

The Road to Maastricht

A Brief History of the Events Leading to the European Monetary Union

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I. Introduction

January 1st, 1999 was a seminal date in a long and evolving process toward European economic integration. On that date, the eleven member states (later joined by Greece) of the European Economic and Monetary Union (EMU) adopted a single currency, the euro, irrevocably fixing their exchange rates together and coordinating all monetary policy through a single entity, the European Central Bank. This event had immense political and economic ramifications. Politically, few symbols of national sovereignty are as important and meaningful as a country's own coins and banknotes. The fact that each member of the EMU relinquished these symbols in favor of a currency shared by eleven other nations underscores the relevance of the union, given the history of the member states. Consider that countries such as France, Germany, and Italy, all of whom had been in armed conflict with one another as recently as 60 years ago, were willing to tie their economies together through a common currency. That they did so may indicate the gains they perceived could be reaped from joining together in a monetary union.

The formation of the EMU was an unprecedented event in economic terms. Never before had so many developed countries joined together in a monetary union, with the resulting economic entity rivaling the largest economies of today. The combined GDP of the EMU member countries in 2002 was \$7.6 trillion, ranking second overall to the US (\$10.4 trillion), but ahead of countries such as China (\$5.7 trillion), Japan (\$3.6 trillion), and the UK (\$1.5 trillion).¹ Furthermore, each of the EMU member states had a long-standing history of independent central banks. This, coupled with the fact that the EMU plays such an important role in the world economy, distinguishes it from other monetary unions such as the CFA Franc Zone or the East Caribbean monetary union. As such, it presents an untested laboratory on a grand scale to examine numerous economic issues ranging from the effects of exchange rate uncertainty to the coordination of monetary policy across a diverse group of nations. A further understanding of the effects of the EMU on these issues will aid not only in the continuing evolution of the EMU itself, but will also be invaluable to exploring the prospects for similar arrangements in

¹ World Bank, *World Development Indicators 2003*. See Table 1 for a complete list of EMU countries as well as GDP and inflation rates from 1990 to 2001.

other parts of the world. Will monetary unions develop in Asia, Latin America, or Africa? In part, this will depend on the success (or failure) of the EMU.

II. The Good, the Bad, and the EMU

To understand the chronology of events leading to the formation of the EMU, we must first understand the economic logic behind the decision of eleven countries to abandon their own currencies and monetary policy. What are the economic benefits and costs to a country of joining a monetary union? Two of the earliest works examining these issues are the optimum currency area studies of Mundell (1961) and McKinnon (1963). The basic argument is that the reduction in transaction costs associated with having a common currency should be balanced against the lost benefits of retaining monetary independence and exchange rate changes as an instrument of adjustment. Much of the impetus toward forming a European monetary union came from increased intra-European trade, highlighting the importance of reducing transaction costs associated with multiple currencies. An examination of the convergence criteria laid out in the Maastricht treaty indicates that the loss of independent monetary policy was a significant concern, as the criteria are aimed at synchronizing the EMU economies in order to lessen the costs of having a single monetary policy for all member states.

The most obvious benefit of joining a monetary union is the reduction in transaction costs. Separate currencies may pose a significant barrier to commodity and factor market integration. How serious are the problems associated with having multiple currencies in an area as integrated as the European Union? Anyone who has traveled extensively can sympathize with the inconvenience and costs of changing currencies when crossing borders. Tourism aside, how important are these costs to the economies of the member states involved? A study by Emerson (1990) found that commissions on currency conversion averaged across the EU were 2.5% for travelers, but fell to only 0.05% for transactions greater than five million dollars. Averaged over all transactions, currency conversion costs were approximately equal to 0.4% of GDP for the EU as a whole. Considering the economic size of this region, eliminating (or at least reducing) these costs by forming a monetary union represents a significant savings.

As the amount of trade between the members of a monetary union increases, so too does the benefit from reducing transaction costs. Said differently, if there was no trade between countries, then there would be little incentive to form a monetary union, since the transaction cost savings only apply to cross-border transactions. So how much intra-EU trade is there? Table 2 gives estimates of the total trade flows (exports plus imports) between various European countries and three trading partners: the EMU member states, a selection of European countries not in the EMU, and all countries worldwide. An estimate of the transaction costs associated with these trade flows is also given. To obtain the most conservative estimate possible, the transaction costs from currency conversion are measured as 0.05% of the trade flow value. These estimates are strictly for motivational purposes and do not attempt to accurately measure the true transaction cost savings associated with a monetary union. There are certainly cross border transactions in which currency is not converted and there is no attempt made here to quantify this. The estimates should, however, provide a rough idea of the relative magnitude of transaction cost savings. To compare trade flows and cost savings pre and post-euro, trade flows are collected for both 1996 and 2002.

