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The Euro as an Economic, Monetary, Political, and Social Stabilizer for the Eurozone and the EU

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THE EURO AS AN ECONOMIC, MONETARY, POLITICAL, AND SOCIAL STABILIZER FOR THE EUROZONE AND THE EUROPEAN UNION

By

Maria J. Lorca-Susino

A DISSERTATION

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Coral Gables, Florida

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THE EURO AS AN ECONOMIC, MONETARY, POLITICAL, AND SOCIAL STABILIZER FOR THE EUROZONE AND THE EUROPEAN UNION

María J. Lorca-Susino

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The introduction of the euro has become the most important example of structural cooperation not only within the EU but also around the world. The success story of the euro and the enlargement process both demonstrate that the EU is ready for a new phase of political and economic integration. This next stage will strengthen Europe’s voice in the world and, as Jacques Delors—President of the EU Commission from 1985-1995—was quoted by Ambassador Günter Burghart, “the perception of an emerging European identity.”

The EMU and the euro have forced countries to undertake structural reforms that have positively affected their labor markets. These reforms have enabled them to improve labor demands with a subsequent reduction of unemployment rates. Consequently, the main purpose of the EMU has been to create a solid currency that has allowed Europeans to avoid unstable macroeconomic situations and become part of an important economic and political bloc.

All of these economic and monetary requirements have facilitated the achievement of price stability, an increase in economic growth, and the amelioration of the problems of the labor markets within the Eurozone thus far. In fact, in the last 10 years, long-term interest rates have fallen to less than 4%, boosting economic growth, sustaining inflation
at around 2% on average, and creating almost 16 million jobs. Hence, the EMU has helped the Eurozone enjoy a solid common currency with the status of an international currency. The euro has therefore favoured the reinforcement of common institutions that have promoted the status of the Eurozone to that of an economic and political actor recognized worldwide.

The global recession that has recently unfolded is putting the euro to the test. This study analyzes the past ten years of the euro and how, during this time, it has served as a stabilizing factor. The economic, monetary, fiscal, and social events that have been taking place daily since December 2008 are not part of this study. However, this study informs a number of qualitative and quantitative circumstances that explain the current developing situation.
DEDICATION

Este trabajo está dedicado a mi familia que me ha ayudado, escuchado, orientado, y animado durante todos estos años. A mi padre por inspirarme y orientarme, a mi madre por hacerme ver las cosas con tranquilidad, a mi hermano por su incondicional ayuda, y a mi marido por su continuo apoyo. Sin mi familia, este proyecto nunca se habría convertido en una realidad.

Este trabajo también está dedicado al Dr. Joaquín Roy por enseñarme que nunca hay que abandonar, y al Dr. Michael B. Connolly por haberme dado la oportunidad y creer en mí. Finalmente, a todos los amigos que me han deseado buena suerte.
ACKNOWLEDGEMENT

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Special thanks go out to the University of Miami for being a wonderful institution that has shaped my life.
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<td>GBP</td>
<td>British pound</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GDR</td>
<td>Germany Democratic Republic</td>
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<tr>
<td>GNP</td>
<td>Gross National Product</td>
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<tr>
<td>HICP</td>
<td>Harmonized Index of Consumer Price</td>
</tr>
<tr>
<td>IGC</td>
<td>Intergovernmental Conference</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>ITL</td>
<td>Italian lira</td>
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<tr>
<td>JER</td>
<td>Joint Employment Report</td>
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<tr>
<td>JPY</td>
<td>Japanese yen</td>
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<tr>
<td>LIBOR</td>
<td>London Interbank Offering Rate</td>
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<tr>
<td>LMU</td>
<td>Latin Monetary Union</td>
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<tr>
<td>NBER</td>
<td>National Bureau of Economic Research</td>
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<td>NCB</td>
<td>National Central Banks</td>
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<tr>
<td>NYBOT</td>
<td>New York Board of Trade</td>
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<tr>
<td>NYBT</td>
<td>New York Board of Trade</td>
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<tr>
<td>NYSE</td>
<td>New York Stock Exchange</td>
</tr>
<tr>
<td>OAPEC</td>
<td>Organization of Arab Petroleum Exporting Countries</td>
</tr>
<tr>
<td>OCA</td>
<td>Optimum Currency Area</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>OEEC</td>
<td>Organization for European Economic Cooperation</td>
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<tr>
<td>OPEC</td>
<td>Organization of the Petroleum Exporting Countries</td>
</tr>
<tr>
<td>PIGS</td>
<td>Portugal, Italy, Greece, Spain</td>
</tr>
<tr>
<td>SDR</td>
<td>Special Drawing Right</td>
</tr>
<tr>
<td>SEA</td>
<td>Single European Act</td>
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<tr>
<td>SEK</td>
<td>Swedish krona</td>
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<tr>
<td>SGP</td>
<td>Stability and Growth Pact</td>
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<tr>
<td>TFEU</td>
<td>Treaty on the Functioning of the European Union</td>
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<tr>
<td>The Fed</td>
<td>U.S. Federal Reserve</td>
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<tr>
<td>The Fed</td>
<td>The Federal Reserve Bank</td>
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</tbody>
</table>
U.K.  United Kingdom
U.S.  United States
UEMOA  African Economic and Monetary Union
USDX  U.S. Dollar Index
USDX  U.S. Dollar Index
USSR  Union of Soviet Socialist Republics
WAMZ  West African Monetary Zone
WWI  World War I
WWII  World War II
Introduction

The euro was introduced on January 1, 2000 at the beginning of the expansionary phase of the business cycle. During these years, the euro has become an economic, monetary, fiscal, political, and social stabilizer. However, a brutal global recession has unfolded and, as predicted by the late Nobel laureate Milton Friedman, the survival of the euro through the worst recession since the slump of 1981-82 is yet to be seen and its strength is being put to the test.

The introduction of the euro has forced governments to comply with a number of monetary and economic requirements and to introduce a number of structural reforms in order to foster innovation, productivity, and competitiveness. These three key components are necessary for the support of the euro, the improvement of the performance of Member States’ labor markets and, more importantly, the position of the Eurozone as a strong economic power in today’s competitive and globalised world.

The ongoing effort to adopt the euro, which was introduced on January 1, 2000, has led to an improvement in Member States’ financial and economic situations. In fact, Eurozone Member States have enjoyed sustained economic growth, low inflation, a reduced unemployment rate, and a world-wide recognized currency, all of which has boosted economic, monetary, fiscal, political and social stability. The harmony between monetary and economic policies has led to a synchronization of the monetary and economic performance of Member States, which, in turn, has sparked the beginning of what can be considered the European business and economic cycles. These cycles are becoming increasingly synchronized and competitive with today’s U.S. dominated
business and economic cycles as references, guides, and forecasting agents. Hence, the euro has stabilized the Eurozone because it has harmonized the political, economic, and monetary relations among Member States, nurturing a positive environment to improve the labor market and job creation.

This harmonization of economic and monetary performance has helped regional integration among Eurozone Member States. In fact, the European Union (EU) has become an icon of successful regional integration. Despite this success, the ongoing integration process has two different speeds; while economic integration has been fast, steady, and assertive, political integration has been slow and sometimes demoralizing. This is justified by the complicated idiosyncrasy of the EU structure. However, the integration difficulties are being viewed with a dangerous complacency. In fact, many voices are claiming that the EU integration process has come to an abrupt end due to the latest difficulties in encouraging important structural reforms, implementing sound economic requirements, and struggling to agree on the Treaty of Lisbon. In fact, Gros and Micossi (2008, 3) have stated that “the EU’s inability to meet the challenges of integration is due to rigid economic structures and inadequate human capital.” In this sense, since the creation of the European Union (EU) there has been an academic debate concerning whether economic integration precedes political integration or vice versa. Some assert that political decisions are the propellers of regional integration and, as Balassa (1961, 129) states, “political motives may prompt the first step in economic integration.” On the other hand, El-Agraa (1989, 10) explains that political decisions have been motivated by economic reasoning. Similarly, Nieminem notes (2005, 91) that historical evidence proves that “descriptions of fluctuations of international economic
integration identify clear economic dynamics behind political decisions.” In fact, according to G. Schroder (2008, 1) “the creators of the euro envisioned it as an instrument to promote political union.”

This study demonstrates that the introduction of the euro has facilitated the EU’s regional integration process, which encompasses economic, monetary, and political integration. Further, this work proves that ten years after the inception of the euro, it has not only become a successful common but also international currency. This dissertation argues and works to demonstrate that since the introduction of the euro countries have been, to different degrees, complying with the necessary requirements to maintain a stable euro which has, in turn, allowed Europe to blossom “into a continent that is widely admired as prosperous, diverse, and caring” (Deppler 2007, 5).

**Historical Background**

The road to the Economic and Monetary Union (EMU) and the euro was paved by the Maastricht Treaty\(^1\) signed in February 1992. The introduction of the euro in 2000 meant that twelve\(^2\) countries had to relinquish their national currencies in favor of a common currency, the euro. The Maastricht Treaty does not incorporate a provision for a country to leave and return to its own currency, preventing countries from devaluing\(^3\) their

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\(^1\) The Maastricht criteria adopted the “Delors Report” of 1989 that specified a three-staged plan to adopt the euro. This report further explained that those countries willing to adopt the euro must maintain a specific inflation rate, solid government finance, and most importantly, a stable exchange rate. The EMU also specified that such countries should join the exchange-rate mechanism under the European Monetary System for two consecutive years without devaluing its currency.

\(^2\) Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxemburg, Netherlands, Portugal, Slovenia, and Spain

\(^3\) According to Federal Reserve Bank of New York, a government devalues its currency because the interactions of market forces and policy decisions have made the currency's fixed exchange rate untenable. A key effect of devaluation is that it makes the domestic currency cheaper relative to other currencies with two consequences. First, devaluation makes the country's exports relatively less expensive for foreigners
currencies. It is for this reason that Martin Feldstein (2000a, 1) has described the EMU as a coalition that “is meant to be a marriage made in heaven with no possibility of divorce.”

The Maastricht Treaty was designed to enable countries to achieve the monetary and fiscal stability needed to adopt the euro. The Maastricht criteria adopted the “Delors Report” of 1989 that specified a three-staged plan for those countries willing to adopt the euro. Granell (1989) explains that the idea of a common currency incorporated into the Delors Report was approved at the informal ECOFIN meeting that took place at S’Agaro—Hostal La Gavina—in the Costa Brava (Spain).  

This treaty spelled out the Convergence criteria requirements which the EU Member States must achieve to enter the European Economic and Monetary Union (EMU). The EMU’s aim is to drive countries to obtain fiscal and monetary stability to achieve economic growth, an important ingredient for the positive evolution of employment rates. Once the Convergence criteria are met, countries are allowed to enter the EMU and introduce the euro as a common currency to become part of the Eurozone. Finally, Eurozone Member States have to comply with the requirements of the European Central
Bank (ECB) for monetary policy and with the demands of the Stability and Growth Pact (SGP) for fiscal policy.

All of these requirements have helped Eurozone countries to achieve the monetary and economic stability needed to maintain the euro. This stability has, in turn, positively affected the labor market: a market that was not seriously taken into account until 1997 when the EU signed the Amsterdam Treaty. Further, in the year 2000, Member States agreed upon the Lisbon Agenda, which underscored the importance of understanding the causes of unemployment and its economic, social, and political consequences.

Due to all of the economic and monetary adjustments that Eurozone countries were required to undergo as perquisites for joining the EMU and adopting the euro, predictions of success for the EMU have been mixed. On the one hand, eurosceptics predicted that the EMU and the euro would not have a significant effect on the overall economic performance of the euro area (Levy 2004, 71). They also speculated that the Eurozone’s persistent growth shortfall would not help improve the elevated unemployment rate of the 1990’s. On the other hand, defenders of the euro believed that the proper functioning of the EMU and the success of the euro as an international currency would require fiscal, monetary, and labor market reforms. They envisioned an improvement in the economic performance of the Eurozone as well as a reduction in the high unemployment rate of the EU as a result of these reforms. These differing points of view support Fishman and Messina’s (2000, 6) claim that “the euro changeover represents an extraordinary real world experiment allowing competing scholarly views to be confronted with new evidence.”
Statement of the Problem

In recent years, the causes and remedies of the high European unemployment rate along with the performance of the euro after its introduction have considerably intrigued economists and policy-makers. Curiously enough, these two topics are related. As Padoan (2001, 57) explains, “the way in which a single currency is managed will affect the possibilities for reducing European unemployment.”

In his “Theory of Optimal Currency Areas,” Robert Mundell (1961) explains that a monetary union is not appropriate for a group of countries if the common currency negatively impacts the labor market. However, he asserts that a common currency cannot function satisfactorily if the labor market displays excessive rigidity and too little mobility. This is, unfortunately, one of the criticisms that the European Commission (2008) highlights in its latest report titled “EMU@10: Successes and Challenges After 10 Years of Economic and Monetary Union.” The European Commission (2008a, 7) states that the single currency was expected to bring benefits; in fact, according to the Commission, “it is unlikely that job gains would have been as impressive under the more volatile monetary conditions and fiscal instability that used to prevail under the previous system.” Alternatively, there are also risks “especially linked to the fact that European workers have demonstrated that they are reluctant to move to seek jobs” (Atkins 2008, 9).

The labor market was not seriously taken into account until the Amsterdam Treaty was signed in October 1997 and the Lisbon Agenda agreed upon in March 2000. These pinnacle agreements strengthened the importance of understanding the causes and consequences of unemployment. In fact, the Lisbon Agenda represented a new attitude and sense of responsibility for the governments of the countries of the EU with respect to
the problem of unemployment. Apart from announcing the new goal of EU policy and a new responsibility for national governments, the Lisbon Agenda is of the utmost significance in that it obligates the governments to continuously assess the employment situation.

Despite its original intention, the economic expansion that the Eurozone has experienced in the past ten years has displaced the importance of implementing certain significant labor reforms stated in the Lisbon Agenda. However, since the beginning of 2008, the shadow of high unemployment rates has dominated the popular debate about economic issues. In fact, citizens of Member States are beginning to openly blame the euro for the economic difficulties that have arisen lately and which are leading to an increase in unemployment rates. Hence, the unemployment rate is once more becoming an important topic of discussion. In fact, the International Monetary Fund (1999, 68) has already reported that

a failure to address labor market problems would prevent Europe from realizing its full growth potential and could also weaken the credibility of the euro if financial markets perceive that persistent unemployment is eroding support for prudent macroeconomics.

Significance of the Study

This study is significant for a number of reasons. First of all, it is intended to contribute to the growing body of literature on European integration in the wake of the euro becoming an international currency. This study hopes to explain from a political, economic, and monetary point of view, that the adoption of the euro has been a success and has set precedence for other countries aiming at creating a prosperous monetary and economic union.
The significance of this study also lies in its contribution to an understanding of how the euro has facilitated economic growth, the creation of employment, and the maintenance of inflation under control in the Eurozone. This study intends to shed light on how the new requirements set in place for the adoption of the euro have engendered a high degree of monetary, economic, fiscal, political, and social stability, which could further help integrate not only the Eurozone but also the EU.

This study also purports to fill in the existing gap in the literature as it relates to the question of how the EMU and the euro have affected the labor market of Eurozone Member States. Although the significance of the monetary and economic components of the currency changeover has been widely acknowledged, I direct my focus towards a somewhat less obvious, but equally relevant terrain: that is, the effect of this transition upon the labor market.

This research is particularly relevant at this time given the unfolding of economic imbalances that are causing some Member States economies’ to perform poorly and impacting the labor markets negatively. The euro is being used as a scapegoat. It is blamed for the lack of competitiveness reflected in the large current account deficit built up by some countries during the past decade. In fact, according to the latest study, “productivity growth has slowed significantly since 1999” in the Eurozone (Atkins 2008, 2). Although the easy response is to blame the euro, this thesis will demonstrate that the euro has not been a negative factor for the Eurozone, rather, this thesis argues that some Member States have not implemented the reforms needed to face the challenge of the euro.
Most significantly, this study is intended to shed light on some of the questions that worry European citizens as more countries are expected to adopt the euro, economic conditions worsen, and globalization pressures intensify.

Hypothesis and Research Question

The hypothesis of this dissertation is that the implementation of monetary and economic policies that Eurozone Member States are obligated to respect\(^8\) has helped improve their monetary, fiscal, economic, and social situations significantly.

In order to come to a conclusion, I will pose the following research questions.

First, are Member States of the Eurozone complying with the ECB, and respecting the Stability and Growth Pact (SGP) goals necessary to have a stable euro? If so, how has the structure and dynamics of these benchmarks contributed to the strengthening the role of the euro?

Second, has the performance of the euro helped enhance economic and monetary integration, not only of the Eurozone but also of the EU as a bloc? And has this economic and monetary integration spilled over towards further political integration?

Finally, have these gains in economic, monetary and political integration helped the performance of the labor market in the Eurozone? If there has been a change, how has the performance of the labor market in the Eurozone affected the EU? And, can these changes be identified with the onset of a European business and economic cycle?

\(^8\) In order to comply with EMU requirements.
Methodology

The main purpose of this study is to identify whether the euro has been an economic, monetary, fiscal, and social stabilizer for the Eurozone. In order to accomplish this, this dissertation uses a quantitative and a qualitative approach.

Chapters three through five uses a qualitative approach; in fact, chapter three analyses qualitatively how the euro has become not only a common currency but also an international one; chapter four analyses quantitatively how Member States are respecting monetary and fiscal policies; finally, chapter five studies qualitatively how the euro has affected Member States’ labor markets.

Chapter six uses a number of statistical and technical analyses to quantitatively corroborate the degree to which the euro has become a common and international currency, and Member States are observing monetary and fiscal requirements. The purpose of this quantitative study is to thoroughly analyse the fitness of the euro as a stabilizer using a vast variety of indexes.

Table. Summary of indexes used, statistic database, and data sources

<table>
<thead>
<tr>
<th>Indexes</th>
<th>Statistic Database</th>
<th>Data Sources</th>
</tr>
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<tbody>
<tr>
<td>U.S. dollar Index</td>
<td>New York Federal Reserve Board</td>
<td>Economagic</td>
</tr>
<tr>
<td>German D-mark or Dem</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Euro</td>
<td>European Central Bank (ECB)</td>
<td>European Central Bank</td>
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<tr>
<td>French franc (FRF)</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Spanish peseta (ESP)</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Italian lira (ITAL)</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>British pound (GBP)</td>
<td>Future Source</td>
<td>E-signal</td>
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<tr>
<td>Dow Jones Industrial Average (DJIA)</td>
<td>Dow Jones Industrial Average (DJIA)</td>
<td>Economagic</td>
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<tr>
<td>EURO Top 100</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Crude Oil (CR)</td>
<td>Bureau of Labor Statistics (BLS)</td>
<td>Economagic</td>
</tr>
<tr>
<td>Commodities Research Bureau (CRB)</td>
<td>Bureau of Labor Statistics (BLS)</td>
<td>Economagic</td>
</tr>
<tr>
<td>Treasury Note (2 years)</td>
<td>Federal Reserve, Board of Governors</td>
<td>Economagic</td>
</tr>
<tr>
<td>Eurodollar</td>
<td>Federal Reserve, Board of Governors</td>
<td>Economagic</td>
</tr>
<tr>
<td>Treasury Note (10 years)</td>
<td>Federal Reserve, Board of Governors</td>
<td>Economagic</td>
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</table>
All the indexes used in the quantitative study have been plotted with the consent of the Omega Research Pro-Suit 2000i program. This is a professional program which only plots data in Metastock form. However, numerical data collected from Future Source, the European Central Bank (ECB), and Economagic was obtained in Excel format. In order to convert Excel data into Metastock readable data, a professional data converter program, the Downloader, was used. Finally, there are a number of figures which have been collected directly from Economagic.

How the Dissertation is organized

The content of this dissertation is divided into six chapters.

The first chapter examines the historic background that led to the introduction of the euro as a common currency. The importance of the German economy and its political circumstances are analysed to explain a number of primordial characteristics embedded in the Economic and Monetary Union (EMU) that sustains the euro as common currency.
The second chapter explains the theoretical framework behind the creation of the euro. It will begin with a short review on the evolution of the EU, the EMU, and the introduction of the euro. This chapter reviews the meaning of economic, monetary and political integration. It explains the theory of Optimal Currency Areas, the path to the EMU, and the adoption of the euro as a common currency. Finally, it also reviews the literature on labor markets and its implications for various countries, setting the conceptual framework for the study.

The third chapter explains whether the euro has become a stable common currency. This section pays close attention to the evolution of the euro from a common currency to an international currency as well as to the possibility of it becoming a global one.

The fourth chapter builds on the historical content provided in chapter one and provides a panoramic overview of the current economic meaning of both the EMU and the euro in the Eurozone. This chapter analyzes recent fiscal policy performance of Member States in relation to the observance of the Stability and Growth Pact (SGP) requirements. It also reviews monetary policy and the ECB performance and decisions taken to maintain price stability and control inflation in the Eurozone. Great emphasis is placed on explaining which countries are complying and what consequences a non-observance position can bring to the future of the euro and Eurozone. Finally, this chapter reviews contemporary attitudes toward the euro.

The fifth chapter explores the evolution of the labor market in the Eurozone with the introduction of the euro. This chapter is crucial to the study since it assesses how the efforts to adopt the euro have exerted a transformational influence on the labor market. This chapter also explores some of the major challenges faced by the Eurozone labor
markets as the Eurozone expands and economic conditions get tougher. The main significance of this chapter lies in its demonstration of how the euro and its influence on the labor market are pushing toward deeper integration and cooperation.

The sixth chapter focuses on the quantitative analysis of a set of specific time series in order to draw the conclusion of this thesis: whether the EMU and the euro have been a stabilizing factor for the Eurozone. To arrive at a conclusion, I analyze the performance of the euro in relation to the behaviour of a number of selected macroeconomic time series. Furthermore, this analysis aims to demonstrate whether the EMU and the euro have helped synchronize the European business and economic cycle that could compete with the current hegemony of the U.S. business and economic cycle for reference, guidance, and forecasting. This chapter is particularly significant in its attempt to bring to light a new approach for understanding the relationship between the euro and the labor market. Consequently, a thorough explanation of both the data collection and analytical methods used in this analysis will be provided. Finally, this chapter will not only present and explain the results but also expose the limitations and biases of the study.

The final chapter presents the summary and conclusion of this dissertation. It will address how well the adoption of the euro has served not only as a monetary, economic and political stabilizer, but also as an integrating tool. It will, moreover, explain how this stabilization has affected the labor market in the Eurozone. Finally, this chapter outlines some recommendations for the conservation of the international credibility of the euro, which is paramount for the continuation of the Eurozone and European Union (EU) projects.
Conclusion

The introduction of the euro has become the most important example of structural cooperation not only within the EU but also around the world. The success story of the euro and the enlargement process both demonstrate that the EU is ready for a new phase of political and economic integration. This next stage will strengthen Europe’s voice in the world and, as Jacques Delors—President of the EU Commission from 1985-1995—was quoted by Ambassador Günter Burghart, “the perception of an emerging European identity.”

The EMU and the euro have forced countries to undertake structural reforms that have positively affected their labor markets. These reforms have enabled them to improve labor demands with a subsequent reduction of unemployment rates. Consequently, the main purpose of the EMU has been to create a solid currency that has allowed Europeans to avoid unstable macroeconomic situations and become part of an important economic and political bloc. Therefore, the Economic and Monetary Union (EMU) is, as Wolfgang Munchau (1999, 21) states:

a game of double or quits. If accompanied by prudent policies and economic reforms, it could help secure sound and stable growth and reduce Europe’s chronic unemployment. But if EMU fails, the whole process of European integration must be at risk.

All of these economic and monetary requirements have facilitated the achievement of price stability, an increase in economic growth, and the amelioration of the problems of the labor markets within the Eurozone thus far. In fact, in the last 10 years, long-term interest rates have fallen to less than 4%, boosting economic growth, sustaining inflation at around 2% on average, and creating almost 16 million jobs. Hence, the EMU has helped the Eurozone enjoy a solid common currency with the status of an international
currency. The euro has therefore favoured the reinforcement of common institutions that have promoted the status of the Eurozone to that of an economic and political actor recognized worldwide.

Nonetheless, the global recession that has recently unfolded is putting the euro to the test. This study analyzes the past ten years of the euro and how, during this time, it has served as a stabilizing factor. However, the economic, monetary, fiscal, and social events that have been taking place daily since December 2008 are not part of this study. Nevertheless, this study informs a number of qualitative and quantitative circumstances that explain the current developing situation.
Chapter One

Historical Background

After World War II (WWII), Europe was devastated and the economies of Germany, France, Great Britain, and the Soviet Union were in shambles. By the end of 1945, Europe was in a state of social and political collapse and had consequently disappeared as an economic power. As the economic situation worsened in 1946 and 1947, the United States, under President Truman advised by U.S. Secretary of State George Marshall, put together the Marshall Plan that consisted of $400\textsuperscript{9} in economic aid. The U.S. Congress passed the Marshall Plan legislation, officially known as the Economic Cooperation Act, on March 30, 1948.

The Marshall Plan required the cooperation of countries receiving economic aid, which would eventually lead to the need for greater integration. In April 1948, countries receiving aid, as designated by the Marshall Plan, created the Organization for European Economic Cooperation (OEEC). This organization would eventually become the seed of the future European Union (EU).

In addition to the economic aid provided by the Marshall Plan, countries soon realized that they had to work towards organizing their economies in order to secure political and social stability. Following World War II (WWII), France was in dire need of economic reconstruction. Guided by Jean Monnet, France put together the Monnet Plan, a three-year program intended to modernize and reconstruct the devastated French

The Monnet Plan aimed at making France more competitive and reestablishing the economic dominion it enjoyed before WWII.

The objective of the Monnet Plan, adopted by Charles de Gaulle in 1946, was to achieve full employment status, raise the standard of living, and improve production and foreign trade using France’s own resources, that is, France’s heavy industries, particularly coal mining, and the steel and iron industry. However, this plan was flawed because the reconstruction of France was completely dependent on German coal. Monnet’s plan could only be accomplished through France’s direct and free access to Germany’s coal rich Ruhr Valley and Saar province. As a result, the Monnet Plan was initially oriented toward taking control of the coal-producing German areas and redirecting the production away from German industry and into French industry. Monnet expected to permanently weaken Germany while raising the French economy to its pre-war levels.

Fortunately, Jean Monnet soon realized that France’s economic recovery rested on German resources, resources which could also restore Germany’s economic power and hegemony. France, therefore, understood that the fate of both countries had to be sealed; in order to foster economic recovery, rivalry between both countries had to be subdued.

In the end, the success of the Monnet Plan did not include the weakening of the German economy. In fact, the Monnet Plan helped dismantle the non-democratic system of government characteristic of the Vichy Regime that some politicians were attempting to impose in France after the war. Furthermore, Monnet argued that the economy should be managed by both government and business taking part in it. Monnet’s

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10 On June 10, 1940, the French National Assembly faced imminent military defeat by Germany and gave full power to WWI hero Marshal Philippe Pétain. Pétain, as last President of the Council of the Third Republic, suppressed the parliament and immediately turned the regime into a non-democratic government in collaboration with Germany.
successor, Etienne Hirsch, called this a “concerted economy” that breaks away from the “planned economy” typically in place during a period of war. Monnet’s goal was to finish with government economic dirigisme and provide the right conditions for the economy to flourish and develop.

On the German side, President Adenauer also realized that the only way Germany could recover economically and regain international respectability was by cooperating with France. This cooperation was to prove that Germany had no intention of achieving supremacy, which, in turn, would help ease controls imposed by the occupying powers. With the help of Italy, Luxembourg, the Netherlands, Belgium, France, and Germany, the European Coal and Steel Community (ECSC) was signed and a “supranational community” was born. Soon after the ECSC was created, Germany turned out to be the most economically powerful country of the Community. As a result, the German mark (D-mark) became an international and anchor currency for other countries and the German Bundesbank became the de facto European central bank.

Once again, the dream of a unified European Union rested in the hands of Germany. Therefore, in order to understand today’s European economic and monetary order, it is necessary to understand the political and economic evolution of Germany, mainly because of the role it played in the creation of the Economic and Monetary Union (EMU) and in the introduction of the euro as a common currency.

Today’s German Federation is physically located in the center of the European continent; curiously enough, Germany has been at the center of most significant political and economic development of the nineteenth and twentieth centuries in Europe. In fact, the evolution of Germany’s political and economic events have affected the fate of
countries around it in such a way that establishes a close relationship between the fate of the German nation and the development of events that have led to the creation of the Eurozone.

Germany: the Eye of the Storm

Sally Bolton (2001) explains that the road to today’s German Federation was initiated in the nineteenth century when 39 independent political units decided to create a Zollverein (German customs union). Each political unit minted coins; however, there was an over-riding single currency, the Vereinsmunze. In order to secure the customs union and the common currency, the central bank of Prussia became, in 1838, the central bank of the Zollverein.

In 1871 Otto von Bismarck went a step further and united all loose principalities to create the “German Confederation,” a consolidation that marked the beginning of the “German Empire.” To support the empire, Bismarck created the Reichsbank, lasting from 1876 until the defeat of Nazi Germany in May 1944, to act as the central bank of the German Empire.\(^\text{11}\) In 1924, the Reichsbank began issuing the Reichsmark, which was to be the only legal tender of the unified German Empire until 1948 when the German mark or Deustche mark (D-mark) was introduced. The Reichsbank and the Reichsmark survived multiple upheavals, including World War I, the traumatic experience behind the German hyperinflation of 1922-23 due to the payment of war reparation costs to the Allies, and World War II.

In 1945, the Bank Deutscher Länder (BDL) later replaced the Reichsbank. The BDL was designed by American and British authorities in the American and British occupation

zones in Germany with the main task of managing currency policy (Bibow 2004). In 1948, the BDL introduced the Deutsche Mark (D-mark) as a new currency to avoid the possibility of a second hyperinflation period after WWII.

In 1957, the BDL was substituted by the Deutsche Bundesbank which became the central bank of the Federal Republic of Germany (FRG), since Germany was divided into two separate states—East Germany and West Germany—in 1949 after World War II. While West Germany (Federal Republic of Germany, FRG) became a market economy, West Germany (German Democratic Republic, GDR) was characterized as having a centrally planned economy (CPE) and became a member of the COMECOM trading block in 1950.

<table>
<thead>
<tr>
<th>Table 1.1. The Federal Republic of Germany: Institutional evolution from the 19th century to today</th>
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<td></td>
</tr>
<tr>
<td>Gov. System</td>
</tr>
<tr>
<td>Central Bank</td>
</tr>
<tr>
<td>Currency</td>
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</tbody>
</table>

The D-mark was, therefore, introduced in June 20, 1948, when the First Act Restructuring the Monetary System was passed with the blessing of the occupying forces. In 1950, the D-mark became convertible to the U.S. dollar and, in 1971, after the collapse of the Bretton Woods system, became an international currency that suddenly found itself in competition with the supremacy of the U.S. dollar and the British pound. In 1972, the International Monetary Fund (IMF) Annual Report recognized the D-mark as a reserve...
currency for the first time (Schwartz 1983). By the time talks about a common currency in the EU began, the D-mark had become an international and global currency and the second reserve currency in the world.

The success of the D-mark rested on the Federal Republic of Germany’s productive manufacturing industry and competitive exports; healthy monetary and fiscal policies; the Bundesbank's management of the currency's value; and the confidence generated by the country's prosperity. Over the years, the D-mark came to represent West Germany’s international financial and economic strength and was responsible for the country's political and economic success and influence throughout the world. With the reunification of Germany,¹² the D-mark increased in importance as a symbol and instrument of Germany's new central role in Europe.

