16

Economic and Monetary Union in Europe

CHAPTER OUTLINE

16.1 Introduction

In this chapter, we examine one of the most important economic issues ever tackled by the European Union (EU), namely Economic and Monetary Union (EMU). On 1 January 2002 EMU was finally realized in Europe when 11 founding countries agreed

to irrevocably fix their exchange rates with no margin of fluctuation and agreed to replace their national currencies with a new European currency called the euro. As we shall see, as well as agreeing to give up their monetary sovereignty, they also agreed to certain rules which have limited to some extent their freedom with respect to fiscal policy in the form of the 1996 Stability and Growth Pact. Despite its realization, the issue of EMU in Europe still has a great deal of relevance since the United Kingdom, Denmark and Sweden have still not joined. In addition, the European Union was enlarged with 10 new members on 1 May 2004, many of them former Eastern-bloc countries committed in principle to replacing their national currencies with the euro at some point in the future. When joining the EMU countries currently have to accept certain fiscal restraints as outlined in the Stability and Growth Pact and there has been much recent debate about how to reform this pact. Finally, the impact of the monetary union on trade and financial markets and institutions is still very much being felt, and the performance of the European Central Bank and the euro in the foreign exchange markets is closely monitored by financial market participants.

In this chapter, we review the history behind EMU and we spend some time looking at the features and operation of its predecessor, the European Monetary System, which commenced operations in March 1979 and ultimately proved to be the vehicle for achievement of EMU. We describe the EMS and evaluate its performance during its years of operation, including an analysis of the major crises that confronted the system in 1992/93 and the convergence process in the run-up to EMU. We then proceed to look at the economic gains/losses to be expected from EMU including some recent controversial empirical research on the topic. We review the various safeguards that have been put into place to ensure that the euro will be a sound low-inflation currency, with particular focus on the Stability and Growth Pact, and then proceed to look at the arrangements for the management of the euro under the so-called EuroSystem. Finally, we look at some of the issues raised by potential new entrants into the EMU distinguishing between the cases of the United Kingdom and the Accession countries which joined the European Union in 2004.

16.2 The Snake in the Tunnel

Following the collapse of the Bretton Woods System in 1971, there was a great deal of concern at the Community level that if the European Economic Community (EEC) (as it was then called) countries allowed their exchange rates to be determined solely by market forces there might be large and sudden changes in international competitiveness associated with exchange rate movements that could undermine the development of free trade within the Community. Indeed, it was feared that there might even be deliberate competitive depreciations by some countries to gain trading advantage, which could result in trade frictions and the emergence of protectionist pressures within the EEC and possibly threaten the existence of the Community itself. In addition, following the Werner Report of 1972 (see section 16.17) the member countries of the EEC had set a target date for achieving EMU by 1980. As a result of these fears and a desire to introduce a single currency as well as some degree of exchange rate stability, EEC members set up the so-called 'Snake in the Tunnel' which subsequently became the plain 'Snake'.

The Snake system has been characterized as a mini-Bretton Woods, a description that was subsequently applied to the EMS. The Snake in the Tunnel commenced

Table 16.1 Central parity realignments in the Snake

Currency	Mar 1973	Jun 1973	Sep 1973	Nov 1973	Oct 1976	Apr 1977	Aug 1977	Feb 1978	Oct 1978
Belg./Lux. franc					–2.0				+2.0
Deutschmark	+3.0	+5.5							+4.0
Dutch guilder			+5.0		–2.0				+2.0
Swedish krone					–3.0	–6.0			
Danish krone					–6.0	–3.0	–5.0		
Norwegian krone				+5.0	–3.0	–3.0	–5.0	–8.0	

(+) indicates a revaluation; (–) indicates a devaluation.
Source: European Commission.

operations on 24 April 1972 and was made up of the original six EEC members (Belgium, France, Italy, Luxembourg, Netherlands and Germany); on 23 May 1972 the UK and Denmark joined the system and Norway became an associate member. While the member currencies could vary by a maximum of ± 1.125% against each other (the Snake) they could float by ± 2.25% against the US dollar (the Tunnel) as permitted by the Smithsonian agreement (see section 11.4). This smaller margin of fluctuation for the member currencies *vis-à-vis* each other than was permitted against the US dollar gave rise to the term 'Snake in a Tunnel' to describe the system. Indeed, between 1972 and 1976 Belgium and the Netherlands limited the divergence between their currencies to ± 0.75% and this became known as the worm inside the Snake!

The system had a chequered history; the UK abandoned its membership of the system after just six weeks and was followed four days later by Denmark which subsequently rejoined in October 1972. Italy withdrew from the Snake in February 1973 and the tunnel was demolished in March 1973 when the Snake currencies decided on a joint float against the dollar. In April 1973 as part of the Snake system the European Monetary Cooperation Fund (EMCF) was set up to provide credits and support for deficit countries. France left the system in January 1974, rejoined in July 1975 and left again in March 1976. Norway left the system in December 1978. Throughout its lifetime the Snake was characterized by a series of devaluations and revaluations which are listed in **Table 16.1**. This coupled with the fact that both Italy and France were out of the system meant that by 1979 the Snake was looking badly mutilated. In the end, the Snake system failed to produce the necessary degree of coordination of economic policies and convergence of economic performance required for its successful operation.

16.3 The background to the European Monetary System

On 17 June 1978, at a conference held in Bremen, six of the community countries committed themselves to the setting-up of the European Monetary System to replace the Snake. The EMS aimed to provide a 'zone of monetary stability' bringing back into the fold countries like Italy and France which had left the Snake. Before looking at the operation of the EMS it is worthwhile reviewing the motivations behind its formation.

Yas-su-Hu (1981) argues that the formation of the EMS has to be seen in a wider context than simply the setting-up of an exchange rate mechanism. He argues that the EMS was based upon a convergence of interests among the EEC countries with regard to a common dollar problem. Under the Bretton Woods system, the dollar was the major international reserve currency, used as a means of settlement between central banks, for exchange market interventions and as a vehicle currency to denominate many international transactions. He argues that the USA was free to run balance of payments deficits to supply the world with the dollars it required. In return for this freedom from balance of payments constraints, the USA was expected to avoid undermining the purchasing power of dollars. When President Nixon suspended dollar convertibility into gold in 1971 the USA had effectively abdicated its responsibility, causing serious economic and financial losses for the Europeans.

The dollar problem had many facets. As the dollar was pegged by foreign central bank purchases of US dollars, this led to a rapid growth in the world money supply and thereby contributed to worldwide inflation. Also, the depreciation of the dollar after suspension of its convertibility meant huge losses for central banks who had purchased dollars under the Bretton Woods system and after the adoption of floating exchange rates as they tried to slow down the appreciation of their currencies against the dollar. In sum, it can be argued that central banks' experience of purchasing and holding US dollars in their reserves had not been a happy one.

Another motivation underlying the Bremen initiative was a desire to provide a stable framework for the conduct of European trade. Since the adoption of floating exchange rates in 1973, there had been very divergent inflation rates, economic growth and balance of payments performances between the EEC economies. European policy-makers were concerned that such divergent economic performances could threaten intra-EEC trade, and it was hoped that stabilizing European currencies would lead to a greater convergence of economic performance and continued growth of European trade.

The EMS commenced operation on 13 March 1979 and, despite much initial scepticism about its survival chances, operated with mixed success for two decades. The EMS consisted of three main features: (1) the Exchange Rate Mechanism (ERM), (2) the European Currency Unit, and (3) financing facilities. A proposed European Monetary Fund was never set up. All members of the EEC joined the EMS, but the UK did not initially participate in the ERM. We now briefly review the three key features as an understanding of these is essential in order to show how EMU was eventually brought about.

16.4 The Exchange Rate Mechanism

The Exchange Rate Mechanism (ERM) consisted of two parts:

1 A grid of bilateral exchange rate bands between each of the member currencies which defined obligatory intervention.
2 An individual band of fluctuation (threshold) for each currency against a European Currency Unit (ECU). The ECU was an artificial currency based upon a calculation of a weighted basket of 12 European currencies. If a currency moved too much against the ECU basket it would lead to the expectation that the authorities of that currency would take policy measures designed to bring it back within its ECU threshold.

Bilateral exchange rate parities and obligatory intervention limits

The bilateral exchange rate aspect of the ERM consisted of a grid of central exchange rates between each pair of currencies in the ERM. Originally each currency could fluctuate a maximum ± 2.25% of its assigned bilateral central rate against another member currency of the ERM. On the setting-up of the system, Italy was allowed to join with a larger band of fluctuation of ± 6%, a similar ± 6% was applied when Spain joined the ERM in June 1989, the UK joined in October 1990, and the Portuguese escudo entered the system in April 1992. However, following an exchange rate crisis on 2 August 1993 there was a widening of permissible fluctuation margins to ± 15% for all currencies. **Table 16.2** shows the central rates of the grid, that also became the fixed bilateral conversion rates between the Euro countries announced on 2 May 1998.

Within the bilateral margins authorities could intervene if they wished but such intervention was not compulsory. **Intra-marginal** intervention was carried out in either EMS or non-EMS currencies (normally the US dollar). Once two currencies reached a bilateral exchange rate margin the authorities of the two currencies were obliged to intervene or take economic policy measures to keep the currencies within their bilateral limits. At the outset of the system, the intention was that obligatory intervention should take place in the relevant EMS currencies rather than in US dollars. For example, if the French franc was at the bottom of its bilateral limit against the deutschmark, the French and/or German authorities would sell deutschmarks and purchase French francs rather than the French use dollars to buy francs. An important feature of the ERM was that any changes in the grid of central rates required 'mutual agreement'. In practice, this meant that parity changes were taken by the finance ministers of the currencies participating in the ERM.

16.5 The European Currency Unit and its role as an indicator of divergence

A key component of the ERM was the ECU which between 1979 and 1999 was a weighted basket of 12 member currencies; the 12 currencies being those of the 12 members prior to the entrance of the three new members. The ECU acted as an 'indicator of divergence' within the ERM. Once a bilateral margin was reached requiring compulsory intervention a question arose as to which authority was responsible for intervention. In the case where the French franc reached its lower bilateral limit against the deutschmark, should the Banque de France use its reserves or raise French interest rates to support the franc, or the Bundesbank sell deutschmarks and accumulate French francs and/or reduce German interest rates?

The ECU was nothing more than a calculation of how a currency was doing against other European currencies. The idea underlying the ECU was that it would single out the currency that was diverging from the average agreed parities before obligatory bilateral exchange rate margins were reached. In effect, the ECU was supposed to act as an alarm bell – once a currency crossed its divergence threshold against the ECU the alarm bell is triggered and the authorities of the diverging currency were expected to take measures to bring its currency back into line. Such action could consist of a change in interest rates and/or in the monetary/fiscal policy pursued by the country. Unlike reaching a bilateral exchange rate limit, triggering the ECU alarm bell did not lead to obligatory intervention, only the expectation of a change in policy stance

Table 16.2 Central rates of the ERM grid in 1998 (bilateral conversion rates announced 2 May 1998)

	DEM 1=	BEF/LUF 100=	ESP 100=	FRF 1=	IEP 1=	ITL 1000=	NLG 1=	ATS 1=	PTE 100=
BEF/LUF	20.6255								
ESP	85.0722	412.462							
FRF	3.35386	16.2608	3.94237						
IEP	0.402676	1.95232	0.473335	0.120063					
ITL	990.2	4799.90	1163.72	295.183	2458.56				
NLG	1.12674	5.46285	1.32445	0.335953	2.79812	1.13812			
ATS	7.03552	34.1108	8.27006	2.09774	17.4719	7.10657	6.24415		
PTE	102.505	496.984	120.492	30.5634	254.560	103.541	90.9753	14.5697	
FIM	3.04001	14.7391	3.57345	0.90642	7.54951	3.07071	2.69806	0.432094	2.96571

Notes:
(a) DEM is deutschmark, BEF/LUF is Belgium/Luxembourg franc, ESP is Spanish peseta, FRF is French franc, IEP is Irish punt, ITL is Italian lira, NLG is Netherlands guilder, ATS is Austrian schilling, PTE is Portuguese escudo, FIM is Finnish markka. (b) It is possible to calculate any permanently fixed bilateral parity from the above gird; for example, Italian lira per French franc is 990.2/3.35386 = 295.183, which is also shown in the grid (FRF 1 = 295.183 ITL).

(*presumption d'action*). Each currency had its own individual divergence threshold against the ECU dependent upon its weight in the ECU; the greater currency's weight, the lower its divergence threshold. The reason for designing the divergence threshold like this was to correct for the fact that currencies with a higher than average weight in the ECU tended to fluctuate less against the ECU than currencies with a lower weight. This is because the higher a currency's weight the more the ECU was made up of that currency and since a currency cannot fluctuate against itself the less likely it is to fluctuate against the ECU. To offset this effect, high-weight currencies were assigned lower divergence thresholds than low-weight currencies. Once a currency deviated too far from its central parity against the ECU then the authorities of that currency were supposed to take measures to bring the currency back into line. For example, once the deutschmark exceeded its divergence threshold against the ECU, the German authorities were expected to take measures to bring the deutschmark back into line. The idea was that this warning bell would lead to action by the responsible country and so avoid reaching obligatory bilateral intervention limits which would provoke speculation about parity changes.

