"An Evaluation of European Monetary Union in its FifthYear"

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Cenk Ünlü

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ABSTRACT

"An Evaluation of European Monetary Union In Its Fifth Year"

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This master thesis re-evaluates the costs and benefits of the EMU from a broader perspective in the light of the performance of EMU. This study tries to reveal the answers to two major questions. One: "Is entering the EMU an economically rational choice?", whilst the other question is "Did the EMU perform in line with expectations?". In order to reach the answers I briefly outline the history of the EMU and try to analyze all the aspects of costs and benefits of EMU. In addition to this, I examine the Euro area from the perspective of Optimum Currency Area Theory. Finally, I investigate the macro-economic performance of Euro area, I apply paired t-test and non-parametric Wilcoxon tests in order to test the performance of EMU member countries before and after the EMU (for the period 1994-2003). My findings reveal that entering EMU brings marginal benefits compared to the risks that it brings. In addition to this, EMU has not brought increased price stability, nor has it boosted growth, employment and intra-trade figures in the Euro zone. The rationale of EMU can only be understood if political motives are taken into account.

KISA ÖZET

"Beşinci Yılında Avrupa Para Birliğinin Değerlendirilmesi"

Hazırlayan

Cenk Ünlü

Bu mastır tezi Avrupa Para Birliği'nin beşinci yılında Avrupa Para Birliği'nin beraberinde getirdiği avantaj ve dezavantajları geniş bir perspektiften tekrar değerlendirmektedir. Bu çalışma iki önemli soruya cevap bulmaya çalışmaktadır. Bu sorulardan ilki " Avrupa Para Birliği'ne girmek ekonomik olarak rasyonel bir seçim midir?", ikincisi ise, "Avrupa Para Birliği'nin performansı beklentileri karşılamış mıdır?". Bu sorulara cevap bulabilmek için Avrupa Para Birliği'nin tahriçesini kısaca özetledikten sonra Avrupa Para Birliği'nin avantaj ve dezavantajlarını tüm yönleriyle incelemeye çalıştım. Buna ek olarak Euro Bölgesini Optimal Para Bölgesi perspektifinden inceledim. Son olarak Euro Bölgesi'nin makro-ekonomik performansını inceledim. Avrupa Para Birliği üye ülkelerinin Avrupa Para Birliği'ne girmeden önceki ve sonraki performanslarını (1994-2003 periodu) karlışaştırabilmek için "t-testi" ve "non-parametrik Wilcoxon" testlerini uyguladım. Bulgularıma göre Avrupa Para Birliği'ne girmek, getirdiği riskler göz önüne alındığında, marjinal faydalar sağlamaktadır. Buna ek olarak Avrupa Para Birliği ne fiyatlarda daha fazla istikrar sağlamıştır, ne de ekonomik büyümeyi, işsizlik oranlarını, bölge içi ticareti iyileştirmiştir. Avrupa Para Birliği'nin rasyonalitesi ancak politik motifler göz önünde bulundurulduğunda anlaşılabilir.

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CHAPTER 1

INTRODUCTION

The European Integration Process (EIP) is a unique experience that dates back to the 1950s, to the immediate aftermath of World War II. This unique experience has both political and economic aspects. Although EIP started with political aims, the economic aspects of this integration process emerged in the beginning of 1970s. The EIP experienced different levels of economic integration such as a single market, customs union and monetary union. On January 1st 1999 the exchange rates of eleven EU countries were irrevocably fixed. This event was a major step for both the European Monetary Union (EMU) and the EIP. Eventually, all the national currencies in the Euro zone were replaced by the Euro. As a result of this event, the largest currency area in the world has been created. January 1st 1999 is a major turning point not only in EU history but also in global economic history.

This historical event has started a huge debate about the future of EMU. The creation of EMU took place in a context characterized by high and persistent unemployment in all countries of continental Europe (Jacquet, 1998 p. 55). One of the most popular questions of 1999 was to ask whether EMU will bring better economic outcomes for member countries while they are fighting against unemployment. In addition to this structural unemployment problem of European countries, there were a number of shortcomings or deficiencies in the construction of EMU. Those shortcomings triggered the debates about EMU and its future. Those shortcomings have both political and economic aspects, which have been listed by Bordo & Jonung (1999) as in the following way:

1- Absence of a central lender of last resort for EMU

2- The lack of a central authority supervising the financial systems of EMU

3- Weak democratic control (accountability) of the ECB

4- Unclear and inconsistent policy directives for the ECB

5- Absence of central co-ordination of fiscal policies within EMU combined with unduly strict criteria for domestic debt and deficits as set out in the Maastricht rules and the Stability Pact in the face of asymmetric shocks

6- Euroland is not an "optimal" currency area

In this study, I wish to contribute to these debates by revealing the economic costs and benefits of EMU with its shotcomings and deficiencies, examining EMU in the light of Optimal Currency Area (OCA) Theory and focusing on the economic performance of EMU since January 1st 1999. In the last five years enough data have been accumulated to empirically test the performance of the EMU experience. This study aims to make use of this opportunity and introduce a broader perspective on the cost and benefit analyses of EMU. Throughout this study arguments for and against EMU are discussed taking various perspectives into account.

In this master thesis, I will be addressing following questions:

Is entering EMU an economically rational choice?

Did EMU perform in line with expectations?

The aim of this thesis is two fold: The first aim is to point to the fact that the road to EMU was dominated by political actors and political developments. The second chapter of this thesis is devoted to the political history of European Monetary Integration dating back to the formation of the Coal and steel Community in 1952.

The second aim is to evaluate the economic performance of the Euro zone and show that the EURO experience was not necessarily a successful economic experience. Therefore I will question the economic rationale of entering the EMU.

In order to answer these two major questions and reach the aims of this thesis, the structure of this study planned was planned in the following way. In chapter 2, I briefly outline the history of EMU and point out that the road towards EMU was neither a smooth path nor was its engine fuelled and oiled by economic concerns only. Almost every key development in the history of monetary integration was triggered by a political development. Furthermore it is either the popularly elected governments or the public itself through referenda that ultimately make the decision to enter into a monetary union. In addition to this, in this chapter, I try to figure out the nature of EMU as an economic and monetary union.

In chapter 3, I try to discuss the arguments focusing on the economic costs and benefits of EMU. In this chapter, I apply a comprehensive analytical analysis, which is weighting the economic costs and benefits of EMU. I believe that this analysis is very beneficial while evaluating the economic rationale of EMU.

In chapter 4, the Euro zone is analyzed from the perspective of OCA theory. In this chapter, I try to question whether the Euro zone is satisfying OCA theory or not. While analyzing Euro zone, McKinnon, Kenen and Mundel's OCA criteria are operationalized.

In chapter 5, I focus on the economic performance of EMU member countries before and after the implementation of EMU; also compare their performance with EU members which are not member of EMU and other developed countries such as Norway, United States and Japan. I evaluate the economic performance of EMU member countries according to following economic indicators:

1-Inflation rate

2-GDP growth rates

3-Unemployment rate

4-Intra-Trade figures

First three indicators are the key economic indicators that reflect the economic well-being or performance of a country. If a country's economy is good those first three indicators should sound good. In addition to this, arguments for

and against EMU are mainly discussed around these indicators. I apply two-tailed paired samples t tests and non-parametric Wilcoxon tests to those figures to understand the real performance of EMU. Intra-trade figures are important because it has been argued that EMU will lead to an increase in the intra-trade volumes in Euro zone as result of decreasing transaction costs, elimination of currency risk. Hence it is necessary to look at the intra-trade figures while evaluating the economic performance of EMU.

In the concluding chapter 6, I argue that the evolution of EMU cannot be explained without understanding the political motives. EMU is not basically an economic phenoumenon, it has very strong political foundations. Focusing on the economic rationale of EMU reveals this fact more clearly. In the absence of political motives, namely further economic and political integration, entering EMU is not a rational choice especially in the absence of common fiscal policy and optimal currency area.

CHAPTER 2:

A BRIEF POLITICAL HISTORY OF EUROPEAN MONETARY INTEGRATION

Monetary unification is not a recent phenomenon compared to the history of the European integration process. In fact, EIP started with the formation of the European Coal and Steel Community which was political in intent but overwhelmingly economic in content. The primary motive of the community was to subordinate 2 sectors indispensable to the war effort to a supranational organization. Therefore it is not surprising that the Rome Treaty of 1958 which established the European Economic Community mentioned monetary integration. However, Rome Treaty was not a natural consequence of the Coal and Steel Community. Political tensions in the 1950s and the onset of the cold war accelerated the move towards a further integrated Europe.

France, feeling deserted by the USA and then by the UK in Suez Canal crisis of 1956 moved closer to the Federal Republic of Germany. During the crisis De Gaulle concluded that the US was not a reliable ally and not dependable if it comes to an all-round nuclear war to defend Europe. This sentiment increased the momentum of the French nuclear program on the one hand and motivated France to embrace European Integration as a counterbalance against US supremacy. As this counter-US feeling was the French state of mind in the late 50s and early 60s, it was also true for most of the 60s when France was challenging the supremacy of the dollar under the Bretton Woods system. In fact for the French side, this state of

mind – challenging US hegemony and retaining the status of a globally influential nation – was to dominate French bids for further economic integration.[1]

Therefore it is important to survey the history of EMU not from the date of its formal debut with the Maastricht treaty but at least from 1958 Rome Treaty if not earlier. The history of European Integration is rich with commentary and analysis, and although not as rich as its political aspect, monetary integration is no exception to this richness. However it is beyond the scope of this study to provide an exhaustive history of the process. Instead, I will focus on the key developments that led to the creation and ratification of Maastricht treaty with emphasis on political concerns of key players like Germany, France and Great Britain. This brief history will demonstrate both that Maastricht and EMU are not primarily economic decisions, especially given that a single currency is not imperative for a monetary union and that monetary integration and adoption of the EURO is not the consequence of a smooth gradual process. .[2] On the contrary, the history of EMU is like a rollercoaster route with steep ups and downs, periods of stagnation and unprecedented tempo flavored by delicate political calculations on the side of influential statesmen like Marjolin, Delors, Schmidt and Giscard D'estaing amongst many others.

[1] For a more detailed account of how German and French politicians and central bankers felt and acted, two useful guides are Szasz (1999) and Padoa-Schioppa (1994). Especiall Szasz having served both Dutch Central Bank and the government both his memoirs of the era and provides an analytical discussion of the political climate of the times.

[2] For different types of monetary unions and their performances Vanssay (2002) provides an accessible survey.

In order to keep the story telling to a minimum I will organize this summary of the political history of the monetary integration around the key developments. These key events are:

- Rome Treaty (1958) and the Barre Plans,
- The Hague Summit of 1969
- Werner Report and 'the snake'.
- European Monetary System (EMS) and the Exchange Rate Mechanism (ERM) 1978-87
- Single European Act 1985-86
- Delors Report and Maastricht

Rome Treaty and Barre Plans

The Rome treaty that established European Economic Community did not envisage monetary integration. But its importance in the history of monetary integration lies elsewhere. Though the Rome Treaty did not comprise monetary integration it created an Economic Community which was "more than a customs union but less than an economic union". (Szasz 1999, 14) In this respect the treaty obliged members to ensure balance of payments, high employment levels and price stability but since there were virtually no enforcement mechanisms these obligations meant hardly more than declarations of intent which resulted in the divergence of individual economics (Szasz 1999, Padoa-Schoppa 1994). The inevitable consequence was increased pressure on exchange rate relations which was vital for common policies, the common agricultural policy (CAP) being the

most important. Rightly or wrongly, France has attached too much political importance and priority to establishing a common farm policy as a prerequisite for any further European integration. Therefore exchange rate relations which were crucial for a common policy that set the prices for farm products gained further priority for France. Maintaining CAP on the one hand and unifying European monetary policies to challenge the US on the other, France was going to push hard for monetary integration. Interestingly enough France was also going to be among the first to abandon concerted monetary efforts when crisis erupted.

Avoiding details, it should suffice to note that the revaluation of the mark and the Dutch guilder in 1961 led to the emergence of discussions concerning a single currency. Again the primary concern was how to maintain common policies, especially the CAP. By early 60s it was evident that common policies required much closer consultation and cooperation among member states in the field of exchange rate adjustments.

A detailed discussion of the common agricultural policy is beyond the scope of this study but I should note that as a price setting mechanism CAP was very difficult to manage when community members started adjusting their exchange rates. In order to avoid any member state extracting unfair advantages by devaluation, CAP included complex price calculation mechanisms that ensured right pricing. In fact, surrendering some control over economic policies like agriculture, steel and coal industries to a higher, supranational authority while keeping complete control over monetary policies was utterly incompatible. Of course any nation state by then was neither ready nor willing to give up monetary

sovereignty. (Szasz 1999, Eichengreen and Frieden 2002). According to Szasz's testimony, Dutch central bank president Haltrop defied European Commissioner Marjolin's suggestion to adopt a European currency, which would initially result from the fixation of exchange rates, on the grounds that money was 'an attribute of sovereignty'.

It is particularly interesting to receive such political opposition from a central banker who, by definition, is supposed to be a technocrat. But it is also illustrative of the political nature of the monetary integration. Giving up national currencies was not necessarily assessed in terms of surrendering monetary policy but in terms of losing sovereignty. In fact monetary integration was viewed as a technical issue when it came to economics and was preferred to budgetary integration, which was much more difficult to achieve. This concern for sovereignty prevailed until the Maastricht treaty. In brief political protectionism of national currencies was among the most influential reasons why abandoning the national currency proved very difficult. A similar experience is the German unification process. When asked about monetary unification with East Germany, Bundesbank President Pohl warned that talking about monetary union was not that easy, stating that if East Germany accepted the Deutsche mark '[it] would no longer have... a currency of its own. The GDR's currency would be managed from Frankfurt. Do you believe the GDR's government would accept that?" (Die Zeit 1990, January 26).

The difficulty of giving up the national currency is not an experience limited to the European Monetary Integration. Vanssay (2002) reports 10

successful monetary unions, 7 of which adopted a single currency. (These unions include the German unification and EMU). At some point the members of all these 7 single currency unions had to make primarily political concessions. Some had to abandon national currencies and adopt a stronger, more stable currency of the prominent member of the union. (Like East Germany adopting the Deutsche mark and Panama and Liberia adopting the US dollar in their bilateral agreements with the US.) Others had to shoulder the burden of a lesser companion, bear inflationary pressures while some unions adopted a brand new currency as in the case of EMU. Engaging in a monetary union therefore is primarily a political process requiring some difficult decisions to be made by popularly elected governments.

It is with this understanding that EMU and the early suggestions for monetary unification should be evaluated. When we think in terms of the nation state, and political importance attached to national currency as a symbol of sovereignty it is not surprising that Marjolin himself later pretended not to have suggested monetary unification.

Nevertheless, the aftermath of the Rome treaty saw some steps taken towards an organized plan or a blueprint for monetary unification in the shape of the so-called Barre Plans. Marjolin's successor as European Commissioner, Raymond Barre proposed that member states should work more closely in making exchange rate adjustments ultimately eliminating fluctuating margins. These proposals are known as the Barre Plans and they are the basis for the decisions of The Hague summit of 1969.

The Hague Summit (1969)

The Hague summit announced the intention to deepen and widen the European communities. Deepening meant the economic and monetary union based on the Barre plans and the immediate implication of widening was the removal of the French veto on the UK's entry to the Community.

Naturally the Hague summit was not merely a tribute to Barre's plans. The main stimulus for the summit was the tensions in the international monetary system and the related tensions within the community. To make a long story short, we should remember that by 1969 the Bretton Woods system and the dollar's convertibility to gold was shaking and the European economies had diverged steadily making concerted efforts to coordinate monetary policies ever more difficult. Within the European Community, Willy Brandt's Ostpolitik required a soothing medicine for the rest of the western Europe. Since any attempt to make conciliatory overtures towards the Iron Curtain was enough to raise concerns about Germany's commitment to the west, Brandt chose to agree to the Hague summit's decision to move for economic and monetary union. In this way he hoped to appease the uneasy western allies by giving the message that Federal Germany was linked to the west with a bond which was stronger than to be broken by his Ostpolitik.