Figure 1.1. The D-mark and the U.S. dollar since 1971.  

¹² German reunification began in 1989 but formally concluded on October 3, 1990.
Germany, the Bundesbank, and its anti-inflationary policy

To understand the road that led to the introduction of the euro on January 1, 1999, the evolution of certain interrelated political and economic events in Germany must be analyzed.

From a political point of view, Germany was shaped by the impact of its status as a newly formed empire, its participation in two destructive world wars, its overnight division into two countries, and reunification fifty years later. From an economic point of view, Germany was impacted by the expenses of rebuilding itself after the destruction of war and the reparation obligations it owed to the Allies after each World War. Most importantly, it had to fight an episode of inflation and hyperinflation after WWI that almost brought the country to its knees and that, together with the world recession of the 1930’s, eventually led to Nazism and WWII. Despite all of the above-mentioned obstacles, Germany has managed to become the most powerful European country and has also been capable of aiding other European neighbor countries economically.

Since the 1950’s, Germany has been fighting two evils to maintain Stabilitätspolitik in the country. On the political side lies Nazism, the evil that Germany longs to forget, and on the economic side lies a second episode of hyperinflation, the evil that Germany hopes to prevent; curiously enough, Nazism was the direct result of hyperinflation.

The German inflation and hyperinflation episode (1920-1923) is one of the most painful and embarrassing moments of Germany economic history. In fact, “it is one of the most notorious and most studied monetary catastrophes in human history” (James 1999, 17). The German inflation and hyperinflation episode was the result of an overly drawn out war and post-war expenditures. The German government not only had to reconstruct
the country but also had to pay the Allies’ reparation obligations specified in the “London Ultimatum” signed in May 1921. The London Ultimatum required that Germany pay a total of 132 billion gold marks in 66 annual installments, that is, 1.7 billion marks a year from 1921 until 1988, placing a substantial burden on the German budget and on the Germany’s balance of payment (Zarlenga 1999). In order to make the required payments the German monetary authorities decided to print money, which, in turn, decreased the value of money and increased prices. As more money was needed, more money was printed and the government entered a vicious cycle from which it was unable to extricate itself. In fact,

the Reichsbank boasted of the efficiency of its 30 paper factories and 29 plate factories producing 400,000 printing plates to be employed by the 7,500 workers in the Reichsbank’s own printing works, as well as by 132 other printing firms temporarily working to satisfy the need for currency (James 1999, 17).

This money printing frenzy resulted in an inflation episode followed by hyperinflation, as Sennholz (2006, 1) explains:

in December 1923, the Reichsbank had issued 496.5 quintillion marks, each of which had fallen to one-trillionth of its 1914 gold value … Practically every economic good and service was costing trillions of marks. The American dollar was quoted at 4.2 trillion marks, the American penny at 42 billion marks.

This period of hyperinflation has never been forgotten as is evidenced by the fact that “its results—the Nazis and World War II—are still taught to every schoolchild” (Whitney 1993, 6). Hence, maintaining price stability remains, for the Bundesbank, the number one priority in the effort to preserve political stability.
During the Bretton Woods System (July 1944 - August 1971), European currencies were under control as countries participating in the system signed an agreement in which national authorities were to submit their exchange rates to international disciplines. Under this system, the U.S. dollar was the numeration of the system, or the standard to which every other currency was pegged; this meant that other currencies were to peg their currencies to the U.S. dollar and maintain market exchange rates within, plus or minus, 1% of parity.

At the same time, in order to bolster faith in the dollar, the U.S. agreed to link the dollar to gold at the rate of $35 per ounce of gold. When the U.S. economy began to weaken, loss of confidence in the dollar prompted other countries to redeem their dollar reserves for gold, further weakening U.S. exposure. F.W. Engdahl (1992, 140) explains that “at the end of 1967, international holders of dollars went to the New York Federal reserve Gold Discount Window and demanded their rightful gold in exchange.” De Gaulle’s economic adviser, Jacques Rueff, went to London on January 1967 with a proposal for raising the price of gold which would, in turn, mean the devaluation of the American and British currency. Washington refused to change the $35 dollar ounce official valuation of gold. Since the U.S. was neither going to exchange dollars for gold nor change the gold valuation, France, the country that had most requested to redeem dollars for gold and one of the largest holders of gold, withdrew from the system. Nonetheless, W. Engdahl (1992, 142) explains:

France itself was the target of the most serious political destabilization of the postwar period. Beginning with the leftist students at the University of Strasbourg, soon all of France was brought to a chaotic halt as students rioted and struck across France. Coordinated with the political unrest (which, interestingly
the French Communist Party attempted to calm down), U.S. and British investment houses started a panic run on the French franc which gained momentum as it was touted loudly in Anglo-American financial media. The May 1968 student riots in France were the response of the vested London and New York financial interests to the one G-10 nation which continued to defy their mandate. Taking advantage of the new French law allowing full currency convertibility, these financial houses began to cash in francs for gold, draining French gold reserves by almost 30% by the end of 1968, and bringing a full-blown crisis in the franc.

The Bretton Woods System worked well as long as the U.S. economy remained strong and countries agreed to hold dollars on the basis of their value in gold. Unfortunately, in the 1960’s, due to the decline in the United States’ balance of payment position, the system began to collapse. As a result, there was an oversupply of dollars held by foreign banks and countries were less willing to hold dollars. These countries soon began to redeem their dollars for gold, resulting in a fall in gold reserves and an increase in gold price. In August 1971, President Nixon announced that the United States would no longer exchange dollars for gold and the U.S. dollar was removed from the Bretton Woods gold standard.

This brought about a new situation, which forced countries to choose a discretionary monetary system. Within the new international monetary system, there were three possibilities for regulation available: a fixed exchange rate, a floating exchange rate, or a single currency.

According to economic theory a system of fixed exchange rates provides very little independent monetary policy; if a country wants to pursue an expansionary monetary policy to close a recessionary gap, price levels will begin to rise faster than that of its partners. This will deteriorate the balance of payment and currency reserves will be lost. In a system of floating rate, a country that implements an expansionary monetary policy
will witness the sustained devaluation of its currency, which raises internal prices and leaves exchanges unchanged. Still, with a “devalued” currency, exports increase but imports are restrained and negatively affect the competitive position of other countries, forcing them to rely on currency competitive devaluations to regain lost ground. Finally, with a single currency countries can avoid this problem but will also lose the ability to adjust exchange rates in case of undesirable wages and price trends.

The United States and the New World Economic Order

After the collapse of the Bretton Woods system in August 1971, the U.S. suffered a number of major political blows that, in turn, affected the stability of the U.S. dollar. In 1973, members of the Organization of Arab Petroleum Exporting Countries (OAPEC)\(^{13}\) announced an oil embargo "in response to the U.S. decision to re-supply the Israeli military during the Yom Kippur War."\(^{14}\) This oil embargo was named the First Oil Crisis since it was responsible for sending world economies into a recession. The price of oil jumped 134\%, which forced the U.S. Federal Reserve (the Fed) to increase the Federal Funds Rate (Fed Funds) target rate from 7.5 percent in May 1973 to a high of 13 percent by the summer of 1974. The result in the U.S. was that from the third quarter of 1973 to the first quarter of 1975, gross domestic product (GDP) growth contracted five out of the seven quarters. Consequently, the U.S. suffered an unprecedented deterioration in growth and a sharp decline in the U.S. dollar (Lien 2008).

In 1979 there was a Second Oil Crisis when the Ayatollah took over Iran and did away with all U.S. oil concessions previously granted by the Shah to U.S. companies in

\(^{13}\) OAPEC consists of the Arab members of OPEC plus Egypt and Syria.

exchange for the U.S.’ backing of the Shah into power. This time the Organization of the Petroleum Exporting Countries\textsuperscript{15} (OPEC) raised prices 118 percent between January 1979 and December 1979. Between January 1979 and December 1979, Fed Funds rates increased from 10 percent to 14 percent and by March of 1980, the Fed Funds rate hit a high of 20 percent. The result was a sharp decrease in the quarterly GDP growth, which dropped 7.8 percent in the second quarter of 1980, triggering the U.S. dollar’s demise (Lien 2008).

A third major period of currency instability ended when, on September 22, 1985, France, West Germany, Japan, the United States, and the United Kingdom signed the Plaza Accord. The five nations agreed to intervene in the currency market in order to depreciate the U.S. dollar in relation to the Japanese yen and the D-mark. Although this intervention was a planned financial maneuver that did not lead to financial panic, it did affect currency markets worldwide. The reason for implementing this devaluation was to help the U.S. emerge from the economic recession that began, as published by the National Bureau of Economic Research\textsuperscript{16} (NBER), in the 1980’s and to reduce the U.S. current account deficit, which had reached 3.5 percent of the GDP (Shafer 1988).

Table 1.2. Overview of oil crisis

<table>
<thead>
<tr>
<th>Years</th>
<th>Shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>1973-1974</td>
<td>First Oil Crisis</td>
</tr>
<tr>
<td>1979</td>
<td>Second Oil Crisis</td>
</tr>
<tr>
<td>1980-1985</td>
<td>US Recession</td>
</tr>
</tbody>
</table>

\textsuperscript{15} A cartel of twelve countries: Algeria, Angola, Ecuador, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

The Bundesbank and the Introduction of the Economic Monetary System (EMS)

After the collapse of Bretton Woods, currencies opted for a system of floating rates. However, this system soon proved not to be beneficial; and, in an attempt to restore order to the exchange market, ten leading nations made up of the European Economic Community (EEC) Member States plus U.K, Ireland and Denmark, met at the Smithsonian on December 16 and 17, 1971. Two days of negotiations resulted in a new system of exchange-rate parity that was called the “Smithsonian Agreement.” As Daniels and VanHoose (2004, 12) explain, “[a]though this new system was still a dollar-standard exchange-rate system, the dollar, was still not convertible to gold.” Unfortunately, the Smithsonian Agreement collapsed within 15 months and a de facto system of floating rates emerged. The reason for this collapse is explained by Mundell (2003, 12) as follows:

the US monetary policy was expansionary in the 1972 presidential election year and the balance of payments deficit built up large dollar balances in Europe and Japan. In February 1973 the U.S. raised the official price of gold to $42.22 an ounce (where it remains to this day). This devaluation only served to whet the appetites of speculators and the crisis intensified. The market price of gold soared and exchange markets became turbulent.

After the collapse of this agreement, European countries realized that they really needed to seek currency stability and independence from the U.S. dollar. This time they signed the Basle Agreement on April 10, 1972, which had designed an intervention system of the central banks. This intervention system limited fluctuations between currencies and the U.S. dollar to a maximum of 2.25 percent and fluctuations between

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17Europa, “EMU: A Historical Documentation.”
any two currencies participating in the snake, to maximum of 4.5 percent. This was commonly known as the *currency snake*.

Unfortunately, this system failed mainly because economic events led by U.S. dollar fluctuations made it impossible for the majority of currencies in the snake to remain within the fluctuation bands. Members participating in the snake were constantly leaving and entering. For example, the U.K. and Ireland left the snake in June 1972, Italy left in February 1973, France left in January 1974 rejoined in July 1975 and left again in March 1976 (Schwartz 1983). By March 1973, only Germany and the Benelux countries remained in the snake system, underscoring once more the cohesion of the FRG economy and the strength of the D-mark.  

Furthermore, these events demonstrated that those countries that were not inclined to pursue price stability to avoid inflation were doomed. The lesson learned was that in order to have currency stability, countries must follow a uniform monetary policy.

Figure 1.2 shows the different inflation rates experienced by Germany, France and Italy from 1972 to 1975. This Figure demonstrates that Germany had the most stable inflation rate while Italy’s was significantly higher.

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Figure 1.2. Evolution of interest rates in Germany, France and Italy from 1971 to 1975

Despite the failure of the system, Germany’s H. Schmidt and France’s V. Giscard D’Estaing engineered the European Monetary System (EMS) to ensure currency stability.

Table 1.3. Monetary System date overview

<table>
<thead>
<tr>
<th>System</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Bretton Woods System</td>
<td>July 1947- August1971</td>
</tr>
<tr>
<td>The Smithsonian Agreement</td>
<td>December 1971- 1972</td>
</tr>
<tr>
<td>The Snake in the Tunnel</td>
<td>April 1972- March1973</td>
</tr>
<tr>
<td>The European Monetary System</td>
<td>March 1979-December 1998</td>
</tr>
<tr>
<td>The Economic and Monetary Union</td>
<td>January 1999 to present</td>
</tr>
</tbody>
</table>

David Marsh (1994) explains that the European Monetary System (EMS), March 13, 1979, became the ultimate plan designed to obtain monetary cooperation among members of the European Union in order to finally provide the currency stability necessary for the introduction of a common currency. In order to achieve this goal, Member States had to work towards reducing their inflation rates. Because European countries trade more with each other than with the rest of the world, it made sense for them to get rid of currency fluctuations and transaction costs in order to allow trade to flourish even more.

The EMS was designed around two key elements: the European Currency Unit (ECU) and the European Rate Mechanism (ERM). The ECU refers to a composed currency (or
currency basket) formed by pre-determined percentages of each one of the participating currencies. This percentage is based on the contribution of each country to the gross national product (GNP) of the Community. Hence, the D-mark became the largest element of the basket due to its status as an anchor currency and its repeatedly proven stability.

Table 1.4. ECU composed currency: Value and percentage weight of European currencies during the ERM

<table>
<thead>
<tr>
<th>Currencies</th>
<th>Value</th>
<th>Weight (%)</th>
<th>Value</th>
<th>Weight (%)</th>
<th>Value</th>
<th>Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgian francs</td>
<td>3.8</td>
<td>9.64</td>
<td>3.85</td>
<td>8.57</td>
<td>3.301</td>
<td>8.183</td>
</tr>
<tr>
<td>German marks</td>
<td>0.628</td>
<td>32.98</td>
<td>0.719</td>
<td>32.08</td>
<td>0.6242</td>
<td>31.915</td>
</tr>
<tr>
<td>Danish krone</td>
<td>0.217</td>
<td>3.06</td>
<td>0.219</td>
<td>2.69</td>
<td>0.1976</td>
<td>2.653</td>
</tr>
<tr>
<td>Spanish peseta</td>
<td></td>
<td></td>
<td>6.885</td>
<td>4.138</td>
<td></td>
<td></td>
</tr>
<tr>
<td>French francs</td>
<td>1.15</td>
<td>19.83</td>
<td>1.31</td>
<td>19.06</td>
<td>1.332</td>
<td>20.306</td>
</tr>
<tr>
<td>British pounds</td>
<td>0.0885</td>
<td>13.34</td>
<td>0.0878</td>
<td>14.98</td>
<td>0.08784</td>
<td>12.452</td>
</tr>
<tr>
<td>Greek drachmas</td>
<td>1.15</td>
<td>1.31</td>
<td>1.44</td>
<td>0.437</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irish punts</td>
<td>0.00759</td>
<td>1.15</td>
<td>0.00871</td>
<td>1.2</td>
<td>0.00885</td>
<td>1.086</td>
</tr>
<tr>
<td>Italian lira</td>
<td>109</td>
<td>9.49</td>
<td>140</td>
<td>9.98</td>
<td>151.8</td>
<td>7.84</td>
</tr>
<tr>
<td>Lux. Francs</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>0.13</td>
<td>0.322</td>
</tr>
<tr>
<td>Dutch gilder</td>
<td>0.086</td>
<td>10.51</td>
<td>0.256</td>
<td>10.13</td>
<td>0.2198</td>
<td>9.87</td>
</tr>
<tr>
<td>Portuguese escudo</td>
<td>1.393</td>
<td>0.695</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: the Belgian and the Luxembourg francs were in a currency union already. The ECU basket values are combined and shown only for Belgium.

The exchange rate mechanism, considered the most important pillar of the EMS, established, for each of the participating currencies, a central type of change to the ECU, central pivot, and some central exchange rates or fixed parities for each currency with respect to the remainder (lateral pivots). The aim of this basket was to prevent currency movements above 2.25 percent (6 percent for Italy), around parity in bilateral exchange rates with other member countries.
The Bundesbank and the European Monetary System: Pros and Cons

The Bundesbank during the EMS talks had, nonetheless, mixed feelings about the creation of the EMS and the eventual introduction of a common currency. The Bundesbank not only worried that the D-mark existence and the dominance of the Bundesbank would come to an end but most importantly, it did not want to be part of a club where price stability was not the number one priority. The Bundesbank’s anti-inflationary policy has been the source of envy for most European countries, which have, from time to time, tried to imitate its policies without much success. The Bundesbank commitment to keeping inflation under control was such that it would not hesitate to implement radical monetary policies that could lead to a recession or to enforce a change of government (Marsh 1994).

The reason for the success of the German central bank (Bundesbank) in implementing anti-inflationary policies is simple. The Bundesbank has, since it was first founded, enjoyed political independence. This independence from government and political-economic situations has allowed it to follow whatever monetary policies have been necessary without political constraints. On the contrary, most European central banks were tied to government desires and usually implemented monetary policies to aid government “self-indulgence” or fund political manipulations oriented towards winning the elections.

When analyzing the pros and cons of introducing the Economic Monetary System (EMS) there were certain economic, monetary, and political issues that Germany’s authorities had in mind.
Table 1.5. Cost and benefit analysis of introducing the Economic Monetary System (EMS) in Germany

<table>
<thead>
<tr>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The D-mark as national symbol</td>
<td>- Stop currency speculation and competitive devaluations</td>
</tr>
<tr>
<td>- Central bank independence and price stability</td>
<td>- Enlarge Germany’s market for goods and services</td>
</tr>
<tr>
<td></td>
<td>- Diversified with the rest of Europe the costs of German reunification</td>
</tr>
</tbody>
</table>

On the costs side, the introduction of the EMS meant that Germany would have to give up its national currency. The D-mark had become a national symbol, which represented the pride of a country with an incredible monetary, political, economic, and social heritage. However, as German Finance Minister, Theo Waiger, expressed on April 23, 1998 in a Bundestag debate, Germany was “not giving up the D-mark but continuing its history of success at the European level” (Dyson 2000, 8). Nevertheless, German authorities feared that the European central bank would not follow Germany’s golden rule: political independence and price stability. Due to such misgivings, Germany would make sure that “[i]n return for … giving up the mark, the rest of Europe would accommodate it by agreeing to be governed by the European Central Bank on the German model” (Lindsey 2005, 2). Forcing European countries to accept a Bundesbank-like central bank in Europe would guarantee that the new central bank would keep its independence from the political process. Nonetheless, the Bundesbank’s learning curve had proven that the success of the D-mark rested upon the political independence of the Bundesbank. This independence would, in turn, guarantee price stability since Germany “doubted the availability of a ‘stability culture’ outside Germany as an essential underpinning for a sustainable EMU” (Dysson 2000, 13).
On the benefits side, introducing the EMS would reduce the economic risks of currency speculation and competitive devaluations. Germany would no longer have to face the devaluation of the U.S. dollar alone. Furthermore, the Bundesbank would not have to continue defending, unsuccessfully and at great cost, European currencies from speculators’ attacks as it had been doing historically. For instance, in 1992 the Bundesbank spent 44 billion marks defending the pound and the lira from currency speculators, yet was unable to prevent those currencies from speculators’ attacks and Black Wednesday followed.

The Bundesbank’s guardian role in reference to European currencies indirectly transformed it into a de facto European central bank without the benefits of being such. Among other benefits for Germany in introducing the EMS was the fact that the cost of helping East Germany catch up with West Germany would be shared with EMS Member States. Germany had been helping European economies and currencies since 1971 and it was now time for the rest of Europe to join Germany in its reunification efforts; the EMS was the instrument that would allow for the sharing of the costs. Finally, it was obvious to German authorities that a common market would require a common currency that would certainly “provide a more predictable environment for German exports and investment” (Dyson 2000, 12).

The German Economy and its Impact in the Rest of the World

Under the Bretton Woods System, Germany’s industry became the most efficient and competitive sector in Europe and its economy became the leader among that of other European nations. The secret of this success rested in Germany’s industrial ability to
take advantage of increases in demand within its borders and within most European
countries by maintaining a strong productivity growth, while keeping labor costs from
rising and achieving sound export competitiveness.

As Germany’s export surplus began to grow, becoming a national symbol of
monetary and economic performance, economic imbalances began to surface for other
European countries. In fact, most European “firms constructed their growth strategy
mostly on extracting productivity growth without much investment but by using existing
capacity” (Halevi 2005, 4). Germany, instead, would use those surpluses to modernize
the industry, which helped to develop new products and improve productivity.

Figure 1.3 shows how Germany’s balance of payments has almost always been
positive, particularly right after the introduction of the euro. Curiously enough, Figure
1.3 demonstrates that Germany was barely affected by the second oil crisis (1979).
Nonetheless, Germany’s balance of payment remained negative from the time of its
reunification on October 3, 1990 until the physical introduction of the euro in January
2002.
Source: Eurostat, Germany External Trade.

Germany: Its Economic and Monetary Influence in the World

The creation of the European Economic Community (EEC) in 1957, or Common Market, meant that European countries had to compete in the same market by exporting similar products to gain surplus at one another’s expense. However, soon after the Common Market was created, not only was Germany’s GDP the biggest in Europe but Germany was also considered the “European Community’s biggest market and most countries’ largest European trading partner” (Mitchener 1993, 1). This was particularly true for France and Italy and, as Halevi (2005, 14), explains:

[i]t]he more Italy exported its textiles, shoes, household appliances, furniture, Fiats, and intermediate mechanical products, the more France suffered. Italian outputs [were] partially Germany displacing, but they were definitely French displacing. If France devalued to counter the Italian systemic devaluation, the area of German capital would disintegrate.
For Great Britain the common market was viewed as a platform to re-launch the British Empire using the synergies of a common market to boost a weakened economy characterized by low growth, investment, and innovation, which, together with a persistent balance of payment deficit and high unemployment, led to the devaluation of the pound sterling in the mid-1960s. Following the pound sterling devaluation in the mid-1960s, the U.K. suffered an increase in unemployment and a decrease in manufacturing production.

Figure 1.4 shows the evolution of unemployment and manufacturing in the U.K. since 1959. This figure demonstrates that unemployment has been increasing since 1959 and illustrates a particularly disturbing escalation occurring in the 1980’s. Figure 1.5 shows that while unemployment was under control during the 1960s, manufacturing was growing; however, as unemployment rose during the 1980’s, manufacturing decreased. Finally, as unemployment decreased during the 1990’s, manufacturing production increased once again.

Figure 1.4. The United Kingdom: A comparison between the Unemployment rate and the Manufacturing Output Index from 1959 to 2007
However, the plan was not conducive to helping Great Britain achieve its aims. The Pound sterling was unable to use the common market to regain its hegemonic status as a leading currency. For those countries\(^\text{19}\) backing up Europe’s common market, the plan was to create “an institutionalized entity in Europe within which Germany could build its economic strength” (Halevi 2005, 7), an economic strength that would benefit other nations.

After the demise of Bretton Woods, most European countries chose a free floating currency system which allowed for currency fluctuations; however, it became common practice to take currency fluctuation to the next extreme level and opt for a competitive devaluation when European countries could not resist the German pressure. For instance, the Italian government devalued the Italian lira by more than 60% against the D-mark between September 1991 and March 1995 in order to gain competitiveness (Mitchener 1992).

Competitive devaluations did not only take place against the D-mark but also against the U.S. dollar. The case of Spain is particularly interesting because of the number of times Spain devalued against the U.S. dollar since Spain introduced its national currency, the peseta, in 1959.\(^\text{20}\) Carmen Pelet Redon explains that the Spanish government devalued the peseta against the U.S. dollar in 1967, 1976, 1982, in September and December of 1992, and in May of 1993.

Competitive devaluations in France and Italy served as ammunition for the damaged caused to the German manufacturing industry. A competitive devaluation in these two

\(^{19}\) Mainly other European countries and the United States

\(^{20}\) From 1959 to 1974 the Spanish peseta was part of the Bretton Woods system. In 1988 the exchange rate peseta-Dem was born. In 1989, it became part of the European Monetary System and, in 1999, part of the euro.
countries meant that German goods and products would become more expensive overnight in France and Italy; hence, German goods and services would suffer from a substitution effect. The loss of market share in France and Italy would do away with a large percentage of Germany’s profits, “since France and Italy together absorbed more than 25% of total German exports” (Halevi 2005, 13).

Finally, the devaluation situation was such in the 1990’s that countries with strong currencies asked the European Union to “punish governments whose currencies [were] devalued” (Friedman 1995, 1). Some countries even considered employing “retaliatory measures against those governments that had made use of competitive devaluations” (Friedman 1995, 1).

In order to end currency fluctuations and competitive devaluations, the European Monetary System (EMS) came into effect on March 13, 1979. The EMS had the blessing of the Federal Republic of Germany (FRG), which wanted to ensure its export grounds and surpluses by putting European currencies under the leash of the Exchange Rate Mechanism (ERM). The EMS became a successful mechanism and was operative until December 31, 1998 when Member States fixed their currencies to the euro.

The introduction of the EMS in 1979 launched West Germany’s economy further into an expansionary economic cycle that boosted productivity, exports, employment, internal demand, and investment in both equipment and constructions.

Figure 1.5 shows the evolution of the German Manufacturing Output Index, which measures the manufacturing production of Germany from 1950 to 1998. It clearly shows that Germany’s manufacturing activity has been constantly increasing.
Fears of Inflation: The German Economic Boom and the Impact of Reunification

At the beginning of the 1980’s, Germany’s monetary authorities had to deal, on the one hand, with economic expansion, and on the other, with the costs of German reunification. Economic expansion was not only the result of the EMS but it was also, and most importantly, the result of how the German monetary reunification was designed.

East German currency, the East German mark, or the Ostmark, was substituted by the D-mark and the Bundesbank was chosen as the central bank for reunified Germany. Upon reunification, monetary authorities agreed that the East German mark was to be converted at par for wages, prices, and basic savings up to a limit of 4,000 marks per person (Colchester 2001, 1). This conversion rate remains controversial among economists. Although it was the quickest way of unifying the German economy, it brought about many economic imbalances. For instance, the conversion at par of East and West currencies brought about the fear of a possible price increase and future inflation. Also, the reunification of East and West Germany substantially increased the unemployment
rate, which skyrocketed due to the high unemployment rate inherited from East Germany. To this day, the unemployment rate in East Germany continues to be higher than that of West Germany.

Figure 1.6 represents the annual evolution of the unemployment rate in Germany, Italy and Spain from 1970 to 2007. The graph shows that unemployment in Germany began to increase right after the unification of Germany. The unemployment rate in Italy has been on the rise since 1970; however, it began to decline in 2000. Finally, the unemployment rate in Spain is, by far, the highest of the three countries with levels of more than 20% in the 1990’s. By the year 2000, the unemployment rate in Spain began to decline.

![Annual Unemployment Rate](image)

Figure 1.6. Annual unemployment rate in Germany, Italy, and Spain
Source: The European Central Bank, “Statistical Data Warehouse.”

After reunification, the new monetary situation forced the government to maintain restrictive macroeconomic policies because German officials were afraid of inflation, which “from July 1992 to July 1993 was 4.8%, about twice that in France or Britain” (Whitney 1993, 4). Hence, the Bundesbank “increase[d] official interest rates on various facilities by 2.5 percent points” (Whitney 1993, 2). Figure 1.8 shows the evolution of
long-term interest rates in Germany. The figure plots how, from 1970 to 2000, Germany had maintained interest rates between 6% and 11%. Right after the year 2000, interest rates began a sudden decline to a 4% level.

Figure 1.7 graphs interest rates in Germany from the first quarter of the 1970’s to the second quarter of 2007. From the 1970’s to the year 2000, interest rates have been fluctuating between 6% to 12%; however, after 2000 interest rates in Germany have been dictated by the European Central Bank and have been maintained at around levels of 4%.

Export surpluses and high employment levels forced Germany to maintain high interest rates, which were asphyxiating European economies and placing some European currencies under the attack of speculators.

By the mid-1990’s, European countries had unsuccessfully requested, on various occasions, that the Bundesbank loosen up monetary policy to aid European countries which were being attacked by currency speculators. Although the Bundesbank refused
because doing so would unleash inflation in Germany, it “spent 44 billion marks trying to
defend the pound and the lira” (Whitney 1993, 2). Unfortunately, on September 14,
1992, the lira suffered a 7 percent devaluation; on September 16, 1992 the British had to
withdraw from the ERM; and in September 1992 the Spanish peseta devalued 5 percent
against the D-mark (Mitchener 1992).

Table 1.6 shows the value fluctuation and currency devaluation against the D-mark of
the British pound, Italian lira, and Spanish peseta.

<table>
<thead>
<tr>
<th></th>
<th>Wednesday, September 16, 1992</th>
<th>Thursday, September 17, 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>British pound</td>
<td>2.687</td>
<td>2.63</td>
</tr>
<tr>
<td>Italian lira</td>
<td>1.224</td>
<td>1.186</td>
</tr>
<tr>
<td>Spanish peseta</td>
<td>148.2</td>
<td>142.8</td>
</tr>
</tbody>
</table>

As a result, the rest of the European countries bluntly accused Germany of a lack of
solidarity toward its European partners due to “its obsessive concern with curbing
inflation for wreaking havoc with the European Monetary System” (Whitney 1993, 4). It
was stated that the German central bank could have defused

the system’s problem, but didn’t. The central bank left its key interest rates
unchanged. That meant no immediate relief for currencies that appear relatively
unattractive alongside the Deutsch mark, and no relief for economies such as
France’s and Britain’s that have been squeezed as they tried to keep up with
Germany’s anti-inflationary fervor (Clemens 1992, 1).]

Despite all these setbacks neither the political nor the economic project of a united
Europe were abandoned and the first stage of the Economic and Monetary Union’s
(EMU) adoption of the euro was eventually introduced on July 1, 1990.
Once the D-mark became the anchor currency, the Bundesbank became the de facto central bank for the rest of the countries since it was doing the best job at keeping inflation low. The problem arose due to the strength of the German economy and the low-inflation policies of the Bundesbank, which ultimately forced other countries to follow its lead. Countries were able to follow the Bundesbank but, by the mid-1980’s, were driven to use changes in interest rates to maintain their currencies within the bands. However, at the beginning of the 1990’s, the EMS was strained by the differing economic policies and conditions of its members, particularly those of newly reunified Germany, and a revision of the EMS requirements was required. The Brussels Compromise in August 1993 awarded the EMS with a new fluctuation band of + and – 15 percent.

Table 1.7. Summary of monetary evolution from the Bretton Woods System to the European Monetary System

<table>
<thead>
<tr>
<th>End of Bretton Woods in 1971</th>
<th>April 10, 1972</th>
<th>March 25, 1979</th>
<th>Treaty of Maastricht</th>
</tr>
</thead>
<tbody>
<tr>
<td>The end of fixed exchange rate and the beginning of Floating Currency System.</td>
<td>Basel Agreement The Snake – to maintain currency fluctuation between the +/-2.25% bands.</td>
<td>European Monetary System (EMS) Currency fluctuation of +/-2.25% (6% for Italy).</td>
<td>Maintains the EMS system of currency fluctuation for those currencies willing to adopt the euro in January 1st, 2000.</td>
</tr>
</tbody>
</table>

Despite all the ups and downs, the EMS worked well. Most importantly, the EMS ended with the imposition of rigid bands, which never helped to stabilize the currency, but rather attracted currency speculators. In the mid-1980’s, Jacques Delors became President of the European Commission and provided new momentum for the creation of the common currency when he came up with the Delors Report.
The Introduction of the Euro

The euro was nominally introduced on January 1, 1999 and physically on January 1, 2002. Currently, in 2009, the European Union has twenty-seven members, and the Eurozone is composed of sixteen of those twenty-seven.