In practice, the divergence indicator did not necessarily work as intended. For example, it was possible for four high-weighted currencies in the ECU basket to appreciate against weaker currencies in the system but keep their same central rate against each other. In such circumstances, they could reach their bilateral parities against the weaker currencies even though they had not reached their divergence thresholds with respect to the ECU.

16.6 Financing facilities and monetary cooperation

Another key feature of the EMS was that each member of the EMS deposited 20% of its gold dollar reserves with the European Monetary Cooperation Fund (EMCF) in exchange for the equivalent value in ECUs; the idea being that authorities use ECUs rather than dollars for their exchange market interventions. Furthermore, since each ECU issued was backed by dollars and gold it was hoped that ECUs would be extensively used for settlements between EEC central banks. The responsibilities of the EMCF were taken over by the European Monetary Institute in January 1994, and by the European System of Central Banks ESCB in 1998.

An important feature of the EMS was that members had access to credit facilities enabling deficit countries to defend their exchange rate parities and manage transitory balance of payments problems. These credit facilities were as follows:

1 **Very short-term financing (VSTF)** – a credit facility which participating central banks granted to one another. Designed predominately to ensure that EMS members who found their currencies under pressure had necessary short-term support to intervene to defend their currency. This credit facility was of unlimited amount with credits and debits denominated in ECUs and the transfers made in the relevant accounts of the EMCF. However, borrowing had to be settled within 45 days with the borrower repaying loans made at relevant money-market interest rates.
2 **Short-term monetary support (STMS)** – the funds available under this credit facility were intended to meet financing needs in instances of temporary balance of payments problems. The system was based upon a system of debtor and creditor

quotas which defined each central bank's borrowing entitlement and financing obligations. Borrowing was for a duration of three months, renewable for a further two periods at the request of the borrowing central bank.

3 **Medium-term financial assistance (MTFA)** – this facility provided credits for participating countries experiencing or seriously threatened with difficulties with their balance of payments over the medium term. Each member had an obligation to grant credit up to a predetermined ceiling, but there was no formal ceiling on the amount of borrowing. Ordinarily no individual country could receive loans of more than 50% of the total committed ceilings. Medium-term loans were for periods of two to five years and conditional upon the borrower taking economic and monetary measures aimed at restoring equilibrium to its balance of payments. The conditionality attached to this facility meant that it was never used!

16.7 An assessment of the European Monetary System

Despite much initial scepticism, many economists were surprised at the resilience and relatively successful operation of the EMS. Against this, however, the system was characterized by periods of turbulence making an overall assessment quite difficult. There are two key areas upon which the EMS has been judged, firstly as a zone of currency stability and secondly as an anti-inflation zone, and we now proceed to look at each of theses issues.

Exchange rate stability in the EMS

In the early days of its operation, some critics of the system viewed the system as a 'mere crawling peg', a fixed exchange rate system with bands in which the central parities are frequently realigned. As **Table 16.3** shows, in the first four years of its operation exchange rate realignments were both frequent and quite substantial. To a large extent, the turbulence of the early years was not surprising given that the second oil shock coincided with the inception of the EMS. However, post-1984 realignments became far less frequent and the realignments much smaller. Indeed, between January 1987 and October 1992 there was 5 1/2 years of stability with only a minor devaluation of the central parity of the lira. Cheung *et al*. (1995) have shown that most realignments in the ERM can be characterized as attempts to restore international competitiveness; that is, move the exchange rate to its PPP level.

Following German reunification and the entrance of the peseta in 1989, the pound in 1990 and the escudo in April 1992, pressures started to build up in the system. In June 1992, a Danish referendum which rejected Danish participation in EMU raised doubts over continued progress towards EMU and concern in the financial markets about the commitment of certain governments towards economic convergence and the maintenance of their exchange rate parities. In particular, strain brought on by German reunification which had led to high German interest rates to finance its growing budget deficit and keep inflationary pressures under control meant that interest rates for other European countries were forced higher in order to maintain their exchange rate parities, since German interest rates effectively placed a floor on other ERM members' interest rates.

With many European economies in recession, speculators became increasingly sceptical about the commitment of governments to defend their exchange rate parities via

Table 16.3 A chronology of developments EMS to EMU

Year	Date	Event
1979	13 Mar.	EMS starts operation (±2.25% for all participants except the Italian lira ±6% band)
	24 Sep.	Deutschmark (+2%), Danish krone (–2.9%)
	30 Nov.	Danish krone (–4.76%)
1981	23 Mar.	Lira (–6%)
	5 Oct.	Deutschmark (+5.5%), guilder (+5.5%), French franc (–3%), lira (–3%)
1982	22 Feb.	Belgian franc (–8.5%), Danish krone (–3%)
	14 Jun.	Deutschmark (+4.25%), guilder (+4.25%), French franc (–5.75%), lira (–2.75%)
1983	21 Mar.	Deutschmark (+5.5%), guilder (3.5%), Danish krone (+2.5%), Belgium franc (+1.5%), French franc (–2.5%), lira (2.5%), punt (–3.5%)
1985	22 Jul.	Belgian franc (+2%), Danish krone (+2%), deutschmark (+2), Franch franc (+2%), punt (+2%), guilder (+2%), lira (–6%)
1986	7 Apr.	Deutschmark (+3%), guilder (+3%), Belgian franc (+1%), Danish Krone (+1%), French franc (–3%)
	4 Aug.	Punt (–8%)
1987	12 Jan.	Deutschmark (+3%), guilder (+3%), Belgian franc (+2%)
1989	19 Jan.	Peseta enters with ±6% band
1990	8 Jan.	Lira (–3.7%) and adopts ±2.25% band
	8 Oct.	Sterling enters with ±6% band
1992	6 Apr.	Escudo enters with ±6% band
	14 Sep.	Belgian franc (+3.5%), deutschmark (+3.5%), guilder (+3.5%), Danish krone (+3.5%), escudo (+3.5%), French franc (+3.5%), punt (+3.5%), sterling (+3.5%), lira (–3.5%)
	17 Sep.	Sterling and lira suspend membership of ERM, peseta (–5%)
	23 Nov.	Escudo (–6%), peseta (–6%)
1993	1 Feb.	Punt (–10%)
	14 May.	Peseta (–8%), escudo (–6.5%)
	2 Aug.	Widening of margins of fluctuations to ±15% for all ERM currencies, Germany and Netherlands agree to bilaterally maintain their currencies in the ±2.25% band
1995	9 Jan.	Austrian schilling enters with ±15% band
	6 Mar.	Peseta (–7%), escudo (–3.5%)
1996	14 Oct.	Finnish markka enters with ±15% band
	25 Nov.	Italian lira rejoins with ±15% band
1998	16 Mar.	Punt (+3%)
	2 May	Selection of 11 qualifying members for EMU and irrevocable fixing of bilateral exchange rates announced
1999	1 Jan.	EMU came into effect and ERM II starts with Denmark and Greece as members, ±2.25% bands
2001	1 Jan.	Greece enters EMU
2002	1 Jan.	Euro arrives on the streets
2004	28 Jun.	Estonia, Lithuania and Slovenia join ERM II with ±15% bands

Notes: (–) indicates a devaluation, (+) indicates a revaluation.

high interest rates. Doubts about the result of a French referendum on the Maastricht Treaty on 20 September 1992 led to speculative pressure building up on the Italian lira and pound sterling. As a response, both the Italian and British governments issued statements proclaiming they were committed to defend their exchange rate parities. However, due to unprecedented market pressure, the Italians were forced to accept an effective devaluation of the lira of 7% (a combined 3.5% devaluation of the lira and a 3.5% revaluation of all the other ERM currencies). However, this was regarded as insufficient by speculators and on 17 September a further wave of speculative pressure against the lira, pound and peseta led to the suspension of the pound and lira from the ERM, while the peseta was devalued by 5%.

In November 1992 further speculative attacks led to the escudo and peseta being devalued by 6%. Foreign exchange market tensions resurfaced in the first half of 1993 leading to a 10% devaluation of the Irish punt in February 1993 and an 8% devaluation of the peseta and a 6.5% devaluation of the escudo in May 1993. Further exchange rate tensions built up within the system in July 1993, and in a last-minute bid to save the system and remove potential 'one-way bets' the bands were widened from ± 2.25% to ± 15% as from 2 August 1993.

Despite these periodic crises, authors such as Artis and Taylor (1988 and 1994) have shown that both nominal exchange rates and real effective exchange rates had become less volatile for EMS currencies (kroner, Belgian franc, lira, guilder and deutschmark) than for non-EMS currencies (the pound, dollar, yen) since 1979 compared with the first six years of floating. While it is not surprising that nominal exchange rates became more stable, as this is precisely what the ERM is about, the fact that it also holds for real exchange rates is indicative of the fact that as well as providing stability for exchange rates the EMS has also led to a greater convergence of inflation rates.

One of the arguments against adopting exchange rate targets has always been that countries would be forced to adjust domestic monetary policy and interest rates to the needs of maintaining the exchange rate target. Hence, exchange rate stability would be achieved only at the cost of increased domestic instability. Interestingly, Artis and Taylor (1994) found that greater stability of exchange rates was accompanied by increased stability of domestic short-term interest rates for the ERM countries. It seems that countries derived both greater domestic and external financial stability from membership of the ERM. By contrast, Artis and Taylor report that non-ERM countries experienced both greater exchange rate and interest rate volatility post-1982.

Although the EMS resulted in less volatility of real and nominal exchange rates for its members, there is clear evidence of significant changes in the levels of real exchange rates over time, particularly in the 1980s. This is because in the 1980s France, Italy, Denmark and Ireland had higher inflation rates than Germany, and the periodic devaluations of their currencies only partly offset these differentials implying real exchange rate appreciations of their currencies against the deutschmark. In the 1990s, however, French inflation was generally below German inflation leading to much more stability of the real exchange rate.

16.8 The EMS as an anti-inflation zone

In the way of background, before we consider the anti-inflation hypothesis, it was a widely held belief that German inflation had generally been lower than that of other

EU countries because of the independent status of the German Bundesbank. The Bundesbank was given a charter in 1957 that required it to ensure price stability, enabling it to pursue tough monetary policies regardless of political pressures to inflate. Having experienced two periods of hyperinflation in the twentieth century the Germans have a high aversion to inflation. Only in the 1990s were other central banks such as the Banque de France (1993), Banca d'Italia (1992), Bank of Greece (1993), Bank of Portugal (1992), Bank of Spain (1994) and Bank of England (1998) granted similar degrees of independence.

A popular interpretation of the advantages of EMS membership was put forward by Giavazzi and Pagno (1986) and Melitz (1988). According to this interpretation one of the major advantages of ERM membership for relatively high inflation countries such as Italy and France was that participation enabled them to reduce their inflation rates more rapidly, substantially and at lower cost than if they had been non-members. According to this anti-inflation hypothesis, there are two ways that the fight against inflation was assisted by full EMS membership: (i) by giving the authorities an incentive to bring inflation under control, and (ii) by affecting private agents' wage and price behaviour.

With regard to the authorities incentives, both Italy and France (and other members) by making a commitment to peg their nominal exchange rates against the key low-inflation currency in the system – the deutschmark – in effect pledged to bring their inflation rates down to the German level. If their inflation rates remained higher than Germany's then they would be penalized by a loss of international competitiveness. Of course, they could opt for occasional devaluations to maintain their competitiveness, but if France and Italy were to do so too frequently this would signal to economic agents that the authorities were not serious in pursuing anti-inflationary policies. By making a commitment to peg their currencies to the deutschmark the authorities made a visible signal of their commitment to an anti-inflation strategy. So long as they maintained the peg (tying their hands), they gained some of the anti-inflation credibility of the Bundesbank.

The effect of agents' wage and price behaviour is connected with the authorities' incentive/credibility effect. Given that their authorities maintained the peg, economic agents in France and Italy learnt that persisting with high wage and price inflation demands made their economies uncompetitive. This ultimately would lead to job losses and an economic slowdown. Hence, workers had an incentive to lower their wage demands which in turn resulted in lower inflation. In addition, employers would resist excessive wage demands since if they believed that the authorities would maintain the exchange rate peg they would know that the resulting cost-push pressures would undermine their competitiveness in international markets.

Given the anti-inflation incentives for both the authorities and economic agents, it was argued that membership of the ERM assisted in the process of bringing down inflation compared to non-ERM membership. The Italian and French authorities by being members of the ERM were, according to the anti-inflation hypothesis, able to bring down their inflation rates more substantially and more quickly than could have been achieved without membership.