Once again the history of EMU was written with political ink. The french bid to challenge US at least on the monetary realm and Germany's attempt to

normalize relations with its eastern neighbors - especially the GDR – effected, maybe even led to the call for Economic and Monetary Union.[3]

Werner Report and 'the snake'

The Hague summit led to yet another report: The Werner report of 1970 which was to become the basis for both the later Delor's report and Maastricht treaty. The Hague summit called for the creation of Economic and Monetary union yet defined neither union properly. The Werner report, resulting from the working of a committee chaired by Luxemburg Prime Minister Pierre Werner, solved the definition problem of monetary union stating that the community would

> "... form a single currency area within the international system, characterized by the total and irreversible convertibility of currencies, the elimination of margins of fluctuation of exchange rates, the irrevocable locking of parities .....including a community organization of the central banks." (Werner Report 1970)

However, although the report envisaged a European Central Bank of some sort, it did not specify its relation to member states. (e.g. whether it would be independent as the Bundesbank or not.)

[3] France's concern for the CAP was still intact, thus adding to its advocacy for establishing monetary union. France did not expect even maybe desire further deepening. Monetary union was to serve both international and community related goals. Germany, on the other hand, reluctantly acquiesced to French bids hoping that spillover effects would induce further integration in economic and political realms. France was the prime example of monetarist approach while Germany was exemplifying the economist approach which treated monetary unification without economic convergence with suspicion. (Szasz 1999)

In the field of economic union the Werner Report was again more precise than the Hague Summit. It called for centralization in specific policy areas, budgetary harmonization and stated that decision making should be at the community level.

The European Council adopted Werner Report with a resolution in 1971. In 1972 the so-called 'snake in the tunnel', or shortly the snake, went into action. The Werner report suggested that member states commit themselves to narrower exchange rate fluctuation margins between currencies of the community than the margin of fluctuation between the member currencies and the US dollar. When made into a graph, this narrower margin looked like a snake crawling in a tunnel – tunnel being the band of fluctuation against the US dollar.

The outlook of the snake was not very bright. It proved very difficult to maintain the 2.25 per cent margin of fluctuation between European currencies in the absence of a common economic policy and convergence of member economies in the wake of a new oil crisis and the demise of the Bretton Woods system.

The British were first to leave the snake in late 1972. Italy was next to follow the British in February 73. March 1973 saw the full demise of the post-war economic system of Bretton Woods when the US declared that the dollar was no more convertible to gold and let the dollar float. The tunnel now disappeared. The French left in January 1974, failing to cope with expansionary pressures. Three large states out and the snake was virtually gone. The French re-entered the snake later but only to leave it again in 1976, effectively killing the snake forever.

The European Monetary System and The Exchange Rate Mechanism

The failure of the snake, jeopardizing monetary integration prospect, seemed monumental at that time. However once again it was political concerns that led to a resurfacing of monetary integration attempts. Two large continental players' motives were once again critical. German chancellor Helmut Schmidt was feeling insecure due to the Carter administration's unpredictability (Szasz 1999, 52). Carter administration, according to Schmidt, was not very reliable either defense-wise or monetary wise. Schmidt looked for a more consolidated European defense frontier to secure itself against the communist block. This required further cooperation in other fields as well and Schmidt felt that monetary cooperation needed to be restored as a first and important step.

France on the other hand understood the need to restore monetary cooperation but having withdrawn twice from the snake, this rendered it impossible for any French government to return to the snake.

The result was the formation of the new Exchange Rate Mechanism (ERM) which introduced the European Currency Unit (ECU) and the new monetary arrangement is known as the European Monetary System in 1979. EMS proved to be much more successful than the snake although the two were not fundamentally different. The only major difference was the replacement of the parity grid with the ECU. In the parity grid each currency was assigned a central value against each other forming the so-called grid. The adjustments were done with reference to the grid. The movement of the snake depended on this fixed grid. But it was possible that a currency that devalued more than others may cause imbalances since the grid was fixed. The ECU was a basket

of member currencies which had no central value. This increased flexibility saved the EMS in the first 4 years of economic turbulence and oil crisis.

Although EMS proved to be a success unlike its predecessor, the snake, its first years were stained by successive crisis. In the first 4 years the EMS was almost crashed sharing the fate of the snake. But it survived not only due to its flexible structure but also due to higher commitment of the member states. The later period of 1983-91 was mainly the building of a limited success story: France learned to adjust its policy instead of pulling out of the system and the 1987-91 period was virtually free of exchange rate adjustments. Yet another reason, maybe as important as the above stated, is the impact of the Single European Act which in effect was the first major step towards the European Union.

Single European Act

The Single European Act (1985) which amended the Rome Treaty is a key development in the history of monetary integration. The Single European Act called for the removal of controls on the movement of goods, capital and persons within the community. The creation of a true common market increased the prospects of joining and maintaining the ERM. As the Single European Act is seen as the first major step from European Economic Community towards the European Union it is also the major step that made EMU possible by transforming EEC into a true common market.

Delors Report and Maastricht

Although the basis of monetary unification is the Werner Report (1970), which proposed an ambitious three-step transition to monetary union to be completed within a decade (Eichengreen & Frieden, 2001, p.2). However, the

collapse of the Bretton Woods system and the 1973-1974 oil crisis obstructed the success of this plan. The European Monetary System started in March 1979 at the initiative of the French President Giscard d'Estaing and the German Chancellor Schmidt, who got the support of other European countries. Although the Exchange Rate Mechanism(ERM) experienced turbulent period between 1979 and 1983, due to the number of devalutions, in the late 1980s monetary unification accelerated. European Council's Hannover Summit in June 1988 led to the establishment of a committee that should propose concrete stages leading to EMU (Eijffinger and De Haan, 2000). This committee was lead by Jacques Delors and offered the very well-known "Delors Report" that proposed a gradual process towards EMU. After Delors Report in July 1990, Stage I of EMU started with the abolition of capital controls. In December 1991. Maastrict Treaty was signed by the heads of European Union and gradually led to Economic and Monetary Union. Maastricht Treaty came into force with following convergence criteria:

A member country can join the monetary union only if:

1- Its inflation rate is not more than 1,5% higher than the average of the three lowest inflation rates in the EMS

2- Its long-term interest rate is not more than 2% higher than the average observed in the three low-inflation countries

3- It has joined the exchange rate mechanism of the EMS and has not experienced a devaluation during the two years preceding the entrance into the union

4- its government budget deficit is not higher than 3% of its GDP (if it is, it should be declining continuously and substantially and come close to the 3% norm, or alternatively, deviation from the reference value(3%) should be exceptional and temporary and remain close to the reference value

5- Its government debt should not exceed 60% of GDP (if it does it should diminish sufficiently and approach the reference value (60%) at a satisfactory pace.

German Re-unification was a determining factor for the establishment of Maastricht Treaty. During German Re-unification, EU members were really suspicious about this historical event. According to Feldstein (1997), France sees EMU and the stronger political union to which EMU will lead as an opportunity for France to be a "co-manager" of Europe as an equal of Re-united great Germany rather than being dominated by a Germany. On the other hand, France considers that the German Bundesbank's domination of European monetary policy would be replaced by the ECB, on which they both have equal number of sits and votes. In addition to this, France was hoping that, further political union through EMU will increase the power of Brussels or Strasbourg against Berlin.

On the other side, German political leaders believe that further political unification in EU through EMU will increase the prospects for peace. Chancellor Helmut Kohl, argues that Germany's reliability as a peaceful neighbour will be enhanced if it is contained within a strong European confederation. Germany sees herself as as natural leader in EU because of its economic weight, military capability and central location in European Union ,which will include Poland, Czech Republic and Hungary in the near future. Germany knows that she can

pursue its domination on monetary policy within EMU. One of the most important signs of this fact is the implementation of Stability Pact that was accepted at the December 1996 Dublin European Council summit meeting.

In January 1994, Stage II of EMU started with the establishment of European Monetary Institute. In June 1997, Pact of Stability and Growth confirmed in Amsterdam. In June 1998, ECB and ESCB have been established. Article 105 of Maastricht Treaty defines the basic tasks of ESCB as in the following way:

1-to define and implement the monetary policy of the Community

2-to conduct foreign exchange operations consistent with the provisions of Article 109;

3-to hold and manage the official foreign reserves of the member states;

4-to promote the smooth operation of payment system

It is clear that the ESCB is the only authorized body, which is in charge of decision-making on monetary policy issues in the Euro zone and the implementation of these polices. Abandoning national currencies in favor of the Euro means giving up a key tool that is necessary to pursue an independent economic and budget policy for members of EMU. Also, adopting Euro annihilate the control of monetary policies by national central banks. ECB and ESCB are the only responsible institutions in EMU for deciding and implementing the monetary policy on the Euro currency zone. It means that interest rates, money supply and

other monetary decisions will be taken and implemented by ECB and ESCB rather than national central banks. It is clear that a key tool in guiding national economy has been abandoned. Members of the Euro zone are not allowed to change the price of its currency by devaluation and revaluation or determine the quantity of national money in circulation. In addition to this, key monetary decisions such as interest rates and money supply that boost or slow down economy, will be taken by ECB.

Eventually, in January 1999, Stage III started with the birth of the new currency, Euro. From 1 January 1999 to 31 December 2001, national currencies continued to circulate at irrevocably fixed exchanged rates. However, financial transactions among commercial banks and central banks were in Euro. In addition to this, governments issued bonds in Euro, not in their national currencies. In January 2002, the first Euro was issued in the Euro zone. In July 2002, the Euro replaced all the currencies in the Euro zone and became the only currency in the Euro zone that is managed by the European Central Bank (ECB).

Structure of EMU

The evolution of the EMU gives important hints about the nature of economic and monetary integration. The nature of economic and monetary union is very important while discussing the costs and benefits of EMU. Looking at the stages of EMU, it is possible to conclude that the EMU contains common market, financial and capital liberalization, monetary union and the central management of monetary policy. However, fiscal union is missing in the EMU case.

Various academics, mentioned fiscal union as an indispensable part of economic union in the following way:

> "Complete economic unions: which are common markets that ask for complete unification of monetary and fiscal policies, i.e., a central authority is introduced to exercise control over these matters so that existing member nations effectively become regions of one nation" (El-Agraa, 1990; p.2).

An economic union involves not only product markets, which are integrated, but a high degree of integration of monetary, fiscal and other policies as well (Robson, 1993).

Full economic union is more than a common market, monetary union and economic union. Full economic union should cover macroeconomic policies, income distribution, common trade policies, and monetary policy. In other words full economic union is the complete unification of economies. (Molle, 1990)

As can be seen, the EMU is far away from satisfying the conditions of an economic union. According to Delors Report there is economic and monetary dichotomy in the definition of economic union. Economic union was defined as: (a) a common market, (b) policies strengthening competition and the market mechanism, (c) common policies aimed at the structural change and regional development, and (d) macroeconomic policy coordination including binding rules for budgetary policies (Delors Report, 1989; p.20)

On the other hand, monetary union has been defined as in the following way: (a) a currency area in which policies are managed jointly with a view of

attaining common macroeconomic objectives, (b) capital liberalization and integration of banking and financial markets, and (c) the elimination of margins of currency fluctuation and the irrevocable locking of exchange-rate parities (Delors Report, 1989; p.18-19).

In the second half of 2001, it was seen that both definitions of the Delors Report have been realized in the Euro zone. The Monetary union is fully completed and the new currency, Euro, is in circulation. All national currencies are irrecoverably fixed to Euro. All national competencies and operational powers regarding monetary rule has been transferred to the European Central Bank (ECB) and European System of Central Banks (ESCB). According to the Maastricht Treaty, ECB is the only institution, which is in charge of decision-making in monetary policy issues in the Euro zone and implementation of these policies. And integration of banking system and financial markets are fully achieved.

On the other hand, the economic union of Euro Zone was loosely realized as it is defined in the Delors Report. It is reflecting the characteristics of a single market. It is possible to observe common trade policies, free mobility of labor, capital and products. However, it is not possible to mark common macroeconomic policies and fiscal policies in the Euro zone. There are various arguments for and against such kind of EMU which has fully achieved monetary union but lots of deficiencies in terms of economic union.

President of European Monetary Institute Alexandre Lamfalussy, who is by nature the most enthusiastic advocate of EMU, listed the benefits of EMU in his speech at London School of Economics on 10 March 1997:

"EMU will ensure price stability, this will bring lower interest rates and provides a stimulus to investment and to growth in the Euro area as a whole.... A further important benefit of EMU is that it will remove the risk of serious real exchange rate misalignments....Short-term intra-EU exchange rate volatility will, of course, also be eliminated. Such volatility can again have a direct effect on trade and investment..... Furthermore, the benefits of economic integration afforded by the Single Market process will be enhanced once the transactions costs of exchanging different currencies are eliminated. These costs, which include commissions, the bid/offer spread and overall cash management costs, otherwise constitute a dead-weight loss for society as a whole and are far from insignificant - although I acknowledge that they are difficult to measure"

On the other hand, opponents of EMU argue that the exchange rate mechanism as an instrument of adjustment has been lost in the absence of fully flexible prices and wages (Jacquet, 1998). Asymmetric economic shocks are a major threat for EMU especially in the absence of available transfer resources from the fiscal system and the perfectly mobile labor market (Eichengreen 1995 and De Grauwe 2000). In addition to this, Paul Krugman(1991) and Pierre Jacquet (1998) argues that the Euro area is not an optimum currency area considering the Mundell's Optimum Currency Area. Referring to Savaş(1999, p. 260), 62 leading German economists announced a common declaration stating that in the absence of the union of the economic, political and social interests, it is not reasonable to impose a monetary union on to the EU. Having a common European market does not enforce or necessitate a common currency. Implementing a common currency hastily will bring about serious economic problems to Western Europe.

CHAPTER 3

COSTS AND BENEFITS OF EMU

Through out this chapter, I will discuss the costs and benefits of EMU which will be beneficial while evaluating the economic rationale of EMU. In the introduction chapter, I have briefly discussed the evolution of EMU, the nature of EMU as an economic and monetary union and the responsibilities of ESCB. Considering these, I will first discuss the benefits, then the costs of EMU. I will examine the elimination of transaction costs, transparency of markets, exchange rate uncertainty and trade, Euro as an international currency under the heading of benefits of EMU. Then I will emphasize the loss of seigniorage revenues, the elimination of the use of the exchange rate as a policy instrument, macro-economic restrictions imposed by EMU as the costs of EMU. It has to be noted that the benefits of EMU are mostly micro-economic such as elimination of transaction costs, transparency of markets. Contrary to this, the costs of EMU are macro-economic namely the loss of seigniorage revenues, elimination of the use of exchange rate as apolicy instrument and macro-economic restrictions imposed by EMU. Those costs are directly affecting the macro-economic policies of member states. On the other hand, the benefits of EMU, which are mostly micro-economic, directly affect the market players, individuals and private enterprises.

BENEFITS OF EMU

Elimination of national currencies in favor of a common currency definitely creates an economic efficiency in the common currency area.

According to Paul De Grauwe these gains in efficiency have two origins. One is the elimination of transaction costs associated with the exchanging of national moneys. The other is the elimination of risk coming from the uncertain future movements of the exchange rates (De Grauwe, 2000, p.58). Firsty, I will discuss the benefits from the elimination of transaction costs. Secondly, I will examine the transparency of markets after EMU. Thirdly, I will analyze the relationship between exchange rate uncertainty and trade. Lastly, I will discuss the Euro as an international currency. The benefits of price stability will not be discussed as the benefits of EMU. Monetary union implies convergence in inflation. However, the EMU did not bring any definition of price stability. The control of price stability is under the aegis of ECB. The Governing Council of ECB defined price stability as an annual increase of the Harmonized Index of Consumer Prices for the Euro area of below 2% (Issing 2001: 9). Hence benefits of price stability[4] completely depends on the future policy of the ECB, not on the EMU. Therefore I will not discuss the benefits of price stability in this chapter.

