces the domestic CPI. However, since \( k > k^* \), the domestic country remains the high inflation country relative to the other.

The ERM, on the other hand, can be treated as a fixed rate regime. In this case, the domestic country is not able to change the exchange rate and it has to accommodate every change in the money supply of the centre country. In the ERM, it has been effectively the case that the participant countries had to follow the moves made by the Bundesbank.

The new wage setting rule is such that wages in domestic country are set equal to the expected money supply increase made by the centre country, which is given by

\[ w = m^{e^*} + s^e \]  

(18)

Solving the model with (18) yields
\[ n_x = n_x^* = 0 \quad (19) \]
\[ q_{tx} = q_{tx}^* = (\sigma/\alpha)k' \quad (20) \]

Equations (19) and (20) give the equilibrium values of employment and inflation with the ERM. From the comparison of inflation rates under the fixed and flexible rate regimes, (20) and (16), it is clear that the ERM is an improvement on flexible rates in terms of inflation if

\[ (k-k')/k' > \epsilon/\alpha \]

i.e., if the credibility gap between the high inflationary country and the centre country is sufficiently large. This result is the same as that of Giavazzi and Giovannini (1989). The reason why it is disinflationary to tie one's money to that of a less inflationary country can be explained by the following argument: In this framework the main channel to reduce inflation is to influence the expectations of price and wage setters. Participating in a regime like the ERM helps to bring down the price expectations since the centre country's monetary authority is known to be relatively tougher on inflation. Consequently, the domestic authority which fails to commit itself to credible monetary targets will achieve lower inflation through the reputation of the monetary authority in the centre country.

It should be noted that here nash equilibria are attained under both the flexible and fixed exchange rate systems. The government is expected to follow the same monetary rule with the centre country in the fixed rate regime, i.e., the ERM. Since the centre country is known to be less ambitious in terms of output and employment, price expectations are lowered and the domestic country improves its output--inflation trade-off. In this paper, a lower inflation will directly increase welfare since \( n = n_x = 0 \) in all cases. That is, the government can not raise output above its natural rate. In a stochastic version, however, the ranking of the equilibrium inflation rates does not necessarily correspond one-to-one to the welfare ranking of the different alternative arrangements (see Özkan, 1990).

2.2. Monetary coordination

In this section I will propose an alternative arrangement to the ERM for the high inflation countries of the system. This will also be beneficial to all sides in the long run due to the stabilising effects of cooperation. This
so-called monetary coordination\(^5\) takes the form of establishing a central\(^6\) committee. The preferences of this institution can be represented by the following maximisation problem. The new objective function is a weighted average of the objective functions of the two countries. Thus, the "central objective function" takes the following form

\[
U_c = \phi \left[-\alpha(n - k)^2 - (q)^2\right] + (1-\phi) \left[-\alpha(n' - k')^2 - (q')^2\right]
\]

(21)

where \(\phi\) and \((1-\phi)\) are the weights attached to the objective functions of the domestic and the centre country respectively, where \(0 \leq \phi \leq 1\) and subscript \(c\) stands for cooperation. The central committee will choose the rate of money creation for each country depending on the result of the maximisation problem. It will then ask the monetary authorities of the two countries to make the necessary changes in their money supply. Both countries will keep their national currencies and monetary authorities.

The central authority's maximisation of (21) yields

\[n_c = n_c^* = 0\]

(22)

\[q_c = \frac{[\phi \sigma k (\varepsilon+\alpha) + (1-\phi)\sigma k' \varepsilon]}{\phi(\alpha^2 + 2\alpha \varepsilon)}\]

(23)

\[q_c^* = \frac{[(1-\phi)\sigma k^* (\varepsilon+\alpha) + \phi \sigma k \varepsilon]}{[(1-\phi)(\alpha^2 + 2\alpha \varepsilon)]}\]

(24)

where the subscript \(c\)'s are used for cooperative outcome.

A comparison between equilibrium inflation rates under this regime and the ERM shows that for monetary cooperation to be inflation reducing for the domestic country

\[k/k' < [\alpha + \varepsilon (2-(1-\phi)/\phi)] / (\alpha + 2\varepsilon)\]

must hold. As \(\phi\) gets larger the equilibrium level of inflation in the domestic country will be actually lower than the one achieved under the ERM. Also

\(^5\) The terms cooperation and coordination are used interchangeably throughout the text.