Before the introduction of the euro as a common currency, each country had its own currency, which represented the national sovereignty of the country and its people. The importance of having a national currency comes from the symbolism of money itself. In fact, the word “money” derives from the surname of Juno Moneta, or Juno the warner, a consort of Jupiter, whose duty was to “warn” the Romans that if they fought “just” wars, they would never lack the money to finance them (Meadows and Williams 2001, 28).

When the time came to reach an agreement on what and how the future common currency was going to be there were many disputes. For instance, due to the influence of Germany in the creation of the EMU and the introduction of the common currency, Theo Waigel—Germany Finance Minister—publicly expressed his preference for “euromark” as the name to be given to the new common currency (Saffire 1998). However, it was the Nobel Prize winner for his theory on Optimal Currency Areas, Robert Mundell, who had the honor of naming the common currency “euro”. Back in 1970, Robert Mundell presented his work at the “Conference on Optimum Currency Areas” that took place in Madrid (McKinnon 2000, 4). At this conference he presented a paper titled “A Plan for a European Currency” (Mundell 1973a) in which, among other things, he proposed to name the new currency “Europa.”

21 Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the U.K.

22 Austria, Belgium, Netherlands, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, Cyprus, Malta, Slovakia, Slovenia.
According to Greek mythology (Belien 2006), Europa was a Phoenician woman of high lineage and the namesake of continental Europe. Europa was the youngest daughter of the king of Phoenicia. The story goes that, one day, she was playing with her elder sisters, Asia and Africa, by the sea when Zeus spotted her. He fell in love with her and transformed himself into a beautiful white bull. He transported her on his back to Crete and the myth of the "The Rape of Europa", "The Abduction of Europa" or "The Seduction of Europa" began.

This mythological reference reached Brussels; Robert Mundell (2002b) explains how he received a phone call in his home in Siena from Lorenzo Bini-Smaghi, a senior staff member of the European Monetary Institute (EMI), predecessor of today’s European Central Bank (ECB). Bini-Smaghi asked Mundell (2002b, 9) if he “had been the first to name the currency "europa" and if it would be a good name now”. Mundell answered in the affirmative and explained that he thought popular usage would most likely abbreviate it to "euro". The EMI followed his advice. One final anecdote reveals that in 1970, when Bini-Smaghi invited Mundell to the European Monetary Commission to discuss alternative names, he was asked how long he thought it would take to create the european currency. Mundell (2002, 10) replied, “it is more difficult than you think. Even if there were no political impediments, it would take at least three weeks”. It took three decades.

Curiously enough, the history of the introduction of the euro has close ties to Spain. To begin with, Robert Mundell first named the common currency on Spanish soil during a conference in Madrid. Furthermore, the Delors Report was approved during an informal ECOFIN meeting that took place in S’Agarò because Spain was holding the presidency of the Council for the first time in its history. Therefore, the common currency was born
in Spanish territory, in the same country that in 1497, during the reign of the Spanish Empire, introduced and minted the first recognized world money: the Spanish Silver dollar of “pieces of eight” (Connolly 2007).

The final step in introducing the common currency was to create its design, most importantly the design of the note bills and the logo that was going to represent the new European currency in the financial markets. Roy (2007, 18) explains that the European Commission asked a team of designers to come up with a logo that would symbolize the new common currency. The winning design was “inspired by the Greek letter epsilon (born in the cradle of Europe) and two parallel lines symbolizing stability, a thought tenaciously sought by the EU leadership.” The Council of the European Monetary Institute (EMI) launched the design competition for the euro note bill and, in February 1996, Robert Kalina was chosen as the winner. There are seven different euro note bill denominations: €5, €10, €20, €50, €100, €200, €500. Each bill has a different color, size, and design. The design of the euro note bills is particularly interesting because each note features windows or gateways on the front side while the back features bridges. The representation of windows and gateways symbolizes freedom and a look toward the future and the representation of bridges symbolizes the unity of European cultures and civilization under a common currency.

Conclusion

The euro was born due to numerous, yet discrete, bodies of intertwined interests that responded to the demise of the Bretton Woods system and the creation of the Economic Monetary System of 1979. When the EMS was set up, the D-mark became the natural
anchor currency due to the feat of the Bundesbank in its ability to maintain inflation low in Germany, an accomplishment that was regarded worthy of imitation.

The Maastricht Treaty rewarded Germany’s monetary stability by designing the European Central Bank (ECB) following the model of the German Bundesbank. Hence, the ECB is intended to follow Germany’s long history of price stability to control inflation, maintain sustainable growth, and high employment. If these three economic pillars transformed the D-mark into the second most important international currency after the U.S. dollar, they should also help the euro become an international currency strong enough to compete with the U.S. dollar. The Maastricht Treaty further bestowed the ECB with the political independence necessary to conduct monetary policy isolated from the interests of Member States, following the German rule that “the management of money must be depoliticized and conducted in a long-term and consistent framework” (Dyson 2000, 8). Since both German requirements were guaranteed, Germany authorities could rest assured that the new euro would be at least as stable as the D-mark. This meant that Germany was “not giving up the D-mark but continuing its history of success at the European level” (Dyson 2002, 8).

Despite, initial economic and fiscal requirements, the German authorities soon realized that the EMS could become a useful tool in bringing about the needed reforms in the newly reunited German economy (Dyson, 2000). Soon enough, the EMS became, for Germany, more than just a catalyst of reforms, “it was an opportunity to regain control over economic policy, to act as a counterweight to the U.S., to reassert the values of the German consensus model” (Dyson 2000, 6). Nonetheless, it had been proven that the strength of Germany’s economy resided in its manufacturing industries, which, due to
their efficiency, were not affected, as the rest of the European industries were, during the oil crisis of the 1970’s. These industries provided Germany with an export drive that translated into export surpluses with significant repercussions, “the German industrial and financial engine [had] dominated Europe since the 1950s; as a result, the German mark has dominated Europe monetarily” (Lindsey 1999, 2).

Germany’s industrial hegemony in Europe proved not only impossible to beat but also too difficult for other European countries to follow. This hegemony, together with monetary policies shaped by Germany’s inflationary traumas of the past, left other European countries with no option but to devalue their currencies to gain competitiveness. When Germany realized that its economic hegemony was at risk, Germany pushed for the EMS and the Exchange Rate Mechanism (ERM) to maintain currencies within bands in Europe. This move on behalf of Germany was the beginning of a long road toward the adoption of the euro as common currency.

Once again, Germany has been in the center of the debate. Since countries worldwide began, in October 2008, to admit that they were heading toward a recession and the “bail out” spree began to fix the liquidity crisis, Germany has held its own view of the situation. This view has led Angela Merkel to be in constant disagreement with Nicholas Sarkozy and other European leaders.23 While Merkel defends an austere help to restart the German economy, other European leaders are proposing multi-billion euro plans that will set the ratio of government deficits and government debts to (GDP) off track. Nonetheless, from the moment the recessionary period was officially acknowledged by most countries in October 2008, Germany has maintained a good record; for instance, it

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has been creating jobs. As of October 2008, the overall unemployment rate, as measured by the German authorities, was 7.2 percent (6.0 percent in West Germany, and 11.8 percent in East Germany), while Spain has the highest unemployment rate of the EU 27 with 12.8 percent and it is expected to reach 14 percent.\(^{24}\) Finally, industrial production in Germany has remained robust throughout 2008\(^{25}\) and has maintained the largest trade surplus of the EU 27 with an impressive €127.4 billion, only in the period between January and August 2008.\(^{26}\)


Chapter Two

Theoretical Considerations

Great Powers have great currencies (Robert Mundell 1993, 10).

The idea of a unified Europe has been a constant in European culture and over the years there have many been attempts to unite Europe. Some attempts used force and others employed politics and diplomacy; but, until the creation of the European Union (EU), no attempt had ever been successful.

Before the existence of the European Union, the closest Europe came to what could be considered “united” was during the “Pax Romana” (Lorca 2007). Since then, there have been two devastating world wars whose goal was to unite Europe under one despotic rule. There have, nonetheless, been numerous political attempts to unite Europe through the use of politics, economics, and diplomacy. The most significant examples have been the Austro-German monetary union, or Zollverein, the Latin Monetary Union (LMU), the Scandinavian Monetary Union, and the Union of Soviet Socialist Republics (USSR) (see chapter 3).

Hence, the proposals for the union of European nation states have been a constant; nevertheless, it was the devastation of World War I and the horrors of World War II that piqued interest in a consensual politically unified Europe. In 1943, Jean Monnet, one of the two fathers of the European Union (EU), wrote in his “Algiers Memorandum”, that “[t]here is no real peace in Europe, if the states are reconstituted on a basis of national sovereignty” (Monnet 20-21, 1943).
Countries as far a field as the United Kingdom and the United States shared the dream of a unified Europe. During a speech at the University of Zürich in 1946, Churchill held these political entities as the standard for the new Europe, calling for a “United States of Europe.” In 1947, the Truman administration realized that World War II’s vast devastation could be the justification for just such a solution, and the United States launched the Marshall Plan to aid in the political and economic reconstruction of Europe. This plan spurred the creation of a transnational bureaucracy because it forced those countries getting economic aid to cooperate with one another.

This cooperation served as a stabilization tool that eventually gave way to the formation of the European Coal and Steel Community (ECSC) during the Treaty of Paris, which was signed by six founding members in 1951. On May 9, 1950, French foreign minister, Robert Shuman, announced “The Schuman Plan” to the world. This plan indicated that France and Germany would delegate the control of two sectors of their economies to an independent authority. The idea was that the management of coal and steel by an independent authority would make war between France and Germany “not merely unthinkable, but materially impossible.”

In 1957, the unification process of Europe took a major step forward when the Treaty of Rome was ratified and the European Economic Community (EEC) and the European Atomic Energy Community (Euratom) were created.

Since 1957, the EU has witnessed half a century of academic debate over its existence motivated by an intense scholarly interest in its innovative political organization. The evolution towards the actual EU has involved through two parallel processes known as

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27 Belgium, the Netherlands, Luxembourg, West Germany, France, and Italy.
the widening process and the deepening process. The widening process represents the enlargement of the EU through the admission of new members. The deepening process represents the structural evolution of the EU’s institutions to create a solid political, economic, and monetary bloc through what is known as the European integration. However, both processes are intertwined since, as Laursen (2006, 124) explains, “[w]idening, or enlargement, was linked with deepening by many political actors.”

European integration entails more than just the achievement of free trade. In fact, on the first page of the Schuman Declaration,29 it is stated that the EU was designed through “the pooling of coal and steel production … [to] provide for the setting up of common foundations for economic development as a first step in the federation of Europe.” According to Balassa (1961), although at its outset the EU had as its main political objective the prevention of future wars between the various countries of Europe, the Union actually developed as a result of economic integration.

Today, the EU is an economic and political union between twenty-seven30 democratic countries. As an economic union, the EU has developed a single market that guarantees four freedoms: people, goods, services, and capital. As a political union, the Reform or Lisbon Treaty has bestowed upon the EU sufficient strength to be respected as a strong political bloc.

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30 Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.
Since January 1, 2009, sixteen\textsuperscript{31} out of the twenty seven Member States that form the European Union,\textsuperscript{32} have belonged to the European Economic and Monetary Union (EMU) and use the euro as common currency, making up the currency union known as the Eurozone.

There are a number of countries which are not part of the EU nor the Eurozone but which use the euro as a national currency. While some countries have entered into an agreement that allows them to use the euro as a national currency, other countries have not but use the euro as a national currency nonetheless.

San Marino, Vatican City, and Monaco not only adopted the euro, but also the right to mint their own euros. Before the introduction of the euro, Vatican City and San Marino had their currencies pegged on a 1:1 basis to the Italian lira and Monaco to the French franc. With the approval of all EU members, Vatican City and San Marino signed an agreement with Italy that allowed them to adopt the euro and mint currency, and Monaco signed the same agreement with France.\textsuperscript{33} These three countries can mint coins with their national symbols; however, they cannot print banknotes.

A more particular case is Andorra. This small country between France and Spain never had an official currency and had never established a monetary agreement with either Spain or France, yet both used the French franc and the Spanish peseta as legal tender currency.\textsuperscript{34}

\textsuperscript{31} Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Malta, Cyprus, Slovakia, and Slovenia.

\textsuperscript{32} United Kingdom, Sweden, and Denmark have chosen not to enter the EMU and adopt the euro. Furthermore, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Bulgaria, and Romania are working towards putting their economies in order to join the EMU in the near future.


\textsuperscript{34} Department of State, “Principality of Andorra.” http://www.state.gov/r/tp/ei/bgn/3164.htm (accessed November 1, 2008).
Finally, Montenegro and Kosovo have used the euro since January 1, 2002 without having established any agreement with any EU country. These two countries previously used the German mark instead of the national currency, the Serbian dinar; when the euro began to circulate they adopted it as national currency. Currently, both countries are in negotiation to enter the European Union. In fact, Elitsa Vucheva (2008, 1) reported that on December 15, 2008, Montenegro presented the “official application for EU membership to current EU President Nicholas Sarkozy” in order to obtain EU candidate country status sometime next year.

Table 2.1. Summary of countries using the euro as a common currency

<table>
<thead>
<tr>
<th>Country</th>
<th>Pegged to</th>
<th>Adopted Euro</th>
<th>Agreement signed</th>
<th>Seeking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monaco</td>
<td>French franc</td>
<td>January 1, 1999</td>
<td>December 31, 1998</td>
<td></td>
</tr>
<tr>
<td>San Marino</td>
<td>Italian lira</td>
<td>January 1, 1999</td>
<td>December 31, 1998</td>
<td></td>
</tr>
<tr>
<td>Vatican City</td>
<td>Italian lira</td>
<td>January 1, 1999</td>
<td>December 31, 1998</td>
<td></td>
</tr>
<tr>
<td>Andorra</td>
<td>French franc</td>
<td>January 1, 1999</td>
<td>December 31, 1998</td>
<td>Agreement but not membership to EU</td>
</tr>
<tr>
<td>Montenegro</td>
<td>Spanish peseta</td>
<td>January 1, 2002</td>
<td>Never</td>
<td>Membership to EU</td>
</tr>
<tr>
<td>Kosovo</td>
<td>German mark</td>
<td>January 1, 2002</td>
<td>Never</td>
<td>Membership to EU</td>
</tr>
</tbody>
</table>

The Eurozone is part of the EU; hence, it enjoys, on the one hand, the advantages of a political and economic union, and, on the other hand, the advantages of a monetary union. Table 2.2 highlights the adoption of the euro by countries throughout the EU.

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<table>
<thead>
<tr>
<th>Country (Native Currency)</th>
<th>EMU Entry Date - Actual</th>
<th>EMU Entry Date - Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria (Austrian schilling)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Belgium (Belgian franc)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>The Netherlands (Dutch guilder)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Finland (Finnish markka)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>France (French franc)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Germany (German mark)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Ireland (Irish pound)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Italy (Italian lira)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Luxembourg (Lux. franc)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Portugal (Portuguese escudo)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Spain (Spanish peseta)</td>
<td>January 1, 1999</td>
<td></td>
</tr>
<tr>
<td>Greece (Greek drachma)</td>
<td>January 1, 2001</td>
<td></td>
</tr>
<tr>
<td>Denmark (Danish krone)</td>
<td>Never joined</td>
<td></td>
</tr>
<tr>
<td>Sweden (Swedish krona)</td>
<td>Never joined</td>
<td></td>
</tr>
<tr>
<td>United Kingdom (Sterling pound)</td>
<td>Never joined</td>
<td></td>
</tr>
</tbody>
</table>

**2004 EU enlargement**

<table>
<thead>
<tr>
<th>Country (Native Currency)</th>
<th>EMU Entry Date - Actual</th>
<th>EMU Entry Date - Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyprus (Cypriot pound)</td>
<td>January 1, 2008</td>
<td></td>
</tr>
<tr>
<td>Czech Repub. (C. korine)</td>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>Estonia (Estonia kroon)</td>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>Hungary (Hungarian florint)</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>Latvia (Latvia lats)</td>
<td>2013</td>
<td></td>
</tr>
<tr>
<td>Lithuania (Lithuania lites)</td>
<td>2010</td>
<td></td>
</tr>
<tr>
<td>Maltese (Maltese lira)</td>
<td>January 1, 2008</td>
<td></td>
</tr>
<tr>
<td>Poland (Polish zloty)</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>Slovenia (Slovenian tolar)</td>
<td>January 1, 2007</td>
<td></td>
</tr>
<tr>
<td>Slovakia (Slovak korune)</td>
<td>January 1, 2009</td>
<td></td>
</tr>
</tbody>
</table>

**2006 EU enlargement**

<table>
<thead>
<tr>
<th>Country (Native Currency)</th>
<th>EMU Entry Date - Actual</th>
<th>EMU Entry Date - Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria (Bulgaria lev)</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>Romania (Romania leu)</td>
<td>2014</td>
<td></td>
</tr>
</tbody>
</table>

The success of the EMU and the euro as economic and monetary integration tools is considered a primary catalyst for political integration in the Eurozone and the European Union.
European Integration: A Theoretical Overview

The EU has become an icon of successful regional integration. But what is understood by the term “regional integration”? Various scholars have defined regional integration. According to Nye (1968, 856), the term integration is an unclear one that, in Europe, has enjoyed:

three different usages at the same time. For the Gaullists … [it meant] consultation over foreign policy … for Jean Monnet and Walter Hallstein it tended to mean supranational handling of increasingly important and controversial tasks; for the federalists it meant the creation of federal institutions.

In contrast to the vagueness of its definition, Ernst Haas (1958, 16) has come up with a very precise definition for what is meant by regional integration:

the process whereby political actors in several distinct national settings are persuaded to shift their loyalties, expectations and political activities to a new center whose institutions possess or demand jurisdiction over the pre-existing national state.

Despite its overall success, the ongoing integration process has moved along at two different speeds; while both economic and monetary integration have been fast, steady, and assertive, political integration has been at times slow and tentative. This disparity can be explained by the complicated idiosyncrasy of the EU structure. Complacency with these difficulties and a haphazard pace is becoming dangerous now that the EU has reached a critical moment with respect to both economic and political integration.

The introduction of the EMU and the adoption of the euro as a common currency has fostered the achievement of many successes and enabled many differences to be overcome. Still, a vocal undercurrent claims that the EU integration process has come to an abrupt end. These naysayers consider the constant difficulties as obstacles to the
implementation of important structural reforms, the encouragement of sound economic requirements, and the obtainment of a long-delayed agreement on the Reform Treaty. Gros and Micossi (2007, 1) have stated that

the EU’s inability to meet the challenges of integration is due to rigid economic structures and inadequate human capital—weakenesses that according to conventional wisdom can only be tackled by national policies, with little role for the Union and common policies. On the contrary, substantial policy spillovers across the EU justify strengthened policy coordination for labor-market, immigration and welfare reform.

Theories of European Integration

The European Union integration process can be explained using a variety of theories. Wiener and Diez (2004) explain that the European integration process can be divided into three phases. The first phase was inaugurated by the signing of the Treaty of Rome and lasted until the early 1980’s, the second phase developed in the 1980’s, and the final phase began in the 1990’s. While neo-functionalism and Intergovernmentalism dominated the first stage, comparative and institutionalist approaches were used to explain the integration process during the 1980’s, and in the 1990’s, it was the alternative approach of social constructivism that led the debate.

Ibryamova and Dominguez (2006, 40) have explained that “[t]his chronological classification does not necessarily mean that one phase replaced the previous one. In fact, integration theories are constantly competing to provide the most convincing explanation of the dynamics of the integration process.”
Table 2.3. Summary of theories that seek explain the evolution of the integration process of the EU.

<table>
<thead>
<tr>
<th>Time period</th>
<th>Phase</th>
<th>Main theories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treaty of Rome form</td>
<td>Explaining Integration</td>
<td>- Functionalism</td>
</tr>
<tr>
<td>1957 onwards</td>
<td></td>
<td>- Neofunctionalism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Intergovernmentalism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Liberal Intergovernmentalism</td>
</tr>
<tr>
<td>During the 1980’s</td>
<td>Analyzing the governance process</td>
<td>- Governance and institutionalism approaches</td>
</tr>
<tr>
<td>From the beginning of the 1990’s onward</td>
<td>Explaining the construction of the EU governance system and political evolution</td>
<td>- Constructivism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Critical Theory</td>
</tr>
</tbody>
</table>

There are many theories that explain regional integration. However, the European integration process is best described by the theory of neofunctionalism, although scholars treat neofunctionalism not as a theory but a framework (Moravcsik 2005). Nevertheless, when the EU was being created, the founding fathers believed that the idea behind the spillover effect of neofunctionalism would propel further integration.

Roy (2005) explains that ideological support for the Schuman-Monnet concept of European integration can be explained by David Mitrany’s functional theory, called functionalism. This theory premises that the function of the organization dictates the shape of its pieces, not the other way around. Functionalism was further enriched and transformed into neofunctionalism.

Neofunctionalism grew, in 1958, out of the efforts of a small group of American political scientists led by E. Haas, who, in his book titled “The Unity of Europe”, sought to apply functionalist thinking to a confined international region. Using the experience of the European Coal and Steel Community (ECSC) as its starting point, neofunctionalism set about the task of describing how the deliberate merger of economic activity in particular economic sectors across borders could generate wider economic integration. Haas’s theory attempted to explain that economic integration would produce political
integration and that the creation of supranational institutions could accelerate these processes. Haas identifies two types of spillovers: functional and political. Moravcsik (2005, 352) explains that the former takes place “when cooperation in certain sectors of the economy (or society) creates technocratic pressure for cooperation in adjoining sectors, thereby propelling integration forward.” He goes on to explain that political spillover occurs “when ongoing cooperation in certain areas empowers supranational officials to act as informal political entrepreneurs in other areas” (2005, 352).

Many scholars have defined Liberal intergovernmentalism as a theoretical school that has no discipline and has Andrew Moravcsik as its only teacher. However, F. Schimmelfenning (2004, 75) explains that “Liberal Intergovernmentalism is an application of rationalist institutionalism, a larger class of International Relations theories (with numerous teachers as well as disciplines) to the field of European integration.” Liberal intergovernmentalism is a theory that builds on the premises of intergovernmentalism “but give it a much more sophisticated and rigorous theoretical underpinning” (75). Nonetheless, some scholars believe that European integration can be further explained by intergovernmentalism. Intergovernmentalism by Stanley Hoffman defends that the level and speed of European integration rest on the hands of nations; hence, any increase in power at a supranational level is the result of a direct decision by governments. Intergovernmentalism can, in fact, explain that the coordination among EU’s supranational institutions are the major forces behind European integration. Stanley Hoffmann’s thesis, which asserts that the state is not an obsolete actor, was reinforced during French President de Gaulle’s “empty chair crisis” which demonstrated that states, at that point, would resist any further gradual transfer of sovereignty to the European
Community (EC). The crisis, also known as the Luxemburg crisis between 1965 and 1966, weakened the Commission while the nation states reassessed themselves. Further, each Intergovernmental Conference (IGC) has forced harmonization among areas and empowered the EU by expanding the mandate of EU legislation. In fact, the most important treaties that have pushed integration forward have come out of IGCs. For instance, the Treaty of Amsterdam of 1997 is the result of an IGC that was launched at the Turin European Council in March 1996, the Treaty of Nice of 2001 was the result of an IGC that began in February 2000 and ended with the Nice European Council of 2001, and the Treaty of Lisbon was drafted in the IGC that took place in Lisbon in July 2007. Schimmelfenning (2004, 75) explains that Moravcsik, in his major work titled “The Choice of Europe,” not only seeks “to explain the major steps towards European integration” making it a grand theory, but also seeks to prove that it is a parsimonious theory since it can be summarized in a number general propositions.

Neofunctionalism is, therefore, adequate in its explanation of the deepening process of the EU, particularly its economic and monetary integration. In fact, Nye (1970, 796) has stated that “the neo-functional approach is more suited to the analysis of cases such as common markets in which significant institutions have been created or market forces released than it is to the analysis of loosely structured relationships.” In the EU, the consolidation of the common market is based on the creation of the Common Agricultural Policy (CAP), which is decided “by unanimity vote without a right of proposal for the Commission” (Schimmelfennig 2004, 84). However, neofunctionalism is not adequate in its explanation of the widening process particularly represented by the enlargements of the union. In fact, Schmitter (2007) believes that neofunctionalism does
not provide a useful clarification of the enlargement process because its theoretical premise is based upon new functional tasks, not more territorial units. Enlargement increases membership, which, in turn, brings greater diversity, diluting the strength of integration. Schmitter (2007, 70) believes that enlargement will only prove to be harmless if “a spill-over in task or authority is built into the negotiations surrounding the accession process.”

In the field of EU studies, authors argue that the creation, evolution, and integration process of EU institutions have been shaped not only by the behaviors but also the preferences and identities of individuals and Member States within Europe. Christiansen, Jorgensen and Wierner (2001) claim that the European integration process has a transformative impact on both the European state system and its units. They explain that just as the European integration process has changed over the years, so have the identities and interests of the agents. The result is that the European integration process has transformed society to such an extent that Europe has moved from a Hobbesian to a Kantian society of eternal peace.

Language-oriented constructivism is a more radical form of constructivism, which focuses on the role of language in the construction of the EU. This approach adds discourse analysis to the debate and explains that language not only informs us about the EU but also that it is through language and speech acts that much of the European integration is constructed on a daily basis. Thomas Diez (1999) explains that it is in saying something that we do something. In fact, there have been very important oral statements that have had an imprint in the construction of the EU; for instance, W. Churchill’s speech after WWII calling for a “United States of Europe”, the “Schuman
Declaration” inaugurating the beginning of the future EU, or Angela Merkel’s speech at the official celebration ceremony of the 50th anniversary of the signing of the Treaty of Rome.

Finally, N. Ibryamova and R. Domínguez (2006) explain that constructivists defend that structures of European politics are social rather than material assuming that the structures of European politics are the results of social interaction among actors. N. Ibryamova and R. Domínguez (2006, 47) explain that for constructivism, interest and identities in Europe as well as the structures of European politics are socially constructed because “the structures of international politics are outcomes of social interactions.” They claim that states are not static subjects but rather dynamic agents with particular identities. These specific identities are not given but constructed through complex practices that make states variable, unstable, and continually changeable.

Economic, Monetary, and Political Integration

The desire for political reconciliation on the European continent became particularly intense during the post-War period. Once the creation of the EU became a reality, academic debate as to whether economic integration precedes political integration or vice versa increased. Some assert that political decisions have been motivated by economic reasoning (El-Agraa 1989), noting that historical evidence proves “descriptions of fluctuations of international economic integration identify clear economic dynamics behind political decisions” (Nieminen 2005, 91). Others believe that political decisions propel regional integration and, as Balassa (1961, 129) states, “political motives may prompt the first step in economic integration”.
When, in the summer of 1954, the French National Assembly failed to ratify the draft treaty on the Establishment of the European Defence Community among the six members of the ECSC, the idea of creating a European Union primarily as a political entity evaporated. Despite this setback, visionary political leaders decided to pursue the path of economic integration with the successful creation of the European Economic Community. In fact, Issing (2001, 1) noted that “over the following 45 years, economic integration acted as a spur to monetary integration.” Today, economists, scholars, and politicians believe that, with economic and monetary integration now consolidated, it is time for political union to become a reality.

According to Balassa, in the *The Theory of Economic Integration*, there are different levels of economic integration that range from basic preferential treatment to monetary union. Economic integration theory explains that preferential treatment is the most basic type of integration. It is one in which some non-EU members enjoy reduced import duties for a particular established set of goods, as exemplified by the relationship formed by the EU and the African, Caribbean, and Pacific countries (ACP countries). This preferential treatment evolves to create the free trade area that ensures that any and all trade impediments, such as import duties and quota restrictions, are not applicable to partner members. One notable example was the European Free Trade Area Association (EFTA), established by the EFTA Convention in 1960, which included Iceland, Liechtenstein, Norway, and Switzerland. More recently, in the Barcelona Declaration

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The EU economic integration began with the customs union agreed on in the Treaty of Rome (1957). According to Balassa (1961), when customs unions lead to a common external regulation and a fully free internal market of goods, services, labor, and capital, the unions’ Member States begin to enjoy what is called a common market. When a group of countries with a common market achieve a high degree of coordination of sound economic policy, those countries form an economic union. This economic union is transformed into a monetary union when the currencies of the Member States are linked by a fixed exchange rate to a common currency. Finally, when a group of countries enjoy an economic union and a monetary union, the group is said to have established an economic and monetary union (EMU). As of today, only the Eurozone can be considered a true EMU. Table 2.4 summarizes the different stages countries must go through in order to achieve an Economic and Monetary Union.

37 The Euro-Mediterranean Partnership is formed by the 27 EU Member States and 10 Mediterranean partners (Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Syria, Tunisia, and Turkey). Libya has held observer status since 1999.

There are three ways in which countries, that already have a solid economic union, can progress toward monetary integration (Mundell 2002a). One way is by using a fixed exchange rate that locks together different currencies and includes a monetary policy dictated by the performance of the balance of payments. The second way involves using a currency board, which is accompanied by the creation of a supranational central bank and a parallel currency. The third way involves a situation in which a supranational central bank is created and a common currency, which replaces national currencies, is introduced. Only those monetary unions that achieve the complete abandonment of all individual national currencies form a common currency area. For Mundell (2002a), stable monetary integration will follow only when countries adopt a common currency.
Furthermore, according to Mundell, monetary integration implies not only the abandonment of national currencies but also the relinquishment of both polity and legal sovereignty.

There are two types of currency areas. One is considered a full or true currency union. The second is a “pseudo,” “incomplete” or “intermediate” currency union. Full unions, such as the Eurozone, are characterized by having a monetary authority embodied in a single joint institution, normally, a central bank. In the Eurozone, the European Central Bank (ECB), together with the central bank of each member state, creates the European System of Central Banks (ESCB). As Mundell (2002b, 126) puts it, with the EMU and the adoption of the euro, “each country sacrificed its policy sovereignty in the field of its own money in exchange for its share of policy sovereignty in the direction of the ECB.” At the same time, he explains that the implication of the creation of the euro and the replacement of national currencies are extremely important for the countries involved in this initiative because “the right to produce a national currency has, for centuries - even millennia - been looked on as a principal dimension of political independence and a badge of legal sovereignty” (Mundell 2002b, 127).

Pseudo, intermediate, or incomplete unions are, according to De Grauwe (2003, 107), those formed by “countries in the world [that] peg their currencies to another one, in particular to the dollar ... to form an ‘incomplete’ monetary union with the country to which they peg.” For Mundell (2002a, 135), “in a pseudo currency area, monetary policy may be allocated to domestic objectives”. There are many examples of incomplete unions, which became “fragile and crisis prone” (Eichengreen 2002, 12). This fragility is due to what De Grauwe (2003, 107) calls a problem of “credibility.” According to
Eichengreen (2002, 21), the intermediate union “forces governments to choose between credibly and unconditionally subordinating monetary polity to the exchange rate.” In fact, the success of the Eurozone as a full union lies in the fact that “the ECB and the European System of Central Banks ... were given the mandate to maintain price stability and to safeguard the credibility of the euro” (Trichet 2008c, 5).

De Grauwe (2003, 107) explains that the collapse of systems like the Bretton Woods in 1973, the Economic Monetary System in 1993, and the unions among South-East Asian currencies in 1997-98 and Latin American currencies in the 1990s, were all the result of “the fragility of a fixed exchange rate system [that] has everything to do with credibility.” In contrast, the strength of the Eurozone rests precisely on the credibility of the requirements set when the Economic and Monetary Union (EMU) was being implemented and the European Central Bank (ECB) was established.

