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The need for labor-market flexibility in a European economic and monetary union

Christopher A. Pissarides*

Summary

■ This paper discusses the likely adjustment problems in European labor markets when there is an economic and monetary union (EMU) and a single currency. The discussion focuses on the need to improve the flexibility of European labor markets when the union's rules constrain monetary and fiscal policy. The paper examines the structure of production and trade in European countries and identifies some sources of asymmetric shocks. The most likely source is in the structure of trade, because European countries are exposed to a diversity of foreign markets. When asymmetric shocks occur, money wages and prices must adjust more when the EMU constraints are in operation. An examination of the evidence pertaining to nominal inertia reveals little about the determinants of inertia and sheds no light on the question of whether inertia will change once the union is formed. If anything, the anti-inflation stance of a future European Central Bank may well increase nominal inertia in wage setting. Employment policies can help labor-market adjustments inside the EMU. But except for the social safety net, where there are some grounds for a common European policy, there appear to be no reasons in favor of a common employment policy in Europe. The different conditions in local labor markets and our lack of knowledge about the best policy in each case call for more flexibility in the choice of policies, with potentially beneficial knowledge spillovers across countries.■

* *Professor of Economics at the London School of Economics and a program director at the Centre for Economic Performance. His main research interests are unemployment theory and the interaction between labor markets and the macroeconomy.*

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The European Union currently consists of 15 countries. The majority are small open economies exposed to a variety of domestic and international shocks. How will they cope with these shocks if they bind themselves together in complete economic and monetary union? The EMU will deprive them of the nominal exchange rate—one easy way to adjust their relative prices *vis-à-vis* the rest of the world. Are alternative ways that are open to them as speedy and as effective? The EMU will also deprive them of an independent monetary policy and much of fiscal policy. Should they complement their common monetary and fiscal policies with a coordinated employment policy?

This paper evaluates the likelihood of country-specific shocks that would require an adjustment of the country's relative prices, and it studies the mechanisms that are set in motion when the exchange-rate tool and monetary policy are tied down by economic and monetary union. In the absence of exchange-rate adjustments and independent monetary policies, the labor market must bear the brunt of any adjustment that occurs in response to idiosyncratic shocks. Sections 1 and 2 briefly discuss the notion of labor-market flexibility and list the constraints imposed by the EMU. Sections 3 and 4 describe the adjustment mechanisms that are set in motion by aggregate shocks and by shocks to the tradable sector of the economy, in the light of the discussion of the constraints imposed by the EMU.

Section 5 looks at the origins of asymmetric shocks in the European Union. It assesses the likelihood of shocks that would require adjustments in relative prices, given that with a single currency, infla-

* *I have benefited from discussions with Charlie Bean and Richard Jackman and from the comments of Lars Calmfors, Christina Nordh Berntsson, and other members of the Swedish Government Commission on the EMU, and participants at presentations in Stockholm and the European Commission in Brussels.*

tion rates (the main cause of exchange-rate fluctuations in the past) will converge. I find some possible sources of real shocks, in particular, in the structure of trade in the union. When such shocks occur, a country must adjust relative prices and wages. So Section 6 looks at the sources and measures of nominal inertia that might delay the adjustment. I ask whether nominal inertia might change when the EMU is formed, and although I find good theoretical reasons for this to happen, the experience of the UK and Italy inside and outside the exchange-rate mechanism of the European Monetary System (EMS) and of France inside it, do not justify much optimism that everything will be all right on the day.

I then ask whether there are active labor-market policies that can ease the transition under the EMU constraints, given that aggregate demand policies will not be available. I find that although policies such as training programs for the unemployed can help, conditions in local labor markets in the union are sufficiently diverse. And our knowledge of the effectiveness of active labor-market policies is sufficiently imperfect to warrant a decentralized approach to policy. There appear to be no benefits from coordination of employment policies at the union level, though policies that are part of the social safety net should be coordinated to avoid *social dumping* and free-riding on other countries' welfare systems.

The EMU imposes some constraints on the adjustment paths, in particular, the exchange rate is fixed and the interest rate and overall money supply are determined outside each particular country. Therefore, the adjustment mechanisms for a single country inside the EMU are more painful than the adjustment mechanisms outside it. I emphasize from the outset that my objective is not to use this analysis to evaluate the pros and cons of the EMU. It cannot be used for this purpose, because many of the factors that should play a key role in such an evaluation are outside the scope of my investigation. Here, my prime focus is on the labor market and how it can best cope with the adjustment from one equilibrium to another under the EMU constraint.

1. The meaning of labor-market flexibility

Labor-market flexibility is a much discussed but still vague concept. One rather narrow way that it can be precisely defined is in terms of the speed of adjustment of an economy in response to shocks. But even this definition is fraught with difficulties. It might be easy

enough to say that one labor market is more flexible than another if it takes less time to adjust to a given shock. But one market might be more flexible when the adjustment is in response to one kind of shock and another market might be more flexible when the adjustment is in response to another, because different shocks usually require different paths of adjustment. So even such a narrow definition of flexibility cannot be used for a general ranking of markets.

The difficulties increase when we do not restrict ourselves to speed of adjustment but we also consider the question of adjustment path. Different markets might follow different adjustment paths in response to the same shock, depending on their institutional arrangements and structure. If this were to happen, generally it would not be possible to say which market was more flexible, unless we had a multi-dimensional welfare criterion for the ranking of adjustment paths. Such welfare criteria have not been invented.

Given these difficulties, labor-market flexibility can only be loosely defined in the context of a particular model of the labor market and with reference to a particular shock. We can think, for example, in terms of the benchmark model that consists of three relations:

1. A labor-demand (or employment) relation
2. A wage-setting mechanism
3. A labor-supply relation

The first relation shows how much labor is demanded at prevailing wages and labor supply. The second tells us what the level of the wage rate is, and the third determines how much labor is supplied, at prevailing wages and demand conditions.

In each case, flexibility means the speed of adjustment from one equilibrium to another, following some shock. For the employment relation, the question is: how quickly does employment adjust in response to shocks, given the wage rate and supply of labor? For the wage-setting mechanism, the question is: how quickly do real or nominal wages adjust to a shock, given the labor-supply and demand conditions. The question of whether we are considering real or nominal-wage flexibility is important; it is one of the issues discussed in this paper. For the supply of labor, the question is: how quickly can the supply of labor adjust, either through migration or participation or even job search, given the wage rate and labor demand?