As shown by Table 2, the savings associated with EMU membership are not trivial. Aggregated across the entire EMU, transaction costs associated with intra-EMU trade were approximately \$825 million in 1996. In 2002, the EMU member countries saved nearly \$900 million in trade costs. While these savings are fairly minor relative to the overall GDP of the region, they are nonetheless significant. Closer examination reveals that the countries that benefit the most in terms of transaction cost savings are the most open. The transaction cost savings as a percentage of GDP are the highest in Belgium and Luxembourg, the two most open economies in the Union. Turning our attention to the European countries outside the EMU, we see that the potential savings, while smaller, still exist. If we look at the UK, we see that the potential savings from joining the EMU would be greater than the potential savings the United States would reap, even though the US trades more than three times as much as the UK. This highlights the fact that a great deal of the UK's trade is with the rest of Europe. A benefit related to the reduction in transaction costs is that there exists a trade creation effect. The reduction in transaction costs gives EMU members a competitive advantage

over non-EMU countries that still face these costs. As a result, the amount of intra-EMU trade should increase and the amount of EMU to non-EMU trade should fall. There has been some evidence supporting this theory.² Recent studies estimate that membership in a bilateral currency union increases trade by 30-90%. There has been some criticism of the applicability of these estimates on two grounds. First, many of the estimates came from looking at currency unions that were very different from the EMU. Rose (2000) finds that members of the CFA Franc Zone or the Sterling Area traded three times as much with each other as with countries outside these currency unions. Some critics have argued that much of this is due to colonial legacies, and the trade creation effects on small developing nations will be different than that on the large developed countries in the EMU. Another problem with estimating the trade creation effects of the EMU is potential endogeneity. Does a monetary union form because its member states have a high degree of trade, or does a high degree of trade follow the formation of a monetary union? As will be seen in the discussion of the events leading to the formation of the EMU, both effects are probably at work here.

Another potential benefit of membership in a monetary union is the elimination of exchange rate uncertainty. Volatile exchange rates tend to discourage cross-border transactions, though the effect of this variable on trade may be small. Frenkel (1995) shows that while Exchange Rate uncertainty has a negative effect on the volume of trade, the reduction is minimal. This may be due to the fact that uncertain exchange rates can be hedged through forward contracts. For this very reason, however, the effect of exchange rate uncertainty on investment may not be negligible. The service life on plants and equipment generally exceeds the term life of forward hedging contracts. It may not be possible to hedge against exchange rate risk for cross-border investment. We should, therefore, expect to see membership in a monetary union be associated with increased cross-border investment.

If the chief benefits of a monetary union are the reduction in transaction costs and elimination of exchange rate uncertainty, then why not just achieve stability through fixed exchange rates? If exchange rates were credibly fixed together, with no chance of being adjusted, then the same benefits should accrue. There are several reasons why such

² See Rose (2004) for extensive survey of this literature

an arrangement may not work. Attempts in the past to replicate the benefits of a monetary union through fixed exchange rates have generally failed, and they have only functioned by imposing capital controls that may reduce efficiency and welfare. Second, the reduction in uncertainty associated with fixed exchange rates is less than that achieved with a monetary union. The reason for this is the presence of an escape clause. For example, it is highly unlikely that the state of New York will abandon the dollar, adopting its own currency. It is more likely and feasible for a country in a fixed exchange rate regime to devalue its currency. With respect to the EMU, it is much less likely that Spain would abandon the euro than devalue the peseta. Forcing all members to adopt the same currency eliminates the escape clause of currency devaluation. Obstfeld (1998) shows how the existence of such an escape clause can hamper efforts to stabilize nominal exchange rates. This is due to the fact that many of the contingencies in which an escape clause will be invoked are unobservable. As a result, uncertainty about whether or not these contingencies will be realized can hamper efforts to pin down the exchange rate.

Balanced against the benefits of monetary union are the costs, namely the welfare loss from independent monetary policy and the danger of tying many potentially disparate economies together. In many respects, the potential costs of forming a monetary union boil down to the contentious debate over the neutrality of money. If monetary policy were incapable of affecting output and unemployment, then the loss of independent monetary policy should not matter. If money is not neutral, due to coordination failures, long term contracts, or various other aspects of price rigidity, then having a common policy across member states may be quite costly. One potential cost of relinquishing independent monetary authority is the loss of seignorage revenue. This by itself may not seem like such a bad thing, especially in countries that are wary of high inflation. A larger problem is the asymmetry of the economies in the union. Suppose one country in the EMU is experiencing high inflation. The ECB may tighten monetary policy to relieve inflation in this country. However, another country in the EMU may be in the midst of a recession and the higher interest rates brought on by the ECB fighting inflation may cripple any hopes for an expansion in this region. Had the member states

been free to pursue their own policy, then the high inflation country could have tightened its policy without imposing higher rates on the economy experiencing sluggish growth.

What is the evidence on monetary neutrality across the European Union? Studies of nominal wage rigidity have found that wages are more sensitive to price changes in the EU than in the US. For example, only 14-18% of a price increase is passed on to wages in the US, while between 25-75% of the price increase is passed on to wages in the EU (Eichengreen, 1993). This implies that money is more neutral in the EU, although it still has real effects, given that there exists some wage rigidity.

The non-neutrality of money becomes less of an issue if the countries in the monetary union have highly correlated economies. Cohen and Wyplosz (1989) find that symmetric shocks are much more prevalent than asymmetric shocks for Germany and France. Weber (1991) applies their methodology to other countries in the EU, reaching similar conclusions. These studies indicate that shocks that affect one country in the EMU are likely to affect other countries in the same way, mitigating the problems of a common monetary policy on asymmetric shocks. Furthermore, these estimates are based on historical data. There is reason to believe that the EMU has caused the member states' economies to move closer together. Indeed, an examination of the convergence criteria laid out in the Maastricht treaty indicates that membership is contingent on countries setting various economic fundamentals (inflation rates, debt) in line with the rest of the union.

