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The Design of EMU

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Abstract

Pursuit of price stability may, but need not, exacerbate output fluctuations. This paper discusses the monetary strategy of the European Central Bank, the intermediate targets that this should entail, and implications for accountability, transparency, and reputation. Country-specific shocks will remain but output correlation may not reflect the old pattern of core and peripheral countries. The Stability Pact will force some countries to switch off their automatic stabilizers; others, with fewer fiscal problems, can retain them. Output correlations in EMU may reflect a fiscal core and fiscal periphery. Additional labor market flexibility remains the best solution.

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Contents		Page
Summary		3
I.	Introduction	4
II.	EMU's Monetary Strategy: Must Price Stability Threaten Output Stabilization?	4
	A. Correcting the Inflation Bias	5
	B. A Tradeoff Between Price Stability and Output Stabilization?	6
	C. Reputation Building	8
	D. Monetary or Inflation Targets?	11
	E. Monitoring and Accountability	13
	F. Conclusion	15
III.	Monetary Instruments and the Conduct of Monetary Policy	16
IV.	The Transmission of Monetary Policy	17
V.	Asymmetries and Adjustment Mechanisms in EMU	19
	A. Are Shocks Asymmetric?	20
	B. Labor Market Adjustment to Asymmetric Shocks	22
	C. Fiscal Accommodation of Shocks	22
	D. The Stability and Growth Pact: How Much Will It Impede Output Stabilization?	25
	E. Conclusion	27
VI.	Challenges for EMU: A Restatement	28
References		30

SUMMARY

Recent research suggests that the pursuit of price stability may, but need not, exacerbate output fluctuations. Credible central banks can take temporary action precisely because they are trusted to reverse it later. The paper examines the role of central bank independence in achieving improved macroeconomic outcomes. Implementation via simple rules for the evolution of monetary aggregates is unlikely to succeed during a period of considerable uncertainty about money demand and monetary transmission. More sophisticated monetary rules can mitigate these difficulties but are then analogous to inflation targets. The potential conflict between building reputation and stabilizing output is lower the more transparent the basis of monetary policy and the more readily previous mistakes are acknowledged and corrected.

A common monetary policy raises problems for countries facing idiosyncracies in monetary transmission or other shocks. The paper assesses the likely severity of these difficulties, and how much they may be mitigated by national fiscal policies. To allow adequate scope for this within the Stability and Growth Pact, countries may on average have to balance budgets over the business cycle, implying perpetual long-run decline in debt-to-GDP ratios. For heavily indebted countries this path may be helpful for a while; for others, this fiscal constraint is unnecessarily tight. Moreover, early in EMU, rapid acquisition of "precautionary fiscal surpluses," a position allowing fiscal expansion during recession, will be much easier for some countries than others. Some countries will have to switch off their automatic stabilizers. Evidence on cross-country correlation of shocks (which displays a clear partition of countries into core and periphery) may be replaced by a new partition reflecting the fiscal core and fiscal periphery, those able and unable to employ automatic stabilizers. Given these dilemmas, it is striking that monetary and fiscal preconditions for EMU entry have not been accompanied by preconditions for labor markets, in which greater flexibility remains the simplest way to reconcile the benefits of common policy with the need to accommodate individual shocks.

I. INTRODUCTION

EMU is supposed to begin in January 1999. If indeed it goes ahead on schedule, what will this new regime look like and how will it function?² Some of the institutional architecture of EMU has already been confirmed, but important decisions remain to be taken. As yet, the design is incomplete. This paper sets out what we know and what we don't, and evaluates both the consequences of decisions already made and rival proposals for completing the regime design.

Section II deals with the monetary strategy of the European Central Bank (ECB): how pursuit of price stability is to be made operational, how this relates to output stabilization, problems in building reputation, the role and choice of intermediate targets, and the importance of transparency and accountability. Section III deals with monetary instruments and the conduct of monetary policy, the relation of operational procedures to the financial structure in which they are embedded. Section IV considers the related question of the transmission mechanism of monetary policy, in which two themes predominate: the extent to which Europe will switch from a collection of small open economies to a much more closed economy, and the extent to which early years of EMU will be fraught with asymmetries in transmission and volatility in money demand, and consequent uncertainty from both. Whereas Section IV is concerned with the extent to which asymmetric transmission may frustrate the pursuit of common monetary policy, Section V examines the extent to which asymmetries in shocks and structures of member states make common policy inadequate, whether this will induce pressures for a federal fiscal policy, and the extent to which the Stability Pact may impede the use of national fiscal policy as the last resort in dealing with idiosyncratic shocks. Section VI restates the challenges EMU will face.

II. EMU'S MONETARY STRATEGY: MUST PRICE STABILITY THREATEN OUTPUT STABILIZATION?

The Maastricht Treaty lays down that the ECB will be independent of governments and will have as its principal and overriding aim the pursuit of price stability. The monetary strategy is the elaboration of the process through which this is to be achieved. The latest report of the European Monetary Institute (EMI, 1997) leaves open both the question of whether monetary targets or inflation targets should be the preferred intermediate target and the precise channel through which the ECB should be accountable. What considerations should govern these choices?

²To date much of the popular discussion has been preoccupied with concerns about transition to EMU. These issues, although important, are largely ignored in this paper.

A. Correcting the Inflation Bias

An inflation bias in monetary policy may reflect the need for seigniorage or the desire to create surprise inflation to alter the real value of nominal contracts.³ The former may be important in less sophisticated economies in which tax collection is still difficult and the prevalent use of cash provides a significant tax base for the inflation tax as an alternative to even more distortionary taxes. This is not a good description of western Europe. Technical progress and increasing competition in financial services are steadily reducing the use of cash and hence the role of expected inflation in financing fiscal expenditure. It is unexpected inflation that increasingly holds the key to understanding any inflation bias in monetary policy.

Since Kydland and Prescott (1977), economists have understood that promises cannot be taken for granted. Decision makers face temptations that they may be unable to resist. Surprise inflation alters the real value of nominal contracts, especially in the labor market, where market power may imply undesirably high real wages, and in the bond market, where unexpected inflation appears to act as a lump sum tax on holders of nominal government debt. However, since the private sector can foresee the temptation faced by government, the consequence is to raise inflation expectations by the appropriate amount.⁴ This is inefficient: the economy bears the costs of foreseen high inflation without the benefits of surprise inflation.

Subsequent research considered whether reputation might reduce this inefficiency when the game between government and private sector is repeated indefinitely.⁵ A reputational equilibrium can be sustained by the threat of punishment: to some extent, the private sector will trust a government promise to pursue low inflation because everyone knows that government cheating will trigger a period of high inflation expectations (loss of reputation) which is costly to the government.

Reputation cannot completely solve the problem of inflation bias. First, the more the future is discounted the less the deterrence today from the prospect of future punishment for succumbing to present temptation. Second, the period of punishment is ambiguous and the difficulties of coordinating private punishers substantial—since punishing is typically costly to the punishers, the incentive to free ride is powerful. But then equilibrium deterrence is small. Thus, although reputation helps, reliable attainment of low inflation may lie in taking steps that irreversibly precommit responsible monetary policy by the appropriate design of institutional infrastructure. Making the ECB independent of government is an example. EMU

³Dornbusch and Fischer (1993) provide a convenient introduction to both issues.

⁴Namely, until the marginal benefit of surprise inflation to the government equals the marginal cost of inflation in general, at which point the incentive to create surprises is eliminated.

⁵For example, Barro and Gordon (1983), Canzoneri (1985).

governments will delegate operational independence to the ECB as their agent. The ECB will be held responsible for achieving price stability.