The shocks in response to which the adjustment occurs can also be defined in terms of the three relations. The most important shocks in the context of the EMU are the shocks to the demand for labor, which can further be distinguished between aggregate demand shocks and aggregate supply shocks. We would expect the nature of labor demand, and the kind of shocks that influence it, to change if and when the EMU comes into operation. Shocks to the wage-setting and labor-supply relations are less interesting in the context of the EMU, except perhaps for policy-induced changes in wage setting. For example, the EMU might not change labor supply conditions in the participating countries, even if labor migration is freer for countries inside the EMU than for those outside. It is also unlikely that there will be more or different kinds of exogenous changes to the wage-setting mechanism of participating countries because of the EMU.

2. The macroeconomic environment and constraints imposed by the EMU

From a purely economic viewpoint, the countries that join an economic and monetary union in Europe become regions of a unified economy, very much like the states are in the U.S. Key features of the union that are of most relevance to the labor market are:

1. The exchange rate between member states is fixed. This immediately implies that members of the union cannot use the exchange rate as a tool of policy or rely on it to bear the burden of adjustment if the country is hit by a shock that necessitates adjustments in the domestic price of goods relative to the rest of the world. But the EMU fixes inter-European exchange rates, not the exchange rate of the common European currency *vis-à-vis* the rest of the world. Here, the EMU is less restrictive than the Bretton Woods system was in the 1950s and 1960s, when all currencies were tied to the U.S. dollar. But at the same time, it might not be accompanied by the foreign exchange and other restrictions that made the Bretton Woods system workable. Now, given that the EMU allows movements in the exchange rate of the common currency *vis-à-vis*, say, the dollar, how do these come about? They come about when there are shocks that are large enough to influence the European economy as a whole. For example, when they hit several European countries simultaneously, or when they hit a

big country, say France or Germany. Because when shocks are common to several European countries, the European economy will function as a single economy with flexible exchange rates, most of the discussion in the sequel will be concerned with a small country that is hit by a shock that is specific to itself. Such country-specific shocks might have no impact on the common currency. So the country in question must find another way to adjust to the shock. These shocks are often referred to in the debate on the EMU as *asymmetric*, or *idiosyncratic*, and I use similar terminology here.

2. There is free movement of factors of production. If factors were perfectly mobile, this would automatically equalize the price of each factor in all countries, as factors exploited all gains from trade. I assume that this is the case for financial capital, which implies that nominal interest rates are equalized across the union. But physical capital and labor, although potentially mobile, might be slow to move, leading to persistence in differentials in the real rate of return to capital and in real wages. In the short to medium run, it may be more realistic to assume that capital and labor supply are given to each country.
3. No single country has authority to issue the single currency. This restriction makes economic sense because the exchange rate is fixed and the currency is common. Without this restriction, individual countries would issue currency to finance spending and shift the costs to the other countries in the form of higher inflation. Regarding the labor market, its implication is that the authorities cannot use monetary policy to change the short-run equilibrium of the market.
4. Restrictions on fiscal policy are less clear cut. In principle, there is no reason why individual countries should not be allowed to borrow as much as they want in a free market. For as long as there is strict adherence to a no-bailout clause at the union level, the constraint on individual borrowing is the higher interest rate that country governments must pay as their debt grows and the possibility of payment difficulties (or eventual default) becomes more likely. But the system would break down if there was expectation that a country, which could not repay its debts, was bailed out by the other countries. Perhaps because of the political difficulties that would arise in the event of a country facing insolvency and the rest of the union refusing to help, the debt criteria for coun-

tries joining the union have been made a lot stricter than they need be. In conformity with much of the public debate on this issue, I assume that the interest rates at which each country can borrow in the common currency are the same everywhere. But it is very likely that there will be some scope for independent fiscal policy within each country, especially if it is in response to temporary cyclical shocks.

Note that the constraints imposed by the EMU, in particular the two nominal constraints of fixed exchange rate and exogenous monetary policy, need not force the economy on to a different final equilibrium from the one reached with flexible exchange rates. All adjustment paths with a flexible exchange rate can, in principle, be replicated by a combination of flexible wages and prices and endogenous money supply in response to international capital movements. But problems arise when there is wage inflexibility and slow adjustment. Even if the inflexibility is only a feature of the short run, longer-run changes to the economy's equilibrium might come about if, in response to the short-run inflexibility, there are sectoral employment or investment adjustments that become irreversible. The short-run problems imposed by wage rigidity might be more serious with the EMU than without it, because normally, the exchange rate is the first variable to adjust in response to a shock and initiate a change in relative prices.

Now, because the constraints imposed by the EMU are nominal, the inflexibilities that might be important in the question of whether a country is worse off with the EMU than without are also likely to be nominal. This makes the question of nominal-wage and price flexibility the key issue. The flexibility of labor demand and labor supply for given prices and wages is also important, because if their adjustment is slow, the problems encountered with nominal rigidity might be exacerbated.

3. Aggregate responses to macroeconomic shocks

To bring out the implications of the EMU for the adjustment process in response to country-specific shocks, I first consider the adjustment of aggregate variables in response to two types of shocks, one in aggregate demand and one in aggregate supply. I simplify by ignoring the adjustments in factor markets and by assuming instead that there is price rigidity in the short run. The labor market does not

feature explicitly in this analysis. But the supposition is that the price rigidity is due to the combination of wage rigidity and some pricing rule, such as mark-up pricing that ties the behavior of prices to that of wages.

When the country does not belong to the EMU, the model economy is very close to the one studied by Dornbusch (1976), with the exchange rate changing to keep the monetary sector in equilibrium throughout the adjustment period. But when the country belongs to the EMU, the exchange rate is fixed, and the monetary sector is kept in equilibrium through international capital movements. Because under the EMU there is a single currency that circulates in the home country and in the rest of the union, equilibrium in the money sector under the EMU is maintained through cross-border flows of the common money.

Consider first the response of a small economy to an aggregate demand shock (or equivalently, to an exogenous fall in domestic savings). With a fixed interest rate, an increase in aggregate demand necessitates a real appreciation in the exchange rate that chokes off the increase in demand (in a closed economy, the real interest rate would rise to crowd out the demand). The final equilibrium is one where aggregate output is the same as before the exogenous increase in aggregate demand. The trade balance is worse and domestic consumption absorbs relatively more of the goods produced in the domestic economy. The appreciation in the real exchange rate is needed to reduce overall demand and increases the consumption of foreign goods.

How does the economy get to that final equilibrium when prices are rigid in the short run? If the country imposes no restrictions on exchange-rate movements, the adjustment to equilibrium can be very fast and is borne entirely by the nominal exchange rate. The nominal exchange rate appreciates by a sufficiently large amount to induce a fall in net exports. But if the exchange rate is tied down by the EMU, adjustment is slower. The increase in aggregate demand reduces unemployment and puts upward pressure on prices and interest rates. Money comes into the country from abroad in response to the latter, which allows prices to increase without a fall in the real money supply. A slow process begins, whereby prices rise gradually, accompanied by inflow of the common currency. This continues until domestic goods become sufficiently expensive (that is, until the real ex-

change rate has appreciated sufficiently) to induce the required fall in net exports.