ELIMINATION OF TRANSACTION COSTS

First, I will discuss the benefits from the elimination of transaction costs. The most visible and measurable gain from monetary union is the elimination of transaction costs in the currency union. There are various estimations trying to

[4] *Price stability brings a range of benefits (Barro 1997; Briault 1995; Feldstein 1999):*
1-It lowers long-term interest rates and thus helps to stimulate investment and growth
2-It improves the transparency of the relative price mechanism, rates of return and effective tax rates. In this way it raises the productive potential of the economy through greater efficiency in resource allocation.
3-It avoids the large and arbitrary redistribution of wealth and incomes consequent on inflation and deflation. The effects are beneficial on social cohesion and stability.

calculate the gains that emerged as a result of monetary union. According to Eichengreen and Frieden, European Commission suggests that conversion costs absorbed about 1 percent of national income for the EU's small, low-income countries but as little as one-tenth of 1 percent of national income for the large member states for which international transactions are less important. Overall, currency conversion costs averaged less than one-half of 1 percent of EU national income in the late 1980s (Eichengreen and Frieden 2001, p.7). De Grauwe is also pointing out a similar gain by looking at European Commission's One Market, One Money Report (1990). According to the report, EC Commission estimated gains at 13-20 billion ECUs per year and this figure represents one-quarter to one-half of one per cent of the community GDP.

This 13-20 billion ECUs creates a deadweight loss problem for the European consumers. They cannot utilize this amount of wealth. Monetary union is enabling the utilization of this wealth by consumers and public.

But it should not be forgotten that transaction costs are creating revenues for the financial sector. Referring to De Grauwe, surveys in different countries indicate that about 5% of the banks' revenues are commissions paid to the banks in exchange of national currencies (De Grauwe, 2000, p.59). After monetary union, exchange commission revenues of banks will decrease drastically. This is the other side of the mirror. In other words, 13-20 billion ECUs is not a full gain emerging out of monetary union. In order to achieve a full gain, bank's should

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4-It prevents the diversion of resources from productive use to hedging against inflation and deflation(Dyson, 2000, p. 178)

recover their exchange commission losses and continue to employ their employees who are dealing with currency exchange operations

TRANSPARENCY OF MARKETS

The second benefit of monetary union is increasing the transparency of markets. In other words, price discrimination between markets will be hindered to a certain degree (De Grauwe 2000, p.59). Price transparency will increase competition and market efficiency due to the introduction of the same currency unit all over the Euro zone. However, it is not possible to ensure full transparency of markets in the currency zone due to differences in administrative regulations and taxation in different countries. These differences can be clearly notified by looking at the prices of various goods in the following table.

Table 1-Prices of various products in EMU member states

State	1 Liter Milk	1,6 l. Renault Megane	Big Mac	Stamp for postcard to Euro zone country	CD In Top 10	Can of Coke
Finland	0,71	21700	4,5	0,6	21,99	1,18
Austria	0,86	15650	2,5	0,51	19,95	0,50
Luxembourg	0,72	12450	3,1	0,52	17,5	0,37
Belgium	0,84	13100	2,95	0,47	21,99	0,47

Germany	0,56	17300	2,65	0,51	17,99	0,35
France	1,11	15700	3	0,48	22,71	0,40
Italy	1,34	14770	2,5	0,41	14,98	0,77
Spain	0,69	14200	2,49	0,45	16,8	0,33
Ireland	0,83	17459	2,54	0,38	21,57	0,7
Greece	1,04	16875	2,11	0,59	15,99	0,51
Portugal	0,52	20780	3,5	0,54	16,93	0,44
Netherlands	0,79	16895	2,6	0,54	22,00	0,45

Source:Reuters, Euro Unmasks price gaps-pity the Finns, 2 January 2002

There are various reasons that prevent the transparency of prices. The most important reason is the absence of a common fiscal policy. Varying tax rates are the major obstacles for the transparency of prices. Unless EMU uniform the tax rates in the Euro zone, it will be impossible to achieve price transparency due to varying personal and corporate income taxes, value added taxes and other indirect taxes. The following table reveals the differences in the corporate income tax rates and value added tax rates in the Euro zone.

Table 2 Tax rates in EMU members states

State	Standard VAT rates May 2001	Combined corporate income tax rate* 2002
Finland	22,0	29,0
Austria	20,0	34,0
Luxembourg	15,0	30,38
Belgium	21,0	40,2
Germany	16,0	38,9
France	19,6	NA
Italy	20,0	NA
Spain	16,0	35,0
Ireland	20,0	16,0
Greece	18,0	NA
Portugal	17,0	35,2
Netherlands	19,0	35,0

*This column shows the basic combined central and sub-central (statutory) corporate income tax rate given by the adjusted central government rate plus the sub-central rate.

NA: Not Available

Source: OECD Tax Database Summary Tables Corporate Income Tax Rate 2002 and European Commission (2001), VAT rates applied in the Member States of the European Community, Doc/2905/2001-EN.

As seen in table above, VAT taxes vary between 15 and 22 per cent in the Euro zone. On the other hand, this variance is more dramatic for the combined corporate income tax rates. This particular tax rate varies between 16 and 40,2 per cent in the Euro zone. It is fair to conclude that absence of full economic union containing common fiscal policy is preventing the full utilization of price transparency benefit.

EXCHANGE RATE UNCERTAINTY AND TRADE

Third important benefit of common currency is the elimination of exchange rate uncertainty. The elimination of exchange rate uncertainty has theoretically important positive effects on international trade and foreign direct investments. The theoretical literature indicates that exchange rate variability has a negative impact on trade only if the risk generated by unstable exchange rates can not hedged or at least priced in efficient financial markets (Gros and Thysgesen, 1998, p. 280). Excess exchange rate volatility increases the risk premium and consequently, the costs of trading partners. This fact negatively affects the trade creation and volume among the trading partners. Theoretically speaking, costs of hedging exchange rates, in other words costs of forward operations are creating dead-weight losses for international trade. This dead-

weight loss is preventing the efficient allocation of the international means of production.

Although the common currency; the Euro, is eliminating the dead-weight losses, it should not be forgotten that, the Euro's trade creation effect should not be exaggerated. According to European Commission's calculations, the elimination of foreign –exchange operations would create a similar effect that would result if custom taxes decreased 1,25 percent (EC, Commission, "One Market, One Economy", European Economy, 44,1991, Savaş p. 129). Similar findings were marked by Bini-Smaghi (1987) and De Grauwe (1987). They figured out minor effects of exchange rate variability on trade. The elimination of exchange risk with the introduction of EMS in early 1980s would lead to an increase in trade of less than 1 per cent. In other words, intra EMS trade volume increased from 15 to 15,15 per cent of GDP.

On the other hand, there is no strong empirical evidence that exchange rate volatility adversely affects international trade and investment according to Eijffinger and De Haan (2000), De Grauwe (2000) and Sawers (2003). An IMF survey (1984) is also supporting the fact that empirical findings are not pointing a significant influence of exchange-rate uncertainty on trade. De Grauwe (2000) is trying to reveal the lack of empirical relationship between exchange rate variability and the growth output and investment through the following table.

Table 3 Growth of GDP and Investment 1981-1993 in EMS and Non-EMS Countries

Annual Growth of GDP and Investment 1981-1993		
	Investment	GDP
EMS Countries	0,94	2,10
Austria	2,15	2,07
Belgium	1,54	1,65
Denmark	0,52	1,80
France	1,11	1,87
Germany	0,92	2,12
Ireland	-0,43	3,48
Italy	0,32	1,75
Netherlands	1,36	2,04
Non-EMS countries	1,72	2,14
Finland	-1,63	1,49
Greece	-0,07	1,44
Japan	4,35	3,57
Portugal	2,52	2,45
Spain	3,17	2,45
Sweden	-0,04	1,19
United Kingdom	2,52	2,02
USA	2,92	2,50

Source: EC Commission, European Economy,

Note: Spain, Portugal, and the UK belonged to the EMS during a short period from 1990 on.

De Grauwe mentions that he had classified those countries into two groups, those that have experienced relatively stable exchange rates, mainly the EMS countries, and those that have seen their exchange rates fluctuate a lot. He also notes that later countries have experienced exchange rate volatility that is three to five times as large as the former. He concludes that the greater exchange rate stability that EMS countries have experienced during 1980s does not seem to have provided a great boost to the growth rates of output and investment (De Grauwe, 2000, p 69). It is clearly seen that average investment and GDP growth rates of Non-EMS countries are higher than EMS countries.

There are various explanations for the absence of a negative impact of exchange rate uncertainty on trade. According to Sawers (2003) exchange rate

volatility presents not only a risk but also offers an opportunity. Foreign markets are not the only alternatives for business. Rational business actors choose to export foreign markets when there is a good level of profit margin. Hence, exchange rate volatility is creating opportunities for business players.

Another explanation is provided by Krugman(1989). According to Krugman, exchange rate volatility is not the only source that increases the costs of trade. He mentions that there are various costs such as marketing, advertisement and establishing distribution chain. If those sunk costs are high and necessary for establishing trade, then exchange rate volatility has secondary importance in determining the trade level. According to Krugman, in those situations exchange rate volatility results in variations in profit margins.

To sum up, it is fair to conclude that theoretically accepted exchange rate volatility's negative effects on trade is not as important as thought. Empirical findings do not support the theoretical argument. In the next chapter, while looking at the main economic indicators for Euro Zone after EMU, the trade figures of Euro Zone will also be analyzed and compared with other developed countries.

THE EURO AS AN INTERNATIONAL CURRENCY

The fourth important benefit of entering a currency union is gaining the advantages of international currency, if the currency union has enough reputation and weight in the world economy. It is self-evident that the new currency's weight in international economy is more than the national currencies. It is clear

that the Euro Zone is the one of the major economic powers in the world economy. With its 6647 billion USD GDP in 2002[5] the Euro Zone is the second economic power, following the United States.

As a result of this fact the Euro is used as a unit of account and a medium of exchange in the rest of the world. The Euro Zone is almost covers one third of world exports. According to 2002 trade statistics, Euro Zone exports 2031195 millions of dollars (fob value) while world's total export figure is 6414058 millions of dollars (fob value).[6] These have additional benefits. The major benefit is boosting the domestic financial markets. Foreign residents and companies will want to invest in assets and issue debt in this international currency, in order to store their wealth and finance their economic activity. As a result of this activity, financial sector in the Euro Zone will take progress and offer more employment opportunities. It is highly probable that in the forthcoming years, the Euro Zone will create its own financial centers or enhance the power of financial centers that are in the Euro Zone such as Luxembourg.

International currencies are used as reserve currency. Credible and reliable currencies are preferred to store the value of the wealth of central banks. Euro's use as an reserve currency is very limited. European Commission President Romano Prodi (in his speech at Economic Club of New York 04.11.2003), announced that "as a reserve currency, the Euro accounted for almost 15% of official reserves in 2002. Admittedly it is still played a much smaller role than the

[5] Source: Main Economic Indicators, OECD, Paris, July 2003; National Accounts of OECD countries, OECD, Paris, 2003.
[6] United Nations, Yearbook of International Trade Statistics 2003

US dollar, whose share amounted to 65%. By holding large amounts of US dollars, the European Central Bank itself contributes to the prevailing role of the US currency as an official reserve currency." It is fair to conclude that the Euro is not satisfying the conditions of a reserve currency. It seems that it is too early to announce the Euro as a reserve currency. Referring to the Prodi's speech, also ECB does not regard the Euro as a predominant reserve currency.

Another benefit of having an international currency is seen in the balance sheet of central bank according to De Grauwe (2000, p. 72). De Grauwe offers the USD as an example. He argues that in 1999 more than half of the dollars issued by the Federal Reserve were used outside the USA. This situation has the effect of more than doubling the size of the balance sheet of the Federal Reserve compared to the situation in which the dollar would only be used domestically. As a result of this profits of Federal Reserve is doubled and channeled to the US Government. According to De Grauwe US citizens are enjoying this fact in the form of lower taxes that are used to finance the government spending. However, he also mentions that benefit of doubling the balance sheet is less than 1% of US GDP. Hence it is fair to conclude that additional revenue of having an international currency is very small. In addition to this, ESCB is very different from Federal Reserve System. It is not possible to transfer the profit of ECB to the any governing body. Allocation of net profits of ECB is as in the following way[7]

[7] Protocol on the Statue of the European System of Central Banks and of the European Central Bank

a- an amount to be determined by the Governing Council, which may not exceed 20% of the net profit, shall be transferred to the general reserve fund subject to a limit equal to 100% of the capital;

b- The remaining net profit shall be distributed to the shareholders of ECB[8] in proportion to their paid shares.

Hence De Grauwe's claim is not valid for Euro Zone. In ESCB it is not possible to lower taxes as a result of the revenue emerging from balance sheet of ECB.

Lastly, I would like to mention one major benefit of entering a currency union and having an international currency. As it is well-known every central bank has to store certain amount of foreign exchange in order to safeguard and defend its currency during economic crisis or speculative attacks. Giving up national currency in favor of international currency is eliminating the necessity of safeguarding national currency also cost of safeguarding. It is also eliminating the currency risk. It has to be noted that private capital flows to developing world reached a record USD 235 billion in 1996[9]. Integration of financial markets offering substantial benefits for many countries but also made them vulnerable to attacks to their currencies.

In the beginning of 1990s, Thailand, the Czech Republic, United Kingdom and Mexico experienced speculative currency attacks, faced with devaluation and

[8] Shareholders of ECB are national central banks that are the members of currency union
[9] Capital Flow Sustainability and Speculative Currency Attacks
http://www.worldbank.org/fandd/english/1297/articles/0111297

important loses. Currency union is eliminating the risk of speculative currency attacks for national economies. When a national economy enters into currency union, it transfers its currency risk to a stronger and a more credible economic union. As a result of this fact, national central bank can store less foreign exchange reserves and assets and allocate those resources more efficiently.

To sum up the benefits of currency union, the following benefits can be listed:

1-It is expected that the elimination of transaction costs will create extra resources. However, there is no consensus on the amount of these extra resources. This extra resource is between 13-20 billion ECU or it is less than 0,5 per cent of EU national income. It should be noted that full utilization of transaction costs is possible if only, can recover their exchange commission loses and continue to employ their employees who are dealing with currency exchange operations.

2-It is evident that the Euro became an international currency; it is used as medium of exchange, a reserve currency and a unit of account. As a result of this, the members of Euro zone are much more confident; they transferred their currency risk to a more powerful economic entity. Hence they do not have to defend their currency and they are immune from speculative currency attacks.

Those are the crystal clear benefits of currency union, particularly the Euro zone. Other possible benefit of currency unions, namely trade creation effect, is not clearly achieved in the Euro zone. Regarding trade creation effect, scholars argue either that there is very small positive effect or there is no clear

empirical evidence between exchange rate uncertainty and trade. In the fifth chapter, intra Euro zone trade figures are going to be analyzed. It will be helpful to conclude this discussion.

Last possible benefit of currency unions is market transparency. However, market transparency cannot be achieved in Euro zone due to the absence of common fiscal policy, varying personal and corporate income taxes, value added taxes and other indirect taxes.

COSTS OF EMU

EMU lead to the emergence of Euro, ESCB and the establishment of ECB according to the provisions of Maastricht Treaty. Article 105 of Maastricht Treaty defines the basic tasks of ESCB as in the following way:

1-to define and implement the monetary policy of the Community

2-to conduct foreign exchange operations consistent with the provisions of Article 109;

3-to hold and manage the official foreign reserves of the member states;

4-to promote the smooth operation of payment system

It is clear that ESCB is the only authorized body which is in charge of decision making in monetary policy issues in Euro zone and implementation of these polices. Abandoning national currencies in favor of Euro means giving up a key tool that is necessary to pursue an independent economic and budget policy

for members of EMU. Also, adopting Euro annihilate the control of monetary policies by national central banks. The ECB and the ESCB are the only responsible institutions in the EMU for deciding and implementing the monetary policy on the Euro currency zone. It means that interest rates, money supply and other monetary decisions will be taken and implemented by the ECB and the ESCB rather than national central banks. It is clear that a key tool in guiding the national economy has been abandoned. Members of Euro zone are not allowed to change the price of its currency by devaluation and revaluation or determine the quantity of the national money in circulation. In addition to this, key monetary decisions such as interest rates and money supply that boost or slow down economy, will be taken by ECB.

Those are the major sources of the costs of entering Euro zone. Costs of entering Euro zone can be listed as in the following way:

1-Seigniorage revenues are relinquished

2-Devaluation and revaluation options are lost. Members of Euro zone can not use exchange rate as a policy instrument.

