

# MULTIPLE WAGE-BARGAINING SYSTEMS IN THE SINGLE EUROPEAN CURRENCY AREA

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*Little attention in the EMU literature has been paid to the interaction between central bank monetary rules and systems of collective wage bargaining. Analytically and empirically, coordinated wage-bargaining systems respond with real wage restraint to non-accommodating monetary policy. Since wage determination is dominated by collective bargaining in all the EMU member states and wage coordination within the member states has grown since 1980, this is a topic of potential importance. In particular, the replacement of the Bundesbank, directly targeting German inflation, by a European Central Bank (ECB) targeting European inflation will remove a major institutional support of wage restraint in Germany. The consequences of this for EMU are worked out under two scenarios, that inflation expectations will be generated by ECB monetary policy and that they will reflect German inflation outcomes. Possible institutional developments are discussed including government–union bargains. The Bundesbank has also played a major role in maintaining fiscal rectitude by targeting excess fiscal deficits in Germany: again its replacement by the ECB—targeting (if at all) European rather than German fiscal policy—loosens fiscal constraints. For underlying structural reasons, therefore, it is possible that Germany will move to a period of fiscal activism with wage restraint and low inflation purchased through social contract negotiations.*

## I. INTRODUCTION

Much attention has been paid to the operation of labour markets under EMU. Most of this has had

two objects: to argue that competitive labour markets are a necessary condition for full employment for economies subject to asymmetric cost or demand shocks and deprived of monetary and fiscal

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policy instruments as a result of the European Central Bank (ECB) and the Stability Pact; and/or to forecast that EMU would force labour markets towards greater competitiveness.

There are several reasons why such analyses are unhelpful.

(i) Wage determination in most of the euro member states is dominated by nationally defined systems of collective bargaining, and the evidence is that this will continue to be the case, at least in the foreseeable future. Even where union coverage is low or has been declining, collective bargaining coverage remains high.

A useful statistical survey (OECD, 1997) shows that in EMU economies the collective bargaining coverage was over 80 per cent of the labour force in Austria (1994), Belgium (1994), Finland (1995), France (1995), Germany (1994), Italy (1992), and The Netherlands (1993). It was above 70 per cent in Portugal (1993) and Spain (1994). This survey does not include Ireland, where there are no reliable coverage figures, or Luxembourg.

The OECD (1997) also gives measures of coordination of wage bargaining within the nine countries referred to above. In none of the nine has coordination decreased between 1980 and 1994; and in three of them, Portugal, Italy, and France, it has increased. Coordination is measured on a scale of 1 to 3: in two of the EMU countries, Austria and Germany, coordination in 1994 is 3; in Italy it is 2.5; in Finland it is 2+; and in the remaining five countries it is 2. (By contrast, in the UK, the USA, Canada, and New Zealand the coordination measure is 1, and in Australia 1.5.) These measures are consistent with an excellent description of bargaining practices in Income Data Services (1996), and in two recent studies of wage-bargaining centralization no general trend towards decentralization is detected (Wallerstein *et al.*, 1997; Iversen, forthcoming).

(ii) While competitive labour markets may be a sufficient condition for full employment for economies subject to asymmetric cost or demand shocks, it is not clear that they are necessary (Teulings and Hartog, 1998). The Netherlands, with one of the highest collective bargaining coverages, is a counter-example. Austria, whose unemployment rate

has long been below average in the OECD, is another. Most notably, Germany has had a lower unemployment rate than the USA on the OECD standardized measure for almost all the period from the 1960s until 1992.

(iii) The important problems may, in any case, not be asymmetric shocks but systemic ones. Cost shocks are strongly correlated across the core euro members, and German wage and inflation developments arguably have a leading influence. Eichengreen (1994) quotes supply shock correlations with Germany of 52 per cent (France), 54 per cent (The Netherlands), 62 per cent (Belgium), and 41 per cent (Austria). Although it is not easy to disentangle the extent to which the transmission mechanism is on the demand side, or via wages and prices, demand shock correlations are significantly less: 30 per cent with France, 21 per cent with The Netherlands, 36 per cent with Belgium, and 32 per cent with Austria (Eichengreen, 1994, pp. 114, 117). If this remains or becomes to a greater extent the case under EMU, shocks in German collective bargaining will tend to be transmitted into systemic shocks. Potential differences between the interaction of the German collective bargaining system and, on the one hand, the Bundesbank and, on the other, the ECB, therefore need to be understood.

For these reasons, we want to analyse how labour markets operate under conditions of collective bargaining with different types of monetary regimes. At the broadest level the question which motivates this article is: Will the switch from the ERM to the single currency affect the pattern of unemployment in the euro area? Two sets of propositions lie behind this question.

First, Hall and Franzese (1998) argue that in a single economy the interaction between the collective-bargaining system and the central bank is a factor in determining the unemployment rate. Specifically, when wage setting is coordinated across the different sectors of the economy, wage-setters know that they will have an effect on economy-wide prices and therefore have an incentive to pay heed to threats from an independent bank that inflationary bargains will not be tolerated. This incentive is missing in uncoordinated systems, and independent central banks in those systems will therefore be associated with higher unemployment.

In related work, Iversen (1998) and Soskice and Iversen (1998) argue that independent central banks that adhere to a non-accommodating monetary rule can induce real wage restraint and lower unemployment when bargaining is coordinated or relatively centralized. The intuition is that a union will seek to cut expected real wages when it knows that the aggregate price effects will not be accommodated. Both the Hall–Franzese and Soskice–Iversen propositions are supported econometrically with data for a broad range of OECD countries and time periods.