Thus, when aggregate domestic demand increases, final equilibrium is the same, irrespective of the exchange-rate regime. But whereas the adjustment outside the EMU is quick and is borne entirely by the exchange rate, inside the EMU the adjustment is slow and is borne by price and money-supply adjustments. Here, there is nothing that monetary policy can do to make the adjustment less costly inside the EMU, because monetary policy is tied down by the rules of the union (and in any case, free capital mobility would render monetary policy ineffective). The policy that could have an influence on the adjustment path is fiscal tightening. An increase in taxes could absorb the increase in aggregate demand without the need for any adjustment in the real exchange rate in either case. But this is not saying anything other than the obvious fact that carefully planned activist fiscal policy can, at least in principle, counteract real aggregate demand shocks when there is price rigidity.

The comparison of the adjustment paths inside and outside the EMU in response to an aggregate supply shock is less clear cut. Suppose aggregate supply rises unexpectedly, say, in response to a fall in the price of raw materials or a natural-resource discovery. The required response in final equilibrium is a fall in domestic prices and a depreciation of the real exchange rate, which increases foreign demand for goods. Of course, in a longer run this would increase domestic wealth and lead to an increase in domestic demand at given prices and interest rates, thus leading to a new equilibrium where domestic residents produce more and consume more. I consider adjustments to the medium-run equilibrium with lower price and depreciated real exchange rate, when the country is inside and when it is outside the EMU.

If the country is outside the EMU, the anticipation of a fall in price (that is, lower inflation) leads to an increase in the demand for the country's currency. This appreciates, in the first instance, the country's exchange rate, leading to a fall in aggregate demand. But as the fall in prices is realized, partly in response to the increase in supply and partly in response to the fall in demand, the demand for the country's currency goes down and the exchange rate depreciates. Prices continue to fall and the exchange rate depreciates further, until aggregate demand increases to the new level of aggregate supply.

So if the county is outside the EMU, the response to an aggregate supply shock involves initial appreciation of the nominal exchange rate that *overshoots* its final equilibrium value. Eventually the outcome is a price fall that might be more or less proportional to the rise in aggregate supply and a real depreciation of the exchange rate.

If the country is inside the EMU, the initial rise in aggregate supply increases the demand for money and brings more of the common money into the country. In the meantime, prices begin to fall in response to the excess supply that is created, which depreciates the real exchange rate and reduces the demand for money. Prices stop falling when the real exchange rate has depreciated enough to equate the rise in aggregate demand with the rise in aggregate supply.

Comparing now the adjustments occurring in the two cases, it can be shown that under plausible conditions, the required price adjustment inside the EMU is greater than the required price adjustment outside the EMU. Also, the speed of price adjustment inside the EMU is less than the speed of adjustment outside the EMU. The reason is that outside the EMU, the real exchange rate appreciates initially, which causes a fall in demand. A disadvantage of this adjustment mechanism is that the response to a rise in aggregate supply is initially a fall in aggregate demand, followed by a cycle. This latter phenomenon is sometimes called the Dutch disease and does not arise inside the EMU.

Of course, whether one system is better or worse than the other depends on the welfare criterion that we are using. But the point that the two examples illustrate is uncontroversial. When there are real aggregate demand shocks and the country is outside the EMU, the exchange rate bears the brunt of adjustment and adjustment is fast; inside the EMU, prices must adjust to get the economy to the same final equilibrium, and this occurs more slowly. When there are real supply shocks, the speed of adjustment is again slower inside the EMU than outside. If the speed of an economy's adjustment inside the EMU is to be the same as the speed of adjustment outside the EMU, prices and money wages inside the EMU must be less sticky than they are outside.

4. Structural adjustment

So far, the discussion concentrated on aggregate analysis, where each country produces a single traded good. But that framework cannot

address several issues that might become relevant when a country joins a monetary union.

This section looks at two issues:

- Structural adjustments within a country when there are two distinct sectors, a tradable sector and a non-tradable sector
- Regional equilibrium within a country and ultimately within the EMU

Suppose a country produces two kinds of goods, a tradable good and a non-tradable good, and is hit by a trade shock. For convenience, we assume that initially the country enjoys full employment and full external balance, so it produces all the non-tradables that it wants to consume and its trade balance is zero. If the country is small, the price of tradables is determined abroad. If the country is inside the EMU, the price of tradables is fixed when measured in the single currency. Outside the EMU, the price is fixed abroad, but because the exchange rate is free to fluctuate, the price that domestic producers receive also depends on domestic influences.

The wage rate in the two sectors is common and equals the value of labor's marginal product in each. This implies that in equilibrium, the ratio of marginal products of labor in each sector must equal the relative price of the two goods. The domestic price of non-tradables and the money wage rate are determined such that the markets for output and labor both clear.

Now consider the adjustment process in response to a fall in the price of tradable goods (see Sachs and Larrain, 1993). This could come about for one of two reasons:

1. There might be a fall in aggregate demand in one of the country's export markets, which leads to a reduction in price. Here, the country responds in the same way inside or outside the EMU if the fall in demand affected all countries in the EMU. But if the country that suffers the drop in demand is not an export market for the rest of the EMU countries, the response to the shock will be different in each case.
2. Changes in other countries inside the EMU could result in an appreciation of the common currency. This leads to a fall in the demand for the traded goods abroad and to a fall in the demand that domestic producers receive.

A fall in the demand for exports when the country is outside the EMU can be easily corrected with a depreciation of the currency. The currency would depreciate to the point where foreign demand is restored and no adjustments are required in the distribution of production between tradables and non-tradables. But inside the EMU, the adjustment route via the exchange rate is not available. As an alternative route that involves no relative price adjustment, the output of tradables falls to the point where the value of marginal product of labor in each sector returns to the level that it was before the fall in the demand for exports.

Following the fall in the output of tradables, adjustment to a new equilibrium comes from an eventual fall in wages through the depressing effect of unemployment on them. It follows that when the asymmetric shocks that hit a country are structurally biased, the adjustment path inside the EMU requires flexibility in nominal wages and most likely rapid labor mobility. If labor is slow to reallocate, the effects of the distortion that comes from inflexible wages could be long lived. Also, if the initial trade deficit caused by the fall in the demand for exports calls for a trade surplus in the future to repay the accumulated debt, the economy would cycle with the tradables sector needing to expand by more than its final equilibrium share. Such export-induced cycles were common in the era of fixed exchange rates, when aggregate demand was used as the tool that controlled the trade balance.