Table 2.5. List of existing and de facto monetary unions

<table>
<thead>
<tr>
<th>Existing Monetary Union</th>
<th>De facto Monetary Unions</th>
</tr>
</thead>
<tbody>
<tr>
<td>- The euro in the Eurozone</td>
<td>- The euro is legal tender in Andorra, Kosovo, and Montenegro.</td>
</tr>
<tr>
<td>- The East Caribbean dollar(^{39}) in Anguilla, Antigua and Barbuda, Dominica, Grenada, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent, and the Grenadines.</td>
<td>- The Hong Kong Dollar(^{43}) in Macau</td>
</tr>
<tr>
<td>- The CFA franc BEAC(^{40}) used by Cameroon, the Central African Republic, Chad, the Republic of Congo, Equatorial Africa,</td>
<td>- The Russian rouble(^{44}) is used in Russia and the Georgian Autonomous republics of Abkhazia and South Ossetia</td>
</tr>
<tr>
<td></td>
<td>- The Swiss franc in Liechtenstein</td>
</tr>
<tr>
<td></td>
<td>- The U.S. dollar is used in Palau, Micronesia, the Marshall Islands,</td>
</tr>
</tbody>
</table>

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Guinea, and Gabon
- CFA franc BCEAO\(^{41}\) used by Benin, Burkina Faso, Côte D’Ivoire, Guinea-Bissau, Mali, Senegal, and Togo.
- The East African Shilling used in the East African Community (EAC)\(^{42}\) between the Republics of Kenya, Uganda, the United Republic of Tanzania, Republic of Burundi, and Republic of Rwanda.

Panama, Ecuador, El Salvador, Timor-Lester, the British Virgin Islands, and the Turks and Caicos Islands.

Table 2.6. List of planned monetary unions

<table>
<thead>
<tr>
<th>Name</th>
<th>Currency</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>West African Monetary Zone(^{45}) – as part of the Economic Community of West African States (ECOWAS)</td>
<td>Eco</td>
<td>December 2009</td>
</tr>
<tr>
<td>Gulf Cooperation Council (GCC)</td>
<td>Khaleeji</td>
<td>2010</td>
</tr>
<tr>
<td>Caribbean Single Market(^{46}) and Economy (CSME) as part of the CARICOM</td>
<td>Unknown</td>
<td>Due between 2010-2015</td>
</tr>
<tr>
<td>Southern African Development Community(^{47})</td>
<td>Unknown</td>
<td>2016</td>
</tr>
</tbody>
</table>

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Finally, there is a continuing debate concerning the final steps toward complete political integration in the EU, given the past successes in economic and monetary integration. Some authors believe that economic and monetary integration entail political integration, while others believe political integration entails economic and monetary integration.

The majority of scholars agree that a political union could only be achieved once an economic and monetary union is set, and that political union is necessary to strengthen the other two. In fact, De Grauwe (2003, 18) believes that although the EMU is a remarkable achievement, “the absence of a political union is an important flaw in the governance of the Eurozone”.

British politicians and Eurosceptics (those opposed to further integration) believe, however, that there is no connection between monetary and political integration. For Wyplosz, there is little doubt that the primary motivation for the EMU was to foster further political integration in Europe. Eichengreen and Frieden (2001, 1) believe that the EMU is a political phenomenon because “it is the outcome of a political process of treaty negotiation, parliamentary ratification, and popular referenda.” They believe that, since the EMU is a new economic experiment, there is no way to know from an economic perspective whether a monetary union would have a positive or a negative magnitude; hence, they believe that “the momentum for monetary union must therefore derive from other, primarily, political factors” (Eichengreen and Frieden 2001, 6). For Issing, both economic and monetary integration are expected to lead to political integration. He explains that, while the creation of the EU was encouraged by economic integration that has led to monetary integration, none could have been achieved without a political
The Path to the European Monetary Union (EMU) and the Euro

The path to the EMU and the euro has not been an easy one. According to Bartel, the nineteenth century witnessed three major attempts to achieve European monetary integration. The first one was the Austro-German monetary union (1857-1866). The second attempt was made through the Latin Monetary Union (1865-1878) between France, Belgium, Italy, and Switzerland. The third attempt was made with the creation of the Scandinavian monetary union (1875-1917) between Denmark, Norway, and Sweden. The European Commission (2008a), in “The EMU: A Historical Documentation,” explains that only two attempts at monetary integration occurred during the twentieth century. The first attempt occurred at the 1969 Den Haag summit, during which the Werner Report was introduced. This report represented the first commonly agreed upon plan of action to create an economic and monetary union in October 1970. The second
attempt was the creation, in 1979, of the European Monetary System (EMS) and the introduction of the European Currency Unit (ECU) as common currency. The main purpose of this second initiative was to set up a zone of monetary stability and to increase efforts to achieve closer economic convergence between Member States.

In April 1989, Jacques Delors outlined what became known as the Delors Report—a thorough, three-stage plan—to introduce the EMU to a process that culminated with the final introduction of a common currency, the euro. Granell explains that the idea of a common currency incorporated in the Delors Report was approved at the informal ECOFIN meeting on May 19-20, 1989, at the Hotel La Gavina in S’Agaro on the Costa Brava (Spain). During the Madrid European Council that took place in June 1989, the Delors Report was adopted as the roadmap for work on the creation of the EMU.

Stage one of the Delors Report, also known as the preparatory phase, states that the Member States of the EU needed, from July 1990 to December 1993, to implement the first of the “four freedoms”: the liberalization of capital movements. The 1992 Maastricht Treaty, which entered into force in November 1993, thoroughly spelled out specific targets concerning the inflation rate, public finances, interest rates, and exchange rate stability. These requirements, which came to be known as the Convergence criteria or Maastricht criteria,\(^48\) established the economic requirements that had to be observed by those EU countries with plans to adopt the euro. Table 1.7 summarizes these requirements.

\(^{48}\) The part of the Maastricht Treaty related to the EMU can be divided into two parts. One part addresses the provisions related to the transition to a monetary union; that is, the convergence criteria. The second part relates to the macroeconomic policy of the completed union.
Table 2.7. Summary of the Maastricht Treaty criteria

<table>
<thead>
<tr>
<th>Target</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation rate</td>
<td>No more than 1.5 percentage points higher than the 3 best-performing Member States of the EU.</td>
</tr>
<tr>
<td>Public finances</td>
<td>The ratio of the annual government deficit to gross domestic product must not exceed 3% at the end of the preceding fiscal year.</td>
</tr>
<tr>
<td>Interest rates</td>
<td>The nominal long-term interest rate must not be more than 2 percentage points higher than the 3 best-performing Member States.</td>
</tr>
<tr>
<td>Exchange rate stability</td>
<td>Applicant countries should have joined the exchange rate mechanism under the European Monetary System for 2 consecutive years and should not have devaluated its currency during the period.</td>
</tr>
</tbody>
</table>

Stage two of the Delors Report, also known as the transitional phase, covers the period from January 1994 to December 1998. During this phase, a new exchange rate mechanism (ERM II) was set up in order to provide currency stability between the euro and the national currencies of those countries that were not yet part of the Eurozone. When the first eleven countries adopted the euro, the EMR was substituted by the ERM II. On March 16, 2006, the national central banks of Member States outside the euro, but aspiring to adopt the common currency, agreed on operating procedures for an exchange rate mechanism in stage three of the Economic Monetary Union (EMU). The main purpose of the ERM II is to make sure that EU Member States that want to adopt the euro succeed in implementing the adequate policies to maintain stable exchange rates between

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the euro and participating national currencies. Table 1.8 indicates the exchange rates that Member States must maintain in order to comply with exchange rate stability.

Table 2.8. National exchange rate to euro and fluctuation bands

<table>
<thead>
<tr>
<th>Member State (national currency)</th>
<th>Central rate (EUR 1)</th>
<th>Fluctuation band</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark (krone)</td>
<td>7.46038</td>
<td>+/- 2.25%</td>
</tr>
<tr>
<td>Estonia (kroon)</td>
<td>15.6466</td>
<td>+/- 15%</td>
</tr>
<tr>
<td>Lithuania (litas)</td>
<td>3.45280</td>
<td>+/- 15%</td>
</tr>
<tr>
<td>Latvia (lats)</td>
<td>0.702804</td>
<td>+/- 15%</td>
</tr>
</tbody>
</table>

Additionally, the report specified that by June 1, 1998, the ECB would become the ultimate monetary authority. Furthermore, the European Council decided to adopt the Stability and Growth Pact (SGP) at the Amsterdam meeting in order to ensure budgetary and fiscal discipline after the creation of the euro. On December 31, 1998, the conversion rates between the eleven participating national currencies and the euro were established. This conversion rate was put in place on January 1, 1999, with the irrevocable fixing of the exchange rates of those eleven national currencies participating in the Eurozone.

Enforcement of the conversion rate, on January 1, 1999, triggered the start of the final stage of the Delors Report, which continues to this day. On that date, the euro currency became a reality, and the single monetary policy was introduced under the authority of the ECB. Although the conversion rate for the euro was put in place, actual euro notes and coins were not introduced until January 2002; this was an intentional delay meant to

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50 Belgium, Germany, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, and Finland.
provide a three-year transition period for the eleven countries adopting the euro. In order to reinforce their commitment to the euro, those same eleven national currencies legally ceased to exist on December 31, 1998. On January 1, 1999, eleven out of fifteen EU countries freely chose to adopt the euro and the Eurozone was born.

Greece, which was unable to meet the convergence criteria to join in 1999, finally qualified in 2000 and was admitted to the Eurozone on January 1, 2001. Denmark\footnote{Denmark has an “opt-out” clause from the Maastricht Treaty. The country held two referendums and both rejected the adoption of the euro, the latest public referendum took place in 2000.}, Sweden\footnote{Sweden has to join the euro by the 1994 Act of Accession agreement. Sweden was not at the beginning meeting the economic conditions to join the Eurozone; however, in 2003, a public referendum rejected euro membership.}, and the United Kingdom\footnote{The U.K. has an opt-out from eurozone membership under the Maastricht treaty. The U.K. meets the economic conditions to join the Eurozone, however, the Government has not yet put the question to public referendum.} did not adopt the euro; these three countries are part of the EMU but are still not part of the Eurozone. Of the ten new countries that joined the EU in 2004, Slovenia qualified in 2006 to adopt the euro in January 2007, and Cyprus and Malta adopted the euro on January 1, 2008. And Slovakia joined on January 1, 2009. Therefore, in 2009 the Eurozone has sixteen Member States.

The Optimal Currency Area Debate

Mundell’s depiction of the adoption of the euro as “the most dramatic change in the international monetary system since President Nixon took the dollar off gold in 1971,” (Bergsten 2005b, 2) places the creation of the EMU and introduction of the euro among the major economic, political, and historical events of the twentieth century. In fact, the only other case of successful monetary unions that can be compared to the introduction of the euro is that of the greenback after the Civil War of 1861-65.
Nonetheless, the idea of a common currency meant to help solve the various economic disadvantages associated with different monies is not new. Both the United States and Britain proposed the importance and convenience of having a world currency when planning the new post-War economic order at the 1944 Bretton Woods summit. Under President Roosevelt and Secretary of the Treasury Henry Morgenthau Jr., the United States presented the White Plan—named after the Treasury's economist, Dr. Harry D. White—which included the provision of a dollar-based new world currency called the “unitas”. Britain, guided by John M. Keynes, proposed a pound-based currency called the “bancor” (Iwamoto 1997). Both currencies were only meant to play the role of an accounting unit. Later on, in 1969 the IMF introduced a new international reserve asset, the Special Drawing Right (SDR), to support the Bretton Woods fixed exchange rate system. Unfortunately, in 1973 the Bretton Woods system collapsed and the major currencies shifted to a floating exchange rate regime. The SDR was introduced because “gold and the U.S. dollar proved inadequate for supporting the expansion of world trade and financial development that was taking place.”\textsuperscript{54} Therefore, the international community decided to create a new international reserve asset under the auspices of the IMF.

De Grauwe (2006) explains that at the time of the signing of the Maastricht Treaty, the monetary union was still a much-debated issue; scholars, economists, and politicians alike were struggling with the pros and cons of such a union. The decision to give up one’s national currency and adopt a common one is made based on a determination of the costs and benefits that relinquishing national monies to adopt a common currency would

have for a group of countries. Still, today, some countries either do not understand or choose not to accept the notion that a world engaged in global trade should just as well share a common currency.

The idea of adopting a common currency in Europe was first introduced by Robert Mundell. Mundell’s work on the feasibility and desirability of a common currency has been classified by Ronald McKinnon (2004) into two categories: “Mundell I” and “Mundell II.” This classification is based on the evolution of Mundell’s thoughts on these issues.


Mundell I expressed some skepticism about the benefits of a common currency area; the ideas of Mundell I “lean towards making currency areas smaller and more homogeneous—rather than larger and more heterogeneous—while emphasizing the advantages of exchange rate flexibility” (McKinnon 2004, 691). The theory of Optimum Currency Area (OCA) of 1961 studies how countries with a monetary union and common currency adjust when affected by asymmetric economic shocks. Mundell claimed that adjustments are based on whether wages are rigid, labor mobility is limited, income transfers are difficult, and differences exist in the labor market and growth rates. According to him, countries with a monetary union and a common currency would not be
able to properly absorb asymmetric shocks unless, among other circumstances, labor mobility is a reality. Mundell (2003, 119) emphasized the benefits of a common currency, Europa, in overcoming economic shocks because “the common currency assures an automatic and equal sharing of the risk of the fluctuation.” This idea, which triumphed under the Maastricht Treaty, was explained in Mundell’s (1973b) article “Uncommon Arguments for Common Currencies.” Following his view, the Commission of the European Communities (1990) document, entitled “One Market, One Money,” sets forth a defense arguing for the benefits of a common currency in terms of microeconomic and macroeconomic stability, and the opportunity to improve equality among countries and regions of the Eurozone.

Finally, Mundell further elaborates his preference for a common currency area in a paper published in 2003 in which he claims the benefits of a world currency—an idea that he had already promoted in a paper published in 1968. In these papers, he argues for the creation of a world or global currency, the “INTOR”. Instead of being a single currency, Mundell (2003, 29) explains that “countries and areas would keep their own currencies which would circulate along with INTORS.” This idea was recently presented again during the “X Encuentro International de Economistas, Globalización y Problemas del Desarrollo,” a conference that took place in Havana (Cuba) in March 2008.
Labor Market Implications

The causes of unemployment can be explained from a macroeconomic and/or a microeconomic perspective. From a microeconomic perspective, unemployment is caused by a mismatch in the demand and supply of labor. The supply side explains the impact of labor unions, duration of unemployment, government benefits, geographic location, and minimum employment wages. The demand side explains the causes of unemployment from the perspective of firing and hiring costs, labor taxation, technical progress, and workers’ level of education. These factors, among others, affect employment preferences and often times prevent workers from joining the labor market.

Collignon (1999, 21) explains that the main problem with unemployment is “the low flow of workers from unemployment back into employment.” He attributes this low flow to the rigidity of the labor markets in the Eurozone, which he describes as providing extremely generous social benefits systems, minimum wage regulations, centralized wage bargaining, and strict regulations regarding firing and hiring. All this discourages the creation of new jobs because employers’ ability to dismiss employees is limited. In addition, the Organization for Economic Co-operation and Development (1994a, 66) states that “macroeconomics policy is relatively impotent in dealing with unemployment resulting from structural causes” and that the only solution to the problem is to solve the unemployment rate caused by structural factors. Baily (2004) and Kirkegaard agree that most changes undertaken by Eurozone members are structural changes mainly related to labor and capital markets. Manzocchi, Padoan, and Vicarelli (2001) conclude that, following the introduction of a single currency, Eurozone countries have displayed
different degrees of mobility and flexibility, which have had consequences not only for employment prospects but also for the management of economic policies.

From a macroeconomic standpoint, scholars explain that strict monetary policies followed by central banks to combat the high inflation rates of the 1970s had a negative impact on the labor markets of the Eurozone. Riese (1986, 25) believes that the labor market experiences a persistent unemployment rate because of “the monetary foundation of interest rates.” Ball (1998) argues that the main cause of stubbornly high unemployment rates in Eurozone countries has one root: the tight monetary policy pursued by central banks to balance the oil crisis in the 1970s and later to meet the convergence criteria imposed by the Maastricht Treaty. Bentolila and Bertola (1990) conclude that the 1973 oil crisis created two well-differentiated unemployment events in Europe. The first one, between 1961 and 1973, was accompanied by positive low unemployment rates. The second one, between 1974 and 1986, reached unprecedented high unemployment rates due to the oil crisis and its aftereffects. Feldstein (2000b), in his paper for the National Bureau of Economic Research, observes that, after 1997, European unemployment improved significantly because the economic boom made cyclical unemployment in Europe almost disappear, while structural unemployment rates remained extremely high.

Recent studies note that since the establishment of the EMU, there has been an increased convergence and similarity of national business cycles within Europe. According to Fantacone and Parascandolo (2000), one of the preconditions for monetary union is the convergence of the participating countries’ growth cycles. Furthermore, data from the International Monetary Fund (IMF) leaves little doubt that economic growth is
an important factor in the evolution of employment rates. The IMF (World Economic Outlook 2006) concludes that the reduction in unemployment rates in most of the Member States of the Eurozone has been accompanied by economic growth tied to cyclical factors.

Both Mundell and Bergsten believe that both the creation of the EU and the introduction of the euro have been positive. Even before the introduction of the euro, they were convinced that the effort made to introduce it was going to allow the Eurozone to experience political and economic stability. They also expected that the euro would eventually “challenge the dollar for global supremacy” (Bergsten 2005b, 3). Nevertheless, these authors believe that the only way the euro can consolidate and fully secure its role as an international currency is through the improvement of the Eurozone’s economic performance. This view is reflected in Kawai’s (1997, 81) suggestion that “Euroland has already achieved convincing price stability but achievement of dynamic growth may also be necessary for the euro to effectively challenge the dollar.” Bergsten (2005b) explains that adopting the euro not only forces countries to give up their national currencies, but also pressures them into relinquishing two major national policy instruments: monetary policy and exchange rate policy.

Conclusion

The introduction of the euro has become the most important example of structural cooperation not only within the EU but also around the world. The success story of the euro and the enlargement process demonstrate that the EU is ready for a new phase of European political, economic, and monetary integration that would strengthen Europe’s
position in the world. The European battle against unemployment, initiated at the Essen European Council, identified, for the first time, employment as one of the most important long-term goals of the European Community. The Luxembourg Process and the Lisbon Agenda reinforced this objective in accordance with Collignon’s (1999, 21) statement that “Europe’s ill is the low rate of employment creation.”

Skidelsky (2001, 9) states that “monetary union is a political project pursued by economic means.” However, the success of this project rests on how the common currency affects the economies of the Member States after its adoption. A monetary union can, indeed, only be considered optimal if the introduction of a single currency helps the “(1) maintenance of full employment; (2) the maintenance of balanced international payments; [and] (3) [the] maintenance of a stable internal average price level” (McKinnon 1963, 717). This shows that there is a strong correlation between employment and stability in price levels, which, as Friedman states, are two of the most important benchmarks that will determine the success of the union. In fact, Friedman (1977, 3) explains that

the effects of a change in aggregate nominal demand on employment and price levels may not be independent of the source of the change, and conversely the effect of monetary, fiscal or other forces on aggregate nominal demand may depend on how employment and price levels react.

Therefore, the introduction of the EMU has provided countries with discipline, since they have to comply with both the decisions of the ECB for monetary policy and the requirements of the SGP for fiscal policies. Before the euro, governments were not completely independent to pursue macroeconomic policies because national central bankers enjoyed monopoly powers for the creation of monetary stability. The fiscal
policy of Member States was trimmed with the adoption of the SGP; the SGP eliminates part of the government’s discretionary national fiscal policy. In fact, Schwartz (2004) explains that defenders of the euro acknowledged that a single European currency and a single European central bank were better suited to achieve monetary stability, while delegating the task of pursuing active macroeconomic and welfare policies to the national governments. Bergsten (2005, 3) points out that a currency union would only be effective as long as the countries involved:

possess the requisite internal adjustment devices, mainly via market mechanism but assisted by governmental policies if necessary, notably regarding labor mobility and capital transfers from “surplus” to “deficit” regions.

Despite these acknowledgements, those scholars and experts traditionally concerned with employment and social policies greeted the EMU with skepticism. The general concern was that the EMU and the adoption of the euro would require a dramatic restructuring of labor markets and social policies geared toward more flexibility in the labor market, decentralized wage bargaining, and reduced social protection. In fact, the introduction of the EMU and adoption of the euro have stirred a debate. Fantacone and Parascandolo (2000, 85) explain that there is a relationship between employment and monetary integration and conclude that the process of European monetary integration and the introduction of the single currency “have had a negative impact on employment.” Meanwhile, others like Jenson and Pochet (2006, 161) state that it cannot “be said that the European social model is gutted.” Moreover, they argue that instead of causing a race to the bottom, the EMU and the euro have pushed toward new governance practices that involve redesign rather than retrenchment.
Chapter Three

The Introduction of the Euro

So much of barbarism, however, still remains in the transactions of most civilized nations that almost all independent countries choose to assert their nationality by having, to their own inconvenience and that of their neighbors, a peculiar currency of their own (J. S. Mill 1894, 176).

The creation of the European Monetary Union and the introduction of the euro brought about an intense debate concerning whether or not the euro would manage to challenge the status of the U.S. dollar and the hegemonic power of the United States established since W.W.II. For this challenge, the euro had to first consolidate its position as a common currency then, gain recognition as an international currency and, finally, become an international, global, or dominant currency.

As the euro gained international financial recognition, it became a stabilizing tool capable of furthering the political integration process of the European Union (EU). The euro has provided the economies of Europe a degree of collective macroeconomic stability, flexibility, and economic transparency that individual Member States could never have achieved on their own. Therefore, the effect of the euro has not only been economically but also politically significant since its inception as an international currency with enough weight to garner, for Europe, some of the political influences heretofore enjoyed solely by the United States due to the hegemony of the dollar since World War II.

The euro has, hence, developed a solid market that has consequently eroded some of the advantages that historically supported the hegemony of the U.S. dollar as a global, or dominant, currency. Nonetheless, the U.S. dollar remains the leading international
currency. There are two correlated reasons that explain its reign. On the one hand, there is
the inertia in the use of the U.S. dollar due to years of currency pre-eminence. On the
other hand, this pre-eminence has given the greenback an edge over the euro in terms of
the size, credit quality, and liquidity of the dollar financial market over the euro financial
market. The pre-eminence of the U.S. dollar has helped the U.S. become a political
hegemony, which has resulted in the “Pax Americana.”

The euro has, nonetheless, transformed the Eurozone into a solid and internationally
respected economic bloc with a wide area of influence and with an ever-increasing voice
in the political arena. However, these achievements have oftentimes been the target of the
fear and confusion of public opinion represented by the perspective of the eurosceptics.
Nevertheless, the reality is that the Eurozone has become viably competitive with the
United States for the first time in history.

This chapter will briefly review the history of the euro and how it has become an
international and global currency. In addition, this chapter will summarize previous
failed European attempts to form a monetary union throughout the centuries as well as
the internal evolution leading to the introduction of the euro as a common currency.
Furthermore, this chapter will examine the economic and monetary fundamentals that
have helped transform the euro from a common currency into an international and global
one that has brought about what could be called the “Pax European.”
The Path to the Euro as a Common Currency

The creation of the Eurozone is a unique endeavor that stands as a model to imitate because of the integration force of the Economic and Monetary Union (EMU) and the successful role of the euro. In fact, the economic stability achieved after the introduction of the euro has been an incentive attractive enough to propel Member States toward the pursuit of further integration at the political and social level. The euro has amply demonstrated the many benefits of a common currency.

The history of Europe reveals that, over the years, there have been many efforts guided toward the achievement of an economic and monetary union and the establishment of a common currency (Bartel 1974); however, although the attempts have been many, the only successful outcome has been the creation of the EMU with the euro. Nevertheless, every single failed attempt has, without a doubt, left an imprint.

Three of the most important but unsuccessful monetary unions have been the Austro-German Monetary Union (1834-1866); the “Latin Monetary Union” (1865-1927) between France, Belgium, Italy, and Switzerland; the Scandinavian monetary union (1875-1917) between Denmark, Norway and Sweden; and The Union of Soviet Socialist Republics (1922-1991) between Armenian SSR, Azerbaijan SSR, Byelorussian SSR, Estonian SSR, Georgian SSR, Kazakh SSR, Kirghiz SSR, Latvian SSR, Lithuanian SSR, Moldavian SSR, Russian SFSR, Tajik SSR, Turkmen SSR, Ukrainian SSR and Uzbek SSR.

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55 See chapter 1.
A monetary union is not simply achieved when a number of countries adopt a
common single currency; it also requires an effective exchange rate between Member
States as well as the adherence of all countries to a common monetary policy. The most
important monetary union was the Latin Monetary Union, which was a French idea
oriented toward improving the country’s political and economic power. According to
Sam Vaknin\textsuperscript{56} due to geographic proximity there were a number of countries that were
constantly trading amongst themselves, particularly France, Belgium and Switzerland.
Eventually, the gold franc was adopted as the monetary basis for Belgium and
Switzerland in 1848, encouraging Italy to follow in 1861. Other countries such as Greece
and Bulgaria also adopted the French currency in 1867. When the Foundation Treaty was
signed in December 1865 in Paris, France, Switzerland, Belgium, and Italy agreed on a
gold and silver conversion rate, creating a bimetallic currency union. The equivalent of a
common monetary policy stipulated that although all countries could mint their own gold
and silver coins, they were restricted to no more than six francs coins per capita.

In 1867, the International Monetary Conference was organized to discuss the future
of the world monetary order. The discussions that took place at the conference led to the
adoption of the Gold Standard that lasted until 1971 when President Nixon eliminated the
fixed gold price and the Bretton Woods System disappeared.

\textsuperscript{56} The history of previous European currency unions.
The euro is viewed, therefore, as a successful common currency capable of promoting convergence among economies of a different size and nature. Since its inception, it has been closely watched by other areas willing to follow in the footsteps of the EMU and the euro. This is the case for many Asian countries, in particular. Haruhiko Kuroda has stated that “the euro has played an essential role in fostering harmony among diverse economies. This experience is extremely useful for Asia as the region moves ever more resolutely towards its own style of regionalism” (Kuroda, 1). Furthermore, the Economic Community of West African States (ECOWAS) is following in the footsteps of the EU model. The ECOWAS is a regional group of fifteen\textsuperscript{57} African countries founded on May 28, 1975 with the signing of the Treaty of Lagos and aimed at promoting economic integration among its members. Curiously enough, the ECOWAS Member States are divided into two different economic and monetary unions. Since January 10, 1994, several members\textsuperscript{58} of ECOWAS created the West African Economic and Monetary Union (UEMOA), which is a customs and monetary union with the CFA franc as common currency. Furthermore, on December 1, 2009, Gambia, Ghana, Nigeria, and Sierra Leone plan to create the West African Monetary Zone (WAMZ) with the eco as common currency.

However, the road to the Eurozone and the euro, although successful, has not been easy. The Delors Report became the successful plan that designed the three stages necessary to achieve the Economic and Monetary Union (EMU) and the adoption of the euro. However, there were two previous failed reports that attempted to establish the

\textsuperscript{57} Member States of the ECOWAS are Benin, Burkina Faso, Cape Verde, Cote d’Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

\textsuperscript{58} Benin, Burkina Faso, Cote d’Ivoire, Mali, Niger, Senegal, and Togo. On May 2, 1997, Guinea-Bissau became its eighth member state.
EMU and introduce the single currency area in Europe. The first was the Werner Report that resulted from the 1969 Den Haag summit, and the second was the 1979 European Monetary System that introduced the ECU as a predecessor of the euro\(^5\) (see chapter 1).

There is an important difference between the previous unsuccessful monetary unions and the EMU. While the previous monetary unions rested on the value of gold or silver, or metallism, the EMU rests on the euro, or chartalism, as fiat money. Metallism or bimetallism is a monetary system in which the value of the currency unit is expressed in amounts of gold or silver, and where the “exchange rate” is fixed by law. This system is very stable mainly because gold and silver are scarce resources and, as a result, governments can only print as much money as could be backed up by the stock of gold or silver stored. Fiat money, on the other hand, is issued by a central national bank, and its value and stability depends on the good credit of the issuing authority. This good credit, in turn, is based on the political and economic stability of the country. However, fiat monies are less stable because of the temptation of the inflationary tax or seigniorage when the Treasury is unable to finance the deficit by bond issue. In the EMU, stability has mainly been achieved through the introduction of the following two pillars: the economic union and the monetary union.

A major instrument of the economic union is the Stability and Growth Pact (SGP), which is based on the implementation of specific fiscal requirements among EMU Member States with the goal of maintaining fiscal stability. The monetary union is based on the existence of the euro as a common currency, and the implementation of a common monetary policy supervised by a central bank- the European Central Bank (ECB).

introduction of a common interest rate by the ECB, and the requirements of the SGP have encouraged further integration because they have fostered the synchronization and harmonization of the economic behavior or business cycle. This leads Rose (2000, 2) to believe that "business cycles are systematically more highly correlated between members of currency unions than between countries with sovereign currencies."

The Euro and Its Evolution: From Common Currency to International Currency

The euro was nominally introduced on January 1st, 1999, but banknotes and coins were not put in circulation until January 1, 2002. Despite its initial success as a common currency, the full impact of the euro is yet to unfold. Nonetheless, with the available data, it is not bold to affirm that the euro has contributed to the disintegration of many different types of borders and has fostered integration at many levels. Indeed, ever since the introduction of the euro, Eurozone Member States have experienced an increase in trading. The euro has not only reduced both direct and indirect trading costs but has also removed the exchange risk and the cost of currency hedge. Furthermore, the euro has allowed for price transparency and reduced price discrimination. Finally, the euro has reduced competitive devaluations, which have helped bolster foreign direct investments.

The euro has therefore brought countries together although, as Trichet (2006, 4) has stated, “we are not witnessing the creation of a ‘fortress Europe,’ but that the European Integration is perfectly complementary with the global integration.”

The euro is, above all, money. In economic theory, money refers to the circulating currencies with legal tender status conferred by a national state and government. In order for a currency to be considered money by the government it has to serve as a unit of
account, a store of value, and a medium of exchange. Furthermore, a limited number of national currencies can be considered to be an international currency, or currency that plays an active role in both international trade and financial transactions. Mundell (1999, 4) explains that a currency is international “when it is used outside the domain in which it is legal tender.” National governments do not decide which currency will become international; rather, it is decided, indirectly, by the market and depends on the size of the economy, the financial system, confidence in the currency’s value, political stability, and a network of externalities of the country (Lim 2006). Hence, not all national currencies can become international. Francesc Granell (2007, 205) explains that “the size of the market, the exchange restrictions and the aforementioned inertia/tradition” are key in determining if a currency can be used as an international currency. However, most governments work hard to transform their national currency into an international one. Benjamin Cohen (2007, 104) explains that there are four benefits to becoming an international currency which are:

a potential for seigniorage (the implicit transfer of resources, equivalent to subsidized or interest-free loans, that go to the issuer of money that is used and held abroad); (2) an increased flexibility in macroeconomic policy afforded by the privilege of being able to rely on one’s own currency to help finance foreign deficits; (3) a gain in status and prestige that accompanies market dominance, a form of “soft” power; and (4) a gain in influence derived from the monetary dependence of others, a form of “hard” power.
Table 3.2 outlines the three major functions that all currencies must fulfill in order to become an international currency (Pollard 2005, 260).