3-Costs of macro-economic restrictions imposed on EMU members by Maastricht Treaty.

SEIGNIORAGE REVENUES

Seigniorage revenue is emerging as a result of the monopoly of state on issuing money. According to Savaş (1999), there are two ways to obtain seigniorage revenue:

First one is printing money. By printing money state obtains revenue which is interest rate free. The size of seigniorage revenue is equal to the amount of printed money minus the cost of printing money.

Second one is the utilization of the reserve money that has to be deposited in central bank by commercial banks. Commercial banks have to deposit certain amount of the deposits collected from the public as reserve requirement. Central banks either pay no interest or pay an interest that is below the inter-bank interest rate.

It is self-evident that when member states give up their national currencies they are losing their first source of seigniorage revenue that is mentioned above. Seigniorage revenue is varying among countries. Because some of them are not paying interest to reserve money and some of them can use printing money as a way of financing budget deficit. Following table shows the seigniorage revenues of some of the European Countries.

Table 4 Seigniorage revenues of EU countries as per cent of GDP in 1994

Seigniorage Revenues as per cent of GNP in 1994	
Country	%
Belgium	0,60
United Kingdom	0,30
Denmark	0,32
France	0,40

Germany	0,57
Greece	1,37
Italy	0,74
Ireland	0,47
Luxembourg	0,16
Netherland	0,60
Portugal	1,63
Spain	1,07

Source: International Payment Bank (Harrison-Healey, 1995, p.115)

It is seen that seigniorage revenues of a country can be as much as 1, 37 per cent of its GNP as in the case of Greece in 1994. Seigniorage revenues can be used in financing government expenditures which can lessen the tax burden of taxpayers. Less developed countries that want to join a currency union and have to satisfy certain inflation levels have to lower or give up their seigniorage revenues.

As was mentioned before, a second source of seigniorage revenue is obtained from utilization of reserve requirements. After the establishment of the ESCB, since monetary policies will be governed by ESCB and ECB, the seigniorage revenue of central banks materialized as a result of their performance in the ESCB's monetary policy function. Article 32 of the Protocol on the Statue of the European System Central Banks and of the European Central Bank, replaces the term "seigniorage revenue" with a new term "monetary income". According to article 32[10] , monetary income will be allocated in the following way:

[10] Protocol on the Statute of the European System of Central Banks and of the European Central Bank

32.5 The sum of the national banks' monetary income shall be allocated to the national central banks in proportion to their paid-up shares in the capital of the ECB....

32.4 The amount of each national central bank's monetary income shall be reduced by an amount equivalent to any interest paid by that central bank on its deposit liabilities...

This new method of allocation of monetary income or seigniorage revenue has some complications. "Countries, whose share in the monetary base exceeds their share in equity capital, will lose seigniorage wealth, and countries with the opposite relationship between these values will gain" (Eijffinger and De Haan, 2000 p. 35). In 1997, Sinn and Fest have calculated the distribution of gains and loses of seigniorage revenues in their article titled "Eurowinners and Eurolosers: The Distribution of Seigniorage Wealth in EMU" as in the following way:

Table 5 Seigniorage Gains and Loses in an All-inclusive Monetary Union

Seigniorage Gains and Loses in an All-inclusive Monetary Union			
Country	(1)Share in ECB equity capital (%)	(2) Share in seigniorage wealth	Difference (1)-(2)
Austria	2,37	3,50	-1,13
Belgium	2,89	2,70	0,19
Denmark	1,66	1,20	0,46
Finland	1,40	0,90	0,50
France	16,87	10,90	5,97
Germany	24,41	35,80	-11,39
Greece	2,06	1,90	0,16
Ireland	0,84	0,70	0,14
Italy	14,96	12,60	2,36
Luxembourg	0,15	0,00	0,15
Netherlands	4,28	4,40	-0,12
Portugal	1,93	1,40	0,53

Spain	8,83	12,70	-3,87
Sweden	2,66	2,10	0,56
UK	14,71	9,30	5,41

Source: Sinn, H.-W and H. Feist (1997), "Eurowinners and Eurolosers: The Distribution of Seigniorage Wealth in EMU", European Journal of Political Economy, 13:665-89

The table presented above, considers a full monetary union and revealing the unequal distribution of seigniorage revenue. As you can find out from the table, countries that create more seigniorage revenue compared to their contribution in ECB equity capital are worse off, as it has been the case in Germany, Austria, Netherlands and Spain.

On the other hand, there is an opportunity regarding the seigniorage revenue of EMU. Considering the economic size of the Euro zone and its influence on world trade, the Euro is the most important rival of the USD as an international currency. Owning an international currency creates important advantages for that country as in the case of United States. Since USD is widely used as medium of exchange and reserve currency, United States governments financed their current account deficits by printing USD (Savaş, 1999, p.70). However, this option is not probable for Euro zone due to the statute and objectives of ECB. As it is well known, the ECB is the most independent central bank in the world. ECB will never care about financing the current account deficit of Euro zone through the requests of governments. On the other hand, financing current account deficit via printing money is clashing with its primary objective, namely price stability.

If we conclude about the seigniorage revenues, it is safe to claim that less developed countries that prefer to finance their budget deficits with seigniorage revenues lose an important source of finance. In addition to this present system of allocation of monetary income in ESCB is making worse of the countries whose share in the monetary base exceeds their share in the equity capital of ECB.

USING EXCHANGE RATE AS POLICY INSTRUMENT

The major cost of entering monetary union is the consequence of giving-up exchange rate as a policy instrument. When a country enters into a currency union, it accepts to fix its currency's value to other currencies or adopts a new currency. Under this conditions country can not revalue or devalue its currency in order to overcome certain economic imbalances.

What kind of economic imbalances necessitates the use of exchange rate as a policy instrument?

It is possible to categorize economic imbalances in two ways. One is to categorize economic imbalances or shocks as demand and supply shocks. In this categorization source of shock is determining the type of shock. For example, if economic problem is emerging from the supply side of the economy then it is called a supply shock. Similar to this, if economic problem is arising from the demand side of the economy then it is called a demand shock. Natural disasters can cause a supply shock due to a decrease in the production capacity. Increasing budget deficit of government can lead to a demand shock. Increasing budget deficit means a decrease in national savings. Decrease in national savings lead to

a decrease in investments and cause a crowding out which means a decrease in investment that result from government borrowing. (Mankiw, N. Gregory 2001, p.571). Increase in government borrowing to finance budget deficit decreases the supply of loanable funds available to finance investment by households and firms. This situation decreases the aggregate demand in economy which creates a demand shock as in the case of Turkey in the late 1990s and in the beginning of 2000s.

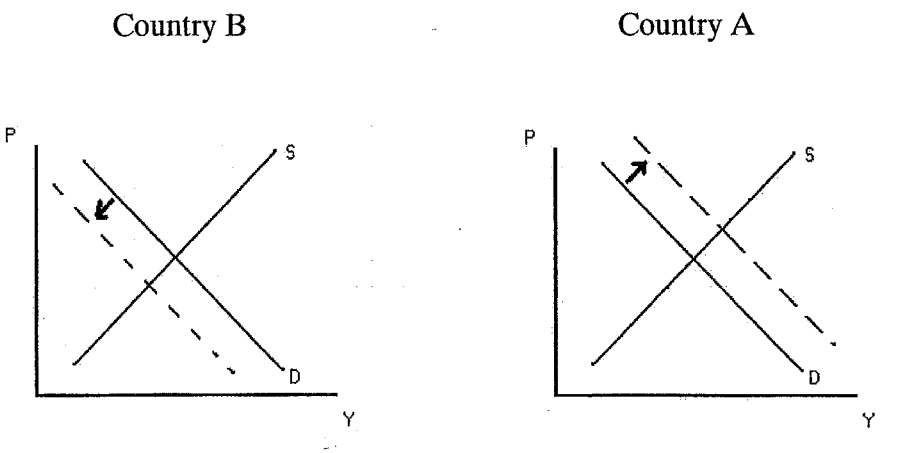
The other type of categorization of economic shocks is general economic shocks and country specific economic shocks. General economic shocks affect the world economy globally. However, country specific economic shocks only hit one country. Country specific economic shock can emerge as a result of that economy's structural problems or country's industrial structure. For example, a decrease in the exports of a country due to a decrease in foreign demand for this country's exports is a country specific shock. It is also possible to define these types of economic shocks as asymmetric and symmetric economic shocks. Country specific economic shocks are asymmetric shocks. In 1981 and 1982 Greece experienced a severe asymmetric shock. During these years Greek exports fell by 13,1 per cent, while the EU average for exports increased by 4 per cent. Similar to this, in the beginning of 1990s Germany and Portugal experienced 6,5 and 7 per cent fall in exports relative to the EU average.

Using the exchange rate as a policy instrument is very influential in managing asymmetric demand shocks successfully, compared to other types of shocks. In symmetric economic shocks all of the competing economies are facing

with the same type of economic shock. Using exchange rate as a policy instrument will not be helpful to overcome the economic shock. Because when a country uses exchange rate as a policy instrument, it devalues its currency, rival economies follow its step, which is the beginning of competing devaluations. Under these conditions the real value of currencies do not fluctuate and alter the existing condition.

However, using exchange rate instrument as a policy instrument can be very effective when there is an asymmetric demand shock. De Grauwe(1997), presents an asymmetric demand shock scenario as in the following way. Assume that two country, country A and country B enters into a monetary union. As a result of an unknown reason consumers increase their demand for country A products, while decreasing their demand for country B products. As a consequence of this fact, aggregate demand shifts as in the following diagrams:

Figure 1-First Phase of an Asymmetric Shock



These shifts in aggregate demand create important problems in the current account and employment figures of country A and B. Since there is a decrease in

aggregate demand in country B, domestic output will decrease and lead to a current account deficit and increase in unemployment. On the other hand, country A will face with current account surplus and upward pressures on its price level. This new situation is a threat for both countries and currency union.

In currency unions the price of each participating currency is fixed to one other and common currency. In order to sustain this equilibrium, price stability and general macroeconomic stability have to be assured and continued in the currency union. However, current account deficit and upward pressures are crucial threats to price stability. In addition to this, a decrease in aggregate demand for a member country's products means a decrease in demand for that country's currency. Hence, it is fair to expect that the value of that particular currency will depreciate if a decrease in aggregate demand continues. Under these conditions it is not possible to ensure currency unions.

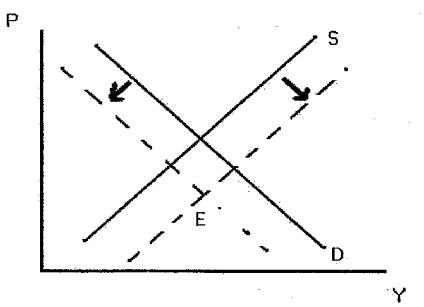
There are three mechanisms which will help to bring back equilibrium in two countries. The first one is wage flexibility, the second one is labor mobility, and the third is currency revaluation or devaluation. Since the use of exchange rate as policy instrument is not allowed in currency unions we cannot utilize currency revaluation or devaluation option.

If wages are flexible enough, unemployed labor force in country B can reduce its wage claim. Similar to this employed labor force in country A can increase its wage claim. As a result of these shifts in wage claims aggregate supply curve shifts downward in country B, while aggregate supply curve shifts

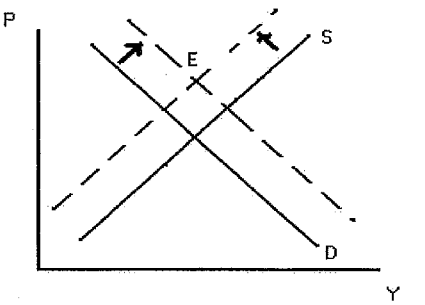
upward in country A. the following diagrams depict the new equilibria in country A and B.

Figure 2 Second Phase of an Asymmetric Shock-Affect of Wage Mechanism

Country B



Country A



As it is represented in the diagrams equilibrium price in Country B is less than the equilibrium price in Country A. In other words, products of country B become more competitive compared to the Country A origin product due to the wage and price increases in Country A. This new situation will lead to an upward shift in the aggregate supply curve of Country B. On the other hand aggregate supply curve of Country A will shift downward as a result of a decrease in the competitiveness of Country A origin products. At the end wage flexibility will achieve necessary trade balance between country A and B.

It has to be noted that this mechanism which is based on wage flexibility can not be operationalized if there are differences in labor market institutions. Labor unions can be classified as centralized, decentralized and moderately

centralized unions. Calmfors and Driffill (1988) created misery indices in which they tried to reveal the relationship between labor market centralization and unemployment and inflation. Calmfors and Driffill concluded that moderately centralized labor markets are experiencing higher unemployment and inflation figures compared to centralized and decentralized labor markets. In the light of this empirical evidence it is fair to conclude that different labor market structures make wage flexibility options either inefficient or obsolete.

The second mechanism that can adjust the imbalance that emerges as a result of an asymmetric demand shock is labor mobility. Scenario is quite simple, unemployed workers from country B will move to country A where there is an excessive demand for labor. As a result of this labor shift, both countries will come back to equilibrium with out changing the price levels in both countries. Because this labor shift will enable to remove excess labor demand in country A and the unemployment problem in country B. However, this theoretically well-functioning model is not that successful in practice, particularly in the EMU case.

Although labor is treated as a commodity in economics, it should not be forgotten that a labor force is composed of human beings who have culture, tradition, language and emotions. The EMU is a currency union that is not homogenous in sociological terms. The EMU members are talking different languages; they have different cultures and traditions. It is clear that legal barriers to labor mobility are destroyed in EU. However, achieving labor mobility is not proven by signing the Schengen Agreement. The most vulnerable labor force are blue color workers during an asymmetric demand shock. Let us suppose that

unemployed steel or automotive industry workers in France have to look for jobs in German market. Language and culture are the most important barriers preventing labor mobility among two countries. Another important factor affecting labor mobility is changing house. According to Gros (1996), the house market is not flexible enough to support labor mobility. Mortgage markets in EMU member states are not connected enough to enable real estate transactions all over the EMU.

Until now, wage flexibility and labor mobility measures are discussed as options that can be used to fight an asymmetric demand shock. Fiscal policy can also be discussed as an option. However, there are two important reasons that are why we do not discuss fiscal policy as an option. First it has to be noticed that EU budget is very small compared to the EU GDP. In 1999 EU spending amounted to more than 86 billion Euros. It accounts for just over 1 per cent of EU GDP (Eijffinger and De Haan, 2000, p. 107). According to Agenda 2000, EU budget revenue is limited to 1,27 per cent of EU GDP. In addition to this, more than 50 per cent of this revenue is channeled to support agricultural policy. It is clear that available funds are not enough to operationalize a fiscal policy that is aiming to over come an asymmetric demand shock. Eichengreen and von Hagen (1995, 1996) argued that EU has no direct fiscal powers.

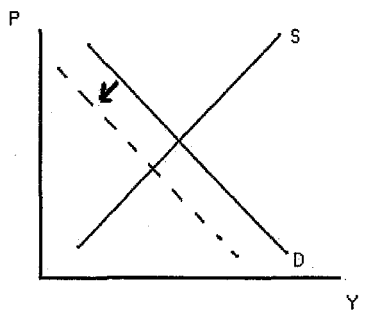
Secondly, fiscal policy, in other words, fiscal transfer is not a permanent solution to an asymmetric demand shock. When there is a permanent demand shock, price and wage adjustments are necessary to overcome the problem.

Otherwise, fiscal transfers become a permanent character of economy and used as a government subsidy for wages and price.