While the anti-inflation hypothesis explained what was in ERM membership for traditionally high-inflation countries, it did not explain German participation in the ERM. Germany had since the Second World War already been a low-inflation country, and the Bundesbank already had anti-inflation credibility. Melitz (1988) argues that the main gain for Germany was that while the nominal exchange rates were fixed and

other countries still had relatively high inflation rates, the Germans experienced an improvement in their international competitiveness due to the resulting real depreciation of the deutschmark.

This interpretation of the EMS suggests that all countries got something out of the system, but at a cost. The Italians and French managed to bring down their inflation rates and sustain them at lower rates than had they not joined the system, but at the expense of some loss of international competitiveness. Whereas the Germans probably accepted a marginally higher inflation rate than had they not been EMS members but were compensated by increased international competitiveness. Some empirical evidence on the validity of the anti-inflation hypothesis is presented in **Table 16.4**.

While there is no doubt that average rates of inflation came down in the EMS countries, **Table 16.4** shows that this is not by itself proof of the EMS anti-inflation hypothesis. This is because inflation rates also fell in the non-ERM countries such as the United Kingdom and the United States. In fact, starting from a similar average inflation rate in 1980, the inflation rate in the non-ERM countries was lower than in the ERM countries up to 1985. Only between 1986–91 did the ERM countries have a lower inflation rate; between 1992 and 1998 the non-ERM countries generally had a lower average inflation rate!

There have been several more formal empirical studies of the anti-inflation hypothesis. As is usual in these studies, it is not possible to prove the hypothesis that the EMS has helped to reduce inflation because it is impossible to know what would have happened in the absence of the EMS. The most popular method of seeking supporting evidence for the hypothesis has been to compare the EMS countries' inflation performance with the performance of a group of non-EMS countries as above. Obviously, such a comparison is not conclusive and the results can prove sensitive to which non-EMS countries are chosen for comparison. Urenger *et al*. (1985) undertook an empirical investigation for the EMS countries up until 1984 and found that the EMS had a significant negative effect on EMS inflation rates. However, a study by Susan Collins (1988) which compared seven EMS countries' inflation performance with 15 non-EMS countries, both during the periods 1974–78 and 1979–86, found only limited and inconclusive support for the hypothesis that the inflation rate had come down more significantly for the EMS countries for the whole of the period.

Giavazzi and Giovannini (1988) used a different methodology to test the anti-inflation hypothesis. They exploited the theoretical predictions of what is known as the Lucas critique. In a celebrated paper, Lucas (1976) argued that statistical relationships will change according to the policy regime in force. In the context of the EMS, the change in policy regime represented by the setting-up of the EMS means that the statistical parameters governing wage, price and output behaviour in the countries studied (France, Italy, Denmark and Germany) should have changed given the discipline of the EMS. Giavazzi and Giovannini did not find that the statistical relationships changed significantly if mid-1979 was taken as the starting point. If the starting point was taken from the beginning of 1982, there was some weak evidence of a change in wage and price behaviour, providing some support for the anti-inflation hypothesis. The authors suggest that because of large real depreciation of the lira and franc in 1978, the French and Italian authorities did not have to accept the EMS discipline in the early stages of the system. Furthermore, it took economic agents time to learn the implications of EMS memberships, and the authorities time to earn credibility. Only then did agents revise downwards their wage and price behaviour.

Overall, it appears that one of the reasons for the lack of conclusive support for the

Table 16.4 Inflation in ERM and non-ERM countries

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ERM countries																			
Belgium	6.7	7.1	8.7	7.7	6.3	4.9	1.3	1.6	1.2	3.1	3.4	4.2	2.2	2.5	2.4	1.3	1.8	1.5	0.9
Denmark	12.3	11.7	10.1	6.9	6.3	4.7	3.7	4.0	4.5	4.8	2.6	2.4	2.1	1.3	2.0	2.1	2.1	2.2	1.8
France	13.6	13.4	11.8	9.6	7.4	5.8	2.7	3.1	2.7	3.6	3.4	3.4	2.5	2.2	1.7	1.8	2.1	1.3	0.7
Italy	21.2	19.3	16.4	14.9	10.6	8.6	6.1	4.6	5.0	6.6	6.1	6.2	5.0	4.5	4.2	5.4	4.0	1.9	2.0
Netherlands	6.5	6.7	5.9	2.7	3.3	2.3	0.1	–0.7	0.7	1.1	2.5	3.2	2.8	1.6	2.1	1.4	1.4	1.9	1.8
Germany	5.4	6.3	5.2	3.3	2.4	2.1	–0.1	0.2	1.3	2.8	2.7	4.1	5.1	4.4	2.7	1.7	1.2	1.5	0.6
Average ERM	10.1	10.8	9.7	7.5	6.1	4.7	2.3	2.1	2.6	3.7	3.5	3.9	3.3	2.8	2.5	2.3	2.1	1.7	1.3
Non-ERM countries																			
Austria	6.3	6.8	5.4	3.3	5.7	3.2	1.7	1.4	1.9	2.6	3.3	3.1	3.4	3.2	2.7	1.6	1.8	1.2	0.8
Canada	10.2	12.4	10.8	5.8	4.3	4.0	4.2	4.4	4.0	5.0	4.8	5.6	1.5	1.9	0.2	2.2	1.6	1.6	1.0
Japan	7.8	4.9	2.7	1.9	2.3	2.0	0.6	0.1	0.7	2.3	3.1	3.2	1.7	1.3	0.7	–0.1	0.1	1.7	0.7
Norway	10.9	13.7	11.3	8.4	6.3	5.7	7.2	8.7	6.7	4.6	4.1	3.4	2.3	2.3	1.4	2.4	1.2	2.6	2.3
United Kingdom	18.0	11.9	8.6	4.6	5.0	6.1	3.4	4.1	4.9	7.8	9.5	7.5	4.2	2.5	2.0	2.7	2.5	1.8	1.6
United States	13.5	10.3	6.1	3.2	4.3	3.5	1.9	3.7	4.1	4.8	5.4	4.2	3.0	3.0	2.6	2.8	2.9	2.3	1.5
Average non-ERM	11.1	10.0	7.5	4.5	4.7	4.1	3.2	3.7	3.7	4.5	5.0	4.5	2.7	2.4	1.1	1.9	1.7	1.9	1.3

Note: (a) The above inflation rates are based on consumer price indices. (b) The UK is included as a 'non-member' although it was a member between October 1990 and September 1992. Austria is also included as a non-member although it joined the system in January 1995.
Source: OECD *World Economic Outlook*.

anti-inflation hypothesis is that for the first three years of its operation it is a seriously defective description of the EMS. The differential effects of the second oil shock made authorities very reluctant to accept the discipline of the system, as is amply illustrated by the frequent realignments and the French dash for growth in 1981. It seems that only after 1982 did policy-makers in France, Denmark, Belgium and Italy decide to subject their economies to disinflationary policies. For instance, the French government adopted an austerity package in March 1983 and the Italian authorities repealed wage indexation laws in 1984. The resulting disinflation led to both a rapid decline in EMS inflation rates and a greater degree of convergence as compared to the group of non-EMS currencies.

16.9 Intervention policy in the EMS

Although the EMS was supposed to result in more symmetry with regard to intervention through the mechanism of the ECU divergence indicator, in practice the indicator did not work particularly well. A study of intervention within the EMS by Mastropasqua and Rinaldi (1988) showed some interesting asymmetries and contrasts with respect to intervention behaviour.

The Bundesbank was generally very active with regard to non-obligatory **intra-marginal intervention**. At times, however, particularly when the system was on the verge of realignments (such as in January 1987 and the 1992/93 crises) it was prepared to engage in heavy obligatory **marginal intervention**. The Bundesbank was far more active with regard to the dollar exchange rate; it was a large seller of dollars when the dollar was appreciating during 1980–85 and a large purchaser when the dollar subsequently fell. The other ERM countries were far more active with regard to intra-marginal intervention and keeping their currencies in line with the deutschmark. Increasingly they used deutschmarks in preference to dollars for such intra-marginal intervention.

The other interesting finding was that the Bundesbank typically sterilized its interventions so that they did not affect the German monetary base. That is, purchases or sales of foreign currency that increased or decreased the German money supply were typically offset by sales or purchases of domestic bonds so as to neutralize the effect on the German monetary base. The other EMS countries normally only engaged in partial sterilization (30–40%) so that purchases or sales of foreign currency resulted in expansion and contraction of their domestic money supplies.

The overall picture that emerges is that the Bundesbank managed the external exchange rate of the ERM currencies against the dollar, while the rest of the ERM members took responsibility for ensuring that they keep their exchange rates in line with the deutschmark managing the internal parities. In addition, the Bundesbank by pursuing a sterilization policy generally did not allow its exchange rate policy to influence its money supply and its primary objective of domestic price stability. On the other hand, other ERM countries accepted the discipline of the system, by purchasing their currencies when they were weak to keep them in line with the deutschmark and permitting this intervention to result in a contraction in their money supplies.

Nevertheless, Mastropasqua and Rinaldi (1988) emphasized that intervention was only one of the means by which countries maintained their peg to the deutschmark. The most obvious means was to raise their domestic interest rates when their currencies were under pressure and lower them when the pressure receded. Here, again, there

was ample evidence that countries other than Germany undertook most of the adjustment burden, the Bundesbank proving very reluctant to reduce interest rates when the deutschmark was strong. In practice, far from being a symmetrical system it appears that weak currency members accepted the discipline of the EMS both with respect to their intervention and domestic economic policies and were prepared to accept the deflationary consequences necessary to maintain their exchange rate. In the early years of the system some of the countries found the discipline too much and realigned their currencies.

16.10 The economic performance of ERM and non-ERM countries

While there is reasonable agreement that the EMS succeeded in its aim of becoming 'a zone of currency stability', especially in comparison to currencies that have been left to float such as the dollar, yen and sterling, there is considerable disagreement over the benefits or otherwise of full EMS membership. Even if membership of the ERM helped in the fight against inflation, this may have been at the expense of countries having to adopt deflationary policies leading to lower economic growth and higher unemployment than non-members. **Table 16.5** shows that economic growth was generally lower for the ERM countries, and it can also be shown that unemployment rates were generally higher for the ERM countries as compared to the non-ERM countries.

Having completed a review of the EMS we now proceed to look in detail at the topic of Economic and Monetary Union.

16.11 What is meant by economic and monetary union?

There are two main components to an economic and monetary union between two or more countries; an exchange rate union and complete capital market integration. By an exchange rate union we mean that the countries agree to the permanent fixing of their exchange rates with no margin of fluctuation. For all intents and purposes this is equivalent to the creation of a single currency. Indeed, the creation of a single currency is the logical outcome of such a situation emphasizing the permanency of the arrangement. The second component of a monetary union is complete capital market integration, which means that all obstacles to the free movement of financial capital between the union members are removed. Furthermore, capital market integration also requires that equal treatment afforded to financial capital throughout the members of the union.

While permanently fixed exchange rates and complete capital market integration are explicit requirements for monetary union, these in turn involve some implicit requirements. One is that the members of the union harmonize their monetary policies. Differential monetary growth rates once productivity differentials have been allowed for would lead to differing inflation rates, which would threaten parity changes undermining the requirement of permanently fixed exchange rates. When a single currency is brought into circulation, it requires a union central bank to control its supply and manage the exchange rate of the currency against third country currencies. Such a central bank needs to be invested with a pool of foreign exchange reserves for this purpose.

