EMU

Getting the End-game Right

Monitoring European Integration 7

Centre for Economic Policy Research

The Centre for Economic Policy Research (CEPR) is a network of over 350 Research Fellows, based primarily in European universities. The Centre coordinates its Fellows' research activities and communicates their results to the public and private sectors. CEPR is an entrepreneur, developing research initiatives with the producers, consumers and sponsors of research. Established in 1983, CEPR is a European economics research organization with uniquely wide-ranging scope and activities.

CEPR is a registered educational charity. Institutional (core) finance for the Centre is provided by major grants from the Economic and Social Research Council, under which an ESRC Resource Centre operates within CEPR; the Esmée Fairbairn Charitable Trust; the Bank of England; the European Monetary Institute and the Bank for International Settlements; 21 national central banks and 42 companies. None of these organizations gives prior review to the Centre's publications, nor do they necessarily endorse the views expressed therein.

The Centre is pluralist and non-partisan, bringing economic research to bear on the analysis of medium- and long-run policy questions. CEPR research may include views on policy, but the Executive Committee of the Centre does not give prior review to its publications, and the Centre takes no institutional policy positions. The opinions expressed in this report are those of the authors and not those of the Centre for Economic Policy Research.

28 February 1997

EMU

Getting the End-game Right

Monitoring European Integration 7

David Begg
Birkbeck College, London, and CEPR

Francesco Giavazzi
IGIER, Università Bocconi, and CEPR

Jürgen von Hagen
Zentrum für Europäische Integrationsforschung,
Universität Bonn, Indiana University, and CEPR

Charles Wyplosz
Institut Universitaire de Hautes Études Internationales,
Genève, and CEPR

Centre for Economic Policy Research

Contents

MEI Steering Committee

Richard E Baldwin
Institut Universitaire de Hautes Études Internationales, Genève, and CEPR

David Begg
Birkbeck College, London, and CEPR

Jean-Pierre Danthine
Université de Lausanne and CEPR

Francesco Giavazzi
IGIER, Università Bocconi, and CEPR

Jürgen von Hagen
Zentrum für Europäische Integrationsforschung, Universität Bonn, Indiana University, and CEPR

Paul Seabright
University of Cambridge and CEPR

Alasdair Smith
University of Sussex and CEPR

Charles Wyplosz
Institut Universitaire de Hautes Études Internationales, Genève, and CEPR

List of Figures

Preface

Informed discussion of European integration should be based on economic analysis that is rigorous, yet presented in a manner accessible to public- and private-sector policy-makers, their advisers and the wider economic policy community. These are the objectives and the intended readership of CEPR reports.

Monitoring European Integration assesses the progress of and obstacles encountered by economic integration in Europe. A rotating panel of CEPR Research Fellows meets periodically to select key issues, analyse them in detail, and highlight the policy implications of the analysis. The output of the panel's work is a short annual report for which they take joint responsibility. This is the seventh in the series.

CEPR is a network of over 350 economists based in over 100 different institutions, primarily in Europe. Much of the research in the Centre's various programmes relates to short- and long-run issues of economic policy in Europe. CEPR puts extremely high priority on effective dissemination of both policy research and the fundamental research underlying it. This series of annual reports has become an important component of this effort.

The topic for this report is the complex, interdependent set of decisions that will structure the countdown to the Euro. There are major risks involved in setting the conversion rates, in continuing the exchange rate mechanism up to the changeover date, and in operating the new EMS. All these issues are highly market-sensitive, and the experience of 1992–3 warns us of what can happen if policy-makers get it wrong. The prescience and analytical clarity of previous reports in this series promise the right approach, and I believe readers will find these expectations justified.

The 1990 report examined the impact of developments in Eastern Europe on the economies of Western Europe and on the process of economic integration among them. Some of its key

insights went against conventional (and even new) wisdom, yet have proved correct and prophetic – for example, the conclusion that German unification would entail a real appreciation of the Deutschmark in the short run.

The 1991 report dealt with Economic and Monetary Union in the European Community, in particular, the macroeconomic and microeconomic issues arising from the process leading to a single currency and a European Central Bank. The report has served as a guide to evaluating the Maastricht Treaty and as a text for interpreting developments in the EMS since August 1992. Again, the analysis in that report has proved far-sighted and robust, in particular its concerns with the problems of transition to monetary union.

The 1992 report analysed the political economy of enlargement of what is now the European Union. The report argued that the issues raised by the EFTA countries' wish to move immediately from the European Economic Area to full EU membership were primarily political; whereas for the existing EU members the motivation was reversed – the EEA had been mainly a political gesture, but there were significant economic incentives for bringing the EFTAns into the Union. The weakness of the economic motivation for the EFTAns may help to explain the difficulty of gaining popular support for accession in these countries. The picture for the Central and East European Countries (CEECs) was and remains quite different: On economic grounds, EU membership is not realistic for some time to come; but radically improved access to EU markets (including agriculture) is essential for the economic progress necessary to make membership feasible.

The fourth MEI report, on subsidiarity, will serve for a long while as the fundamental study of this complex problem of political economy. It examines the application of the principle of subsidiarity to both the macroeconomic and the microeconomic policies of the Union. It shows where central intervention may be justified on economic grounds and where there is no such justification, although political and bureaucratic motivations may nevertheless result in intervention.

MEI 5 offers a new approach to the challenge of high unemployment in Europe. The report argues that the repeated calls for deregulation as the solution to European unemployment are oversimplified and naïve: The costs of regulation are not as high as

they appear, neither are European labour markets as sclerotic as is commonly argued, nor are the differences with the United States as clear as conventional wisdom maintains. This naïveté extends to the politics of high unemployment: European societies simply do not appear ready, according to the report, to sacrifice the advantages of high wages, benefits and job protection in order to fight high unemployment. The authors analyse this resistance to solutions and what *can* be done with incremental change.

MEI 6 was the first analysis of *Flexible Integration* as a principle for further development of the EU. The concept has since become the key to progress in the Intergovernmental Conference, and the CEPR report is justly regarded as a major innovative step in this process.

None of these institutions or individuals is in any way associated with the content of the report. The opinions expressed are those of the authors alone, and not of the institutions to which they are affiliated nor of CEPR, which takes no institutional policy positions. The Centre is extremely pleased, however, to offer to an outstanding group of European economists this forum for economic policy analysis.

Richard Portes
18 February 1997

Executive Summary

EMU is scheduled to begin on 1 January 1999, but the Ins will be selected in Spring 1998. This transition to EMU, always likely to be fragile, during the resulting interim period has been further complicated by three commitments already made. These are as follows:

(i)   that conversion rates between the Euro and the national currencies of the Ins will be decided at the start of EMU (Maastricht Treaty);

(ii) that at this time, the value of the ECU must not change (Maastricht Treaty);

(iii) and that the Euro, being the legal continuation of the ECU, should convert initially at one for one with the ECU (Madrid Summit).

These decisions have three technical but crucial implications:

(i)   conversion rates for Ins cannot differ from those implied by market rates on 31 December 1998;

(ii) the conversion rate between the Euro and the currency of any Ins *cannot* be specified in advance;

(iii) nevertheless, bilateral conversion rates between the Ins *could* be specified in advance.

Markets will worry whether and how such problems will be overcome. Any coherent proposal for managing the transition must deal with two difficulties: Beliefs about eventual conversion rates may be self-fulfilling; and Ins may be tempted to play endgames, relaxing previous austerity once their selection for EMU is irreversible.

Most proposals existing today fail to confront these challenges. Floating into EMU, adopting as conversion rates the exchange rates prevailing on 31 December 1998, provides no anchor for market expectations, too little discipline on the Ins and too much opportunity for strategic manipulation of conversion rates.

Other flawed proposals include narrowing the bands to diminish uncertainty and constrain competitive devaluations (but narrow bands might not survive speculative attacks), and the use of conversion rates based on historical averages of actual exchange rates (but conversion rates could still be manipulated and speculative pressures might simply be brought forward).

To avoid these pitfalls we propose to preannouce the *bilateral* conversion rates for the Ins and then rely on floating to proceed to these fixed end-points.

Provided the conversion rates are credible, market rates will steadily converge to these rates without the need for any intervention at dates when EMU remains some way off.

Preannounced conversion rates between Ins should be based on the central parities ruling when Ins are first confirmed. Currently such rates pose surprisingly few problems for the competitiveness of potential EMU members.

Pre-Ins should be required to join at exchange rates, relative to the Euro, based on their central parities in the ERM II at the time their EMU membership is accepted. The Maastricht requirement of no devaluation for two years prior to EMU entry would remain in force.

This maintains the principle of equal treatment, reduces avoidable uncertainty about future admission, yet recognizes the reality that countries deemed to have converged insufficiently may then face huge pressures for immediate depreciation. Requiring eventual entry based on 1997 parities would impose years of deflation and lack credibility. Our proposal does not preclude devaluation by pre-Ins in 1998 provided the Maastricht requirement is still observed.

This entire procedure should be announced as soon as possible. Speculative crises typically do not wait for policy decisions to be made.

1 The EMU End-game

According to the timetable set up in the Maastricht Treaty and the decisions at the European Councils in Madrid, Florence and Dublin, the Third Stage of Economic and Monetary Union will start on 1 January 1999. On that day the European Monetary Union (EMU) will begin and the Euro will be introduced as its currency. The Maastricht Treaty and the '*Scenario for the Changeover to the Single Currency*' adopted in Madrid lay out the schedule of events that will happen until then. In the second half of 1997, the European Commission and the European Monetary Institute (EMI) will prepare their assessments of the state of convergence that has been achieved by the member states of the European Union. To do this, they will form judgements of how closely the member states will have met the convergence criteria for monetary union defined in the Treaty. These reports will be presented to ECOFIN (The European Council of Ministers of Economics and Finance) in early 1998, which will decide – with qualified majority and upon a recommendation from the Commission – which member states fulfil the criteria for moving to Stage III. ECOFIN will recommend its decision to the European Council of the Heads of States or Government (the European Council for short). The European Parliament will also form an opinion and submit it to the Council.

The Maastricht Treaty obliges the European Council to confirm – taking account of the reports and with qualified majority – before 1 July 1998 which states fulfil the necessary conditions for the introduction of the single currency. There will then be an interim period for the preparation of the operations of the European Central Bank (ECB). At the end of the interim period, i.e., at the beginning of EMU, the European Council will decide and announce the rates at which the existing national currencies

of the states participating in EMU will be converted into the new currency, the Euro.

<u>1.1</u> Mind the gap: The risk of missing EMU in the interim period

The open gap of at least six months between the membership decision and the beginning of EMU is a critical aspect of this plan. The EMI (1996, p. 17) explains that the interim period is necessary to reserve time for the remaining legal actions to set up the monetary union; actions which can only be taken when the participants are known. With insufficient time, technical problems and legal uncertainty might create financial instability in the introduction of the new currency that might damage the credibility of the entire project.

But the interim period itself creates new problems for reaching Stage III safely. On the one hand, it could easily become a time of increased exchange rate speculation destabilizing the exchange rates of the countries selected to participate in the EMU. On the other hand, the interim period opens a window of time for playing *end-games* of frivolous monetary and fiscal policies that would further destabilize exchange rates. Obviously, a series of exchange rate crises and wild gyrations of rates that supposedly would be irrevocably fixed at the end of the year would feed doubts and fears about the viability of the monetary union and might lead the member governments to stop the process at the last moment. Injudicious management of the interim period thus creates enormous risks for a successful completion of EMU.

There are, at least, four sources of exchange rate instability during the interim period. The first comes from the uncertainty about the conversion rates of the national currencies to the Euro. Immediately after the announcement of the EMU participants, investors in foreign exchange markets will start making guesses about the conversion rates and change their bets with any new rumour coming up during the interim period. The second comes from the fact that, as long as there is time, markets will suspect that the governments could still change their minds. Thus, if markets find the list of members implausible for a stable European currency, because the European Council's interpretation of the entry

criteria is less stringent than expected or recommended by the EMI and the Commission,[1] or if the European economies are hit by unexpected shocks, markets may still test the governments' resolve to move to EMU with new rounds of speculative attacks.

Third, the decision of which countries are *in* will also declare which ones are unfit for EMU. The currencies of these countries could come under pressure and depreciate sharply in exchange rate crises that might affect even some of those currencies that are included in the list of participants. For example, countries whose industries would find it difficult to compete with those who benefit from depreciation.

Finally, the institutional mechanisms designed for assuring a smooth convergence to EMU, such as the *Convergence Procedure* and the requirement to fulfil the entry criteria for EMU, will have no more bite once the list of members has been revealed. At the same time, the (in)famous *Stability Pact* will not yet be in place.[2] Instead, governments will be tempted to use monetary and fiscal policies to manipulate exchange rates and obtain favourable conversion rates in the end.[3] After the long phase of insufficient economic growth and high unemployment caused by the effort to reach the fiscal entry criteria,[4] governments will also be all too happy to use this first opportunity to ease fiscal policy. It should come as no surprise that Mr Kohl's (and Mr Waigel's) government now promises to loosen its tight fiscal grip on the German economy at the beginning of 1998. Countries that did not pass the hurdle will have lost much of their reason to continue their efforts to reduce fiscal deficits and keep inflation low. Even if their entry has 'only' been postponed for some time, their governments will face difficulties explaining to their electorates why strict continuation of tight policies will make sense. Moving to a more expansionary fiscal stance in Europe could create additional exchange rate instability.

It might be argued that the risk of exchange market instability during the interim period could easily be mitigated and that national economic policies could be disciplined by returning to the narrow bands of the European Monetary System (EMS). But the experience with the EMS has taught that its disciplining effect was quite limited.[5] More importantly, the ERM crisis of 1992/93 has demonstrated forcefully how vulnerable narrow exchange rate bands are to speculative attacks, when capital mobility is as high as

it is in Europe today and when there is no guarantee that the Bundesbank will provide unlimited financial support for a currency under attack.[6] Unsuccessful experiments with narrow bands during the interim period could only call the viability of EMU into question and add to the risk of not reaching it.

1.2 A strategy for the end-game

How, then, should the interim period be managed? This is the question we tackle. Our analysis starts from the assumption that the European Council has reached a decision about the members of EMU and develops a strategy for moving from this announcement to the final goal of EMU. We will argue that a safe and consistent strategy must focus on the end-point, the conversion rates of the national currencies to the Euro. The scenario already adopted by the European Council implies that these rates can only be chosen on the basis of the exchange rates on the last day both between the participating currencies and between these and outside currencies. Since this prohibits any numerical fixing of the conversion rates prior to the last day, we advocate a *rule* for how the conversion rates should be chosen: **The European Council should commit in advance to use the current bilateral central parities of the European Monetary System as the irrevocably fixed exchange rates of the national currencies at the start of EMU.** Announcing this rule and assuring its credibility will resolve the uncertainty about the conversion rates sufficiently to provide a safe passage to EMU. Furthermore, it would abate the incentives for engaging in *end-games*, thus contributing further to exchange rate stability in the interim period.

Speculative attacks on fixed exchange rates occur when investors can place one-sided bets against the parities defended by the central banks. The best strategy to avoid such attacks is to rule out one-sided bets. To assure this, we propose that **during the interim period, the central banks should not commit to exchange rate bands**.

The management of the end-game in 1998 will establish an important precedent for all subsequent entries to the EMU. All later entrants can and must expect that their final passage to the single currency will evolve under the same rules as the first round

of membership in 1988. To provide assurance for an early possibility to join the monetary union and to prevent large exchange rate fluctuations for the countries not joining in the first round, we propose **that the Council should establish the method of using prevailing central parity at the moment of announcing a country's membership as the final conversion rate of its currency to the Euro as the guiding principle for future entries**.

We proceed as follows: Chapter 2 describes the features of the current scenario in more detail and shows that the final conversion rates can only be based on market exchange rates prevailing on the last day. Chapter 3 explains why the current scenario leaves the exchange rates of the last day indeterminate and discusses the incentives for end-games. Chapter 4 discusses various proposals that have been made to resolve the indeterminacy. Chapter 5 details our own proposal for a safe strategy. Chapter 6 considers the special problems facing the countries that will wish to enter EMU at a later date. The concluding chapter advocates an early announcement of this strategy even prior to the membership decision.

2 The Current Scenario: An Incomplete Strategy

2.1 The main steps in the current scenario

According to *The Scenario for the Changeover to the Single Currency* adopted at the European Councils in Madrid and Florence,[7] the Council's confirmation of which states fulfil the criteria for EMU will be made in the first half of 1998. An *interim period* of several months between the determination of the members and the start of EMU is dictated by the need to meet several legal requirements, which can only be completed once this list of members is known. Box 2.1 gives an overview of the main legal actions to be taken during this period. The ECB will have to be created as an institution and the members of its Council appointed. In addition, the legal ground for its monetary policy operations must be laid. These decisions involve the European Council, the Commission, the European Parliament and the national governments. The EMI (1995) advocated an interim period of at least one year to fulfil all these tasks. The membership decision, however, is likely to be made no earlier than April 1998, because of the need to wait for the statistical data to be available to judge the performance of the member states in 1997. From now on, we assume that April 1998[8] is the critical date.

The ECB's monetary policy operations will start immediately thereafter. Its monetary policy will be defined and implemented on the basis of the Euro. The ECB will also start the operation of the new interbank payments system, TARGET, based on the Euro, to facilitate the development of an interbank money market unsegmented by national borders in the Euro area.