Table 3.2. Functions of an International Currency

<table>
<thead>
<tr>
<th>SECTOR</th>
<th>Private</th>
<th>Official</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Function</strong></td>
<td><strong>Unit of Account</strong></td>
<td><strong>Exchange Rate Peg</strong></td>
</tr>
<tr>
<td></td>
<td>Invoice</td>
<td>Reserves</td>
</tr>
<tr>
<td></td>
<td>Financial Assets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle/Substitution</td>
<td>Intervention</td>
</tr>
<tr>
<td><strong>Store of Value</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Medium of Exchange</strong></td>
<td></td>
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</tr>
</tbody>
</table>

Trichet (2006, 2) explains that soon after its introduction, the euro not only succeeded in becoming an international currency but also demonstrated that "one single currency is more efficient than multiple currencies in performing the roles of a medium of exchange and unit of account." By December 2006 the euro already had more notes in circulation than the U.S. dollar, an expected outcome considering the fact that the Euro area has 318 million people and the U.S. only 300 million (Atkins 2006). On August 1, 2007, Diana Farrel (2008, 2) reported that "there were $840 billion worth of euro notes sloshing around the world, compared to $814 billion U.S. dollars.” Jean-Claude Trichet explained that the European Central Bank (ECB) estimated that "the stock held outside the Eurozone must be worth at least €55bn, and that it is almost certainly too low an estimate given the net outflow accounted for by tourists.” Nonetheless, in 2007 the global total in financial markets including equities, government and corporate debt securities, and bank deposits was estimated to be $157 trillion, $56 trillion of which belonged to the U.S.’s financial market. This alone demonstrates that the U.S. remained the largest financial market in the world. This chapter explains the function of the euro as a unit of account and as a store of value.
The Euro as a Unit of Account: Invoice Currency and Currency Peg

A currency will be considered an international currency if it can operate as a unit of account at both the private and official level. In the private sector, the euro must be used to price international trade and debt contracts; that is, it must be used as an invoice currency. In theory, when trade takes place between two industrial economies, the invoice will have the currency of the exporter. Trade between industrial and developing countries will be invoiced in the currency of the industrial country. Trade between two developing countries is usually priced in the currency of a third country. The data shows that before the euro was introduced, the U.S. dollar was the designated third country leading currency. The preeminence of the U.S. dollar continues to this day, however, its potency has diminished with the introduction of the euro.

Jeffrey A. Frankel (2008) explains that countries in the Eurozone have experienced a significant increase in their bilateral trade with other Eurozone members states. He explains that this general trend has also been corroborated by the findings of other scholars. In fact, Frankel (2008, 3) explains:

Flam and Nordström (2006) found an effect of 26% in the change from 1995-98 to 2002-05. Berger and Nitsch (2005) and De Nardis and Vicarelly (2003) reported similarly positive results. More recently, Chintrakarn (2008) finds that two countries sharing the euro have experienced a boost in bilateral trade between 9 and 14%. Overall, the central tendency of these estimates seems to be an effect in the first few years on the order of 10-15%.

Figure 3.1 shows the evolution of export activity between Eurozone Member States. It clearly demonstrates that trade among Eurozone Member States has increased, especially after 1990.
In the **official sector**, the euro is considered to be a unit of account dependent on the number of countries that choose it as a currency peg. Under the Bretton Woods system most currencies were tied to the U.S. dollar. When the Bretton Woods system collapsed, some of the currencies allowed their value to float, but most chose to peg their exchange rates to the U.S. dollar. Hence, there was a general preference for the U.S. dollar, although some European currencies began to develop areas of interest. This was the case for the French Franc, since it was used as a currency peg for most of the old colonies such as the African Financial Community franc (CFA), and the British Pound, which was used as the currency peg for most of the old colonies, mainly those located in the Caribbean. Richard Pomfret (2005) explains that the CFA after the demise of the Bretton Woods system included Benin, Burkina Faso, Cameroon, Chad, Comoros, Rep. of Congo, Cote d’Ivoire, Equatorial Guinea, Gabon, Guinea-Bissau, and Mali. The British pound
extended its area of influence and continues to be used side by side with the national currency in Guernsey, Isle of Men, Jersey, Saint Helene, and Scotland; however, in the case of Gibraltar, the Gibraltar pound is pegged to the UK pound.

However, with the introduction of the euro, the dominance of the U.S. dollar, although sustained, is losing ground to the euro. In fact, the loss of value of the U.S. dollar against the euro has accounted for the abandonment of the dollar peg by certain countries, particularly oil producing countries. In fact, the United Arab Emirates and Saudi Arabia are thinking about substituting this fixed exchange rate policy for a basket of currencies with heavy weight on the euro, while Kuwait has already “unshackled its dinar from the tumbling U.S. dollar…and switched the exchange rate mechanism to a basket of currencies” (Reuters 2007, 1). Further, L. Phillips (2008, 1) reported that Kuwait, Syria, Iraq, and Turkey\textsuperscript{60} have “unveiled plans for the creation of a regional economic and security union for the Middle East explicitly modeled on the European Union” and declared their interest in creating a “Regional Economic Partnership.”

\textbf{The Euro as a Store of Value: Financial Assets and Reserve Currency}

Currencies act as a store of value when they guarantee the purchasing power of money over time. Granell (2007, 206) explains that:

the future trends in this international function of the euro as a ‘store of value’ would depend on the ‘euro intrinsic’ qualities demonstrated to the markets, and the political will of the national authorities of the third countries to diversify the euro to avoid overdependence on the US dollar if the United States continues to run enormous external imbalances.

\textsuperscript{60} According to the report, the aim is to convince Jordan, Saudi Arabia, the Gulf states of Bahrain, Oman, Qatar, and the United Arab Emirates to join the Project.
In the *private sector*, the purchasing power of the euro is measured by the demand of products denominated in euros in the bond market, money market, foreign exchange market for currency diversification, and capital markets.

For instance, since the introduction of the euro in 1999 the bond market has witnessed two developments. On the one hand, there has been an increased trend in total euro-denominated bond issuance, and, on the other hand, an increase in the number of bonds issued by the Eurozone Member States. This demonstrates that after the introduction of the euro, the bond market has witnessed a dramatic increase in integration, proving that the single currency has been an integrating factor.

First of all, the total euro-denominated bond issuance has been growing consistently since 1999. Figure 3.2 below shows that the total volume of bonds issued in euros has increased an impressive 44 percent from 1999 to 2006. In fact, while in the first quarter of 1999 euro-denominated bonds accounted for 44.6 percent and U.S. dollar-denominated bonds accounted for 55.4 percent, in 2003, “the euro [surpassed] the dollar to become the most popular currency for international bond issues (although the overall size of the U.S. bond market remains larger)” (Farrell 2008, 2). However, it is important to analyze the evolution of debt issuing by governments as well as corporations and financial institutions. While the issuing evolution of both types of bonds are important to measure how the euro has become an instrument to store value, the increase in debt issued by

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62 Total issuing activity is a compilation of bonds issued by Agencies, Central Governments, Local Governments, Supranationals, Asset-Backed Securities Financials, Pfandbriefe, Corporates.
corporations and financial institutions demonstrates that the euro has broadened access to the capital market.

Figure 3.2. Total issuing activity from 1999 to 2006

Figure 3.3 shows the trend of local and central government issuance activity since 1999. A comparison analysis between the issuing activity in 1999 and 2006 demonstrates that there has been an increase of only 14 percent. Although this percentage increase could be considered low, it proves that governments have been attempting to subdue their expenditures in order to comply with the requirements of the Stability and Growth Pact (SGP). In fact, in 2003 and 2004 the issuing activity peaked, which is coincident with the breach of the requirements of the SGP by most of the Eurozone Member States.
It is important to mention that the Eurozone provides countries with a framework of financial credibility that Member States would not enjoy had they been operating on their own financially. In fact, before the euro was introduced, sovereign debt issued by Portugal, Italy, Greece, and Spain was pejoratively called PIGS due to the very poor governmental fiscal management that negatively affected the quality of their sovereign debt, while German Bunds were considered the gold standard of European sovereign debt issuance.

The introduction of the euro forced PIGS countries to put their fiscal houses in order. However, after a short period of fiscal restructuring, certain countries ceased being fiscally responsible. As a consequence, in 2006, Italy witnessed the downgrading of its “sovereign debt to the same level as Botswana’s” by two credit rating agencies (Munchau 2006, 1). In addition, Portugal and Greece have also witnessed a downgrade in their
sovereigns’ rates. On June 2005, Portugal was downgraded from AA to AA- and Greece was downgraded, on November 2004, from A+ to A\textsuperscript{64} and on January 15, 2009 from A to A-.\textsuperscript{65}

Europa Press published the fact that, in September 2008, Spain had to suspend an auction of 15-year sovereign bonds worth 3,825 million euros due to a lack of demand. Ever since then, Spain’s situation has become increasingly worrisome to the point that the front page of the Financial Times reported, on January 13, 2009, that “Standard & Poor’s, the rating agency, said Spain’s top-notch triple A credit ratings could be downgraded because of its high private sector debt after it entered what is likely to be a deep recession.” In fact, it was downgraded just days later, on January 19, 2009, from triple A to AA-.

Unfortunately, Greece, with a current account deficit of 12 per cent; Italy, with a debt-to-gross domestic product of 104 percent; and Ireland, which announced that it will not control government spending in order to face the economic recession, have also been warned of a possible downgrade in their debt credit rating. These warnings might, nonetheless, extend to “other European countries as governments take on record debt levels, which could jeopardize the sustainability of their public finances” (Financial Times 2009, 1).

The reason for these record high and dangerous government debt levels lies in the fact that governments, in order to fight economic difficulties, are expected to increase debt

levels by issuing government bonds worth €1.000bn in 2009; that is, double what was issued in 2008. Finally, what has really set off all the alarms is that “the gap in bond yields between the benchmark German bunds and the sovereign debt of Spain, Greece, Ireland, Italy and Portugal has risen fourfold since July to levels not seen since the launch of the euro in January 1999” (Financial Times 2009, 1).

Had these countries been outside the Eurozone, the outcome would have been very dangerous for their economic viability and credibility. Unfortunately, this demonstrates that these countries have not transformed their economic and fiscal discipline to close the gap with Germany and the Nordic countries that sustain impeccable economic and financial behavior.

However, Gross and Micossi (2008, 1) have reported that one of the most significant disadvantages is that the eurozone’s “separate markets for sovereign debt paper of unequal quality issued by European governments cannot compete with the U.S. market … until the Eurozone develops a unified market for bonds denominated in euros.” They further explain (1) that the reason why the public bond markets in the United States and Japan are more successful than the public bond markets of individual EU Member States is that

if needed, the government could always force the (national) central bank to print the money necessary to meet its obligations. But this is not the case in the eurozone, since no government can force the European Central Bank to print money. For international investors, there is no euro area government bond in which they could invest to diversify their risk away from the dollar.

Jean-Claude Trichet (2008b, 2), the President of the European Central Bank, opposes the idea of a joint bond market expressing during his testimony at the economic
committee of the European parliament that “[w]e consider it good that each particular state, each particular treasury has its own refinancing and has its own way of being on the market.”

The result of the fragmentation of bond markets is that the government debts of Portugal, Italy, Greece, and Spain have been witnessing a rise in bond spreads which is worrying Almunia—the EU Economic and Monetary Affairs Commissioner. This rise in bond spreads is due to the fact that the economic situation of these countries has been down-graded by the market; that is, market and investors do not trust these economies as much as they trust other economies. In order to invest in the country—through the purchasing of government bonds—PIGS’ governments are forced to offer a higher return as an incentive. This, in turn, makes debt financing more expensive for governments.

Table 3.3 below specifies the grading rating of sovereign debt for Eurozone Member States. While the Eurozone as a whole enjoys a solid credit rating, it is still below that of the U.S., which has a solid AAA rating according to all major credit rating institutions.

Table 3.3. Standard and Poor’s Credit Rating

<table>
<thead>
<tr>
<th>Country</th>
<th>Standard &amp; Poor's Credit Rating</th>
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<tbody>
<tr>
<td>Austria</td>
<td>AAA</td>
</tr>
<tr>
<td>Belgium</td>
<td>AA+</td>
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<tr>
<td>Germany</td>
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<td>Finland</td>
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<td>France</td>
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<td>Netherlands</td>
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<td>Norway</td>
<td>AAA</td>
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<tr>
<td>Luxembourg</td>
<td>AAA</td>
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<tr>
<td><strong>DOWN GRADED</strong></td>
<td></td>
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<tr>
<td>Portugal</td>
<td>AA-</td>
</tr>
<tr>
<td>Spain</td>
<td>AA-</td>
</tr>
<tr>
<td>Italy</td>
<td>A+</td>
</tr>
<tr>
<td>Greece</td>
<td>A-</td>
</tr>
<tr>
<td><strong>NEW TO EUROZONE</strong></td>
<td></td>
</tr>
<tr>
<td>Cyprus</td>
<td>A+</td>
</tr>
</tbody>
</table>
Finally, Figure 3.4 illustrates the issuing activity of corporations and financial institutions in euros from 1999 to 2006, which resulted in an impressive 30 percent increase in issuance activity. This proves, on the one hand, that the euro has facilitated corporations’ and financial institutions’ access to the capital markets, on the other hand, it corroborates that governments enjoyed a “crowding-out” effect discouraging corporations and financial institutions from issuing bonds. With the introduction of the euro and the obligation of governments to reduce their debt increase, corporate and financial institutions were given the opportunity to increase their debt issuances to raise capital.

![Figure 3.4](http://ec.europa.eu/economy_finance/publications/publ_page8701_en.htm)
Furthermore, Stavros Peristiani (2007) released a study disclosing the fact that American companies are issuing some of their corporate debt in euros. In fact, the study reveals that in 1995 American firms issued 92 percent of their bonds in U.S. dollars while in 2006 only 83 percent of their bonds were in U.S. dollars. Furthermore, the share of Europeans borrowing in the U.S. bond market dropped from 20 percent in 2000 to approximately 9 percent in 2006.

In the official sector, the performance of the euro as a store of value is analyzed according to its use as a reserve currency. According to Pollard, a country will hold reserve currency to finance imports, foreign debt, and to intervene in currency markets in order to manage the exchange rate.

According to the Currency Composition of Official Foreign Exchange Reserves (COFER), the allocated reserves claims in U.S. dollars of all countries represented 43 percent in 1995, with the introduction of the euro in 1999, that percentage increased to almost 55 percent, and, in 2007, the claims in U.S. dollars decreased to 40 percent of all allocated reserves holdings (see table 3.4). The data shows that in 1995 the percentage of U.S. dollars held among industrialized countries was 51.7 percent, while only 13.35 percent were held in euros. In 2007, 69.20 percent of all the reserve currency held was in U.S. dollars and 23 percent was held in euros. Nonetheless, Anne Y. Kester (2007, 3) reported that the “U.S. dollar [is] gradually declining in use as reserve currency [and] more developing countries than industrial economies [are] switching into euros” Nevertheless, Lindsey (2005, 247) explained that ever since the U.S. dollar surpassed the British Pound, “people all over the world [have looked] to the dollar as a reliable store of wealth,” since the U.S. dollar has demonstrated its status as a “secure and portable asset that will hold its value over time.”
### Table 3.4. Currency Composition of Official Foreign Exchange Reserves (COFER) – in millions of U.S. dollars

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<tbody>
<tr>
<td><strong>Total Foreign Exchange holdings</strong></td>
<td>$1,389,801</td>
<td>$1,782,136</td>
<td>$1,936,516</td>
<td>$2,408,435</td>
<td>$6,397,800</td>
</tr>
<tr>
<td>Allocated reserves</td>
<td>$1,034,175</td>
<td>$1,379,705</td>
<td>$1,518,244</td>
<td>$1,795,915</td>
<td>$4,069,465</td>
</tr>
<tr>
<td>U.S. Dollar</td>
<td>$610,337</td>
<td>$979,783</td>
<td>$1,079,916</td>
<td>$1,204,673</td>
<td>$2,599,785</td>
</tr>
<tr>
<td>U.S. dollar Percentage</td>
<td>43.92</td>
<td>54.98</td>
<td>55.77</td>
<td>50.02</td>
<td>40.64</td>
</tr>
<tr>
<td>Euro (ECUs)</td>
<td>$88,288</td>
<td>$246,950</td>
<td>$277,963</td>
<td>$427,327</td>
<td>$1,076,389</td>
</tr>
<tr>
<td>Euro Percentage</td>
<td>6.35</td>
<td>13.86</td>
<td>14.35</td>
<td>17.74</td>
<td>16.82</td>
</tr>
</tbody>
</table>

**Industrial Countries**

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</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Foreign Exchange holdings</strong></td>
<td>$660,205</td>
<td>$729,599</td>
<td>$786,251</td>
<td>$910,641</td>
<td>$1,501,306</td>
</tr>
<tr>
<td>Allocated reserves</td>
<td>$653,526</td>
<td>$724,790</td>
<td>$783,483</td>
<td>$908,308</td>
<td>$1,496,188</td>
</tr>
<tr>
<td>U.S. dollars</td>
<td>$341,359</td>
<td>$529,270</td>
<td>$566,526</td>
<td>$619,350</td>
<td>$1,038,941</td>
</tr>
<tr>
<td>U.S. dollar Percentage</td>
<td>51.71</td>
<td>72.54</td>
<td>72.05</td>
<td>68.01</td>
<td>69.20</td>
</tr>
<tr>
<td>Euros/ECU</td>
<td>$88,116</td>
<td>$119,864.</td>
<td>$136,102</td>
<td>$209,067</td>
<td>$345,402</td>
</tr>
<tr>
<td>Euro Percentage</td>
<td>13.35</td>
<td>16.43</td>
<td>17.31</td>
<td>22.96</td>
<td>23.01</td>
</tr>
</tbody>
</table>


In 2005, Jeff Frankel and Menzie Chinn (2005, 14) presented a study that concluded that the euro would take over the dominance of the U.S. dollar as a reserve currency if the Eurozone economy was to become larger than the U.S. economy and if macroeconomic instability were to “undermine … confidence in the value of the dollar, in the form of inflation and depreciation.” In fact, the difficulty of America’s financial situation and the dollar’s depreciation against the euro for the past two years suggest that the greenback could lose its status as a reliable reserve currency. Table 3.4 demonstrates that the U.S. dollar continues to be the preferred reserve currency and that the euro is the second preferred currency. The table indicates that the euro has been continually gaining territory; its increase from 6 percent in 1995 to almost 17 percent in 2007 represents a total growth of 11 percent, a percentage that is expected to rise as China and Middle
Eastern countries continue to reduce their currency pegs to the U.S. dollar and increase their pegs to the euro and a basket of multiple currencies.

For almost a century the dollar has been the sole dominant and *de facto* international currency available. However, the introduction of the euro has changed this monopoly although, as Pedro Gomis-Porqueras and Joaquín Roy (2007, 230) explain, the international role of the euro rests “on the ability of policy makers to implement consistent and sustainable economic policies that can promote economic growth” although the euro has to first and foremost become “a symbol of common identity, shared values and the success of European integration in bringing the people and nations of Europe together” (230).

**The Euro as a Global Currency**

Economic theory explains that there are five key factors that determine whether or not a currency can become a global currency. According to Bergsten (2005, 279) those factors are:

- the size of its underlying economy and global trade;
- the economy’s independence from external constraints;
- avoidance of exchange controls;
- the breadth, depth and liquidity of the economy’s capital markets;
- the economy’s strength, stability and external position.

Campanella (2007, 95) summarizes that the euro only meets two out of the five criteria required of a global currency. She explains that the economy of the eurozone does carry significant weight in the world and that there are no restraints for the free movement of capital. However, the economic situation of the Eurozone is in disarray and has not been very stable or strong since mid-2007. Also, there are significant external
constraints in that all Member States are suffering from high current account imbalances; and, finally, the restraints of the SGP have hindered the euro since it prevents the Eurozone from becoming “a lender of last resort”.

Despite all of this, the precariousness of the United States’ financial situation, alongside the depreciation of the dollar against the euro over the past two years, suggests that the U.S. dollar may lose its status not only as an international currency but also, and most importantly, as a global currency, as it did temporarily in the 1930s. Nonetheless, an analysis of the behavior of the euro concerning the five criteria listed above demonstrates, as Eichengreen states, that the U.S. dollar has not lost its international global currency status but has, instead, been sharing it with the euro as the euro becomes increasingly more attractive.

The Euro and the Facts that Make a Global Currency

Before the EU was created, the United States was the largest economy in the world; however, the EU now takes its place, although the gross domestic product (GDP) of the Eurozone accounts for most of this. Figure 3.5 below shows the GDP evolution in the United States, the EU, and the Eurozone from 1999 to the expected GDP at the end of 2009.\textsuperscript{66} In 1999, the U.S. had a gross domestic product (GDP) of $9,268.43 billion while the GDP of the EU countries totaled $9,924.57 billion of which the Eurozone contributed $7,289.08 billion.

Figure 3.5. Comparison of Gross Domestic Product in the Euro area, EU, and U.S.
Source: This graph has been elaborated by the author. The data used for this graph can be found in Eurostat webpage.

Figure 3.6 below shows that the real GDP of the Eurozone has been stable and has followed an upward trend. Furthermore, the GDP of the U.S., although higher, has been more volatile.

Figure 3.6. Real Gross Domestic Product in the Eurozone and U.S. since January 2000 to December 2008
Source: This graph has been elaborated by the author. The data used for this graph can be found in Eurostat webpage.
When it comes to trade, it is important to analyze the evolution of imports and exports as well as how the value of the euro against the U.S. dollar has impacted the trade balance. Figure 3.7 below shows the evolution of the euro on a monthly basis since January 1st, 1999 to December 2008. The data reveals that November 2002 was the last time both currencies were close to parity.

Figure 3.7. The euro since December 31, 1998 to October 31, 2008
Source: Bloomberg Terminal.

Despite this increase in the value of the euro and the tight contractionary monetary policy that the European Central Bank (ECB) implemented until 2008, the Eurozone has witnessed unprecedented export volumes. Figure 3.8 below shows the trend of exports, which, curiously enough, is in total disagreement with the economic fundamentals that predict that there should be an inverse relationship between currency value and exports.
Moreover, the euro is considered a global currency because the Eurozone has demonstrated that it is independent from external constraints and that there are no capital flow controls. This has helped the Eurozone become an important player in terms of global financial assets. Although the introduction of the euro has furthered the integration process, Trichet (2008c, 1) affirms that further efforts are still needed to make the objective of a competitive and safe single market in financial services come true. I am convinced that this process should be first and foremost market-driven. But I also believe that public authorities have a role in fostering financial integration in Europe.

Trichet explains that there are clear signs of integration in the bond market and, as a result, bond yields are no longer the results of national factors but the result of factors common to the Eurozone. This integration process has helped offer a wider variety of diversification tools to investors. In fact, according to Trichet (2008c, 2), “euro area
residents have almost 60% of their total bond portfolios in euro area cross-border bond holdings.” On the other hand, measuring integration is more difficult in the equity market because, as Trichet (2008c, 3) explains, “stock returns are less directly comparable across countries than returns in the money and government bond markets.”

According to the Mckinsey Global Institute,\(^67\) in 1990 the value of financial assets in the United States stood at $15 trillion and at $10 trillion in the Eurozone. However, in 2006 the total value of global financial assets was at $167 trillion, $56 trillion of which were in the United States and $38 trillion of which were in the Eurozone. Figure 3.9 below illustrates the distribution of assets in 2006 in percentage terms. While the U.S. clearly surpasses the Eurozone in equity assets, both economic blocs are very close in private debt security. When it comes to government debt securities and bank deposits, the Eurozone takes the lead.

\(^{67}\)Mckinsey Global Institute, “Global Financial Assets.”
The Single European Act (SEA) facilitated the free flow of capital, resulting in cross-border capital flows including purchases of equities and debt securities, lending, and foreign direct investment that averaged $1.7 trillion per year from 2001 to 2005. In 2006, McKinsey reported that total cross-border capital inflows to the U.S. stood at $1,680 trillion and stood at $3,304 to the Eurozone. Figure 3.10 below shows that the Eurozone received a higher percentage in Equity securities and lending and deposits than the United States.
In 2006, the study of cross-border capital outflow shows that the Eurozone is the larger source of capital outflow with $3,270 trillion, followed by the United States with $1,052 trillion. Figure 3.11 below represents the percentage distribution of capital outflow and illustrates how the United States percentage outflows in Foreign Direct Investment (FDI), equity security, and debt security surpass that of the Eurozone; although, as a whole, the Eurozone has the highest capital outflow by far.
In summary, the study above shows that the euro is becoming an important currency in the capital market in the Eurozone. In fact, the analysis of the “breadth, depth and liquidity of the economy’s capital markets” (Bergsten 2005a, 279) shows that the euro has come a long way since 1999. For instance, the previous analysis has demonstrated that the Eurozone’s financial markets have a value—or financial depth—still below the depth of financial markets in the United States. One reason for this is that the U.S. has the competitive advantage of centuries of financial innovation behind it; nevertheless, the Eurozone’s financial depth has increased from $10 trillion in 1990 to $38 trillion in 2006.

The Eurosceptics

Despite the evident progress, there is a group that, since 1992, has been persistently forecasting the demise of the euro and that of the EMU. This group is known as the eurosceptics. This term derives from “eurosclerosis,” an expression used in the 1980’s to
describe the economic situation of high unemployment and low growth, suffered by most of the EU members. Diane Coyle (2005, 1) states that “the term *Eurosclerosis* was coined to describe the furring of Europe’s economic arteries.”

During the 1980’s this name was first given to those who were skeptical about the U.K. joining the European Economic Community (ECC). Now the term has broadened to include those who are against the EU per se, the Constitution, or just the euro. This group is even represented in the European Parliament under the “Independent/Democracy Group of the European Parliament.”

Nowadays, the main concern of euroskeptics is the economy. Since the 1980’s, they have been arguing against the feasibility of the EMU and the euro as a solid common currency. They emphasize what they believe is a lack of accountability in the implementation of the SGP and the slow pace of structural reforms needed to solve fundamental economic problems, particularly the “eurosclerosis.” They view this lack of economic coherence as a consequence of insufficient and incomplete integration, which is essential to the functioning of the EU as a unitary actor.

Euroskeptics have systematically forecasted not only that the euro will never challenge the U.S. dollar’s dominance as an international or global currency, but also that the Eurozone will never succeed as a common currency area. Some extremists are even opposed to the idea of the European Union. They follow Charles Wyplosz’s (1999, 76) distorted view that the EMU and the euro are part of “the hidden agenda of Europe’s long-planned adoption of a single currency” as well as his pessimistic belief that the euro will only dominate in what he calls the “euro-time zone” (89). Contrary to Wyplosz’s perspective, Mundell (2002b, 6) argues that the creation of the euro had a fundamental
political purpose: “(1) fear of invasion by the Soviet Union; (2) the need to bury Franco-German enmity; (3) emulation and jealousy of the United States; and (4) the desire to increase or restore Europe’s power.” On the other hand, Cohen (2003, 2) believes that the euro will of course dominate monetary relations within the European region and may even extend its influence to some neighboring areas … But elsewhere, for the foreseeable future, Europe’s new money is fated to remain a distant second to the greenback.”

Eurosceptics’ negative economic forecasts may eventually become a reality. They have proclaimed that the overvaluation of the euro, the difficulty in agreeing on a “constitution,” the rising taxes and tight monetary policies will definitely push the Eurozone into recession. They have constantly predicted that countries like Italy, Spain, Portugal and Greece will not be able to survive a recession. Eurosceptics argue that these countries have not made the structural reforms necessary to make it through difficult financial times.

Currently, the Eurozone has fifteen Member States. Denmark, Estonia, Latvia, and Lithuania are already part of the Exchange Rate Mechanism (ERM II) and are working to meet the requirements to join the Euro. Unfortunately, countries such as the Czech Republic, Bulgaria, and Romania still are far behind in terms of their economies and finances and will have to wait a bit longer before they can join the ERM II.

However, there are three countries, the U.K., Denmark, and Sweden, which have not joined the Eurozone for very peculiar reasons.

Although Sweden joined the EU on January 1, 1995, it still maintains the Swedish krona (SEK) as its national currency because the changeover to the euro was rejected in a popular referendum held on September 14, 2003. The result of the vote was that “56%
vot[ed] against the euro, with only 42% voting in favor, on a high turnout of 81%.”\textsuperscript{68} The Swedish economy is extremely stable. In fact, the OECD (2007) study on Sweden reported that the Swedish Riksbank, or central bank, which was founded in 1968 and is the oldest central bank in the world, is doing an excellent job at maintaining price stability and has been doing so since the 1990’s.

Denmark has been a member of the EU since 1973 and, although it has met the economic convergence criteria for participating in the third stage of the EMU, it has kept its national currency. Nonetheless, the krone is part of the ERM II and is, in fact, linked to the euro. Unfortunately, “[i]n the most recent referendum in 2000, the Danes voted not to join the single currency by a margin of 53% to 47%.”\textsuperscript{69} The Government of Fogh Rasmussen, re-elected in November 2007, announced the possibility that a new “referendum on swapping the Danish krone for the euro could be held in 2011.”\textsuperscript{70}

Finally, the U.K. joined the European Economic Community (EEC) in 1973 after two attempts. The U.K was, during the 1960’s, a member of the European Free Trade Association (EFTA), an alternative association to the EEC. When in May 3, 1960, the U.K. submitted its candidacy to the EEC, De Gaulle vetoed it claiming that the U.K. was not European enough to be a member of the Community. The U.K. under Prime Minister G. Heath submitted a second application on May 11, 1967 and finally became a member in 1973. This time, G. Pompidou lifted the veto but only once he was sure that the U.K. accepted the agricultural financial requirements imposed by M. Schumann, which are

now known as the Common Agricultural Policy (CAP). The Institute for Agricultural and Trade Policy (2007, 1) explain that the CAP “was established in 1963 and has provided the basis for Europe’s food and agricultural programs … as part of the Treaty of Rome that was signed in 1958.” The purpose of the CAP is to have the Community intervene in the market to buy farm output when the price falls below the established price level, placing a high burden on the EU budget. Simon Jeffery explains that the U.K. was, in 1967, and continues to be, opposed to the high cost imposed by the CAP on the budget, since “[o]nly 5% of EU citizens work in agriculture, and the sector generates just 1.6% of EU GDP.” The rift between the U.K. and France rested on the fact that France was, and still is, in opposition to any reform of the CAP due to its past and current status as one of the main recipients of CAP funds.

Nonetheless, the UK has always been reluctant to adopt the euro. On the one hand, the U.K. regards the British pound as a badge of independence and a symbol of liberty and sovereignty. According to Mundell (2003, 4), there is always a tendency for the dominant country to reject a world currency. The basic fear is that a global currency represents a threat to the position of its own currency. The counterpart of the conjecture is that actual or potential rivals try to pursue international monetary reforms to clip the wings of the dominant power and to redistribute power.

On the other hand, economically speaking it was very difficult for the U.K. to adopt the euro due to the value of the pound in relation to the Deutsch mark. Edgar George, governor of the Bank of England from 1993 to June 2003, explained in 2001 that “the

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only way out of the dilemma were if the euro strengthened against the dollar, as then the pound might be able to fall against the euro while also strengthening against the dollar. If this claim is analyzed point by point, the euro has been strengthening against the U.S. dollar for the past 2 years. Further, figure 3.12 demonstrates that the pound has been falling against the euro since January 2002. Figure 3.12 also shows the value of the Pound Sterling against the euro and the U.S. dollar since January 2002.

The economics and finance ministers of these three countries are part of the Economic and Financial Affairs Council (the Ecofin Council), which meets once a month to discuss areas including: economic policy coordination, economic surveillance, monitoring of Member States' budgetary policy and public finances, the euro (legal, practical and international aspects), financial markets and capital movements and economic relations with third countries.