*Thus, in an individual economy with a non-accommodating central bank, equilibrium employment will improve with the degree of union coordination of wage bargaining.*

From this proposition, Iversen (1998) and Hall and Franzese (1998) draw the implication that the move from a multiple to a single currency system governed by an independent central bank will increase the equilibrium unemployment rate if the individual national systems of collective bargaining do not at the same time coordinate their wage-setting across the different economies within the single currency area. Applied to the euro area, the ECB will face an uncoordinated collection of national collective bargaining systems. Hence, equilibrium unemployment will be higher. Thus Hall and Franzese and Iversen argue:

*When individual economies, each with relatively coordinated/centralized wage bargaining and independent central banks, are merged together into a single currency area with one central bank, overall wage coordination will decline and equilibrium unemployment will rise.*

*In this article we argue that this proposition is correct as it stands, but that it does not apply to the transition from the Exchange Rate Mechanism (ERM) to the ECB, since there was only one real central bank, the Bundesbank, in the ERM.*

Second, and the most important topic of this article, how will German collective bargainers react to the demise of the Bundesbank and its replacement by the ECB, and what will be the consequences? We argue, following Hall (1994) and Iversen (forthcoming, ch. 5) that the non-accommodating policy of the

Bundesbank, by restraining real wages in a highly coordinated wage-bargaining system, has been material in the exceptionally low unemployment and inflation rates which Germany enjoyed from the late 1950s until the early 1990s. (We discount here the high unemployment in Germany in the period from 1992 until recently, which we believe reflects at least in part the deflationary policies of the Bundesbank following the deficit-financed German reunification, combined with the need to reduce public-sector deficits to meet the requirements of Maastricht in a low private-sector growth environment.)

Therefore, if the ECB targets the European instead of the German inflation rate, German wage-bargainers will no longer be confronted by the likelihood of monetary deflation as a direct response to increases in German wage and price inflation. This may alter the trade-off between employment and real wages for German unions in favour of higher real wages: there may be, *ceteris paribus*, a reduction of restraint on German wage-bargainers. The demands of IG Metall in the current wage round, with the Bundesbank lying on its death bed, repudiating a prolonged phase of wage moderation, appear to bear this out.

There are two different cases to consider. The first is that the collective bargaining systems in the different member states operate independently of each other, so that inflation will *de facto* be determined by monetary policy at ECB level. In this case we will argue:

*If inflation expectations at the European level are independent of German price developments (Case 1), the potential reduction in wage restraint in Germany as a result of a European inflation target by the ECB replacing a German inflation target by the Bundesbank will lead to increased unemployment in Germany. The caveat to this is that institutional developments—discussed in the last section—may take place in German labour markets which will mitigate the effect.*

The second possible case is that German inflation developments may play an important role in generating (or anchoring) European inflation developments.

*If German wage-bargainers take full account of the impact of German wage developments on European inflation, and if they believe that the ECB will pursue a similarly non-accommodating policy on European inflation to the Bundesbank's policy on German inflation, then there will be a similar incentive for restraint.*

*(As an alternative, if the ECB takes full account of the impact of German wage developments on European inflation, it may in part target German inflation as well as European inflation. Again, an incentive for restraint will have been recreated for German wage bargainers.)*

*However, if, as seems at least initially plausible, German wage bargainers do not take full account of the impact of their decisions on European inflation, and the ECB does not target German inflation, then an increase in German inflation will translate (in this second case) into an increase in European inflation and the ECB may then take restrictive measures. This will be the case of a symmetric inflation shock originating in Germany.*

The article is organized as follows. In the next section an analytic model is presented, enabling us to examine potential changes in equilibrium unemployment in both the first-case scenario of independent wage bargaining across economies and in the second case of Germany setting European inflation. Section III concludes with a discussion of likely institutional developments, especially in Germany.

## **II. THE ANALYTICS OF EQUILIBRIUM UNEMPLOYMENT IN A SINGLE CURRENCY AREA**

In this section we develop a highly simplified model in order to draw tractable conclusions about equilibrium unemployment rates in the different member countries of the single currency area. It was noted in section I that two different assumptions can be made about the generation of inflation expectations in the single currency area. The first assumption is that it reflects euro region-wide developments, such as the ECB's monetary or inflation targets for the region; the second assumption is that euro region

inflationary expectations reflect German inflation developments. In Case 1, it will be argued that the switch from Bundesbank to ECB carries significant risks because of the likelihood of less constrained wage-bargaining in Germany: in this case, which is modelled by the assumption that collective bargaining takes place simultaneously in different economies, the risk is that Germany loses competitiveness relative to other economies and that unemployment rises in Germany. The second case is modelled by assuming that German wage bargaining precedes that in other countries: so long as German wage-setters can anticipate the effect of their behaviour on European inflation they will respond with restraint to European-inflation targeting by the ECB. But the danger is that they do not anticipate it, for then lack of restraint in Germany will translate into a symmetric inflation shock in the whole euro region.

The section is organized into three parts: a simple explanation of why the problem arises; then Case 1, the equilibrium in a single currency area with many separate collective-bargaining systems and a monetary authority targeting area-wide inflation; finally, Case 2.

### **(i) The Problem**

We need, first, to understand why a problem arises in any case. It may be intuitive that the switch from Bundesbank to ECB and from German to European inflation targeting loosens the bargaining constraints on German unions without significantly tightening the constraints on collective-bargaining systems in other euro economies, and that if bargaining constraints are loosened, equilibrium unemployment will be affected. But standard theory denies that monetary policy can be non-neutral, so how does the problem come about?

Consider an economy with a number of sectors; alternatively, a sector can be a single country in EMU, with EMU the economy. The central bank of the economy has a non-accommodating monetary policy. First, take the case of a single union covering the whole economy. Assuming constant labour productivity and demand elasticities, producers apply a constant mark-up to the money wage, so that the real wage is fixed, whatever money wage the encompassing union chooses. The union then

chooses the money wage, say  $W^*$ , (and hence price level) to secure the real money supply (hence aggregate demand) which produces the union's desired rate of employment, say  $e^*$ . This is where the union's indifference curve sits on the constant real wage line.