The analysis of the role of labor mobility leads to the second set of issues that come under the heading of structural adjustments. A striking feature of regional and industrial data in European countries is that there are very few differences in wages across sectors for similar kinds of labor. But there are obviously large differences in wages among countries (see Pissarides and Moghadam, 1990). Employment and capital investment seem to mostly absorb regional shocks, whereas as the natural rate hypothesis predicts, wages seem to absorb national shocks. There can be many reasons for these differences. Two obvious ones that might gain wide support, as Jackman (1996) noted, are the issues of comparability and labor migration.

Within a country, there might be a single national trade union or other mechanisms that press for more equality in regional earnings. Normally, the group with which a worker compares him or herself is one consisting of like workers in his or her own country. Unions are

more likely to insist on equal pay for equal work for all workers in their own country than for workers in different countries, where they have no members. The outcome of negotiations by national unions might be a large degree of wage equality across the regional and industrial dimension.

Migration is the second reason why we might expect to see equalizing forces in wages at the regional level. If national migration is responsive to differences in economic incentives, wage and unemployment differentials might not persist for long. The economic system might reach some kind of regional equilibrium with compensating unemployment and wage differentials that might not be large.

Countries, in contrast, can have persistent wage differentials because of productivity differences. Here, the question that naturally arises is whether, after the formation of the union, the EMU countries will start behaving like regions of a single country in that respect. If, after the union, the comparability group is extended to include all countries in the EMU, there could be devastating consequences for some of the countries that now have lower wages. As their wages rise to catch up with the other countries, they would create unemployment that would not act to check the wage growth. Of course, if international migration becomes more important after the EMU, the disequilibrium could be corrected with large movements of labor out of the low-wage countries. But EMU countries must decide whether they want to see more comparability across member countries and induce more labor reallocation as a result.

5. The origins of idiosyncratic shocks

The foregoing analysis made it clear that when a country suffers from idiosyncratic shocks, the adjustment to equilibrium is slower when it is a member of the EMU than when it is not. The question that then arises is: how likely are European countries to suffer from idiosyncratic shocks?

There is still no consensus in the Economics profession about the source of business fluctuations in European (or other OECD) economies. So one exercise, which might shed some light on the synchronization of cyclical shocks, is to examine *ex post* the unexplained (residual) components of GDP of European countries and test whether there are cross correlations between them. Table 1 shows the results of this exercise.

Table 1. Correlation coefficients in the European Union

	D	F	B	NL	L	A	DK	I	ES	P	G	GB	IR	SF	S	Var
D	1.000															5.15
F	0.460	1.000														2.87
B	0.460	0.720	1.000													4.52
NL	0.590	0.620	0.750	1.000												5.43
L	0.580	0.280	0.420	0.250	1.000											10.77
A	0.580	0.510	0.570	0.480	0.300	1.000										5.52
DK	0.410	0.490	0.390	0.520	0.200	0.170	1.000									7.69
I	0.380	0.590	0.670	0.480	0.270	0.520	0.260	1.000								6.24
ES	0.008	0.440	0.420	0.075	0.180	0.380	0.190	0.350	1.000							7.98
P	0.220	0.250	0.390	0.267	0.390	0.210	0.070	0.345	0.206	1.000						11.13
G	0.320	0.350	0.180	0.130	0.220	-0.004	0.230	0.020	0.250	0.300	1.000					9.82
GB	0.450	0.400	0.350	0.370	0.140	0.280	0.190	0.260	0.118	0.330	0.410	1.000				3.88
IR	0.190	-0.240	0.220	0.200	-0.004	0.110	-0.002	0.110	-0.036	0.360	0.080	0.230	1.000			6.14
SF	-0.010	0.330	0.440	0.260	0.080	0.180	0.330	0.190	0.300	0.017	0.280	0.330	0.230	1.000		9.09
S	0.109	0.282	0.327	0.326	0.035	-0.079	0.403	0.260	0.092	-0.124	0.319	0.400	0.124	0.697	1.000	2.51
Ave.	0.339	0.415	0.450	0.380	0.238	0.300	0.275	0.336	0.212	0.231	0.220	0.324	0.104	0.261	0.226	

Notes: The correlation coefficients are of the residuals from a regression of the first difference of the log of GDP on constant and four lags of itself. The data are annual for the 1950-1991 period.

For each country of the union, I regressed the annual growth rate of GDP on a constant and four lags of itself. The residuals were then correlated with each other. Table 1 shows the 15x15 correlation matrix along with the variance of each residual in the last column. The idea behind this is that the residuals stand for the shocks that drive the cyclical fluctuations in GDP. A high correlation coefficient for the residuals of two countries signifies a common cause of cyclical shocks, and so the two countries are more natural partners for a currency union. A low correlation coefficient points to diverse sources of shocks and is a warning that following cyclical shocks, the required relative price adjustments within the union might be large.

What is a high and what is a low correlation in this context? To put this into perspective, I also correlated the residuals of the U.S. and Canada, two countries that are obviously as suited for economic and monetary union as two countries can ever be. The residual correlation coefficient for those two was 0.8. In contrast, the correlation coefficient between the residuals of Germany and Austria, for example, is 0.58, and between Belgium and the Netherlands, 0.75. In the bottom row of the table, where the average correlation coefficients are shown, it is apparent that the big four countries have large average correlation coefficients, presumably because country-specific shocks to them are transmitted to the rest of the union through trade. Of the smaller countries, Belgium, the Netherlands, and Austria have the highest coefficients. Ireland has by far the lowest coefficient.

It appears from the averages that because the European Union is such an integrated market, the more of the big countries that join the EMU, the better the chance that the dominant shocks within the EMU will be union-wide. It also appears that of the smaller countries, the Benelux countries, Austria, and possibly Denmark have the biggest residual correlations with the rest. Factor analysis of the residuals confirms this.

Factor analysis is a technique that identifies the number of distinct factors that are needed to explain the variations in the residuals of a set of countries. For example, can variations in the residuals of one country be explained by the variations in the residuals of another. Or, is another factor needed? The technique cannot say what those factors are, but it can tell how many factors are needed in each case.

The results of the analysis show that the core countries (Germany, France, Benelux, Austria, and with or without Denmark) have only

one significant factor, whereas the European Union as a whole has five. This implies that in the core, shocks are driven mainly by one common causal factor. In the union as a whole, at least five distinct factors can be identified.

Another way to examine the potential for country-specific shocks in the European Union is to examine the structure of each country and look for differences that might act as sources for distinct shocks. Table 2 looks at the share of manufacturing, agriculture and services in the 15 countries of the union (the missing sector is construction and others).