Hence, a monetary union differs from a fixed exchange rate system in several

Table 16.5 Economic growth in ERM and non-ERM countries

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
ERM countries																			
Belgium	2.9	–0.3	1.1	2.0	1.4	2.5	1.2	1.7	4.1	3.8	4.2	1.8	1.3	–0.7	3.3	2.3	0.8	3.8	2.1
Denmark	–0.4	–0.9	3.0	2.5	4.4	4.3	3.6	0.3	1.2	0.6	1.4	1.1	0.6	0	5.5	2.8	2.5	3.0	2.5
France	1.6	1.2	2.5	0.7	1.3	1.9	2.5	2.3	4.5	4.3	2.5	1.0	1.3	–0.9	1.9	1.8	1.0	1.9	3.6
Italy	3.5	0.5	0.5	1.2	2.6	2.8	2.8	3.1	3.9	2.9	2.2	1.4	0.7	–0.9	2.3	3.0	1.0	2.0	1.7
Netherlands	1.2	–0.5	–1.2	1.7	3.3	3.1	2.8	1.4	2.6	4.7	4.1	2.4	1.5	0.7	2.9	3.0	3.0	3.8	4.3
Germany	1.0	1.0	–0.9	1.8	2.8	2.0	2.3	1.5	3.7	3.6	5.7	5.1	1.8	–1.1	2.4	1.8	0.8	1.5	1.7
Average ERM	1.6	0	0.8	1.7	2.6	2.8	2.5	1.7	3.3	3.3	3.4	2.1	1.2	–0.5	3.1	2.5	1.5	2.7	2.7
Non-ERM countries																			
Austria	2.9	–0.3	1.1	2.0	1.4	2.5	1.2	1.7	4.1	3.8	4.2	3.6	2.4	0.3	2.7	1.9	2.6	1.8	3.6
Canada	1.5	3.7	–3.2	3.2	6.3	4.8	3.3	4.2	5.0	2.4	–0.2	–2.1	0.9	2.3	4.8	2.8	1.6	4.2	4.1
Japan	2.8	3.2	3.1	2.3	3.9	4.4	2.9	4.2	6.2	4.8	5.1	3.4	1.0	0.2	1.1	1.9	3.4	1.9	–1.1
Norway	4.2	0.9	0.3	4.6	5.7	5.3	4.2	2.0	–0.5	0.9	1.9	3.6	3.3	2.7	5.3	4.4	5.3	5.2	2.6
United Kingdom	–2.2	–1.3	1.7	3.7	2.4	3.5	4.4	4.8	5.0	2.2	0.4	–1.4	0.2	2.3	4.4	2.9	2.8	3.3	3.1
United States	–0.3	2.5	–2.1	4.0	6.8	3.7	3.0	2.9	3.8	3.4	1.3	–0.2	3.3	2.7	4.0	2.5	3.7	4.5	4.2
Average non-ERM	1.5	1.5	0.2	3.3	4.4	4.0	3.2	3.3	3.9	2.9	2.1	1.2	1.9	1.8	3.7	2.7	3.2	3.5	2.8

Source: OECD *World Economic Outlook*.

fundamental respects. A monetary union is a permanent commitment to peg the exchange rate logically leading to the creation of a single currency. Fixed exchange systems allow for occasional realignments and usually permit margins of fluctuation around a central rate. A monetary union requires a well-developed institutional framework such as a single union central bank. Finally, within a monetary union financial capital must be allowed to move freely between the members of the union. This contrasts with the experience of some fixed exchange rate regimes whereby exchange rate parities are often defended only by resort to capital controls.

16.12 Benefits of economic and monetary union

The benefits and costs associated with the introduction of a single European currency – the euro – legal tender throughout the EU members of the currency union, are a mixture of political, social and economic benefits.

Stimulus to intra-EU trade

The underlying rationale of the European Union is that the removal of barriers to trade by increasing the volume of intra-EU trade will lead to a corresponding rise in the economic prosperity of its members. To maximize the trade flows between the EU member states and achieve a truly single market, it is argued that there needs to be a common medium of exchange. Differing national currencies that fluctuate against one another inhibit trade flows by increasing uncertainty facing companies which can only be eliminated by hedging techniques that entail additional (though not substantial) costs for small to medium-sized companies. This argument for a currency union in Europe is particularly important; not only are the European economies particularly open to international trade as a percentage of their gross domestic product, but also a large proportion of their trade is with each other, that is there high degree of intra-European trade.

Against this, some have argued that short-run exchange rate uncertainty can be easily hedged and probably has very little adverse effect on trade (see for example IMF, 1984), implying that the benefits from a single currency may be small. However, Peree and Steinherr (1989) have argued that the problem is not really short-term uncertainty which can be easily hedged, but rather medium to long-term uncertainty (one-year-plus horizon) for which well-developed forward markets do not exist. They find that medium to long-run exchange rate uncertainty generally exerts a significant adverse effect on international trade. As a monetary union is by definition a long-term arrangement, the adverse effects of medium to long-run exchange rate uncertainty would presumably be eliminated.

A further boost to intra-EU trade comes from the elimination of the transactions costs involved in converting different currencies for intra-EU trade. These costs involve the time and resources used up by firms acquiring and selling the requisite currencies, and banks' commission charges. The European Commission has estimated the cost savings from elimination of these transaction costs to be around 0.4% of EU GDP per annum. It should be noted, however, that this would involve smaller profits for banks. **Box 16.1** describes controversial research on the impact of monetary unions on trade flows.

Box 16.1

The impact of a monetary union on trade

In a recent and controversial paper, Rose (2000) estimated that the effects of a currency union could increase trade by as much as 300% in the countries he studied where currency unions had come into being, comparing the volumes of trade to countries that did not have a common currency. The Rose paper has come in for much criticism since it was focused on relatively poor and/or small nations that had formed currency unions and its applicability to the case of the European Union is doubtful, although it nonetheless suggests that the effects of creating a single currency in Europe could be quite significant. In a follow-up paper, Glick and Rose (2001) examine the impact of a currency union on those countries that adopt a common currency using panel data (a mix of cross-sectional and time-series data) and find that it doubles the volume of trade, a considerably lower impact than in the original Rose paper yet still highly significant. In a recent paper, Micco, Stein and Ordonez (2003) using post-1999 data argue that the euro has already increased trade in the region by 4% to 16% depending upon the particular methodology used. These estimates while significantly lower and more realistic than those of Rose (2000) and Glick and Rose (2001) are nonetheless significant and suggestive that the creation of the euro has already had a significant economic impact. They also find that the creation of the euro, as well as stimulating intra-Eurozone trade, has also increased extra-Eurozone trade (that is trade with non-Euro members). Another interesting finding is that the impact of the euro on trade flows actually really began in 1998, a whole year prior to the actual permanent fixing of exchange rates!

A more efficient allocation of factors of production within the EU

EMU involves not only the creation of a single European currency, but also the removal of capital controls and distortions to the treatment of financial capital among EU countries. There is no doubt that the free movement of capital within the EU has in the past been distorted by capital controls and differing national treatments of financial capital leading to a sub-optimal allocation within the Union. Capital controls have typically restricted capital from moving to countries where it has a low marginal productivity to countries where it has a high marginal productivity. The permanent abolition of exchange rate controls and the absence of uncertainty created by exchange rate fluctuations has undoubtedly led to a more efficient allocation of capital within the Union. Similarly, with wages and salaries expressed in terms of a common currency, EMU will result in a better allocation of labour, as labour moves from areas of low-marginal to high productivity regions.

Economizing of foreign exchange reserves and seigniorage benefits

Dollar Treasury bonds held in EU member reserves typically earn low rates of interest and their purchasing power in terms of US goods is eroded over time by US inflation. Economizing on the amount of reserves held would reduce the seigniorage benefits accruing to the USA (see Chapter 11). Some argue that EMU will reduce the total foreign exchange reserve holdings of EU countries, since there is no need to hold reserves to manage intra-EU exchange rates. Furthermore, there is a good chance that

the euro will tend to fluctuate less against third-country currencies than the individual EU currencies. The reasoning is that the average economic performance of many countries with the same currency is likely to be more stable than that of the individual countries with their own currencies, implying less need to hold foreign exchange reserves. In addition, the euro will inevitably become a major world currency, leading to an increase in the European currency component of non-EU countries' reserves primarily at the expense of the US dollar, resulting in corresponding seigniorage benefits accruing to the EU. Cohen and Wyplosz (1989) have estimated that the gains accruing to the EU from this latter effect could amount to around 0.75% of European Union gross national product.

Additional benefits are:

- **Savings in administrative costs for businesses**. This is potentially significant benefit for firms involved in managing their exchange risk and operating their businesses in many different European currencies. Different European currencies and fluctuations between them have meant that firms use up resources in having to monitor their exchange-risk exposure and in revising their pricing strategies in the different European markets. The existence of the euro has considerably reduced these costs.
- **Greater liquidity and rationalization of financial markets**. This is less talked about but potentially important benefit of EMU for the eurozone area. Prior to the euro, national government bond and equity markets, while generally very liquid, were to some extent segmented from one another. Post-EMU, all government debt of the member countries has been denominated in euros and this has made the government bond markets even more liquid and resulted in a lowering of transaction costs. Furthermore, there has already been a significant rationalization of equity markets; now company stocks are all quoted in euros with more equity business done on the most efficient exchanges. The access to cheaper sources of finance and improved liquidity for both governments and companies is a potentially significant benefit from EMU.
- **Greater price transparency**. Another gain from having a single currency is that consumers and businesses benefit from price transparency. Now that all prices in the eurozone countries are quoted in euros it is more difficult for manufacturers to maintain significant price differentials in different markets. Consumers buying from the cheapest sources will, over time, help ensure that a single pricing policy biased towards the lower end of the prices charged in different countries is adopted by many multinationals. This implies a potential benefit for consumers and businesses at the expense of reduced profits for some multinational companies.

16.13 Costs of European Monetary Union

Most of the perceived costs of EMU are not so much associated with the final attainment of monetary union, but rather with the transitional costs associated in achieving it.

- **Loss of monetary autonomy**. The use of a common currency with a European Central Bank charged with determining monetary policy and the short-term interest rate on the euro is the most visible sign of the main cost associated with EMU.

Since EMU has involved the introduction of a single currency with no capital controls, then a single short-term interest rate has prevailed in the eurozone countries. This means real dilemmas for the European Central Bank when setting interest rates, as it has to reconcile the needs of booming member states with those of member states suffering from recession. In the absence of EMU, national central banks in booming countries would typically raise the short-term interest rate to dampen economic activity, while national central banks of countries in recession would usually reduce the short-term interest rate to boost economic activity. A common interest rate in the post-EMU era may be insufficiently high to curtail economic activity in booming countries while too high to help countries in recession.

- **Loss of national macroeconomic policy autonomy**. A major argument against EMU is that the acceptance of a single currency means that countries are no longer free to determine their own monetary policies and inflation rates. In economics it is widely believed that in the short run a trade-off exists between inflation and unemployment known as the Phillips curve. Some countries prefer to have low inflation rates and are prepared to accept relatively high unemployment, while others prefer low unemployment and relatively high inflation. With floating exchange rates these different inflation preferences can be reconciled by an appreciating currency for low-inflation countries. Since a monetary union requires common inflation rates, countries with differing preferences with respect to any unemployment–inflation trade off will lose from monetary union. This argument is illustrated in **Figure 16.1** that compares the UK and eurozone Phillips curves.

  Assume that UK policy makers prefer relatively high inflation, while the Eurozone prefers less inflation. The optimal inflation-unemployment trade-off for the UK is given by P_{UK*} and U_{UK*}, while the optimal trade-off for Eurozone area

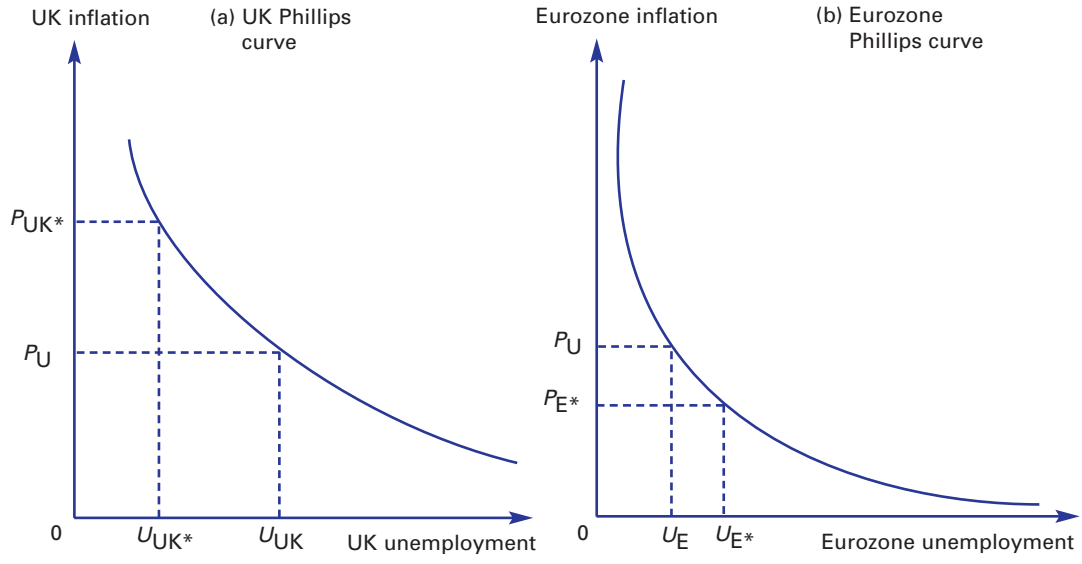

Figure 16.1 UK and eurozone Phillips curves

is P_{E^*} and U_{E^*}. In a monetary union both have to accept a common inflation rate P_{U^*}, which implies higher UK unemployment than UK policy-makers prefer, and higher eurozone inflation than the eurozone countries prefer. However, there is much debate in economics over whether Phillips curve trade-off exists. Most economists accept that in the short run such a trade-off usually exists but in the long run no such trade-off exists, with each country having a vertical Phillips curve at its natural rate of unemployment. Hence, the costs associated with the loss of national policy autonomy are probably confined to the short run.