A decision to assign the instrument of monetary policy to the agency of the ECB in pursuit of the objective of price stability does not imply either that price stability has become the sole object of macroeconomic policy or that monetary policy has become the sole instrument of macroeconomic policy. The monetary-fiscal mix continues to matter, and governments continue to care about deviations of actual output from potential output. Rather the case for delegation of monetary policy rests on the argument that the joint outcome for output and inflation will be better when the choice of the policy mix is not dominated by fiscal authorities.⁶

Delegation is an attempt to mitigate the consequences of the fundamental distortions that give rise to the inflation bias, to find a way of living with them rather than eradicating them. In particular, the potential for inflation bias is larger the greater the output persistence exhibited by the economy:⁷ when sluggish wage and price adjustment lead to slow reversion of output towards its natural rate, surprise inflation has a larger benefit because it generates an output boom that is sustained for longer. Since the public foresee this, the expected (and hence the actual) inflation rate is higher.

An EMU characterized by sluggish adjustment of output and employment makes the ECB's task of achieving price stability more difficult than otherwise it need have been. Although the literature on optimal currency areas has always recognized that greater wage-price flexibility can reduce the policy conflicts between member states, the systematic relationship between the temptation to inflate and the degree of inflexibility has attracted much less attention. It is striking that there has been such an asymmetry between the attempt to improve the fiscal fundamentals (the Maastricht criteria, the Stability and Growth Pact) whilst labor market fundamentals have been largely neglected.

B. A Tradeoff Between Price Stability and Output Stabilization?

Must the credible pursuit of price stability imply benign neglect of the business cycle? Initially, economists concluded that it must. Rogoff (1985b) showed that the easiest way to counteract the inflation bias inefficiency was to delegate monetary policy to a central bank which valued price stability more strongly, and therefore output stability less strongly, than did its citizens. Trading one inefficiency off against the other, appointment of a somewhat more

⁶Clearly, results will depend on how fiscal policy is chosen, for example whether it remains chosen by different national governments or whether it is coordinated; in reality, the ECB will have many principals whose fiscal policies will not be closely coordinated.

⁷See Lockwood and Philippopoulos (1994), Lockwood, Miller and Zhang (1995), and Svensson (1997).

conservative (inflation-averse) central bank would yield a social profit, despite the lower weight on output stabilization, and increased output volatility thereby entailed.

Yet this analysis does not fit the facts. For a large group of countries over many years, Alesina and Summers (1993) showed that countries with a more independent central bank not only enjoy lower inflation without lower real economic growth (the vertical long-run Phillips curve) but also that, despite lower inflation bias, they do not experience greater output volatility.

Subsequently, this puzzle has been resolved. Choosing central bankers with preferences biased towards price stability and against output stabilization is not the only way to ensure the central bank will counteract the inflation bias. Persson and Tabellini (1993), Walsh (1995), and Svensson (1997) discuss the use of inflation contracts which are most easily interpreted as financial transfers to the central bank governor, a performance related bonus or penalty depending on inflation outcomes. In an ideal world, the optimal contract turns out to be linear in the inflation rate: since the key 'externality' arising from surprise inflation is the attempt by the monetary authority to divorce actual and expected inflation—and in equilibrium, being equal, one is a linear function of the other—a penalty that rises in direct proportion to realized inflation is appropriate. However, the penalty 'tax rate' on inflation will generally be period specific since it should depend ideally on the initial conditions from which the economy begins and whatever shocks are known to have occurred.

The key implication of an optimally designed incentive contract for the central bank is that it deals with the inflation bias without inducing any distortion to output stabilization. It solves the Rogoff problem and would be compatible with the Alesina-Summers evidence cited above. However, performance-related contracts of this exact type do not abound, even in countries that have independent central banks. In any case, practicing central bankers give short shrift to the idea that performance-related pay could have much impact on the behavior of central bankers who have already volunteered to pass up much more lucrative job opportunities in the private sector.⁸

A more practical alternative to inflation contracts is the use of inflation targets, in which delegation prescribes a target rate of inflation in such a way as to counteract the inflation bias. In a natural rate model, in which output deviations last only a single period, Svensson (1997) confirms that a delegated inflation target, which may vary from period to period to reflect knowledge about recent shocks, can match the optimality properties of the inflation contract.

Once we allow for output persistence and sluggish adjustment, policy then needs two dimensions—one concerned with the optimal degree of accommodation of current shocks and

⁸See, for example, Blinder (1995).

one concerned with the optimal speed of unwinding of previous shocks,⁹ for example those demand and supply shocks outside the central bank's immediate control. Nevertheless, a combination of targets and the appointment of central bankers with suitable 'distorted' preferences about price and output stability can still achieve the optimal result: eliminating the inflation bias without distorting the ability to stabilize output. Since a high weight on inflation relative to output is one component of this two-pronged approach, Svensson argues that the latitude for missing policy targets should therefore be relatively small. Any bands for intermediate targets should be relatively narrow.

Optimality of course is only for textbooks. For example, some of the shocks to which the central bank would ideally respond are almost certainly impossible for the public to verify even ex post. Monitoring difficulties preclude complex behavior contingent on shocks that are difficult for all to observe. Practical policy design will then favor robustness and simplicity. Simpler design of delegation rules, being second best, will reintroduce the need to trade off losses from the inflation bias against losses from an inappropriate degree of output stabilization.

The fear that the ECB will be insufficiently cautious should be balanced by a concern that it could be designed in a manner that forces it to be too cautious. EMU needs to get this balance right. Virtue is not exclusively on the side of caution. This section has argued that the design of EMU to safeguard price stability may, but need not, imply a requirement that monetary policy neglects any role for the stabilization of EMU output. An efficient design of the rules under which the ECB will operate can allow it to achieve price stability without exacerbating output fluctuations; an inefficient design may achieve the same degree of price stability but at the cost of greater output fluctuations. The evidence that in practice central bank independence has not implied additional output volatility may indicate either that national design of monetary policy has been efficient in such instances, or that national fiscal policy has been able to take the strain. Whether fiscal policy can play an equivalent role within EMU is the subject of Section V.

So far, the argument assumes that, apart from contemporaneous shocks, output is capable of central bank control. More realistic assumptions on the information structure—the long and variable lags in the effect of monetary decisions—raises other difficulties which will be discussed in relation to the choice of intermediate target for the ECB. First, however, a related issue must be addressed: the common perception that the ECB will initially have to engage in a period of 'reputation building'.

C. Reputation Building

Even careful designs are more reassuring when they have been tried out in practice and withstood the stresses for which the architect had planned. There are two facets of the

⁹Sluggish adjustment makes it expensive to unwind past shocks immediately.

textbook account described above that require more reality. First, it is assumed that the principal can credibly delegate to the agent.¹⁰ Could there be circumstances in which EMU governments will so regret their precommitment of monetary policy that they may be tempted to try to reverse it? Second, the discretionary action of the ECB is sensitive both to the actual, but hard to verify, preferences of its decision makers and to its model of how the EMU economy works, on which there is substantial scope for disagreement. Simply asserting how the ECB is likely to behave is different from confirming that these predictions are reliably borne out. There is no substitute for a good track record.

Is economic theory helpful in contemplating how this is likely to be established? What is involved is a signaling game, originally introduced into macroeconomics, albeit in stylized form, by Backus and Driffill (1985) and Barro (1986). The main insight is that 'soft' policy makers have an incentive to mimic 'tough' policy makers for a while, thereby lulling the public into a false sense of security before springing their eventual inflation surprise.¹¹ The cost to 'soft' policymakers is initially having to pursue tougher policies than they would really like; the benefit is that they achieve a larger surprise when they do finally renege. 'Tough' policymakers, by assumption, face no such temptation. Heterogeneity of preferences, and the public's difficulty in assessing these directly, is what leads initially to a pooling equilibrium in which the type of policymaker cannot be distinguished. In a game with a finite horizon, the eventual temptation for the 'soft' policymaker to cash in its reputation becomes irresistible.