With the start of EMU, the national currencies will become sub-units of the Euro, i.e., the equivalent of banknotes and coins of dif-

Box 2.1 **Legal tasks before the start of EMU**

Adoption of new legislation:

capital subscription rates for ECB,
collection of statistical information,
minimum reserves,
consultation of ECB,
fines and penalties on undertakings.

Implementation of ECB operating framework:

regulations,
monetary policy instruments,
monetary policy procedures.

Source: European Commission (1996a)

ferent face values of the same currency. The national currencies, however, will remain legal tender in the participating countries until the introduction of Euro banknotes and coins has been completed about three years after the start of EMU. More specifically, a contractual obligation to pay, for example, an amount of 100DM will, after 1 January 1999, become an obligation to pay the corresponding amount of Euros denominated in Deutschmarks (European Commission 1996b, p. 11). The situation is complicated by the fact that a national currency will only be legal tender in the country where it was issued. Thus, a 100DM bill will not be legal tender in France, although economically it will be merely an odd subunit of the same currency of which the French franc will be a subunit. Euro coins and banknotes will be introduced with legal tender status on 1 January 2002. National currencies will definitely lose their legal tender status on 1 July 2002, although the member states will be free to accept coins and banknotes for an indefinite time thereafter.

Starting 1 January 1999, the member governments will be required to issue new public debt exclusively in Euros. Existing public debt and non-public financial assets and obligations need not be converted into Euros immediately but can continue to be traded in national currency units. Starting 1 July 2002 at the latest,

all public debt will be redeemable exclusively in Euros. Until then, private agents will be free to choose whether they wish to write contracts and to issue new debt in Euros or national currencies. This is the essence of *no compulsion – no prohibition*, the principle adopted for the introduction of the Euro.

This principle and the fact that banks and financial institutions are expected to keep at least some of their operations with the public on the basis of national currencies rather than the Euro,[9] suggest that banks and non-banks may still find it attractive to trade national currencies directly against each other and against third currencies in foreign exchange markets. Thus, it is likely that, for some time at least, there will still be 'exchange rates' among the national currencies quoted in the markets. This is the reasoning behind the call upon the ECB, as stated in the changeover strategy, to encourage the use of the Euro in foreign exchange markets. Exchange rate arbitrage will ensure that these direct bilateral rates cannot differ by any significant amount from the irrevocably fixed bilateral exchange rates that can be derived from the conversion rates.[10]

2.2   Picking conversion rates to the Euro

According to the Maastricht Treaty, the rates of conversion of the national currencies to the Euro will be set on 1 January 1999. More specifically, the Treaty (Art. 109l (4)) implies that these rates can be fixed no earlier than that (European Commission 1996b, p. 6), and that the relevant decisions must be made with unanimity among the Heads of States of the countries participating in EMU, upon a proposal from the Commission and after hearing the opinion of the ECB. The implication is that there will be uncertainty about the conversion rates until the very last moment. It is true that the Treaty does not rule out an announcement by the European Council of the rates it intends to use. Given that the final decision, however, can only be made at the start of EMU, such an announcement would not necessarily be credible.

If the governments were to choose the conversion rates at the start of EMU, their decisions would be driven by three considerations. First, there must be a judgement of which rates seem compatible with an external and internal macroeconomic equilibrium,

given the price and wage trends in the member states in the years before the beginning of EMU. From this perspective, conversion rates should be chosen to reflect price and wage movements over the recent past. Second, while the rates should not bias trade within the EMU, governments might be tempted to push for rates that win their economies competitive advantages for some time into the EMU. Finally, the conversion rates affect the member countries' private and public financial wealth. They determine the value of public sector debt in the new currency. Here, the incentive works in the same direction; the more devalued a national currency at the start of EMU, the smaller the debt burden the government will have to bear afterwards. Furthermore, the choice of conversion rates may imply a wealth transfer among citizens of different participating states. As Gros and Lannoo (1997) point out, such transfer could be substantial even for small changes in conversion rates. Since macroeconomic equilibrium, competitiveness, indebtedness and wealth considerations will have different weights in the judgement of different governments, there will be ample room for negotiation. Considerable uncertainty will therefore remain until the conversion rates have been announced.

To assure the continuity of contracts, legislation currently being prepared by the Commission rules that the introduction of the Euro will not change the terms of any legal instrument or allow the unilateral termination of contracts unless the parties concerned have agreed otherwise.[11] The introduction of the Euro can, therefore, only change the denomination of contracts from national currencies into Euros. These provisions will apply to all contracts denominated in national currencies or ECUs irrespective of where these contracts were originally agreed. Thus, a Deutschmark-denominated bond issued by the German government will be treated in this regard in the same way as a Deutschmark-denominated bond issued by, for example, the Hungarian government.

With the introduction of the Euro, the ECU, which is currently being used as the unit of account of the European Union and serves as the basis for all official payments, will cease to exist and will be replaced by the Euro. The ECU is like a basket of national monies consisting of fixed quantities of each basket currency. By virtue of Art. 109g of the Maastricht Treaty, its current composition, which is shown in Box 2.2, cannot be changed before the

start of EMU. The European Council decided at its meeting in Madrid that the ECU will be converted to the Euro at a rate of one for one.

The Maastricht Treaty and the current strategy for the introduction of the Euro have only one further provision regarding the choice of conversion rates. Art. 109l of the Treaty rules that the choice of conversion rates will not change the *external value* of the ECU. Together with the conversion rule of ECUs into Euros this means that the initial price at which the ECB first buys or sells Euros for non-participating currencies on 1 January 1999 (or the first working day after that) will be the same as the last quotation of the ECU on 31 December 1998.

Box 2.2 **The basket ECU and its exchange rates**

The current ECU is a basket of the currencies of all EU member states. At the moment, one ECU has the following components:

$$1ECU = 0.6242DM \quad + \quad 1.332FF \quad + \quad 0.2198HFL \quad + 3.301BFR +$$
$$0.13LFR \quad + \quad 151.8LIT \quad + \quad 0.1976DKR \quad +$$
$$0.008552IRLP + \quad 0.08784GBP \quad + \quad 1.44DR \quad +$$
$$6.885PTA \quad + \quad 1.393ESC$$

The market exchange rate of the ECU is computed using the market exchange rates of the constituent currencies. Thus, if s_y is the dollar exchange rate of currency y (units of y per US dollar), the dollar exchange rate of the ECU is:

$$S_{ECU} = 0.6242S_{DM} \quad + \quad 1.332S_{FF} \quad + \quad 0.2198S_{HFL} \quad + 3.301S_{BFR} +$$
$$0.13S_{LFR} \quad + \quad 151.8S_{LIT} \quad + \quad 0.1976S_{DKR} \quad +$$
$$0.008552S_{IRLP} + \quad 0.08784S_{GBP} \quad + \quad 1.44S_{DR} \quad +$$
$$6.885S_{PTA} \quad + \quad 1.393S_{ESC}$$

Note that, if a_y is the y-exchange rate of the Deutschmark (Deutschmarks per unit of currency y), the condition of triangular arbitrage

$$a_y = S_{DM} / S_y$$

implies that the dollar exchange rate of the ECU is:

$$S_{ECU} = (0.6242S_{DM} \quad + \quad 1.332S_{FF} \quad + \quad 0.2198S_{HFL} \quad + 3.301S_{BFR} +$$
$$0.13S_{LFR} \quad + \quad 151.8S_{LIT} \quad + \quad 0.1976S_{DKR} \quad +$$
$$0.008552S_{IRLP} + \quad 0.08784S_{GPB} \quad + \quad 1.44S_{DR} \quad +$$
$$6.885S_{PTA} \quad + \quad 1.393S_{ESC}) \; S_{DM} = S_{DM}/a_{ECU}$$

It is not clear, however, what the reference to the 'external value' exactly means. Under one interpretation, it refers exclusively to the value of the ECU against non-participating currencies, e.g., the US dollar or the pound sterling, assuming that the UK will not participate in the EMU. This interpretation merely assures that an individual holding a claim in ECUs will not face a capital gain or loss against outside currencies, and that the dollar value of contractual obligations denominated in ECUs will not change. It assures that there is no incentive in the run-up to EMU to buy or sell ECU-denominated assets for outside currencies to avoid capital losses or obtain capital gains.

This first interpretation, however, has no implications for the conversion rates of the participating currencies to the Euro. Even if the rule is applied, the conversion rate of, for example, the Deutschmark to the Euro can be chosen freely. But note that any difference between the conversion rate of the Deutschmark to the Euro from the last exchange rate between the Deutschmark and the ECU implies that an individual holding a Deutschmark-denominated asset may face a capital gain or loss against the outside currencies. This is demonstrated in an example in Box 2.3. Uncertainty about the conversion rate of Deutschmarks, or any other participant currency, would, therefore, invite massive speculation and consequently cause extreme exchange rate instability.

This is where the second interpretation comes in. This interpretation holds that the external value of the ECU refers to the ECU exchange rate against any other currency including the currencies of all EMU participants. If this were true, then the arbitrage condition that the bilateral rate between any two participating currencies, e.g., the Deutschmark and the French franc, must be equal to the ratio of their exchange rates with an outside currency, e.g., the dollar, becomes relevant. Arbitrage implies that, if the rates between the Deutschmark and the ECU and the French franc and the ECU cannot change in the conversion, then the Deutschmark/French franc rate cannot change in the conversion. This second interpretation, therefore, rules out all capital gains or losses of any participating currency against all other participating currencies and all outside currencies between the last day before and the first day of EMU. Thus, there would be no incentive for buying or selling assets denominated in participating currencies for other currencies to obtain capital gains or losses from the conversion. It fol-

Box 2.3 **Picking conversion rates**

To illustrate the issues in the choice of conversion rates, consider the following simple example involving only four European currencies, A, B, C, D, and the US dollar. We assume that A and B participate in the EMU, C and D do not.

Let a_y be the A-exchange rate of currency y, x_y the amount of currency y in the ECU basket, and s_y the dollar exchange rate.

The A-rate of the ECU on the last day is:

$$a_{ECU} = X_A + X_B a_B + X_C a_C + X_D a_D.$$

The external value of the ECU against the dollar is

$$S_{ECU} = X_A S_A + X_B S_B + X_C S_C + X_D S_D.$$

Under the first interpretation of the conversion rules, the current provisions imply

$$S_{Euro} = S_{ECU}.$$

Since the last quotation of an outside currency on the last day equals the first quotaion on the first day of EMU, the external value with regard to outside currencies is also unchanged. Thus, the Euro-exchange rates of currencies C and D will be S_C / S_{ECU} and S_D / S_{ECU}, respectively.

Consider, however, the implicit dollar exchange rate of currency A on 1 January 1999, S'_A, which equals the conversion rate, α_A, of A to the Euro times the dollar rate of the Euro, S_{Euro}

$$S'_A = \alpha_A S_{Euro} = \alpha_A S_A / a_{ECU}.$$

Of these, S_A is a market rate prevailing on the last day and S_{ECU}, is determined by market rates too. α_A, however, has an arbitrary degree of freedom.

Now suppose that the central banks of A and B wish to precommit to a conversion rate of their currencies to the ECU. Let the pre-announced rate be a^*_{ECU}. To achieve this rate, they must set

$$\alpha^*_{ECU} = X_A + X_B a^*_B + X_C a^*_C + X_D a^*_D,$$

i.e., they must also precommit to fixing the exchange rates with the currencies of C and D. This can only be achieved if the central bank of B pegs its currency to the A currency, while the central bank of A pegs its currency to the basket consisting of C and D.

lows that exchange rate stability will be greater if markets were assured that the second interpretation was the correct one. The European Council should take the first possible opportunity to declare that this interpretation is the relevant one.

For the sake of avoiding uncertainty and speculation, it would obviously be highly desirable to determine the conversion rates well in advance of the beginning of EMU and announce them to the markets. Such an announcement would facilitate the introduction of EMU and increase the private sector's ability to make rational plans before that date. Since, under this interpretation, the conversion rate of a participating currency to the Euro would have to be equal to the same currency's market exchange rate with the ECU on 31 December 1998, such an announcement would amount to a firm commitment on the part of the central banks to fix the ECU exchange rates of the currencies of all EMU participants at the preannounced conversion rate on the last day.

A difficulty arises at this point from the fact that the ECU contains currencies that are likely not to participate in the EMU, e.g., the pound sterling. As shown in Box 2.3, this fact makes the ECU exchange rate of a currency participating in EMU depend on its exchange rates with the non-participating currencies. The implication is that the ECU exchange rates of the participating currencies cannot be predicted with certainty, unless the central banks of the EMU participants fix their exchange rates with the non-participating currencies during the interim period. But given that the European Council would just have declared that these countries are unwilling or unfit to join the monetary union, the central banks of the participating currencies would certainly not want to tie their monetary policies to those of the non-participating countries before the start of EMU. Even if they announced such a step, markets would find it highly implausible and test the commitment to fixed exchange rates in speculative attacks. But with flexible exchange rates between the participating and the non-participating currencies, a commitment to a preannounced ECU rate is impossible.

The rule that the ECU will be converted to the Euro one for one and the fact that the ECU contains the currencies of countries that will not participate in the EMU thus have a bizarre implication: Giving markets complete certainty that the EMU will not involve capital gains or losses on the *last* day makes it impossible to create any certainty about the conversion rates of the currencies partici-

Box 2.4 **Commitment to bilateral rates**

Consider again the example of Box 2.3. The central banks of A and B can precommit to a bilateral exchange rate a^*_B. This does not require pegging their currencies to the outside currencies. The ECU rate of the A currency will then be

$$a_{ECU} = X_A + X_B a^*_B + X_C a_C + X_D a_D$$

which cannot be predicted since a_C and a_D are uncertain.

pating in the Euro any day before 31 December 1998. They can only be determined from the last day's market rates.

The same is not true, however, for the bilateral exchange rates among the EMU member currencies. This is demonstrated in an example in Box 2.4. The requirement to use the market rates of the last day against the ECU and the non-participating currencies does not prevent the governments of the participating countries from fixing the bilateral exchange rates among only their currencies before the last day, nor from announcing what these rates will be on the last day. Such an announcement would not face the same credibility problems as fixing the exchange rates with outside currencies, because the central banks that will participate in the EMU would only have to coordinate their monetary policies among themselves.

The strategy already adopted by the European Council thus leaves a degree of freedom, namely the timing of the announcement of the bilateral conversion rates of the participating countries. In the following chapters, we explain why and how the Council should use this degree of freedom to reduce the uncertainty about the final conversion rates.

3 Exchange Rate Instabilities during the Interim Period

In this chapter we discuss two problems that any candidate for a coherent transition strategy will have to confront. Section 3.1 examines the potential indeterminacy of the final day's exchange rates and Section 3.2 evaluates the danger that those newly accepted for EMU will embark on expansion during the interim period.

3.1 The indeterminacy of last-day exchange rates

Chapter 2 has shown that the conversion rates of the national currencies to the Euro used on 1 January 1999 must be the ECU market exchange rates prevailing on 31 December 1998. Nor can the bilateral conversion rates differ from the bilateral market rates on the last day of the interim period. This observation has led some officials to conclude that the determination of the conversion rates must be left to the free play of market forces. According to this view, the European Council would simply wait until the last day to see which exchange rates and, therefore, which conversion rates, the markets will set. The crucial question then is, of course, can we rely on market forces to deliver equilibrium exchange rates on the last day that would be appropriate for the conversion of national currencies to the Euro?

The proposition that we can rely on market forces hinges on a fundamental misunderstanding of the way foreign exchange markets work. Modern theory of international finance holds that foreign exchange markets determine exchange rates based on forward-looking expectations. More specifically, the exchange rate of one currency relative to another today depends on a set of *fundamentals* such as relative money supplies, price levels and real out-

puts today, and the expected rate of depreciation of that currency over some time in the future. Put differently, the exchange rate today depends on today's fundamentals and on the time-path of the fundamentals over a very long time horizon. Part A of the appendix to this chapter illustrates this logic in a simple example.

Consider what happens in the run-up to EMU. Speculators in the foreign exchange markets will hold expectations about the ECB's monetary policy and the EMU's inflation trend relative to other currencies, e.g., the US dollar, after the start of EMU. They will also have expectations about the EMU's level of real income. Thus, if markets knew what the Euro money supply was at the beginning of the monetary union, they could anticipate a unique equilibrium exchange rate for the Euro immediately, in the same way they form exchange rate expectations for other currencies. Using the one-for-one conversion rule for the ECU and the Euro, this would unambiguously determine the ECU's exchange rate with the dollar on the last day before the start of EMU.

The problem with this, however, is that markets cannot know what the Euro money supply will be. The reason is that, as shown in part B of the appendix, the Euro money supply will be the sum of the national money supplies of the EMU member states converted to Euros. Thus, as long as the conversion rates of the national currencies to Euros, i.e., the ECU exchange rates of the national currencies on the last day, are not known, the exchange rate of the Euro with the dollar on the first day of EMU cannot be determined.

Consider, then, the problem of finding an equilibrium ECU exchange rate for an EMU member currency, e.g., the Deutschmark. We have seen in Chapter 2, that the ECU rate of the Deutschmark can be determined as the ratio of the Deutschmark/dollar rate and the ECU/dollar rate, which, in turn, is a weighted sum of the dollar rates of all national currencies included in the ECU. As shown in part C of the appendix, the logic of forward-looking expectations implies that the Deutschmark/dollar rate on the last day prior to EMU depends on a fundamental (the relative money supplies, price levels and real income) and the expected Euro/dollar rate on the first day of EMU multiplied with the conversion rate of Deutschmarks to Euros. Thus, unless the conversion rate is known, the last day's market exchange rate is undetermined.