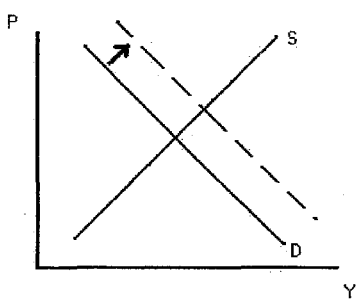
It is seen that wage flexibility, labor mobility and fiscal policy are not effective measures for EMU to overcome an asymmetric demand shock. Giving up exchange rate mechanism as a policy option is putting the most powerful gun down. Let us remember our scenario, as a result of an unknown reason; consumers increase their demand for country A products while decreasing their demand for country B products. As a consequence of this fact, aggregate demand shifts as in the following diagrams:

Figure 3 First Phase of an Asymmetric Shock

Country B

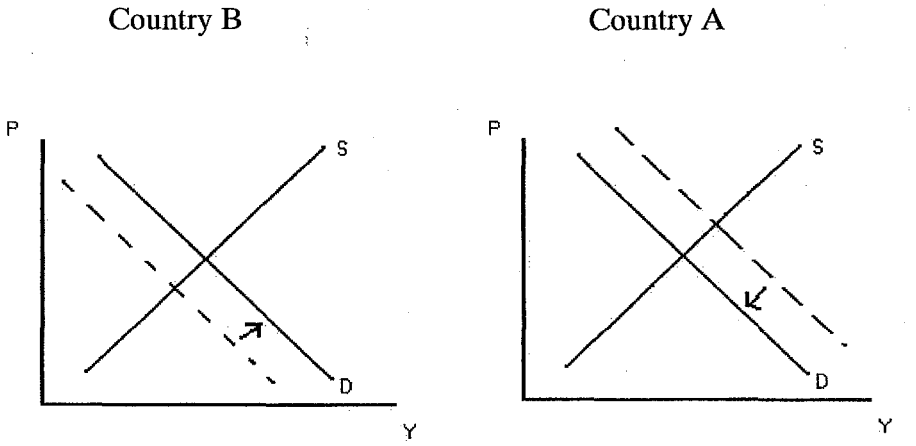


Country A



These shifts in aggregate demand creates important problems in the current account and employment figures of country A and B. Using the exchange rate policy will effect the economies as in the following way. The revaluation of the currency of Country A will reduce the aggregate demand in country A and the demand curve will shift left to its initial position. On the other hand, the devaluation of the currency of Country B will increase the competitiveness of Country B products. And this shift the aggregate demand of Country B right.

Figure 4 Affects of Devaluation and Revaluation of Currencies on an Asymmetric Shock



Using exchange rate policy to overcome an asymmetric demand shock is very effective and less costly compared to other options. According to De Grauwe (1997) using exchange rate policy makes necessary adjustment of wages and prices somewhat less painful. Some historical evidences reveal that using exchange rate policy can be very beneficial and effective. After the unification of East and West Germany, a demand shock effected Germany's trading partners and DM dominated EMS. Italy, Sweden, Spain and Finland depreciated their currencies against DM and successfully over come the economic crisis.

To sum up, member countries of EMU are giving up their most effective tool that is definitely useful to cope with an asymmetric demand shock in the Euro area. This fact is becoming a more severe problem in the absence of a homogenous labor market structure that is hardening labor mobility and wage-price adjustment mechanisms.

MACRO-ECONOMIC RESTRICTIONS IMPOSED BY EMU

Membership to EMU not only imposes elimination of national currencies and introduction of common monetary policy but also necessitates coordinated and restricted macro-economic policies. Candidate countries have to satisfy certain economic conditions before entering currency union. These conditions imposed by Maastricht Treaty and can be listed as in the following way:

A candidate country can join the monetary union only if:

1- Its inflation rate is not more than 1,5% higher than the average of the three lowest inflation rates in the EMS

2- Its long-term interest rate is not more than 2% higher than the average observed in the three low-inflation countries

3- It has joined the exchange rate mechanism of the EMS and has not experienced a devaluation during the two years preceding the entrance into the union

4- its government budget deficit is not higher than 3% of its GDP (if it is, it should be declining continuously and substantially and come close to the 3% norm, or alternatively, deviation from the reference value(3%) should be exceptional and temporary and remain close to the reference value

5- Its government debt should not exceed 60% of GDP (if it does it should diminish sufficiently and approach the reference value (60%) at a satisfactory pace.

These convergence criteria are imposed in order to ensure a healthy currency union. Restrictions upon interest rates, inflation rate, and budget deficit and government debt-GDP ratio are aiming to control inflationist pressures in the Euro area. Those criteria that are restricting macro-economic policy, providing balance and harmony between monetary policy and fiscal policy in the Euro area. Convergence criteria are also aiming to decrease the default risk of member countries. Those practices are inevitable to protect the monetary union (Savaş, 1999, p. 108).

However those safeguarding precautions are also creating certain possible costs for EMU members. The major cost of the implementation of convergence criteria is possible increases in unemployment according to a Keynesian perspective. Restrictions imposed on budget deficit and government debt ratios necessitates fiscal re-structuring. In the short run, fiscal re-structuring can lead to a decrease in aggregate demand, which causes a decrease in production and employment levels.

On the other hand, a neo-liberal perspective argues that if fiscal re-structuring is perceived as a positive development by the public, fiscal constraints can strengthen the economy in the following way. With the implementation of fiscal constraints such as a decrease in budget deficit, market players expect a decrease in inflation. That causes a decrease in real and nominal interest rates which eliminates the crowding out effect. These developments create an appropriate environment for private sector investment. At the end increasing investment leads to an increase in employment figures both in the short- run and the long-run.

It is possible to check the validity of these arguments by looking at the unemployment figures of EMU member countries before and after 1999. In addition

to this, we should control these figures with other EU members, United States and Japan.

Table 6 Standardized Unemployment Rates-Per cent of Civilian Labor Force

Standardized Unemployment Rates-Per cent of civilian labor force						
Country	1996	1997	1998	1999	2000	2001
Euro Area	10,80	10,80	10,20	9,40	8,50	8,00
Austria	4,40	4,40	4,50	4,00	3,70	3,60
Belgium	9,50	9,20	9,30	8,60	6,90	6,70
Denmark	6,30	5,30	4,90	4,80	4,40	4,30
Finland	14,60	12,70	11,30	10,20	9,80	9,10
France	11,90	11,80	11,40	10,70	9,30	8,50
Germany	8,70	9,70	9,10	8,40	7,80	7,80
Greece*	9,80	9,80	11,10	11,90	11,10	10,40
Italy	11,50	11,60	11,70	11,30	10,40	9,40
Luxembourg	2,90	2,70	2,70	2,40	2,30	2,10
Netherlands	6,00	4,90	3,80	3,20	2,90	2,50
Portugal	7,30	6,80	5,20	4,50	4,10	4,10
Spain	18,10	17,00	15,20	12,80	11,30	10,60
United Kingdom	8,00	6,90	6,20	5,90	5,40	5,00
Norway	4,80	4,00	3,20	3,20	3,40	3,60
Sweden	9,60	9,90	8,20	6,70	5,60	4,90
United States	5,40	4,90	4,50	4,20	4,00	4,70
Japan	3,40	3,40	4,10	4,70	4,70	5,00

*: Greece unemployment rate is calculated according to the commonly used definitions. This unemployment figure is representing percentage unemployed population to the labor force.

Source: OECD

Common currency came into practice in 1999. Hence it is appropriate to compare 1998 and then post-EMU figures. It is seen that Euro area unemployment figure before the introduction of Euro is 10,20 per cent in 1998. In 1999, when member countries completed their fiscal adjustments, this figure dropped to 9,40 per cent. In 2001 when Greece entered into EMU, unemployment figure in the Euro dropped to 8% from 8,50%. Opposed to Keynesian argument Euro areas did not face

with an increase in unemployment. When national figures analyzed, it seen that none of the member countries experienced such an increase in their unemployment figures as it has been argued by Keynesian argument. All of the EMU members successfully passed through the transition period.

In addition to these when we compare the Euro areas employment figures with Sweden, Norway, United Kingdom, United States and Japan, it is not possible to conclude that Euro areas' employment growth performance is worse than those listed countries. In the next chapter the unemployment figures of the Euro area will be analyzed in a more detailed manner.

The second important cost of restricted macro-economic policies imposed by the EMU is the loss of fiscal sovereignty. The importance of fiscal sovereignty depends on the availability of other economic tools such as monetary policy and exchange rate policy and the economic conditions. Fiscal sovereignty might be very important during recessions, especially in the absence of monetary policy and exchange rate policy, as in the case of EMU. Expansionary fiscal policies can be very effective in fostering economic growth and overcoming recession. During recessions governments can increase their expenditures. An increase in government expenditures, stimulates aggregate demand. Through this process positive economic growth can start again.

However, fiscal restrictions imposed by "The Pact for Stability and Growth" that was agreed at the Dublin Council of December 1996 is eliminating the use of expansionary fiscal policies in the following way:

- *The reference value of a 3 per cent deficit would constitute an absolute ceiling, except if the country concerned experiences a fall in GDP of over 2 per cent.*

- *If a country is found (during the semi-annual evaluation performed by the Commission) to have a deficit in excess of 3 per cent of GDP, it would have to make a non-interest bearing deposit equivalent to 0,2 per cent of GDP plus 0,1 per cent for each point of the excess deficit. The variable part applies only for deficits up to 6 per cent of GDP; total is thus capped at 0,5 per cent of GDP.*

- *The Deposit will be returned as soon as the deficit goes below 3 per cent, if the excess deficit persists for over two years, the deposit becomes a fine.*

Implications of such a strict pact will be far-reaching. Deviations from 3 per cent deficit upper limit will be more costly to a country that is already experiencing economic recession. For example, a country that ran a deficit of 5 per cent for more than two years would have to pay a fine (or more precisely, forfeit deposits) equivalent to 0,4 per cent of GDP for each following year. For most countries such a sum would be substantially larger than the net contribution to the normal EU budget. Payments of this size would certainly have large political and economic impacts, since they would require a substantial increase in taxes and/or reduction in expenditure, unless they were financed by issuing more debt (Gros and Thygesen,

1998 p.344). Increase in taxes and reduction in expenditure due to the fines can worsen the recession and lead to a recession trap.

In addition to this, during asymmetric demand shocks in the adjustment process either labor wages goes down or unemployed labor force look job in other countries in the absence of monetary policy, exchange rate policy and redistributive fiscal policies. In both cases huge burden is loaded onto working class. Inevitable labor immigration is not a good way of solving a problem. It has various complications for member states and labor force. It should not be forgotten that humanity is also a capital; it is the wealth of a nation. Compulsory immigration of a labor force of a country is huge cost that is paid to overcome an economic shock. On the other hand, achieving wage adjustment in the short-run is not so feasible for EMU member countries due to the varying labor market structure of member countries.[11]

To sum up, losing fiscal sovereignty can create important costs for EMU members particularly during recession periods. Since EMU members have already given up their monetary policies and exchange rate policies, losing fiscal sovereignty makes them vulnerable and helpless during economic crises, particularly in demand shocks.

In brief, the costs of EMU can be listed as in the following way:

1- EMU members are losing their seigniorage revenue, which is created as a result of printing money, since the monopoly of printing money has been transferred to

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[11] This issue has been discussed under the title of Using Exchange Rate as Policy Instrument in the previous section of this thesis

ECB. In addition to this, the countries' seigniorage revenue, which is based upon the utilization of reserve requirements, is distributed in an unfair way. Countries whose share in the monetary base exceeds their share in equity capital will lose seigniorage wealth, and countries with the opposite relationship between these values will gain (Eijffinger and De Haan, 2000 p. 35).

2-Members of the EMU are losing their one and only effective tool against asymmetric economic shock

3-Losing fiscal sovereignty, in the absence of monetary and exchange rate policies, makes EMU members vulnerable and helpless during an economic crisis, particularly in demand shocks.

4-Giving up monetary policy, exchange rate policy and losing fiscal sovereignty in the absence of centrally-governed fiscal system, creates enormous pressure on the labor market. During an asymmetric economic crisis the labor market has to undertake the entire burden. Flexible wages and prices and labor mobility are the only mechanisms to over come an asymmetric shock.

CHAPTER 4

IS EURO AREA AN OPTIMUM CURRENCY AREA?

Optimal currency area (OCA) theory was put forward by Nobel laureate Robert Mundell in his famous article "A Theory of Optimum Currency Areas" in 1961. Theory advanced with the contributions of McKinnon(1963), Kenen(1969). European monetary integration process revived interests in OCA theory. OCA theory tries to compare the costs and benefits of using common currency for the member states of a currency union. In addition to this, OCA tries to identify the criteria that are necessary to sustain a single currency area (Mundell 1961; McKinnon 1963; Eichengreen 1998). Considering these features of OCA theory, it will be beneficial to analyze EMU from the perspective of OCA theory. OCA theory will be useful to determine whether EMU developed on economic aims or political aims.

According to OCA theory, while the number of currency union members increasing and the currency union area broadening, benefits of single currency decreases, costs of currency union increases (Savaş, 1999 p 96.). Optimum Currency Area is the region in which benefits of currency union maximized and costs of currency union minimized.

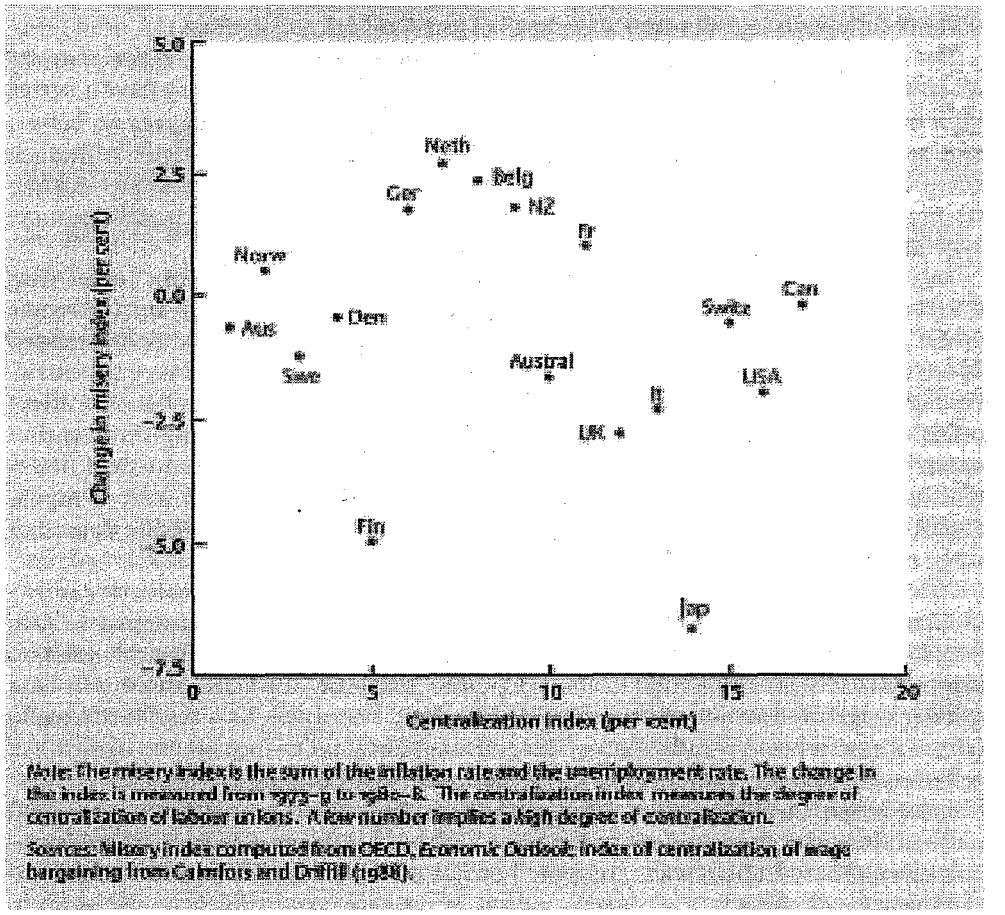
States lose two main instruments that are necessary to over come an asymmetric economic shock. These instruments are using exchange rate policy and pursuing independent monetary policy, interest rate. In the absence of these policy instruments, labor mobility, wage flexibility and fiscal transfers are the only policy options to manage

asymmetric economic shocks. However availability of these three options is problematic for EMU.

OCA theory necessitates fully flexible wages and prices to fight against asymmetric demand shocks. Importance of flexible wages and prices against asymmetric demand shocks has been discussed in the previous chapter of this thesis. However, Euro zone's high level of structural unemployment reveals that wages and prices are quite rigid in Europe. According to OECD 2000 unemployment figures, there is 8 per cent unemployment in Euro area. This unemployment figure is higher than 10 per cent in Greece and Spain. Compared to United States (4,70 per cent) and Japan (5 per cent) Euro area's unemployment figures are very high.