Now, assume that there are many unions, each bargaining simultaneously and independently to choose a sectoral money wage. They all know that if they were to coordinate their bargaining perfectly, they would choose the same money wage as the encompassing union (if union objective functions were the same) and get an employment rate of  $e^*$ . But if they bargain independently, they are in a prisoner's dilemma situation. Each union faces a trade-off between the real wage and employment, since if the sectoral money wage is increased, given money wages in the other sectors, the sectoral real wage rises—the union moves up the sectoral demand curve for labour. So, even if all the unions chose  $W^*$  (and hence the employment rate  $e^*$ ), that would not be sustainable. For each union could raise its utility by increasing the sectoral money wage and moving up its sectoral demand for labour schedule. If each union did so prices would rise in parallel, the real wage would be unchanged, but the real money supply and employment would have fallen. Equilibrium is where the union indifference curve is tangential to the labour demand function at the fixed real wage imposed by pricing behaviour.

In this story, an independently bargaining union might have reasoned that its money wage behaviour would have affected the real money supply. If there are many unions the effect will be negligible. Thus in the EMU Case 1, where unions bargain independently, the effect of any individual money wage increase on the European price level and hence inversely on the real money supply will be small. But where there are only two or three independent unions, or where there is a relatively high degree of wage coordination, then the effect of an individual union's choice of money wage on the aggregate price level and real money supply will be important: in effect, the labour demand curve the union faces will be flatter, and thus it will behave with more moderation. This case is similar to the German case in ERM. So the move from ERM to EMU implies that, at least in Germany, less wage restraint would be forthcoming, *ceteris paribus*, under EMU than

under the ERM, if there is simultaneous wage bargaining under EMU (our Case 1).

Under the alternative possibility for EMU (Case 2) the other unions (sectors, economies) look to German inflation to determine their inflation expectations. This, as we shall see, then puts the German union into a situation similar to that of the encompassing union. Since it then determines European inflation, it has an incentive for restraint since the ECB targets European inflation. But there is an important difference to an encompassing union. Because the other unions set wages in the knowledge of the German money wage, they can either set higher wages, reducing the German real wage, or they can undercut the German wage.

### (ii) Case 1

In this sub-section, we assume that expected inflation reflects European monetary targets, rather than German inflation; we do so by assuming that wages are set simultaneously in the different member countries. A model is developed which will be used throughout this article. The single currency area itself is treated as a closed economy. While clearly only a simplifying assumption, it is not unrealistic, given the low ratio of imports and exports to GDP in the euro region. Each of the  $N$  individual economies in the area can be thought of as producing a differentiated product, with a single national union choosing the wage in that economy; apart from the differentiated product, the  $N$  economies are identical. The assumption of a single union in each national economy can be thought of as reflecting the relatively high degree of coordination within each national system. The area as a whole is then a closed economy with  $N$  sectors, each with its own union. A simple assumption is that there are many Bertrand competitors in each sector, so that with constant returns to scale and labour productivity normalized to unity, the price  $P_i$  in the  $i$ th national economy will be equal to the money wage  $W_i$ .

To evaluate the equilibrium employment rate in each sector of the single currency area, we can derive the trade-off between the real wage and the employment rate which the sector union faces. It is assumed that unions are interested in the area-wide price level, not the sectoral one; this is unrealistic, particularly for the large member states, but it does

not alter the conclusions significantly. With  $m$  representing the real money supply in the single currency area, aggregate demand in country  $i$  is given by:

$$q_i = e_i = m / N - \eta \cdot p_i = m / N - \eta \cdot w_i \quad (1)$$

where  $\eta$  is the slope of the demand curve.  $p_i = P_i / P$ , where  $P$  is the aggregate price level for the single currency area, based on a geometric price index. Since  $W_i = P_i$ , and normalizing labour supply to unity, this also shows the trade-off between the employment rate,  $e$ , and the real wage,  $w$ . (A linear demand curve, and a Cobb–Douglas objective function are used to simplify the model.)

To derive the equilibrium employment rate, we need next the objective function which the  $i$ th union maximizes:

$$U_i = w_i^\alpha \cdot e_i \quad (2)$$

where  $\alpha$  picks up the importance given to real wages as compared to employment. In maximizing (2) subject to (1), the standard procedure is to argue that (1) represents a simple trade-off between the real wage and employment along the sectoral labour demand schedule. In principle, however, the possibility needs to be taken into account that the wage decision of the union may affect the real money supply. This will be the case if the sector is large enough and if the central bank adopts a non-accommodating monetary policy. As set out in the Appendix, this is because, if money wages are set simultaneously in all sectors, and if there is a common view of the rationally expected price level, then the union in any given sector can lower the expected aggregate price level by lowering the nominal wage in that sector relative to the other sectors; hence the expected sectoral real wage is also lowered. The first-order condition (see Appendix) is:

$$w_i = \frac{(\alpha - R)}{\eta \cdot (1 + R)} \cdot e_i \quad (3)$$

where

$$R = \frac{\beta}{N - 1}$$

and measures degree of restraint due to monetary policy. Equation (3) can be interpreted as a bargained real wage schedule, showing how the bargained or target real wage increases as the employment rate and the importance attached to wages ( $\alpha$ )

increases, and falls as the product market demand becomes more elastic, and as  $R$ , the degree of restraint, increases.

It can also be seen that  $R$  will be small in the case of a monetary union if  $N$  is large. That is because the effects of any one union on the real money supply will be of the order of  $1/N$ . The union in country  $i$  lowers its wage and hence price level by  $d \log W_i$ , and this lowers the aggregate price level by  $1/N$ . ( $d \log P_i$ ), raising the real money supply by  $\beta$  times the same amount, where  $\beta$  is a measure of the non-accommodation of monetary policy, from  $\beta = 0$  (accommodating policy) to  $\beta = 1$  (fully non-accommodating). Given the numbers of members of EMU, we can reasonably say that the direct restraining effect on wage decisions of the ECB's monetary policy will be very limited. Hence, in Case 1, where wages are set simultaneously, we can approximate the bargained real wage schedule under EMU as though  $R$  was zero:

$$w = \frac{\alpha}{\eta} \cdot e \quad (3a)$$

Since all unions set the same nominal wage, which is equal to the sectoral price level, and since

$$P = \prod_i P_i^{1/N} \quad (4)$$

the real wage in equilibrium is equal to unity (the price-determined real wage or feasible real wage (Carlin and Soskice, 1990; Layard *et al.*, 1991)),