\(^6\) The words centre and central are used extensively in the text and might be confusing. Centre indicates the low inflationary country which is usually identified with Germany. Central, on the other hand, represents the committee formed as a supernumerary body.
for the monetary coordination to be inflation reducing for the centre country the following condition must hold

$$\frac{k}{k'} < \frac{(1 - \phi)}{\phi}$$

The centre country can improve its inflation–output trade–off by participating in the new arrangement if \((1 - \phi)\) is sufficiently large. Therefore a conflict between the two countries is bound to prevail. The larger the \(\phi\) gets the lower the inflation rate is in the domestic country and vice versa. An inspection of the inflation reducing condition for the domestic country reveals that \(\phi\) must be greater than \(1/2\) for the domestic country to have lower inflation in the new arrangement. From the second condition it must be smaller than \(1/2\) for the centre country to lower its inflation rate. Then \(\phi\), the degree to which the central committee cares about the domestic country, gains crucial importance. The choice of \(\phi\) depends on the aim of such cooperation. If it is a step towards a complete monetary and political union, the centre country might accept taking part in such cooperation for convergence reasons even if \(\phi\) is high, unless it is too high. Otherwise, the previous lower inflation country might be the new higher inflation country. If, on the other hand, it is an alternative to a fixed exchange rate system itself, the centre country must be compensated by other means to be convinced to take part in the new arrangement.\(^7\)

Government's credibility problem is still crucial. For the coordinated reputational policies to be sustainable there must be some threat strategies. In the two country model analysed in this paper the domestic country is the one which has a reputational problem at home. In this case if she reneges upon agreed coordinated outcomes she will end up with high time–consistent inflation at home. This fact alone poses sufficient threat to the policymaker in the domestic country, and therefore helps to sustain coordinated outcomes. Having experienced the ERM crisis the critical question at this stage could be as to why cooperation would work this time. In fact, the way the ERM collapsed in July 1993 forms a good basis for suggesting monetary cooperation of the form analysed in this paper. The system worked well during a period over which economic conditions between the participating countries were converging. However, when the unification increased the demand in Germany, monetary policy in that country started to be too

\(^7\) There could be two types of incentives to convince the centre country to take part in the "monetary cooperation" arrangement. Firstly, destabilising effects of the country specific shocks may disappear since the monetary policy is set jointly. Secondly, the cooperation between the countries could be more comprehensive such as in the EEC. Then the centre country could use its bargaining power in other aspects of cooperation.
contractionary to be followed by the other countries of the system, most of which were already in deep recession. The system collapsed with speculative attacks on the weak currencies of the system when the financial markets realised that the monetary policy-making was too tight for those countries (see Özkan and Sutherland, 1994). The reason as to why the Bundesbank did not agree to relax its monetary stance is simply that it was preoccupied with its own targets and the effects of unification on German economy to consider the effects of its policy action on the member countries' economies. With monetary cooperation of the form suggested here, however, the community could fight the adverse effects of such country specific shocks with a more neutral central committee by setting monetary policy appropriate for each country.

It is necessary at this point to discuss what this "monetary cooperation" arrangement implies for the exchange rate policy. The growth rate of money supply will be determined as a result of the central committee's optimisation problem. Once the two countries set their money supplies, the exchange rate between the two currencies will then be determined endogenously.

2.3. The case of a single European Central Bank

In this section we will discuss the solution to the model in the case of a single European central bank. We will show to way it is different from the previous arrangement namely the monetary coordination.

In the present case with full unification the new supranational body will be the single central bank. There will be one community which has one single currency. The monetary policy will be directed by the single central bank. There will be one equilibrium level of employment and inflation rate. This is in sharp contrast with the case of monetary cooperation where countries keep their national currencies and central banks. In the case of monetary cooperation, the central committee is involved in joint maximisation and cares about both countries. How much weight is given to different countries' well-being is determined by the size of $\Phi$.

The objective function for the community, in the case of central bank, will then take the following form

$$U_e = -\alpha n_e - k_e - q_e^2$$

(25)

where $n_e$ and $q_e$ are employment and inflation rates in the community and subscript $e$ stands for Europe. The employment target of the community, $k_e$, is a weighted average of the employment targets of the two countries.
\[ k_e = \lambda k + (1-\lambda)k' \quad (26) \]

The single central bank is assumed to be formed by the members of the previous national central banks whose degree of ambitiousness varied. Therefore, the monetary policy is now designed by a single institution whose taste for employment is determined by \( \lambda \). The central bank, once created, has its own targets and optimises its own welfare function. The central committee, on the other hand, cares about two different countries and advices on monetary policy-making accordingly. Here \( \phi \) shows how much the central committee cares about the domestic country whereas \( \lambda \) is the degree of the representativeness of domestic policymaker's in the board of the single central bank.

The maximisation problem results in

\[ n_e = 0 \quad (27) \]

\[ q_e = (\alpha/\alpha)k_e \quad (28) \]

Inflation produced with the single central bank is higher than that with the ERM, i.e., \((\kappa_k/\alpha) > (\kappa_k'/\alpha)\) since \(k_e > k'\). The comparison between the inflation rates under this regime and monetary cooperation is not very straightforward algebraically and therefore is left to the numerical analysis of the next section.