In a game without a finish, the dynamics of when revelation takes place is less clear. It may be, for example, that when some shocks take on extreme values the cost of mimicking becomes unacceptably high and policymakers are forced to reveal their true colors. 'Tough' policymakers also have an incentive to choose actions which 'soft' policymakers would find it prohibitively costly to mimic, thereby bringing forward the date at which the benefits of a good reputation can be enjoyed. During the period of pooling, before revelation takes place, imperfect credibility can be very costly to a true "toughie" since the public must hedge against the possibility that they are in fact dealing with a "softie": inflation expectations, and nominal variables in which they are embedded, will therefore be higher than after the toughie is revealed.

Of course, the world is not this clear cut. As Blinder (1995) observes, there are in practice a continuum of preferences, ranging from very tough to pretty wet; and revelation is never as decisive as the above account suggests. One act of weakness rarely dissipates the entire stock of reputational capital, just as one act of resolve rarely induces total trust. Rather reputational capital ebbs and flows in response to the repeated comparison of words and deeds.

¹⁰In practice, of course EMU will make the ECB the agent of many principals, namely the Member States of EMU.

¹¹See also Cukierman and Meltzer (1986) and Cukierman (1992).

Even within this more realistic view of how reputation can be developed, the ECB may initially devote considerable attention to 'investing' in policies that are 'tougher' than it would choose to pursue after its reputation has been established more reliably. Given the preceding discussion about the appropriate design to counteract the inflation bias, demonstrating resolve may imply both the pursuit of an average inflation target that is lower than it need be (perhaps even negative inflation), and insufficient accommodation of temporary disturbances, thereby exacerbating output variation. Given what is known about output persistence in Europe, there is every chance that the real effects will last a long time even if the original shocks wear off quickly.

Can anything be done to mitigate this difficulty? Although greater labor market flexibility would be beneficial, it is probably too late to secure significant changes by the time EMU begins; even so, there is no case for delay. More flexible labor markets remain an important requirement if EMU is to work well, and the sooner progress is made the better. One aspect of the ECB's operational procedure that can make a difference and be achieved from the outset is the transparency of its decision making.¹² This operates through two distinct channels. First, the more evident is the basis of decisions and the manner of responding to shocks as they occur, the more difficult it is for an imposter to mimic the behavior of a truly tough central bank. Thus transparency facilitates revelation. Second, and related, it is important that the ECB not be sold to the public as a monetary straightjacket, for then it will have to behave in such a manner merely to avoid a dramatic loss of initial reputation. This argument views delegated monetary policy playing its appropriate role in dealing both with price stability and with output stability. Unless the role of the latter is explicit from the outset, its proper pursuit by the ECB will attract unwarranted criticism and hence will not be attempted.

The gains to attaining credibility are large. The Bundesbank has often taken an active role in managing the German economy, and has done so without inducing fears of higher inflation precisely because its assurances that its actions would be temporary were widely believed. For example, Begg et al (1991) document the behavior of central banks immediately following the stock market crash of October 1987. Fearing an adverse shock to demand and confidence, all central banks in the major countries cut interest rates, promising that they would be raised once the crisis was over. Which central bank cut interest rates most? The Bundesbank. Three months later, which was the only central bank to have raised interest rates to their former level? The Bundesbank.

Begg, Giavazzi and Wyplosz (1997) argue that the Greenspan Fed has been similarly activist in the 1990s, again without adverse effects on inflation expectations. But this raises a second issue: how did the Fed acquire such a reputation, which allowed it to engage in

¹²Reviewing the performance of 6 central banks, Bernanke and Mishkin (1992) conclude that one of the attributes of credible central banks is that they do not 'play games' with decision making in related to stated objectives.

monetary activism without precipitating fears of higher inflation? How much should be attributed to standing on the tall shoulders of the Volcker Fed, how much to the attributes of the current Board, especially of its Chairman? Answers to these questions help us think about how quickly reputation can be developed, and how much of it resides in individuals rather than institutions.¹³

ECB Board Members will not start with a blank history: as experienced central bankers in their own countries they already have an extensive track record. Indeed, given widespread agreement on the sluggishness of real adjustment in Europe and hence agreement about the cost of rapid disinflation, any reasonable assessment of post-Maastricht disinflation would surely conclude that what has been surprising is how much, not how little, disinflation has been achieved.

Of course inflation control may prove difficult not by intent but because there will be uncertainty, especially at the beginning, about the demand for euro money and about the transmission mechanism of ECB monetary policy. Does it matter which procedure for intermediate targeting is adopted?

D. Monetary or Inflation Targets?

The instrument of monetary policy is the short term interest rate. This takes up to two years to affect output and prices, a lag that raises the possibility of using an intermediate target for monetary policy. Brunner and Meltzer (1967) list the desirable properties of such a target: it should be reliably under the central bank's control, it should have a predictable relationship with the final target, and it should be capable of affecting the public's expectations.

For many years, targets for the growth of monetary aggregates have been used to fulfil such a role.¹⁴ Data on monetary aggregates is quickly available, allowing prompt evaluation of the actual monetary stance in relation to the stance previously promised. However, even for narrow money, fluctuations in demand have in practice meant that central bank control was usually only imperfect;¹⁵ for broad money, changes in the degree of banking competition and the nature of financial regulation have meant very substantial changes in money demand, and consequent uncertainty during this process, more so in some countries than in others. Hence, for a given level of the monetary instrument, the subsequent evolution of monetary aggregates has been only approximately under central bank control, and with a lag.

¹³See also Drazen and Masson (1994).

¹⁴For a recent review, see Friedman and Kuttner (1996).

¹⁵See, for example, Goodhart (1994).

Lags between interest rate decisions and inflation and output consequences are longer still. Moreover, both money demand and the transmission mechanism to output and prices will be especially uncertain during the early period of EMU. There will be no direct history with which to compare, and construction of a 'shadow history', a composite of the behavior of member states, raises serious issues about the Lucas critique, whether the change of regime will itself induce changes in behavior.¹⁶

The EMI (1997) has recently recommended that the choice of intermediate target be narrowed down to a monetary target or an inflation target. Monetary targets appear to accord more closely with the previous practice of the Bundesbank. An attempt to associate the behavior of the ECB with the track record of the Bundesbank might be easier if the ECB adopted the same monetary strategy as the Bundesbank has pursued. However, this argument can be overstated.

First, continuity of reputation is more likely if the initial membership of EMU is small, centered on a German core, and seen to have fulfilled the Maastricht convergence criteria on which the Bundesbank itself has laid emphasis. If core countries such as Germany and France miss the Maastricht criteria by sizeable amounts, or are thought to have achieved them only by creative accounting or one-off adjustments that give a poor indication of sustainability, and especially if one consequence of this is to make membership of EMU larger because other countries are then difficult to exclude, it will be difficult to believe that the ECB will derive much of a honeymoon effect merely by following the same intermediate target that was used by the Bundesbank .

Second, several empirical studies have confirmed that, whatever its rhetoric, the Bundesbank's behavior has not been the inflexible pursuit of rigid monetary targets.¹⁷ Its revealed behavior has been consistent with the simultaneous pursuit of price stability and output stabilization, not unlike the reaction function implied by the Taylor rule,¹⁸ and similar in spirit to the vision of inflation targets elaborated above. As emphasized in von Hagen (1995), where previously announced monetary targets have proved inappropriate for the subsequent evolution of prices and output, it is the Bundesbank's monetary targets that have quickly been adjusted. The transparency of the adjustment, and the reasons made public for the adjustment, have confirmed trust in the reliability of the Bundesbank's pursuit of its underlying objectives.

¹⁶Cassard, Lane and Masson (1997) show that historically it is possible to estimate a stable demand for broad money for a core group of countries—Germany, France, Netherlands, Denmark and Luxembourg. Montecelli and Papi (1996) argue that EU-wide money demand has been at least as stable as money demand in individual countries. Barran, Coudert and Mojon (1996) examine similarities and differences in monetary transmission across countries.