Table 2. Origins of gross domestic product in the European Union (1990-1994 averages in percent)

	Manu-facturing	Agriculture	Services
Austria	27	2	64
Belgium	21	3	62
Denmark	20	4	66
Finland	25	6	60
France	28	4	68
Germany	28	1	64
Greece	16	10	64
Ireland	30	8	55
Italy	26	3	64
Luxembourg	29	2	65
Netherlands	22	3	71
Portugal	28	5	61
Spain	22	3	61
Sweden	24	2	68
UK	24	5	64

Source: Economist Intelligence Unit, Country Profiles

Manufacturing is the main tradable sector in the economy and the one most exposed to cyclical shocks, whereas the service sector is the least exposed to cyclical shocks. Because at least some of the causes of changes in employment patterns in each country might be due to European-wide industry shocks (for example, the decline of agriculture and textiles, the rise of financial services and health), if two countries have different structure, even European-wide industry shocks can lead to asymmetric shocks at the country level.

There are no large differences in the manufacturing share. All countries except Greece have a share between 20 percent and 30

percent. Agriculture is a small sector in all countries except for Greece again and Ireland, where it is 10 percent and 8 percent, respectively. There are also no large differences in the share of services in GDP, where in all countries except for Ireland, they account for 60 percent to 70 percent of GDP (in the Netherlands they are just above 70 percent of GDP). But looking at the distribution of manufacturing and services, it is unlikely that differences here would introduce a large component of idiosyncratic shocks in a future EMU, with the possible exception of some of the smaller countries in the periphery, in particular Ireland and Greece.

Table 3 gives data on the distribution of output between consumption, government spending and investment and also on exports as a percentage of GDP. Investment varies from 14 percent to 23 percent of GDP, and because it is the most volatile component of demand, it is a potential source of idiosyncratic shocks in the union. There are also a few differences in the share of consumption and government spending, which could lead to different kinds of cyclical behavior in each country.

Table 3. Expenditure on gross domestic products in the European Union (1990-1994 averages in percent)

	Private consumption	Public consumption	Investment	Exports	Exports to non-EU
Austria	54	18	23	37	14
Belgium	60	15	18	72	19
Denmark	52	25	17	34	16
Finland	51	20	15	30	13
France	59	19	20	23	9
Germany	54	17	19	36	17
Greece	73	12	18	17	8
Ireland	55	16	14	71	23
Italy	62	17	18	19	9
Luxembourg	55	13	23	90	25
Netherlands	60	13	18	50	12
Portugal	65	17	23	22	6
Spain	61	16	19	19	6
Sweden	53	26	17	34	16
UK	63	20	16	23	11

Source: Economist Intelligence Unite, Country Profiles

But the biggest differences among countries are in their export shares, with Italy and Spain having the lowest (19 percent of GDP)

and Belgium, Ireland, and Luxembourg the highest (above 70 percent). What is more interesting here is the fraction of exports that go to countries outside the European Union, because they might transmit external shocks to the trading countries that are uncorrelated with developments inside the union. Here, Spain and Portugal have the lowest shares of 6 percent of GDP, whereas the Scandinavian countries and Germany have higher shares at 16-17 percent and Ireland and Luxembourg the highest at 23-25 percent of GDP. With such differences in the volume and destination of exports of each country, there could be a potential source of idiosyncratic shocks in this domain.

6. Nominal inertia

The foregoing analysis clearly indicates that a primary concern regarding entry into the EMU is whether there are nominal price and wage rigidities whose real effects are exacerbated with a fixed exchange rate. There is no simple answer to the question of how to measure nominal inertia, partly because even if we find a way of estimating them, it is no guarantee that the relation would remain stable in a different environment. Nominal rigidities estimated when a country does not belong to the EMU may disappear when the country joins the EMU.

Conventionally, nominal inertia are measured by estimating price or wage equations that contain a set of explanatory variables and lags of themselves on the right-hand side. Layard, et al. (1991) measure them by making an assumption about inflation expectations and then saying that the degree of nominal inertia is measured by the coefficient by which (*ex post*) expectation errors influence real wages and the markup of actual prices over costs. If there is a difference between the actual and expected general price level and this turns out to have a large influence on real wages, nominal-wage rigidities are high. Without nominal rigidities, there is no reason why real wages should respond to expectational errors. For example, when there is full indexation, real wages do not respond to actual prices, regardless of whether or not they are anticipated.

This definition highlights the important point about nominal rigidities that we made at the beginning of this section, namely the estimated rigidities are not necessarily structural coefficients that would remain constant across sample periods. Because they depend on expectations, the assumed expectation mechanism (and by extension

the monetary regime in operation) should influence the estimated nominal rigidities. For the EMU, because market participants know that the EMU changes the monetary regime, any estimates obtained from data before the EMU is set up, are not necessarily a good guide to the nominal inertia that might prevail after the EMU.

Now, when the exchange rate is flexible and bears the brunt of adjustment, workers and their employers might be aware that prices need not change by much to restore equilibrium, following a shock. As a result, they might be prepared to lock wages into long-term contracts and lead the econometrician to estimate substantial nominal rigidities.

But if a country is in the EMU, agents may realize that when there are asymmetric shocks, the only adjustment route open is via nominal-price and wage adjustment. They might, under these circumstances, realize that locking themselves into nominal-wage contracts could prolong the adjustment period and cause more problems within the firm. So we would expect countries that enter the EMU to exhibit less nominal inertia than they did before entry.

Layard, et al. (1991) did not test for changes in nominal inertia as monetary regimes changed, say from Bretton Woods to flexible exchange rates and then from flexible rates to the managed float of the European Monetary System. They tried to find correlations between institutional features of the labor and product markets and nominal inertia, but failed to find any correlations other than some weak ones in wage setting. Nevertheless, their findings can be used to shed some light on two questions of direct relevance to the issue of exchange-rate flexibility.

First, they argue and find some weak evidence to support the fact that an economy that suffers from more frequent or larger nominal shocks exhibits less nominal inertia. Ball et al. (1988) provided a theoretical justification for this claim, and the intuition behind it is that if nominal shocks are more frequent, the cost of the nominal inertia to market participants is higher. This implies that when shocks are more frequent, real wages respond less to expectational errors about future prices.

Because flexible exchange rates increase the variance of nominal shocks in an economy, one might then expect to find less inertia outside the EMU than inside. But the relevant question for the costs of the EMU is not whether there is more or less inertia but whether real wages respond more or less to nominal shocks. Because outside the

EMU the variance of nominal shocks is likely to be larger, it is also likely that there will be bigger errors in the formation of price expectations. So even with less inertia in nominal wages, it is possible that real wages respond more to prices outside the EMU than inside, because the price shocks are likely to be larger.