- **Loss of inflation tax**. German agreement to EMU was crucially dependent upon guarantees of a low inflation rate in the union. For some governments, especially the 2004 Accession countries, the move to EMU is potentially costly because it is necessary to bring their inflation rates down and into line with the low eurozone rate. This undermines their implicit inflation tax revenue. In countries where there is a large amount of outstanding public debt and a large holding of the monetary base, as opposed to interest-earning bank accounts, inflation by reducing the real value of both the outstanding debt and the purchasing power of the authorities' monetary base liability effectively constitutes a tax. The lower EMU inflation rate implies a smaller inflation tax revenue for high-inflation countries meaning that their governments will have to replace the lost inflation tax with explicit direct and indirect taxes. In an analysis of this argument, Cohen and Wyplosz (1989) calculated that the taxation of the monetary base was far more significant for some countries than others. In particular, assuming a constant 5% inflation rate, the inflation tax as a percentage of GDP was 2.1% for Ireland, 3.9% for Italy and 3.5% for Spain, but only 1% for Germany, 1.1% for France and 0.7% for the UK and the Netherlands. Furthermore, since Italy and Spain are among the most heavily indebted countries, the temptation to inflate and reduce the real value of outstanding debt was higher in those countries. It should be noted that although explicit taxes tend to be politically more unpopular than hidden taxes, such as 'inflation taxes', from an economic viewpoint the replacement of inflation tax by more explicit taxes is not necessarily a bad thing!
- **Regional disparities**. Another concern over EMU is that while it will probably lead to gains for the EU as a whole, some countries could gain while others could lose. The increased movements of capital and labour associated with EMU, as factors move from low marginal productivity areas towards high productivity areas, could manifest as a regional problem with undesirable social effects. This may be particularly important with respect to labour movements, because labour that leaves low productivity areas is usually the most mobile and productive part of a region's workforce. To mitigate such adverse regional effects may require a corrective EU regional policy, with those regions and countries that gain, funding compensatory measures in regions that have lost from EMU. Although some regional disparities may emerge as a result of EMU, it is very much open to debate as to whether regional policy is the best means of alleviating the problem. Regional policies have fallen out of favour in recent years for a whole host of reasons; these include political manipulation, the diversion of funds to inefficient industries and the delaying of desirable economic adjustments. In practice, it is difficult to assess whether a region is in decline because of EMU or for other reasons.
- **Loss of the exchange rate policy instrument**. Another argument employed against EMU is that the member countries, by agreeing to a fixed exchange rate within the union, are depriving themselves of both the exchange rate policy

instrument and monetary policy instruments. Tinbergen's instruments–target rule (see Chapter 4) argued that policy-makers generally require as many independent instruments as they have targets. The loss of the exchange rate policy instrument and ability to pursue an independent monetary policy does not matter if the authorities have only one objective, because they could use fiscal policy to achieve internal balance. However, this leaves the problem of external balance. The question of whether or not the authorities are really losing a policy instrument for dealing with external equilibrium is not clear-cut. This is because for the Eurozone as a whole, there is nothing to prevent the euro floating *vis-à-vis* currencies of the rest of the world to ensure that the balance of payments of the Eurozone is kept in equilibrium. Nevertheless, overall external equilibrium for the Eurozone disguises the fact that some member countries of the Eurozone may experience persistent deficits and others persistent surpluses. The loss of the exchange rate policy instrument is therefore applicable to the individual Eurozone countries.

- **Transition costs**. There are inevitably some transition costs involved in EMU. These range from the costs of calling-in existing national notes, the printing of new notes, education and training, changing information technology systems to cope with the new currency, and altering existing automated telling machines and vending machines. The European Banking Federation (1995) estimated the costs of the transition to be 25–40 billion ECUs or roughly 2% of bank costs. These are largely 'one-off' costs, and against these we need to offset certain future benefits such as economies of scale that will result from manufacturers having to deal with only one currency and banks having to deal with less currencies, and so on.

Overall, it is clear that there are some advantages and some disadvantages attached to EMU. Even if the overall benefits of EMU exceed the overall costs this does not necessarily imply that EMU is in any sense optimal. The number of countries that would form an optimal EMU remains an open question. Another point to bear in mind is that there may well be winners and losers from EMU, and/or the benefits may be spread thinly over many millions of people throughout the Union while the losses are heavily concentrated in particular sectors. Another very important point when considering the benefits and costs associated with EMU concerns the characteristics of the new European currency. If the euro turns out to be a low-inflation and well-managed currency with responsibility for its issue in the hands of a credible, independent, well-managed European Central Bank (ECB), then the case for EMU is strengthened. If, however, the euro turns out to be a weak, inflation-prone currency run by a poorly managed European Central Bank then the case for EMU is correspondingly weakened. Finally, for past and future potential member states the precise costs and benefits depend partly on the conversion rates of their currency against the euro – to the extent that a currency is overvalued in relation to say PPP this increases the real purchasing power of the country, but against this the country may suffer a loss of competitiveness which could contribute to a post-EMU recession in that country.

16.14 A history of the road to European Monetary Union

The Rome Treaty of 1957 which created the European Economic Community (EEC) made no explicit mention of monetary union; however, the architects of the treaty no doubt envisaged the EEC eventually developing into a fully fledged economic union

with full monetary integration among its members. At the time of signing the Rome Treaty, the priority was the creation a customs union which involved the adoption of a common tariff policy *vis-à-vis* third countries and the removal of trade barriers (especially tariffs) between member countries. By 1968 much progress had been made in these areas and it was believed that a means of further increasing trade between members would be creation of a single European currency. At the Hague Summit of December 1969 the then six member countries of the EEC agreed in principle to establish complete economic and monetary union in stages, commencing in January 1971 and being completed by the end of 1980. Although in retrospect such a target seems absurdly ambitious, it must be remembered that the Bretton Woods system of fixed exchange rates had been operating with only occasional realignments for two decades.

The Werner Report

As a result of the Hague Summit of 1969, a committee was set up to investigate the subject and in 1972 it delivered the so-called Werner Report on Economic and Monetary Union. The report envisaged a fully fledged monetary union between the members of the EEC by 1980. In relation to the free movement of factors of production the report argued for the removal of all impediments and distortions to such movements. The report foresaw the conduct of fiscal and monetary policies being carried out at the community level by community institutions invested with the necessary decision-taking powers. The main aim of such institutions being to regulate the monetary and credit policies of the union and manage the external exchange rate *vis-à-vis* non-EEC currencies. Fiscal policy would be employed to ensure both economic stability and growth. Finally, community institutions would also operate regional and structural policies designed 'to contribute to the balanced development of the community'.

The main result of the Werner Report was the Snake in the Tunnel arrangement of 1972 which, as we have seen, had a very poor track record and was all but finished by 1978. Apart from being over-ambitious, there were more fundamental reasons for the failure to achieve EMU by the target date. In the first instance, the six original members were joined by Ireland, the United Kingdom and Denmark in 1973. Their accession negotiations and ensuring their successful integration into the EEC inevitably took precedence. In addition, as we saw in Chapter 11, the Bretton Woods system of fixed exchange rates broke up in 1971 and was swiftly followed by the first oil shock of 1973/4. The impact of the oil price rise was not spread evenly and coinciding with the new era of floating exchange rates meant that countries were free to adopt different policy responses. Some countries, such as the UK and Italy, adopted expansionary policies in a bid to stave off recession, while others such as Germany were determined to avoid inflation and adopted deflationary policies. With such policy divergences and resulting differential inflation rates any hope of achieving fixed exchange rate parities between European currencies was soon vanquished. During the period 1971–75 French consumer prices rose by 52%, while in Germany they rose by 34.7% and in the UK by 82.5%.

At the end of the day, the principal obstacle to monetary union was that the Heads of State that met at the Hague Summit failed to deliver the political will and commitment necessary for its achievement. To a large extent they misunderstood the full implications required to achieve EMU. Put simply, the declaration to achieve EMU only had a real chance of success if the member states were prepared to sacrifice the

macroeconomic control of their national economies to achieve common inflation objectives, and the political will to do this was never present.

EMS and the Delors Report

The EMU project was clearly flagging when in 1978 the President of the European Commission Roy Jenkins suggested that a European Monetary System be set up to provide a zone of currency stability for the European currencies. As we have seen, the EMS had a mixed performance in its early days and was not initially viewed as a vehicle for achieving EMU. However, in 1986 Europe passed the Single European Act with the aim of creating a single market by 1992. This in turn led to an inevitable debate about whether a single market would be best served by a single currency. At a meeting of the European Council in June 1988, the Heads of Government of the member countries of the EEC confirmed the long-run objective of economic and monetary union. A committee of academics and central bankers headed by Jacques Delors, President of the European Commission, was set up to investigate the EMU issue and propose a strategy for achieving EMU. The result of the deliberations was the so-called Delors Report of 1989 which set out a broad outline proposal for achieving EMU. The Delors Report emphasized that member states would have to be prepared to transfer decision-making power to Community institutions in the field of monetary policy and be bound to preset procedures and rules in other areas such as fiscal policy. In particular, it emphasized the need not only for convergent monetary policies, but also for convergent fiscal policies. The report argued that monetary union requires a single currency rather than just irrevocably fixed parities. A single currency would demonstrate the irreversibility of the move to monetary union, considerably facilitate monetary management within the community and avoid the transaction costs of converting currencies. An EU Central Bank was viewed as a necessity to operate monetary and credit policy and interest policy rather than close coordination between existing central banks. Full liberalization of capital markets and financial market integration were also viewed as essential.

The Delors Report took it for granted that the benefits of EMU exceed the costs, and it was the remit of the committee to draw up a set of proposals relating to how such a process might be achieved. The report envisaged the attainment of EMU in three stages, each stage representing a significant change with respect to the preceding one. The report did not set out explicit deadline dates, but it was subsequently decided by the European Council meeting in Madrid in June 1989 that Stage 1 would begin on 1 July 1990. Prospective dates for Stage 2 (1 January 1994) and Stage 3 (1 January 1997 or 1 January 1999) were later agreed at Maastricht and by the European Council in Madrid in December 1995. The three stages were as follows:

Stage 1: the convergence phase

The first stage lasted from 1 July 1990 to 31 December 1993 and aimed at providing the necessary foundation upon which to build EMU, especially a greater convergence of economic performance and enhancing economic and monetary coordination between member states within the existing EMS institutional framework. The main features of this stage were the completion of the Single Market project, a strengthening of community policies to iron out regional imbalances, greater cooperation and coordination of monetary and fiscal policies, the removal of obstacles to financial integration including the removal of all obstacles to the private use of the ECU, and all members of the EMS joining the ERM.

Stage 2: the transition phase

The second stage began on 1 January 1994 and represented a transition phase aimed at ensuring the readiness of national economies for the eventual permanent fixing of exchange rate parities. The second stage required amendments to the Treaty of Rome and resulted in the Maastricht Treaty. In this stage the basic organs and structure of economic and monetary union were set up involving both the revision of existing community institutions and establishment of new ones. The major institutional development in this stage was the establishment of the European Monetary Institute (EMI) in Frankfurt on 1 January 1994 to prepare the groundwork for the implementation of the final phase. The EMI had two main tasks: (i) to assist progress on economic convergence by strengthening coordination of monetary polices between EU central banks, the so-called European System of Central Banks (ESCB) with the aim of ensuring price stability, and (ii) to make preparations for the final phase, for example, by working on issues such as the statute of the Central Bank, the European System of Central Banks (ESCB), note and coin design, financial sector issues, dissemination of information, and so on.

The ESCB absorbed the previously existing monetary arrangements (the EMCF and Committee of Central Bank governors). The key task of the ESCB was to begin the transition from the coordination of independent national monetary policies to the formulation and implementation of a common monetary policy by the ESCB itself. Upon EMU in 1999, the ESCB assumed full control over the formulation and implementation of the Community's monetary policy, including day to day decisions on exchange market interventions with respect to third currencies.

Stage 3: the fixing and euro phase

The Maastricht Treaty stipulated two possible starting dates for the permanent fixing of exchange rates, either the 1 January 1997 or 1 January 1999; since the 1997 date was missed the 1 January 1999 date became *de facto* the new starting date. Members that met the so-called Maastricht conditions would move to irrevocably locked exchange rates with national currencies subsequently being replaced by the euro. From 1 January 1999 the members of the currency union became subject to a single monetary policy set by the European Central Bank. In addition, rules and procedures relating to the Community in the macroeconomic and budgetary field became binding. In particular, the Council of Ministers in cooperation with the European Parliament had the authority to take directly enforceable decisions. The European Central Bank was given full control over the formulation and implementation of the Eurozone's monetary policy.