One may object to this idea that some exchange rate will have

to prevail on the last day. But this objection only reflects a fallacy in the use of the notion of the time. If equilibrium exchange rates are forward looking, they are forward looking even during the last day's trading session. Assuming falsely that they are looking forward to a market that does not exist leaves the rates undetermined; see part D of the appendix.

Since this is true for all EMU member currencies, it follows that the last day's ECU exchange rates of these currencies are undetermined. To know the conversion rates one needs the exchange rates, but to price the exchange rates properly, one needs the conversion rates. The result is a boot-strap equilibrium, where any exchange rate could be an equilibrium exchange rate. In this sense, the proposition of using the last day's exchange rates as the conversion rates leaves the exchange rates and the conversion rates fundamentally undetermined.

Another way to look at this indeterminacy starts from the assumption that the central banks are truly committed to letting the markets determine the last day's exchange rates in a hands-off manner, i.e., with no interventions in the foreign exchange market. This amounts to the promise that, whatever the exchange rate will be at the closing of the market on the last day, there will not be any exchange rate change between that day and the first day of EMU. The implications of this promise are clear from interest rate arbitrage. In equilibrium, interest rate arbitrage assures that the difference in overnight money market rates for two currencies, for example, the Deutschmark and the French franc, must equal the expected change in the exchange rate between the two currencies from one day to another. Therefore, a hands-off policy combined with the promise of no change in the exchange rate means that the French central bank must use its monetary policy instruments to peg the French money market rate to the German one, while the Bundesbank must use its instruments to peg the German money market rate to the overnight rate of the US dollar. But here comes the difficulty: The promise of no change in the exchange rate does not suffice to pin down the level of the exchange rate. In other words, any exchange rate between the Deutschmark and the franc, as between the Deutschmark and the dollar, could be an equilibrium exchange rate for which the central banks' promise holds. Box 3.1 explains this view in more detail.

In essence, the argument that the exchange rates on the last

Box 3.1   **A Wicksellian interpretation of last-day indeterminacy**

Start from the interest rate arbitrage condition:

$$i_{t-1} - i^*_{t-1} = e_t - e_{t-1}$$

where, for example, i is the French interest rate, i^* the German rate, e the (log of the) exchange rate between French francs and Deutschmarks, and the length of one period, $(t - (t-1))$, corresponds to the length of the contract to which the interest rate refers. The time-horizon is short, so that we can assume that real variables (income and real interest rates) are constant.

If central banks commit to choose as a conversion rate at time T (2 January 1999, or the first day of trading), whatever exchange rate prevails at the closing of the market on 31 December 1998 (time $(T-1)$), then $e_T = e_{T-1}$ implies $i_{T-1} = i^*_{T-1}$. On the last day of trading the Banque de France must peg French interest rates to the level of German rates at all maturities (since the exchange rate will be constant forever in the future) and let the market determine the level of e_{T-1}. Any divergence between French and German interest rates would mean that the market does not believe that the conversion rate will indeed equal the market exchange rate on 31 December. But, as we have argued in the text, the absence of a market in which francs and Deutschmarks can be traded at time T, implies that traders will be unable to choose the exchange rate at time $T-1$, and, therefore, the last-day exchange rate will be undetermined.

day, if left to the market, are undetermined, is identical to Wicksell's (1907) time-honoured observation that a monetary policy which simply pegged the nominal rate of interest would leave the price level undetermined. And this is because by pegging the nominal rate of interest the central bank determines the real money supply, but loses control of the nominal money stock. In order to keep the nominal interest rate unchanged, any price level calls for a corresponding money stock that must be provided passively by the central bank.

Sceptics of this analysis may think that this is truly too academic and that there will, after all, always be some exchange rate on the last day. True, but not every possible exchange rate would be an appropriate one to be used as a conversion rate. The point about indeterminacy is not that no rate will exist, but rather that any rate could be an equilibrium rate on the last day. A jump in an exchange rate even of as little as 5% or 10% could seriously change the competitiveness of the EMU economies and make the entry into EMU very unattractive. Furthermore, the logic of forward-looking expectations will hold not only on the last day but every day before that. Leaving the last day's exchange rate indeterminate implies that markets have no anchor to base their expectations on during the interim period. This would destabilize exchange markets in a period when it is least desirable.

Other sceptics may argue that it is very unlikely that the future member central banks of the EMU would adopt a hands-off strategy and abstain from intervening in the foreign exchange market on the last day. Couldn't the central banks secretly agree on the bilateral conversion rates beforehand and intervene to drive the exchange rates to these targets? This may be true, but it does not solve the problem. Even if the central banks could, through very large interventions, move the exchange rates wherever they wanted to in the last minute of trading on 31 December 1998, the indeterminacy would remain in any minute before that unless the central banks would credibly reveal their intentions in advance. In the absence of a preannouncement, markets would be left alone guessing where the banks might drive the exchange rates in the last minute. Long before 31 December, speculators would start worrying about the central banks' intentions on the last day, and such worries would be reflected in erratic exchange rate movements during the interim period.

Thus, there are several facets to the indeterminacy: Whether the central banks will really want to leave the determination of the conversion rates to the markets or want to use the power of last-day interventions to aim at their own target exchange rates, the market exchange rates remain indeterminate during the interim period. Without an anchor for expectations, they can take any value and there is little hope that the these values will be consistent with a smooth transition to EMU.

There is one additional reason to worry about exchange rate instability during the interim period. As the last day approaches, the absence of preannounced conversion rates creates incentives to use monetary and fiscal policies to gain temporary benefits, or even to manipulate the conversion rate. We discuss how such incentives might arise and what their consequences would be in the next section.

<u>3.2</u>   Celebrating success: An engagement party for the Ins?

The announcement of which countries are fit to join *in* EMU from the start – that is, which countries are among the *Ins* – will come against the background of gloomy macroeconomic performance and increasing political uneasiness with the single currency project. With one more year of fiscal tightening and nothing happening on the front of labour market flexibility, it is hard to expect that European unemployment numbers will look any better in the Spring of 1998 than they do today. Political pressures to do something about unemployment could then become irresistible for the governments of the newly elected members of the EMU. In addition, the Ins may be tempted to cash in on the suffering during the transition, while the political support to continue the fiscal adjustment may simply vanish in the other countries.

We shall discuss the situation of the other candidates for EMU in Chapter 6. In this section, we look at the Ins and ask how strong will the incentives be to relax their monetary and fiscal policies during the interim period. After April 1998, the situation in the countries that will be declared Ins will change in two ways. Financial markets and labour markets will react to the news. Their reactions will have important repercussions on domestic macroeconomic conditions. For example, any remaining premiums on currency risk will disappear from interest rates; this alone will alter the incentives and constraints of fiscal policy-makers by reducing the interest burden in the budget. Moreover, the mere fact of being in the group of Ins may change the incentives policy-makers face. We shall first explain the reasons why the prospect of entering EMU will affect economic policy making at the national level at least in the short run. We will then discuss the mechanisms that would be in place, or could be put in place, to resist such pressures.

3.2.1 A credibility bonus

Newly declared Ins, especially those whose ability to pass the test for EMU had been in doubt, are likely to face an immediate credibility bonus for a more disciplined monetary policy in the future. Such countries will experience a reduction in interest rates, especially for longer maturities.[12] Unless monetary policy is tightened in consequence, this will constitute an automatic channel for domestic expansion. The bonus will be larger the weaker the reputation of the EMU entrant had been before. Lower interest rates may also reduce the fiscal burden of government borrowing. For new debt, or that contracted with variable interest, this will be reflected in a reduced flow of debt service. For existing fixed-interest debt, the impact effect of being declared *in* for such countries will be an appreciation of bond prices; the gain, therefore, accrues to private lenders not to public borrowers.

Some of this credibility bonus may be anticipated. A government with inside information about its own prospects of entry might, of course, try to exploit this via debt management in the run-up to the entry decision; private market participants will endeavour to diagnose such activity and adjust bond prices accordingly. While the size of the credibility bonus will be affected by such considerations, the qualitative conclusion is clear; countries that experience a credibility bonus on interest rates will gain a reduction in the budget deficit. With high and persisting rates of unemployment and economic growth too sluggish, it is unlikely that the governments of these countries will react to lower interest rates by asking their central banks for a tighter stance on monetary policy to offset such effects. Whether the national central banks, recently made independent, will choose to do so is an issue we consider below.

The credibility bonus will also affect exchange rates. To the extent EMU raises weaker countries to a tougher monetary standard already enjoyed by the inner core, the declaration of membership is a force for nominal appreciation of the exchange rate. Equivalently, it allows the weaker countries to defend the existing nominal exchange rate paths with lower interest rates than before, since there is less need to provide a hedge against depreciation. Thus, although the credibility bonus reduces domestic interest rates, it would not induce pressure for exchange rate depreciation.

3.2.2 **Wavering fiscal discipline**

There are several reasons why at this juncture governments may wish to stimulate their economies by discretionary fiscal action, thereby adding to the expansionary effects described above. First, if 1996-7 represented a *special austerity effort* to meet Maastricht criteria, the cost–benefit calculus changes after entry has been achieved. The political benefits of further austerity are lower once the goal has been achieved, while the costs increase, as it would be hard to ask for a further effort continuing what has been portrayed as a final push. Furthermore, after the release from the numerical Maastricht targets the political costs of fiscal expansions vanish, so that it becomes harder to sustain such a tough reputational equilibrium.

Second, the EU will reach 1998 with a relatively loose monetary stance. In the absence of the possibility to use fiscal policy to stimulate their stagnating economies, European policy-makers have resorted to monetary policy. In the run-up to the single currency, Europe goes today through a period of *reversed Reaganism* (von Hagen and Lutz, 1996) – tight budgets and easy money.[13] This is illustrated in Figure 3.1, where we show the fiscal and monetary stimuli for all EU countries in 1995 and 1996. The fiscal stimulus is measured by the reduction in the ratio of the structural deficit less
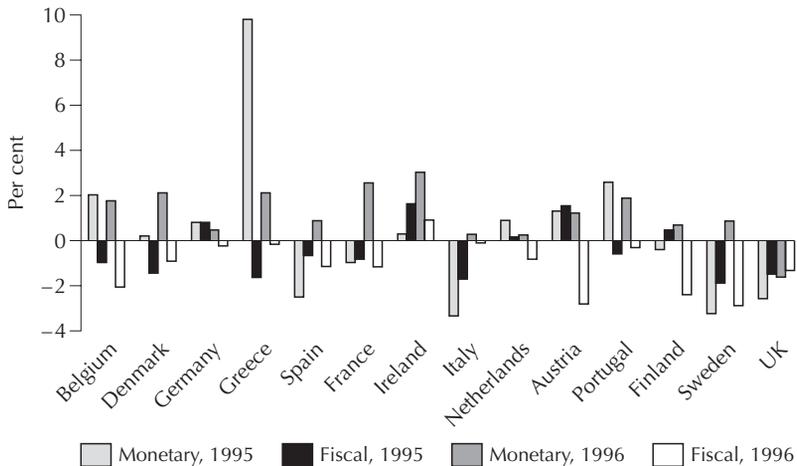

Figure 3.1   Monetary and fiscal impulse

interest payments to GDP, a negative stimulus meaning a reduction in this ratio. The monetary stimulus is approximated by the reduction in the ex-post real-money market interest rate.

A scenario of reversed Reaganism is represented by a combination of an expansionary monetary stimulus and a restrictive fiscal stimulus. The figure shows this combination for almost all EU countries in 1996, the exceptions being Ireland, where both stimuli were positive, and the UK, where both were negative. Of the few countries where monetary policy was still restrictive or neutral in 1995 (Spain, France, Italy and Sweden), it moved to an expansionary stance in 1996. In Germany and Austria, where fiscal policy was still slightly expansionary in 1995 (though less so than in 1994), it moved to a restrictive stance in 1996. If this policy regime is continued over the coming year, as it is likely to be, there will not be much room for additional monetary manoeuvre. In contrast, all governments will stand ready to relax fiscal policy.

Such an outcome could create two problems for the interim period and the incipient EMU. First, the increase in aggregate demand from expansionary fiscal policy would, by the time EMU begins, add to the price pressures caused by the current monetary stance. The ECB would then face problems to establish its credibility as a central bank fighting inflation. Second, fiscal expansions would create exchange-rate pressures among the Ins. The interim period could thus become a period of increased exchange rate volatility that would cast doubt on the desirability of EMU itself.

3.2.3 The incentive for a last devaluation

The prospect of EMU membership will change the inflation–unemployment trade-off of the Ins. Once the future monetary institutions can be relied upon to discipline inflation expectations, there is much less reason to fear the consequences of a monetary expansion today. If workers understand that the exchange rate with the main trading partners will be fixed soon, they cannot hope for the exchange rate accommodation that previously might have accompanied nominal wage increases. In such circumstances, demand expansion leads to greater output and less inflation than previously. Facing a different trade-off, national policy–makers are more tempted than before to expand.

Against this background, the most obvious temptation facing successful Ins is to engineer a conventional monetary expansion that will boost aggregate demand and ameliorate any remaining fiscal difficulties. Such an expansion would be accompanied by a temporary exchange rate depreciation stimulating exports too. The incentive for such a depreciation will be even stronger, if governments can expect that the conversion rates picked at the start of the EMU will simply validate the depreciation and allow their countries to enter EMU with a competitive advantage that would last until output prices could finally adjust. This is, of course, merely another variant of the incentive for a last devaluation to which we drew attention in an earlier MEI report[14] and the danger of which was recognized in the Maastricht Treaty. With different and uncoordinated monetary expansions taking place in the group of Ins, the result would again be a higher degree of exchange rate instability during the interim period.

There is, at least, one further consideration adding to this incentive. Assuming that the conversion rates of national currencies to the Euro would validate any depreciation during the interim period, a monetary expansion during this time would depress the value of nominal public debt in Euros. Since prices and wages would eventually rise relative to the EMU price level to adjust to the preceding boost in national aggregate demand, such a strategy would ultimately reduce the real burden of debt service for the government concerned.

The attractiveness of such a policy for the national policy-makers depends on whether a temporary depreciation of sufficient magnitude could indeed be achieved and win sufficiently large gains. The literature on exchange rate pass-through[15] raises some doubt about the success of such a strategy. Specifically, it holds that, under modern conditions of two-way trade and imperfect competition, nominal exchange rate changes may be reflected as much in profit margins as in output changes. This is most likely when the exchange rate changes are expected to be only temporary ones.

Furthermore, one might argue that significant depreciations of individual currencies cannot occur, if all the Ins embarked on such policies at the same time. Nevertheless, the outcome would then still be a depreciation of their currencies against other countries –

in particular vis-à-vis the yen and the dollar. This possibility could still induce the Ins to move in that direction. Furthermore, the outcome of non-significant depreciations among the Ins would be the equilibrium of a scenario characterized by a classical *prisoners' dilemma*. Even if each government understands that it would be in the best interest of the Ins as a group not to embark on an expansionary course, each government would also understand that it is in its own best interest to do exactly that.

Ultimately, the risk of monetary expansions of this type arising during the interim period depends largely on the size and the composition of the group of Ins.[16] If the Council selected a group of countries whose economies were relatively homogeneous and whose inflation performance had been relatively similar in the recent past, the likelihood of a last devaluation resulting from a discretionary monetary expansion would probably be quite small. But if the Ins were relatively numerous and diverse in economic structures and economic policy traditions, the likelihood that some countries would embark on that route would be greater. In this case, the adverse economic policy incentives during the interim period may easily cause an increased degree of exchange rate instability that must be addressed by a successful strategy for the interim period.

3.3 Conclusion

We have argued in this section that the absence of preannounced conversion rates makes the transition very fragile. This fragility could be amplified by the incentives some countries may have in relaxing monetary and fiscal policies once they are deemed Ins. We now turn to the possible solutions

APPENDIX **The economics of last-day indeterminacy**

Part A

In this box we explain the indeterminacy of last-day exchange rates in a simple example. We let D_t and F_t be the dollar exchange rates of the Deutschmark and the French franc, and S_t the dollar rate of the Euro. M_D and M_F denote the German and French money supplies. For simplicity, we assume that the ECU consists only of γ_D and γ_F units of Deutschmarks and francs. Thus, the ECU exchange rates of the Deutschmark and the franc are:

$$A_{DM,t} = \left[\gamma_D + \gamma_F \frac{D_t}{F_t}\right]$$

$$A_{F,t} = \left[\gamma_F + \gamma_D \frac{F_t}{D_t}\right]$$

Subsequently, lower-case letters denote logarithms.