The case of a single European central bank could be inflation reducing and welfare improving only if the Eurofed is less ambitious in terms of output than the Bundesbank, which is not possible with the assumption of \(k_e = \lambda k + (1-\lambda)k'\). If it is as tough as the Bundesbank but not more so, the inflation rate will be the same as the one attained with the ERM.

2.4. Simulation analysis

In this section the model is solved numerically. Our main purpose is to examine the changes in equilibrium inflation rates with respect to different parameters. The parameters of interest are \( \phi \), the weight given to the domestic country in joint maximisation, and \( k \) and \( k' \), the employment targets of the domestic and the centre countries respectively. Our base set of parameters are \( \varepsilon=0.8, \alpha=0.5, \beta=0.8, \delta=0.5, \lambda=0.5, \kappa=0.7 \) and \( k'=0.5 \).

Figure 1 gives the movements of equilibrium inflation rates under the ERM, the monetary cooperation and the Eurofed with respect to \( \phi \). Since \( \phi \) does not affect \( q_e \) and \( q_e \) only \( q_e \) responds to \( \phi \) changes. At low levels of \( \phi \) \( q_e \) is above the other two. At high levels of \( \phi \) monetary cooperation is better
than the ERM and Eurofed in reducing inflation. It is clear that as the domestic country gets a higher weight in the central maximisation it improves its inflation–output trade–off.

Figure 2 depicts the movements of the same three variables with respect to a change in $k$, the employment target of the domestic country. The inflation rate that can be produced by the ERM in the domestic country does not respond to $k$. The single central bank is worse than the other two regimes for all values of $k$. The inflation rate through monetary cooperation is the lowest for low levels of $k$ and between the other two at higher levels. As $k'$ is taken to be 0.5, low levels of $k$ implies that two countries are not too dissimilar and confirms that similar countries can do better by cooperating.

Figure 3 suggests that the ERM is the best alternative when the centre country is very tough on inflation, i.e., when $k$ is very low. However, increases in $k'$ makes monetary cooperation more attractive especially when $(k-k')$ is low ($k=0.7$). The case of a Eurofed is the worst one for a wider range of the parameter.

What emerges from the numerical analysis is that monetary cooperation could be a realistic alternative to the fixed rates for a wide range of parameters. The Eurofed is not seen as an alternative but rather as an arrangement which could take place at the culmination of monetary and political union.

3. Conclusions

The ERM is generally accepted as a way of importing reputation from the Bundesbank, which is known for its tight policies, to the high inflationary countries of the system. By fixing the exchange rate, the monetary authorities of the participant countries follow every move made by the Bundesbank. Therefore, inflation is reduced due to lower price expectations.

In this paper it is argued that fixing the currency to that of a low inflation country is a way of reducing inflation but not necessarily the best way of doing it. The "best" alternative suggested is the monetary coordination. This arrangement takes the form of creating a single central monetary authority (not a central bank) which is involved in monetary policy-making for all participant countries. Its preferences are represented by a maximisation problem. "The central welfare function" combines all the participating countries' welfare functions with varying weights. The analysis shows that although it is not possible to make all countries better off, high inflationary countries can reduce their inflation even below the rate that can be achieved with a fixed exchange rate regime if $\phi$, the degree to which the central committee cares about the domestic country, is sufficiently large. In addition, there is an incentive on the part of the low inflation country to join the system in which destabilising effects of shocks disappear. This is because the
central committee cares about both countries. Countries can not get involved in "beggar thy neighbour" policies by continuously contracting money supply. Moreover, lower inflation will be achieved with flexibility gains due to the elimination of fixed rates.

With the single central bank, the crucial issue is how ambitious the central banker is. It is possible to achieve a lower inflation rate than both the with fixed rates and monetary cooperation if the central banker is tougher than the Bundesbank. However, this arrangement is seen as a last step in European integration rather than as an alternative to monetary cooperation.

The form of monetary cooperation as developed in this paper might also be thought of as a step between fixed rates and a European central bank. They can achieve a converged inflation rate as a community by changing the weights on each country's welfare function in the joint maximisation problem. Furthermore, in an environment with a move towards a single central bank the employment targets might themselves converge. These developments may smooth the transition to the union. The monetary cooperation, therefore, could serve as a transmission mechanism as well as an alternative arrangement to the fixed rates.

Figure 1
The Responsiveness of Inflation to \( \phi \) under the Three Regimes
Figure 2
The Responsiveness of Inflation to $k$ under the Three Regimes

Figure 3
The Responsiveness of Inflation to $k^*$ under the Three Regimes
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