16.15 The Maastricht Treaty

As a follow-up to the Delors Report, the Maastricht Treaty was signed in the Dutch town of Maastricht in December 1991 and, following ratification in the parliaments of all EU countries, came into force on 1 November 1993. The Maastricht Treaty was in part a collection of additions and amendments to the Treaty of Rome covering political and economic reform. It provided the legal basis to establish the institutions required for EMU; for instance, allowing the formation of a European Central Bank. The Treaty also set out the conditions under which a country would be eligible for joining EMU. Only countries that meet all four of the following conditions,

the so-called 'convergence criteria' had the right to join in EMU at the outset and these conditions also apply to the prospective new EMU entrants (see section 16.25):

1 Average consumer price inflation in the country should not be more than 1.5% above that of the three countries with the lowest inflation rates.
2 A country should not have an excessive budget deficit, with the reference rate being that it should not exceed 3% of gross domestic product.
3 The outstanding public-sector debt (national debt) of the country should not exceed 60% of gross domestic product.
4 Average nominal long-term interest rates in the year of examination should not be more than 2% above that of the three countries with the lowest inflation rates.

It should be noted that in respect of the Maastricht criteria there was two big let-out clauses. Firstly in respect of fiscal deficits a country might be permitted to join with a fiscal deficit above 3% of GDP if 'the ratio has declined substantially and continuously and reached a level that comes close to the reference value; or, alternatively, the excess over the reference value is only exceptional and temporary and the ratio remains close to the reference value'. In respect of the levels of national debt, a country might be permitted to join in EMU with national debts above 60% if 'the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace'. The latter let-out clause became very significant when the European Commission made its assessment of eligible entrants in 1998.

In addition to the four criteria, the currency of a country was expected to have respected normal margins of fluctuation and not been devalued within the ERM in the two years prior to a country joining EMU. The United Kingdom and Denmark were in a different position from the other EU countries since they were not required to join EMU even if they met the convergence criteria. The United Kingdom negotiated an 'opt-out' which was set out in a Protocol attached to the Treaty. The Protocol stated that the UK was not obliged to join Stage 3 without a separate decision by its government and Parliament. Denmark decided not to join Stage 3 but had the right to revoke this decision in accordance with its constitution. Subsequently, it was agreed that actual (not forecast!) 1997 data would be used for assessing which countries were eligible to join EMU in conjunction with forecasts for 1998, the decision being taken by a qualified majority vote in May 1998. Sweden effectively made itself ineligible for EMU entrance by not permitting the kronor to participate in the ERM system for the two years prior to EMU.

16.16 An evaluation of the Maastricht criteria

The Maastricht criteria were primarily motivated by a German desire to ensure that the qualifying members for EMU had a strong fiscal and monetary background. Having a European Central Bank with voting members made up from countries with a sound financial background was viewed as an essential foundation for ensuring that the euro would turn out to be a sound currency with similar attributes to the deutschmark. Another way of saying roughly the same thing was that the Germans were keen to exclude countries with a poor economic record and high propensity to print money when faced with economic difficulty (such as Italy and Greece). While the basic idea of including only countries with sound economies and sound fiscal

policies as a basis for ensuring a sound monetary union has significant merits, the Maastricht criteria have been subjected to numerous criticisms.

One criticism was that the Maastricht criteria were very arbitrary both in relation to the targets set and the targets chosen. The choice of 3% for the budget deficit to GDP ratio and 60% for the government debt to GDP ratio were clearly arbitrary – the limits could easily be raised to say 3.5% and 80% respectively without creating a confidence crisis and permitting more founding members. In addition, in the run-up to EMU there was evidence that some governments were massaging their fiscal deficits it meet the criteria.

Another major criticism was that the national debt criterion was not really appropriate since it looked only on the liability side, ignoring state-owned assets. A government can have a high national debt but the value of state-owned assets might mean it has a low net liability or even a positive net asset position; whereas a government with a lower national debt might have relatively few state-owned assets and a lower net asset position relative to its GDP. Many have criticized the choice of targets as being only financially oriented, having nothing to say on the real economy such as economic growth, the balance of payments and rate of unemployment. Indeed, the narrow focus on financial criteria may have imposed an excessive degree of fiscal austerity on Europe in the run-up to EMU, implying higher unemployment and lower economic growth than would otherwise have been the case.

A significant critique of the Maastricht conditions was made by De Grauwe (1996) who pointed out that countries like Italy and Belgium would have less of a public debt problem and lower fiscal deficits if they were allowed to join EMU. This is because outside of EMU they had to pay high interest rates on their public debts since financial markets feared that they would resort to printing money to repay their debts, and as such they had a significant inflation risk premium built into their interest rates. In a monetary union they would have a lower inflation premium to pay since they would not be able to print money to redeem their national debts which would be denominated in euros. In turn, lower interest rates would enable them to lower their fiscal deficits since they would reduce the financing cost of the national debt which is part of this year's fiscal deficit. In other words, high government debt countries could more easily meet the Maastricht conditions as members of EMU than if they were excluded.

A further argument against the Maastricht conditions is that the convergence criteria are not really that important and they distract attention from more important fundamental issues. The Maastricht Treaty itself has a so-called 'no-bail-out' clause that makes it clear that government debt is the responsibility of the government that issues the debt; in legal terms other member states are excluded from 'joint and several liability'. As such, it can be argued that the Maastricht conditions were not really necessary since each government that joins EMU is responsible for its own debt and governments will have to be prudent so as to ensure that their debt rating is not undermined by credit-rating agencies.

Another problem with the Maastricht conditions is that there were plenty of 'before' conditions but no 'after' conditions, which to some extent was illogical. A country might behave well before joining the monetary union to qualify for membership and then misbehave after joining. A realization of this problem motivated the Germans to demand that the Maastricht conditions be extended to cover the behaviour of countries after they joined EMU. More specifically, the Germans negotiated a so-called Stability and Growth Pact (SGP) to cover the post-EMU era.

16.17 The Stability and Growth Pact

In the run-up to EMU the German government began to realize that selling the EMU project to a sceptical German public would be extremely hard without any post-EMU guarantees on fiscal deficits. In particular, the Germans feared that countries might get their budget deficits down to meet the Maastricht fiscal criteria, but after EMU fiscal laxity would undermine confidence in the new euro.

At a summit held in Dublin in December 1996, the Germans secured the Stability and Growth Pact (SGP) designed to ensure that fiscal prudence remained in place following the start of EMU. The pact subjects countries running 'excessive' fiscal deficits (defined as a deficit above 3% of GDP) to fines unless they take action to get their deficits down. Each member state of the monetary union has to prepare a multi-annual stability programme setting out its budgetary position which requires endorsement by the Council of Economic and Finance Ministers (ECOFIN) and is made public. Implementation of the programme is monitored by the Commission and ECOFIN which can recommend policy adjustments if the plans are not adhered to.

If a country is deemed to have an 'excessive deficit' the Commission prepares a report and sends it to ECOFIN and if the Council believes the deficit to be excessive it will recommend that the member state take corrective action within four months with a view to correcting the deficit within 12 months of its occurrence. If the measures are not implemented or are deemed to be insufficient, the member state must make a non-interest-rate bearing deposit with the European Central Bank ten months after the notification. If the deficit remains excessive the deposit is converted into a fine two years later.

There are exceptions in which a deficit may be above 3% of GDP without incurring a fine. Most importantly, if the member state has suffered a sharp economic downturn defined as an annual fall of real GDP of 2%, then the deficit is considered exceptional and does not trigger any action. In general, a fall of less than 0.75% in GDP is not considered exceptional, while a fall of between 0.75% and 2% in GDP is subject to the judgment of the Council. Other exceptions include unusual events outside of the Country's control such as a national catastrophe which has a major impact on the member state's financial position.

The penalty initially takes the form of a deposit to be placed in a special Community budget account, which is convertible into a fine after two years if the country fails to bring down its annual budget deficit. The maximum penalty in any one year is 0.5% of GDP, in the first year the deposit is a fixed portion of 0.2% of GDP and a variable portion of 0.1% for every 1% above the 3% threshold. If the deficit persists in the second year, additional variable portion sanctions can be levied up to a ceiling of 0.5% of GDP. Ironically, as **Box 16.3** explains, the Germans themselves have been in breach of the SGP!

16.18 The changeover to the single currency

In November 1995 the European Monetary Institute published a document entitled 'The changeover to the Single Currency', setting out the transition process. The document envisaged three periods for the transition:

1 The first period (originally scheduled for May 1998) involved the selection of the countries that met the Maastricht criteria and were therefore eligible to join EMU.
2 A second period (1 January 1999), the permanent fixing of the bilateral rates between the member currencies and announcement of their conversion rates to the euro. At the start of the second period the European Monetary Institute was to be liquidated and be replaced by the European Central Bank and the European System of Central Banks (ESCB) comprising the ECB and existing national central banks; the purpose of the ESCB being to conduct a single monetary policy for the euro area and to maintain price stability by setting appropriate short-term interest rates for the euro. The ESCB would be responsible for both money-market and foreign-exchange operations for the euro. The Euro was to be used in banking operations alongside the existing national currencies, but one of the guiding principles of the second period was 'no compulsion, no prohibition', that is, no company/bank was to be compelled to use or prevented from using the euro or existing national currencies. This meant that banks were free to make transactions and offer services in the Euro but would only be compelled to do so in the final period. In addition all contracts denominated in ECUs were to be legally replaced by the euro on the basis of one ECU being equal to one euro.
3 A final period (starting on 1 January 2002) was the introduction of euro banknotes and coins alongside existing national notes and coins for a maximum period of six months. Both being legal tender and anyone able to exchange on demand at commercial banks or the national central banks national currency for euros. At the end of the six months and no later than 1 July 2002, it was planned that national notes would cease to be legal tender (although exchangeable for euros at national central banks) with the euro becoming the sole legal tender in the participating countries.

By and large, the timetable envisaged in the changeover plan was successfully followed. On 25 March 1998 the European Commission and European Monetary Institute published their convergence reports recommending that 11 countries, Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain be admitted to EMU. Then in May 1998 during a meeting of the Heads of State held in Brussels the formal decision was taken to admit the 11 countries and the bilateral exchange rate parities were fixed at the central rates prevailing in the ERM as shown in **Table 16.2**. It was not possible to announce the rates against the euro since the pound sterling was floating against the currencies, and since the pound was part of the ECU then the currencies were still fluctuating against the ECU. On 1 June 1998 the ECB formally came into being replacing the EMI.

On 31 December 1998 the conversion rates to the euro were announced based on the then prevailing exchange rates of the currencies against the ECU. Hence the ECU moved from being a mere calculation to a real currency called the euro at a parity of one ECU to one euro. The final announced conversion rates of the national currencies to the euro are shown in **Table 16.6**, and are the permanently irrevocably fixed rates that prevailed from that point onwards for financial market transactions and for when the national currencies were to be replaced by actual euro notes and coins as from 1 January 2002. On 19 June 2000 the Council of Ministers judged that Greece had fulfilled the convergence criteria and approved its accession to the euro area as the twelfth member starting 1 January 2001. **Box 16.2** looks at some of the logistical matters associated with bringing actual euro notes and coins into existence.

Table 16.6 Irrevocable euro conversion rates

Austria schilling	13.7603	Ireland punt	0.787564
Belgium franc	40.3399	Italy lira	1936.27
Finland markka	5.94573	Luxembourg franc	40.3399
France franc	6.55957	Netherlands guilder	2.20371
Germany deutschmark	1.95583	Portugal escudo	200.482
Greece drachma	340.750	Spain peseta	166.386

Source: European Commission.

Box 16.2

The practicalities of introducing the euro

Although EMU commenced in January 1999 with the irrevocable fixing of exchange rate parities, euro notes and coins were only actually introduced at street level on 1 January 2002. Approximately €132 billion worth of notes and €37.5 billion of euro coins were brought into circulation. The distribution of the coins required the equivalent of 1,000 one tonne trucks making the equivalent of 100,000 journeys. Some 3.2 million vending machines needed converting requiring at least one man-hour to convert each to accept new notes and coins. However, the actual introduction of euro notes and coins went surprisingly smoothly, and within 20 days there was a near 90% usage of the euro in the eurozone area.

16.19 The performance of the euro in the foreign exchange market

When the euro first came into existence it had a parity of approximately $1.17/€1 against the US dollar, and many economists expected it to strengthen. But contrary to expectations the first few years of its existence the euro exhibited a marked decline against the US dollar in the foreign exchange market. However, as **Figure 16.2** shows, the euro has since made a dramatic recovery and the US dollar has declined in value in part due to concerns about the need to correct an ever-widening US current account deficit. The euro's future looks to be bright because of the various safeguards that have been put in place to ensure that it will be a sound low-inflation currency.