A standard model of the exchange rate holds that today's rate depends on a 'fundamental' (the relative money supplies and real incomes at home and abroad) and tomorrow's expected exchange rate. To simplify we normalize the fundamental such that the Euro money supply remains as the only argument. Let M be the EMU money supply. On the first day of EMU, T, the Euro's dollar rate will be:

$$S_T = \beta m_T + \eta E s_{T+1}$$

where E denotes an expectation, $0 < \beta < 1$, and $\eta = 1-\beta$.
Suppose that the public has an expectation about the ECB's monetary policy

$$m_{t+1} = \mu m_t, \text{ with}$$
$$\eta\mu < 1$$

The Euro's exchange rate with the dollar will be:

$$S_T = \beta\sum_{j=0}^{\infty} (\eta\mu)^j m_T = \theta m_T$$

Part B

The money supply of Euros equals the Deutschmark, $M_{D,T\text{-}1}$, and franc, $M_{F,T\text{-}1}$, supplies of T-1 converted to Euros,

$$M_T = X_T M_{D,T\text{-}1} + Y_T M_{F,T\text{-}1}$$

where X_T and Y_T are the conversion rates of Deutschmarks and francs applied at the end of day T–1. The first result can now be seen: The Euro money supply and, hence, the Euro's exchange rate with the dollar cannot be known unless the conversion rates are known.

Part C

Next, consider the dollar exchange rates of the Deutschmark and the franc on day T–1. This rate must incorporate the expected conversion rates x_t and y_t

$$d_{T\text{-}1} = \beta m_{D,T\text{-}1} + \eta E\,(x_T + s_T)$$

$$f_{T\text{-}1} = \beta m_{F,T\text{-}1} + \eta E\,(y_T + s_T)$$

The second result is, therefore, that the Deutschmark and franc exchange rates against the dollar (or any third currency) cannot be determined unless the conversion rates are known. It follows from the above that the Deutschmark and franc exchange rates with the ECU cannot be determined unless conversion rates are known.

Part D

Consider now the proposal to set the conversion rates of the Deutschmark and the franc to the Euro equal to their last quotations with the ECU on day T–1. To analyse this proposal we must consider the timing on T–1 carefully. Thus, let $a_{DM,T\text{-}1}$ and $a_{F,T\text{-}1}$ be the last quotes at the end of T–1 of the Deutschmark and franc ECU rates, and let Δ denote a time interval during the day. For our purposes, it is sufficient to look at the bilateral Deutschmark–franc rate during the day:

$$
\begin{aligned}
d_{T\text{-}1\text{-}\Delta} - f_{T\text{-}1\text{-}\Delta} \;&= \beta_\Delta\,(m_{D,T\text{-}1\text{-}\Delta} - m_{F,T\text{-}1\text{-}\Delta}) + \eta_\Delta E_\Delta\,(a_{DM,T\text{-}1} - a_{F,T\text{-}1}) \\
&= \beta_\Delta\,(m_{D,T\text{-}1\text{-}\Delta} - m_{F,T\text{-}1\text{-}\Delta}) + \eta_\Delta E_\Delta\,(d_{T\text{-}1} - f_{T\text{-}1})
\end{aligned}
$$

where E_Δ denotes an expectation during the day and β_Δ and η_Δ are the elasticities during the day. Unless the last bilateral quotations

are known, the intra-day bilateral rate is undetermined. But why not just wait and see?

As the last day evolves, foreign exchange trading will become more and more elastic with regard to the expected conversion rates and less elastic with regard to the money supplies:

$$\beta_\Delta = \beta(\Delta) \rightarrow 0, \eta_\Delta = \eta(\Delta) \rightarrow 1 \quad as \; \Delta \rightarrow 0$$

Thus, the equilibrium bilateral rate evolves as

$$\lim_{\Delta \rightarrow 0} d_{T-1-\Delta} - f_{T-1-\Delta} = d_{T-1} - f_{T-1}$$

Obviously, this equation holds for any pair of dollar exchange rates of the Deutschmark and the franc. Thus, the announcement that the conversion rates be equal to the last ECU exchange rates leaves the ECU exchange rates undetermined.

Finally, the Deutschmark exchange rates with the dollar any day before T-1 are

$$d_{T-1-j} = \beta m_{D,T-1-j} + \eta E \, d_{T-j}$$

$$= E \left[\beta \sum_{j=0}^{T-1-j} \eta^i \, m_{D,T-1-j+i} + \eta^{T-1-j} d_{T-1} \right]$$

Since d_{T-1} is undetermined, d_{T-1-j} is undetermined. That is, the exchange rate can take any value depending on the market's expectation of the conversion rates.

4 Solutions to the End-game that Won't Work

Chapter 2 has shown that the conversion rates for the national currencies to the Euro must be the market exchange rates observed at the close of December 1998. Chapter 3 has argued that just waiting for the markets to determine these rates creates a serious indeterminacy problem that may translate into sharp exchange rate instability. Several proposals have been made so far to tackle this problem. This chapter reviews these proposals and shows that all of them face serious pitfalls.

4.1 A return to narrow bands?

Facing indeterminacy, a natural idea is to narrow the range of possibilities. In this view, a return to narrow bands for exchange rates between the Ins during 1998 would be the obvious solution. But not a wise one. Narrow exchange rate bands have been tried before. By the early 1990s, after several years without realignment, many people thought that EMU could be reached by following this road. Although, with hindsight, everyone now recognizes that the crisis that emerged during 1992–3 had been brewing for some time, the likelihood of such setbacks had not been generally foreseen, and had certainly been vastly underestimated. Indeed, it was our purpose in the first MEI Report in 1990 to draw attention to this danger,[17] a theme to which we returned a year later.[18]

According to its official interpretation, the 1992–3 crisis was a delayed reaction to a large, asymmetric shock, the unification of Germany, and to an excessively long period of stability in central parities despite some sustained inflation differentials. These events are long past, and there has been a dramatic convergence of infla-

tion rates since 1992 (see Figure 4.1) as well as a good deal of reshuffling of EMS parities. Hence it is sometimes believed that a repeat of 1992–3 is ruled out. This is an optimistic but wholly misleading view. It is based on a questionable interpretation of the crisis and on wishful thinking regarding the economic, social and political background of the months to come.

Regarding the causes of the 1992–3 crisis, there is a view that at least in some cases the speculative attacks were not based on 'fundamentals'. Eichengreen and Wyplosz (1993), Portes (1993), Jeanne (1996), and others provide evidence suggesting that some of the currencies that came under speculative attack were not overvalued when the crisis arose. Still, one might argue that the attacks were triggered by widely shared expectations that monetary and fiscal policies were about to be relaxed in these countries. However, Eichengreen, Rose and Wyplosz (1995) observe that macroeconomic policies were unaltered after the crisis in those countries that remained in the ERM. Nor is there evidence that markets expected such a change: Rose and Svensson (1994) find no evidence of any devaluation premiums in interest rates prior to the EMS depreciations of 1992–3.[19] If the turbulence was a surprize to financial markets, it is difficult to interpret it as the result of an
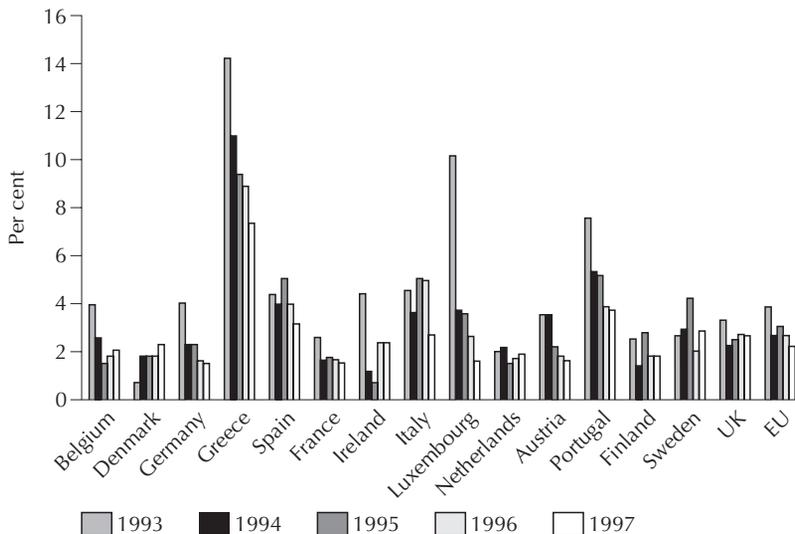

Figure 4.1   Inflation rates

irresistible force such as a permanent deterioration of the fundamentals meeting an erstwhile immovable object, the exchange rate peg. Of course, we do not deny that German unification was a massive asymmetric shock. To prevent huge migration from East to West Germany, eastern consumption had to rise substantially above eastern production in the short run, a recipe for inflation in Germany to which the Bundesbank was always bound to react by raising interest rates. Adequately tough medicine for Germany, where a boom was raging, was going to be a fatal dose for Germany's EMS partners, for whom such high interest rates were crippling.[20] Yet, the crisis came much later than the unification shock, an observation which does not fit well with the notion that exchange markets are forward looking.

Lessons from this episode have not yet fully percolated. A first lesson is that crises can be brewing underneath the surface and not yet be recognized by markets and policy-makers. Second, crises can be self-fulfilling: Currencies that are not misaligned may come under attack when there is a possibility that the attack itself will result in a change of policy. In some, carefully defined, circumstances, speculators may realize that if they don't attack a currency the government will indeed continue to defend the peg, and that an attack would induce the government to abandon the peg. This will be the case if the defence of the peg proves too economically expensive, e.g., because it requires extremely high interest rates that hurt debt service (Italy, Ireland), home-owners (the UK) or the level of economic activity (Sweden, Spain).

Two things would tend to make a crisis unlikely in 1997–8. First, the duration of the transition is now getting significantly shorter every day. There is little time for a further deterioration in the fundamentals. Second, the level of the fundamentals across different Ins would be relatively homogenous - that, after all, was the purpose of adopting the Maastricht criteria as entry conditions. Yet, the social and political situation likely to prevail over 1997–8 makes it difficult not to be concerned about the ability of the authorities to sustain the costs of severe, prolonged exchange rate turmoil. A great deal of optimism is required to ignore the writing on the wall. For a parallel with 1992–3, replace German Unification with the Maastricht criteria. Last-gasp efforts to sneak in under the wire are likely to have prompted austerity during 1996–7, the second avoidable recession in Western Europe in the

1990s. Recession hits the political fundamentals, often a necessary underpinning for maintenance of sound economic policies. In addition, public anxiety about EMU will grow as the time to jump draws nearer. Clearly, in nearly every In country, a sizeable proportion of the population is either opposed to, or concerned about, the abandonment of the national symbol that they see in their currency. All this provides fertile ground for a last-ditch effort by political leaders opposed to EMU. Narrow bands are excessively fragile for vulnerable governments.

4.2   Narrow bands plus strong solidarity

Crisis might yet be averted by concerted action to help those in trouble. The selected Ins should have achieved a high degree of economic convergence, so that mutual support in case of attack would be natural. In addition, having been committed to merge soon into the ECB, national central banks will be more ready to support each other in the interim period. Since the money supply of the EMU will be the sum – suitably converted – of all pre-existing national money supplies, non-sterilized interventions leave the aggregate EMU money stock unchanged and could be safely undertaken in literally unlimited amounts without inflationary consequences later on.[21]

This reasoning seems to be behind the recent proposal of a CEPS report (Gros and Lannoo, 1997) which argues that the volume of interventions in the EMS should be made a function of the time remaining until the start of the EMU. In this view, the Bundesbank's support for weaker EMS currencies would increase as the critical day approaches – reaching the willingness to undertake unlimited interventions in the last phase of the interim period.

Unfortunately, the experience with theoretically unlimited interventions within the ERM is far from reassuring. The famous 'Emminger letter' casts a cloud on the Bundesbank's willingness to abide by such a commitment.[22] In addition, fully sterilized interventions might lead to astronomical interest rates in the country under speculative pressure. Even when the authorities are strongly determined to defend their currency, as was the case in Sweden in the Fall of 1992, the political ability to withstand such pressure is limited.[23] If the interventions are not fully sterilized in the defend-

ing country, the aggregate money supply will rise. This in turn could well reduce some countries' willingness to continue supporting currencies under pressure.

Even if unlimited support is maintained along with some degree of non-sterilization to contain interest rates, another danger lurks in the background. The impression that the overall EMU money supply is rising, perhaps rapidly, might fuel fears that Europe's monetary policy will not be as tight as the Bundesbank's, denting the ECB's credibility even before its birth. This could in turn unleash a wave of speculative attacks against the currencies of all Ins countries, especially against the strongest since these would be seen as those most likley to undergo the biggest shift. The situation would then change radically. The traditionally strong-currency countries will feel the urge to send clear signals of toughness, even if this would have the effect of splitting apart the group of Ins. The argument that a dead EMU is better than a weak EMU could be made to follow from the logic of the Maastricht Treaty. This argument would in fact be strengthened if the decision of who the Ins are had been controversial: There is more than a chance that the final list will differ from the conservative one drawn up by the EMI, leading to the view that political considerations lead governments to water down the Maastricht criteria.

In the end, we conclude that although unlimited intervention is technically a solution that could support a narrowing of the band, its implementation is quite unrealistic. Cool-headed authorities should not be prepared to take unlimited risks unless serious thought has been given to alternative approaches.

4.2.1 How much support for Ins under pressure?

Begg and Wyplosz (1993), in analysing a decade and a half of monetary integration within Western Europe, stress the persisting relevance of a *fundamental dilemma*: Fearing inflation more than its partners do and trusting itself more than any informal arrangement embracing partner countries, Germany always finds it hard to endorse collectivization of monetary powers unless either Germany is allowed to act as the leader of the group, or the common monetary policy is tied down by formal rules that, from a German viewpoint, are adequately and reliably tough. What this means is that the exercise of a common policy in intermediate sit-

uations is simply not credible. In particular, given its constitution, one cannot expect the Bundesbank to intervene in unlimited amounts in defence of another currency during some intermediate regime of monetary unification: Until EMU is established, price stability in Germany remains the Bundesbank's first responsibility.

While it is undeniable that credible promises of unlimited support would be sufficient to underpin even narrow bands, the ERM experience of 1992–3 points to the difference between *extensive support* and *unlimited support*. Were a country to face a substantial attack, it still remains doubtful whether the Bundesbank (or any other authority) would be prepared to increase the German money supply indefinitely; but, as we saw in 1992–3, even massive support by the Bundesbank may not suffice to deter speculation. Instead, it might only find the conviction that yet further support will become increasingly difficult and that a devaluation is, therefore, imminent.

Note, too, that there is a probable connection between the number of Ins and the vulnerability of the transition. If the Ins are confined to an inner core this will reinforce the transition in two ways: The perceived cost of failing to complete the transition will be higher and more improbable, and the need for emergency, and therefore acute, austerity to crawl in under the Maastricht wire might be lessened. Conversely, if the interpretation of the criteria has been generous and, as a result the number of Ins is much larger, the transition of the Ins is fraught with greater danger. Under such circumstances, narrow bands, in our view the most dangerous route, are particularly inappropriate.

4.2.2 Wide bands all the way?

A common reaction to the crisis of 1992–3 was to conclude that floating across the dangerous river of transition was safer than trying to cross it on a tightrope; narrow bands should be abandoned in favour of much greater exchange rate flexibility during transition.[24] Within the context of European integration, 'floating' should probably be interpreted as 'wide bands'. The wide band solution, however, effectively leaves the conversion rates undetermined and resurrects the possibility of a 'final realignment' in which Ins can endeavour to manipulate a depreciation within the band whilst claiming that the band itself is unaltered.

Floating one's way into EMU through a wide band not merely creates systematically bad incentives for Ins, it also creates ambiguity that may foster further speculative attacks. Some countries may find themselves depreciating in December 1998 even if this is not their intended policy. If markets misread the policy-makers' intentions, a speculative attack could occur even in a wide band and destabilize the exchange rate.

4.3 A currency board

An even more radical solution would be to eliminate the band altogether and remove all discretion in intervention and sterilization. This could be done in one of two forms. The first is to move forward the effective date at which the ECB takes over, for example to a day shortly after the announcement of who the Ins are. This, however, is incompatible with the Maastricht Treaty which, explicitly states that the ECB will come into effective existence in 1999, and denies the EMI any monetary power.

The second solution is the adoption of a currency board as the monetary arrangement for the interim period. A currency board is a combination of a fixed exchange rate without margins of fluctuation (or very narrow margins corresponding to the cost of wholesale transactions on the foreign exchange market) and a rock-solid commitment to limit monetary policy to unsterilized interventions in support of the exchange rate. De facto, a country that adopts a currency board gives up its monetary policy autonomy. Thus, this solution provides most of the advantages of an anticipated shift to EMU without clashing with key provisions of the Maastricht Treaty. One would, of course, need to decide which currency all other Ins peg to. Most likely, that would be the Deutschmark, so that de facto the Bundesbank would continue the functions of the ECB for the rest of 1998. This solution could build up the reputation of the future ECB now explicitly recognized as the successor to the Bundesbank. It would free the Bundesbank from any intervention commitment and squarely put the burden of exchange rate support on the other central banks. In atomic bomb fashion, the existence of a currency board should act as an absolute deterrent and in fact eliminate the risk of any speculative attack so that, in the end, the surrender of monetary policy for the non-German

Ins is simply an anticipatory move with no adverse implications.

In addition to obvious national resistance to such an asymmetric construction the currency board option is highly impractical. To be credible, and this is its only advantage, a currency board has to be backed by specific national legislation. It is highly unlikely that national parliaments will undertake such far-fetched legislation for just a few months in the interim period. In addition, the currency board says nothing about the choice of conversion rates, except that the choice of pegs logically implies that of conversion rates.