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However, when the Ecofin Council is working on issues related to the Euro and the EMU, the Economic and Finance ministers of the U.K., Sweden, and Denmark as well as those representatives of the Member States whose currency is not the euro do not take part and do not vote on issues related to the euro and the EMU.

Finally, despite Eurosceptics and naysayers of the EU and the Eurozone, there are a number of countries such as Turkey, Macedonia, and Croatia that are willing to submit application to join the club. According to Olli Rehn, EU Commissioner for Enlargement, on April 14, 1987, Turkey submitted the application to become a member of the EU but was not recognized as a candidate for full membership until December 12, 1999 at the Helsinki Summit; however, negotiation began on October 3, 2005. On February 26, 2004, Prime Minister Branko Crvenkovski delivered Macedonia's formal application for EU membership to the Irish Presidency in Dublin. Finally, according to the EU, Croatia applied in 2003 and is expected to join in 2011.

The map below provides a visual aid of countries that are members of the European Union and those that are candidates.

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Conclusion

A common currency is a currency shared by a number of countries, which have agreed on eliminating their national currencies and adopting a common, or single, currency. By agreeing to do so, they create and participate in a monetary union. The Eurozone is the only common currency area that exists today. The Eurozone has become a reality as a result of an effective and rigorous coordination involving both political and economic integration. When a high degree of economic, monetary, and financial integration has been achieved among a number of countries, it is safe to state that regional integration is a fact. The euro has therefore enforced the changes detected in

\[79\text{Austria, Belgium, Netherlands, Finland, France, Germany, Ireland, Italy, Luxembourg, Portugal, Spain, Greece and Slovenia, and since January 2008 Cyprus and Malta. New EU members Slovakia, Estonia, Latvia and Lithuania have joined the exchange rate mechanism; others that have farther to go before adopting the euro are: Bulgaria, Hungary, the Czech Republic, Poland and Romania.} \]
economic performance when analyzing trading improvement of the Eurozone as well as the increase in Foreign Direct Investments. Figure 3.13 represents the evolution of the export activity in the Eurozone as percentage of GDP, showing a clear uptrend since January 2000.

Figure 3.13. Exports as percentage of gross domestic product.
Source: This graph has been elaborated by the author. The data used for this graph can be found in Eurostat Webpage (http://epp.eurostat.ec.europa.eu/portal/page?_pageid=0,1136217,0_45571464&_dad=portal&_schema=PORTAL (accessed September 30, 2008).

The Eurozone has forced a change in behaviour in the financial sector that is leading to an increase in integration levels, although the levels of integration are uneven across financial markets. In fact, the ECB and the Eurosystem are currently putting together a series of initiatives oriented toward bringing countries closer together. In fact, Tumpel-Gugerell (2005, 2) has explained that:

integration is very strong in the money market; has progressed significantly in government bond markets; has improved for the corporate bond market; is slow but progressing in the case of the equity market; and is much less advanced in a range of banking markets segments.
The euro has so far become a successful common currency that has proven right Jacque Delors’ endlessly quoted premonition, which predicted that “le petit euro deviendra grand” despite eurosceptics’ warnings to the contrary. In fact, the last Eurobarometer, taken on November 2006, analyzing the first five years of the introduction of the euro shows a high but declining approval rate for the euro among Eurozone Member States. Nevertheless, the acceptance of the euro as an international and global currency helped along by the buoyant economic performance of the Eurozone is represented in the evolution of the Business Climate Indicator below.

![European Commission Business Climate Indicator](image)

Figure 3.14. The Business Climate Indicator index for the EU
Source: This graph has been elaborated by the author. The data used for this graph can be found in the European Commission webpage under Economic and Financial Affairs. [http://ec.europa.eu/economy_finance/db_indicators/db_indicators8650_en.htm](http://ec.europa.eu/economy_finance/db_indicators/db_indicators8650_en.htm) (accessed September 30, 2008).

The countries in the Eurozone have substantially improved financially and economically since the introduction of the euro as a common currency. Indeed, from

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1999 to 2007, the economic situation in the Eurozone, characterized by economic growth where most of its members enjoy a positive trade balance despite a strong euro, while internal demand is declining due to tax increases and high interest rates, was contributing to the control of the inflation rate.

All this means that the euro has so far been a stabilizing factor in the Eurozone due to the economic and fiscal efforts that countries have had to undertake in order to qualify for the euro as well as the surveillance role of the ECB and the SGP. Nonetheless, the study of the strength and stability of the Eurozone has demonstrated that there is room for concern particularly if the Stability and Growth Pact is not respected and if many structural reforms, that must be undertaken in order to guarantee the future of the euro as a common currency, continue to be postponed. Structural reforms aimed at helping countries improve their economic situation must be implemented, particularly in countries with economies in disarray such as Spain, Portugal, Italy, and Greece. In fact, the International Monetary Fund (IMF) has recently recommended that Spain implement deep structural reforms in order to improve the country’s economic prospects.81 Some countries, such as Germany and France, have implemented recommended reforms, particularly those reforms needed in the labor market.

These structural reforms aim at controlling inflation differentials and growth differentials as well as ensuring the rigorous implementation of the SGP in order to improve productivity and competitiveness, among other things, all of which will undoubtedly improve the employment situation of the Eurozone.

Chapter Four
The Euro and its Two Pillars

Several factors have made great currencies in the past. The list includes: size of transactions domains, stability of policy, absence of controls, fall-back value, a sense of permanence, low interest rates and a strong central state. (Robert Mundell 2003, 12)

The introduction of the euro as common currency is the result of arduous negotiations and numerous compromises among governments and citizens of twenty-seven countries comprising the Eurozone. Countries can adopt the euro only after fulfilling the convergence criteria specified in the Maastricht treaty. Entry into the EMU and adoption of the euro imply the achievement of a significant degree of monetary and economic integration that has not yet been reached by any other policy area of the European Community.

The success of the EMU and the euro rests on three pillars: the credibility of monetary and economic policies achieved through the commitment of Eurozone Member States to maintain price stability; the observance of fiscal criteria; and, the implementation of required structural policies, particularly in the labor market.

Meeting these three sets of requirements is the major guarantor of a long-lasting euro. Price stability is the result of a sound and indivisible monetary policy implemented by the European Central Bank at a supranational level. Fiscal criteria are the set of fiscal requirements that must be achieved at the national level to maintain control of government debts and spending. Structural policies are those policies implemented by national governments to achieve, for instance, the requirements established by the Lisbon

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82 The convergence criteria are also referred to as the Maastricht criteria.
Strategy to improve the labor market and strengthen social cohesion. The connection between monetary policy, economic policy, and the EMU is depicted in table 4.1.

Table 4.1. Connection between the EMU and monetary and economic policy

<table>
<thead>
<tr>
<th>Economic and Monetary Union (EMU)</th>
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<tbody>
<tr>
<td>A. Monetary Policy</td>
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<td>- 3. Structural Policies: Lisbon Agenda</td>
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</tbody>
</table>

The euro has become much more than just a common currency for the sixteen countries that have chosen to adopt it as a common currency. J. Almunia (2007, 12) explained that the euro plays an important economic and financial role because it delivers four significant benefits. First, the introduction of the euro has established a culture of macroeconomic stability; that is, countries that historically lacked macroeconomic stability have been forced to put their finances in order to meet fiscal requirements. Further, Almunia (2007, 12) explains that the euro has lowered transaction costs since “preceding the introduction of the euro, such transactions costs amounted to 0.5 per cent of gross domestic product (GDP) in the European Union.” Thirdly, the euro has pushed market transparency “allowing consumers to compare prices more directly, and firms to compare costs more easily. This has helped boost price competition and has improved the efficiency of markets” (13). Finally, Almunia (2007, 13) explained that the euro has brought about financial stability, both within the Eurozone and globally by “eliminating the risk of exchange rate tension among the Member States.”

The long road that led to the adoption of the euro began in March 1979, when the process of monetary integration was re-launched with the creation of the European
Monetary System (EMS) and the introduction of the European Currency Union (ECU). The EMS is heralded as having been instrumental in promoting the internal and external stability necessary to strengthen monetary and economic integration.

The Single European Act (SEA),\textsuperscript{83} the first major revision of the Treaty of Rome, was signed in February 1986 and enforced on July 1, 1987. Its main objective was to introduce the steps necessary to help gradually reach a full single market in the EU by 1992. This single market has erased national borders, bringing national economies closer together and forcing governments into economic integration. Scheller (2006, 20) believed that, in order for the single market to achieve its full potential, it needed a common currency to “ensure greater price transparency for consumers and investors, eliminate exchange rate risks within the single market, reduce transaction costs and, as a result, significantly increase economic welfare in the Community.”

Table 4.2 Overview of the Single European Act

<table>
<thead>
<tr>
<th>Treaty</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Single European Act (SEA)</strong></td>
<td><strong>Objective:</strong> to improve the economic and social situation by extending common policies and pursuing new objectives: the Single Market</td>
</tr>
</tbody>
</table>
| • Signed on: February 17 in Luxembourg and on February 28, 1986 in the Hague  
  ○ Entered enforced on: July 1, 1987 | **Article 20:** Introduced Chapter 1 in Part three, Title II of the EEC Treaty reading: *Cooperation in Economic and Monetary Policy (Economic and Monetary Union)* |

Article 20 of the SEA introduces a new chapter – Chapter 1 – titled *Cooperation in Economic and Monetary Policy* (*Economic and Monetary Policy*). Article 102.a in this Chapter 1 declares that

In order to ensure the convergence of economic and monetary policies which is necessary for the further development of the Community, Member States shall co-operate in accordance with the objectives of Article 104. In so doing, they shall take account of the experience acquired in co-operation within the framework of the European Monetary System (EMS) and in developing the ECU, and shall respect existing powers in the field.

Moreover, Article 23 of the SEA introduces Title V on *Economic and Social Cohesion* with article 130a stating that

In order to promote its overall harmonious development, the Community shall develop and pursue its actions leading to the strengthening of its economic and social cohesion. In particular, the Community shall aim at reducing disparities between the various regions and the backwardness of the least-favoured regions.

Moreover, Article 130b states that

Member States shall conduct their economic policies, and shall coordinate them, in such a way as to attain the objectives set out in Article 130a. The implementation of the common policies and of the internal market shall take into account the objectives set out in Article 130a and in article 130c and should contribute to their achievement. The Community shall support the achievement of these objectives by the action it takes through the structural Funds (European Agricultural Guidance and Guarantee Fund, Guidance Section, European Social Fund, European Regional Development Fund), the European Investment Bank and the other existing financial instruments.

Finally, as the EU project was moving toward consolidation and the idea of a monetary and economic union was becoming more popular, the Treaty on the European Union, or Maastricht Treaty, introduced Title VI on *Economic and Monetary Policy* setting the structure for such a union. The Maastricht Treaty is responsible for
introducing the Convergence criteria that had to be met in order to adopt the euro and set in place and structure the monetary and economic policy of the EU.

The EU is currently deciding on the Treaty of Lisbon, which does not alter too much the requirements of the Maastricht Treaty but does, however, include, for the first time, an interesting “exit clause” for those countries deciding to leave the EU.

The Convergence Criteria and the Economic and Monetary Union

The EMU is a three-staged process designed to help Member States adjust their economic and monetary policies to make way for the introduction of the euro as a single currency. Introduction of the EMU has created a structure that is characterized as having, on the one hand, a centralized monetary policy under the supervision of the ECB, and, on the other hand, decentralized economic policies, such as fiscal and structural policies, under the supervision of the individual national governments. The ECB explains that the main reason for this dichotomy is that “while monetary policy in a monetary union is indivisible by nature, economic policies need to take into account national characteristics and national institutional settings and therefore can be more efficiently conducted at a national level” (Trichet 2008a, 21).

The Maastricht Treaty, signed on February 7, 1992, introduces a chapter on the foundation of the EMU as well as on the Convergence criteria or Maastricht Criteria, that is, the economic and monetary requirements European Union Member States must fulfill in order to become eligible to adopt the euro and become part of the EMU. The requirements for the Maastricht criteria are specified in the protocol “On the Convergence

Table 4.3. Protocol on the Convergence criteria

| ARTICLE 1 | The criterion on price stability referred to in the first indent of Article 109j(l) of this Treaty shall mean that a Member State has a price performance that is sustainable and an average rate of inflation, observed over a period of one year before the examination, that does not exceed by more than 1½ percentage points that of, at most, the three best performing Member States in terms of price stability. Inflation shall be measured by 30 means of the consumer price index on a comparable basis, taking into account differences in national definitions. |
| ARTICLE 2 | The criterion on the government budgetary position referred to in the second indent of Article 109j(l) of this Treaty shall mean that at the time of the examination the Member State is not the subject of a Council decision under Article 104c(6) of this Treaty that an excessive deficit exists. |
| ARTICLE 3 | The criterion on participation in the Exchange Rate Mechanism of the European Monetary System referred to in the third indent of Article 109j(l) of this Treaty shall mean that a Member State has respected the normal fluctuation margins provided for by the Exchange Rate Mechanism of the European Monetary System without severe tensions for at least the last two years before the examination. In particular, the Member State shall not have devalued its currency’s bilateral central rate against any other Member State’s currency on its own initiative for the same period. |
| ARTICLE 4 | The criterion on the convergence of interest rates referred to in the fourth indent of Article 109j(l) of this Treaty shall mean that, observed over a period of one year before the examination, a Member State has had an average nominal long-term interest rate that does not exceed by more than 2 percentage points that of, at most, the three best performing Member States in terms of price stability. Interest rates shall be measured on the basis of long term government bonds or comparable securities, taking into account differences in national definitions. |
ARTICLE 5
The statistical data to be used for the application of this Protocol shall be provided by the Commission.

ARTICLE 6
The Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament, the EMI or the ECB as the case may be, and the Committee referred to in Article 109c, adopt appropriate provisions to lay down the details of the convergence criteria referred to in Article 109j of this Treaty, which shall then replace this Protocol.

All these requirements must be met and respected by those countries willing to adopt the euro as a common currency. Once the euro has been adopted, countries must comply with the economic and monetary requirements established in Title VI of the Maastricht Treaty. This title sets the rules to be respected and the procedures to be followed for the proper functioning of the Eurozone and the success of the euro.

Table 4.4. Overview of the Treaty on European Union

<table>
<thead>
<tr>
<th>Treaty on European Union</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treaty</strong></td>
<td><strong>Contribution</strong></td>
</tr>
<tr>
<td>Sets its objectives in connection with the EMU to: Establish an accurate calendar to carry out EMU, split into three phases.</td>
<td></td>
</tr>
<tr>
<td>Introduces <strong>Common Provision, Article 2</strong>: to promote economic and social progress which is balanced and sustainable, in particular through the creation of an area without internal frontiers, through the strengthening of economic and social cohesion and through the establishment of economic and monetary union, ultimately including a single currency in accordance with the provisions of this Treaty.</td>
<td></td>
</tr>
</tbody>
</table>

**Title VI: Economic and Monetary Policy**

*Chapter 1*: Economic policy – Article 104
  - Art 103: Guidelines of the economic policies
  - Art 104C-1: Excessive government deficits
  - Art 104C-2a: Government deficit to GDP
  - Art 104C-2b: Government debt to GDP
  - Protocol on excessive Deficit Procedures

*Chapter 2*: Monetary policy – Article 105
  - Art 105.1: Objective: price stability by European System of

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However, the EU is currently on the verge of approving the “Treaty on the Functioning of the European Union” (TFEU) or Treaty of Lisbon. Title VIII of the consolidated version on the TFEU is titled “Economic and Monetary Policy” and has five important chapters relevant to the functioning of the Eurozone and the euro as a common currency.

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>Economic Policy</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>Monetary Policy</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>Institutional Provisions</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Provisions specific to Member States whose currency is the euro</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>Transitional Provisions</td>
</tr>
</tbody>
</table>

In Title VIII, the fact that the EU is an open market economy, which encourages free competition, is underscored. The necessity of economic coordination as well as the importance of stable prices, sound public finances and a balanced balance of payments is also highlighted. Article 125, which explains that neither the EU nor individual Member States are responsible for any other State debt liability, is an extremely important addition. The article reads:

The union shall not be liable for or assume the commitments of central governments, regional, local, or other public authorities, other bodies governed by public law, or public undertakings of any member State, without prejudice to mutual financial guarantees for the joint execution of a specific project. A
Member State shall not be liable for or assume the commitments of central governments, regional, local, or other public authorities, other bodies governed by public law, or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project.

In this spirit, Article 126 reminds Member States to avoid excessive government deficits by respecting deficit constraints and debt issuance under the requirements specified in the Protocol.

When ratified, the Treaty of Lisbon will include provisions in Chapter 4 that Member States adopting the euro must respect “in order to ensure the proper functioning of the economic and monetary union.” For the first time, an “exit clause” for those EU Member States that want to exit the EU is included in the Treaty of Lisbon.

This “exit clause” was introduced in the failed Treaty Establishing the Constitution for Europe.86 This Treaty included Article 60 titled “Voluntary Withdrawal from the Union” which has been maintained in the Treaty of Lisbon as the “exit clause.” In fact, point 40 of the “Explanatory Memorandum on the Treaty of Lisbon,” published by the Foreign and Commonwealth Office of the U.K., explains that the treaty “recognises a Member State’s right to withdraw from the European Union and sets out procedures providing for such an eventuality.” However, this clause will become available once the Treaty of Lisbon is approved by all Member States.

In 1999, a first group of countries had met the Maastricht criteria and were ready to adopt the euro; the only country from this original group of fifteen countries that did not meet the compliance deadline was Greece, which eventually achieved compliance in 2001. Denmark, Sweden, and the United Kingdom opted to keep their national currencies.

and have still not joined the Eurozone. Of those countries that joined the EU in 2004 and 2007, Slovenia met the criteria and adopted the euro on January 1, 2007, and Cyprus and Malta on January 1, 2008; Slovakia is scheduled to adopt the euro on January 1, 2009. The rest of the countries listed in Table 2.2 are still working on achieving and maintaining compliance with the requirements. If everything goes as planned, Lithuania will join on January 1, 2010; Estonia on January 1, 2011; and Bulgaria, Hungary, Latvia, the Czech Republic, Poland, and Romania on January 1, 2012.

Finally, once the countries have satisfied the various requirements to join the EMU and adopt the euro, their monetary performance is monitored and controlled by the ECB and their fiscal performance is supervised by the SGP. As a final step, a number of structural reforms must be undertaken at the national level in order to foster integration, which the Lisbon Agenda determined to be a matter of great importance.

The First Pillar: Monetary Policy and the European Central Bank (ECB)

In Title VI Chapter 2, The Maastricht Treaty sets the basis for the Monetary Policy of the EU. The European Central Bank (ECB) has been, since the introduction of the Maastricht Treaty, responsible for implementing the required monetary policy in the Eurozone. Hence, the ECB has been in charge of introducing a new monetary system for the Eurozone. Further, the ECB is considered to be a supranational monetary organization because the Maastricht Treaty took monetary policy-making from the national level to the supranational level. Hence, the ECB became an independent body and its monetary policy-making has been shielded from possible political influences.
The predecessor of the ECB, the *European Monetary Institute* (EMI), was established during the second stage of the EMU as a transition vehicle to the ECB. Its duties are described in Article 109 f of the Maastricht Treaty\(^8\).

Table 4.6. Treaty of Maastricht: Article 109f

<table>
<thead>
<tr>
<th>ARTICLE 109 f</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. At the start of the second stage, a European Monetary Institute (hereinafter referred to as ‘EMI’) shall be established and take up its duties; it shall have legal personality and be directed and managed by a Council, consisting of a President and the Governors of the national central banks, one of whom shall be Vice-President. The President shall be appointed by common accord of the Governments of the Member States at the level of Heads of State or of Government, on a recommendation from, as the case may be, the Committee of Governors of the central banks of the Member States (hereinafter referred to as ‘Committee of Governors’) or the Council of the EMI, and after consulting the European Parliament and the Council. The President shall be selected from among persons of recognized standing and professional experience in monetary or banking matters. Only nationals of Member States may be President of the EMI. The Council of the EMI shall appoint the Vice-President. The Statute of the EMI is laid down in a Protocol annexed to this Treaty. The Committee of Governors shall be dissolved at the start of the second stage.</td>
</tr>
</tbody>
</table>

The ECB was founded on June 1, 1998, and began operations on January 1, 1999, when the euro was introduced. The Maastricht Treaty in its Title VI, Chapter 2, sets up the structure for and functions of the European System of Central Banks (ESCB) and the ECB. The ECB, together with the national central banks (NCBs) of Eurozone Member States, form the Eurosystem. Further, the ECB and the central banks of all the EU Member States form the ESCB. The relationship among these various banking entities and their governing bodies is depicted in table 4.7.

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The ECB is composed of the Governing Council, the Executive Board, and the General Council. The Governing Council is the most important decision making body in the ECB. It is responsible for establishing monetary policy and interest rates. It is composed of the Executive Board of the ECB and the governors of the NCBs of the countries in the Eurozone that, when making decisions involving monetary policies, are not representing their countries’ interests but rather acting as independent entities seeking the best position for the Eurozone. In essence, monetary policy decisions are made on the basis of one person, one vote.

Table 4.7. Relationship among EU banking entities and their Governing Bodies

Table 4.8. Structure of the ECB Governing Council

<table>
<thead>
<tr>
<th>President</th>
<th>Jean-Claude Trichet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vice-President</td>
<td>Lucas Papademos</td>
</tr>
<tr>
<td>Governors of the National Central Banks</td>
<td></td>
</tr>
<tr>
<td>Guy Quaden (Belgium),</td>
<td>Michael C. Bonello (Malta),</td>
</tr>
<tr>
<td>Axel A. Weber (Germany),</td>
<td>Nout Wellink (Netherlands),</td>
</tr>
<tr>
<td>John Hurley (Ireland),</td>
<td>Ewald Nowotny (Austria),</td>
</tr>
<tr>
<td>Georgios Provopoulos (Greece),</td>
<td>Victor M. Ribeiro Constancia (Portugal),</td>
</tr>
<tr>
<td>Miguel Fernández Ordóñez (Spain),</td>
<td>Marko Kranjec (Slovakia),</td>
</tr>
<tr>
<td>Christian Nayer (France),</td>
<td>Ivan Sramko (Slovenia),</td>
</tr>
</tbody>
</table>
Mario Draghi (Italy), Erkki Liikanen (Finland), Athanasios Orphanides (Cyprus), Yves Mersch (Luxemburg),

The Executive Board is formed by the ECB’s president, vice president, and up to four other members in charge of implementing the monetary decisions made by the Board and informing the various EU Member States’ NCBs of these decisions.

Table 4.9. Executive Board of the ECB: Past and Present

<table>
<thead>
<tr>
<th>Year</th>
<th>President</th>
<th>Vice-President</th>
<th>Board Member</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>Win Duisenberg</td>
<td>Christian Noyer</td>
<td>Sirkka Hamalainen</td>
</tr>
<tr>
<td>2002</td>
<td>Jean Claude Trichel</td>
<td>Lucas Papademos</td>
<td>Gertrude Trumpel-Gugerell</td>
</tr>
<tr>
<td>2003</td>
<td>TBA</td>
<td>TBA</td>
<td>TBA</td>
</tr>
<tr>
<td>2004</td>
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<tr>
<td>2005</td>
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<td>2006</td>
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<tr>
<td>2010</td>
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<tr>
<td>2011</td>
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<tr>
<td>2012</td>
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<tr>
<td>2013</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
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</tbody>
</table>

Finally, the General Council is composed of the ECB’s president, vice-president, and the governors of the NCBs of all EU Member States. Governors of those EU countries that have not yet adopted the euro cannot participate in decisions related to the euro, although they are invited to participate in discussions involving monetary policy issues.

Table 4.10. General Council of the ECB

| President | Jean-Claude Trichet |
| Vice-President | Lucas Papademos |
| Governors of the National Central Banks |
| Guy Quaden (Belgium), Ivan Iskrov (Bulgary), Zdenek Tuma (C. Republic), Nils Bernstein (Denmark), Axel A. Weber (Germany), Andres Lipstok (Estonia), John Hurley (Ireland), Yves Mersch (Luxemburg), Andras Simar (Hungary), Michael C. Bonello (Malta), Nout Wellink (Netherlands), Ewald Nowotny (Austria), Slawomir Skrzyypeck (Poland), Victor M. Ribeiro Constancia (Portugal),
The ECB transformed the traditional central banking regime in Europe in two ways. First, the ECB took charge of issuing and managing the common currency in the Eurozone—the euro—which meant that NCBs ceased to issue and manage their own national currencies; it resulted in a case of seignorage, whereby the ECB has the exclusive right to issue euro bank notes and Member States are only allowed to issue the amount of currency authorized by the ECB. Hence, the euro not only replaced national currencies but also took away the national sovereignty element that each national currency embodied.

Second, the ECB took over the various NCBs’ capacity to implement monetary policy. Eurozone Member States must follow the monetary policy designated by the ECB. In fact, the ECB’s main objective has been to fix interest rates for the Eurozone and thereby set the course of the monetary policy with the sole objective of maintaining price stability in the Eurozone. The ECB, hence, sets a common nominal interest rate oriented toward fighting the average inflation rate in the Eurozone because, as Mundell (1999, 6) explains, “no currency has ever survived as an international currency with a high rate of inflation.”

Eurozone Member States were forced, therefore, to reduce their nominal interest rates in order to satisfy the requirement for convergence of rates. The central bank interest rate
is the key reference rate set by the ECB; simply put, this rate identifies the cost (or price) of borrowing, or the earnings from lending, expressed as an annual percentage rate. Interest rates are the main instrument of the ECB’s monetary policy and are used to achieve its primary objective of maintaining price stability. Since the introduction of the euro, the nominal interest rate in the Eurozone has experienced a downward trend, facilitating an expansive monetary policy for the Eurozone. Figure 4.1 shows the evolution of interest rates in the Eurozone.

![Eurozone Interest Rates](image)

Figure 4.1. Eurozone interest rate: Historical trends
Source: The numerical data is from Eurostat, “Interest Rates.”

In 1998, the Governing Council of the ECB defined price stability as a year-on-year increase in the Harmonized Index of Consumer Price (HICP) for the euro area that must be kept below, but close to, 2%. That is, a rate of inflation below 2% is essential not

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88 Oesterreichische National Bank, “The Eurosystem’s Definition of Price Stability.”
only to protect the real value of income and wealth to preserve the purchasing power of citizens, but also to sustain growth and job creation.

Despite common nominal interest rates meant to control inflation in the Eurozone, each country has experienced a different national inflation rate. In fact, inflation rates in most of the Eurozone Member States fall into one of three groups: those that have maintained a relatively steady inflation rate under the benchmark 2%, those whose inflation rates have been decreasing but are above the 2% benchmark, and those that adopted the euro after 2004.

Inflation rates for the first group, those whose interest rates have held steady at or below the 2% benchmark, are illustrated in figure 4.2. This group is composed of countries (Belgium, Germany, France, and Austria), which have managed to maintain their inflation rates under the required benchmark of 2%.

In 2008, the inflation rate of all these countries has increased substantially particularly in the case of Germany, despite its aversion to high inflation rates.

Interest rates for the second group of countries, those whose inflation rates are not controlled but have been steadily decreasing over the years, are depicted in figure 4.3.

Figure 4.3. Historical Inflation Rates in Greece, Italy, Portugal, Luxembourg, Ireland, and Spain
Source: The numerical data is from Eurostat, “Inflation Rates.”

Figure 4.4 graphs a third group of countries formed by those countries that adopted the euro after 2004. Although Slovakia recently adopted the euro on January 1, 2009, it has been included among this group of countries to better elucidate the evolution in the status of these countries’ interest rates. Since these nations have been consistently working to reduce their high inflation rates to join the euro, their rates are significantly low. Slovakia and Malta achieved inflation rates below the 2% benchmark, Cyprus is nearing the target, and only Slovenia is well above the benchmark. However, for all of them, the year 2008 set their finances off track and inflation rates have reached levels of almost 5%. This high level of inflation rates puts these countries in a very difficult
situation and makes them the target of potential economic fines if action is not taken to reduce their high rates.

Figure 4.4. Historical Inflation Rates in Slovenia, Slovakia, Cyprus, and Malta
Source: The numerical data is from Eurostat, “Inflation Rates.”

Since nominal interest rates are fixed for all Member States but the inflation rates vary from country to country, each country essentially has a different real interest rate. The difference in real interest rates is one of the primary explanations for the disparities of economic growth among Eurozone Member States. Further, the current economic situation of high commodity prices has a significant impact on prices and inflation rates in most of the Member States; now, more than ever, this condition is hindering efforts to close the gap between nominal and real inflation rates, affecting growth and price stability.

According to Scheller (2006), maintaining price stability is fundamental and essential to helping the Eurozone become a credible economic entity with a powerful common currency managed by the ECB. Figure 4.5 shows the history (since 1996) of annual
average HICP in those countries comprising the Eurozone. The trend clearly shows an increase in this index, particularly in 2005, when it passed the 100 level.

Figure 4.5. History of the Harmonized Index of Consumer Prices in the Eurozone
Source: The numerical data is from Eurostat, “Inflation Rates.”

In addition to its responsibility to set and maintain centralized monetary policy, the ECB is also responsible—as stated in Chapter 2, Article 105.2 of the Maastricht Treaty—for conducting foreign exchange operations as well as maintaining the banking payment system to ensure a stable financial system. Finally, Art 105 explains that the ECB (2) has the mandate to act “in accordance with the principle of an open market economy with free competition, favoring an efficient allocation of resources and in compliance with the principles set out in Article 3a.”

The ECB was designed to be independent (Article 107) from Member States and EU institutions. In order to achieve this objective, the ECB followed the structure of the

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German Bundesbank, which outfitted the ECB with political independence and was assigned its own budget to arm it with financial independence. Such unprecedented expansive authority is the reason why the ECB has been considered the most powerful independent institution not only in the Eurozone, but also in the EU. According to Petr Doucek (2005, 4) the ECB is the “embodiment of modern central banking [...]. It is independent within a clear and precise mandate; and it is fully accountable to the citizens and their elected representatives for the execution of this mandate.” Specifically, the second paragraph of Article 107 of the Maastricht Treaty proclaims the ECB’s independence from other European Union institutions and national governments, emphasizing that European officials should “respect this principle and not seek to influence the members of the decision-making bodies of the ECB.” Nevertheless, its independence relies on its legitimacy, which is granted because the ECB is accountable to democratic institutions. Hence, the ECB is required to publish quarterly reports on the activities of the Eurosystem as well as a consolidated Weekly Financial Statement. In addition, it has to produce an Annual Report on its activities and on the monetary policy of the previous and the current year. The Annual Report has to be addressed to the European Parliament, the EU Council, the European Commission and the European Council.

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90 The Bundesbank governance structure: a president, a vice president, and two additional board members put forward by the German government. Four additional members of the executive board put forward by the Bundesbank.
Nevertheless, French President Nicolas Sarkozy has repeatedly challenged the policy of independence. He has recently proposed to enforce publication of the ECB’s meeting minutes and to enforce greater political co-ordination between national governments and the ECB. These two proposals are in total confrontation with the idea of independence stated in Article 107. President Sarkozy has blamed the ECB for maintaining a monetary policy oriented toward fighting an inflation that, in his opinion, did not exist. Parker and Atkins (2007, 1) explain that this monetary policy was “forcing up interest rates and the value of the euro against the dollar and other currencies.” Sarkozy, in turn, blamed the policy for the negative economic performance of most Eurozone Member States as plotted in Figure 4.6.