Some critics of the EMU have argued that it will lead to increased country specialization, increasing asymmetries across the union. The breakdown of trade barriers should, in the Ricardian tradition, lead countries to specialize in those goods for which they have a comparative advantage. For example, there is a greater incentive for a country like Spain to specialize in primary manufacturing and Germany to specialize in high technology when both countries use the same currency. Increased specialization increase the likelihood that a shock will affect countries in different ways, creating problems for a single monetary authority. While this hypothesis is plausible, the new trade theory gives us reason to believe that the amount of specialization will be limited. In the presence of scale economies and product differentiation, we may see different

varieties of the same product being produced in all locations³. So, while specialization may appear, it is unlikely that this specialization will be complete.

Prior to the formation of the EMU, many imbalances between countries were adjusted by changes in the exchange rate. The removal of this adjustment mechanism implies that other areas will now be affected. In the United States, for example, differences in real wages across states are often adjusted for by migrations of labor. Labor mobility is much lower across Europe. Various impediments such as cultural ties and language barriers make migration between EU countries more difficult than migration between US states. Eichengreen (1993) finds that even migration *within* European countries is lower than that in the US, with migratory flows between French states or between German states being only $\frac{1}{3}$ and $\frac{1}{2}$ as large as those within the US. Since imbalances can no longer be adjusted by exchange rate changes, and migratory barriers limit the ability of labor movement to adjust, the EMU may lead to increasing disparities between member states. Perhaps in deference to this issue, labor mobility has been a main tenet of the EMU and it is possible that migration may increase in the future.

Greater factor mobility may come at a price, however. The loss of monetary policy as a tool for governments to influence the economy places a greater premium on autonomous fiscal policy. Suppose a government pursued an expansionary fiscal policy today, incurring a budget deficit. Assuming rational expectations, people would foresee higher taxes in the future, causing them to move to lower tax jurisdictions and lowering the tax base. Thus, greater factor mobility reduces the effectiveness of fiscal policy. Furthermore, upper bounds placed on government debt by the Stability and Growth Pact limit how much can be done via government spending.

This section has laid out some of the benefits and costs of the European Monetary Union. It may be too early to judge whether the EMU has been more beneficial than harmful, and one could argue that the ECB has not been faced with any crises yet. What is known, however, is that twelve countries felt that the benefits of EMU membership exceeded the costs. Attempts have been made to maximize the benefits (by allowing for

³ Those familiar with the new economic geography pioneered by Krugman (1991) may wonder why a “home market effect” would not be creating a single agglomeration of industry in the largest market. While this may be possible, a more likely result is found in the “racetrack economy” of Fujita, Krugman, and Venables (1999), in which multiple agglomerations arise. The underlying assumptions leading to this result are more in line with the European Union.

free trade, encouraging factor mobility, etc.) while minimizing the costs (increased homogeneity across the union). Still, the question remains whether the benefits of having a single currency are worth the loss of monetary policy. This thesis attempts to better quantify some of the benefits of a single currency, which when added to the substantial literature on the costs of a common monetary policy, should make a significant contribution to the debate.

III. The Road to Maastricht

A common theme throughout the evolutionary history of the EMU is that increased intra-European trade led to an increased incentive to form a monetary union. The advantages of a monetary union (reduced transaction costs, increased transparency, and reduced uncertainty) are magnified as the amount of trade within the potential union increases. Thus, any study looking at the origins of a monetary union must examine the factors that led to increased trade in goods and services among the member states. In fact, one of the biggest criticisms of the empirical studies on the effect of monetary union on trade is that there is an endogeneity problem. Do monetary unions create trade or do monetary unions form because of trade? When looking at how the EMU evolved, we must give some credence to the latter statement.

The following sections trace the chronology of events that eventually led to the Maastricht Treaty of 1992, which in turn laid out the explicit process for the formation of the EMU. Section III-a looks at two attempts at monetary unions during the latter half of the 19th century. While the economic climate at this time was certainly different from that today, the experience of these unions is reflected in later attempts to form monetary unions. Section III-b looks at the events following World War II that eventually led to the formation of the European monetary union. The lessons learned from the ancestors of the EMU, such as the “Snake” and the European Monetary System (EMS), played a key role in developing the features of the EMU today. Understanding the reasons behind the successes and failures of these systems can also provide us with a template to study the EMU. Does the current system avoid the mistakes of the past? Is the current system more equipped to deal with external shocks that doomed older versions? What about the

current economic climate differs from the past? We can begin to examine these (and many other) questions with a clearer understanding of the history behind the EMU.

III-a. 19th Century Monetary Unions

The drive to establish a monetary union in Europe has existed for at least the past 140 years. There are several cases, such as Italian and German unification in 1861 and 1871 respectively, in which independent entities first formed a political union and then adopted a common currency. There have also been examples of arrangements similar to the EMU, in which several independent countries maintained their sovereignty, but shared a common currency.