Another barrier for fully flexible wages is different labor market structures of EMU members. Different levels of labor market centralization is evident in the EMU members. Clamfors and Driffill (1988) created an index of centralization of wage bargaining. Following figure reveals the different levels of labor market centralization in various countries. According to Clamfors and Driffill Austria, Denmark, Germany have a highly centralized labor market. Where as Netherlands and Belgium have moderately centralized labor market. On the other hand, United Kingdom and Italy are the countries that have low degree of centralization in the labor market.

Figure 5 Structure of Labor Market in Various Countries



Note: The misery index is the sum of the inflation rate and the unemployment rate. The change in the index is measured from 1973–9 to 1980–8. The centralization index measures the degree of centralization of labour unions. A low number implies a high degree of centralization.

Sources: Misery index computed from OECD, Economic Outlook; index of centralization of wage bargaining from Calmfors and Driffill (1988).

Considering these different levels of labor market centralization and high unemployment levels in Euro zone, flexible wage mechanism can not work effectively.

Other than flexible wage mechanism, labor mobility can also be used to overcome an asymmetric demand shock. However, as it is discussed before in the previous chapter, Euro zone is not offering fully flexible labor force[12]. Although legal barriers are obsolete with the Schengen Agreement, different languages and cultures are

[12] Inadequate labor mobility discussed under the title of Using the Exchange rate mechanism.

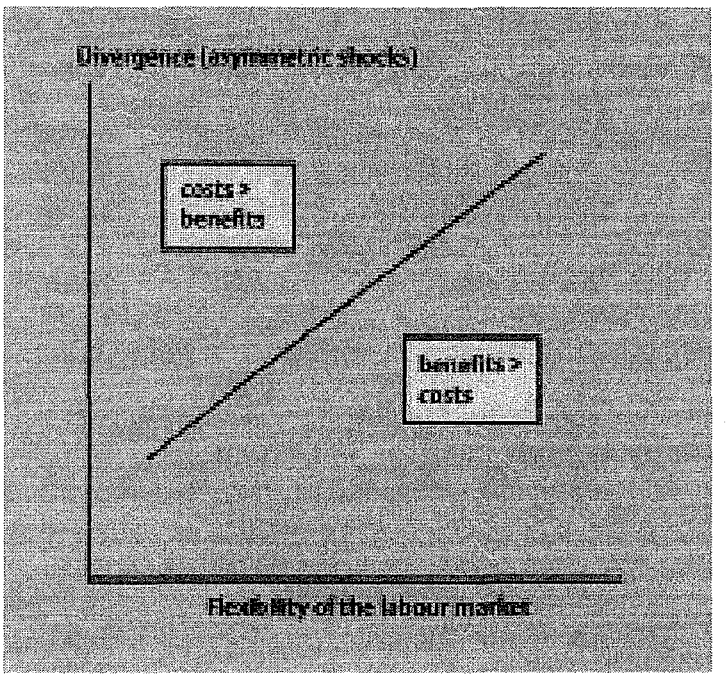
still the most important barriers for labor mobility. In addition to these economic costs of labor mobility should not be neglected. Labor mobility in Euro area is not fluid enough.

The last probable adjustment mechanism for asymmetric demand shock is fiscal policies. However centralized fiscal transfers are out of consideration for Euro area due to the absence of centrally-organized fiscal policy and insignificant size of EU budget. EMU has been designed in the absence of centrally-organized fiscal policy. EU budget is limited with 1,27 per cent of EU GDP. And more than 50 per cent of EU budget is spent for supporting agricultural policy. This structure of EMU is not capable of allocating fiscal transfers in the Euro area to over come asymmetric demand shocks. In addition to this, the Stability and Growth Pact restricts the use of national fiscal policy as a proxy for both monetary policy and centrally organized redistribution (Wyzplosz 1997, Eichengreen and Wyplosz 1998, Fatas 1998).

In the absence of full wage and price flexibility, labor mobility and centrally-organized fiscal policy, EMU is very defenseless against asymmetric demand shocks. Under these conditions removing the causes of asymmetric demand shocks is very important. Economic convergence in the Euro area is the most practical solution for asymmetric economic shocks. Economic convergence means that economic shocks are likely to be less asymmetric and therefore easier to manage at the core (Eichengreen 1998). If member countries' economic structures are similar, they will experience similar demand shocks and need same monetary policies. Under these conditions monetary union will be beneficial rather than being costly. Following figure (from De Grauwe 1997) depicts under which circumstances benefits of monetary union exceed costs of it and visa versa. According to this figure, when labor market mobility is high

and divergence among monetary union members is low, benefits of monetary union are higher than the costs. Contrary to this, when labor market mobility is low and divergence among monetary union members is high, costs of monetary union are higher than the benefits.

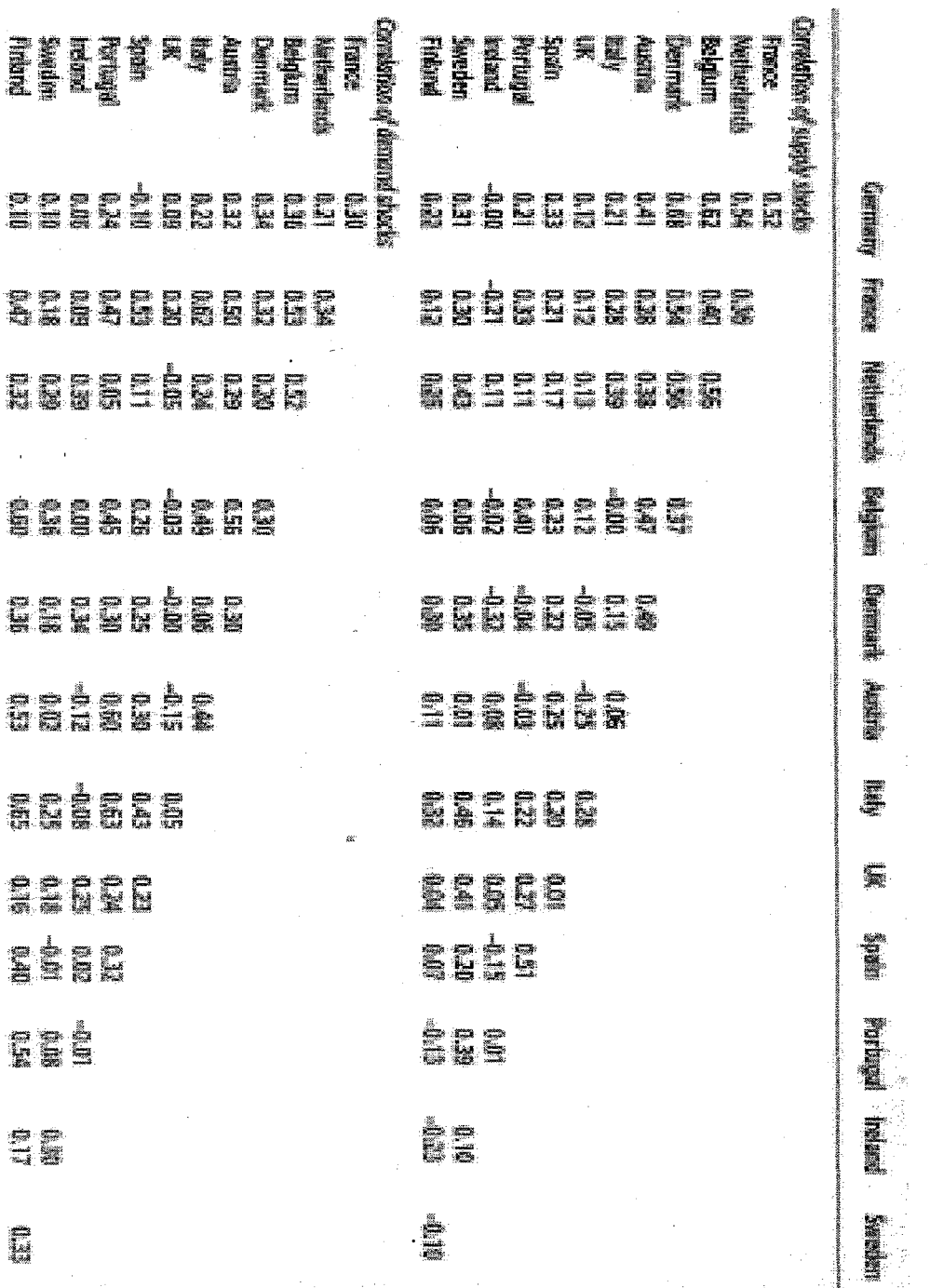
Figure 6 Costs and Benefits of a Monetary Union



However, it is hard to claim that EMU is a converging economic entity. Bayoumi and Eicheengreen (1994) tries to analyze the correlation of supply and demand shocks among EU members. They apply Vector Auto Regression approach for the period 1963 and 1990. Following table is reproduced from this study by Eijfinger and De Haan (2000). Considering the significant correlation threshold as 0,30 or 0,35 we find out very few EMU members are likely to experience similar demand shocks.

For example, when Germany experiences a demand shock, Spain, Finland, Ireland, Netherlands and Italy will unlikely experience a similar demand shock. Various similar findings can be pointed out from this table.

Figure 7-Correlation of Demand and Supply Shocks in the European Union



It seems that current economic convergence is not enough to prevent asymmetric shocks. But what about the future? Will further economic and monetary integration decrease divergence among EMU members? There are two conflicting and competing arguments about the convergence issue. According to Krugman (1991), increasing commercial activity among EMU members will lead to regional concentration of industrial activities. As a result of industrial concentration in certain regions of EMU, EMU will be more prone to asymmetric shocks. Such kind of industrial concentration will change the nature of industrial shocks to regional shocks. For instance, automotive industry can be concentrated in Germany and France. And automotive industry can face a demand shock; this can lead to an asymmetric shock in Germany and France.

On the other hand, European Commission's Report, "One Money, One Market" argues that further economic and monetary integration will lead to less divergence in Euro area. According to report, increase in trade will help to synchronize business cycles in member countries. However, synchronization of business cycles not necessarily eliminating the risk of asymmetric shock. According to Eijffinger and De Haan (2000, p. 23), asymmetric shocks originating in diverging national economic policies should also be reduced.

Other than labour mobility, fiscal transfers and asymmetric shocks there are two major criteria for optimum currency areas namely, product diversification and openness. Product diversification criteria introduced by Kenen. According to Kenen, countries whose production and exports are widely diversified and of similar structure form an optimum currency area (Baldwin and Wyplosz, 2003). During an asymmetric demand shock, the most likely victims will be the countries that are specialized in a narrow range

of goods. When we examine the EMU member countries considering the production patterns, we realize that Netherlands and Greece are not satifying Kenen's product diversification criteria. Netherlands is one of the major gas exporter, as a natural consequence of this fact, Netherlands' economy very sensitive to world gas market fluctuations. Similar to this, in Greece agriculture and tourism are the major sectors of economy. Any indispositions in these sectors can harm both Greece economy and EMU.

Last criterion is McKinnon's openness criterion. Baldwin and Wyplosz explain this criterion as in the following way:

"Openness matters in the OCA theory because, in a small open economy, most of the goods produced and consumed are traded on international markets. Accordingly, their prices on the local market are largely independent of local conditions and any change in the value of the currency tends to be promptly passed into domestic prices. When this is the case, exchange rate changes fail to affect either the country's competitiveness, hence they are essentially useless" (Baldwin & Wyplosz, 2003, chapter 13).

Openness can be measured in various forms. Baldwin & Wyplosz define openness as the share of economic activity devoted to international trade. Following table try to measure openness of various countries according to Baldwin & Wyplosz's definition.

Table 7 Openness in 2002

Average of ratios of exports and imports to GDP

Austria	53,5
Belgium	91,7
Denmark	43,1
Finland	39,9
France	31,5
Germany	38,4

Spain	33,6
Sweden	48,8
United Kingdom	30,7
European Union	12,3
United States	13,5

Greece	29,9
Ireland	85,4
Italy	29,9
Netherlands	65,3
Portugal	38,3

Japan	10,8
Australia	23
Canada	44,1
Switzerland	51,3

Source: European Economy 73, (2001)

According Table 7 it is hard to claim that every EMU member satisfies McKinnon criterion. If we accept 40% (ratio of imports and exports to GDP) as a threshold for openness, only Netherlands, Ireland, Austria and Belgium can satisfy the openness criterion. Smaller countries of EMU are satifying the openness criteria, while bigger countries such as Germany, Italy, France and Spain can not satisfying this criterion.

In the light of those arguments and evidence, it is fair to conclude that Euro area is not homogenous enough to prevent asymmetric demand shocks. In addition to this, it does not seem to decrease its divergent economic structure in the near future. Hence, Euro area is still very fragile against asymmetric economic shocks. In the absence of European level redistributive fiscal system, full labor mobility, flexible wages and prices, it is hard to fight against asymmetric economic shocks in the Euro area. Also it has been argued that Europe is a too large geographical area to form a well-functioning monetary union. New Euro zone that consists of twelve member states is not an optimal currency area according to many economists such as Eichengreen, Feldstein, Bordo and Jonung. According to Bordo and Jonung (1999), the efficiency gains from monetary union do not outweigh the costs of monetary union.

CHAPTER 5

ECONOMIC PERFORMANCE OF EURO AREA

Through out this chapter, economic performance of Euro area is going to be discussed. In order to understand the real performance of EMU certain economic indicators of Euro area is going to be analyzed. These economic indicators can be listed as in the following way:

1-Inflation rate

2-GDP growth rates

3- Unemployment rate

4- Intra-trade figures of Euro area.

Arguments that are supporting monetary union stating that GDP growth rate, intra-EMU trade is going to increase due to the elimination of exchange rate uncertainty. Another argument supporting monetary union is claiming that inflation rate is going to decrease in the Euro area because of the strict monetary policies that are governed by the most independent central bank (ECB). Hence, it is necessary to analyze these figures in order to test the validity of these arguments.

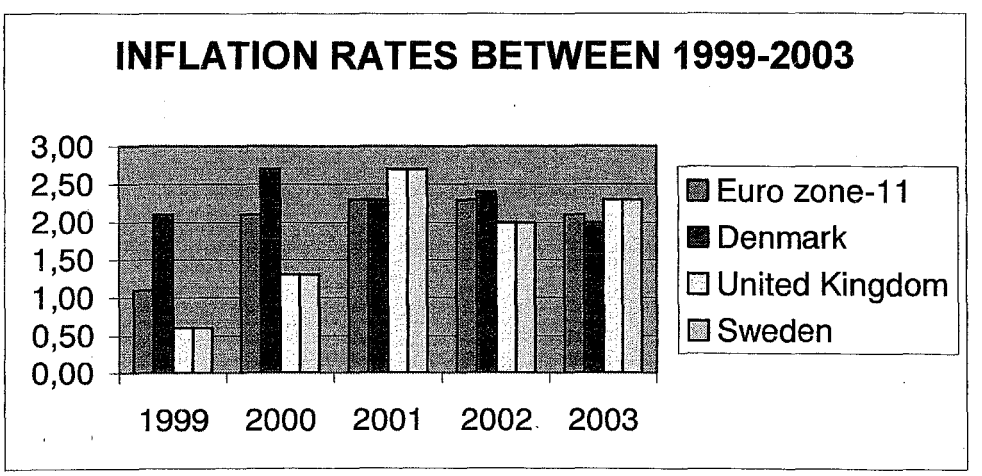
On the other hand, there are conflicting arguments related to the unemployment in the Euro area. According to Keynesian perspective, strict convergence criteria that are necessary to enter EMU can lead to an increase in the unemployment level. However, neo-liberal perspective argues that increasing stability due to the strict monetary and

fiscal policies in the Euro area will lead to an increase in the employment level because of the increasing investment in the Euro area. Therefore, analyzing unemployment figures will be helpful to conclude about competing arguments.

INFLATION

Article 2 of Protocol on the Statue of the European System of Central Banks and of the European Central Bank, states that the primary objective of the ESCB shall be to maintain price stability in the Euro area. On the other hand, this protocol did not offer a definition of price stability to ECB. The Governing Council defined price stability as an annual increase of the Harmonized Index of Consumer Prices for the Euro area of below 2% (Issing, 2001, p.9). Therefore, it is necessary to analyze monetary stability performance of Euro area in terms of this target. Table 10 represents the inflation figures of European Union countries, Norway, Japan and United States. Following bar chart is derived from Appendix 1.