![Eurozone: GDP in prices of the previous year (economic growth)](image)

Figure 4.6. Eurozone economic growth

Figure 4.7 also represents the worrisome performance of the Eurozone’s current account balance. These are examples of two very important economic imbalances that, as J. M. González-Páramo explains, must be adjusted. He explains that these imbalances,
particularly in a country’s current account, must be orderly adjusted. He warns that (2007, 195), “should imbalances persist for a fairly long period, there is a risk that this could lead to a purely market-led adjustment that might prove to be abrupt and would entail high costs.”

González-Páramo claims that the ECB should take into account the implications of a rate change, not only in the name of achieving price stability but also as a means of encouraging job creation and fostering growth. Sarkozy “charged that the ECB should be consistent with lowering the cost of liquidity while at the same time increasing the supply” (Oxford Analytica 2008, 1). Supporters of the ECB, ranging from Monetary Affairs Commissioner Joaquín Almunia to most of Europe’s finance ministries, defended
the bank’s independence and made it clear that the ECB’s mandate was not going to be amended. As current high commodity prices are pushing inflation rates upward, the ECB argues that it is its responsibility, now more than ever, to be “a firm guide for inflation expectations so Member States can look to their own real economic concerns” (Oxford Analytica 2008, 2).

The Second Pillar: Fiscal Policy and the Growth and Stability Pact

In Title VI of the Maastricht Treaty of Chapter one establishes economic policy. In fact, Article 102.a explains that the Member States and the Community should not only respect the principle of an open market economy with free competition but should also “conduct their economic policies with a view to contributing to the achievement of the objectives of the Community.” In order to guide this achievement, Article 103 highlights that the correct implementation of economic policies is a matter of common concern and sets the procedure to follow stating that “Member States shall regard their economic policies as a matter of common concern and shall coordinate them within the Council, in accordance with the provisions of Article 102a.”

This Title of the Maastricht Treaty highlights the importance of avoiding excessive government deficits and points out that “reference values are specified in the Protocol on the excessive deficit procedure annexed to this Treaty.” Further, Article 104.C.3 clearly explains that “if a member state does not fulfill the requirements under one or both of these criteria, the Commission shall prepare a report” stressing the importance of these two requirements for the proper functioning of the common currency.

In particular, Council Regulation 14466/97\footnote{Euro-Lex, “COUNCIL REGULATION (EC) No 1466/97 of 7 July 1997 on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies.” http://eurlex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&numdoc=31997R1466&model=guichett (accessed January 2, 2009).} was signed on July 7, 1997. It is titled “On the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies.” The purpose of this regulation is to set out the rules covering the content, the submission, the examination and the monitoring of stability programmes and convergence programmes as part of multilateral surveillance by the Council so as to prevent, at an early stage, the occurrence of excessive general government deficits and to promote the surveillance and coordination of economic policies.

Furthermore, Council Regulation 1467/97 was signed on July 7, 1997 and is titled “On speeding up and clarifying the implementation of the excessive deficit procedure.” The purpose of this regulation is to set out “the provisions to speed up and clarify the excessive deficit procedure, having as its objective to deter excessive general government deficits and, if they occur, to further their prompt correction.”

Opponents of the SGP believe it is pro-cyclical and anti-growth. Bini Smaghi (2007, 2) explains that “the 3% deficit ceiling set by the Maastricht treaty, which tends to be reached in cyclical downturns, is likely to push countries to adopt corrective measures in
bad times and thus to implement pro-cyclical budgetary policies.\footnote{Lorenzo Bini Smaghi, “Asymmetric Adjustment in Monetary Unions: Evidence from the Euro Area,” European Central Bank, June 19, 2007. http://www.ecb.int/press/key/date/2007/html/sp070619.en.html (accessed October 15, 2008).} Evidence that the SGP had a pro-cyclical effect, particularly during an economic downturn, led heads of state and government to reform the SGP in order to avoid this pro-cyclical momentum. Hence, during the March 2005 Summit, it was agreed that the SGP should be revised; the rules were relaxed to make it more enforceable.


the Pact comprises a European Council resolution (adopted at Amsterdam on 17 June 1997) and two Council Regulations of 7 July 1997 laying down detailed technical arrangements (one on the surveillance of budgetary positions and the coordination of economic policies and the other on implementing the excessive deficit procedure). Following discussions on operation of the SGP, the two regulations were amended in June 2005.\footnote{European Union, “The Reform of the European Union”, Glossary, http://www-old.itcilo.org/actrav/actrav-english/telelearn/global/ilo/law/eug19.htm (accessed November 1, 2008).}

In the medium term, the Member States undertook to pursue the goal of a balanced or nearly balanced budget and to provide the Council and Commission with a stability program by 1 March 1999 (and update it annually thereafter). Similarly, Member States
not taking part in the third stage of EMU, i.e. those that have not (yet) introduced the euro, are required to submit a convergence program.\textsuperscript{101}

By 1990, a number of Member States complying with the Maastricht Convergence Criteria, Article 121.1 of the EC Treaty, became eligible to adopt the euro. However, German Finance Minister Theo Waigel expressed concern that some EU states might be making a one-time effort to qualify for the euro, after which they would revert to their former high levels of borrowing and endanger the stability of the new currency. The SGP was created in order to ensure that countries were engaged in a long-lasting effort.

The SGP is characterized by its flexing of a preventative and corrective (or dissuasive) muscle to keep governments from applying less stringent fiscal policies at the expense of the other euro-committed countries. The corrective arm of the SGP is equipped with excessive deficit procedures (EDPs); and, it is this arm’s mission to identify and put an end to situations of excessive deficits. The European Council (2008, 1) highlights that the SGP “ought to be respected or penalties will be imposed upon those EU countries not complying with these requirements.”\textsuperscript{102} As González-Páramo (2005, 5) explains, “high deficits and growing debt levels are a cause for concern. If unchecked, they are liable to have a detrimental impact on economic growth and welfare. In particular, the need to finance a large stock of public debt pushes up interest rates and discourages private investment.”

By 1997, all but one of the countries aiming toward the adoption of the euro were complying with the Maastricht convergence criteria, thanks to the introduction of


stringent fiscal structural reforms. A result of these efforts was the improvement of the fiscal position of some of these countries. However, the benign economic climate that most Eurozone countries enjoyed from 1997 to 2000 that helped improve fiscal balances was a cyclical improvement. Unfortunately, by the end of 2000, a number of economic setbacks experienced by the economies of the Eurozone triggered a low growth trend that lasted from 2001 to 2005. Under those difficult economic circumstances, most of the countries were neither complying with the SGP nor penalized for their failure to do so, which weakened the Pact’s credibility (Barysch 2003, 2).

This is the case behind the ECOFIN council’s decision, made in November 2003, to put on hold the excessive deficit procedure for France and Germany and to adopt, instead, a set of political conclusions in order to avoid further economic instability. However, the Commission believed that the behaviour of the Council put the credibility of the SGP at serious risk. This resulted in a dispute between the Council and the Commission that was eventually settled by the European Court of Justice (ECJ). To add insult to injury, the ECJ did not come to a final conclusion. According to Dutzler and Hable, the ruling was “solomonic,” since “the Court shared the Council’s perception and declared the action inadmissible to the extent that it concerned the failure of the Council to adopt the recommendations. In turn, it followed the Commission’s claim and annulled the Council’s conclusions in its essential elements.” (Dutzler and Hable 2005, 3) This dispute further hindered the credibility of the SGP, which was considered insufficiently flexible to aid in the recovery of the battered economies of Eurozone Member States. In fact, Romano Prodi once stated, “I know very well that the stability pact is stupid, like all decisions which are rigid.” (Keaney 2002)
Since the SGP is of the utmost importance for the future of the European project, the Commission decided to relax the SGP requirements to make it more enforceable. In March 2005, the Ministries of Finance of the European Union Member States agreed that a reform of the SGP was needed and the new Regulations framework for the SGP entered into force in July 2005.\textsuperscript{103}

The new SGP has not modified the parameters of what has to be respected, which entails a commitment to maintaining budgets at close to balance or surplus, of not running a budget deficit that exceeds 3\% of GDP, and maintaining a national debt lower than 60\% of GDP. What has been relaxed has been how measures will be implemented to force the correction of excessive deficits and national debts. Therefore, most of the changes have to do with the corrective arm of the SGP. As Commissioner Almunia (2007, 12) explains,

> the reformed SGP maintains the overall focus on fiscal stability, while addressing a number of problems that were identified over the first five years of its existence. In particular, the new pact puts increased focus on debt sustainability and the need to make greater adjustment efforts in economic good times.

The old Pact forced Member States to implement the proposed corrections in only four months, and the exceptional circumstances under which a deficit of 3\% was not considered excessive were (1) unusual events such as natural disaster, and (2) a severe economic downturn with a decline in GDP larger than 2\%. However, the new Pact gives Member States six months to implement the proposed corrections, and provides an explicit long list of exceptional circumstances. The new pact specifies that

\begin{itemize}
\end{itemize}
a deficit above 3% of GDP is not necessarily considered excessive if it can be shown that the breach is ‘exceptional and temporary’. In this context, a deficit can be considered exceptional if it results from a ‘severe economic downturn.’ The new pact has made the definition of severe economic downturn less stringent. Now, any negative growth rate, or even a period of positive but very low growth compared with the trend, can be considered exceptional (González-Páramo 2005, 4).

The new modifications to the Pact are still not sufficient to make governments comply with it and the SGP continues to be very unevenly respected. There are many concerns on the part of the European Central Bank, the German Bundesbank, the Union of Industrial and Employers’ Confederation of Europe (UNICE), and the International Monetary Fund (IMF), all of which consider the Pact to have been weakened by the modifications made to it. Nevertheless, the Commission is endlessly pushing EU Member States to observe the SGP for the sake of a successful EU and stable euro.

The economic turmoil faced by the countries of the Eurozone during the last two quarters of 2008 has forced governments to inject money into their economies by “stimulus package.” Most of the world economies are suffering from slow growth and a substantial decline in output that is negatively affecting the labor market and, in turn, the living standard of millions of people. This economic downturn is aggravated by disarray in the financial sector bringing even more instability to the current situation. Governments in the EU have been using “stimulus packages” in an attempt to rectify the precarious situation.

Nonetheless, the European Commission presented an EU-wide stimulus package proposal, on Wednesday January 14, 2009, worth €200 billion to help resist the impact of the current economic downturn. The President of the Commission, Manuel Barroso, explained that €170 billion will come from national governments and the rest will come
from the EU’s finances. This injection of money will set excessive deficits in most countries above the 3% level outlined in the SGP. In fact, N. Girgis (2008, 1) has reported that the EU Monetary Affairs Commissioner, J. Almunia, declared that, “while the deficit rules remain in place, temporarily excessive budget deficits would be allowed. Several decimal levels above the 3% maximum outlined by the Growth and Stability pact would be acceptable.”

For instance, Hutton and Purkiss (2008, 1) have reported that in the U.K. Prime Minister G. Brown has

Promised a 20 billion-pound package of tax cuts and spending between now and April 2010 to help counter Britain’s first recession since 1991. The Treasury predicts the budget deficit will soar to 8 percent of gross domestic product in the year starting April 2009 as the recession pound tax revenues. Debt is projected to double to more than 1 trillion pounds by 2012.

Some of the countries that have put forward a stimulus package include Portugal, which will inject €2.18bn in the economy (Wise 2008, 1) and Germany, which has reported a stimulus package of €83bn with a compromise reached on a controversial €100bn bail-out for companies in need and a €500 bn package for banks (EurActiv, 1). Furthermore, France has announced a stimulus package of €26 bn, an amount that pushed France’s budget deficit to 3.9%, way above the required 3%. In addition, Italy has destined €80bn to the stimulus plan (Dinmore 2008, 1). Finally, Spain has announced a modest €11bn in aid in an attempt to help an economy suffering the bust of the construction sector and an increase of the unemployment level of more than 13%, the highest in Europe (Burnett 2008, 1).

Further, the International Monetary Fund explained that the €200bn stimulus package put together by the “European Union leaders and equal to 1.5pc of gross
domestic product, would not be enough to revive economies” (Monaghan 2008, 1). Further, A. Monaghan (2008, 1) reported that the president of the ECB, Jean-Claude Trichet, declared that “governments could risk doing more harm than good to their economies if they extend borrowing so much ... that [they exceed] their budget deficit.”

Figure 4.8 shows the performance of the overall government debt to gross domestic product, or gross debt as percentage of GDP, in the Eurozone since 2000. The specified target requires that Member States maintain their government debt below 60%, but the data from which this graph was generated clearly indicates that the Eurozone as a block is well above the required benchmark of 60%.

![Figure 4.8. Gross debt as percentage of gross domestic product](http://ec.europa.eu/economy_finance/publications/publication12530_en.pdf)

The detailed analysis provided in figure 4.9 shows how the EU Member States are complying with the requirement. The countries represented in this graph can be grouped into three categories. Italy, Greece, and Belgium have been well above the requirement since 1999. The bulk of countries—Cyprus, Malta, Germany, France, and Austria—are
not dangerously above the 60% benchmark, even though they have not been complying with the requirement. Finally, Portugal, Spain, the Netherlands, Finland, the United Kingdom, and Slovenia are below the benchmark.

Figure 4.9. Government debt to gross domestic product per country

The second criterion calls for governments to maintain a ratio of government deficit to GDP below 3%; that is, the government must maintain its net borrowing to gross domestic product below 3%. Figure 4.10 illustrates that the Eurozone, as a whole, is complying with the abovementioned requirement. The data from which the chart was
generated indicates that, from 1995 to 2000, there was a constant reduction in overall deficits. Furthermore, from 2000 to 2003, the deficit began to increase again until 2004, when the trend reversed, yielding a ratio close to zero. This is extremely positive for the economy of the Eurozone. It would be even more favorable if the Eurozone were to begin to experience a budget surplus. However, Tony Barber (2008, 7) has reported that the reform of the SGP allows governments “more freedom to let their budget deficits rise in times of prolonged low growth or negative growth, a condition that forecasters predict will apply to most EU countries until well into 2009.”

![Euroarea Deficit (-) or Surplus (+) as % of GDP](http://sdw.ecb.europa.eu/quickview.do?SERIES_KEY=121.GST.Q.I4.N.D1300.DEF.D0000.CU.G (accessed July 23, 2008)).

From the introduction of the euro until 2009, the Eurozone and the EU experienced economic growth propelled by a robust increase in investment, continued strong worldwide growth, and an improved economic outlook in almost all EU Member States.
Hence, the Eurozone has witnessed how, since the introduction of the euro, millions of new jobs have been created, reducing the unemployment rate from a peak of more than 9.1% in January 2000 to 7.3% in July 2007. Figure 4.11 demonstrates that unemployment rate behavior in the Euroarea has mostly declined since 2000. According to the Commission’s spring 2008 economic forecasts, economic growth in the Eurozone has begun to deteriorate.

Figure 4.11. Unemployment Rate in the Eurozone
Source: Numerical data is from the European Central Bank, “Unemployment Rate as % of GDP.”

In terms of the fiscal requirement stated in the SGP, Eurozone Member States are not respecting the benchmarks. In fact, the difficult economic times that some Member States have been experiencing are not helping the case. If serious measures are not taken soon, the stability of the EMU and the credibility of the euro could be in jeopardy. This analysis presents the worrisome reality that very few countries respect the SGP. Further,
these countries are not penalized for not respecting the SGP requirements, mainly because it has been argued that imposing penalties of any sort when countries are already mired in economic problems further hinders economic recovery. However, not enforcing the SGP undermines the main spirit of the Pact, which calls for the enforcement of budgetary discipline among the countries in order to avoid jeopardizing the economic growth of the Eurozone and of the entire European Union of 27 countries.

Conclusion

This chapter has analyzed how successive treaties have shaped the creation of the EMU and the introduction of the euro starting with the Single European Act and following the Maastricht Treaty as a decisive creator. Moreover, once the Treaty of Lisbon is approved, it will maintain the structure set in place by the Maastricht Treaty with the exception of the inclusion of the “exit-clause.”

The Maastricht Treaty established the most important pillar necessary to sustain the EMU and the euro. This first pillar of utmost significance requires that monetary policy be kept under the surveillance of the ESCB, an independent body with one clear objective: the maintenance of price stability. Price stability is fundamental to keeping inflation under control. However, political independence and the recently proved tough fight against inflation have stirred a debate and divided opinion among European leaders. Some leaders have been opposed to this tough fight against inflation with high interest rates. This policy has been blamed for the loss of competitiveness in the Eurozone as well as for its low economic growth and performance. Other European leaders have defended not only the necessity of keeping politics separate from the ECB but also the
policy that ensures that prices are kept under control. The Maastricht Treaty has also
established the economic policy necessary to maintain the EMU project. The Treaty has
introduced the Stability and Growth Pact (SGP) to force those countries used to having a
relaxed macroeconomic policy to comply with certain requirements. The SGP forces
Member States to comply with two simple requirements. On the one hand, Member
States must not exceed a budget deficit of more than 3% of the gross domestic product; on
the other hand, Member States must maintain the government debt under 60% of the
GDP.

This study demonstrates that, unfortunately, none of the sixteen Eurozone Member
States respect either of the abovementioned requirements. As the graphs have shown,
each Eurozone Member State surpasses the benchmark with the end result being that the
Eurozone, as an economic bloc, exceeds the requirements. This sends a negative signal,
mainly to investors, on the “health” of the Eurozone economy and weakens the allure of
the euro as a solid and reliable currency to invest in. In addition to the lack of respect
given to SGP requirements, the ECB has also been unable to keep prices under control,
despite the high interest rates maintained, because every single Member State has an
inflation rate above the 3% requirement. The fact that the Eurozone has been unable to
respect the SGP over the past ten years, in spite of the blessing of a benign economic
situation and a solid expansionary cycle, is cause for concern. Even more worrisome is
the question of what the fate of the Eurozone will be under the currently difficult
economic situation which will push the requirements of the SGP to a record high,
jeopardizing the stability of the EMU and the euro as a solid common and international
currency.
Chapter Five

The Third Pillar: Structural Reforms in the Labor Market

The proper functioning of the EMU depends not only on Member States adopting and complying with monetary and fiscal policy requirements, but also on a number of structural reforms, especially in the labor market, required to foster economic growth and a stable euro. Before 1960 unemployment was not considered an economic issue that demanded worldwide attention; hence, research concerning unemployment was not taken into consideration due to the fact that the unemployment rate within the European Community stood at less than three percent of the labor force. However, for the past twenty years the unemployment rate has increased dramatically in various countries. As a result of the economic and political impact of a significant increase in unemployment, its causes and its consequences have become one of the most debated topics in recent years.

Over the past years a number of labor reforms have been implemented in most Member States. Commissioner Almunia (2007, 14), has expressed that “in order for the euro area economy to reach its full potential it is necessary to step up progress on structural reforms,” particularly those oriented toward increasing productivity and employment in the Eurozone. Jobs commissioner, Vladimír Špidla (2008, 1), has stated that labor reforms are finally producing results as suggested by the evidence demonstrating that "structural unemployment has fallen by one third since 2004 and the EU employment rate, currently at 66% has moved much closer to the overall target of 70%.” Furthermore, Špidla has forecasted the creation of 5 million new jobs in the EU by 2009, which will push the unemployment rate under 7% in 2009, the lowest level
experienced since the mid-1980s.

Figure 5.1 plots the evolution of the unemployment rate from January 1995 to December 2008. This figure illustrates that Denmark, Sweden, and the U.K., have lower unemployment rates than the Eurozone 15. However, Figure 5.1 also shows that the overall unemployment rate has been increasing since 2008.

![Standardized Unemployment Rate](source)

Unfortunately, as of January 2009, the unemployment rate in the Eurozone is well above the 7% benchmark forecasted by the Jobs Commissioner. Figure 5.2 demonstrates, in detail, the evolution of the unemployment rate in the Eurozone as well as its inability to meet the 7% benchmark.
Figure 5.2. Standardized Unemployment Rate in the Eurozone 15 from January 1995 to December 2008.

The need to combat high and burdensome unemployment rates was first addressed during the 1994 Essen European Council. Unemployment was approached as a priority in 1997 by heads of state or government leaders of EU Member States gathered together in Luxembourg for a special Employment Summit. Their purpose was to agree on “a limited package of measures aimed at improving employability, supporting entrepreneurship, increasing adaptability and strengthening equal opportunities” (European Industrial Relations Observatory On-line 1997).

The end result of the deliberations led to the introduction of the European Employment Strategy (EES) as a key element of EU employment policy. The EES has been designated as the main instrument in providing direction to and ensuring the coordination of the employment policy priorities to which Member States should
subscribe at the EU level. However, it was not until the Treaty on European Union introduced a title on employment, that unemployment was definitively established as a priority. In fact, Article 125 (ex Article 109n) of the Treaty Establishing the European Community states the following:

Member States and the Community shall, in accordance with this Title, work towards developing a co-ordinated strategy for employment and particularly for promoting a skilled, trained and adaptable workforce and labour markets responsive to economic change (37).

Once the Treaty of Lisbon is ratified, it will introduce “Title IX” on Employment, which explains (Article 147.2) that, “the objective of a high level of employment shall be taken into consideration in the formulation and implementation of Union policies and activities.” Title IX explains what steps and measures must be followed by all Member States to, in coordination with the European Council, achieve a high level of employment. Article 148 explains that, “the European Council shall each year consider the employment situation in the Union and adopt conclusions thereon, on the basis of a joint annual report by the Council and the Commission.” Further, Article 148 explains that

The council, on a proposal from the Commission and after consulting the European parliament, the Economic and Social Committee, the Committee, of the Regions and the Employment Committee referred to in Article 150, shall each year draw up guidelines which the Member States shall take into account in their employment policies”

The European Union and the Legal Framework to the Employment Problem

The European Union Member States had many problems to solve when drafting the Treaty of Rome (1958); since then, many of those same problems were considered priorities, giving very little attention to labor market performance, let alone the idea of
full employment until the Treaty of Amsterdam (1997). Unemployment was simply not considered a Community concern at the time; although, in 1990, unemployment was to become the EU’s most intractable economic problem (Van Oudenaren 1999). When the Maastricht Treaty was signed in 1997, it was agreed for the first time that all efforts to fight unemployment were to be joined.

Article 2 of the Treaty on European Union (Maastricht Treaty) states that the Community is responsible for establishing both a common market and the EMU in order to promote “a harmonious, balanced and sustainable development of economic activities, a high level of employment and of social protection, [and] equality between men and women” throughout the community. Following this statement, in November 1997, the EU countries joined to discuss the situation in the “The European Jobs Summit” and developed the “Lisbon Agenda” by the year 2000. This agenda specifies lofty objectives to be achieved by 2010. Many studies throughout these years were warning that such objectives would never be achieved if countries remained reluctant to make structural changes in the labor market.

Employment policies in the European Union, drafted by the Employment, Social Affairs and Equal Opportunities Commission, state that “[t]he objectives of full employment, quality of work and productivity and employment and cohesion are at the centre of EU policy” (1). The Standing Committee on Employment composed of “Social Partners” which include trade union and employer representatives, agree upon such policies. This Committee was reintroduced in 1999 by the Council of Ministers to advise the Council and the Commission on employment policy (Rosenberg 1991). The European Employment Strategies (EES) are a set of guidelines geared toward obtaining
employment improvements. The main goal of the latest EES is to work on macroeconomic policies that will create favorable conditions for economic growth and jobs that will, in turn, ensure a dynamic and well-functioning euro area and improve the coordination of labor market issues between Member States and the European institutions of the EU (EES 2007).

The EES is based on key reporting tools designed to guide Member States toward obtaining specific results at the end of the three-year cycle. According to the European Commission on Employment and Social Affairs, the reported tools include:

- **Integrated Employment Guidelines**: following a proposal from the Commission, the European Council agrees every year on a series of guidelines setting out common priorities for Member States' employment policies.

- **National Reform Programmes**: every Member State draws up a program in which it is described how these Guidelines are going to be designed and implemented nationally.

- **Joint Employment Report**: the Employment chapter of the annual progress report is adopted by the Council to form the Joint Employment Report.

- **Recommendations**: The Council may decide, by qualified majority, to issue country-specific Recommendations upon a proposal by the Commission.

- **EU Annual Progress Report**: the Commission reviews progress made at both national and Community levels. On the basis of this annual report, the Commission may, if necessary, identify further actions to be taken in order to achieve the objectives proposed in the guidelines.

However, the goals stated in Article 125 (ex Article 109n) of the Treaty Establishing the European Community states that the Community must work together to develop “a coordinated strategy for employment and particularly for promoting a skilled, trained and adaptable workforce and labor markets responsive to economic change.” However, this
objective could never be realized unless all EU Member States were to take the promotion of employment as a matter of common concern and as a major goal for the Community. These goals and concerns finally coalesced during the Lisbon European Council, March 23-24, 2000, when Member States agreed on implementing a new strategic goal for the Union to strengthen employment, economic reform and social cohesion as part of a knowledge-based economy. Therefore, the Lisbon European Council set the goal “to become the most competitive and dynamic knowledge based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion” (Barroso 2002, 2). Furthermore, great emphasis was placed on the modernization of the European social model by investing in people and building an active welfare state. A welfare state and social model have been defined as “an elaborate and expensive network of publicly funded, cradle-to-grave programs designed to protect everyone in Europe against the vicissitudes of contemporary life” (Barroso 2002, 2).

The Importance of a Robust Labor Market: The Demand and Supply of Labor

In the realm of economics, land, labor, and capital are the three main factors of production. They are considered scarce resources therefore they must be fully utilized in order to be economically efficient.

Governments understand the economic importance of having a competitive labor market as a powerful engine of economic development. A competitive labor market allows for a robust labor market and provides the country with a positive business environment to foster economic growth. For this reason, EU Member States must make
the right labor reforms to ensure, strengthen, and secure a prosperous Europe. When the labor resource is not efficiently utilized, there is a labor imbalance that results in unemployed workers. Although, some level of unemployment is inevitable in a complex economy, every EU country must aim to perform at its ultimate potential to achieve full employment. Since labor market statistics measure many different aspects of the labor market situation and provide insight into the economy, governments utilize them in the analysis, evaluation, monitoring and planning of not only the economy and labor market, but also for social purposes to help inform a wide range of government policies toward population groups of particular concern, including women, young people, older people, and jobless households, for example.

Measuring the amount of unemployment is not an easy task although most countries have standardized the calculation of labor statistics and percentage rates. Labor statistics place people into three categories—employed, unemployed, or not in the labor force—where the labor force is defined as the sum of employed and unemployed, leaving out those who are not considered part of the labor force.

**Unemployment: The result of a Mismatch in the Labor Demand and Supply**

Economists study unemployment as a result of imbalances in the labor market which are affected by the forces intervening in the demand and supply for labor. There are many causes of unemployment; unfortunately, it is never easy for a government to identify a solution that does not affect other parts of the economy. However, understanding unemployment from a demand and supply perspective has proven highly efficient in order to study its causes, and to propose solutions while taking into account secondary economic effects.
On the one hand, the demand for labor is the number of workers demanded to produce goods and services; thus, it is a “variable derived from production plans, and production itself is supposed to depend largely on demand for products” (OECD 1963, 7). Therefore, unemployment is caused when there is a reduction in the aggregate demands for goods and services which automatically lower the aggregate demand for labor force: fewer products are being demanded by the society. As a result, fewer workers are needed and hired to produce those products; hence, labor demand decreases and unemployment rises. On the other hand, some economists have tried to explain unemployment as a direct cause of an imbalance in the supply for labor; that is, the available number of individuals willing and able to enter the labor market at any particular time.

All European Union countries know that, in order to reduce the high unemployment rates that economic reports constantly reveal as worrisome, many labor market reforms affecting both the demand and supply side have to be implemented.

A. Lindbeck and D. Snower (2001) have explained that in countries with strong labor unions, the demand for labor is affected and the unemployment rate is higher than in countries without or with weaker labor unions. Bentolila and Bertola (1990) have pointed out that the unemployment problem lies in the extremely high cost (associated with tight labor market policies) that businesses face when hiring and firing. Along these lines, Malivaud (1994) has highlighted the fact that the unemployment problem is directly related to the lack of investment capital resulting from high labor costs in the 1970’s and the high interest rates of the 1980’s that led to almost every investment project having a negative rate of return. Finally, S. Nickel (1997) states that the welfare state is not the only agent causing unemployment; a legal framework that makes the labor market rigid
and inflexible is also responsible. In fact, he compared the U.S. and the European labor markets and came up with results indicating that the labor flexibility for hiring and firing and the low union density in the U.S. were strong reasons behind the differences between both unemployment rates.

On the labor supply side, it is important to emphasize that there are situations where the individual finds very little incentive to join the labor force due to generous social-safety nets that discourage the worker from participating in the labor force. Sylvia Nasar explains that in Europe, “there’s no longer much stigma attached to being out of work” (1999, 1). This proves that it is necessary to make structural reforms in most of the EU countries in order to improve the supply of labor and reduce the unemployment rate. Fitussi, Jestaz, Phelps, and Zoega (2000) have arrived at results that prove that the two main causes for high unemployment are unemployment insurance benefits and employment protection laws.

Government Programs to Reduce Unemployment: Active and Passive Measures.

At their meeting in January 1992, the OECD labor ministers endorsed a plan of action based on the concept of active and passive labor market policies designed to help countries with high unemployment rates. EU Member States committed themselves to budgeting a percentage of their GDP into labor market policies designed to improve labor participation and reduce unemployment. Governments specify information about individual labor market programs that appear in state budgets. Governments are also responsible for making the accounts and annual reports of bodies that implement the programs public. Unfortunately, the data reported is influenced by national and
institutional arrangements and reporting standards. One example is from OECD data from 1998 to 2006.

Figure 5.3 below represents the total expenditure on active and passive measures from 1998 to 2006. The trend shows that both types of spending are correlated and that, while governments increased resources from 2001 to 2004, since 2004, the percentage of GDP budgeted to these measures has been declining. The analysis of this data, made available by Member States and distributed by the Organization for Economic Co-operation and Development (OECD), is very irregular, as Figure 5.3 demonstrates, for two reasons. First, not all the Member States provided information and second, 2006 is the last year of data available. Still, based on the information found, Figure 5.3 shows that governments have spent more money in passive than in active measures.

![Figure 5.3. Evolution of total public spending in active and passive measures](image)
Active measures are oriented toward improving access to the labor market and jobs, job-related skills, and labor market accessibility. Table 5.1 lists all active measures.

Table 5.1. Active measures by type

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<th>40: Employment incentives</th>
</tr>
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<tbody>
<tr>
<td>41: Recruitment incentives</td>
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<td>42: Employment maintenance incentives</td>
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<table>
<thead>
<tr>
<th>50: Supported employment and rehabilitation</th>
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<tr>
<td>51: Supported employment</td>
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<tr>
<td>52: Rehabilitation</td>
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<table>
<thead>
<tr>
<th>60: Direct job creation</th>
</tr>
</thead>
<tbody>
<tr>
<td>70: Start-up incentives</td>
</tr>
</tbody>
</table>

Table 5.2 shows the evolution of public expenditure in active measures. The trend is that while some countries such as Austria, C. Republic, and Luxembourg have increased spending, the rest of the countries are decreasing spending or, like Greece and the Slovak Republic, have spent nothing. The U.S. has been reducing its contribution to active measures since 2001.
Table 5.2. Evolution of spending in active measures by country from 1998 to 2006

<table>
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<td>0.95</td>
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<td>1.15</td>
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<td>0.78</td>
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<tr>
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<td>..</td>
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</tr>
<tr>
<td>Slovak Republic</td>
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</tr>
</tbody>
</table>

Passive measures, on the other hand, cover spending on unemployment compensation, which covers unemployment insurance and benefits and early retirement benefits. Table 5.3 specifies the policies covered under passive measures.