¹⁷See von Hagen (1995), Clarida and Gertler (1996), Bernanke and Mihov (1996).

¹⁸Taylor (1993, 1995).

In some circumstances, they also blur the usefulness of distinctions between inflation targets and monetary targets. But it is important to understand when we should worry about the distinction and when we need not.

Here, some formal modeling helps. Persson and Tabellini (1993) show that it is possible to delegate monetary policy to a central bank and obtain the same outcome whether one uses a monetary target or an inflation target, but that it is easier for outsiders to monitor central bank behavior when assessed against an inflation target than a monetary target; if the central bank has inside information about monetary conditions, it is more difficult to assess the aptness of its choice of monetary instrument. We tend to judge the performance of a golfer by how close to the hole she hits the ball, not by direct assessment of club speed or hip rotation. Informational requirements are important. Given the priority that the ECB will inevitably place on early reputation building, procedures that complicate monitoring undermine the ease with which that reputation can be developed.

Moreover, the implied rule for monetary aggregates is a complicated rule conditional on the state of the economy and all available information: this is quite different from any simple rule for monetary growth, which would lead to quite different (and suboptimal) outcomes. At a time when money demand is likely to be especially uncertain, both because of changes in the medium of exchange and because the asset demand may be unpredictable until the ECB's track record is better established, simple rules for monetary growth are particularly to be avoided: this is just an application of the analysis of Poole (1970).

Thus, if credibility were exogenous, there might be little to choose between an inflation target, implying a (complex) reaction function relating interest rates to the state of the economy, and a sophisticated monetary target, relating both interest rate and monetary announcements to the state of the economy in an equally complex way. Either would be preferable to simplistic rules for the evolution of monetary aggregates: the early years of EMU, when money demand and monetary transmission are bound to be uncertain, is not the time to put one's eggs in the basket of simple monetary targeting.

Next, we must recognize that credibility is not exogenous. This means that monitoring and accountability will matter.

E. Monitoring and Accountability

Advocates of monetary targets are well aware of the difficulties and drawbacks described above. The chief drawback of inflation targets is the length of time until actual inflation is affected by changes in monetary policy (see, for example, EMI (1997)). This has two implications. First, it takes a long time to detect poor performance by the ECB. Second, the principal(s), EMU governments and their citizens, may find it difficult credibly to commit to punishing poor performance detected today but applying to decisions taken by the ECB two years in the past. Thus the chief argument in favor of monetary targets is that decisions on

interest rates affect this intermediate target more quickly and hence facilitate better monitoring. In turn this helps the central bank be more credible.

King (1994) and Svensson (1996) note that inflation targets do have an associated intermediate target that is immediately available, namely the central bank's inflation forecast over the horizon until interest changes take effect on output and prices. But for model uncertainty and any possible inside information available only to the central bank, one could assess central bank performance by the effect of its interest rate stance today on today's forecast of inflation say two years in the future. This of course is the procedure that all central banks adopt in private. The issue is whether it could be made public, or at least announced after private deliberations had been concluded.

Whether or not the ECB will have much private information of any value, model uncertainty (disputes in positive economics about how EMU transmission mechanisms will actually work) is likely to be significant during the early years, creating a mist within which public doubts may arise that announced ECB forecasts are not the central estimate of the ECB. Yet biases are unlikely to be substantial, and the interests of transparency are best served precisely by making such announcements and subsequently conducting discussions in public about why forecasts turned out to be inappropriate when this was the case. The Bank of England's Inflation Report has been influential in stimulating such a discussion in the U.K. and surely helps explain Sherlock Holmes's dog that didn't bark in the night—the fact that, despite leaving the ERM in order to engage in a substantial devaluation, the U.K. did not face significant inflationary pressures in the aftermath of 1992.

Other conclusions, however, are possible, and seasoned observers have reached differing views. Svensson (1996), having made the analytical case for using inflation forecasts as intermediate targets, then concludes that it may be 'safer' simply to rely on ex post inflation outcomes, despite the delay involved. Von Hagen (1996) jumps the other way and concludes that (sophisticated) targets for monetary aggregates may be more reliable.

Whichever balance is reflected in this final judgement about the target that is *primus inter pares*, and for which the ECB should be held formally accountable, transparency of procedure is paramount and inflation forecasts should be announced.

Accountability will in fact operate through several channels. The ECB will formally and regularly report to the European Parliament. Its activities will also be subject to implicit review when the fixed term contracts of ECB members come to an end and the Council of Ministers appoints successors. But in addition to those formal channels, there may be more frequent accounting for decisions, both to financial markets and to electorates.¹⁹

¹⁹Blinder (1995) cites with approval the Reserve Bank of Australia which now accompanies every change in interest rates with a written explanation of why this was undertaken.

This is not simply wishful thinking. There is a sound political reason to anticipate that the ECB will be driven into an early and frequent accounting for its actions. At least in the early years of EMU, and in particular until 2002 when banknotes are expected to be widely introduced, the threat of a deeply dissatisfied country leaving EMU will be more credible than, say, the threat of Alabama to secede from the Union because it dislikes the monetary policy of the Fed. In practice, therefore, the ECB will face pressure to inform and to explain, both in relation to changes in interest rates and in relation to whether targets have in fact been achieved. Member states anxious that the early years of EMU avoid a deflationary bias may wish the ECB to explain why it missed the bottom end of its target range as well as why it overshot the top end of the range.

F. Conclusion

This section has discussed the monetary strategy by which the ECB will pursue its primary and overriding goal of price stability and subsidiary objective of supporting the economy. To make this operational, the ECB needs to have an idea of what price stability means,²⁰ over what period it is to be achieved, with what precision it should be achieved, and whether its performance will be evaluated by intermediate targets or final outcome. Each of these questions has yet to be resolved.

Delegated monetary independence, although the solution to the inflation bias of discretionary government control of monetary policy, does not imply zero weight on output stabilization. Coupled with a realistic model of output persistence, this implies that past deviations of inflation from target, arising because central bank control of the economy is only imperfect, should ideally be eliminated steadily rather than in a single step. If model uncertainty could be resolved sufficiently to make agreement on the degree of persistence practical, it would of course be desirable to formulate a normal (i.e., optimal) rate at which this gap should be closed. Given model disagreements and the need to find a procedure on which EMU participants can agree, an implicit band for inflation outcomes may offer some of the same advantages, albeit in a more ad hoc manner. If such a band is adopted, it should be symmetric around the central target, and the ECB should have to account explicitly for crossing either edge of the band; the ECB would also be wise to account for its policy actions (or inaction) within the band.

²⁰For example, in the United States the Boskin Commission concluded that quality improvements and other measurement errors imply that price stability is consistent with annual increases in consumer prices of at least 1 percent.

Provided knowably dangerous rules, such as simple targets for money growth, are avoided, the precise details of the monetary strategy may be less important than the perceived transparency with which operational decisions are reached, including the readiness of the ECB to explain why decisions were reached, to admit when previous decisions were erroneous, and to take prompt action to remedy them. Since the environment will be one of uncertainty, the reliability of response to new information will be more reassuring than adherence to central estimates that are unlikely to prove robust.

III. MONETARY INSTRUMENTS AND THE CONDUCT OF MONETARY POLICY

The EMI (1997) has set out the likely instruments through which the monetary strategy will be pursued. In so far there is a distinction between an Anglo-Saxon model and a Bundesbank model of monetary conduct, the EMI's recommendation is adoption of the latter.

It is envisaged that the ECB will have two standing facilities, one for deposits and one for loans, which will be available to eligible counter parties with unlimited access. These facilities will smooth out short run fluctuations in liquidity, help ensure the smooth functioning of the payments system, provide a ceiling and a floor for market interest rates, and thereby allow the ECB to signal its future monetary intent by changing the rates applying to its standing facilities. Within this corridor, market rates will be further manipulated using open market operations, chiefly using repos and reverse repos.