$$w = 1 \quad (4a)$$

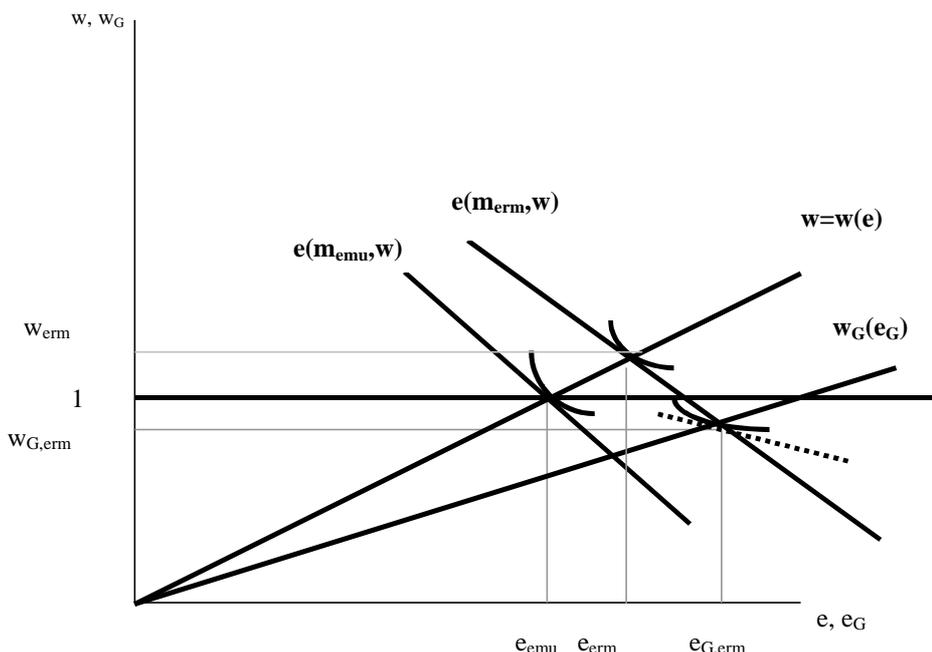
so that the equilibrium employment rate is

$$e^* = \frac{\eta(1 + R)}{(\alpha - R)} \approx \eta / \alpha \quad \text{for large } N. \quad (5)$$

Two factors alone then determine the equilibrium employment rate: the less the importance attached by the union to increased real wages (i.e. the lower is  $\alpha$ ), the greater will be the equilibrium employment rate; similarly, the more elastic is product market demand, the greater will be the equilibrium employment rate.

What difference does the movement from the ERM to EMU make under these assumptions? If the ECB targets the European price level, and adopts a

Figure 1



credible non-accommodating stance, and if the collective-bargaining systems in different countries bargain independently of each other, then (5) captures the effects of monetary policy under EMU. In fact, the effects are rather small, since each individual independently bargaining union has such a limited effect on the aggregate European price level. Optimistically, only very modest restraint will be shown.

Turn to ERM. Now we need to distinguish between the behaviour of bargainers in Germany and in the other ERM countries. In the latter, wage bargaining is straightforward, since they have no effect on the real money supply (or, more accurately, interest rates) in the ERM region. Hence their bargained real wage schedule is given by equation (3). By contrast, the German bargainers have to take into account that the Bundesbank is targeting German inflation so that their wages have a direct impact on the German real money supply—which then determines European interest rates. German bargainers have the same objective function (2) and they are constrained, as other countries, by (1); but in the German case  $m = m(w_G)$  rather than being constant. As shown in the Appendix, the German real wage bargaining schedule is therefore:

$$w_G = \frac{\alpha - \beta(N/N - 1)}{\eta.(1 + \beta(N/N - 1))} . e_G . \quad (6)$$

Figure 1 enables us to compare the wage and employment outcomes in ERM and EMU, and to show under what conditions employment is worse under EMU as a result of the switch from Bundesbank German inflation targeting to ECB European inflation targeting. It is assumed throughout that the total labour force of the whole region is fixed in size. Ignoring the light dashed lines, the equilibrium under EMU is straightforward for the case of a large number,  $N$ , of members and hence of wage-bargaining systems. The upwards sloping line,  $w(e)$ , is equation (3); this is the bargained real wage schedule when bargainers take no account of the impact of wage increases on the real money supply. This is exactly correct for the non-German members of ERM and it is approximately correct for members of EMU with large  $N$ .

With large  $N$  the equilibrium under EMU is at the intersection of the  $w(e)$  wage bargaining schedule and the condition, equation (4a), that relative prices in each economy are unity, implying that the feasible or price-determined real wage is also uniformly

unity. This condition is the horizontal line with  $w = 1$ . Thus in equilibrium the employment rate is  $e_{\text{emu}}$  and the real wage is 1. The downwards sloping lines,  $e(m, w)$ , are the demand for labour schedules which each individual set of wage-bargainers faces. In the EMU case, with rational expectations, price expectations will ensure that  $m_{\text{emu}}$  is such that the relevant labour demand schedule goes through the EMU equilibrium point; the representative union indifference curve will then be tangential to the labour demand schedule at this point.

Now consider the situation in the ERM. The  $w(e)$  wage-bargaining schedule is still valid for economies other than Germany, since wage-bargainers in those economies have no influence on  $m_{\text{erm}}$ . By contrast, the German wage-bargaining schedule under ERM,  $w_G = w_G(e_G)$  from equation (7), embodies greater restraint and hence implies lower real wage demands at any given level of employment than  $w(e)$ : as can be seen by comparing equations (3) and (7),  $w$  and  $w_G$  are both zero at  $e = e_G = 0$ , but  $w_G(e_G)$  has a flatter slope than  $w(e)$ .

Since  $m_{\text{erm}}$  is the same for all ERM members, the wage–employment combination  $(w, e)$  of the ERM members excluding Germany must be on the same labour demand schedule,  $e(m_{\text{erm}}, w)$ , as the German wage–employment combination  $(w_G, e_G)$ . This can be seen in Figure 1. It will be noted that the indifference curves of the non-German are tangential to  $e(m_{\text{erm}}, w)$ ; although the utility functions are the same, the indifference curve of the German wage-setters is tangential to a flatter constraint, since it takes into account the impact of German wages on  $m_{\text{erm}}$ .