One such example was the Latin Monetary Union (LMU), established in 1865 and comprised of Belgium, France, Italy, Switzerland, and later joined by Bulgaria and Greece.⁴ At the time, most monetary systems were bimetallic, using both gold and silver coinage. New discoveries of gold in California and Australia drove up the relative price of silver, increasing the incentive for arbitrageurs to exploit the different purity levels across the coins of different countries. They did this by using the policy of “free coinage,” in which anyone could bring metal to the mint and receive standard money in exchange. Arbitrageurs purchased high silver content coins with coins of lower purity. The high silver content coins were then melted down and taken back to the mint. As a result of this application of Gresham’s Law, several countries banned the use of foreign coins. For example, after Switzerland reduced the purity of its small silver coins to 80%, these coins were banned from use by the French government. This process worsened over time with repeated devaluations.

Eventually, it became apparent that adopting a common currency could get around this problem as well as lower transaction costs and increase transparency. Belgium, France, Italy, and Switzerland ratified a treaty in 1865 that established uniform sizes and purities for gold and silver coins and guaranteed the acceptance of each country’s coins for all debts, public or private. It should be noted that this system only applied to metallic coins and there was no arrangement made to standardize or universally accept each country’s banknotes.

⁴ For an extensive discussion of the LMU, see Bailey and Bae (2003)

From its inception, the LMU was plagued by divergent monetary policies among its members, a problem exacerbated by the convertibility of banknotes (which were not universally convertible) into coinage that was accepted universally. The union-wide acceptance of silver coins gave countries the opportunity to generate seigniorage revenues at the expense of the other member states, essentially exporting their inflation. Various attempts to preserve the union were made, with the member states periodically agreeing to suspend the minting of silver coins. These attempts were generally short lived, and by the end of the 19th century, it was becoming clear that the union was untenable. In fact, one of the reasons the union may have lasted as long as it did was that a country leaving the union would have had to redeem all of its silver coins in gold, something the smaller states did not believe they could afford to do. A result of this was that France, the leading state in the union, essentially subsidized the weaker states. With the outbreak of World War I in 1914 and the general suspension of gold coinage, the LMU was effectively dissolved.⁵

Another early attempt at a monetary union was the Scandinavian Currency Union (SCU), founded in 1875 and composed of Denmark, Norway, and Sweden.⁶ The SCU was created for two main reasons. First, there was a desire to increase the economic clout of the region, the notion being that a Scandinavian economy could achieve greater efficiency than a Danish or Swedish economy working separately (the whole being greater than the sum of its parts). Member states also saw the advantages of eliminating transaction costs and pooling central bank resources. A new currency was created, the gold Scandinavian kroner, and conversion rates for each country's silver currency into the gold kroner were set. Each country was permitted to freely issue subsidiary (silver) coinage, but they were required to redeem this coinage for kroner at the established conversion rates. As a result, the problem of decentralized monetary policy was somewhat mitigated. In 1885, a move to further centralize the monetary system was made by allowing the three central banks to draw on each other at par.

⁵ The LMU survived in one form or the other until 1925, but the features that made it a monetary union were essentially eliminated by 1914.

⁶ A more thorough discussion of the Scandinavian Currency Union can be found in Kærgård and Henrikson (2003)

Initially the SCU only applied to coinage, but in 1894 the central banks of Norway and Sweden agreed to accept each other's paper money at par. This, however, may have led to the ultimate decline of the currency union. At the time of the agreement, there were large discrepancies in the amount of paper currency in circulation across the SCU. In Sweden, banknotes made up over 56% of the currency in circulation, while this figure was 41% for Norway and 26% for Denmark. This imbalance, coupled with the agreement among central banks to accept each other's paper money at par put a strain on the system. Between 1904 and 1905, the Swedish Riksbank drew 20 million kroner more on the Danish Nationalbank than the reverse. This caused a strain on the Swedish bank's gold reserves, especially since there were no fees on these drafts to act as a restraining device. As a result, Sweden suspended the 1894 agreement, and a new agreement was signed setting an upper limit on debt between central banks and allowing the banks to charge fees on inter-bank drafts. The SCU continued to operate until the outbreak of WWI and the ensuing ending of the gold standard by all three countries. Divergent growth rates in money and prices following this led to the final dissolution of the union in 1920.

Both the Latin monetary union and the Scandinavian currency union provided important lessons for the EMU. While both of the former systems were similar to the EMU in that they were comprised of sovereign political entities adopting a common currency, they differed in several respects. Most importantly, there was little coordination of monetary (or fiscal) policy. This led the smaller LMU countries to "export inflation" and the SCU members to overdraw on their reserves, actions that eventually led to the downfall of the unions. Second, both unions were based on the gold standard. This provided stability and security prior to WWI, since most of the developed world adhered to the gold standard, and the price of gold did not suffer large fluctuations in this period. This changed after the outbreak of WWI and the abandonment of the gold standard, causing both unions to fail. Third, the member countries in the unions maintained their own currency, at least as a subsidiary. This provided them with an "escape clause" to deviate from the exchange rates agreed upon by the unions. By comparison, there exists no such escape clause across the EMU since the euro is the only currency used. This is one of the fundamental differences between adherence to a fixed

exchange rate and a full monetary union, a theme we will see repeated when looking at more recent attempts at establishing monetary union. Finally, whereas the EMU member states can be collectively considered as a large closed economy, the countries in the LMU and the SCU were much more like small open economies and thus more exposed and sensitive to external shocks. At the time of the SCU, exports from Denmark to Sweden were approximately 23% of GDP, whereas exports from Denmark to the UK and Germany were 39% and 32% of GDP respectively. By comparison, average exports from one EMU country to another are approximately 60% of GDP. It can thus be argued that the main reasons for the failures of the LMU and the SCU, decentralized monetary policy and exposure external shocks, are eliminated or reduced with the EMU.