These practices are in any case already followed by many of the countries likely to participate in EMU. Von Hagen (1997) argues that, as a general principle, the details of monetary conduct tend to be implied by the details of the market microstructure and constitutional restrictions in which monetary policy must operate. For example, only in the U.K., Italy, and Greece has there been substantial lending to government by the central bank; in such circumstances, there may be a tradition of conducting open market operations by outright purchase and sale of short term government paper. In countries with restrictions, constitutional or otherwise, on central bank lending to government, repos and reverse repos provide the analogous basis for open market operations. Leaving aside the question of government default, it is hard to see that any issues of monetary control are raised by such distinctions.²¹ Moreover, there has been some convergence in market practice in Europe in recent years; for example, the UK now has a thriving repo market that is increasingly the basis for operations conducted by the Bank of England.

The aspect of monetary conduct that is still the subject of considerable debate is whether or not the ECB will impose reserve requirements on commercial banks, as advocated

²¹And any default is likely to pose problems of monetary control through its systemic effects on banks and other financial institutions not just through any direct effect on the balance sheet of the ECB.

in EMI (1997) and likely to follow from the general prevalence of German attitudes towards operational procedures. Unless such requirements earn market interest rates, they are of course a tax on banks, and there is little to be said from an efficiency viewpoint by then endeavoring to offset this distortion by reliance on another, namely the fact that standing facilities may involve an element of subsidy to eligible counter parties. Nevertheless, as noted by von Hagen (1997), the Bundesbank, which has traditionally championed the virtues of reserve requirements in making short-term monetary control more reliable, has itself reduced requirements in Germany very substantially in recent years. It is therefore difficult to imagine that this issue, whichever way it is resolved, will make a major difference to the first-order macroeconomic issues that are the focus of this paper.

IV. THE TRANSMISSION OF MONETARY POLICY

A generation of European policy makers have become accustomed to a particular perspective, namely the small open economy in a world of ever increasing capital mobility. Europeans have not engaged in extensive discussions about the channels of monetary policy because they were all familiar with Route One. Changing interest rates puts immediate pressure on the exchange rate. In a small open economy in which domestic price and wage adjustment is also sluggish, the potential leverage of monetary policy is enormous. That many European countries have used monetary policy rather little in recent years is testament not to their belief in its powerlessness but in its potential efficacy: wishing to achieve exchange rate stability, they then had no distinct monetary independence.

The contrast with the United States is dramatic. Being large, the U.S. is also a relatively closed economy; globalization has made it only slightly less closed. And this is reflected in the preoccupations of economists. For example, the Fall 1995 issue of the *Journal of Economic Perspectives* includes a symposium on the channels of monetary policy, in which a series of papers by eminent U.S. economists worry about the difficulty of economics in pinning down how monetary policy is transmitted to the real economy.²² Why does monetary policy, which operates on short term nominal interest rates, have its greatest impact on long term investment, which should respond to long term real interest rates? Why more generally is there not stronger evidence of the interest elasticity of various components of domestic aggregate demand? Does the credit channel, with its emphasis on endogenous fluctuations in the quantity of credit in response to cyclical fluctuations in adverse selection and moral hazard, provide the missing link?

The most dramatic change in the transmission mechanism caused by the advent of EMU, especially if it begins with a large number of members, will therefore be that the exchange rate will become much less important in the transmission of monetary policy, and

²²See the papers by Mishkin, Taylor, Bernanke and Gertler, Meltzer, and Obstfeld and Rogoff.

the domestic mechanisms, so much the centerpiece in the U.S., will become correspondingly more important.

What will this imply for the external value of the Euro? Whereas small open European economies have hitherto been preoccupied with their exchange rate, the policy of the ECB is likely to be much closer to policy in the U.S., which can loosely be described as benign neglect of the exchange rate coupled with emergency action, often with involvement by the Treasury, when the dollar reaches severely misaligned levels against major trading partners.

What is the effect of size per se on the degree of exchange rate volatility that the central bank will optimally permit? Martin (1997) shows that in theory the relationship between size and exchange rate volatility is not monotonic. Exchange rates sometimes change in response to exogenous shocks and are sometimes manipulated by policy in search of a strategic advantage. Being smaller makes the real exchange rate more vulnerable to shocks but also increases the incentive of policy makers to stabilize it. Martin shows that in theory a hump-shaped relation exists between size and exchange rate volatility, and confirms this finding empirically using data on 210 bilateral exchange rates within the OECD during 1980–95. A euro attached to a small EMU may therefore behave differently from a euro attached to a larger EMU even if the credibility and other attributes of member states are the same in the two situations.

The second point to note is that a common monetary policy within EMU nevertheless may have very different consequences for different member countries, at least during the early years.²³ At present, the transmission mechanism seems to differ somewhat across nation states in Europe, as documented for example in Cottarelli and Kourelis (1994), Borio and Fritz (1994), and Barran, Coudert, and Mojon (1996). In particular, there is substantial variation in the use of longer-term financial contracts that insulate borrowers from fluctuations in short term interest rates and hence delay the impact of monetary policy on final demand for goods and services. CEPR (1997) highlights the contrast between, at one extreme, the U.K., in which finance for house purchase is largely at variable interest rates and much of firms' external finance is channeled through bank loans with the same features, and continental European countries, such as Germany and France, in which a much larger fraction of both household and corporate borrowing is at medium to long-term interest rates. Differential transmission mechanisms both complicate the assessment of the ECB about the appropriate interest rates to set and may offer greater scope for conflict between ECB members about the desirability of particular courses of action.

²³This point is usually neglected in the literature examining the extent of asymmetric shocks in member states, where the presumption is that a common monetary policy will create a problem precisely because it impacts symmetrically on different members.

These conclusions are subject to two caveats. First, some of the early evidence of asymmetries may overstate its case. For example, Britton and Whitely (1997) show that the use of national models to identify national transmission often exaggerates the asymmetry because of very different modeling strategies adopted in different countries; adopting a common empirical approach reduces but does not eliminate the disparities in monetary transmission across countries.

Second, the Lucas Critique may bite quite hard. For example, the U.K. used to have a corporate bond market which dealt in long commercial paper. Inflation rates of 25 percent in the 1970s dealt it a mortal blow. But with an assurance of low inflation for ever, who knows? Most of the rationale for prevalence of variable nominal interest rates lies in a past history of inflation and a tax treatment that reduced the attraction of the only alternative to variable rates, namely explicit inflation indexation. Financial structure is therefore not independent of macroeconomic behavior. There are therefore two reasons to expect convergence in the financial structure of European countries : convergence of inflation performance and increased competition in financial services as the single market is increasingly realized.²⁴ Even so, this will not happen overnight; CEPR (1997) stresses the lead times involved, and urges active policy measures to encourage convergence, for example by distinguishing capital adequacy requirements for fixed and floating rate debt and changes in tax relief for different types of housing finance. I conclude that the ECB is likely to confront substantial asymmetries in transmission, at least in its early years. To the extent that transmission mechanisms are changing over time, they will also be difficult to predict. This reinforces the earlier claim that credibility is unlikely to be built by making accurate inflation forecasts; rather it will be developed by reacting promptly to new circumstances in ways that appear obvious ex post even if they cannot be predicted ex ante.

V. ASYMMETRIES AND ADJUSTMENT MECHANISMS IN EMU

Asymmetries in monetary transmission are not the only asymmetries that EMU will face, nor necessarily the most important. The entire literature on optimal currency areas since Mundell (1961) asks whether asymmetries in shocks or in structure cause sufficient problems

²⁴Despite economists' tendency to dichotomise nominal and real, and to downplay exchange rate risk, casual conversations with leaders of continental European businesses often indicate extensive plans to change the actual organization of their operations, in procompetitive ways, not in response to the Single Market 1992 programme but only now in response to the prospect of a single currency.

to offset the gains that can be realized from pursuit of a common monetary policy when countries are highly integrated.²⁵

A. Are Shocks Asymmetric?

If structures of different economies are sufficiently similar, common shocks can in principle be dealt with by common policy, at least to the extent this is compatible with price stability as discussed in Section II. However, different shocks may call for different policy responses. A robust judgement about the likelihood of a shock to a particular country being resolved by pursuit of the appropriate policy at the EMU level thus requires us to be as specific as possible about the shocks and their correlation across countries.