How far out will  $e(m_{\text{erm}}, w)$  be? That will be determined, under rational expectations, in the same way as the position of  $e(m_{\text{emu}}, w)$ , namely by the requirement corresponding to  $w = 1$  in the EMU case. In the ERM case, the geometric average of the real wages of the different economies is still necessarily unity, but the German real wage is necessarily less than those of the other ERM members; this is because any labour demand schedule cuts the German wage-bargaining schedule at a lower real wage than it cuts the wage-bargaining schedule of the other members. To satisfy the condition that the geometric average of the real wages of the ERM members is unity, the German real wage must be below and the

real wage of the other members above unity. As can be seen from Figure 1, that implies that employment both in Germany and in the other member states is greater than in the EMU case.

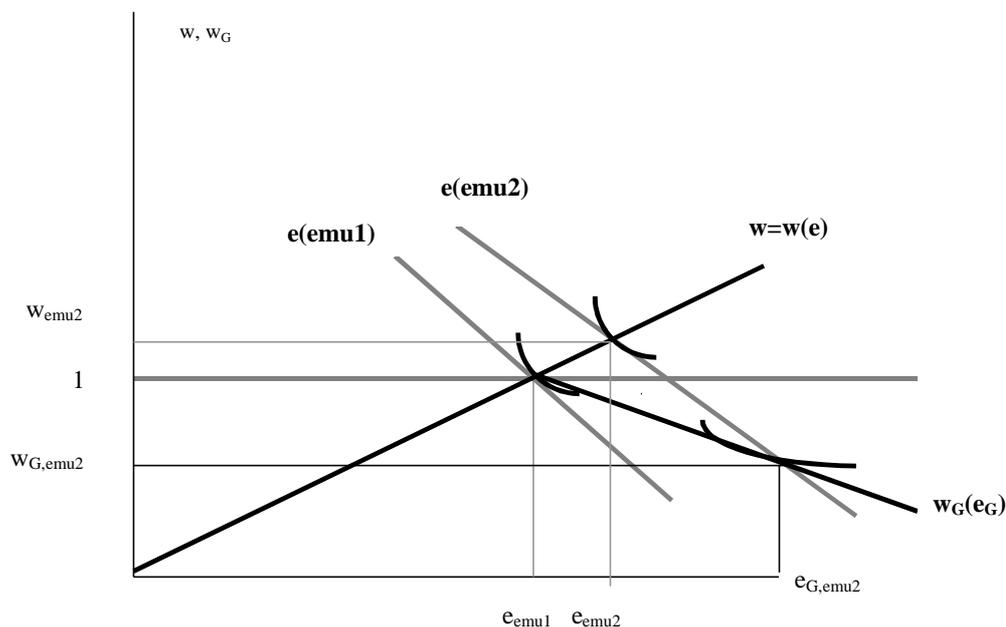
This result can be interpreted simply as follows. Consider a single economy with a number of different sectors. If the costs of production in any one sector are reduced (for instance by union real wage moderation), there are two effects. First, output in that sector expands as a consequence of the sectoral fall in relative prices or wages. (If we start off from the EMU equilibrium in Figure 1, this first effect is a movement down  $e(m_{\text{emu}}, w)$  to where it intersects with the German wage-bargaining schedule  $w_G(e_G)$ .) Second, the terms of trade of the other sectors improve, implying that real wages in those sectors increase. That then allows aggregate demand to increase consistently with stable inflation; in other words the feasible or price-determined real wage has risen in the other sectors, thus permitting employment and the bargained real wage to rise in those sectors. (This corresponds to the outwards shift of the labour demand schedule in Figure 1 from  $e(m_{\text{emu}}, w)$  to  $e(m_{\text{erm}}, w)$ .)

### (iii) Case 2: German Wage-bargainers as Inflation Setters in Europe

Imagine something like an EMU wages round, in which collective bargainers outside Germany watch German developments before conducting their own negotiations. In a very loose sense, something of this nature takes place in The Netherlands, Belgium, and Austria; in France, collective bargaining is undergoing substantial changes, but large companies increasingly relate their (*de facto* unilaterally imposed) wage increases to unit labour cost developments in Germany, and collective bargaining reflects these increases. This is not German-orchestrated coordinated bargaining across Europe: it is more of a Stackelberg game, in which once the German nominal wage level or increase is known, other wage-bargainers can choose their desired real wages.

How does this affect the behaviour of German wage-setters? There are two sub-cases to consider. In the first German wage-setters correctly predict the consequences of their behaviour. In the second they behave myopically.

Figure 2



*Correct prediction by German wage-setters*

Take a simple case in which there are two countries, Germany (with money wage  $W_G$  and employment  $e_G$ ) and the ‘Rest’ (with money wage  $W$  and employment rate  $e$ ). The ECB fixes the nominal money supply at  $M^0$ , and can commit credibly to non-accommodation.  $W_G$  is set first and then the Rest sets  $W$ . In all other respects, including union utility functions and demand elasticities, Germany is identical to the other members. The Rest union sets  $W = W^0$  to achieve a particular real wage ( $w^0$ , let us say) which maximizes its utility subject to the trade-off between real wages and employment; we assume that the Rest (because it is in fact a collection of individual unions) does not think it can significantly affect the real money supply, and so does not take that into account in choosing  $w^0$ . This implies that the real wage-bargaining schedule of the Rest is given by (3), and is the same as  $w(e)$  in Figure 1. Now return to the choice of  $W_G$ . From (4):

$$P = (W^0)^{1/2} \cdot W_G^{1/2} = w^0 \cdot W_G \quad (7)$$

Equation (7) has two central implications for German decision-making: First, it implies that German unions have no ability to choose a real wage since whatever money wage they choose, the German real wage is determined by the real wage choice of the Rest:  $w_G$  is

the inverse of  $w^0$ . Second, given  $w^0$ , European inflation is determined by German money wages. Thus what matters in the choice of  $W_G$  is its effect on  $P$  and hence on  $m$ . Since  $m$  fixes the labour demand schedule faced both by Germany and the Rest, a lower  $W_G$  raises  $m$ , and this in turn pushes out the labour demand schedule which each economy faces; this raises  $e_G$ —but it reduces  $w_G$  since the higher labour demand schedule will mean that the bargained real wages of the Rest will be higher from  $w = w(e)$ .