III-b. From WWII to EMU

The push toward monetary union was interrupted by the first and second World Wars. Aside from the political infeasibility of a European monetary union during this time, several economic factors made the adoption of a common currency unrealistic. Most countries abandoned the gold standard at the start of WWI, leading to highly divergent growth rates in prices and money supply. European economies were dealing with a wide range of issues from hyperinflation in Germany to an overvalued currency in the UK (resulting from an ill-advised attempt to restore pre-war parity with the gold standard) to the international effects of the Great Depression. Not until the post-WWII reconstruction period did the notion of monetary union gain any attention.

Following the Second World War, the economies of many European nations were in dire need of assistance. A major source of external aid was the Marshall Plan of 1948. Under this program, the United States made aid contingent on cooperation between European governments and increased liberalization of intra-European trade and payments. Furthermore, aid was offered on a continental and not bilateral basis. Part of the reason behind the aid being structured in this way was the desire by the U.S. to have an economically strong Western Europe as a bulwark against the Soviet Union. Regardless of the motivation, the Marshall plan provided the impetus for increased intra-European trade following WWII. France, who favored punitive measures against Germany, initially opposed increased economic integration. As cold war tensions

heightened, the US and the UK increasingly pushed for an economically revitalized Germany to be firmly entrenched in the Western camp (Tsoukalis, 1997).⁷ A compromise was reached with the formation of the European Coal and Steel Community in 1952. This created a free trade area in coal and steel between France, Germany, Italy, and the Benelux countries. While this only applied to the free trade of coal and steel between these countries, it represented a first step towards greater economic integration.

The Treaty of Rome expanded economic integration with the formation of the European Economic Community (EEC) in 1957. The EEC had several objectives. First was the creation of common market in all sectors allowing for the free movement of commodities, capital, and labor. This would involve the elimination of intra-European tariffs and quotas and the establishment of a common external tariff. The EEC had several stated monetary objectives such as equilibrium in the overall balance of payments, confidence in European currencies and stable prices. However, the implementation of these objectives was not explicitly set down and no framework for policy coordination was established. Part of this was due to the fact that Keynesian ideas still held sway amongst many of the countries' policymakers, and it would have been politically unfeasible to eliminate a country's ability to make tailored fiscal policy. Perhaps in deference to this, capital controls were allowed to remain, as the free movement of capital would have undermined the effectiveness of individual policy. The lack of a push to coordinate monetary policy may have been due to the success the Bretton Woods system had enjoyed up to that time. Exchange rates were stable and most of the European countries were experiencing similar rates of inflation and growth (Arestis, McCauley, and Sawyer; 1999). Thus, most of the benefits of a monetary union were being achieved through the Bretton Woods system.

The breakdown of Bretton Woods in the 1960's, coupled with increased intra-European trade as a result of the EEC, fueled the drive toward monetary union.⁸ The EEC declared that monetary integration was an explicit objective at a summit at The Hague in December 1969 (Tsoukalis, 1997). This summit led to the Werner Report in

⁷ A contributing factor may have been the experience of Germany following the First World War. Excessively punitive measures imposed at the Treaty of Versailles left Germany economically crippled and ripe for a regime change. Restoring the German economy may have been viewed as a way to prevent the Communists from rising to power as the Nazis had done following WWI.

⁸ All tariffs on internal EEC trade had been eliminated by July, 1968 (Arestis et al, 1999)

1971, which advocated the movement to a monetary union by 1980. Elements of the Werner Report were implemented in 1972 with the introduction of “the Snake.” This mechanism limited bilateral exchange rate movements to 2.25% bands. There was no move, however, to coordinate monetary policy. One problem with this arrangement was that it placed the burden of adjustment on weak currency countries. In the end, the lack of policy coordination led to the downfall of the Snake. The first OPEC oil shock led to different levels of unemployment in different European countries. Various influences led these countries to respond in different ways, leading to different levels of inflation. As a result, some currencies were devalued, some were revalued, and some countries left the Snake altogether. The pressure put on the arrangement ultimately led to abandonment of the Snake by 1974.