4.4   The Lamfalussy rule

Is there any half-way house between the legal requirement not to fix the conversion rates before the start of EMU and the desire to reduce uncertainty about these rates much earlier? The most straightforward intermediate regime for the conversion rate is to preannounce a rule that makes the terminal rate chosen on 1 January 1999 depend on the evolution of variables prior to that date. When the Ins are announced in 1998, that rule would be known; it might even depend on some variables already known at this date, but in general it would also depend on some variables still to be determined during 1998. The wide band proposal is a special case in which only the spot rate at the end of December 1998 matters.

Although a general rule can of course have an infinite number of particular variants, here we focus on a variant proposed by Alexandre Lamfalussy, the first EMI president. We follow De Grauwe (1996) in calling it the *Lamfalussy rule*. The rule would use an average of the relevant ECU rates over some period prior to the end of December 1998 as the final conversion rates of the national currencies to the Euro. Lamfalussy proposes an average of the rates during the three-year period 1996–8.

This solution turns the usual determination of the exchange rate on its head – instead of depending on the future course of monetary policy, it becomes increasingly dependent on its own history. If the solution is credible, then as the launch of EMU draws closer, the market exchange rate becomes increasingly stable as it converges towards its own average. The advantage of this

approach is that it makes the job of monetary authorities increasingly easier over time. Exchange rate stability grows over time, in particular over the last period that could well be the most politically volatile. Yet, it suffers from the same indeterminacy as the previous solution; since any drift will be ratified by the authorities on 1 January 1999, any value can be an equilibrium. Its ratification, however, is partial since the past counts. This feature produces two opposing effects on the incentive to enter EMU with an undervalued conversion rate.

First, since the influence of exchange rate changes on the conversion rate is stronger the earlier and longer lasting they occur, any attempt to achieve a *good deal* must come long before the launch of EMU. This prevents a last minute blitz. It also prevents beggar-thy-neighbour behaviour before the Spring of 1998, since such action could disqualify a country from EMU membership. Second, should the markets sense political readiness or pressure to achieve a trade advantage, to have any effect a late depreciation would have to be very large. This would signal the possibility of large speculative gains and could trigger a powerful attack.

Thus, the Lamfalussy approach raises the stakes; it makes a late attack less likely but also more violent if it occurs. The effect on the authorities' willingness to conduct unlimited non-sterilized interventions in case of an attack is similar. Determined collective action is more justified as the rewards from a late depreciation from any potential free rider are low. On the other side, market pressure may be more intense because the size of the depreciation would be larger in case the attack succeeds. Finally, De Grauwe (1996) warns that the Lamfalussy rule might lead to 'perverse' jumps in the spot rate, because it would lock past exchange rate disturbances into the final conversion rule.

The avowed intention of the rule is to diminish the incentive for strategic manipulation of the final conversion rate by reducing the payoff to late engineering of a competitive depreciation of the spot rate. Conversion rates, weighed down also by the earlier behaviour of the exchange rate, respond (much) less than they would under a wide band transition in which market spot rates on the final day would be then locked in forever. By including 1998 behaviour within the rule, however, the Lamfalussy compromise still leaves room for some incentive for strategic behaviour by the Ins.

In a nutshell, therefore, the issue is whether or not one can imagine circumstances in which the additional flexibility implied by the Lamfalussy rule could provide a significant advantage that offsets the disadvantages identified above. In our view, whether or not one agrees that the Maastricht criteria were wise, their purpose was to enforce a degree of homogeneity on the Ins that renders unnecessary any additional flexibility during the short transition to 1999. It cannot make sense to compel such homogeneity in 1997, only to condone its relaxation during 1998.

4.5 Bartolini–Prati bands

The Lamfalussy rule seeks to maintain flexibility of the spot rate, within wide bands, during transition whilst limiting scope for manipulating the final conversion rate by adopting a conversion rule specified in terms of the historical average of the spot rate. Bartolini and Prati (1997) propose a different use of historical averaging – to allow narrow bands to be combined with greater flexibility during transition. They suggest that bands be adopted not for spot rates but for historical (moving) averages of spot rates.

This of course is what is often practised in other contexts. For example, the familiar practice of specifying targets for growth rates of monetary aggregates would look unfamiliar if applied to daily growth targets. That would appear a constricting, indeed incredible, commitment by monetary authorities; if anything hinged on it, financial markets might on particular occasions speculate that such commitments would have to be abandoned. Even a 'narrow band' for daily growth rates of money would be very restrictive. In contrast, commitment to a monetary target over, for example, a year allows smoothing via averaging to occur whenever shocks contain at least some transient component. Monetary authorities can accommodate temporary shocks provided they take offsetting action within the medium term (the period over which average targets are specified).

Bartolini and Prati apply this logic to exchange rate bands. Instead of responding to the 1992–3 crises by *widening* the bands to increase the robustness of the regime, it would have been possible to achieve the same effect within narrow bands by switching the commitment from the spot rate to an average of recent rates.[25]

In response to a temporary shock on a particular day the spot rate could then be allowed greater freedom to absorb the shock. Bands for average exchange rates essentially allow policy-makers to borrow against the future. They can indulge in temporary accommodation but not permanent accommodation; laxity today must be accompanied by austerity tomorrow to sustain the average within the committed range.

Do narrow bands, thus reformulated, convey any benefit over wide bands that have the same short-run room for manoeuvre? Suppose, first, that the bands were intended to be maintained forever. There would then be a significant difference over the medium to longer run. Within a wide band, it would be possible to engage in policies that induced not just a temporary but a permanent depreciation of the spot rate to the edge of the wide band. Short-run flexibility comes thus at the cost of reducing long-run discipline. In marked contrast, under the Bartolini–Prati rule, any significant temporary depreciation of the spot rate, in particular to a level outside the narrow band but within where a wide band would have been, must eventually induce some appreciation to maintain the narrow band for the historical average. Short-run flexibility no longer prejudices longer-run discipline.

This advantage of the Bartolini–Prati rule applies essentially in relation to the alternative of maintaining wide bands indefinitely.[26] Advantage as a steady state regime is not the same as advantage as a transitional regime on the way to EMU. In that context, the Bartolini–Prati rule, unsupported by additional commitments, might have the most perverse incentives of all. By 'investing' in an appreciated exchange rate during the late stages of transition, an In could then obtain the right of a substantial depreciation right at the end without violating the narrow band for averages.[27] This observation is important because it undermines the idea that narrow bands automatically diminish the range for the final conversion rate.

A Bartolini–Prati rule might still make sense as a transitional device if supplemented by a rule that imposes greater constraints on the end-point. One candidate for such a constraint is the Lamfalussy rule. One would then have two sets of moving averages, one for the band commitment, another for the conversion rate. Not only does this appear to look rather complicated, it raises the danger that historical echoes from transient effects during

transition might become embedded in the initial nominal conditions for EMU. On balance we continue to prefer our own solution for the conversion rate.

5 Fixed Ends Without Bands: Getting the End-game Right

It should be clear by now that any successful strategy for the interim period must confront two dangers. First, ambiguity about the conversion rates makes the path of exchange rates in the interim period indeterminate, a recipe for turbulence in financial markets. Second, freedom of manoeuvre during 1998 provides opportunities for strategic behaviour among the Ins, in particular the pursuit of competitive depreciations, a recipe for outcomes that are collectively adverse. Moreover, the Ins as a whole may face incentives for an engagement party. If they all succumb, they may obtain some welcome relief from unemployment; yet, they will also increase the early difficulties facing the new ECB.

Chapter 4 discussed a range of proposals designed to navigate these difficult waters. We have argued that all these proposals have important drawbacks. Narrow bands may be vulnerable to a rerun of 1992–3. The Ins might manage to coordinate monetary policy and exchange rate intervention during 1998, but they might not. The extent of the risk may depend on the homogeneity of the Ins, a topic we discuss later. All other proposals examined in Chapter 4 take as their starting point the need to avoid the problems of 1992–3, and pay as their price a large degree of flexibility in the eventual conversion rate. There is a better way.

5.1 Preannounce the bilateral conversion rates for the Ins

We recommend instead that countries deemed Ins should face a preannounced set of bilateral conversion rates amongst themselves. By preannounced we mean that these are made known, at

the very latest, at the date Ins are decided. Chapter 7 discusses whether it might be desirable to make either decisions or announcements at some earlier date.

Note, first of all, that the announcement regards only the bilateral rates among the Ins, not the conversion rates of the national currencies to the Euro. As we saw earlier, the latter can only be determined on the basis of the last day's exchange rate. Announcing the bilateral rates would not violate this legal requirement.[28] Instead, the announcement would tell the public and the markets that the bilateral conversion rates implied by the conversion of the national currencies to the Euro will be equal to the preannounced rates without regard to the ECU exchange rates prevailing on the last day and without regard to any other circumstances. Of course, it would also not eliminate all uncertainty about the final conversion rate, but it would reduce it to the uncertainty regarding the joint rates of the Ins with other currencies.

The benefit of our proposal comes from the fact that, by fixing the bilateral conversion rates among the Ins, the indeterminacy of the last day's exchange rate is resolved. More specifically, the fixing of the conversion rates would allow the markets to determine the Euro money supply at the start of EMU and, hence, the level of the Euro's exchange rate with regard to other currencies (see the appendix to Chapter 3). As we saw earlier, this is a necessary condition to determine the equilibrium exchange rates of the currencies of the Ins with all other currencies before the start of EMU. In this sense, fixing the bilateral rates provides an anchor for exchange rate expectations and eliminates dangerous instability. If the announcement is credible, no further measure is necessary to assure that the bilateral market exchange rates among the Ins will converge to the preannounced rates at the end of the interim period. In addition, the irrevocable fixing of the bilateral rates has several immediate advantages. It reduces uncertainty; it constrains strategic behaviour near the end when the benefits of such behaviour are large and the costs otherwise are small; and it reduces the likelihood of an engagement party among the Ins. Since these advantages are self-evident, we next discuss the possible difficulties, actual or perceived, that this recommendation might encounter.

5.1.1 Smooth convergence on the preannounced conversion rates?

Would the market rates converge smoothly on the preannounced conversion rates? Suppose first that there were no legal constraints on the final conversion to the Euro. It would then be open to the authorities simply to preannounce a final set of rates operative at the instant EMU is created. If the market considers these rates fully credible, intertemporal arbitrage would bid market rates to these levels one instant before conversion occurred. This is illustrated in the appendix to this chapter, which continues the example from Chapter 3. If the final rates were imperfectly credible, market rates might not converge to preannounced rates, but then the authorities could still convert at the preannounced rates – market participants would have made a losing bet. There would be no requirement to intervene to bid the market rate to the preannounced rate.

This scenario is attractive but unavailable. In Chapter 2 we showed that undertakings already made impose the requirement that there be no jump between the market rates on 31 December 1998 and the conversion rates used in introducing the Euro. Our proposal will work only if we can show that such jumps can be ruled out.

It may well be – indeed we think it highly likely – that conversion rates will be credible and that, in removing foreseeable profit opportunities, financial markets will enforce smooth convergence of exchange rates in exactly the way that they ensure that prices of maturing Treasury bills gradually converge on par. To confirm, however, that our proposal is sound, we need to discuss what would happen if credibility was less than perfect. The legal requirement for 'no jumps' then rules out the punishment (subsequent use of preannounced rates, with discrete capital losses for those betting the wrong way) that would otherwise enforce convergence.

In such circumstances, there would be no alternative but for the central banks to engage in 'unlimited' intervention to bid exchange rates to the required rates on the last day. The appendix shows that the intervention needed to achieve this depends on the extent to which market expectations deviate from the announced rates. Such intervention would not be literally unlimited; buying the entire monetary base of a currency under threat would be sufficient and something much smaller would almost certainly suffice.

Although we raised doubts in Chapter 4 about whether central banks would intervene earlier in the transition, for example, in defence of a narrow band, it is vital to understand that at the final instant incentives for central banks are radically different.

In particular, there is no danger that unsterilized intervention, for example by the Bundesbank, could feed through to domestic inflation. Such effects are not instantaneous and there is all the necessary time available. The opening act of the ECB would then be to reverse any aggregate effects on the common money stock by implementing the preannounced conversion rates and behaving exactly as it would have done in the absence of the crisis. Aggregate effects on the common money supply would be small anyway since last-day interventions among the currencies of the Ins would mainly change the composition, not the size, of the EMU money stock. Note, too, that the intervening central banks would make profits on their intervention: Those buying depreciated currencies would enjoy a rapid capital gain, those selling appreciated currencies would avoid a capital loss.

Rehearsing this argument reveals that such action would be unlikely to be required. With a credible deterrent now in place, the pursuit of profit and avoidance of loss by ordinary market participants should bid exchange rates to the preannouced or 'par' levels just as in the Treasury-bill market. Our proposal does not avoid the possibility of intervention by central banks; but, by concentrating their forces at the critical point, where they do most good and have least cost, we maximize the deterrent effect and thereby minimize the likelihood that such action will actually be needed.

5.1.2 Can the announcement be credible?

The success of our proposal depends critically on the assumption that the European Council can credibly commit to the announcement of the bilateral conversion rates. What if the Council could not do that. Some have argued that the legal prescription of the Maastricht Treaty that the conversion rates can only be fixed on 1 January 1999 rules out any commitment (e.g., Gros and Lannoo 1997). If this were true, our proposal would be just as good as waiting for the last day with no announcement.

Luckily, there are a number of ways how the credibility of the

announcement can be assured. To see this, note that the last day before and the first day of EMU will be governed by two rules; the central banks will be independent from the governments and the decision about the conversion rates must be made with a unanimous vote in the European Council.

It is well known from political economy that unanimity is an extremely conservative decision rule. If every member of a committee can veto a decision, the committee will have a very hard time making a decision to move away from the status quo. While this has often hindered the European Union in the past, now the conservativeness comes in handy to strengthen credibility. Whatever the status quo will be at the time of the Council decision on 1 January 1999, it has an extremely high chance of survival.

The credibility of the announcement, therefore, depends on whether or not the current central rates can be made the status quo for the Council decision. There are several ways to do this. First, the announcement itself will give the central rates the status for the Council debate. Once the announcement has been made, the Council will find it very hard to move away from it, since this would be interpreted as a squandering of national wealth in those countries whose currencies would enter the EMU at a higher conversion rate than announced.

Second, the governments of the prospective EMU member states could strengthen the credibility of the announcement by committing the central banks by legal decree to intervene on the last day before EMU and force the market rates to equal the central parities. Since such interventions will only change the composition but not the size of the initial EMU money supply, they would have no inflationary consequences and, therefore, pose no problems for the central banks. The crucial point, however, is that the central banks would be bound to execute the intervention. With central bank independence, the governments themselves would not be able to control the interventions any more and, hence, would not be able to stop them even if they wanted to opt for a last realignment.

Furthermore, as specialized agencies the central banks do not face the threat of standing for re-election at some point after the beginning of EMU. Suppose that a large number of people bought Deutschmarks at a lower rate and sold French francs at a higher rate than the central rate shortly before the start of EMU. Sticking

to the announcement would become a difficult matter for the governments, because their being hard-nosed would cost those who placed a wrong bet a substantial fortune. Fearing the loss of the electoral support of those groups that would be hurt by sticking to the commitment, the governments would thus be tempted to give in to market pressure and validate the speculation ex post. The independent central bank will be in a much stronger position in this regard, since they can afford to let wrong bets turn out to be what they are, namely money-losing guesses.

Finally, the governments could strengthen the credibility of their commitment to the central parities by ruling out any capital gains from picking different conversion rates accruing to them. Suppose the government had announced the bilateral conversion rates and that markets believed this announcement. There would then be a strong temptation for the EMU member governments with relatively high debt levels to pressure for a last devaluation reducing the value of their debt burdens. This temptation can be ruled out by issuing an option prior to the start of EMU giving all public debt holders the right to convert their bonds using the preannounced parities. With such an announcement, a large part of the sources of the credibility problems would disappear.

5.1.3 Could asymmetric shocks render preannounced rates incredible?

Central banks can enforce preannounced rates if they choose to act. Are there any circumstances in which, despite previous assurances, they might choose not to act? Two possibilities merit brief discussion. First, suppose that a central bank or group of central banks had disagreed with the political decision about the composition of the Ins. Politicians might then be asking central banks to defend, or threaten to defend, a conversion rate that the banks believed inappropriate. In such circumstances, we think that there is little doubt that the central banks would in fact intervene. Exchange rate decisions, particularly those about exchange rate regime, have always been the responsibility of governments not of central banks. We see little threat to our proposal from this channel.

A more serious difficulty arises when an asymmetric shock arises

between the announcement of conversion rates and the start of EMU. The announced rate might then not be the best rate for a country to join EMU. For example, a country experiencing an adverse and permanent shock to its competitiveness might raise again the issue of a last devaluation; even when told this is precluded by the Maastricht Treaty, the market might start betting against the reluctance of the authorities to enforce convergence on what now appears to be an overvalued exchange rate.

In our view the proper response to this problem is to say that, if EMU cannot cope with such shocks, it should not be proceeding in any case. Such shocks will be a fact of life of Stage III, even if we hope that European integration will imply that shocks large enough to cause difficulties are also shocks that tend to affect most countries and hence can be accommodated, in part at least, using the common monetary policy. Calling into question the commitment to a preannouncement for one currency risks reopening the discussion for all other currencies.