One evident distinction is between demand and supply shocks. Bayoumi and Eichengreen (1994, 1996) use the Blanchard-Quah methodology to identify demand and supply shocks affecting output in each European country.²⁶ Examining the correlations across countries for each shock, they conclude that there is a clear group of 'core countries' in which both demand and supply shocks are highly correlated across countries (Germany, Austria, Switzerland, France, Denmark, Belgium, Netherlands, and Luxembourg) and a clear periphery that is less integrated with the core (Italy, U.K., Spain, Portugal, Ireland, Finland, and Greece).²⁷ By implication, a common monetary policy is more likely to meet the needs of the core than the periphery.²⁸

Kenen (1969) noted that a likely source of shocks that are asymmetric across countries is regional specialization. If shocks are largely sector-specific, and countries have a diversified collection of sectors, asymmetries across countries may be small. Stockman (1988) examined

²⁵A convenient update is contained in Blejer et al (1997) who report proceedings of a conference commemorating Mundell's 65th birthday. Bayoumi and Eichengreen (1996a) contains the most complete empirical evaluation of the literature on currency areas.

²⁶Essentially this involves running bivariate vector autoregressions for output and prices and identifying as demand shocks those shocks which have no long run effect on output, and as supply shocks those which do have a long run effect (Blanchard and Quah, 1990). Although many economists are content with this characterization, some have objected that, since one can invent models in which demand shocks have persisting effects and models in which supply shocks have temporary effects, the Blanchard-Quah classification should simply be relabeled as 'temporary' and 'permanent' shocks.

²⁷Sweden is the only country that is difficult to classify, lying somewhere between the two groups.

²⁸High correlation is not desirable everywhere and always, as we shall see when discussing the extent to which fiscal federalism can offer mutual insurance.

the pattern of sectoral and national shocks in seven European countries and concluded that they were of roughly equal importance. Of course, we could try to examine whether the sectoral/national division bears any correspondence to the supply/demand division. Bayoumi and Eichengreen (1996a, 1996b) confirm that 'sectoral' shocks are much more closely identified with supply shocks, 'national' shocks with demand shocks.

Suppose this is true. Can we make an educated guess about how the Lucas critique is likely to operate here? How will the advent of the EMU regime change the likely pattern of shocks? The most obvious conjecture is that demand shocks will become more highly correlated because of the common monetary policy pursued, a conclusion likely to be correct despite the following qualifications.

First, until we consider fiscal policy, and hence the monetary-fiscal mix, we cannot be sure that monetary policy will dominate demand at the national level. Whether there is much scope for national fiscal policies, and whether or not they will be correlated, will depend *inter alia* on the Stability and Growth Pact and how countries decide to operate within it (see below).

Second, asymmetries in structure may impart asymmetric effects to symmetric policies. In addition to the domestic aspects of monetary transmission cited earlier, there are external aspects: different economies face different exposure to the euro exchange rate against the rest of the world (a topic largely neglected to date). If the fact that EMU as a whole is relatively closed induces benign neglect of the exchange rate, the significance of differences in exposure to the external exchange rate may be magnified by the larger fluctuations in the exchange rate that are allowed to occur.

Against these concerns must be set the possibility that EMU increases the correlation of demand (and possibly supply) shocks. Frankel and Rose (1996) demonstrate the clear cross-country relationship between the degree of trade integration and the correlation of countries' business cycles. Presumably this can take place through two quite distinct mechanisms. First, greater openness increases cross-country spillovers and induces incentives for greater policy coordination (the process of which EMU is the extreme case).

Second, greater openness may reflect lower trade barriers and greater specialization. Specialization can take place within countries or in regional clusters that span national frontiers of small, continuous economies. Why does all this matter? Because the eventual pattern of sectoral location may increase or reduce the sectoral similarity of different countries and hence the likely correlation of shocks faced by their national economies. Bayoumi and Eichengreen (1996a) discuss this issue and conclude the evidence may be compatible with increasing sectoral specialization at the national level, a recipe for somewhat greater vulnerability to asymmetric or 'country specific' shocks. Had the Frankel and Rose evidence been drawn from the same sample of (potential EMU) countries, this would have provided some reassurance: whatever is happening to sectoral location, even if this operates in an 'unhelpful' direction, the finding that overall output correlations rise with trade integration

(presumably through the dominance of demand mechanisms in this instance) provides some comfort. However, the Frankel and Rose evidence draws on a much wider group of countries to reach this conclusion, so, without further research, we cannot be sure it applies to potential EMU members alone. In particular, it should not be assumed that EMU countries are representative of the wider sample: the decision by a particular group of countries to embark on a currency union reveals a belief about the nature of their integration that is quite unrepresentative of the world in general.

B. Labor Market Adjustment to Asymmetric Shocks

If the common monetary policy will not deal adequately with country-specific shocks, can labor market adjustment within countries play that role? Blanchard and Katz (1992) conclude that in the United States interstate migration plays a major role in adjustment to state-specific shocks; real wage flexibility is next most important; changes in unemployment and labor force participation are much less important. In contrast, Decressin and Fatas (1995) find that in Europe it is changes in labor force participation that provide the principal adjustment mechanism.

Sometimes labor force participants will be close to indifferent about whether they work or not; the private costs of changes in participation will then be small. But this is not the norm. Even if it was, there may be beneficial externalities from being in the labor force. The social cost of having labor force participation take the strain is therefore likely to be large. If the United States finesses this problem by its greater real wage flexibility, could EMU do likewise? Section II noted the failure of EMU preparations to impose any conditions for greater labor market flexibility as part of the Maastricht convergence conditions. Any reliable increase in real wage flexibility will therefore have to rest on the Lucas critique. Such a case is not difficult to make, as in Begg (1990): in a model of staggered wage setting, as in Taylor (1979), less accommodative policy by government changes the degree of persistence in the real economy and thereby induces some compensation via the incentive to set forward looking wage contracts. Nor is this a theoretical curiosum: Alogoskoufis and Smith (1992) show that a century of evidence, during which exchange rate regimes changed markedly, provides powerful empirical support. Whatever the modeling details adopted, Bayoumi and Eichengreen (1996a) are surely correct to conclude that past evidence on real wage flexibility in Europe may be only an imperfect guide to future behavior. By the same token, induced labor market responses are likely generally only to offset part of the difficulty. Fiscal policy will therefore come under pressure to deal with remaining asymmetries.

C. Fiscal Accommodation of Shocks

Could monetary union quickly set in train forces for much closer fiscal integration? Some fiscal integration has of course already occurred through pressures of fiscal competition and mobility of tax bases across countries: to the largest extent in relation to capital taxation;

to a lesser extent in relation to indirect taxation;²⁹ and, since labor mobility between European countries is not high, to a much lesser extent in relation to income taxation and welfare provision. However, the focus here is not on the wider impact of European integration on the structure of national fiscal systems but on the narrower impact of monetary union on the ability of national governments to mitigate the effects of country-specific shocks on output once they have dispensed with country-specific monetary and exchange rate policies.

During the last two decades there has been downgrading of the role of discretionary fiscal policy in output stabilization (see, for example, Mishkin (1995)), reflecting both concerns about long-run fiscal solvency and about the timeliness with which discretionary fiscal policy can be deployed in relation to short-run shocks. Solvency will be discussed shortly in relation to the Stability Pact; the prior concern is timeliness. Two considerations suggest fiscal policy may have an important role to play in relation to accommodation of shocks in Europe. The first is that, in comparison with the U.S., lower real wage flexibility and greater output persistence in Europe make timeliness less of an issue: unaccommodated, shocks have effects which last long enough to organize a policy response. Second, the fiscal response need not be discretionary. In principle, automatic stabilizers can do the same job. If we therefore proceed on the assumption that a fiscal response to shocks is feasible, is it desirable?