Figure 8 Inflation Rates Between 1999-2003



There are striking points that are necessary to mention, when the above bar chart is examined. First of all between 1999 and 2003, Euro zone satisfied its inflation target only in 1999. In the following years, although Euro zone is close to its inflation target, Euro zone could not achieve its inflation target which is less than 2 per cent. Secondly, inflation rate of other European countries that are not member of EMU, are not dramatically above the Euro zone inflation rate. In the last two years, inflation rates of Euro area and other European Union countries area in a converging manner. It has to be noted that United Kingdom's average inflation performance(1,2%) for the period 1999 and 2003 is considerably better than Euro zone inflation performance(1,98%). Hence it is fair to conclude that countries that did not enter EMU are not worse of in terms of inflation figures.

After comparing Euro Area's inflation performance and other European Union countries' inflation performance, it will be beneficial to analyze the effects of EMU on member countries. Two tailed paired samples t test is applied in order to test the null hypothesis "There is no difference in the average inflation performance of EMU members before and after EMU". In this test EMU member countries' inflation figures between 1994 and 2003 are processed.

Our findings reveal that there is no statistically significant difference in the inflation performance of EMU member countries before and after EMU in 95% confidence interval. Our test revealed a calculated t score -0,37 which is smaller than our critical t score 2,201 for 95% confidence level. Hence we can not reject the null hypothesis. There is no statistically significant difference in the inflation performance of EMU members before and after EMU. Other than paired t test, I also applied a non-

parametric test, Wilcoxon test, due to the limited size of our sample. Our findings revealed a very big significance value which is 0,583. Since our significance value is bigger than 0,05, we conclude that there is no difference in the inflation performance of EMU member countries before and after EMU.

Our findings and observations reveal that Euro Area's inflation performance did not change with EMU. Also European Union member's that are not participating EMU are not suffering from inflation. However, putting price stability as principle objective and adopting ambitious inflation target, less than 2%, bring certain risks. According to Bibow, targeting less than 2% inflation rate in the medium term can lead to an anti-growth attitude. Putting measurement bias at, 0.5%, implies a mid-point for the medium term price target of 1.25%. It means that Germany will have to depart from its 3% inflation record and henceforth live with an inflation trend roughly 1% (if the Balassa-Samuelson effect is taken into account) (Bibow 2001: WP 338). Adopting more ambitious inflation target, 1%, rather than 3%, does not guarantee better economic performance. Decreasing real GDP growth can be the evidence of this argument. In 2003 Euro area's real GDP growth was 0,40%, while United States was experiencing a 3,1% real GDP growth. This issue is going to be analyzed in the next section in depth.

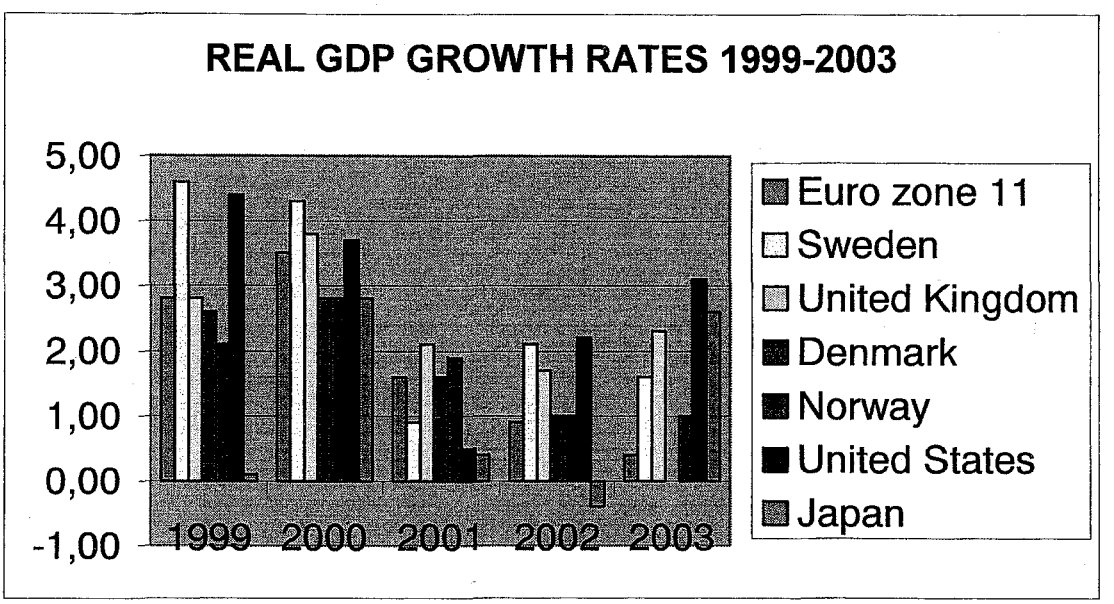
REAL GDP GROWTH RATE

Real GDP growth rate is one of the most important macroeconomic indicators that are reflecting the progress of an economy. To grasp the performance of Euro area, it will be appropriate to look at the real GDP growth rate of Euro area and compare it with the general trend. According to neoclassical growth model, elimination of the exchange rate risk will lead to an increase in economic growth (DeGrauwe 2000, p.67). EC report "One Market, One Money" (1990) is also supporting this argument. According to neoclassical model, elimination of exchange rate risk decreases the interest rate which leads to an increase in the rate of growth of output.

However, Euro area's real GDP growth rate figures are not supporting this argument. Real GDP growth rate of Euro area is in a decreasing trend since 2000 contrary to general trend. Euro area could not catch the global economic recovery (Finansal Forum, 24 March 2004, p.8). Although world economy is enjoying considerable real economic growth since the second half of 2003, Euro area is stuck into an economic recession. In 2003, major economies of Euro area performed either negative economic growth or almost no economic growth. Germany, Portugal and Netherlands faced with negative economic growth with following figures, -0,10, -0,80, -0,90 respectively. In addition to this, France and Denmark passed a stagnant year with 0,1 and 0 economic growth respectively in 2003. Leading economic actors of Euro area, namely Germany and France, could not follow the general world economic trend. According to Finansal Forum the major reason of this fact is the increasing unemployment figures in the Germany and other countries. Due to high unemployment figures low level of consumer expenditure is frustrating economic growth.

Following diagram clearly reveals the Euro area's performance compared to other European Union countries, Norway, United States and Japan since 1999. Year 2003 is very striking, Euro area is performing one of the worst real GDP growth rate, while United States, United Kingdom and Japan are enjoying high level of growth rate. Even Japan, which is well-known with its recessions, high saving ratios and low expenditures, reached 2,60 per cent real GDP growth rate in 2003.

Figure 9 Real GDP Growth Rates 1999-2003



Following table is based on the same real GDP growth rates between 1999 and 2003 (Appendix 2).

Table 8 Average Real GDP Growth Rates Between 1999-2003

	Average Real GDP Growth Rates between 1999-2003
Euro Zone 11	1,84
United Kingdom	2,54
Denmark	1,6
Sweden	2,7
Unites States	2,78

It is seen that United Kingdom, Sweden and United States obviously performed better real GDP growth rate than Euro area. Whereas Denmark's real GDP growth performance is slightly below the Euro area average. It is seen that Euro area's real GDP growth performance is not better than other developed countries mentioned above. In addition to this, Euro area's last two year growth performance is contrary to general trend in which major developed economies are enjoying considerable growth rate.

On the other hand, when we compare the EMU member countries' real GDP growth rate performance before and after EMU, I find out a significant difference. Again we first applied one tailed paired t test with a null hypothesis stating "EMU member countries' before EMU average real GDP growth rate is less than the after EMU average real GDP growth rate". We also used the annual real GDP growth rate figures of EMU member countries between 1994 and 2003. I have find out a calculated t score 3,439 which is higher than critical t score of 99% confidence level, 2,718. Hence we reject our null hypothesis and conclude that EMU member countries' before EMU average growth rate is higher than after EMU average growth rate.

Other than paired t test we also applied non-parametric Wilcoxon test. Wilcoxon test revealed a significance level 0,012 which is smaller than 0,05. Hence we conclude that there is a significant difference in the growth rates of EMU member countries before and after EMU.

In the light of these empirical findings when we turn back to the inflation-growth rate discussion mentioned in the previous section, we can safely conclude that ambitious

inflation targeting did not prove better inflation performance but worse real GDP growth rates for EMU member countries.

UNEMPLOYMENT

There are two conflicting arguments about the effects of EMU on unemployment in the Euro area. The first one states that unemployment in the Euro area is going to decrease over time. The other one argues that unemployment in the Euro area is going to increase in the beginning of EMU. Savaş (1999) expounds those arguments in the following way. According to first argument unemployment in the Euro area is going to decrease in the long run due to the increasing macroeconomic stability. Strict convergence criteria restricting government debt and fully independent ECB that is pursuing tight monetary policies creating a convenient economic environment that is suitable for investment. Increasing investment in the Euro area eventually lead to a decrease in unemployment in the Euro Area. Another explanation of decreasing unemployment is the increasing trade volume because of EMU. Theoretically speaking EMU has a trade creating and diverging effect in the Euro area according to Feldstein(1997). Feldstein mentions that EMU will increase the trade volume among member countries and lead to the diversion of existing imports from countries outside the monetary union to countries inside it. Hence, increasing trade volume will create new employment opportunities in the Euro area and lead to a decrease in unemployment.

The other argument claims that strict convergence criteria for EMU will lead to an increase in unemployment in the Euro area. As it is mentioned before convergence criteria imposing tight fiscal and monetary policies that can reduce investment

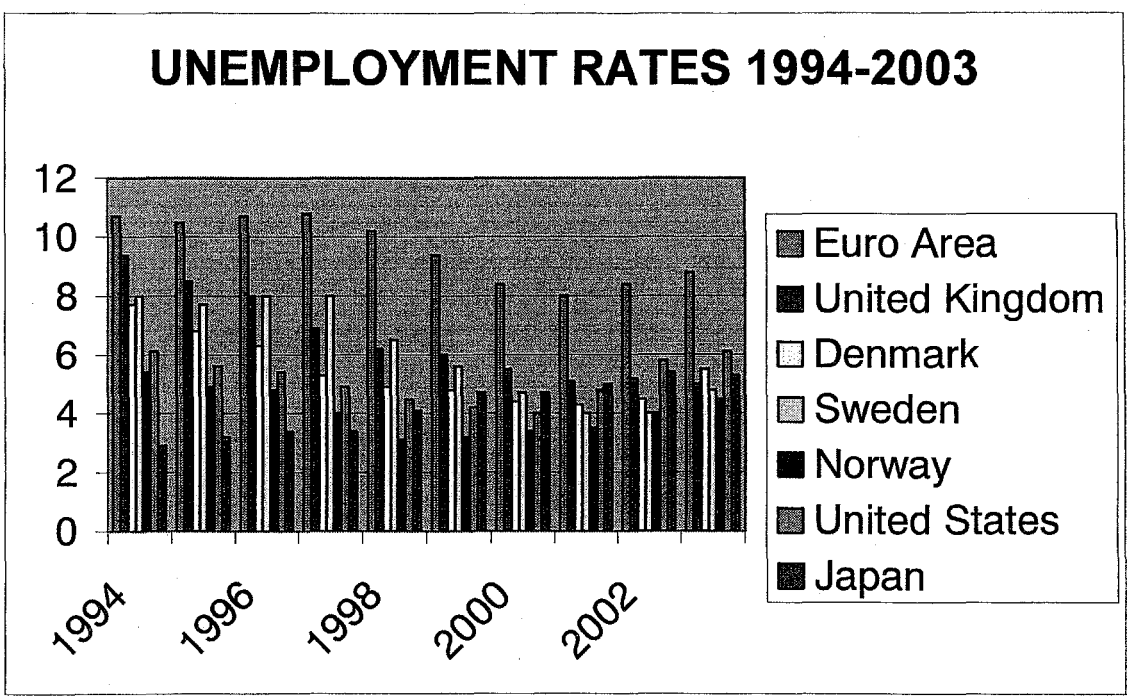
tendencies in the member states. Therefore, unemployment figures can increase temporarily in the Euro area. Another claim is focusing on asymmetrical economic shocks. As it is discussed in the previous chapter, EMU member countries give up all their effective tools namely monetary and fiscal sovereignty, use of exchange rate as policy instrument that are necessary to over come an asymmetric demand shock. They solely depend on labor mobility and wage, price flexibility. This is creating an important risk for labor force. Since labor mobility and labor market is not flexible enough in the Euro area, asymmetric economic shocks will end up with an increase in the unemployment in the Euro area.

Leaving aside the theoretical arguments, it will be helpful to examine the unemployment figures in the Euro area. Following chart (figure 10) is based on the OECD data. Looking at figure 10 and data represented in Appendix 3, it is fair to conclude that Euro area unemployment rate is a decreasing trend since 1999. Euro area's unemployment rate was 10,20 at the end of 1998. This figure dropped to 8,80 in 2003. Although Euro area's unemployment figures are in an increasing trend in the last two years, it is a reflection of general trend in the world economy. As you can see in the Appendix 3, United States, Japan, Sweden Denmark and Norway also experienced an increase in the unemployment rates. However, it has to be noted that Euro area's unemployment rate is 2 per cent higher than its closest country, United States. Euro area's 8,80 per cent unemployment rate is a reflection of its structural unemployment problem. In 1994 Euro area's unemployment rate was 10,70. This high unemployment figure did not recede much between 1994 and 1998 when there was no monetary union. After EMU this figure decline moderately from 10,20 to 8,80. Hence it is fair to

conclude that EMU member countries are experiencing a permanent structural unemployment problem.

When we apply a one tailed paired samples t test with a null hypothesis stating that "EMU member countries' before EMU average unemployment rate is lower than the after EMU average unemployment rate", we find a calculated t score 3,378. Our calculated t score is bigger than the critical t score of 99% confidence level, 2,764. Therefore we reject our null hypothesis and conclude that EMU member countries' after EMU unemployment performance is better than before EMU performance.

Figure 10 Unemployment Rates 1994-2003



In addition to paired t test we again applied a non-parametric Wilcoxon test. Our Wilcoxon test revealed a significance level 0,01 which is below the critical significance

level. Hence we conclude that there is a significant difference in the unemployment performance of EMU member countries before and after EMU.

To sum up, Euro area's unemployment performance is following the general trend in the world economy in last two years. Euro area's unemployment figures are much more better since 1999 compared to the before EMU period 1994 and 1998. However Euro area's unemployment figures are still too high compared to EU members that are not members of EMU and other developed countries such as United States, Norway and Japan. Although unemployment figures of Euro area is better after EMU, it is hard to claim that EMU can help to decrease those unemployment figures to the levels of competing economies. On the other hand it is fair to conclude that the first theoretical argument that is discussed in the beginning of this section is much more valid than the second argument.

INTRA-TRADE

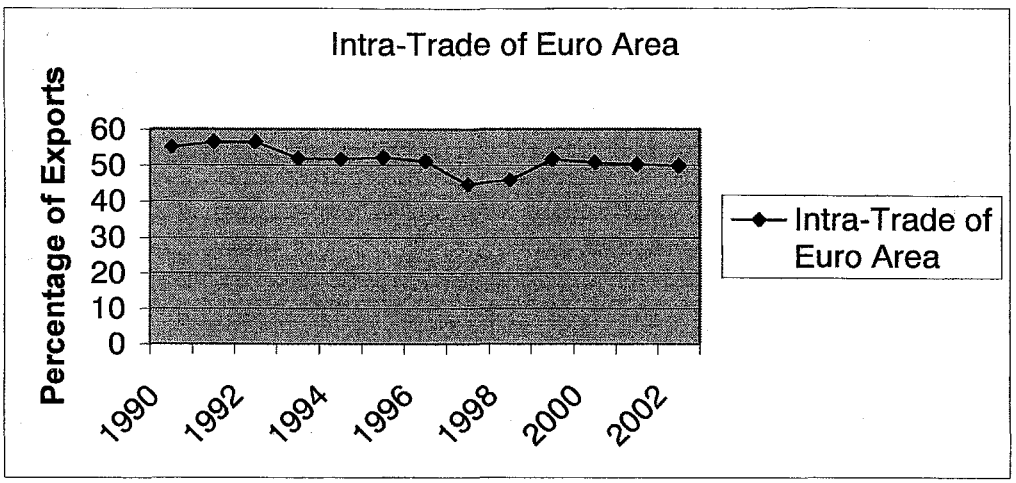
In the previous chapters while discussing the benefits of a monetary union, it has been mentioned there are arguments stating that elimination of exchange rate risk and decreasing transaction costs will create a positive effect on the intra-trade in the Euro area. According to those arguments, decreasing transaction costs and elimination of hedging costs will free intra-trade from dead-weight loses. On the other hand it has also mentioned that there is no strong empirical evidence that is pointing out a significant increase in intra-trade figures due to the elimination of exchange risk. Therefore it will be appropriate to look at the intra-trade statistics of Euro area.