Although there is no precise test in the literature of the effect of nominal shocks when their variance varies, it would appear from the weak association of the variance of nominal GDP with nominal inertia that when the variance of nominal shocks is larger, the real effects of nominal shocks are also larger. The experience of the UK with the severe nominal shock of 1980-81 and again when it entered the exchange-rate mechanism at an overvalued exchange rate in 1989 confirms that the real effects of nominal exchange-rate shocks can be substantial, even if they are expected to be permanent (see also Bean and Symons, 1989).

Second, there appears to be more nominal inertia in countries with centralized wage bargains. The effect of nominal shocks on unemployment due to inertia in the Layard-Nickell framework is proportional to the sum of the two coefficients that they estimate for nominal inertia (see Layard et al., 1991, p. 402-406). One of the coefficients measures nominal inertia in price setting, the other measures nominal inertia in wage setting. Table 4 gives the sum of the two coefficients for the countries in their sample, for the 1969-1985 period and the Calmfors-Driffill (1988) index of corporatism. The table clearly shows that there is a relation between nominal inertia and the Calmfors-Driffill hump-shaped index, with countries that have either centralized wage bargains or completely decentralized wage setting more likely to exhibit nominal inertia.

Because Calmfors and Driffill argue that in the centralized and competitive countries there might be more flexibility in responding to shocks, the correlation in Table 4 may be surprising. But one might argue, as Alogoskoufis and Manning (1988) did, that centralized wage setters can see the link between price and wage inflation and thus moderate their wage demands when prices are increasing, to avoid an inflationary wage-price spiral. So if this is the reason for the estimated high degree of nominal inertia in the centralized countries, one cannot extrapolate and claim that once inside the EMU these countries might suffer longer adjustment lags than the decentralized countries. The adjustments to nominal prices and wages that are required inside the EMU are not ones that lead to wage-price spirals

but ones that are required to bring about changes in the real exchange rate. If centralized wage setters restrain their wage demands to avoid inflation and also respond to supply shocks to avoid unemployment (as Bruno and Sachs (1985), Calmfors and Driffill (1988) and others argue) then by extension, they would respond to the external shocks once inside the EMU to bring about the required changes in the real exchange rate through speedy price and wage adjustments.

Table 4. Nominal inertia in OECD countries

Centralization rank		Country	Estimated inertia
1	1	Austria	4.09
2	4	Denmark	0.13
	2	Norway	4.78
3	3	Sweden	5.18
4	17	Canada	4.28
5	16	U.S.	3.18
6	15	Switzerland	3.19
8	5	Finland	3.49
9	6	Germany	0.78
10	14	Japan	0.81
11	13	Italy	2.23
12	12	Ireland	1.15
	12	UK	0.91
13	7	Netherlands	0.94
14	8	Belgium	0.14
15	9	New Zealand	0.96
16	11	France	0.87
	11	Spain	1.07
17	10	Australia	0.09

Notes: Column 1 of "Centralization rank" is the Calmfors-Driffill (1988) adjusted index of corporatism, according to which highly centralized and completely decentralized wage setting gets a low rank. Column 2 is also from Calmfors and Driffill, and it is a rank of centralization of wage bargains. The estimated inertia is from Layard, et al. (1991), Chapter 9, Table 2 (p. 406), and it is the sum of the coefficient of acceleration of inflation in their price and wage equations.

But at least so far, the evidence does not support the view that wage and price setting is different under different exchange-rate regimes. A controlled experiment of what would happen when a country left a regime of managed exchange rates is provided by the exit of Italy and the UK from the exchange-rate mechanism of the

EMS and by the French, Spanish, and Portuguese devaluations. It is reasonable to assume that in all cases the devaluations were (correctly) perceived to be permanent and also that the rise in long-term interest rates in Italy and the UK indicated a rise in inflation expectations. Yet, the behavior of prices and wages in all these countries did not change after 1992 and in fact, actual inflation in those countries turned out to have fallen more since the devaluations than the fall in actual inflation in the countries that remained in the ERM (Gordon 1995; Jackman, 1996). The evidence so far is that nominal wages and prices in those countries did not behave differently outside the ERM and inside.

What appears to have happened in those countries is that following German re-unification and the correctly perceived need for a real depreciation of the peripheral currencies inside the ERM, monetary authorities everywhere tightened policy to bring about the real depreciations through lower inflation. But this created unemployment, and the fact that the *Bundesbank* was also tightening policy at that time contributed to the problem in the other countries. When Italy and the UK exited the ERM, they continued their tight monetary policies, which reduced their inflation rates. But the required real depreciation was brought about by nominal exchange-rate depreciation. France remained inside the ERM and eventually succeeded to bring about the real depreciation through lower inflation and a smaller nominal depreciation. But the real costs of the real exchange-rate adjustment in the French case exceeded those in either Italy or the UK.

One might argue that the reason for the absence of a clear break in the price and wage dynamics after 1992 in the countries that exited the ERM is that even for countries inside the ERM, the expectation was that they would not be able to hold on to their nominal exchange rates in the face of such events as German unification. In France, for example, perhaps prices and wages did not fall fast enough because there was the expectation that sooner or later it would have to devalue its currency. But this argument is losing force as time goes by and the EMU is becoming more of a reality. And it is also falsified by the behavior of long-term interest rates, which are lower for the countries inside the ERM than for the countries outside.

A more likely explanation of the success of the 1992 devaluations for those who exited is that the countries that experienced them had considerable excess capacity, which absorbed the shock for given

prices. There is some evidence that nominal inertia are more prevalent when there is excess capacity. For example, a given rise in unemployment exerts a greater influence on inflation at lower unemployment rates than at higher rates. Also, at high inflation rates, wages are more likely to be indexed and contracts are more likely to be renegotiated at frequent intervals. It is becoming increasingly likely, as the evidence gathers, that the state of the labor market was and still is a more important influence on wage setters than the exchange-rate regime appears to be. One should be cautious not to generalize to the EMU from this experience, because there is much more to the EMU than fixed exchange rates (the long-term credibility of the policy, for a start). But at least so far, the experience of the UK and Italy since 1992 is not encouraging for those who believe that nominal devaluations are quickly absorbed by prices and wages and have no real effects.

Apart from the credibility issue that might become important under the EMU, there is also the question of the absence of independent monetary policies and the anti-inflation stance of the European Central Bank. If the evidence that there might be more nominal rigidities at lower and less variable inflation rates is correct, the implication for adjustments inside the EMU is that they will be slow. In fact, in the absence of fundamental changes in the wage-setting practices following the EMU, the two constraints imposed by the EMU, fixed exchange rates and low common inflation, reinforce each other. The first makes it more important that nominal inertia should be reduced and the latter removes one possible route that can reduce them. The only route that the inflation constraint allows is the more painful one of adjustments in relative prices for given small changes in the aggregate indices.