This failure to stabilize exchange rates led to the creation of the European Monetary System (EMS). The EMS had three main policy objectives⁹:

1. The creation of a zone of monetary stability characterized by low inflation and stable exchange rates
2. Increased policy coordination between member states
3. Adoption of common policies toward countries outside the EMS

To achieve the first goal, the Exchange Rate Mechanism (ERM) was established. Within this mechanism was a precursor to the euro, the European Currency Unit (ECU). The ECU was a time varying weighted basket of EMS currencies. Each country’s currency had a central rate tied to the ECU and was allowed a fluctuation band around this central rate. Tying each currency to the ECU placed the burden of adjustment on all countries, since if one country’s currency deviated outside the band, then this would change the value of the ECU, forcing all countries to make adjustments. The fluctuation bands were set at $\pm 2.5\%$, while Italy was allowed a wider $\pm 6\%$ deviation.¹⁰ The ERM was an attempt to stabilize exchange rates while allowing for divergent monetary and fiscal policy. Countries were allowed to realign their central rates if policy divergences created balance of payments disequilibria. Capital controls were retained, which allowed the

⁹ European Commission, 1989

¹⁰ When the Portugal, Spain, and the UK later joined the ERM, they were permitted the wider 6% band.

countries to pursue different policies without the problem of capital flight in anticipation of realignment.

There were several flaws in the design of the ERM. First, it had the asymmetry problem of a fixed exchange rate system. Deficit countries were under pressure to deflate, while surplus countries were under no similar pressure to inflate. Second, there were speculative attacks on each country's currency. Knowing that a country would have to intervene whenever its currency reached a limit, speculators could buy or sell the currency before it reached those limits. This effectively narrowed the fluctuation bands, placing a greater burden of adjustment on weak currency countries. Another issue was that there were both low and high inflation countries in the ERM. In order to stay competitive with the low inflation countries, the high inflation countries would periodically have to devalue their currencies, realigning their central rates against the ECU. These realignments undermined the exchange rate stability goal of the ERM. Finally, the imposition of capital controls, while necessary to maintain the system, went against one of the overriding tenets of the EEC: the creation of a trading zone with the completely free movement of goods and factors of production.

Partly in response of this, the EMS was amended with the Single Europe Act (SEA) in 1987. The SEA eliminated capital controls and called for a greater coordination of economic policy. This was done through the surveillance of economic indicators across the region leading to a greater degree of EMS intervention to counter speculative attacks made possible by the liberalization of capital flows. For a time, this system accomplished its goals. Between 1979 and 1988, real exchange rates and money supplies were more stable between EMS members than between countries outside the EMS (McDonald and Taylor, 1991). The period 1987 –1992 saw convergence in inflation, interest rates, and deficits (Arestis et al, 1999).

This success, however, was soon to end. Many of the countries in Western Europe were experiencing recession in 1992. Germany, the largest economy in the EMS, was also faced with the problem of restructuring East Germany following reunification. The high cost of restructuring coupled with the anti-inflation preferences of the Bundesbank led to tight monetary policy in Germany. Without capital controls and relatively lower interest rates elsewhere in the EMS, there was a large capital flight.

Faced with large losses from remaining in the ERM, the UK and Italy both left in 1992. Other currencies were repeatedly devalued. In the end, the ERM was only salvaged in any form by retreating to a 15% fluctuation band. The damage, however, had been done.

The EMS crisis of 1992 highlighted the need for a new system. The European countries were still in the midst of a recession and looking for ways to promote recovery. The Delors Report, issued in 1989, provided one possible solution. Europe had been losing ground in new technology to the US and in old technologies to the developing world. The success of the common market in promoting recovery following WWII made it seem like the logical choice to promote recovery in the 1990's and beyond. This report attempted to facilitate this goal, while avoiding the mistakes of the past. The immediate removal of all capital controls was endorsed and advocated the complete centralization of monetary policy through an independent entity, the European Central Bank. In a political concession, countries were allowed to pursue autonomous fiscal policy, although limits on budget deficits were to be enforced.

The features of the Delors Report were adopted in the Maastricht Treaty of 1992. Movement towards a monetary union was explicitly laid out in three stages:

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| Stage I: | The removal of all capital controls, reduction of inflation and interest rate differentials, and increased stability in exchange rates. |
| Stage II: | Further policy convergence and the creation of a temporary body, the European Monetary Institute (EMI) to coordinate policy among the member country central banks. |
| Stage III: | Transfer of complete monetary policy to the ECB and the irrevocable fixing of exchange rates through a new common currency, the euro. To prevent the indefinite continuation of Stage II, Stage III would begin no later than January 1 st , 1999. |

The Maastricht treaty also laid out explicit criteria that needed to be met before any country joined the EMU. The five membership criteria are:

1. A country's average exchange rate may not deviate by more than 2.5% from its central rate for two years prior to membership
2. The inflation rate may not be more than 1.5% above the average rate of inflation of the three lowest inflation EU countries
3. Long term interest rates may not be more than 1.5% above the average interest rate of the three lowest inflation countries

4. A country's budget deficit may not exceed 3% of GDP
5. Overall government debt may not exceed 60% of GDP

These membership criteria were intended to continue to hold throughout a country's membership in the EMU. In May of 1998, the European Commission selected the countries eligible to form the EMU and January 1st, 1999 was set as the date for the complete transfer of monetary authority to the ECB. All bank transactions would be conducted in euros, and the euro was slated to replace individual country currencies by July of 2002.