Neither are we discussing simply the costs and benefits for the initial group of Ins. Whatever decisions are adopted to govern their transition will influence market expectations for subsequent admission of further members. In Chapter 6 we will argue that it is best to make this explicit by committing now to use similar rules to govern subsequent entry; a principle of equal treatment that underlies many decision making processes within the EU. It would therefore be wise, when preannouncing conversion rates, to make clear that these are now irrevocable even in the presence of further shocks. With this clearly in place, we do not anticipate difficulties in ensuring that market rates converge on preannounced rates.

5.2 Choosing the preannounced rates: The current central parities?

How are the preannounced rates to be chosen? Ideally, these bilateral rates among the Ins will be close to equilibrium rates. Technically, it is the multilateral or effective exchange rate against all currencies that is relevant. Members of EMU, however, will have one degree of freedom – their common external exchange rate – so what matters is that large and avoidable asymmetries are

not introduced by the method of choosing the preannounced conversion rates.

Furthermore, we do not want to instigate a further period of negotiation and uncertainty. It would be nice if some fairly obvious rule could be adopted, the more so since it would then be easier to verify equal treatment of subsequent waves of EMU entrants. One candidate immediately suggests itself: Using the existing central parities of the ERM wide bands to calculate bilateral rates to preannounce for the Ins. This rule has the huge merit of simplicity and transparency. In the rest of this section, we examine whether the central parities today are different from our best guess about equilibrium nominal exchange rates.

There are two reasons that this investigation should be broad brush rather than fine detail. First, although it is nearly a century since the original invention of purchasing power parity (devised to estimate equilibrium exchange rates for the return to the gold standard after World War I in which different countries experienced very different rates of inflation) we now understand that equilibrium real exchange rates can change substantially so that mere correction for inflation is insufficient in establishing equilibrium nominal exchange rates. At best, economists can give only a rather imprecise indication of the range in which equilibrium exchange rates lie at any point in time.

Second, wage and price adjustment, and hence real exchange rate change, will be a continuing feature of Stage III. Small discrepancies in the initial conditions can be unwound by normal processes. The task of those choosing initial parities is to avoid large errors that place early and unnecessary strains on EMU. In what follows, we take a number of simple snapshots, each from a different angle, to look for evidence about whether existing central parities might suffice as the basis for preannounced bilateral conversion rates. 1997 figures are taken from OECD Economic Outlook and Eurostat projections.

5.2.1   Deviations of spot rates from the central parities

Figure 5.1 shows how the spot rates relate to current central parities for the current members of the ERM, positive deviations implying spot rates that are depreciated relative to the central rate.
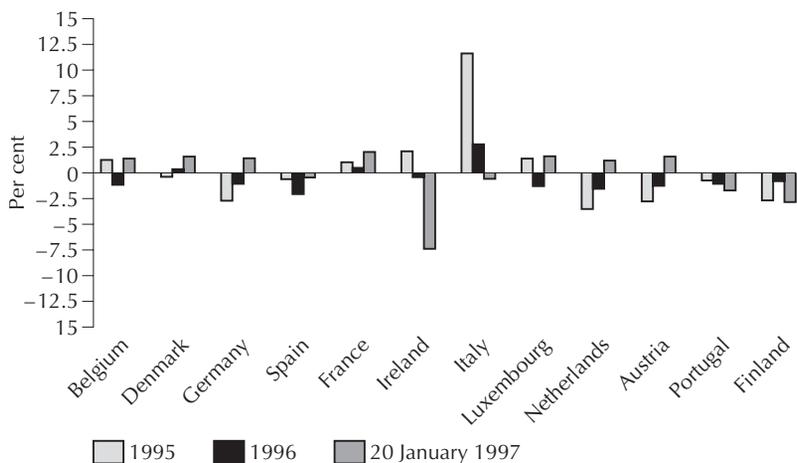
Figure 5.1 Deviations from central parity

The figure shows that all currencies are within 4% of their central parity and many are considerably closer. Using central parities to determine conversion rates would not impose any dramatic jumps on the level of spot rates existing already.

5.2.2 Central parities as equilibrium rates

To see whether the current central parities can be regarded as equilibrium rates, however, we need further information. We look at three questions: Are these rates compatible with recent inflation trends?; are economies either in external balance or capable of achieving this by the pursuit of common policies?; and is there already evidence of recent significant asymmetric shocks to potential EMU economies, or other evidence of macroeconomic tension across potential EMU members?

Inflation differentials matter because they create pressure to adjustment within EMU to restore competitiveness of individual countries. For EU member states, Figure 5.2 looks at wage inflation adjusted for productivity growth, confirming that substantial convergence has taken place, principally by inflation reduction in formerly high-inflation countries. In 1996, except for Greece, unit
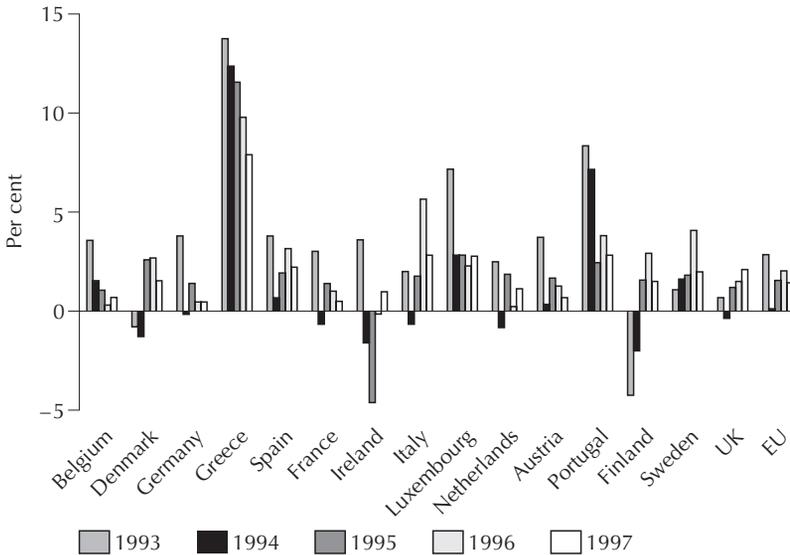
Figure 5.2   Changes in unit labour cost

labour costs were rising at less than 3% a year in all member states. For GDP deflators (see Figure 4.1) in 1996, Austria, Belgium, Denmark, Germany, France, the Netherlands, Finland and Sweden all had rates below 2%; Luxembourg, the UK and Ireland had rates of 2–3%. Only the Southern European member states had higher inflation: Spain 3.9%, Portugal 4.7%, Italy 4.9% and Greece 8.9%. Judged by inflation rates, a high degree of convergence has been achieved.

Inflation convergence alone is not sufficient to assure the central parities as equilibrium exchange rates. Even if inflation differentials are small today and are expected to vanish in the future, they may add up to a significant real exchange rate problem if they persisted for some time. To look at this issue, Figure 5.3 shows cumulated changes in nominal unit labour costs relative to Germany. Since the choice of a starting point for the cumulation is necessarily arbitrary, we consider two measures. The first cumulates inflation differentials with Germany from 1987 onwards, the first year of a long period of no realignments in the EMS. The second one uses 1993, the year of the last EMS crisis, as the starting point. Both measures are correct for realignments in the EMS cen-
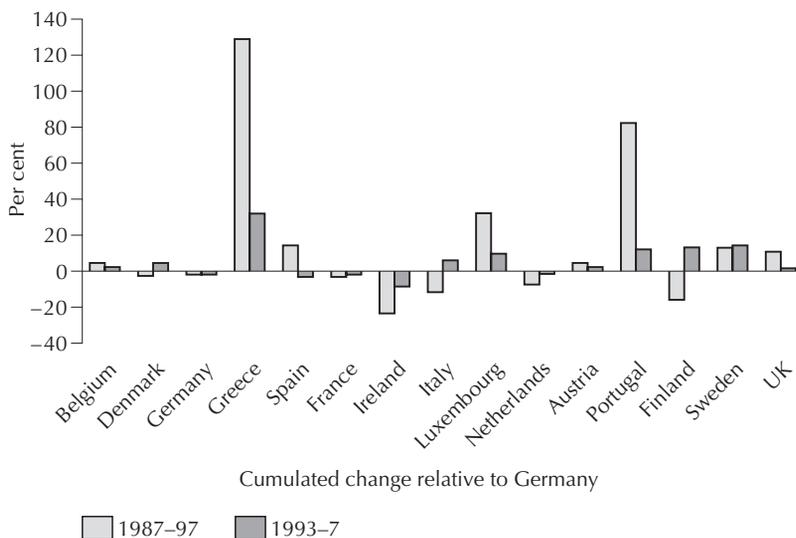
Figure 5.3   Real exchange rate, unit labour cost

tral parities over the period considered.[29] Both measures show the extent to which the central parities ruling today – the ones that would become the basis for preannouncements – have adequately kept up with differential evolutions in unit labour costs since the respective starting years.

Our first measure, cumulating real exchange rate changes since 1987, shows that there is a core group of countries for which the central parities have implied no sizeable changes in real exchange rates: Belgium, Denmark, France, the Netherlands and Austria. Ireland, Italy and Finland experienced significant improvements in competitiveness over the ten-year period, while the opposite was true for Spain and Luxembourg. Greece and Portugal are the outsiders with very strong real exchange rate appreciations.

The picture becomes even more favourable when we look at the second measure, since Italy and Spain join the group of countries with no large real exchange rate changes. Furthermore, the changes for Luxembourg and Portugal are much less dramatic over this period. The outcome in Luxembourg reflected an inflation spike in 1993. Ireland has benefited from an increase in productivity during the last five years. Comparing our two measures suggests

that real exchange rate movements relative to the central parities have gone in the right direction. Even cumulated changes are not dramatic for EMS countries. For example, over the same period Greece has suffered a loss of nearly 50% in competitiveness implied by its central parity, during a period in which it endeavoured to use the exchange rate as an anchor to achieve disinflation.

Next, we ask whether or not the European economies are in external equilibrium in the sense that current account imbalances are small relative to national output (Figure 5.4). Several countries in Europe had quite large current account balances in mid-1996: Belgium, Ireland, Italy and Portugal had large surpluses, while Greece was running current account deficits of more than 3% of GDP. Clearly, the larger countries except Italy were all close to external balance. The 1997 projections indicate no important change in that position.

For the monetary policy of the ECB, the current account of the prospective EMU will be more important than the current account of the individual member states. Thus, it would be important to know whether the current account balances of potential EMU member states add up to a large overall surplus or deficit, or whether these balances approximately offset each other. Note that,
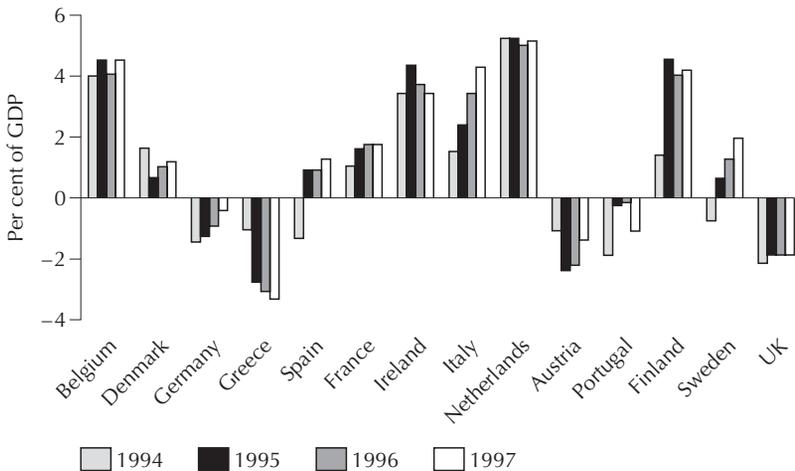

Figure 5.4   Current account balances

as long as the EMU is fully integrated into the world capital market, it does not matter whether a member state's current deficit occurs in trade with another member or with the rest of the world, since the EMU's exchange rate would only come under pressure if the net position of the union as a whole is out of balance.

To consider this issue, Figure 5.5 shows the current accounts of four possible EMU configurations: EMU7 comprising Belgium, Germany, France, Ireland, Luxembourg, the Netherlands and Austria; EMU10 adding Portugal, Spain and Finland to this group; and EMU11 also containing Italy. Whatever the grouping, the combined current accounts improved steadily since 1994, and would be projected to continue to do so in 1997. Moreover, the current account surpluses of the last three years remained well below 1% and are projected to stay small, at least in the case of EMU7 and EMU10. External balance appears to pose no problem for the perpetuation of central parity.

The sustainability of the external position, however, should be assessed only when internal balance also applies: Other things equal, the current account will improve during recession when imports are low, and deteriorate in a boom when imports are high. Figure 5.6 examines OECD estimates of EU member states' output
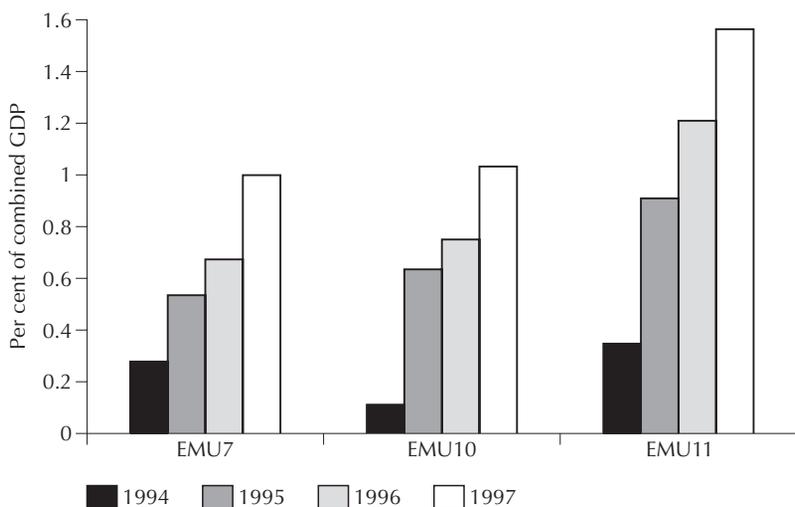

Figure 5.5   EMU current account balances

gaps – the cyclical difference between actual output and potential or trend output. A negative output gap indicates that actual output falls short of potential output. Figure 5.6 tells a powerful story of cyclical recession in the EU, to which several factors contributed. For example, the depth of the Finnish recession may still owe something to the cutbacks in its traditional export markets to the east. Nevertheless, the uniformity of the recessions suggests an important role for a common cause, and a substantial part of that cause has been austerity of macroeconomic policy in the run up to the decision on the Maastricht criteria.

Figure 5.6 suggests that evidence of a European recovery is at best very weak – output gaps are projected to fall only slowly during 1997 – and any further belt-tightening to make the final deadline could yet throw this into reverse again. This general background will colour both the transition during 1998, when political unease may increase, and the early atmosphere of the new ECB, which is unlikely to inherit a substantial inflation problem.

The other signal from Figure 5.6 is that Ireland is different, a fact obscured in earlier figures which raised no warning about its exchange rate or its growth in wage costs, and only a small warn-
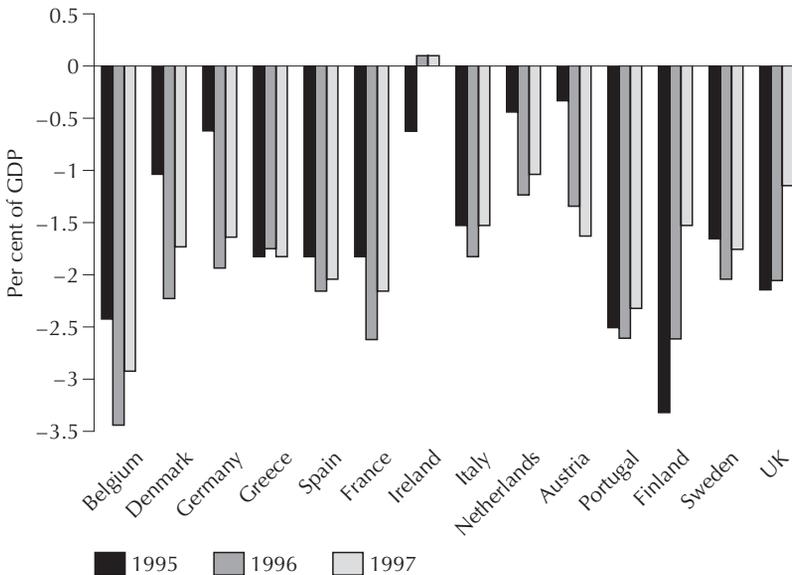

Figure 5.6 Output gaps

ing about its current account (surplus). Indeed the Irish asymmetry is more marked when we consider its current account surplus in Figure 5.4 in conjunction with its cyclical position in Figure 5.6. Normally, we would expect cyclical expansion, relative to its partners, to be correlated with an inferior current account performance. Ireland's current spot rate is close to its central parity (Figure 5.1). Thus, if from Figures 5.4 and 5.6 we see some evidence that Ireland is undervalued relative to is competitors, we should also conclude that the Irish central parity may be undervalued. Should EMU abandon the use of central parities in determining conversion rates, not just for the first wave of Ins but as a precedent for future entrants, simply because the Irish punt may then be a little undervalued? We think not.

First, despite our efforts to take many things into account, we simply cannot be that sure of this conclusion. Second, the burdens of overvaluation and undervaluation are very different. Entering EMU on the former basis would entail a period of Irish recession; entering on the latter basis at worst implies a period of Irish boom. For a nation state this might imply a loss of credibility, and thus higher interest rates; within EMU no such cost will attach to Ireland itself. While it is true that, if the EMU's common policy is then set to maintain aggregate behaviour, the counterpart to Irish competitiveness will be a little less competitiveness elsewhere, in practice spreading this offset to a small country through a much larger union will have negligible effects.