16.20 The eurosystem

The overall decision-making structure and control of monetary policy in the eurozone is carried out in the framework of the eurosystem. The eurosystem comprises the ECB and the 12 national central banks (NCBs); the governing bodies of the eurosystem are the Executive Board and the Governing Council. The Executive Board consists of the president, vice-president and four directors of the ECB while the Governing Council is made up of the six members of the Executive Board and

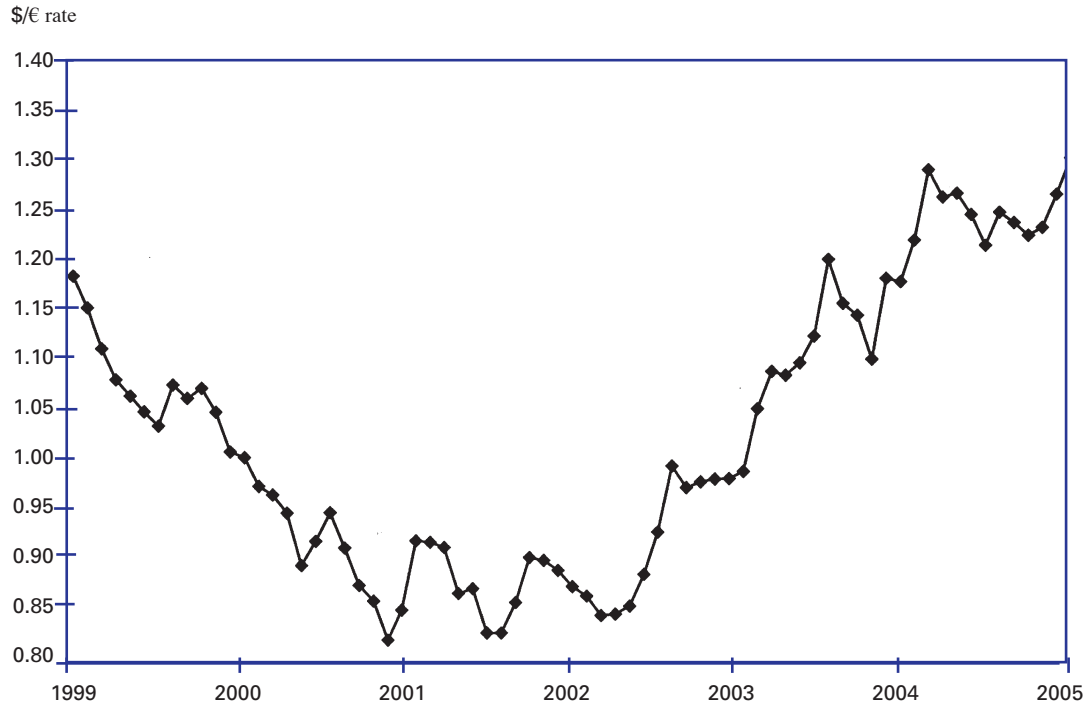

Figure 16.2 The dollar–euro exchange rate, 1999–2005

governors of the 12 NCBs. The Governing Council is the main decision-making body and formulates monetary policy for the eurozone area taking decisions on interest rates, reserve requirements and the provision of liquidity to financial markets and institutions. The Governing Council meets every two weeks in Frankfurt and each of its 18 members has one vote; the Executive Board implements decisions taken by the Governing Council including giving instructions to the 12 NCBs. So while the decision-making process is highly centralized, the implementation process is in fact quite decentralized with the NCBs carrying out the decisions in their national money markets.

The independent ECB has been set up basically modelled on the Bundesbank. Indeed, Paul De Grauwe (2003) argues that the language used by the drafters of the statutes on the ECB is tougher on inflation and political independence than the statutes of the Bundesbank. The ECB has a statutory duty to ensure price stability, and it was left to the European Central Bank to define what was meant by price stability and in its *Monthly Report* of January 1999 it defined this as keeping inflation within the range of 0–2% for the euro area as a whole, using a harmonized index of consumer prices (HICP). The objectives of the ECB are laid out in the Maastricht Treaty, in particular Article 105 makes it clear that the prime objective is price stability but it permits the ECB to 'without prejudice to the objective of price stability' to take into account general economic policies within the Eurozone area including levels of employment, but these are very much secondary to the main objective and from its *Monthly Report* it is quite clear that the ECB itself regards its sole objective as being the

maintenance of price stability. The Maastricht Treaty is very clear on the political independence of the ECB, and Article 107 states that:

> When exercising the powers and carrying out the tasks and duties conferred upon them by this Treaty . . . neither the ECB nor a national central bank, nor any member of their decision making bodies shall seek or take instructions from Community institutions or bodies, from any Government of a Member State or from any other body.

The independence of the ECB has been secured by several means. Firstly, the Maastricht Treaty conditions which can themselves only be modified by unanimous approval of all EU member states. Secondly, the minutes of its Governing Council meeting when it sets the target level of short-term interest rate for the euro are not published and neither is the voting record of its members; this protects national central bank governors from fear of job losses for not voting the way that their national governments would like. Finally, the ECB is also prohibited from printing money to finance any member state's fiscal deficit. There have been criticisms about the potential lack of accountability of the ECB, but it has made some moves to dispel such criticisms, for instance the President of the Bank holds a press conference after every meeting of the Governing Council to explain its interest rate policy and the ECB also publishes it *Monthly Report* which explains in some detail the basis of its policies.

While the ECB has a target rate of inflation between 0–2%, it has made it clear that this is a medium-term target (the precise time period is not defined) and as such it can permit this target to be exceeded in the short run. Indeed, in the first 72 months of the euro the 2% inflation target was exceeded in 36 of the months (that is, 50% of the time); however, the deviations were not generally substantial except for a period during late 2000 when in November an annual inflation rate of 2.9% was recorded. In fact in the first 72 months the annualized rate of inflation was exactly 2.01%. The ECB uses an intermediate monetary targeting system to achieve its inflation target, and in particular it has set a reference value for the rate of growth of the M3 money supply in the eurozone of 4.5% per annum, but it permits the reference value to be exceeded or undershot so long as the inflation target is likely to be met over the medium term. The main policy decision of the Governing Council is to set the *refinancing rate* which is the rate of interest at which it will provide liquidity to the banking system in exchange for eligible reserves such as euro-denominated Treasury bills.

Authors such as De Grauwe (2003) have made a number of criticisms of the inflation target; in particular, it is regarded as too low since the actual reported inflation rate may overstate the real inflation rate by anywhere from 0.5–1.5% because of quality improvements. Also, since it is an inflation target for the eurozone area as a whole there may be widely divergent inflation rates between members of the eurozone, with deflation in some and inflation above 2% in others. For further details the reader is referred to De Grauwe (2003) which provides a comprehensive analysis of many issues relating to EMU and the ECB.

Box 16.3

The Stability and Growth Pact in practice

The Stability and Growth Pact (SGP) came about very much because of German insistence that there would be fiscal restraint after the commencement of EMU, and in particular to reassure a sceptical German public that countries such as Italy, Greece, Spain and Portugal would not destabilize the new currency by running large fiscal deficits post-EMU. In practice, however, the German economy has been experiencing slow growth, high unemployment and large fiscal costs associated with reunification of West and East Germany, all of which have meant fiscal problems. In addition, the French economy has been growing relatively slowly combined with high levels of unemployment, and the result has been that, ironically, both countries have been exceeding the fiscal deficits of the SGP is shown in **Table 16.7**.

The fact that German and French fiscal deficits have exceeded the SGP requirements has led to a number of problems, the first being that initial deposit fines should have been levied on France and Germany who successfully blocked such attempts, and this has to a large extent undermined the credibility of the SGP. Fines can be imposed only when a two-thirds majority of the Council of Ministers (finance ministers) approve their imposition, and France and Germany blocked attempts by smaller countries and the Commission to impose the fines. The failure to enforce the SGP on the big countries and a feeling that the SGP imposes an unduly harsh fiscal straightjacket upon countries that need to stimulate economic growth by running larger than 3% fiscal deficits for a certain period of time, has led to an intense debate on how to reform the SGP. One suggestion is to pay attention to the size of public debt; if a country has a low level of national debt then it could be permitted to exceed the 3% fiscal deficit criterion for a period of time, whereas a country with a high national debt would be expected to keep to the 3% limit. Another suggestion is to pay more attention to the cyclically adjusted fiscal deficit; in the case where an economy is growing below trend its headline deficit may be above 3% but its cyclically adjusted deficit might be below 3%, whereas when the economy is growing above trend its headline figure may below 3% while its cyclically adjusted figure might be above 3%. Other proposals include raising the fiscal deficit above 3% to say 4%, or permitting it to average 3% over the economic cycle, thereby allowing a country to temporarily exceed 3% without necessarily incurring a fine.

Table 16.7 Fiscal deficits post-EMU of euro members

	1999	2000	2001	2002	2003	2004	2005
Austria	2.0	0.8	–0.8	0.3	0.8	0.5	0.5
Belgium	–0.5	1.0	0.5	0	0.2	–0.2	–0.7
Finland	2.2	7.1	5.2	4.3	2.1	1.6	2.1
France	–1.8	–1.4	–1.5	–3.3	–4.1	–3.8	–3.6
Germany	–1.5	1.3	–2.8	–3.5	–3.9	–3.7	–3.1
Greece	–1.8	–2.0	–1.4	–1.5	–3.0	–3.2	–2.9
Ireland	2.3	4.4	1.1	–0.1	0.2	–0.5	–0.8
Italy	–1.8	–0.7	–2.7	–2.4	–2.5	–3.1	–3.9
Luxembourg	3.7	6.3	6.3	2.7	–0.1	–1.8	–2.5
Netherlands	0.7	2.2	0	–1.6	–3.2	–3.1	–2.9
Portugal	–2.9	–2.9	–4.4	–2.7	–2.9	–3.8	–3.2
Spain	–1.2	–0.9	–0.4	–0.1	0.3	0.3	0.5
euro area	–1.3	0.1	–1.7	–2.3	–2.7	–2.8	–2.7

Source: OECD. The figures for 2005 are forecasts.

Table 16.8 Exchange Rate Mechanism II member countries

Currency	Joined in	Central rate per euro
Danish krone	Jan 1999	7.46038 ± 2.25%
Estonian krone	June 2004	15.6466 ± 15%
Lithuanian litos	June 2004	3.45280 ± 15%
Slovenian tolar	June 2004	239.640 ± 15%

Note: The Greek drachma was a member of ERM II for the period January 1999–December 2000 at a parity of 340.75 drachmas per euro, the parity at which it converted to the euro on 1 January 2001.
Source: European Commission.

16.21 The Exchange Rate Mechanism II

When the ERM I ceased to exist on 1 January 1999, ERM II came into being principally so that Greece that had not qualified for EMU and Denmark that had decided not to join EMU could continue to maintain stable currencies against the euro members. The ERM II is also relevant to the accession countries that joined the European Union in May 2004, as joining ERM II for two years is an essential precondition for participation in EMU itself. Despite having the same fluctuation bands as ERM I of ±15%, ERM II is not a carbon copy. ERM II has four key features: (1) it is based on central rates fixed for participating currencies *vis-à-vis* the euro and therefore has no parity grid – the normal band of fluctuation being ±15%, (2) obligatory interventions once margins are met, (3) the ECB and all participating 'pre-in' central banks have the right to initiate procedures to review the central rates, and (4) access to short-term financing facilities with the ECB having the right to suspend intervention and financing operations. In practice, a country that joins ERM II can request a lower margin of fluctuation, and such has been the case with Denmark that currently operates a ±2.25% band against the euro. It is envisaged that the new accession countries will spend a *minimum* of two years in ERM II prior to their adoption of the euro, and it is possible that *some* might use the narrower ±2.25% band and it is likely that they will join at central rates which will ideally be their conversion rates to the euro once they go for permanent fixing. Three of the accession countries joined ERM II, and **Table 16.8** shows the members that at the time of writing had joined ERM II; Greece was a member for two years prior to its entrance into EMU.

Box 16.4

The United Kingdom and the euro

There has been an intense debate between politicians and increasingly among the British public about whether the UK should join EMU; all three major political parties have committed themselves to holding a referendum on the matter. As well as the traditional debate about the economic costs and benefits, there is an intensely political element to the debate in the UK with many opposed to EMU on the grounds of a loss of national sovereignty. While the Labour government is committed in principle to joining the EMU, it is ambivalent on the timing ➔

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and the government decided to assess the suitability of UK entrance in relation to the so-called 'five economic tests':

(1) **Convergence** – are business cycles and economic structures compatible so that we and others could live comfortably with euro interest rates on a permanent basis?
(2) **Flexibility** – if problems emerge is there sufficient flexibility to deal with them?
(3) **Investment** – would joining EMU create better conditions for firms making long-term decisions to invest in Britain?
(4) **Financial services** – what impact would entry into EMU have on the competitive position of the UK's financial services industry, particularly the City's wholesale markets?
(5) **Growth, stability and employment** – will joining EMU promote higher growth, stability and a lasting increase in jobs?