Upon examination, it is clear that at least the last four convergence criteria are based on the optimum currency area work by Mundell and McKinnon. Countries may not join the monetary union until they exhibit macroeconomic fundamentals in line with the other member countries. In this way, the efficiency loss from a centralized monetary policy is reduced. Furthermore, the criteria are set so that no one country will place too high a burden on the other countries in the EMU. These features, coupled with a centralized monetary policy make the current arrangement an improvement over past attempts to create monetary unions or stabilize exchange rates.

There was a great deal of uncertainty about whether or not monetary union would proceed in the period following Maastricht. The currency crisis of 1992 left grave doubts in people's minds about the viability of a monetary union. There were concerns over the loss of sovereignty, the defeats of referenda in Denmark and the UK, and the war in Yugoslavia. In addition, many people felt that traditionally high inflation countries such as Italy and Spain would not be able to meet the convergence criteria. A poll of over 200 economic and financial forecasters conducted from 1996-1998 indicates that there were considerable doubts about some countries joining the EMU. The results of this poll are given in Table 3.

As evidenced by Table 3, there were serious doubts about some of the countries eventually joining the EMU. At the beginning of 1996, 7% of respondents thought that Spain would join, 2% thought Italy would join, and none of the respondents thought Portugal would join. Within a year, the majority (albeit a smaller one) of respondents still didn't think these traditionally high inflation countries would join. By January of

1998, however, nearly all forecasters were predicting that both countries would join. While these increases reflect the successful efforts by Italy, Portugal, and Spain to curb their inflation, the fact that most experts believed they would not join as late as two years before the EMU indicates how much uncertainty there was about the process. While the traditionally low inflation countries such as Germany and France were nearly universally thought to be forming the EMU, there were grave doubts about the ability of countries on the European “periphery” to meet the convergence criteria.

Will the EMU succeed where past arrangements have failed? Given that it has only been five years since the introduction of the euro, it may be too early to judge. There are, however, several reasons to be optimistic. First and foremost, the EMU has established a single monetary policy for all member states. With free capital movement between states, this is a necessary condition to prevent against such events as the ERM crisis of 1992. Second, the member countries are all using the same currency. Doing so removes the escape clause problem associated with fixed exchange rate regimes. Finally, the EMU member states will be committed to maintaining the arrangement as long as it proves beneficial. Early evidence has indicated that trade has increased across the union. This thesis provides some evidence on increased stability in cross border prices, increased inflows of foreign direct investment, and perhaps greater equity market integration. As the EMU continues to provide benefits to its members, the likelihood that it will remain in place increases.

There are some reasons to doubt the endurance of the EMU. There are no explicit provisions to coordinate fiscal policy. While there are limits on government deficits, the degree of fiscal policy coordination is much less than that found with monetary policy. Divergent fiscal policy may lead to divergent growth rates, exacerbating the problems caused by a common monetary policy. A second potential problem may be the economic asymmetry across the union. Germany and France are clearly the largest economies in the EMU and one could argue that if either country were to leave, the EMU would collapse. As such, the convergence criteria may not strictly apply to these countries. In fact, both countries recently announced that because of a desire to run expansionary fiscal policy, they would not meet the 3% government debt requirements. While there are provisions in place to impose fines on countries failing to meet these criteria, it is

unlikely that the weaker states in the EMU would be able to impose enough leverage on the stronger states to comply. In this sense, the EMU exists only as long as Germany and France will it to do so. Increased growth in the other EMU states may lessen this problem, however.

IV. Conclusion

The EMU has clearly been influenced by European monetary history. The success and failures of past efforts to stabilize exchange rates or establish monetary unions have shaped the current system. Further, it becomes evident that monetary union is not an exogenous goal in itself, but part of a greater push toward economic integration. By understanding the successes and failures of the past, we can better gauge the success and/or failure of the EMU as well as future attempts at economic and monetary integration, not only in Europe but also in other parts of the world.

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Table 1: GDP and Inflation Rates

	GDP (\$billions)			GDP Per Capita (\$)			Inflation (%)		
	1990	1995	2001	1990	1995	2001	1990	1995	2001
United States	5,847.92	7,488.46	9,792.59	23,444	28,280	34,322	5.40	2.81	2.83
Japan	2,371.17	2,886.65	3,261.29	19,194	23,012	25,672	3.06	-0.13	-0.73
Canada	539.34	667.03	866.67	19,407	22,724	27,883	4.76	2.17	2.53
Euro-Zone	4,996.80	6,124.31	7,548.28	17,037	20,479	24,738	4.76	2.97	2.72
Austria	147.05	186.83	228.92	19,034	23,217	28,150	3.26	2.25	2.66
Belgium	182.87	220.97	271.67	18,347	21,799	26,412	3.45	1.47	2.47
Finland	87.8	97.47	131.43	17,610	19,082	25,333	6.10	0.99	2.58
France	1,032.42	1,239.34	1,524.08	18,197	21,426	25,749	3.38	1.78	1.63
Germany	1,471.96	1,836.54	2,152.68	18,531	22,495	26,146	2.70	1.72	2.48
Greece	113.35	136.51	184.34	11,156	13,053	17,406	20.40	8.94	3.36
Ireland	43.7	63.55	124.37	12,464	17,642	32,397	3.27	2.52	4.87
Italy	1,020.37	1,237.92	1,459.19	17,990	21,640	25,181	6.50	5.24	2.79
Luxbrg.	8.66	14.13	24.71	22,688	34,508	56,022	3.70	1.92	2.67
Netherlands	271.1	335.99	436.71	18,131	21,733	27,228	2.45	1.92	4.53
Portugal	107.65	132.1	176.37	10,878	13,307	17,595	13.37	4.12	4.39
Spain	509.86	622.97	833.81	13,129	15,888	20,279	6.72	4.67	3.59
UK	970.29	1,190.97	1,478.29	16,857	20,446	25,141	9.48	3.41	1.82
Sweden	151.65	179.31	221.68	17,719	20,305	24,924	10.38	2.45	2.42
Switzerland	160.85	182.14	203.95	23,964	25,869	28,204	5.73	1.80	0.95
Norway	95.13	127.42	159.91	22,429	29,225	35,433	4.11	2.46	3.02