We conclude that there are surprisingly few hurdles in the path of central parities as a basis for bilateral conversion rates, a decision rule preannounced and in operation by the time Ins are selected.

5.3 Monetary policy during 1998

With the end-points clearly established in the manner discussed above, the only remaining question for the Ins during 1998 is how monetary policy will be conducted between the date that they become Ins and the beginning of 1999 when EMU begins.

In Chapter 4 we gave short shrift to several proposals for handling this period. Our own preference is clear. Having committed all of the firepower of policy-makers to establishing and defending

the bilateral conversion rates at the end, we then recommend a relaxed attitude to the run-up to this point. Anchoring the end-point not only prevents the dangers that otherwise accompany wide bands but also dispenses with the need to incur the dangers inherent in narrow bands.

Our ideal solution would be to dispense with bands altogether for countries that are deemed Ins. The central parity would summarize their exchange rate commitments, to which they would be held as the transition expired. In the meantime, countries would be free to float, in the knowledge that any gains pursued, for example through depreciation, would have to be repaid so quickly that they yield scarcely any benefit. Uncertainty is reduced and incentives for perverse behaviour are considerably diminished.

We doubt that anything substantive hinges on the scrapping of current wide bands when Ins are announced. Figure 5.1 showed that spot rates are close to central parities and well away from band edges. If the conversion rates remain credible, the scope for exchange rate changes between Ins during 1998 will be very limited. German interest rates are currently below 3% and nobody is forecasting a boom in Germany before EMU arrives. German interest rates might fall further but are unlikely to increase significantly during 1998.

Imagine another In decided to engage in strategic behaviour and reduced its interest rate as much as possible to engineer a temporary depreciation of its spot rate against the Deutschmark. If the end-point is credible, how much can the spot rate fall in, say, May 1998? Even if the expansionary country reduces its interest rate to, for example, 0.5%, the interest differential with Germany will be only 3%. And with only seven months to 'maturity', the exchange rate will be as firmly anchored to its terminal condition as a seven month Treasury-bill is anchored to its par value. It might be possible to engineer an exchange rate depreciation of 1–2% below the central parity. In such circumstances the band width is largely irrelevant. In particular, there is little difference between a wide band and free floating subject to the same terminal condition of the central parity.

Why then were we not more enthusiastic about the narrow band option? Would it not be true that, if exchange rates cannot vary much, a narrow band would also have a healthy chance of success? Yes and no. Given the same commitment to enforce the

end-point, a narrow band would have a good chance of success. The strongest objection to a narrow band proposal is that typically it does *not* include a commitment to tie down the end-point this precisely; and with greater ambiguity about the end-point, the entire chain breaks down. If the spot rate might be at the edge of the band at the end, there are circumstances in which the market might wish it to be outside the band before that date, provoking the need for substantial intervention sufficiently far enough in advance of EMU that national central banks might properly worry about the impact on their own inflation, interest rates and credibility.

A second advantage of our proposal arises when there is a shock that begins to call into question the credibility of the final commitment. The wider the band, the more central banks can allow the exchange rate to take the strain in the short run, postponing the time at which any substantial intervention will be required. It is central to our argument that the later the intervention the more credible it is that it will be carried out and hence the larger its deterrent effect.

A third advantage is that some crises resolve themselves if one

During the interim period from the declaration of the Ins until the end of 1998, consider the behaviour of two Ins, one labelled A for austere, the other E for expansionist. The latter engages in a temporary monetary expansion, the former does not. It has already been announced that their bilateral exchange rate at conversion will be s^*: one unit of A's currency will exchange for s^* units of E's when EMU begins. Moreover, suppose s^* was the bilateral exchange rate implied by EMS central parities in the run-up to Spring 1998.

Suppose both countries had pursued similar tough policies to achieve the Maastricht criteria. They had similar interest rates and their exchange rate s had been close to s^*, since most potential Ins had been close to their central parities during this period. If both simply continue the previous policies, their bilateral exchange rate s will

remain constant during the interim period, as shown by the line XZ in the upper part of Figure 5.7; their interest rate differentials will remain as shown in the lower part of the figure.

What happens if E alone now engages in a temporary expansion during the interim period? E reduces its interest rate but A does not. Figure 5.7 shows two scenarios, one in which E sets its interest rates 4% below A, the other where the differential is 2%. With the end-point determined as s^*, there is a convergence region XYZ in Figure 5.7. At the outset, Y is the maximum depreciation that E can achieve relative to the end-point Z at which the exchange rate is back to s^*. The slope along YZ is determined by the interest parity condition that interest differentials must be offset by anticipated exchange rate changes during the interim period. Even with an interest differential of 4%, E's exchange rate cannot depreciate more than 2.5%, if the interim period is assumed to last 240 days. The maximum slope would be achieved if country E reduced interest rates to zero and held them there until monetary sovereignty ended with the start of EMU. Smaller interest rate reductions would imply a smaller convergence region; Y would be closer to X. Since depreciation of E's bilateral exchange rate is simply appreciation of A's bilateral rate, the convergence region would have the inverse shape when viewed from country A. We use the term convergence cone to capture the idea of thinking about both countries' perspectives at the same time.

In the text we argue that X and Y will not be that far apart: The expansionist country E cannot reduce interest rates below zero and the austere country A begins with interest rates that in practice in 1998 will not be that high. Not only is there a limit to the slope of YZ, but the short duration of the interim period implies that the length of the cone is short.

Of course behaviour among the Ins may not be as asymmetric as suggested above. With elections looming, even the austere country may loosen its belt after the rigours of the previous two years. Symmetric (Nash) behaviour would then imply both countries cut interest rates. Bilateral exchange rates would simpy converge along the dotted line XZ. The cone would collapse to a line. There would still be some expansionary effect, now achieved exclusively by collective depreciation of Ins against other countries.
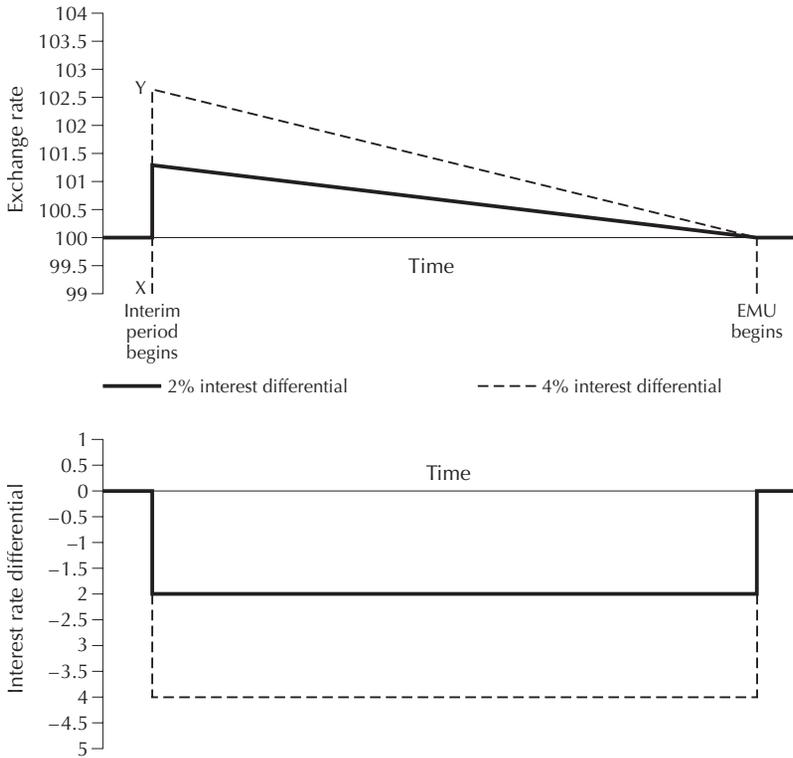
Figure 5.7 The convergence cone

has the luxury of waiting – some shocks prove less permanent than initially perceived. The narrower the band, the more likely is the need for intervention to be brought forward, and the less credible the continuation of that intervention is likely to become. Indeed, we would take this argument to its logical conclusion. In the event that our proposal for the end-point is adopted but the existing wide bands retained, and should a crisis then develop several months before the end of transition, our preference would then be to widen the bands further, as in 1993, rather than provoke at this juncture a test of wills between speculators and central banks. Good generals understand that temporary retreat is not always an unsound tactic.

<u>5.4</u>   How many Ins surfing the first wave of entry?

Decisions on which countries are deemed Ins will reflect a lot of politics. We have no wish to comment on such aspects. We can, however, discuss briefly the economic consequences of different outcomes of the political process. This is done most simply by contrasting the two extreme possibilities – a narrow, homogeneous grouping and a much larger, and necessarily more diverse, number of Ins.

Suppose EMU comprised only two countries that for a long time had appeared to follow very similar policies. It then seems plausible that there could be many feasible routes to EMU. Even where outcomes were theoretically indeterminate, historical solidarity would provide a natural focus for market expectations; nor would there be great concern about either the potential failure of one of the partners to survive the 1988 transition or to undertake a strategic ambush as conversion drew near. In contrast, the larger and more diverse the number of Ins, the more likely it is that any fault lines in transition will become apparent.

Viewed in this light, our proposal, being the most robust, is also the proposal most likely to be compatible with a decision to have a relatively large number of Ins. Other proposals discussed in Chapter 4 would tend to encourage a cautious approach to the number of Ins. Politically, of course, it is possible that some countries might actually wish to precommit to a process in which initial Ins were not numerous. Advocating one of the other approaches to transition might then be an effective means to this end. More generally, 'economic' views about the best form of transitional arrangement are unlikely to be independent of 'political' objectives. In this latter regard, we remain strictly neutral. We merely observe that our proposal closes off few political options.

<u>5.5</u>   Conclusion

In this chapter we have argued that the best approach to 1998 is to agree that Ins will face the following rules: Immediately adopt for 1999 the set of bilateral conversion rates that are implied by existing central parities; proceed towards this end-point within wide bands (or no bands at all); if wide bands come under threat, widen

them again. But in no circumstances relax the commitment to the end-point.

As we explained in Chapter 2 it will not be possible to announce the conversion rates of each currency to the Euro until the start of 1999. The undertaking that 1 Euro will equal 1 ECU precludes any earlier announcement since the ECU will contain currencies such as sterling that will be free to move throughout the period; since the ECU/Deutschmark rate cannot credibly be preannounced, neither can the Euro/Deutschmark rate. Nevertheless, it is feasible to preannounce bilateral rates between the Ins; for example, the French franc/Deutschmark rate if France and Germany are both Ins. This is what we recommend.

Two questions remain to be answered. What should be the relation between Ins and pre-Ins? And when should preannouncements take place? For the first group of Ins, our answer in this chapter was by Spring 1998 at the latest. Since markets will not be idle in the meantime, Chapter 7 considers whether the announcement date should be brought forward before 1998. Since this also raises issues for future waves of entry to EMU, first we discuss relations between Ins and pre-Ins.

APPENDIX **Bilateral rates as anchors**

Consider again the example in the appendix to Chapter 3. Assume now that the governments have preannounced the bilateral conversion rate $x_T - y_T$ for the Deutschmark and the franc.

Our analysis shows that the actual rates will converge to the preannounced rate,

$$\lim_{\Delta \to 0} (d_{T-1-\Delta} - f_{T-1-\Delta}) = x_T - y_T$$

Given the money supplies of Deutschmarks and francs, this is sufficient to determine the expected Euro money supply,

$$EM_T = \left[1 + \frac{Y_T}{X_T} \frac{M_{F,T-1}}{M_{D,T-1}} \right] X_T M_{D,T-1}$$

Thus, the announcement of the bilateral rate anchors the expected exchange rate of the Euro to the dollar.

It follows that the announcement also determines the dollar's exchange rates before and on the last day.

Finally, recall that at any time before the end of the last trading day, the bilateral exchange rate is

$$d_{T-1-\Delta} - f_{T-1-\Delta} = \beta_\Delta \left(m_{D,T-1-\Delta} - m_{F,T-1-\Delta} \right) + \eta_\Delta E_\Delta \left(d_{T-1} - f_{T-1} \right)$$

Suppose that, for whatever reason, the expected rate $d_T - f_T$ deviates from the preannounced rate. The central banks could intervene during the last day to assure that the rate equals the desired rate,

$$m_{D,T-1-\Delta} - m_{F,T-1-\Delta} = \frac{1}{\beta_\Delta} \eta_\Delta \left(x_T - y_T - E_\Delta \left(d_{T-1} - f_{T-1} \right) \right).$$

But this intervention would only exchange Deutschmarks for francs at the rates $x_T - y_T$ and thus only change the composition, but not the level, of the Euro money supply. Hence, even very large interventions on the last day would not affect expected inflation or the expected dollar rate of the Euro.

6 A Strategy for Delayed Entry

In deciding which countries enter EMU, the Heads of State will have to finely balance two concerns. First is the adherence to the convergence criteria. A strict application will enhance credibility, prevent possible litigation and controversies and establish an ECB with a fairly homogeneous board. A second consideration will inevitably weigh in, however, and needs to be brought up to the surface. Rejection of some countries will be a dramatic event with potentially serious consequences both in the rejected countries and within the EMS.

During the last two years of Stage II, all potential EMU members are pursuing strict policies. In most countries governments are currently introducing very unpopular budgets promising citizens that these budgets, though hard, are necessary to meet the Maastricht criteria. Whether intentional or not, the implicit message is often that such measures will also be sufficient. Thus, the perception is that, with EMU membership at the end of the tunnel, current hardship will soon be rewarded by a fall in the risk premium on domestic bonds. This has already partially happened. We see in Figure 6.1 that the countries most likely to be declared Ins have interest rates significantly less than 50 basis points away from the German Bund rate. For the others, there remains a significant gap, despite a spectacular narrowing (more than 400 basis points) over the last few months. The reduction in interest premiums amounts to an easing of monetary policy. It will also allow fiscal policy to be loosened up. Wherever public debt is high and debt service amounts to a very large fraction of GDP, a reduction in the risk premium on government bonds can have dramatic effects on the budget. In 1996 in Italy for instance, the average cost of debt service was 8.4%, producing a cost of debt service as high as 10.5% of

GDP. If the average cost of debt service fell to 6%, debt service as a share of GDP would fall by three percentage points.[30] This means that if Italy meets the 3% Maastricht limit at current interest rates, and then joins the currency union, the Italian budget would soon be balanced – and that is including interest payments on the debt. One then understands why Mr Prodi has promised that the special tax surcharge introduced in 1997 to meet the Maastricht limit will be refunded (with interest) once Italy becomes a member of the monetary union. Much of the same situation can be found in most other countries.

What will happen when some countries are excluded from the first wave? The political leaders will unavoidably be seen as having extracted major effort from the population to no avail. The combination of failure at securing a seat in EMU and of misguided promises will have deep political repercussions (for example, the Italian prime minister has already announced that, in this event, he would resign). It is uncertain whether new governments and/or legislatures would still be committed to monetary union. The shock from the exclusion could boost anti-European sentiments. Demands for a change in fiscal policy would be widespread. Wage
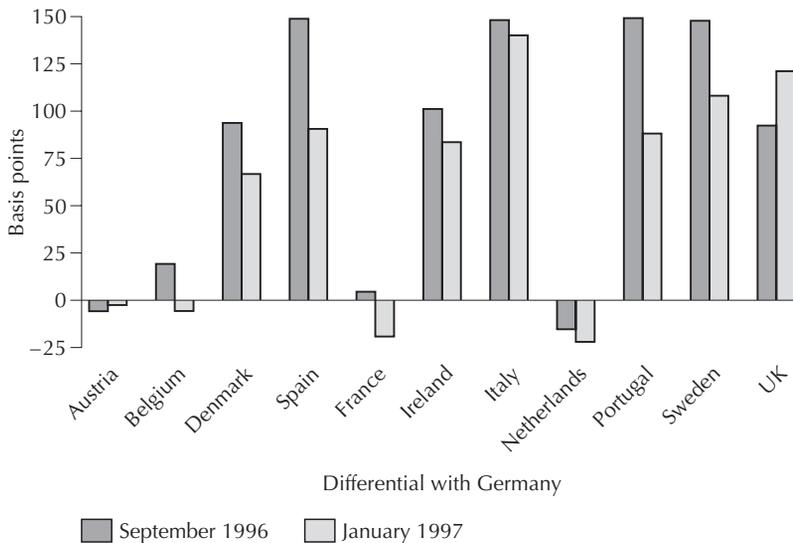

Figure 6.1   Long-term interest rate differentials

negotiations, currently driven by the expectation of a common EMU inflation rate, would become more difficult, possibly reversing the very rapid convergence of inflation rates observed in the recent past and still under way in 1997. All this could easily invite speculative attacks on exchange rates.

What would happen next, during the last months of 1998 before the ECB takes over? The wide EMS bands may seem quite secure today. Following as dramatic an event as rejection from EMU, however, exchange rates could easily move by 15% or more in a matter of hours if not minutes. Within the framework of the existing EMS, in principle, joint interventions at the margins are compulsory. Would the Bundesbank be prepared to carry out unlimited interventions to defend a currency put on hold for lack of convergence? The very fact that such an event would raise difficult questions is an invitation for markets to test the strength of the commitment. The outcome is hardly in doubt.