In June 2003 the UK Treasury published 'UK membership of the single currency: An assessment of the five economic tests', based on the outcome of 18 extensive EMU studies into the above issues. The assessment argued that intra-euro area trade has increased strongly in recent years as a result of EMU by as much as 3 to 20%; that the UK could enjoy a significant boost to trade with the euro area of up to 50% over 30 years; and that UK national income could rise over a 30-year period as a result of EMU entrance by between an additional 5 to 9%. A 9% increase in national income translates into a boost to potential output of around 0.25% a year, sustained over a 30-year period. However, despite this, at the time of the assessment the UK failed the convergence criteria even though meeting the Maastricht criteria, partly because of concerns over its housing market. The flexibility criterion was also failed; even though more flexibility of labour markets has been achieved there is still quite a divergence between the UK and EU labour markets. The investment test was nearly passed with the report noting that there had been some loss in inward foreign direct investment into the UK since the start of EMU. The financial services test was met with the report believing the UK would prosper even more inside the eurozone than it currently does outside. Despite the potential for increased trade and output, the growth, stability and employment objective was not met in the short term with it being judged that the UK would be better outside of EMU than inside. In particular, a common interest rate set by the ECB and the potential constraints on the use of fiscal policy under the Stability and Growth Pact were noted. The executive summary concludes:

> Overall the Treasury assessment is that since 1997 the UK has made real progress towards meeting the five economic tests. But, on balance, though the potential benefits of increased investment, trade, a boost to financial services, growth and jobs are clear, we cannot at this point in time conclude that there is sustainable and durable convergence or sufficient flexibility to cope with any potential difficulties within the euro area. So, despite the risks and costs from delaying the benefits of joining, a clear and unambiguous case for UK membership of EMU has not at the present time been made and a decision to join now would not be in the national economic interest.

I am frequently asked by students, policy-makers and people working in the financial sector of the City of London for my views on the subject of EMU and UK entry, and in the hope of influencing a few votes I should state that I am strongly in favour of UK participation in EMU. No-one would be in favour of UK participation in EMU if the euro was to prove to be a high-inflation and low-confidence currency, but there have been numerous safeguards put

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in place to ensure that it will be a sound low-inflation currency that over time will acquire credibility in financial markets and with EU citizens. In addition, there is plenty of theoretical and empirical evidence that shows that monetary policy is not that powerful a tool in anything but the very short run at influencing output and employment, this means that giving up monetary sovereignty is not that big a deal. In addition, the medium to long-term prosperity in an economy is determined by the productivity, ingenuity, education, flexibility and other 'real things' not by the unit of money that we use in the shops! Finally, there are real savings in transaction and hedging costs for economic agents and businesses, and while the UK remains outside of the euro area there is a real risk of a loss of foreign direct investment due to the exchange risk specific to the UK. In the UK the debate tends to be very polarized and one should not exaggerate the importance of the issue; the UK economy will certainly not fall apart because it remains outside the euro area and will certainly not fall apart or boom because it joins the euro area. As for the appropriateness of the five economic tests, the less I say the better!

16.22 The accession countries and EMU

When the eight Central Eastern European Countries (CEEC) (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia) along with Malta and Cyprus joined the European Union in May 2004 they also agreed in principle to the adoption of the euro as their national currency at some time in the future, and none have an 'opt-out' arrangement such as the one negotiated by the UK. According to the European Commission and European Central Bank, the monetary integration of the CEEC economies into the euro area should be multilateral (that is involve the ECB, existing and new entrants), successive (that is in stages dependent on economic reform and progress prior to ERM II entrance) and phased (some join before others). The CEEC countries need to meet the Maastricht Treaty criteria as a precondition for joining EMU, but in addition they are also expected to achieve some real convergence which entails catching up with the rest of Europe in the process of economic development by speeding up the processes of transition and structural reform. As Ottmar Issing stated in a speech in Budapest in February 2003:

> It is important that any decision to join ERM II is consistent with an adequate level of nominal and real convergence with the euro area . . . Once in ERM II, countries will be expected to continue their convergence process until the sustainable achievement of the Maastricht criteria . . . For some countries the benefits of staying longer in ERM II could more than offset the opportunity costs . . . Optimally choosing the timing of adoption of the euro also implies reducing the differences in per capita income levels.

The addition of the real convergence criteria is interesting and it is understood to involve the catching-up of their real GDP per capita towards the community average, the implementation of structural reform and the termination of their process of transition towards market-based economies. However, the real convergence criteria have not been clearly defined although it is possible that the community will define this at some point. Lavrac and Zumer (2003) suggest that the real convergence criteria have

been added so as to give the existing eurozone countries the right to delay the entrance of some of the CEEC that might quickly have fulfilled the nominal (Maastricht) criteria should the need arise. They point out that the concept of real convergence is potentially dangerous since it could be misused to keep the CEEC out of EMU indefinitely since catching up will be a lengthy process; transition and structural reform can likewise be never-ending. For example, in 2002 only Slovenia, Cyprus and the Czech Republic had a PPP per capita GDP above 60% of the EU average, Hungary and Malta were above 50%, Estonia, Lithuania and Poland slightly above 40% and Latvia around 35%. In addition, there is a potential for a conflict between real and nominal (that is Maastricht) convergence, the latter in particular by requiring fiscal discipline and low inflation means that tight macro-polices may conflict with economic growth and employment and the process of real convergence.

The first phase of this process was the pre-accession phase prior to their admittance into the European Union in May 2004. During this phase the CEEC adopted the *acquis communautaire* in respect of EMU – this involved removal of capital controls, making their central banks independent and prohibiting their central banks from printing money to finance their fiscal deficits. During the pre-accession phase the CEEC countries were free to pursue their own independent exchange rate policies.

The second phase started with their accession to the EU in May 2004 and ends with their inclusion in the eurozone. During this phase the CEEC give up some of their monetary autonomy since their exchange rates are a matter of common concern as are their macro-economic policies (fiscal and monetary). During this period they need to avoid excessive fluctuations of their currencies and also misaligned exchange rates (such as undervaluations which would give them a competitive advantage). Prior to joining EMU they will need to have spent at least two years with their currencies inside the ERM II arrangement and not have devalued their currencies during their membership. When they are assessed to be ready to join EMU they will have no option but to join, although this is not a major concern since all CEEC countries have already expressed a commitment to join.

The third and final phase – the adoption of the euro – starts when the CEEC meet the criteria to join the eurozone, adopt the euro and cease to use their national currencies. Once they join they have similar rights and obligations as other eurozone member countries and they will need to respect the fiscal requirements of the Stability and Growth Pact and their national central banks will join in the ESCB arrangements.

While all accession countries have committed themselves to joining EMU, at the time of writing Cyprus, Lithuania, Malta, Slovenia and Estonia have committed themselves to a fast-track route of entrance, possibly 2007/08, while the others particularly those with more difficult fiscal projections are thinking more in terms of 2009/10. In terms of the Maastricht Treaty conditions, as **Table 16.9** shows it is noticeable that the accession countries do not fare too badly in term of the criteria, the main problem area is with respect to the fiscal deficit criteria where the performance of the individual countries exhibits quite a bit of variability and there is likely to be problems for some of them in meeting the criteria. The addition of some real convergence criteria might potentially present a problem, but in practice it is unlikely to be significant. The countries will attract more investment and growth once they are inside the eurozone which will actually help with the process of real convergence in the medium term.

A point of more than academic interest is that the Maastricht criteria require the

Table 16.9 The accession countries and the Maastricht criteria

	Harmonized index of consumer prices	Fiscal balance % of GDP	Public debt % of GDP	Long-term yields
Cyprus	2.8	–3.5	59.7	5.1
Czech Republic	1.4	–6.7	26.9	4.8
Estonia	3.6	1.3	5.8	7.4
Hungary	5.2	–9.2	56.3	7.1
Latvia	2.0	–3.0	14.6	5.3
Lithuania	0.4	–1.7	22.7	5.2
Malta	2.2	–6.2	66.6	5.4
Poland	1.9	–3.8	41.8	7.3
Slovakia	3.3	–7.2	44.3	7.0
Slovenia	7.5	–2.4	27.8	6.7
AC-10	2.7	–5.1	39.9	6.6
Reference value	2.9	–3.0	60.0	6.9

Notes: (a) Figures are for 2002. (b) The AC-10 figure is the accession countries' weighted average according to their GDPs. (c) The long-term bond yields are 5 or 10-year bonds or relevant proxies.
Source: Backe and Thinman (2004).

accession countries to achieve convergence of price inflation and interest rates to within 1.5% and 2% of the 'three best-performing' EU countries. Some commentators such as Kenen and Meade (2003, p. 9) are concerned that this criterion is overly burdensome and inappropriate now that EMU is in existence; they suggest that:

> The European Commission should recast the benchmarks used to assess compliance with the inflation-rate and interest-rate requirements. These should be based on the inflation rate and average long-term interest rate prevailing in the euro area, not those prevailing in the 'three best-performing' EU countries.

In addition there is the issue of whether when assessing exchange rate stability in the two years prior to joining EMU to apply the 2.25% band or the 15% band; the Commission has indicated that it would likely use the 2.25% band. However, Kenen and Meade (2003) argue that the new members need more flexibility and that the Commission should apply the 15% standard band of ERM II. The currencies will otherwise be vulnerable to speculative attacks and at risk of crisis should their currencies approach or exceed the 2.25% band.

There are important issues posed by CEEC entry into EMU for both the CEEC and the existing eurozone countries. Too-early entry of the weaker CEEC currencies into the euro could undermine confidence in the euro and require a looser European monetary policy than would otherwise be the case. There is also no doubt that with more member states joining the euro at very different levels of economic development compared to the existing members that the design of the optimal monetary and exchange rate policy becomes a more complicated task for the ECB. The CEEC will be exposed to the same sort of cost–benefit analysis that we have outlined earlier in this chapter. However, these risks should not be exaggerated, the CEEC economies are only

a small part of EU GDP and there are plenty of safeguards in place to ensure the euro will remain a low inflation currency.

16.23 Conclusions

Although the EMS was originally envisaged as a zone of monetary stability, it differed from a simple agreement to peg exchange rates in a number of important respects, such as the central role of the ECU, the setting up of a common pool of reserves, the individualization of divergence thresholds and the theoretically symmetric responsibilities for surplus and deficit countries. However, the EMS was certainly far from a monetary union. There was no European Central Bank to supply the ECU which was a mere calculation and far from a medium of exchange. The EMS transformed itself from a zone of currency stability into a credible anti-inflation zone, and its final transformation was to become a framework for achieving EMU. Its success as an anti-inflation zone can be partly explained by the fact that following the experience of the 1970s there was a greater commitment by governments to control inflation. Furthermore, the associated cost in terms of higher unemployment levels did not prove to be politically disastrous for the governments concerned. While EMS members did bring down their inflation rates, especially in the cases of Italy and France, this does not establish causality. It may well have been the case that Italy and France would have engaged in an anti-inflationary set of policies even if they had not joined the EMS.

During the 1980s and 1990s the balance of benefits and costs tipped increasingly favourably towards EMU. In the way of benefits, the single market project by tackling non-tariff barriers to trade and requiring the removal of capital controls made the usage of differing national currencies look increasingly inefficient; while the main cost associated with EMU, namely the loss of monetary policy sovereignty, had already largely been given up by members of the ERM who accepted the monetary discipline of the Bundesbank. For this reason, France and Italy became increasingly interested in EMU partly because it would give them a greater say in the conduct of monetary policy as members of the board of the European Central Bank.

The implications of EMU extend beyond the boundaries of the European Union. The euro, backed by a credible European Central Bank, is likely to acquire an important role as a major reserve currency. In 2003 the enlarged EU-25 GDP at €9,715 billion was slightly larger than the US GDP of €9,616 billion, but GDP per capita in the USA is €33,017 which is substantially higher than the EU-25 average of €21,232. In 2002 the eurozone area accounted for 15.7% of world output, lower than the 21.1% share of the United States. In addition, the eurozone area accounted for around 31.2% of world exports (excluding intra-Eurozone trade) while the USA accounted for approximately 12.4% of world exports. Against this, US capital markets are approximately twice the size of the combined EU markets, and the dollar dominance may take some time to be overcome, and some authors such as Cohen (2003) are sceptical about whether the euro will challenge the dollar as the major international currency in the foreseeable future. However, a significant shift towards the euro as a reserve currency and less holdings of dollar reserves is likely to occur over time.

There are a number of safeguards designed to ensure that the euro proves to be a sound low-inflation currency: the Maastricht convergence criteria, the Stability and Growth Pact, the independent status of the ECB with its 0–2% inflation target, and

the 'no-bail-out' Maastricht clause being among the most significant. With such safeguards in place it is somewhat surprising that the first few years of the euro were characterized by noticeable weakness in the foreign exchange market. However, despite breaches of the SGP by two of the key countries and the ECB tending to exceed its 2% inflation target, the euro has made a substantial comeback on the foreign exchange market showing that it will likely become a major reserve currency. There are still many challenges ahead for the euro and the ECB, the most pressing being the potential admission of the UK and the accession countries.

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