* Source: World Bank, *World Development Indicators* 2003. All GDP figures are in Purchasing Power Parity. Inflation is defined as the percent change in the CPI. The inflation measure for the Euro-Zone was constructed by taking a weighted average of all member countries inflation rates, where the weights were calculated as the member country's GDP divided by the total EMU-wide GDP.

Table 2: Trade Flows and Transaction Cost Savings

	1996				2002			
	World Trade	Non-EMU Trade	EMU Trade	Cost Savings	World Trade	Non-EMU Trade	EMU Trade	Cost Savings
EMU	\$3,266,741.06	\$507,485.92	\$1,651,000.48	\$825.50	\$3,703,239.94	\$548,377.58	\$1,787,725.94	\$893.86
Austria	125,114.21	12,614.96	\$76,644.73	38.32	\$135,909.61	13,869.64	80,150.28	40.08
Bel-Lxbrg.	326,339.79	44,650.35	201,932.68	100.97	433,977.16	53,539.51	262,593.38	131.30
Finland	71,421.12	20,357.12	22,449.70	11.22	77,957.71	19,022.86	25,057.56	12.53
France	558,814.95	86,763.69	292,612.15	146.31	608,667.70	90,353.13	303,442.27	151.72
Germany	982,865.51	165,317.17	432,700.94	216.35	1,064,400.13	167,100.08	433,388.33	216.69
Greece	40,298.52	4,328.03	21,745.14	10.87	43,284.58	3,572.85	18,188.39	9.09
Ireland	81,330.00	28,176.89	25,926.26	12.96	140,686.71	47,335.96	44,333.04	22.17
Italy	460,214.62	59,827.63	228,047.74	114.02	501,344.55	60,244.19	236,978.84	118.49
Netherlands	338,264.31	50,574.47	180,013.96	90.01	338,752.54	52,192.50	170,801.31	85.40
Portugal	57,302.84	7,848.64	37,799.60	18.90	66,467.57	7,507.22	46,177.45	23.09
Spain	224,775.19	27,026.98	131,127.57	65.56	291,791.70	33,639.66	166,615.10	83.31
Non-EMU	\$1,017,506.50	\$150,747.57	\$500,970.49	\$250.49	\$1,158,522.62	\$152,036.82	\$573,095.27	\$286.55
Denmark	92,010.90	23,207.51	39,449.58	19.72	104,998.06	28,469.36	47,292.48	23.65
Norway	83,264.10	28,894.69	33,745.24	16.87	94,464.18	29,713.95	38,532.85	19.27
Sweden	147,839.64	40,396.37	66,358.00	33.18	147,157.51	37,927.81	64,441.79	32.22
Switzerland	158,049.62	14,748.85	96,257.07	48.13	171,547.79	12,371.48	105,329.15	52.66
UK	536,342.23	43,500.15	265,160.60	132.58	640,355.07	43,554.21	317,498.99	158.75
USA	\$1,440,411.29	\$97,358.10	\$200,001.16	\$100.00	\$1,895,506.64	\$117,658.35	\$283,612.30	\$141.81

* *UN CommTrade Database, (2003)*. All trade flows and transaction cost savings are in millions of US dollars. Non-EMU Trade refers to a country's trade with Denmark, Norway, Sweden, Switzerland, and the UK combined. EMU trade refers to a country's trade with the twelve members of the EMU. Cost Savings are calculated by multiplying a country's EMU trade by 0.05%, representing the estimated lower limit on currency conversion commissions.

Table 3: Likelihood of Joining the EMU

Country	Date of Poll				
	January 1996	August 1996	January 1997	August 1997	January 1998
Germany	100	100	100	100	100
France	97	100	100	100	100
Netherlands	76	100	100	100	100
Belgium	79	95	100	100	100
Austria	79	93	97	96	100
Ireland	60	82	88	96	100
Spain	7	7	31	90	100
Finland	36	48	76	91	94
Portugal	0	4	32	84	97
Italy	2	3	19	67	99
Denmark	50	42	25	16	7
Sweden	7	13	13	4	11
UK	22	8	4	1	0
Greece	0	0	0	1	0

* Numbers indicate the percentage of respondents who believed a given country would join the monetary union at its outset. Shaded regions indicate that a country is not currently a member of the EMU. Greece officially joined the EMU on January 1st 2001. Source: McCauley and White (1997)