Reflecting further on the British experience with the managed float for the brief period when it was inside the ERM and on its experience outside before and after, one can apparently find arguments for and against the locking of exchange rates implied by the EMU. In 1980-81, when the exchange rate was completely free to vary, it appreciated in response to the monetary tightening, overshooting its long-run level in the textbook fashion first described by Dornbusch (1976) and making the real adjustment costs to a lower inflation regime higher. Manufacturing suffered from the Dutch disease (the appreciation of sterling mainly hurt the tradables sector) and unemployment increased by more than it needed to. The behavior of ex-

change rates at that time gives ammunition to those in favor of the EMU (or at least in favor of some kind of stringent exchange-rate mechanism). Had the UK been inside the ERM, the argument runs, the exchange rate would not have appreciated by as much, the anti-inflation policy would have been more credible and the real costs of the adjustment would have been less.

But when in 1990-91 it became apparent that the British exchange rate was overvalued, because of a real shock that necessitated a downward adjustment against the German mark, it became very difficult to bring about the real depreciation through price and wage adjustment. The costs of monetary restraint, in response to the real shock, turned out to be worse than they would have been if the country was outside the ERM. And to add ammunition to those opposed to the tight constraints of the ERM, experience since the departure from the ERM in 1992 confirmed that there can be long-term real depreciation and inflation reduction at small real cost from the combination of nominal depreciation and tight monetary policy.

It could well be that the difference in the two cases was in the source of the shocks. In the first case, the shock was monetary restraint that did not carry much credibility. In the latter case, it was a real shock that carried credibility. Perhaps the ERM in 1980 would have given the credibility that would have eased the adjustment path, but what is interesting here is why it did not give enough credibility to bring down prices and wages faster in 1991-92, before the UK's exit from the ERM.

7. Employment policy

We have argued that the constraints imposed by the EMU will increase the need for labor-market flexibility elsewhere, in particular in nominal wages and prices, and in the speed of response of the supply of labor to changes in the demand for skills. The question that arises in this context is whether there are labor-market policies that can ease the adjustment to shocks when the EMU constraints are in operation; and whether there are any benefits to policy coordination across the European Union in such policies.

I take up first the question of policy coordination across the union. Because the union has social, employment, and environmental objectives, it must recommend to its members the labor-market policies that can help in their attainment. It is in this light that the white paper on competitiveness, which recommended the partial replace-

ment of employment taxes by pollution taxes, should be viewed (European Commission, 1994). But here the question, which we are interested in, is whether there are extra benefits to a country in the union that is pursuing a given policy, when other countries are also pursuing the same policy.

A case for policy coordination across the union can be made when employment policies pursued in one country have externalities in other countries, either positive or negative. More specifically, policy coordination in the EMU can be viewed as a way of dealing with the problems that arise when one of two conditions holds: first, if other countries can free ride on the policy of the implementing country and second, if the policy imposes a cost on other countries in the union. In the former case, there are positive externalities from employment policy: the country implementing the policy is bearing a larger cost than the other countries. Those other countries should then be made to pay for the additional costs, either through a central fiscal transfer or by the requirement that they should also implement the policy that the first country has adopted. In the second case, the externalities are negative: the costs are imposed by the implementing country on other countries, so it should either compensate them for those costs through the center or it should not be allowed to implement the policy. In either case, the central authorities must take action specifically addressed to the policy in hand.

Monetary policy coordination clearly satisfies at least the second of these criteria. If countries were allowed to pursue their own monetary policies, they would contribute to inflationary pressure on the single currency at different rates. The countries that chose higher rates of monetary expansion would export inflation to the rest, reaping the benefits of the higher monetary expansion at small inflation cost. The case for fiscal policy coordination is less clear-cut but if the bailing out of the fiscally imprudent country is perceived to be a possibility, a case for coordination can again be made. If a country borrowed to the extent that it could not repay its debts, there would be a cost on the other countries if it came to bailing it out by taking on its debts.

Let us then examine the case for employment policies in the light of this discussion. Some employment policies clearly have spillovers for other members of the union. The social security net, and in particular, taxes on wages and unemployment benefits, is the most important one. It is well established that employment taxes and unem-

ployment benefits increase wage costs for employers and reduce the differential in living standards between employed and unemployed. Now, if a country in the union cuts taxes and benefits, it might reduce wage costs for employers and encourage more job creation. But employers from other countries of the union may also be attracted to it, with negative consequences for job creation in other countries.

Although this transfer of job creation may be greeted as a market response to cost differentials and thus treated as desirable by some, it is a cost that one member of the union imposes on another because of different social policies. It is not a free-market response to a difference in economic fundamentals among countries. It is what is sometimes called *social dumping*, because jobs are transferred to a country at the cost of worsening social conditions for the unemployed. Because the European Union, as a whole, has a policy of promoting a social safety net, it should also ensure that there are minimum standards that country members follow, to reduce the additional employment costs of such policies that are imposed by countries that provide no safety net. But if some countries wanted to offer more social protection than the minimum specified, they should be left to face the consequences of social dumping.

Another consequence of different rates of social protection can also be dealt with when there is policy coordination at the union level. This is when unemployed workers, or more generally low-income groups, are able to leave countries that offer no social protection and claim benefits in countries that offer the most generous protection, as they might when the EMU is in operation. Because the financing of the social safety net is to be done at the national level, such migrations might increase the budgetary costs of those countries that offer the more generous protection. With the strict fiscal guidelines imposed by the union on members of the EMU, the consequences for the country that attracts poorer migrants could be substantial. Once again, a minimum safety net specified by the union could protect countries that wish to offer generous social support from countries that decide to free-ride on their partners. Of course, another possibility is to continue disallowing such claims from nonnationals, but the latter might be difficult to monitor and might conflict with other EU objectives.

But the case for cooperation in other social policies is a lot weaker. Active labor-market policies that are designed to reduce mismatch between demand and supply are not likely to have negative

or positive spillovers across national frontiers because of the EMU. The case for European cooperation cannot be made on these grounds. Moreover, labor markets are diverse and operate much more at the local level than, say, financial markets do. National institutions influence some key factors, such as wages. But this alone does not justify the introduction of European-wide restrictions on what members do. Needs at the local level might vary, so one policy might be appropriate for one labor market and another policy for another. Also, and equally important, even if objectives were agreed, there might be uncertainty about the most appropriate policies needed to achieve those objectives. Members might best be left alone to find their own way in the pursuit of employment objectives. This again contrasts sharply with monetary policy, where it is generally agreed that monetary restraint is the only way to achieve lower inflation. No such agreement exists on how to achieve higher employment.

Consider now the case for active labor-market policy during the transition to the EMU and after. The transition to the EMU might involve some structural adjustments in local labor markets, in response to the lifting of restrictions on factor mobility and the fixing of exchange rates. Although a case can be made that the winners should subsidize the losers in this transition process, there should obviously be no attempt to reverse or even to slow down the adjustment to a new structural equilibrium for the union.