When analyzing the intra-trade statistics we will focus on flow of exports in the Euro area. We will look at the percentage of exports rather than the nominal currency figures reflecting the trade volume. Because Euro zone expanded in 2001 with Greece and this created a shift in the nominal figures. Hence looking at the percentage figures will not mislead us. In addition to this, trade creating and trade diverging effects of EMU can be seen much more clearly in this way. Following table xxx is obtained from OECD data.

Table 9- Intra-Trade of Euro Area as Percentage of Exports Between 1990-2002

Intra-Trade of Euro Area as Percentage of Exports Between 1990-2002												
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Euro Zone	55,089	56,434	56,365	51,753	51,655	52,123	51,126	44,762	45,925	51,684	50,763	

Figure 11- Intra-Trade of Euro Area as Percentage of Exports Between 1990-2002



When we look at the intra-trade figures of Euro area we see that in 1999 in the first year of EMU we realize an almost 6 per cent increase in intra-trade between EMU members. However, we can not observe a continuos increase in the following years. Intra-trade volume of Euro area as percentage of exports has been stabilized around 50 per cent. When we look at this picture from a broader perspective we see that since the beginning of 1990s intra-trade volume of Euro area is in a decreasing trend. EMU could not reverse this trend. In the beginning of 1990s intra-trade volume of Euro area was around 56 per cent of total exports. However in 2002 this figure is around 50 per cent. 6 per cent decrease is striking. When we consider the theoretical discussion in the light of these empirical findings; it is fair to conclude that EMU could not realize its trade creating and diverging effects in the Euro area.

CHAPTER 6

CONCLUSION

It is true that entering a monetary union is primarily a political decision. Political actors bear the cost of making these difficult decisions under the pain of losing (or winning for that matter) elections. However, regardless the political content of these decisions, the political costs of joining and remaining at a monetary union is calculated through the economic performance of the union. Therefore it was important to link the political content of the European Monetary Integration process to its economic performance.

It is very costly to opt for an exit from EMU. But it is possible. Eichengreen and Frieden (2001) start their edited volume by warning the reader that EMU is not an irreversible process. Though it may prove costly, any member at any time can choose to use the exit option.

In short, the decision to enter or exit from a monetary union is dependent on a combination of cost benefit analyses in both economic and political realms. So, there is no guarantee that a politically promoted EMU will perpetuate no matter what the economic costs it may incur to the members.

When we think in terms of cost and benefit analysis, the decisions that define the past, the present and the future of EMU appear to be a delicate web of political and economic considerations. In this thesis, I tried to show that the making of the EMU was

a political history as well as an economic one and that the Economic performance of this highly promoted union is not an admirable success story.

The history of the snake was short and miserable. But the EMS and EMU proved to be successful. Is this difference due to the severity of the crises that hit each attempt? In fact the 92-93 recessions and the collapse of the sterling in 1992 were no less severe than the devaluations of the mid 70s. But, the snake died and EMU survived. Obviously a full fledged historical study of the monetary integration is far beyond the intention of this study.

Here I focused on the economic rationale of the EMU. My analysis shows that EMU is not an optimum currency zone. In addition the economic performances of the Euro zone countries in key performance criteria show that adopting euro was not a very lucrative investment. EMU has not helped reduce the inflation, increase employment, boost growth and increase the amount of trade within the Euro zone. In fact in all major macroeconomic criteria EMU has not provided any improvement to the community. The only two benefits of the EMU so far realized were the creation of an international currency and decreased transaction costs. Both benefits are important, yet it is not clear whether these benefits fulfill the expectations from the monetary union.

On the other hand snake was not less rational than the EMU but it collapsed miserably while EMS did not. It was not the economic performance of the snake that led it to its collapse. But the lack of commitment of the members and the disbelief of the market caused its demise.

My analysis shows that from a purely economic perspective, in the absence of a common fiscal policy or realization of the Economic Union, entering Euro is not a rational choice. Yet the hard fact is that no one has ever opted for the exit option yet. There is even not a serious discussion. This is of course expected since monetary union is attached to a political aim: Providing the momentum for further economic and political integration. Although entering a monetary union, and abandoning national currencies is a hard political choice, surrendering budgetary control over the government spending to a European fiscal high authority is even harder. So although the monetary union is costly, it is not as politically costly as establishing the economic and political union. This is partly the reason why an economically questionable practice has been in effect since 1999.

However, there is always a stop-loss point. This is why an economic evaluation of EMU is important. Even if political concerns were influential in keeping the EMS and EMU alive in 1979-83 and 1992-93 respectively it was the economic recovery that made the survival perpetual. If devaluations had continued after 1983 and if recession had not ended in the second half of the 90s, the fate of the EMS and EMU might have been very different. Therefore we have to be wary.

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APPENDIX 1

INFLATION RATES BETWEEN 1994-2003

Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	BEMUAV	AEMUAV
EU 15	2,80	2,80	2,40	1,70	1,30	1,20	1,90	2,20	2,10	2,00	2,2	1,88
Euro zone-11	2,70	2,40	2,20	1,60	1,10	1,10	2,10	2,30	2,30	2,10	2	1,98
Euro zone-12	2,80	2,60	2,30	1,70	1,20	1,10	2,10	2,40	2,30	2,10	1,97	2,27
Belgium	2,40	1,30	1,80	1,50	0,90	1,10	2,70	2,40	1,60	1,50	1,58	1,86
Germany	2,80	1,70	1,20	1,50	0,60	0,60	1,40	1,90	1,30	1,00	1,56	1,24
Greece	10,90	8,90	7,90	5,40	4,50	2,10	2,90	3,70	3,90	3,40	6,09	3,67
Spain	4,60	4,60	3,60	1,90	1,80	2,20	3,50	2,80	3,60	3,10	3,3	3,04
France	1,70	1,80	2,10	1,30	0,70	0,60	1,80	1,80	1,90	2,20	1,52	1,66
Ireland	2,40	2,50	2,20	1,20	2,10	2,50	5,30	4,00	4,70	4,00	2,08	4,10
Italy	4,20	5,40	4,00	1,90	2,00	1,70	2,60	2,30	2,60	2,80	3,5	2,40
Luxembourg	2,20	1,90	1,20	1,40	1,00	1,00	3,80	2,40	2,10	2,50	1,54	2,36
Netherlands	2,10	1,40	1,40	1,90	1,80	2,00	2,30	5,10	3,90	2,20	1,72	3,10
Austria	2,70	1,60	1,80	1,20	0,80	0,50	2,00	2,30	1,70	1,30	1,62	1,56
Portugal	5,00	4,00	2,90	1,90	2,20	2,20	2,80	4,40	3,70	3,30	3,2	3,28
Finland	1,60	0,40	1,10	1,20	1,40	1,30	3,00	2,70	2,00	1,30	1,14	2,06
Denmark	1,80	2,00	2,10	1,90	1,30	2,10	2,70	2,30	2,40	2,00	.	.
Sweden	2,90	2,70	0,80	1,80	1,00	0,60	1,30	2,70	2,00	2,30	.	.
United Kingdom	2,00	2,70	2,50	1,80	1,60	1,30	0,80	1,20	1,30	1,40	.	.
Norway	1,40	2,50	0,70	2,60	2,00	2,10	3,00	2,70	0,80	2,00	.	.
United States	2,60	2,80	3,00	2,30	1,60	2,20	3,40	2,80	1,60	2,30	.	.
Japan	0,70	-0,10	0,10	1,80	0,60	-0,30	-0,70	-0,70	-0,90	-0,30	.	.

Source: European Statistics Institute

APPENDIX 2

REAL GDP GROWTH RATES BETWEEN 1994-2003

Countries	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	BEMUAV	AEMUAV
EU 15	2,70	2,40	1,60	2,50	2,90	2,90	3,50	1,60	1,00	0,70	2,42	1,94
Euro zone -11	2,40	2,20	1,40	2,30	2,90	2,80	3,50	1,60	0,90	0,40	2,24	1,84
Euro zone -12	2,40	2,20	1,40	2,30	2,90	2,80	3,50	1,60	0,90	0,40	2,50	0,97
Belgium	3,20	2,40	1,20	3,50	2,00	3,20	3,80	0,60	0,70	0,80	2,46	1,48
Germany	2,30	1,70	0,80	1,40	2,00	2,00	2,90	0,80	0,20	-0,10	1,64	0,95
Greece	2,00	2,10	2,40	3,60	3,40	3,40	4,40	4,00	3,90	4,70	3,04	4,25
Spain	2,40	2,80	2,40	4,00	4,30	4,20	4,20	2,80	2,00	2,40	3,18	2,85
France	2,10	1,70	1,10	1,90	3,40	3,20	3,80	2,10	1,20	0,10	2,04	1,80
Ireland	5,80	9,90	8,10	11,10	8,60	11,30	10,10	6,20	6,90	1,60	8,70	6,20
Italy	2,20	2,90	1,10	2,00	1,80	1,70	3,00	1,80	0,40	0,30	2,00	1,38
Luxembourg	3,80	1,40	3,30	8,30	6,90	7,80	9,10	1,20	1,30	1,20	4,74	3,20
Netherlands	2,90	3,00	3,00	3,80	4,30	4,00	3,50	1,20	0,20	-0,90	3,40	1,00
Austria	2,60	1,60	2,00	1,60	3,90	2,70	3,40	0,80	1,40	0,90	2,34	1,63
Portugal	1,00	4,30	3,50	4,00	4,60	3,80	3,40	1,70	0,40	-0,80	3,48	1,18
Finland	3,90	3,40	3,90	6,30	5,00	3,40	5,10	1,10	2,30	1,90	4,50	2,60
Denmark	5,50	2,80	2,50	3,00	2,50	2,60	2,80	1,60	1,00	0,00		
Sweden	4,20	4,10	1,30	2,40	3,60	4,60	4,30	0,90	2,10	1,60		
United Kingdom	4,40	2,80	2,70	3,30	3,10	2,80	3,80	2,10	1,70	2,30		
Norway	5,30	4,40	5,30	5,20	2,60	2,10	2,80	1,90	1,00	1,00		
United States	4,00	2,50	3,70	4,50	4,20	4,40	3,70	0,50	2,20	3,10		
Japan	1,10	1,90	3,40	1,90	-1,10	0,10	2,80	0,40	-0,40	2,60		

Source: European Statistics Institute

APPENDIX 3

UNEMPLOYMENT RATES: COMMONLY USED DEFINITIONS (PER CENT OF LABOR FORCE)

Country	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	BEMUAV	AEMUAV
Euro Area	10,7	10,5	10,7	10,8	10,2	9,4	8,4	8	8,4	8,8	10,1	8,4
Austria	5,3	5,3	5,6	5,7	5,7	5,3	4,7	4,8	5,3	5,5	5,52	5,12
Belgium	9,8	9,7	9,5	9,2	9,3	8,6	6,9	6,7	7,3	8,2	9,5	7,54
Finland	16,6	15,4	14,6	12,7	11,4	10,3	9,8	9,1	9,1	9,2	14,14	9,5
France	12	11,4	12	12,1	11,5	10,7	9,4	8,7	9	9,6	11,8	9,48
Germany	8	7,7	8,4	9,2	8,7	8	7,3	7,4	8,1	8,9	8,4	7,94
Greece	9,6	9,1	9,8	9,8	11,1	11,9	11,1	10,4	10	9,3	9,88	10,54
Italy	11,2	11,7	11,7	11,8	11,9	11,5	10,7	9,6	9,1	8,9	11,66	9,96
Luxembourg	2,7	3	3,3	3,6	3,1	2,9	2,6	2,6	3	3,8	3,14	2,98
Netherlands	7,6	7,1	6,6	5,5	4,2	3,2	2,6	2	2,3	3,7	6,2	2,76
Portugal	6,9	7,2	7,3	6,7	5	4,4	4	4,1	5,1	6,4	6,62	4,8
Spain	18,4	18,1	17,5	16,6	15	12,8	11	10,5	11,4	11,4	17,12	11,42
Denmark	7,7	6,8	6,3	5,3	4,9	4,8	4,4	4,3	4,5	5,5		
United Kingdom	9,4	8,5	8	6,9	6,2	6	5,5	5,1	5,2	5		
Norway	5,4	4,9	4,8	4	3,1	3,2	3,4	3,5	4	4,5		
Sweden	8	7,7	8	8	6,5	5,6	4,7	4	4	4,8		
United States	6,1	5,6	5,4	4,9	4,5	4,2	4	4,8	5,8	6,1		
Japan	2,9	3,2	3,4	3,4	4,1	4,7	4,7	5	5,4	5,3		

Source: European Statistics Institute

APPENDIX 4

PAIRED T TEST & NON-PARAMETRIC TEST OF INFLATION DATA

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BEMUAV	2.4038	12	1.4109	.4073
	AEMUAV	2.5272	12	.9036	.2609

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	BEMUAV & AEMUAV	12	.578	.049

Paired Samples Test

		Paired Differences					t
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	
Pair 1	BEMUAV - AEMUAV	-.1234	1.1545	.3333	-.8569	.6101	-.370

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
AEMUAV - BEMUAV	Negative Ranks	5[a]	6.40	32.00
	Positive Ranks	7[b]	6.57	46.00
	Ties	0[c]		
	Total	12		

a. AEMUAV < BEMUAV

b. AEMUAV > BEMUAV

c. BEMUAV = AEMUAV

Test Statistics [b]

	AEMUAV - BEMUAV
Z	-.549[a]
Asymp. Sig. (2-tailed)	.583

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

APPENDIX 5

PAIRED T TEST & NON-PARAMETRIC TEST OF REAL GDP GROWTH RATE DATA

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BEMUAV	3.4602	12	1.9105	.5515
	AEMUAV	2.3750	12	1.5716	.4537

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	BEMUAV & AEMUAV	12	.820	.001

Paired Samples Test

		Paired Differences					t
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	
Pair 1	BEMUAV - AEMUAV	1.0852	1.0931	.3156	.3907	1.7798	3.439

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
AEMUAV - BEMUAV	Negative Ranks	11[a]	6.45	71.00
	Positive Ranks	1[b]	7.00	7.00
	Ties	0[c]		
	Total	12		

a. AEMUAV < BEMUAV

b. AEMUAV > BEMUAV

c. BEMUAV = AEMUAV

Test Statistics [b]

	AEMUAV - BEMUAV
Z	-2.510[a]
Asymp. Sig. (2-tailed)	.012

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test

APPENDIX 6

PAIRED T TEST & NON-PARAMETRIC TEST OF UNEMPLOYMENT DATA

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	BEMUAV	9.4527	11	4.0786	1.2298
	AEMUAV	7.4582	11	3.0758	.9274

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	BEMUAV & AEMUAV	11	.887	.000

Paired Samples Test

		Paired Differences					t
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	
Pair 1	BEMUAV - AEMUAV	1.9945	1.9584	.5905	.6789	3.3102	3.378

NPar Tests

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
AEMUAV - BEMUAV	Negative Ranks	10[a]	6.20	62.00
	Positive Ranks	1[b]	4.00	4.00
	Ties	0[c]		
	Total	11		

a. AEMUAV < BEMUAV

b. AEMUAV > BEMUAV

c. BEMUAV = AEMUAV

Test Statistics [b]

	AEMUAV - BEMUAV
Z	-2.578[a]
Asymp. Sig. (2-tailed)	.010

a. Based on positive ranks.

b. Wilcoxon Signed Ranks Test