Sala-i-Martin and Sachs (1992) first suggested that the existence of the federal tax system in the US provided the automatic stabilizer par excellence, insuring individual states up to 40 cents in the dollar against state specific shocks to income. Since Europe patently has nothing like this in place, the idea that monetary union in America is underpinned to such an extent by fiscal policy has provoked a profusion of further research.

Subsequent research has tended to qualify heavily the original conclusion. Von Hagen (1992) noted that the empirical methodology of Sala-i-Martin and Sachs failed to distinguish temporary and permanent shocks, or in his terminology failed to distinguish insurance and redistribution. Von Hagen's estimates indicated that perhaps only 10 cents in the dollar reflected insurance. Bayoumi and Masson (1996) and Fatas (1997) confirm that redistribution and insurance are both reflected in flows of fiscal transfers. Von Hagen and Hammond (1995) argue that separating out the insurance dimension is complicated, difficult to verify, and hence improbable politics.

There is also a deeper concern, namely whether or not any fiscal federation can commit to make permanent transfers in response to permanent shocks. Ex ante, this is the risk that it is most valuable to insure, but ex post such insurance may or may not be available. In a

²⁹For a recent assessment in relation to indirect taxation, see Keen and Smith (1996).

sense, what defines an optimal political area is one in which such commitments are credible.³⁰ However, plans for European integration in the 1990s have taken place against the same backdrop as hopes by some for disintegration of some European countries: separatist movements have gained ground in such countries as Italy, Belgium, and the U.K. What we call systematic regional redistribution can also be called the ex post fulfilment of an ex ante insurance contract to a region whose shocks happened to be adverse and very permanent. The point is that we have lots of evidence that such contracts are difficult to honor even within countries whose idea of nationhood and mutual responsibility is at least a century older than EMU: we should not expect substantial amounts of insurance for future but permanent shocks, what were earlier called supply shocks, through any pan-EMU federal mechanism.

What about temporary shocks? Here too the previous benefits of mutual insurance through federation may have been exaggerated. The degree of integration that makes monetary union attractive simultaneously implies a positive correlation of output shocks that yields little gain through mutual insurance. Putting the same point in another way, one country may get federal help in a slump but partner countries are also likely to be in a slump, so the federal budget will go into deficit and the present value of the recipient country's future tax liabilities will rise correspondingly. With Ricardian equivalence, net gains would be small, a point emphasized in Bayoumi and Masson (1996) and Fatas (1997). Of course, Ricardian equivalence does not hold exactly, so there are some liquidity benefits from such a policy. Moreover, the more one wishes to rely on the high correlation of output shocks to dismiss the efficacy of mutual insurance, the more one is diminishing not merely the solution but the problem: with high output correlation, the single monetary policy is increasingly well placed to respond to the concerns of all member states. Thus, part of the concern that lies behind this strand of research is the fear that this single monetary policy will pay insufficient attention to output stabilization, either because the monetary strategy of the ECB has been formulated more narrowly than my discussion in Section II suggests is optimal or because, despite appropriate design for the steady state, early emphasis on reputation building requires the ECB to signal early toughness.

It is therefore likely that countries will face asymmetric shocks and wish to use their own national fiscal policies. For temporary shocks, national fiscal policies provide a natural means of intertemporal smoothing; for permanent shocks, intertemporal smoothing is largely inappropriate. If supply has fallen permanently, demand needs to adjust one way or another.

This prescription glosses over the very real difficulty of diagnosing shocks soon after they occur. Nor does reliance on automatic stabilizers rather than fiscal discretion provide any

³⁰Canada is often cited as an example of a country that is a fiscal federation in which explicit redistribution across states is enshrined in the constitution. The argument is not that ongoing redistribution is impossible, but rather that it is only feasible within an area in which it is accepted (and in particular accepted by the richer regions that have to make systematic transfers to poorer ones).

solution to this dilemma: permanent shocks require (discretionary) changes in the setting of tax rates and spending levels. Automatic stabilizers are therefore no panacea. Their continuing attractiveness rests on an empirical judgement that demand shocks are sufficiently prevalent to make them part of normal operating procedure; governments (and economists) also have to be alert to the situations in which other action is called for.

D. The Stability and Growth Pact: How Much Will It Impede Output Stabilization?

The Stability and Growth Pact, agreed in Dublin in 1996 and confirmed in Amsterdam in 1997, provides a framework for maintaining and enforcing the Maastricht fiscal criteria after EMU has begun. The Pact restates the commitment to a maximum budget deficit of 3 percent of GDP and, except in special circumstances, applies penalties to deficits that exceed this level. Exemption from penalty will normally apply to countries whose real GDP has fallen 2 percent within a period of four quarters; in cases of output falls of between 0.75 percent and 2 percent, penalties may or may not be applied at the discretion of the Council of Ministers; overshooting the deficit limit without the alibi of even an output fall of 0.75 percent will automatically trigger penalties. Eichengreen (1996) calculates that, among the 15 individual countries that make up the EU, GDP has fallen 2 percent in a four-quarter period only 13 times in the last 30 years, an average of less than once per country in three decades.

Let us agree that exemptions will be rare and that incentives to avoid penalties will be large: countries will therefore try to keep budget deficits below 3 percent of GDP.³¹ One implication of the preceding analysis is that, since countries will want some room for fiscal maneuver in order that they can respond to adverse country-specific output shocks, they should aim for an average budget position that allows scope for substantial loosening in a crisis.³² Suppose for the sake of argument this turned out to be roughly budget balance on average. Thus in the long run, nominal debt of the government would be constant, while nominal GDP continued to grow. Despite occasional cycles, the trend in debt/GDP ratios would be inexorably down. For countries whose debt/GDP ratios are already well within the 60 percent level, the conclusion may be that the Stability Pact is unnecessarily tight.

Those uncomfortable with this conclusion might wish to base their case on the poorness of current budget balances as an indicator of longer run sustainability, notably because the (large) extent of unfunded future pension obligations of the government can

³¹Note in passing that historical data from a past with high inflation a misleading indication of the likelihood of triggering the 3 percent deficit threshold since budget deficits include nominal interest payments; price stability should be accompanied by much lower nominal interest rates than many EU countries experienced over the last few decades. Conversely, most countries have a larger debt GDP ratio than 20 years ago, which makes satisfying the 3 percent limit more difficult.

³²CEPR (1997) attempts some calculations of what this might imply.

already be calculated. While this does indeed provide a motive for further fiscal adjustment, it also undermines the case for a uniform ceiling on current fiscal deficits; countries such as Germany and France have much larger unfunded pension liabilities than say the U.K.

Tight fiscal policy on average need not pose any problems for output in the long run, especially if accompanied by looser monetary policy (which in such circumstances would not jeopardize price stability) But fiscal tightening imposes a substantial deflationary bias in the short run if monetary policy is not correspondingly relaxed. Indeed, given the difficulty that many (most?) countries have had squeezing under the Maastricht wire, there is a presumption many EMU members will initially be very close to the 3 percent limit: it may be hard for them quickly to engage in another bout of fiscal tightening.

The objective of the Stability Pact and Growth is not to promote short-run output volatility but to safeguard fiscal solvency, intrinsically a long run consideration. This invites the response that the Stability Pact should apply to structural (i.e., cyclically-adjusted) deficits not to raw unadjusted deficits.³³ Any redesign in this way would of course have to recalibrate the whole exercise: an average or structural deficit of 3 percent yields very different long run properties from a maximum deficit of 3 percent. It might, for example, be recast as a requirement to pursue budget balance over the cycle.