After the establishment of the EMU, the restriction on exchange rates and monetary policy necessitates, as we have seen, more wage and price flexibility at the local level and can be helped by more adjustable labor supply. Because wage and price flexibility depends on the institutional structure of each country, it appears that the way to tackle the problem is with policies that work best at the local level. There appear to be no advantages to coordinating such policies at the European level. In fact, coordination might make things worse by imposing a straitjacket on diverse labor markets.

Our analysis of nominal inertia shows that we do not know enough, either of the causes of inertia or of their likely response to the EMU. The *Lucas Critique* of policy evaluation even implies that it is futile to try to predict what would happen to nominal inertia and what policies might be beneficial in dealing with them when an unprecedented event such as the EMU occurs. In the absence of such knowledge, it is best to let members experiment on their own, building on their superior knowledge of their local labor markets. A paral-

lel may be drawn with the experience of the last 20 years. In the 1970s and 1980s, when most OECD countries were following passive measures of social support, Sweden and other smaller European countries pursued more active policies, combining expansionary macroeconomic policies with active labor-market policies. The lessons from that experiment were frequently reiterated by the OECD in its *Employment Outlook* and are still proving useful for policy-making in other countries. For example, they were instrumental in changing opinion in the UK in favor of active policies (such as the Restart program) that reduced long-term unemployment. Experience inside the EMU will be different. The lessons of the past must be adapted. The adaptation process is more likely to succeed if it is built at the local level than at the central European level and if a diversity of experiences is built during the initial stages of the EMU.

The idea to complement the EMU with cooperation in the field of employment has much merit in its recommendation of active policies to combat unemployment. High unemployment in some countries could put at risk the fiscal objectives of the EMU by making it more difficult to cut spending and could lead some members to abandon the social safety net and encourage social dumping as a way out of the problem. There is also much merit in the suggestion that employment and the union's other social objectives can only be achieved through faster productivity growth. Faster productivity growth will also make it easier to contain inflationary pressures, because worker aspirations for wage rises can be met more easily. But it is questionable whether the coordination of employment policies across the union can lead to better results than the independent pursuit of such policies in each member country. Of course, objectives might be stated at the union level, because they are uncontroversial enough: high employment growth, low unemployment and no discrimination at work have been frequently stated as objectives of policy at the national and European levels. But the requirement that the policies needed to pursue these objectives should be dictated and that the record of each member with these policies should be regularly monitored, does not appear justified in light of the diversity of European labor markets, and the uncertainty about which policies might be beneficial and which harmful in a free-functioning labor market.

The core of any active labor-market policy must be occupied by policies that ease the transition of workers from one job to another. Several recommendations made by academic economists and national

and international organizations—from the suggestion that there should be subsidized training programs for those displaced from their jobs to the one that the state should take on an active information-gathering role through employment agencies address this issue. But the implementation of such policies has not proved straightforward, and experimentation with different kinds of measures within the larger framework might still yield useful results. So there might be positive benefits from allowing members to pursue their own policies. And unlike the case of monetary policy or social dumping, there appear to be no negative spillovers to other countries from the independent pursuit of active policies, such as training and job matching at the local level.

In light of this discussion, it does not appear justified to legally bind members to certain policies that are uniform across the union. Does this imply that there is no role for European institutions in the pursuit of employment policies? That conclusion would be incorrect. There is still an important gap that must be filled, and this is for a body that can advise and evaluate the different policy alternatives in the European context. The OECD does it for its members and the European Commission also does it to some extent. But given the importance of better employment performance for the European Union, there appears to be scope for either expanding the role of existing departments or for a more specialized body that could advise, recommend, and evaluate policy alternatives in the diverse local situations that are found inside the union. The importance of such a body might grow, as the union expands, to incorporate new members that are less well integrated with the core than those currently inside. Coordination in employment policies at the union level can begin with coordination at the research and information-gathering departments, where there can be large positive spillovers among member countries. But such coordination should not have the force of law and should not obligate members to pursue policies that they do not perceive to be in the best interests of their own local labor markets.

8. Conclusions

We argued that economic and monetary union in Europe increases the need for more labor-market flexibility, in particular, flexibility of relative prices, nominal wages, and labor supply. The problems intro-

duced by the EMU are primarily adjustment problems that are exacerbated by the lack of flexibility in exchange rates and monetary policy and by the low-inflation regime that might prevail when the single currency is introduced. For example, whereas a drop in the demand for a country's exports could be quickly corrected by a depreciation of its nominal exchange rate in a flexible exchange-rate regime, with the EMU in operation, the correction must come from relative price and wage deflation in the country in question *vis-à-vis* its European partners.

The countries of the European Union are natural partners in currency union if the likelihood of country-specific shocks is small. An examination of actual GDP data since 1950 for the 15 countries in the union has shown that there is a sufficiently high correlation between the cyclical shocks of the countries in the core (Austria, Benelux, France, Germany, and perhaps also Denmark) to justify optimism that if they formed a union, the likelihood of large country-specific shocks would be small. But this analysis and an analysis of the macroeconomic structure of the 15 have revealed that not all countries are natural partners in a union.

Our analysis of nominal inertia in prices and wages revealed that they are present, but our knowledge of their properties is still scant. It seems impossible to associate nominal inertia with a particular set of factors that characterize either labor or output markets, except perhaps that there is less inertia when there is more variance in nominal shocks. Equally important, economic theory suggests that nominal inertia should be less in a regime of fixed exchange rates than in a regime of flexible exchange rates but no such evidence can be found. On the contrary, there is evidence that the nominal inertia that characterizes countries that operated inside and outside the exchange-rate mechanism of the EMS were not different in the two regimes. Also, nominal inertia seems more prevalent in situations of low inflation and high excess capacity, which should worry proponents of the EMU. The anti-inflation stance of a future European Central Bank may well lead to more nominal inertia in wage setting.

If nominal inertia makes the adjustment to shocks inside the EMU more difficult than it is outside, employment policies can ease the pain by helping the transition of workers from one job to another. But except for the social safety net, where coordination at the European level appears justified, there appear to be no strong reasons to

believe that coordination in other policy initiatives could improve performance.

Regarding the social safety net, a commitment to a minimum standard appears warranted to reduce social dumping and the free-riding of one country on the welfare system of another. But such negative cross-border spillovers might not flow from active labor-market policies. And because local needs might differ and our knowledge of the effectiveness of policies is not perfect, there could be rewards from the knowledge that would be accumulated from the diverse experience at the local level. The latter points to an important role that might be played by a central European body, which coordinates policy research and the evaluation of policies at the local level. But its role should be an advisory one, not an enforcement one.

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