In Figure 2, the line  $w_G(e_G)$  represents the constraint that the German real wage is the inverse of the Rest real wage. It is constructed as follows: on any given labour demand schedule, e.g.  $e(emu2)$ , the Rest real wage is given by  $w(e)$  and equal to  $w_{emu2}$ , so that  $w_G(e_G)$  intersects  $e(emu2)$  at  $w_G(w_{emu2})$ . German wage-bargainers choose their utility-maximizing position on  $w_G(w)$ , as shown here where it intersects  $e(emu2)$ , and to attain that position they choose  $W_G$  to produce the appropriate level of  $m$  to push the labour demand schedule sufficiently far out. The assumptions underlying this model imply that German wage-bargainers will be constrained to choose a lower than average real wage, rather than being undercut by follower countries. Alternative assumptions leading to undercutting are discussed in the Appendix.

Thus, *so long as German wage-bargainers can predict correctly the effect of their wage decisions on the other EMU members*, this set-up will tend to produce higher employment in both Germany and the other member states, with lower German and higher Rest real wages. Though the mechanism is different, as can be seen in Figure 2, the results are similar to the world of ERM. In effect, the ECB targeting European inflation restrains German wage-bargainers in a world in which Germany sets European inflation rates, if German wage-bargainers are far-sighted enough to realize this.

#### *Myopic German wage-setters*

If the assumption is accepted that German inflation will determine European inflation under EMU (and how realistic that is is unclear), the major concern is that German wage-bargainers may not take into account their central role. This is, then, what can turn German attempted real wage increases into a systemic inflation shock for the EMU and require a deflationary monetary response from the ECB.

Diagrammatically, this situation is portrayed in Figure 1, where German wage-bargainers are initially at  $(w_{G,erm}, e_{G,erm})$ . Instead of believing (correctly) that they are constrained by  $w_G(e_G)$  in Figure 2, they believe incorrectly that they are constrained by  $e(m_{erm}, w)$ . Since their objective functions are the same as those of wage-setters in the other economies they attempt to move to  $(w_{erm}, e_{erm})$ , by an appropriate increase in  $W_G$ . Wage-setters elsewhere then follow the wage increase, the European price level rises, and the ECB tightens monetary policy to  $m_{erm}$ . The ECB thus responds to an inflationary systemic shock by cutting demand.

In summary, if the appropriate model to represent how EMU will work is one in which inflation expectations are determined in a pan-European way, without leading sectors or economies, the danger is that equilibrium unemployment will rise in Germany and to a lesser extent elsewhere, reflecting a decline in German wage restraint. If, alternatively, Germany becomes the inflation-setter under EMU, then the incentive for restraint will be restored so long as German wage-setters can correctly predict the indirect outcomes of their choices on European inflation. The problem in this case arises if they cannot make such predictions: then the danger

is of reduced wage restraint in Germany leading to symmetric inflation shocks in the EMU area.

### III. GERMAN BARGAINING AND THE ECB

In this section we look in more detail at the relation between the Bundesbank and German wage-bargainers. We then discuss the institutional ways out of the dilemma caused by the need to ensure continuing wage restraint in Germany.

#### (i) The Bundesbank and German Wage-bargainers

The post-war German wage-bargaining system has been dominated by a small number of large and well-organized industrial unions and employers' associations, with a particularly central role played by the metalworking sector. Although the 17 industrial unions are organized into an overarching union confederation, DGB, all wage bargaining takes place at the industry level, with the industry organizations of employers and workers coordinating the bargaining process in individual *länder* (federal states). Macroeconomic policies are heavily influenced by an independent central bank, whose policies have been consistently oriented toward the goal of maintaining price stability, even when this goal has occasionally come into conflict with other economic objectives.

Central bank commitment to restrictive monetary policies has created an economic context in which unions and employers can anticipate with a high degree of confidence the likely response of the Bundesbank to inflationary wage settlements. In part because of this non-accommodating monetary rule, and in part because of its organizational strength, metalworkers' unions (IG Metall) and their employer counterpart (Gesamtmetall)—both with a concentration of members in the most dynamic, export-oriented firms—have enjoyed a wage-leading position *vis-à-vis* the rest of the German labour market. A review of bargaining rounds between 1974 and 1994, for example, reveals that in 15 out of 21 bargaining rounds the export-oriented metalworking sector set the norm for wage increases. Because IG Metall has such a significant effect on economy-wide wages and prices, it knows that

militancy will significantly reduce demand and employment in its own sector, which furnishes it with a strong incentive to act with restraint. To avoid a squeeze on profits, employers likewise have a strong incentive to resist excessive wage demands (Hall, 1994).

This does not mean that the German system is always working smoothly, or that it is without inherent tensions. For example, when in 1974 widespread strikes broke out in the public sector, triggering large wage increases throughout the German economy, the Bundesbank responded by embarking on an aggressive deflationary policies, causing a steep increase in unemployment (Scharpf, 1991, pp. 128–30; Goodman, 1992). Likewise in 1979, just as the German government had given in to foreign pressure and embarked on a moderately expansionary policy (the ‘locomotive strategy’), the second oil shock and the severe tightening of the US monetary policy triggered a strong response by the Bundesbank, similar to that following the first oil crisis. In both cases, exogenous events created uncertainty about macroeconomic policies which caused the Bundesbank to embark on exceptionally deflationary policies in order to maintain its future credibility.