In addition to adverse political and social consequences, failed countries will face added economic difficulties in pursuing the convergence programme; higher interest rates, increased debt service, the potentially inflationary impact of the devaluation, and the need to re-enter the EMS at least two years before attempting accession to EMU as mandated by the Maastricht Treaty. A delay initially intended to be of short duration (e.g., until the next review aimed at entry in 2001) could well drag on, raising the spectre of a durably divided Europe. Clearly, the trade-off between the benefits from a strict adherence to the convergence criteria and the costs of leaving out some countries eager to join the first wave is deeper than commonly perceived.

This discussion indicates that in April 1998 the pre-Ins should be dealt with very carefully. Obviously little could be done if the exclusion of one country was accompanied by a wave of anti-European sentiment that resulted in that country abandoning its plans to re-sit the exam at the next possible date. But if a country, notwithstanding the exclusion, remains committed to the monetary union, then ways should be found to increase the credibility of its exchange rate, thus reducing the chances of a speculative attack. Our proposal, the principle that central parities will be the eventual conversion rates, turns out to be attractive in this situation too.

The European Council (1996) has affirmed the principle of

equal treatment. Future decisions to admit a country to the mone-
tary union will be based on the same conditions as those applied
to the first group of members in April 1998. This decision is
designed to avoid the possibility of discrimination. If the pre-
announcement of conversion rates is presented as a matter of
principle, not just a convenient decision for the first wave, it will
automatically then concern the following waves. The rule that
EMS central parities determine the conversion rates has several
additional attractive features for the pre-Ins as well.

To avoid the social, political and economic turmoil anticipated
above, it is most likely that the Heads of State will accompany
their Spring of 1998 decision with pledges that the delay imposed
on the rejected countries will be very short. The Treaty specifies
that the next automatic decision point is for entry in January
2001, but earlier entry is not ruled out either. For those countries
that narrowly failed the entrance examination, aiming at a short
delay will be essential to limit the backlash effect.[31] Harnessing
exchange rate expectations through the preannouncement princi-
ple will have a crucial stabilizing effect. It would also contribute to
reduce the uncertainty in the market as it would rule out the possi-
bility that a country which has been excluded, but remains com-
mitted to joining the union, uses the remaining two years for a
spell of devaluation-driven growth.

The combination of the two principles – equal treatment and
the equality between conversion rates and ERM central parities –
will also prove useful for later waves. It will again rule out attempts
at late manipulations. It will be especially useful regarding the
countries of Eastern and Central Europe that may well require large
bands during their convergence period and yet will still need an
exchange rate anchor.[32]

7 To Preannounce Bilateral Conversion Rates

There are two distinct reasons to worry immediately about the pre-announced conversion rates for the first wave of Ins. First, markets are already thinking about the eventual conversion rates. Second, whatever happens in relation to the first wave of entry to EMU, there will be future waves of entry and it is desirable, perhaps even required by the Maastricht Treaty, that a similar process be used in subsequent entry waves. Even if, somehow, it was possible to surprise markets first time round, on subsequent occasions the procedure will be more familiar. A comprehensive proposal must therefore address what is entailed in such circumstances. Our previous logic carries neatly over even to these new problems. Early resolution of uncertainty is desirable, yet commitments made too far in advance might, justifiably, lack credibility.

7.1 The first wave of Ins

The composition of this initial group is necessarily in doubt until Spring 1998; that is the implication of the timetable agreed so far. It is undesirable that uncertainty also persists about the rules to which successful Ins would then be subject, not least because currency crises before the Ins are chosen could undermine a country's chances of becoming a first-wave In.

The Maastricht Treaty laid down that a necessary condition for becoming an In was the avoidance of an EMS realignment during the two years preceding entry. Precisely for this reason, Italy rejoined the EMS in December 1996 to allow two full years before December 1998. In Chapter 5 we advocated interpreting the Maastricht stipulation in relation to the central parity alone, and

to widen the bandwidths as needed to avoid speculative attacks. As long as the use of the central parities as the ultimate conversion rate is assured, the wide band would be sufficient.

During 1997 potential Ins will in any case be committed to preservation of the central parity in order to fulfil Maastricht obligations. There is therefore nothing to lose and everything to gain by announcing immediately that central parities will become the basis of the ultimate conversion rates for countries making it into the first EMU wave. Should any crisis erupt before Ins are chosen, we favour the same response that we have advocated thereafter: If necessary widen the bands but do not compromise choice of the conversion rate.

In our view this method of the pre-transition to Spring 1998 has several advantages. For likely Ins it considerably reduces uncertainty about the eventual conversion rates, which under other proposals, such as maintenance of existing 15% bands, might lie anywhere within a 30% range. Ambiguity of end-point fosters ambiguity of starting-point, a recipe for needless speculative attacks unrelated to the fundamentals. For unlikely Ins, or those able to qualify only if thereafter they are allowed substantial accommodation, our procedure would allow a final opportunity for policy action within a country while there is still time for it to take effect before EMU begins.

7.2   Subsequent waves of Ins

What would all this imply for countries that failed to make the first wave but still aimed to join EMU eventually? We considered, but quickly discarded, the idea that they too should commit to the current central rate, that rate ruling in early 1997. Some of these countries might not join EMU even in the second wave, so we might be contemplating conversion rates not just for 2001 but for 2003 or even later. Since the pre-Ins will have been excluded from the first wave because they have not converged sufficiently with the likely EMU group, asking the pre-Ins then to adjust sufficiently to offset the divergences they will cumulate in the short run is asking for a degree of adjustment that is needlessly painful and therefore not very credible.

In whatever wave entry takes place, EMU entrants will still have

to observe the Maastricht criteria. In particular, they will have to avoid a realignment during the final two years before entry. What we propose is that EU countries announce as soon as possible in 1997 that all future Ins will be subject to the same procedure as those in the first wave; a commitment to final conversion at central parity but relatively wide bands until that point. This implies that a country failing the entry exam at the first attempt will be able to realign to correct quickly its past divergences, and then embark on holding the new parity for the two-year period in the run-up to EMU membership.

There is, of course, the possibility that some countries, having made major efforts to qualify for the first wave but been unsuccessful, face a sharp speculative attack once their initial failure becomes known. It may be objected that by allowing the possibility of devaluation at this point our proposal makes devaluation more likely. We tend to take the opposite view. There may in practice be few realistic ways of resisting such forces in these circumstances. If so, it is unwise to invest too much in a defence that is doomed from the outset. Certainly, it would be a mistake for the first act of the ECB to be an unsuccessful intervention in defence of a country that, by virtue of being excluded from the first wave, had already been judged incapable of prospering easily with its existing central parity. Better in our view to cleanse the wound and allow a fresh start.

Endnotes

1. It is worth noting that the Maastricht Treaty gave the Council the opportunity to show how stringent its interpretation of the criteria will be by demanding a decision at the end of 1996 as to whether or not a majority of member states fulfils the criteria. The Council has willingly let this opportunity go by, thus missing the possibility to reduce uncertainty.

2. For a critical discussion of the Stability Pact see Eichengreen and von Hagen (1996) and von Hagen and Eichengreen (1996).

3. For earlier discussions of end-games in the context of EMU see Fratianni and von Hagen (1992), Fratrianni *et al* (1992) and Froot and Rogoff (1991).

4. For an empirical analysis of the economic effects of fiscal policies in the run-up to EMU see von Hagen and Lutz (1996).

5. See von Hagen and Neumann (1996).

6. See Eichengreen and Wyplosz (1993) for an analysis of the ERM crisis.

7. See '*The Scenario for the Changeover to the Single Currency*', European Commision (1996a).

8. It might be later than that, since France will hold elections in March of 1998 and the new government may want to have the final word in the decision.

9. Green paper on the 'Introduction of the Single Currency', European Commission (1995).

10. The changeover strategy foresees that the Council will only adopt conversion rates of the national currencies to the Euro. Very small differences between the bilateral exchange rates of national currencies and their implied conversion rates could arise from rounding problems.

11. See European Commission (1996b). Technically, this rule refers to the ECU as a currency basket rather than financial assets denominated in ECU.

12. Such an effect need not be universal for two reasons. First, some

countries (Germany in particular) may initially enjoy more credibility with the new arrangements. Second, if the market had been anticipating that EMU would be confined initially to a hard 'inner core', the unexpected admission of a larger but softer group of countries might have an adverse effect on the credibility of inner core countries. See Gros and Lannoo (1997) for an empirical discussion of this point.

13. Von Hagen and Lutz (1996) predicted that reverse Reaganism would be the likely outcome of a convergence process relying on numerical targets for deficit and debt ratios in the run-up to EMU. Their analysis implies that the ECB at the start of EMU will face inflationary pressures resulting from excess money growth during the transition. See also Hughes-Hallett and McAdam (1995).

14. Begg *et al* (1991)

15. Betts and Devereux (1996)

16. For a detailed discussion see von Hagen (1997).

17. See Begg *et al* (1990).

18. See Begg *et al,* 'EMU: The Macro issues' in *Monitoring European Integration: The Making of Monetary Union*, CEPR 1991.

19. In the pure Krugman (1979) model of speculative attacks no premiums are necessary ex ante because, despite the abrupt switch in regime, endogenous asset prices (exchange rates) are smoothly merged to ensure normal returns to speculators. Modelling the regime switch under uncertainty is rather more complicated, see Obstfeld (1994; 1995).

20. See von Hagen (1996).

21. This is only true as a first approximation. If the conversion rate differs from the rate at which a central bank has swapped its currency against another one, the aggregate money supply is affected (reflecting gains or losses from intervention), but this is likely to be a second-order effect.

22. See Eichengreen and Wyplosz (1993) for the crucial role of the 'Emminger letter', and details on the letter, during the ERM crisis of September 1992.

23. The various ways in which political pressure builds up has been analysed in Bensaid and Jeanne (1996) and Ozkan and Sutherland (1995).

24. See, e.g., De Grauwe (1994).

25. Bartolini and Prati (1997) conduct sophisticated simulations to try to calibrate the implicit trade-off between band widening and historical lengthening of the average to which the commitment applies. The answer of course depends importantly on the degree of persistence of shocks; averaging has no benefit when all shocks are permanent.

26. We should emphasize that Bartolini and Prati confine their formal

analysis to steady state regimes. Their analysis, however, invites extension to a discussion of transition, an invitation that here we have accepted.

27. Note that to accomplish this an earlier depreciation might then be necessary to allow the subsequent appreciation that permits the final depreciation; such 'echo effects' can be important under regimes that specify targets for historical averages. For a fuller discussion, see the comments by Guiseppe Bertola that appear at the end of Bartolini and Prati (1997).

28. De Grauwe and Spaventa (1997) suggest that the current official scenario prohibits preannouncing the bilateral conversion rates. In fact that scenario stipulates that once EMU has started the only official conversion rates will be vis-à-vis the Euro. This does not preclude our proposal.

29. Gros and Lannoo (1997, p. 6), for example, argue that a conversion rate of the Deutschmark 1% higher than announced would create a loss of wealth equivalent to 30 billion DM.

30. In 1996 the spread between Italian and German interest rates ranged between 400 basis points on three-month bills, and 250 basis points on ten-year bonds. Weighting these spreads by the composition of Italian debt (where fixed-rate long term bonds account for 38% of outstanding government securities) and assuming that the country risk is about 50 basis points (the current difference between the BTP-Bund spread and the corresponding spread on swaps; see Favero, Giavazzi and Spaventa, 1997) we find that the average cost of debt service would fall from 8.4% to about 6% if Italy were a member of the monetary union and if Euro interest rates were at the level of current German rates. As a share of GDP this amounts to a saving of three percentage points. Of course this would not happen overnight, because once in the currency union, the Italian Treasury would still, for many years, keep paying the high coupons attached to the bonds issued in the past (15% of outstanding fixed-rate bonds will mature after the year 2000).

31. We have seen in Section 5.2 that central parities are close to equilibrium exchange rates for all the current members of the EU, with the only exception of Greece, and possibly of Ireland. Since inflation convergence is a precondition for entry, and inflation rates have already converged, it is unlikely that significant swings in the real exchange rates of the countries left out would occur between 1998 and 2000 – if they were to occur they would by themselves, bring the country to violate one of the admission criteria.

32. On this issue, see Wyplosz (1996).

References

Bartolini, L. and A. Prati (1997) 'Soft versus hard rules for exchange rate targeting', forthcoming, *Economic Policy,* 24.

Begg, D. and C. Wyplosz (1993) 'Recent intellectual history: The European Monetary System', in *The Monetary Future of Europe*, CEPR.

Begg, D., F. Giavazzi, L. Spaventa and C. Wyplosz (1991) 'EMU: The Macro Issues' in *Monitoring European Integration 2: The Making of Monetary Union*, CEPR.

Begg, D., J.-P. Danthine, F. Giavazzi and C. Wyplosz (1990) 'The East, the West and the Deutschmark' in *Monitoring European Integration 1: The Impact of Eastern Europe*, CEPR.

Bensaid, B. and O. Jeanne (1997) 'The Instability of Fixed Exchange Rate Systems when Raising the Nominal Interest Rate is Costly', *European Economic Review*, 37, forthcoming.

De Grauwe, P. (1994) 'Towards European Monetary Union without the EMS', *Economic Policy,* 18.

De Grauwe, P. (1996) 'How to fix conversion rates at the start of EMU', mimeo, University of Leuven, October.

De Grauwe, P. and L. Spaventa (1997) 'Setting Conversion Rates for the Third Stage of EMU' mimeo.

Eichengreen, B. and C. Wyplosz (1993) 'The Unstable EMS', *Brookings Papers on Economic Activity*, Part I, 51–144.

Eichengreen, B., A. Rose and C. Wyplosz (1995) 'Exchange market mayhem: the antecedents and aftermath of speculative attacks', *Economic Policy,* 21.

Eichengreen, B. and J. von Hagen (1996) 'Fiscal Restrictions and Monetary Union: Rationales, Repercussions, Reforms', in: Robert Holzmann (ed.) *Maastricht: Monetary Constitution without a Fiscal Constitution?*. Nomos: Baden-Baden.

European Commission (1995) Green Paper 'Introduction of the single currency'. European Commision: Brussels.

European Commission (1996a) 'The Scenario for the Change-over to the Single Currency', *Official Journal of the European Communities,* C 22/2, 26 January.

European Commission (1996b) 'Secondary Legislation for the Introduction of the Euro and Some Provisions Relating to the Introduction of the Euro', COM(96), 499 final, October.

European Council (1996) Conclusions, Meeting of the European Council in Dublin, 13–14 December 1996.

European Monetary Institute (1995) 'The Transition to the Single Currency', Frankfurt am Main.

European Monetary Institute (1996) 'Progress Towards Convergence', Frankfurt am Main.

Favero, C., F. Giavazzi and L. Spaventa (1997) 'High Yields: The Spread on German Interest Rates', *Economic Journal*, 1997, forthcoming.

Fratianni, M., and J. von Hagen (1992) *The European Monetary System and European Monetary Union*. Boulder: WestView.

Fratianni, M., C. Waller and J. von Hagen (1992) 'The Maastricht Way to EMU', in *Essays in International Finance 187*. Princeton: Princeton University.

Froot, K.A. and K. Rogoff (1991) '*The EMS, the EMU, and the Transition to a Common Currency*', Working Paper 3684. Cambridge: National Bureau of Economic Research.

Gros, D., and K. Lannoo (1997) '*The passage to the Euro'*, Working Party Report No. 16. Brussels: CEPS.

Hughes-Hallett, A., and P. McAdam (1995) 'Fiscal Deficits in Line with the Maastricht Criteria for Monetary Union: An Empirical Analysis', mimeo, Strathclyde University.

Krugman, P. (1979) 'A model of balance of payments crises', *Journal of Money, Credit and Banking*, 11, 253–70.

Obstfeld, M. (1994) 'The logic of currency crises', *Cahiers Economiques et Monetairies,* 43, 189–213, Bank of France.

Obstfeld, M. (1995) 'Models of currency crises with self-fulfilling features', NBER Working Paper 5285, October.

Ozkan, S.G. and A. Sutherland (1995) 'Policy Options for a Currency Crisis', *Economic Journal*, 105, 510–19.

Portes, R. (1993) 'EMS and EMU after the Fall', *World Economy,* 16, 1–16

Rose, A. and L. Svensson (1994) 'European exchange rate credibility before the fall', *European Economic Review,* 38, 1185–216

von Hagen, J. (1996) 'Credible Roads to EMU', in: Marc Uzan (ed.) *The Financial System under Stress*. London, New York: Routledge.

von Hagen, J. (1997) 'Monetary Policy and Institutions in the EMU' *Swedish Review of Economic Policy,* forthcoming.

von Hagen, J. and B. Eichengreen (1996) 'Federalism, Fiscal Restraints, and European Monetary Union, *American Economic Review,* 86, 134–8.

von Hagen, J. and M.J.M. Neumann (1996) 'A Framework for the Monetary Policy under EMU', in: Deutsche Bundesbank (ed.) *Monetary Policy Strategies in Europe*. München: Vahlen.

von Hagen, J. and S. Lutz (1996) 'Monetary and Fiscal Policies on the Way to EMU', *Open Economies Review,* 7, 299–325.

Wicksell, K. (1907) 'The Influence of the Rate of Interest on Prices', *Economic Journal*, XVII, 213–19.

Wyplosz, C. (1996) 'Monetary Options for the 'Outs'', National Bank of Austria, December.