The long-run characteristics of such a policy might not differ dramatically from the existing Stability Pact, provided, under the latter, countries aim for a 'precautionary fiscal safety margin' in order then to have scope for accommodation of adverse country-specific shocks. However, the former variant is preferable: by putting too little pressure on countries' fiscal position during an upswing, the Stability Pact may leave countries with too little scope to accommodate downswings.³⁴

³³Buiter, Corsetti and Roubini (1993) and Eichengreen (1996) are only two of many papers making such a recommendation.

³⁴Examining empirically the effect of fiscal restrictions on lower-level governments, Bayoumi and Eichengreen (1995) confirm that, when constraints apply to deficits not adjusted for the business cycle, the consequence of fiscal constraints is to diminish the stabilizing nature of fiscal policy over the cycle. Eichengreen and von Hagen (1996) observe that such fiscal restrictions are less commonly imposed on lower-tier governments which have sufficient authority over tax collection that, in a crisis, they could credibly increase tax revenue without any resort to further claims on central government. Countries in EMU will of course retain the authority for national tax gathering. The presumption of the Stability Pact is therefore that insolvency not lack of fiscal jurisdiction might be the reason for claims on policy at an EMU level.

A more limited innovation, suggested in Eichengreen (1996), would be to utilize the evidence from cyclically-adjusted budgets to adjudicate, within the existing framework of the Stability Pact, when a penalty should or should not be applied within the range of moderate recession, i.e., when there is a four-quarter output fall in the range of 0.75 percent-2 percent.

E. Conclusion

Integration of Europe's labor and product markets, achieved more through trade and capital mobility than through movement of workers, has proceeded substantially. There is a clear group of 'core countries' and to date they behave differently from those in the periphery. Participation in EMU will change historical patterns of correlation, and is likely, though not guaranteed to increase these correlations. It is unlikely quickly to change the geographical and cultural realities that make the periphery distinct from the center, and, even within the core, country-specific shocks will remain.

Although, as a consequence, real wage flexibility and factor mobility are likely to increase somewhat, it would be optimistic to expect rapid changes in behavior. A role will remain for fiscal policy, more through automatic stabilizers than through discretionary changes, except when obvious supply shocks have been identified, in which case a discretionary response is needed. Federal fiscal policy will play little role in the foreseeable future, and countries close to the 3 percent limit for budget deficits will be constrained by the Stability Pact. In practice, therefore, early EMU participants face the unpalatable choice of engaging in yet another round of fiscal tightening in order to build up precautionary fiscal surpluses, as a baseline from which countercyclical fiscal policy is then possible, or else risk entering EMU with budget deficits sufficiently close to the permitted maximum that any setback to recovery in Europe would quickly force members to take discretionary action to switch off the automatic stabilizers that would normally kick in during a recession.

The latter is a distinct possibility. It would render immediately irrelevant empirical studies of historical correlations of output: countries with spare fiscal capacity would allow fiscal policy to loosen as in the past, countries hard up against their constraint would not. Knowledge of the fiscal position would be a key piece of information in predicting which countries were correlated with which; it would imply a fiscal core and a fiscal periphery, not well correlated with the grouping with which we have become familiar.

In contrast, redefining the Stability Pact with explicit reference to structural budgets would have the short term conjunctural advantage of distinguishing the continuing need to improve underlying budget positions over some medium run from the necessity of doing so precisely at a time when Europe is in recession.

Fiscal tightening need not imply recession. In principle, what is taken away with fiscal policy can be given back with monetary policy. Indeed, one of the key arguments for a regime where operational control of monetary policy is delegated to an independent central bank is that it should remove the presumption that fiscal tightening invariably leads to output

contraction: in pursuit of price stability, the central bank will undo the effects on EMU aggregate demand that fiscal authorities create. However, the 'conjunctural' concern is that, until the ECB has established its reputation, it may be unwilling to do this to the extent required.

VI. CHALLENGES FOR EMU: A RESTATEMENT

During the second half of the twentieth century, western Europe has experienced substantial economic integration both of markets and of policy. Each has fostered the other and responded to the other. This reality has many reflections. Two of the most visible have been the Single European Act, designed to complete the single market by elimination of non-tariff barriers, and the Maastricht Treaty, confirming the high degree of monetary interdependence within the EU and affirming the objective of adopting a common currency.

The first challenge for EMU is to ensure that the common currency is a sound one. Most of the architecture of EMU—both in the framework for the ECB and the Stability and Growth Pact, and in the requirement of the convergence criteria to demonstrate that prior soundness has already been achieved—is designed to ensure that this is so. If EMU money proves unsound it will not be because its architects paid too little attention to delegation and commitment mechanisms to remove the inflation bias in monetary policy.

Indeed, they may have paid too much attention, and from that stems the second challenge of EMU: how to reconcile sound money with tolerable stabilization of output over the business cycle. This matters not just because excessive output fluctuations are undesirable per se, especially in a continent where mechanisms of persistence have historically been significant, but also because dissatisfaction with output stabilization is probably the principal threat that remains to sound money. Neglect of this concern runs the risk that countries will seek ways deliberately to frustrate the intentions of EMU's architects.

Fortunately, there is no irreconcilable conflict between these first two challenges. Much of the thrust of modern macroeconomic research in this area is that it should be possible to have one's cake and eat it too. This does not mean that any form of precommitment will suffice.

The third challenge for EMU is to enable the ECB to build a reputation for sound money without subjecting EMU countries to an extensive recession at a time when individual countries have not yet built up sufficient precautionary fiscal surpluses to be able to use fiscal policy to cushion outcomes that develop particularly adversely in their individual countries.

Meeting the second and third challenges will be easier if there is greater clarity about the intentions of the ECB in relation to the accommodation or not of particular shocks, and a more general adoption of a very transparent procedure for monetary policy both in ex ante formulation and ex post adjustment to new information. Transparency has two virtues: it

prevents temporary accommodation being misinterpreted as permanent relaxation, and it facilitates the ease and reliability of verifying the true intentions of the ECB.

The fourth challenge for EMU is to recognize that the Stability and Growth Pact, even after refinement at the Dublin and Amsterdam summits, remains an unreliable basis for coping with country-specific shocks, despite its reflection of the legitimate concern that fiscal discipline should be encouraged on the average and over the long run. The 1990s have revealed what economists have long preached, that the current budget deficit is a deeply flawed indicator of any fiscal variable of interest. If EMU is to continue to rely on the deficit level as a criterion for penalties that are large enough to have incentive effects on policy, it is likely to be driven into deeper discussion of how deficits are measured and what they reflect. While the Stability and Growth Pact continues to be calibrated on a measure that ignores the state of the business cycle and knowable changes in future government spending liabilities it will remain on shaky ground.

The fifth challenge for EMU is to recognize that measures to promote labor market flexibility need to be pursued as a matter of urgency. Greater labor market flexibility not merely allows different countries more easily to cope with idiosyncratic shocks but also, by reducing the period for which any recession will be protracted, diminishes the pressure on European politicians to succumb to the inflation bias in an attempt to avoid recessions at the EMU level.

Failure to achieve adequate labor market flexibility means that individual countries, more likely those of the periphery than the center, at some point will experience shocks whose consequences persist, to which the only national response will be fiscal relaxation that eventually poses a challenge to the Stability Pact or raises renewed calls for additional cohesion funds to make systematic transfers from center to periphery. Since the evidence for peripheral asymmetry and slow adjustment is pervasive, EMU needs to make substantial progress on this issue quickly. Nor can it rely on a fortuitous correlation of the economic core, defined by correlation of shocks, and the fiscal core, defined by the ease of meeting the Maastricht criteria, to guarantee that a stricter initial application of the Maastricht preconditions will eliminate all those countries for whom idiosyncratic shocks and sluggish adjustment pose most problems.

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