The strong labour market of the late 1980s, fuelled at the start of the 1990s by the process of reunification, also led the Bundesbank to react sharply to inflationary wage demands. The force of the reaction, combined with the fulfilment of the Maastricht conditions, produced both sharply rising unemployment in Germany and a prolonged period of wage restraint. The rise in unemployment restored unions’ belief in the need for restraint, and wage settlements since 1994 have been on average very moderate. This suggests that the consequences for wage bargaining of German reunification are transitory, and will not undermine performance in the medium to long run.

Section II predicts that German unemployment should be lower than in other member countries under ERM. Leaving aside the abnormal period since 1993, this hypothesis is clearly borne out empirically in the period from 1983 to 1992. During that period German unemployment is below the level in every other member country by an average of 3.2 percentage points.

The danger for Germany posed by the common currency is that monetary policies come to be determined by concerns that are unrelated to behaviour in the German labour market. This will either be the case if European inflation is generated outside Germany, so that German wage-setters will affect relative wages rather than European inflation; or if, even though German inflation is important in generating inflation expectations at the European level, the time lags and uncertainties make this impractical for German wage-setters to take into account. The difficulties of garnering wage moderation in the current bargaining round may be indicative of the problem insofar as the Bundesbank, facing the imminent transition of control to the ECB, is no longer fully in charge of German monetary policy. If this diagnosis is correct, it would pose a fundamental threat to the implicit coordination of wage and monetary policies that has characterized the German system in most of the post-war period.

## (ii) Ways out of the Dilemma

There are four ways in which this problem can be partially or fully solved.

- (i) The German system of collective bargaining may fragment, and we may see a movement to competitive labour markets in Germany.
- (ii) German employers may devote more organizational resources to wage bargaining to make up for the vacuum left by the disappearance of the Bundesbank.
- (iii) The ECB might change its monetary rule from targeting European inflation to mimicking the Bundesbank by targeting German inflation.
- (iv) Finally, and in the short term most likely, the German government may try and bargain wage moderation against fiscal policy.

Apart from the first, none of the above excludes any of the others. We examine each of these cases.

### *Competitive labour markets in Germany*

If Germany were to move towards competitive labour markets, that would in principle lower the equilibrium unemployment rate in the absence of the Bundesbank policy of non-accommodation.

However, with two main exceptions, the process of change in German labour markets at the moment

and in the foreseeable future is not towards perfect competition. Those exceptions are the former East German states and certain markets in high-level specialized skills. Otherwise, the process of change in labour-market practices is (and has been for a long time) towards giving a greater role to works councils in areas such as overtime agreements, early retirement, and opt-out clauses, in conditions of exceptional product-market conditions. In itself, the direction is thus towards an insider–outsider type economy, rather than perfectly competitive labour markets, since works councils represent existing employees and not the labour force as a whole.

The insider–outsider aspect should not be overdone, however, for these developments have gone along with clear framework agreements, typically maintaining arbitral roles for unions and employer associations. Moreover, basic wage negotiations still take place between unions and employer associations, and it is these which determine (together with tax changes, productivity growth, and changes in the terms of trade) the underlying German rate of inflation (Thelen, forthcoming).

#### *Increased employer bargaining power*

A second possible development in the German system of wage determination is that employers increase their bargaining power. There is substantial employer coordination involved in wage determination in Germany. Why then have they not always maximized their power in wage bargaining? The answer is that there are costs to increased coordination: for instance, greater effectiveness requires more organizational resources to be devoted to keeping errant companies in line; it is facilitated by lock-out or strike funds; and political resources are needed to shape and change the legislation surrounding wage negotiations. Thus, even though German employers have the organizational framework necessary for increasing their bargaining power, and—let us assume—a capacity for collective choice, the extent to which they choose to develop the practices required to exercise their bargaining power more fully reflects a balance of benefits and costs.

As the credibility of the Bundesbank grew over the decades since the 1950s (when the Bundesbank enjoyed nothing like the power it has had until recently and when the employer associations were

correspondingly more interventionist in wage bargaining), so the benefits to the employers from the exercise of their bargaining power declined. While such an analysis is inevitably simplistic, it captures some of the dilemma employers now find themselves in. And it suggests that we may see the employer associations taking a more determined stance in future, not just directly in negotiations but in internal reorganization, in attempting to modify relevant legislation and in building financial resources.

Practices take time to change in Germany, since decisions are made on a consensus basis, and major changes in the stance of employer associations are unlikely to happen tomorrow. The unions, however, are already in their internal arguments anticipating that there will be an employer reaction to aggressive bargaining on their side. The strategic argument is made that wage moderation now will reduce the likelihood of longer-term institutional employer reaction and hence keep open union options subsequently. Despite this, it would be a bold prediction that this will provide sufficient moderation on the union side to fill the gap left by the Bundesbank.

*ECB targeting German not European inflation* In the longer term, if it becomes clear that wage- and price-setters in other EMU member states base expected inflation on German developments, the ECB might target German inflation rather than European inflation. Were that to occur, the ECB would be behaving like the Bundesbank, and the German equilibrium rate of unemployment would fall back to what it was under the ERM. The only difference would be that exchange rates could not be altered.

This is not a fanciful scenario. It appears that interest rates are going to be set initially to reflect conditions in France and Germany, rather than those of other member states; so that the principle that the monetary (or interest rate) rule does not respond to the European average is at least tacitly accepted. But there are two reasons why the ECB is unlikely to target German inflation in as clear a manner as the Bundesbank in the near future.

First, there is no consensus that German inflation does act as a pace-setter for the EMU area. Although inflation rates appear highly correlated

across the core economies of Continental Western Europe, this may reflect symmetric demand shocks rather than a direct inflation-transmission mechanism. It would require a strong consensus in the ECB to justify focusing on a single economy.

Second, the ECB is in practical terms going to have to find a *modus vivendi* with the French, German, and Italian governments. While the latter will not want to see any significant rise in inflation, their primary concern in the next few years will be to avoid growth of unemployment. By contrast to the British government's position in relation to the Monetary Policy Committee, they are relatively unconcerned about the external value of the euro; indeed, their goal will be to avoid appreciation not depreciation against the dollar. It is therefore unlikely that the ECB will take the political risk of responding to German wage increases by sharp interest-rate rises in the Bundesbank manner.

#### *A German social contract*

A final possibility is that the German government will attempt to develop an agreement with the German unions and employer associations, embodying wage restraint on the one hand and fiscal concessions on the other.

It is possible, but unlikely, that employer associations will offer employment guarantees. This is unlikely because such guarantees require to be negotiated at company not industry level, still less at national level. Thus what was the original idea behind the *Bundnis für Arbeit*—namely the exchange of employment guarantees for wage restraint with a large role being played by employer associations—looks likely to be replaced by a

more direct agreement between government and unions involving fiscal policy.

A new and more activist role for fiscal policy will be facilitated by the death of the Bundesbank as a macroeconomic actor. In the longer term this may prove to be of more importance than the recent election of a pro-Keynesian Social Democratic government. The Bundesbank's understood capacity to punish German fiscal activism would have made it very difficult for a government, especially a new government, to embark on such policies.

If the price of wage restraint is fiscal expansion, then it is difficult to see how these negotiations can take place within a purely national environment. That then puts the Stability Pact, or at least the German interpretation of it, at risk. It was Germany which insisted on the rigid form of the Stability Pact; it will be ironic if the new German government engages with the French government to water it down. Yet all the signs are that there will be two choices for the European Central Bank: either it responds to French and German political pressure to adopt a more expansive monetary policy, or the French and German governments are likely to be successful in making the Stability Pact more growth oriented, and creating some form of European economic government.

The reason why the ECB is in this dilemma is not primarily to do with its structure. The ECB's problem is that it cannot push opposition to the Franco-German axis too far without endangering EMU itself. For in terms of ultimate *realpolitik* the French and the Germans can always threaten to renegotiate the Treaty.

## MATHEMATICAL APPENDIX

### Case 1: Unions Set Wages Simultaneously

(a) EMU: The *i*th union maximises (2), subject to (1). Substituting (1) into (2) and differentiating yields:

$$\alpha \cdot \frac{m}{N} \cdot w_i^{\alpha-1} + \frac{w_i^\alpha}{N} \cdot m' = (\alpha + 1) \eta \cdot w_i^\alpha \tag{a.1}$$

or

$$\alpha + \left( \frac{w_i \cdot m'}{m} \right) = (\alpha + 1) \eta \cdot w_i \cdot \left( \frac{m}{N} \right)^{-1} \tag{a.2}$$

Defining  $\left(\frac{w_i \cdot m'}{m}\right)$ , the elasticity of the real money supply with respect to the sectoral real wage (which will be evaluated below), by  $-R$  (for ‘restraint’), and substituting (2) to express  $m/N$  in terms of  $e_i$  and  $w_i$ , gives (3). The equilibrium rate of employment, given by (5), is derived directly from (3), (3a), (4) and (4a).

Evaluating R: assume that the monetary rule of the ECB is given by

$$M = P^{1-\beta} \quad (\text{a.3})$$

where  $M$  is the nominal money supply. Then:

$$\begin{aligned} R \equiv -\frac{d \log m}{d \log w_i} &= -\left(\frac{d \log m}{d \log P}\right) \left(\frac{d \log P}{d \log P_i}\right) \left(\frac{d \log P_i}{d \log W_i}\right) \left(\frac{d \log W_i - d \log P}{d \log W_i}\right)^{-1} \\ &= \frac{\beta}{N} \left(1 - \frac{1}{N}\right)^{-1} = \frac{\beta}{N-1}. \end{aligned} \quad (\text{a.4})$$

(b) ERM: under ERM only Germany faces restraint. The monetary rule now becomes:

$$M = P_G^{1-\beta} \quad (\text{a.5})$$

where  $P_G$  is the German price level. The restraint factor in (6) is derived analogously to (a.4).

The different equilibrium employment rates in Figure 1 are derived as follows. From (4):

$$(w_{G,erm})^{1/N} \cdot (w_{erm})^{N-1/N} = 1 \quad (\text{a.6})$$

$e_{erm}$  and  $e_{G,erm}$  satisfy (a.6), (1), (3a), and (6).

### Case 2: Germany Sets $W_G$ First and the Other Members then Simultaneously Set $W$

In the second move, the other members maximize in the normal way to choose their real wage according to (3a), since the only constraint  $W_G$  imposes is on  $m$ . Germany then maximizes  $(w_G)^\alpha \cdot e_G$ , subject to (3a) and

$$\frac{m}{N} = e_G + \eta \cdot w_G = e + \eta \cdot w \quad (\text{a.7})$$

and  $w = w_G^{-1}$  (a.8)

which is a simplification of (a.6). Thus Germany’s constraint is the downwards sloping line  $w_G(e_G)$  in Figure 2:

$$e_G = \eta \cdot \left(\frac{\alpha + 1}{\alpha}\right) w_G^{-1} - \eta \cdot w_G \quad (\text{a.9})$$

This maximization yields:

$$w_G = \left( \frac{\alpha - 1}{\alpha} \right)^{1/2} \quad (\text{a.10})$$

It will be noted that  $w_G < 1$  in (a.10), so that Germany is constrained as Stackelberg leader to set a real wage below the ‘follower’ economies. This can be seen in Figure 2, where  $w_{G,emu2} < w_{emu2}$ .

The result is derived on the assumption that objective functions are identical. If the German objective function attaches a higher weight to wages,  $\alpha_G > \alpha$ , the German equilibrium moves back up  $w_G(e_G)$ . The reader can check that maximizing  $w_G^{\alpha_G} \cdot e_G$  subject to (a.9) implies that  $w_G > w$  iff  $\alpha_G > 1 + 2\alpha$ .

Finally, we can show how to derive the money wage which German wage-setters set. Substituting  $w_G$  into (a.9) to get  $e_G$ , and substituting  $w_G$  and  $e_G$  into (a.7) to get  $M/P$ , and using (a.8) in the form  $P = w_G^{-1} \cdot W_G$  finally yields:

$$W_G = \frac{M}{N} \cdot \left( \frac{\alpha - 1}{\alpha} \right) \eta^{-1}. \quad (\text{a.11})$$

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