Table 5.3. Passive measures by type

<table>
<thead>
<tr>
<th>80: Out-of-work income maintenance and support</th>
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</thead>
<tbody>
<tr>
<td>81: Full unemployment benefits</td>
</tr>
<tr>
<td>811: Unemployment insurance</td>
</tr>
<tr>
<td>812: Unemployment assistance</td>
</tr>
<tr>
<td>82: Partial unemployment benefits</td>
</tr>
<tr>
<td>83: Part-time unemployment benefits</td>
</tr>
<tr>
<td>84: Redundancy compensation</td>
</tr>
<tr>
<td>85: Bankruptcy compensation</td>
</tr>
<tr>
<td>90: Early retirement</td>
</tr>
</tbody>
</table>
Table 5.4 below shows the evolution of government spending on passive measures. The trend here is that spending has been maintained or reduced in almost all countries since 1998, including the U.S.

Table 5.4. Evolution of public spending in passive measures from 1998 to 2006

<table>
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<tr>
<th></th>
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<th></th>
<th></th>
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<tbody>
<tr>
<td>Austria</td>
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<td>1.15</td>
<td>1.16</td>
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<td>1.91</td>
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<td>2.08</td>
<td>1.95</td>
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<td>0.88</td>
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<td>0.65</td>
<td>0.74</td>
<td>0.81</td>
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<td>0.84</td>
<td>0.85</td>
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<td>..</td>
<td>0.87</td>
<td>0.72</td>
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<tr>
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<td>0.98</td>
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</table>

In the 1980’s, economic problems were characterized by slow growth and the rising trend in unemployment, even during the expansion phase of the business cycle. Eventually, it became apparent that structural difficulties rather than cyclical ones lay behind high unemployment rates and other labor market problems. Structural difficulties are primarily on the supply side of the labor market and should be addressed with the aim of facilitating labor market adjustments. The policy recommends shifting labor market
expenditures from passive to active measures to mobilize the labor supply, improve the quality of the labor force, and strengthen the search process in the labor market.

In the literature related to labor market measures, the percentages that governments assign to these two measures are published in every OECD Employment Outlook. In his study, J. Martin (1998) provides a sound comparative analysis as well as an explanation of the usage of these two measures. However, he is unable to conclusively identify the relationship between expenditure in these labor measures and a reduction in unemployment. He states that, “some studies appear […] to show robust effects of active policies in terms of lowering the natural rate of unemployment, others appear […] to show zero or insignificant correlations” (13).

To begin with, there seems to be a systematic reduction of government spending on these two measures as suggested by the constantly decreasing percentage attributed to the expending, which means that governments are budgeting less economic resources to fight unemployment via passive and active incentives. In fact, from 1997 to 2001, a reduction in resources coexists with a reduction in the unemployment rate.

Finally, Figure 5.4 shows the correlation between active and passive measures and the unemployment rate in Eurozone Member States. The results demonstrate that as spending is increased the unemployment rate increases as well.
These findings suggest that there is an inverse and direct relationship between unemployment benefits and the unemployment rate. As unemployment benefits increase, along with an increase in the percentage of expenditure to reduce unemployment, the unemployment rate increases as well. Therefore, it can be concluded that these two measures encourage unemployment, rather than combat it.

The Lisbon Agenda and Its Review

The most significant effort aimed at solving the unemployment situation in the EU was developed in March of 2000 during the Lisbon European Council. During this time, the EU set a number of goals oriented towards helping it become a competitive and dynamic knowledge-based economy capable of sustaining economic growth, creating employment and improving social cohesion. In order to achieve such a challenging objective, the Employment, Social Affairs and Equal Opportunity Commission elaborated the Lisbon Agenda based on recommendations and a general consensus.

The Lisbon Agenda specified the main labor market related goals that the
Commission urged countries to reach between 2005 and 2010. Basically, the main objectives behind this reasoning were to design a strategy with employment policies that would enable the EU to achieve full employment by 2010 with certain short-term employment objectives. Each country was given *carte blanche* to implement the necessary measures to achieve these goals; most of these measures involved urgent labor market reforms.

Every single country agreed on these objectives since these goals were considered fundamental to the improvement of labor market performance and the reduction of the high unemployment rate that was asphyxiating the economic performance and societal well-being of most of the countries. Vladimir Spidla pointed out that the most important objectives were the following:

- To create more and better jobs.
- To reap the benefits of its enlargement and to coordinate national employment, inclusion and social protection policies and financial support provided by the European Social Fund.
- To address the impact of demographic aging on its social protection systems - pensions, health care, long-term care - and on employment policies.
- To promote an inclusive society and continue to roll back all forms of discrimination, based on race or ethnicity, disability, age, or sexual preference.

The Lisbon Agenda, therefore, laid down the basis for the foundation of a dynamic economy respectful of the social model and highlighted the urgency of implementing specific structural reforms to help the EU grow at a rate of 3% per year for the next several years. The objectives established by the Lisbon Agenda and their accompanying reforms will provide the basis for superior European competitive performance and aid in achieving the Agenda’s primary employment aims. Table 5.5 summarizes the employment targets set by the Lisbon Agenda.
Table 5.5. The Lisbon Agenda - Employment Rate Objectives

<table>
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<tr>
<th>Type of employment</th>
<th>Year</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>2010</td>
<td>70%</td>
</tr>
<tr>
<td>Women</td>
<td>2010</td>
<td>60%</td>
</tr>
</tbody>
</table>

Five years after the launch of the Lisbon Strategy, the Commission recognized that the results were somewhat disappointing and that the European economy failed to deliver the expected performance in terms of growth, productivity, and employment. In fact, in its first draft entitled “Joint Employment Report (JER) for 2004-5,” the European Commission showed that the overall employment rate had remained stagnant at 63%, despite continuing increases for women and for older workers. The Commission concluded that the Lisbon target of achieving a 70% employment rate by 2010 was to be a challenge.

The (New) Lisbon Agenda

The Barcelona European Council confirmed that obtaining full employment had become a major goal for the EU. In the face of poor employment statistics, the Commission acknowledged that more adequate structures were needed to better manage changes in the economy and in society in order to deliver stronger, lasting growth and to create more and better jobs (Barroso 2002).

When the United Kingdom took over the Presidency of the EU, Mr. Blair and Mr. Barroso chose the informal meeting at Hampton Court, held on October 27, 2005, to address, among other issues, whether the Lisbon Agenda ought to be revised. President Blair further defended the urgent necessity to reform the Lisbon Agenda and, in a speech before the EU Parliament on June 23, 2005, President Blair (2005, 2) asked,
what type of social model is it that has 20m unemployed in Europe, productivity rates falling behind those of the USA; that is allowing more science graduates to be produced by India than by Europe; and that, on any relative index of a modern economy—skills, R&D, patents, IT, is going down not up.

The Commission decided to revise the Agenda focusing its attention on those actions needing to be taken rather than targets to be attained. This situation led heads of state and governments, during the spring 2005 Summit, to revise the Lisbon objectives and stress the importance of implementing the reforms needed for growth and employment in order to re-launch the Lisbon Strategy without delay.

The European Social Partners of the Standing Committee in Employment also shared the EU’s view on the importance of improving the employment situation. In fact, this group declared support for the review of the Lisbon strategy at the Tripartite Social Summit in Brussels that was held together with representatives of the EU.

The re-launching of the Lisbon agenda was basically focused on increasing growth and jobs by increasing knowledge and innovation and making Europe a more attractive place to invest in and work in. The re-launch of the agenda led euro-skeptics to believe that the Lisbon process has been a sad disappointment and has become an example of how having too many goals and targets results in a failure to achieve anything at all (McCreevy 2005, 2).

In 2007, the Commission was able to say that the re-launched Lisbon Agenda was working in terms of growth and job strategy performance. The economic upturn of the past years has helped the pace of needed reforms, as is indicated by Vice President Gunter Verheusen’s (2006, 2) declaration that “[o]ur strategy for Growth and Jobs is
working. Entrepreneurship and innovation are gaining ground in Europe and we are now starting to implement structural changes to our economy.”

Seven years after the launch of the Lisbon Agenda, the Commission recognizes that the results are somewhat disappointing and that the European economy has failed to deliver the expected performance in terms of growth, productivity and employment.

Figure 5.5 shows the employment rate in 15 Member States of the Eurozone along with those three countries that did not adopt the euro as a common currency. The data indicates that the Eurozone is well below the benchmark but that the trend, since 2000, is approaching the 70% level required. However, those three countries that are not part of the Eurozone—Denmark, Sweden, and the United Kingdom—are well above the 70% employment level established by the Lisbon strategy.

Figure 5.5. Employment rates
Source: OECD Stat Extracts, “Employment Rate. All Persons. Age 15-64.”
In addition to an overall employment rate of 70% by 2010, the Lisbon Agenda set a goal for a women’s employment rate of 60% by 2010; this objective has, so far, not been met. Figure 5.5 demonstrates that the Eurozone is far from achieving this objective and that non-Eurozone countries are surpassing the employment benchmark. By the same token, Figure 5.6 depicts the evolution of the women’s employment rate from 2000 to 2007 showing that Eurozone Member States are closing the gap; nevertheless, there is still work to be done.

Figure 5.6. Employment rates for Women

Conclusion

In the last ten years, the euro has demonstrated that having a common currency has many advantages, particularly if the currency becomes not only an international currency but also a global currency. However, maintaining this standard requires difficult
adjustments and constant surveillance on the part of every single Eurozone member state.

This chapter has demonstrated the vast achievements of the Eurozone in terms of reducing unemployment via structural labor market reforms. Still, even more remains to be done and there is no room for complacency. While monetary policy has not been an issue and Member States are fully complying with the ECB, most of the structural reforms recommended, such as those determined by the Lisbon Agenda, are not being met and unemployment remains high. More worrisome is the fact that unemployment has not been reduced during the expansionary phase of the business cycle, casting a shadow over the future of the labor market in the case of the Eurozone entering an economic recession or depression. Since it only sets the policies to be implemented, the EU, as an institution, has limited responsibilities for such high figures. Ultimately, it is the responsibility of each member state to provide the national political means necessary for the required labor market reforms thereby reducing unemployment rates. Hence, it is important for individual Member States to keep in mind that although the Eurozone has been blessed by buoyant economic conditions and a strong euro during the past few years, as global economic conditions worsen, certain countries might be facing unprecedented labor market situations.
Chapter Six
Statistical and Technical Analysis of the Euro as a Stabilizer for the Eurozone

The main focus of this study is to examine whether the euro has been an economic, monetary, fiscal, and social stabilizer for the Eurozone. In order to do this, the underpinnings of the euro are analyzed in this chapter. Moreover, the requirements and benchmarks that have to be achieved, maintained, and respected are tested against the data found in three major statistics data sources: the European Central Bank’s Statistics Data Warehouse (http://sdw.ecb.europa.eu/), Economagic (www.economagic.com), and E-signal.

This chapter focuses on a thorough quantitative analysis of the fitness of the euro as a stabilizer using a vast variety of indexes. For this purpose, this chapter studies the evolution of 25 indexes analyzed throughout 51 figures.

Table 6.1. Summary of indexes and statistic and data sources

<table>
<thead>
<tr>
<th>Indexes</th>
<th>Statistic Database</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Dollar Index</td>
<td>New York Federal Reserve Board</td>
<td>Economagic</td>
</tr>
<tr>
<td>German D-mark or Dem</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Euro</td>
<td>European Central Bank (ECB)</td>
<td>European Central Bank</td>
</tr>
<tr>
<td>French franc (FRF)</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Spanish peseta (ESP)</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Italian lira (ITAL)</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>British pound (GBP)</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Dow Jones Industrial Average (DJIA)</td>
<td>DJIA</td>
<td>Economagic</td>
</tr>
<tr>
<td>EURO Top 100</td>
<td>Future Source</td>
<td>E-signal</td>
</tr>
<tr>
<td>Crude Oil (CO)</td>
<td>Bureau of Labor Statistics</td>
<td>Economagic</td>
</tr>
<tr>
<td>Commodities Research Bureau (CRB)</td>
<td>Bureau of Labor Statistics</td>
<td>Economagic</td>
</tr>
<tr>
<td>Treasury Note (2 years)</td>
<td>Federal Reserve, Board of Governors</td>
<td>Economagic</td>
</tr>
<tr>
<td>Eurodollar</td>
<td>Federal Reserve, Board of Governors</td>
<td>Economagic</td>
</tr>
<tr>
<td>Treasury Note (10 years)</td>
<td>Federal Reserve, Board of Governors</td>
<td>Economagic</td>
</tr>
</tbody>
</table>
The purpose of this dissertation was to analyze if the euro has been a stabilizer for the Eurozone. To answer this question, this chapter has used a number of figures and indexes to analyze four markets: the foreign exchange market, the stock market with special emphasis on Crude Oil and commodities markets, the money market, and the labor market.

The foreign exchange market is the first market studied to analyze if the euro has become a successful common currency. In order to do this, the following foreign exchange indexes and currencies are analyzed. The currencies used for this study—the German mark, the Spanish peseta, Italian lira, and French franc—have been obtained from Future Source (www.futuresource.com).

<table>
<thead>
<tr>
<th>Figure</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>U.S. Dollar Index (USDX)</td>
</tr>
<tr>
<td>Figure 2</td>
<td>U.S. Dollar Index with a 20-months simple moving average and de-trended</td>
</tr>
<tr>
<td>Figure 3</td>
<td>German D-mark or Dem</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Dem and U.S. Dollar Index</td>
</tr>
<tr>
<td>Figure 5</td>
<td>The ECU and €/$ or euro</td>
</tr>
<tr>
<td>Figure 6</td>
<td>€/$ and the U.S. Dollar Index</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Dem and €/$</td>
</tr>
<tr>
<td>Figure 8</td>
<td>French franc (FRF) and the €/$</td>
</tr>
</tbody>
</table>
The stock market is the second market analyzed to study how the introduction of the euro has affected some major stock indexes. This section emphasizes the importance and significance of the relationship between the euro and the price of oil and certain commodities due to their direct effect on price stability and inflation.

Table 6.3 Summary of stock exchange indexes, Crude Oil, and CRB.

<table>
<thead>
<tr>
<th>Figure</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 13</td>
<td>Dow Jones Industrial Average (DJIA)</td>
</tr>
<tr>
<td>Figure 14</td>
<td>DJIA with 20-months moving averaged and de-trend</td>
</tr>
<tr>
<td>Figure 15</td>
<td>DAX</td>
</tr>
<tr>
<td>Figure 16</td>
<td>DAX and 30-months moving average and de-trend</td>
</tr>
<tr>
<td>Figure 17</td>
<td>DJIA and U.S. Dollar Index</td>
</tr>
<tr>
<td>Figure 18</td>
<td>DAX and euro</td>
</tr>
<tr>
<td>Figure 19</td>
<td>DAX and DJIA</td>
</tr>
<tr>
<td>Figure 20</td>
<td>DAX and DJIA with covariance</td>
</tr>
<tr>
<td>Figure 21</td>
<td>DJIA, DAX, EURO Top 10.</td>
</tr>
<tr>
<td>Figure 22</td>
<td>Crude Oil and CRB since 2002</td>
</tr>
<tr>
<td>Figure 23</td>
<td>Crude Oil and CRB with covariance</td>
</tr>
<tr>
<td>Figure 24</td>
<td>CRB and U.S. Dollar Index</td>
</tr>
<tr>
<td>Figure 25</td>
<td>Crude Oil and U.S. Dollar Index</td>
</tr>
<tr>
<td>Figure 26</td>
<td>Crude Oil and U.S. Dollar Index with covariance</td>
</tr>
<tr>
<td>Figure 27</td>
<td>Crude Oil and euro (€/$)</td>
</tr>
</tbody>
</table>

Depending on the evolution of the price index and inflation, the European Central Bank (ECB) decides on the “price of money” and adjusts the money markets accordingly. For this reason, the third market analyzed is the evolution of the money market and its relationship with the euro.
Table 6.4. Summary of money market indexes

<table>
<thead>
<tr>
<th>Figure</th>
<th>Index</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 28</td>
<td>Treasury Note 2-years and Eurodollar 3-months</td>
<td></td>
</tr>
<tr>
<td>Figure 29</td>
<td>Treasury Note 10-years and the German Bund</td>
<td></td>
</tr>
<tr>
<td>Figure 30</td>
<td>€/$ and German Bund</td>
<td></td>
</tr>
<tr>
<td>Figure 31</td>
<td>LIBOR 1-month and Eurodollar 3-months</td>
<td></td>
</tr>
<tr>
<td>Figure 32</td>
<td>EURIBOR 3-months and Eurodollar 3-months</td>
<td></td>
</tr>
<tr>
<td>Figure 33</td>
<td>EURIBOR 3-months and LIBOR 1-month</td>
<td></td>
</tr>
<tr>
<td>Figure 34</td>
<td>EURIBOR 3-months and €/$</td>
<td></td>
</tr>
</tbody>
</table>

The fourth market studied is the labor market and how the unemployment rate has been changing over time after the introduction of the euro. In this section, figures are enhanced by a drawn-in recession mark to better explain the relationship between the business cycle and the labor market.

Table 6.5. Summary of labor market indexes

<table>
<thead>
<tr>
<th>Figure</th>
<th>Index</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 37</td>
<td>U.S. Civilian Unemployment since 1954</td>
<td></td>
</tr>
<tr>
<td>Figure 38</td>
<td>Federal Funds Rate since 1954</td>
<td></td>
</tr>
<tr>
<td>Figure 39</td>
<td>U.S. Civilian Unemployment since 1960</td>
<td></td>
</tr>
<tr>
<td>Figure 40</td>
<td>U.S. Civilian Unemployment since 1990</td>
<td></td>
</tr>
<tr>
<td>Figure 41</td>
<td>Eurozone Civilian Unemployment since 1990</td>
<td></td>
</tr>
<tr>
<td>Figure 42</td>
<td>Federal Funds Rate since 1990</td>
<td></td>
</tr>
<tr>
<td>Figure 43</td>
<td>Euroarea EURIBOR 3-months</td>
<td></td>
</tr>
<tr>
<td>Figure 44</td>
<td>U.S. and Euroarea Unemployment rates and differential</td>
<td></td>
</tr>
</tbody>
</table>

Finally, there is a concluding section which introduces a number of innovative and “custom-made” figures used to conclude on how the euro has affected the labor market as a stabilizer factor.
Table 6.6. Custom-made indexes

<table>
<thead>
<tr>
<th>Figure</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 44</td>
<td>U.S. Unemployment, Eurozone Unemployment, and the Unemployment Differential</td>
</tr>
<tr>
<td>Figure 45</td>
<td>Eurozone CPI and Unemployment rate, and the Harmonized €Phillip’s Curve</td>
</tr>
<tr>
<td>Figure 46</td>
<td>Eurozone real GDP and Unemployment rate, and the Harmonized €Okun’s Law</td>
</tr>
<tr>
<td>Figure 47</td>
<td>The Harmonized €Phillip’s and €Okun’s Law</td>
</tr>
<tr>
<td>Figure 48</td>
<td>Eurozone M1 and CPI, and the custom made Inflationary Money Supply Index (€M1/HICP)</td>
</tr>
<tr>
<td>Figure 49</td>
<td>Eurozone M1 and Unemployment rate</td>
</tr>
<tr>
<td>Figure 50</td>
<td>U.S. Industrial Production Index</td>
</tr>
<tr>
<td>Figure 51</td>
<td>Eurozone Industrial Production Index</td>
</tr>
<tr>
<td>Figure 52</td>
<td>U.S. Total Houses Sold</td>
</tr>
</tbody>
</table>

Technical Matters and Computer Program Technicalities

This chapter presents a total of 52 figures to study four markets. Some of the figures have been collected directly from Economagic. These figures have been graphed showing recessions provided by the National Bureau of Economic Research (NBER) which is the only organization that can officially announce U.S. business cycle expansions and contractions.

The rest of the figures have been plotted with the consent of the Omega Research Pro-Suit 2000i program. This is a professional program which only plots data in Metastock form. However, numerical data collected from Future Source, the ECB, and Economagic were obtained in Excel format. In order to convert Excel data into Metastock readable data, a professional data converter program, the Downloader, was used. These figures graph a wide variety of custom-made indexes strengthened by the statistic reliability of a number of significant statistical methods such as the covariance, de-trend, and simple and exponential moving averages. Table 6.7 provides a summary of which figures have been analyzed using which statistic method.
Table 6.7. Summary of statistical study

<table>
<thead>
<tr>
<th>Figure</th>
<th>Index</th>
<th>Covariance</th>
<th>De-Trend</th>
<th>Moving Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 2</td>
<td>U.S. Dollar Index</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Figure 14</td>
<td>DJIA</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Figure 16</td>
<td>DAX</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Figure 20</td>
<td>DAX and DJIA</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 23</td>
<td>Crude Oil and CBR</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 26</td>
<td>Crude Oil and U.S. Dollar Index</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 44</td>
<td>USUnemp and €Unempl + diffe</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 39</td>
<td>U.S. Civilian Unemployment</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 45</td>
<td>€HICP and €Unemp + €phillips</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 46</td>
<td>€GDP and €Unempl + €Okun’s</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 47</td>
<td>€Phillips and €Okun’s</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 48</td>
<td>€M1 and €HICP + €M1HICP</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Figure 49</td>
<td>€M1 and €Unempl + €M1Unemp</td>
<td>√</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The covariance is used to measure to what extent two random variables vary together and it is defined as $\text{Cov}(x,y) = E\{[x - E(x)][y - E(y)]\}$. The importance of this statistical method rests in that the result obtained will indicate the relationship, or lack thereof, between two random variables. When the result of the covariance is negative, it indicates that the two random variables have varied in opposite directions, meaning that there is no linear relationship between the two. On the other hand, positive covariance implies that both variables enjoy a linear relationship and are moving in the same direction. Finally, the larger the magnitude of the product the stronger the strength of the relationship.

For this chapter, the covariance used is a custom-made formula that has been altered and programmed as a built-in effect in the Omega ProSuit 2000i computer program. This covariance has a length of 30 months (or periods) and has been programmed to move within a -0.35 to +0.35 range. The formula used is explained in Table 6.8.
Table 6.8. Custom-made covariance formula

Inputs: IndependentVal(Close of Data1), DependentVal(Close of Data2), Length(30);

Plot1(Correlation(DependentVal, IndependentVal, Length), "Covariance");

Plot2(0, "Zero Line", BLACK);
Plot3(.35, "COV POS", BLUE);
Plot4(-.35, "COV NEG", RED);

{Alert Criteria}

If Plot1 > .35 Then
Alert("There is a strong positive correlation in the last "+NumToStr(length,0)+" bars")
Else
If Plot1 < -.35 Then
Alert("There is a strong inverse correlation in the last "+NumToStr(length,0)+" bars");

Condition2 = PLOT1 < -.35;
Condition3 = PLOT1 > .35;

if CONDITION2 then
setPlotColor(1, red);
if condition2 then
setplotwidth(1, 6);
if CONDITION3 then
setPlotColor(1, green);
if CONDITION3 then
setPlotwidth(1, 6);

Also, three of the figures analyzed in this chapter have been “de-trended.” When a time series is de-trended the secular trend is removed from the macro data, hence, the cyclical and growth components of that time series is disentangled. De-trending a time series is a controversial aspect of the business cycle study because it implies transforming data and some scholars believe this is a manipulation of pure data. Nonetheless, Nobel
Price Simon Kuznets used this system most of his academic life and demonstrated that, for certain time series with high volatility, a de-trend is recommended. In this chapter the formula used to de-trend the time series is explained in Table 6.9.

**Table 6.9. Custom-made de-trended formula**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>Price(Close), Length(N);</td>
</tr>
<tr>
<td>N = 20</td>
<td></td>
</tr>
<tr>
<td>PLOT1(0,&quot;CERO&quot;,&quot;Cero Line&quot;);</td>
<td></td>
</tr>
<tr>
<td>PLOT2(CLOSE-XAverage(Price, Length), &quot;DETREND&quot;);</td>
<td></td>
</tr>
<tr>
<td>{Alert Criteria}</td>
<td></td>
</tr>
<tr>
<td>CONDITION1= PLOT2 &lt; 0;</td>
<td></td>
</tr>
<tr>
<td>CONDITION2 = PLOT2 &gt;0;</td>
<td></td>
</tr>
<tr>
<td>if CONDTION1 THEN</td>
<td></td>
</tr>
<tr>
<td>THEN</td>
<td></td>
</tr>
<tr>
<td>setPlotColor(2,red);</td>
<td></td>
</tr>
<tr>
<td>if condition1</td>
<td></td>
</tr>
<tr>
<td>THEN</td>
<td></td>
</tr>
<tr>
<td>setPlotwidth(2,6);</td>
<td></td>
</tr>
<tr>
<td>if CONDITION2</td>
<td></td>
</tr>
<tr>
<td>THEN</td>
<td></td>
</tr>
<tr>
<td>setPlotColor(2,green);</td>
<td></td>
</tr>
<tr>
<td>if CONDITION2</td>
<td></td>
</tr>
<tr>
<td>THEN</td>
<td></td>
</tr>
<tr>
<td>setPlotwidth(2,6);</td>
<td></td>
</tr>
<tr>
<td>{Alert Criteria}</td>
<td></td>
</tr>
<tr>
<td>condition2= plot1 &gt; +0 and plot1 &lt; plot1[12] and plot1 &lt; plot1[14] and plot1 &lt; plot1[16] and high = highest (high,16) and high - low &gt; high[1]-low[1] or plot1 = lowest(plot1,16);</td>
<td></td>
</tr>
<tr>
<td>condition3= plot1 &lt; -0 and plot1 &gt; plot1[12] and plot1 &gt; plot1[14] and plot1 &gt; plot1[16] and low = lowest (low,16) and high-low &gt; high[1]-low[1] or plot1 = highest(plot1,16);</td>
<td></td>
</tr>
</tbody>
</table>
Moreover, a number of indexes have been analyzed using a 20-months simple moving average. A simple moving average is a statistical technique used to analyze a set of data points by creating an average of one subset of the full data set at a time with each number in the subset given an equal statistical weight. In this chapter, a 20-months simple moving average is used which means a 20-months simple moving average of closing price is the mean of the previous 20 months' closing prices. If those prices are: PM, PM-1, PM-2, PM-3, ..., PM-19, then the formula is \( \text{SMA} = \frac{(PM + PM-1 + PM-2 + \ldots + PM-19)}{(20)} \). Finally, each time a new data (month or period) is added to the time series, the entire moving average is recalculated to account for the new value added while dropping out the old one. Further, this 20-months moving average has been programmed and its exact formula is explained in Table 6.10.
Table 6.10. 20-Months simple moving average

<table>
<thead>
<tr>
<th>Inputs: Price(Close), Length(N);</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 20 Months;</td>
</tr>
<tr>
<td>Plot1 = Current Value;</td>
</tr>
<tr>
<td>Plot1[1] = Prior Value;</td>
</tr>
<tr>
<td>Plot2[2] = Two Values Ago;</td>
</tr>
</tbody>
</table>

Plot1(AverageFC(Price, Length), "SimpAvg1");

{Alert Criteria}

Alert("The Moving Average has just changed direction and is now uptrend")
Else
Alert("The Moving Average has just changed direction and is now downtrend");

Figure 6.39 explains the U.S. civilian unemployment rate using an exponential moving average that has been optimized to come up with the best number of months in order to better fit the index. An exponential moving average applies exponentially decreasing weighting factors since the weighting assigned for each older data point decreases exponentially. This factor gives much more importance to recent observations but not discarding older observations entirely. For the U.S. unemployment rate, in Figure 6.39, the best optimization of the exponential moving average is using 14 and 4 months. The optimization process was first introduced by Joseph Fourier who devoted his academic life to what is now called the Fourier series. Fourier series decompose a periodic function embedded in all series into a sum of simple oscillating functions known as sinusoidal waves. The sum of oscillating functions can be studied using the “Fourier Transform” which finds the period that optimizes the study of the oscillating functions. The formula used has been modified and programmed to draw a red spot every time the moving average crosses the index, signaling that the unemployment rate is going to
decrease, and a green spot when it crosses the index to signal that the unemployment rate is going to increase. Although optimized-exponential moving average are not commonly used as a statistical tool, when used in the U.S. unemployment rate the relationship is almost perfect. The custom-made formula is explained in Table 6.11.

Table 6.11. Custom-made optimized and exponential moving average

| Plot1(XAverage(CLOSE, 14), "XAverage"); |
| Plot2(XAverage(CLOSE, 4), "2XAverage"); |
| {Alert Criteria} |
| IF PLOT2 < PLOT1 AND PLOT2[1] > PLOT1 THEN |
| SETPLOTCOLOR(1, RED); |
| IF PLOT2 < PLOT1 AND PLOT2[1] > PLOT1 THEN |
| SETPLOTWIDTH(1, 6); |
| {OKAY} |
| IF PLOT2 > PLOT1 AND PLOT2[1] < PLOT1 THEN |
| SETPLOTCOLOR(1, GREEN); |
| IF PLOT2 > PLOT1 AND PLOT2[1] < PLOT1 THEN |
| SETPLOTWIDTH(1, 6); |
| End; |

Figure 6.44 uses a 20-months simple moving average that has been also programmed to draw a red spot when the index is going down and a green one when the index in going up. Table 6.12 explains the formula used.

Table 6.12. 20-months simple moving average

| Inputs: Price(Close), Length(20); |
| Plot1(Displace)(AverageFC(Price, Length), "SimpAvg1"); |
| {Alert Criteria} |
| SETPLOTCOLOR(1, red); |
The Euro and World Currencies

Figure 6.1 graphs the U.S. Dollar Index (USDX) since 1986 until December 2008. The U.S. Dollar Index measures the performance of the U.S. dollar against a basket of currencies composed of the euro (EUR), Japanese yen (JPY), British pound (GBP), Canadian dollar (CAD), Swiss franc (CHF), and Swedish krona (SEK). This index started in March 1973, soon after the demise of the Bretton Woods system, and it is listed in the New York Board of Trade (NYBOT).

In 1995 the index value, worth around 80 (point A), began an appreciation period that lasted until 2002 when it reached a significant all time high around 120 points (point B). Since 2002 the dollar index has been steadily losing value, reaching at the beginning of 2008 an all time low at around 72 points (point C). However, since 2008, the U.S. Dollar Index has been gaining ground and has been testing new highs at around 90 (point D).
Figure 6.1 plots the U.S. Dollar Index (USDX) with a 20-months simple moving average and the de-trend of the index. The 20-months moving average crosses the U.S. Dollar Index every time a change of tendency is taking place. This change of tendency is further represented by the “de-trend” of the index. When the index is changing tendency and is going up, the de-trend is in green. When the index changes tendency and is losing value, the de-trend is in red.
Figure 6.2 plots the evolution of the Deutsch mark (D-mark) against the U.S. dollar from August 2007 to December 2008. The D-mark is not longer trading as a currency since it was absorbed by the euro. However, there are several foreign exchange data vendors, that still maintain the daily trading value of European currencies such as the D-mark, French franc, Spanish peseta, and Italian lira.

Technically speaking, the value of the U.S. dollar divided by the value of the D-mark is known as the Dem— the name of the German currency in the foreign exchange market when it was traded against the U.S. dollar. Figure 6.3 shows the evolution of the Dem from August 2007 to December 2008. Had the Dem not ceased to exist, its value over the past years would have been the one represented in Figure 6.3. In fact, its value as of December 31, 2008 would have been $1.391/Dem.
Figure 6.3 plots a positive relationship between the U.S. Dollar Index (USDX) and the Dem since August 2007 to December 31, 2008. As the value of the U.S. Dollar Index goes up, the value of the currencies that form the index goes down. Simultaneously, the evolution of the Dem shows that as the value of the U.S. dollar goes up the value of the Dem goes down. Hence, when the U.S. Dollar Index and the Dem exchange rates are plot together, robust positive correlation is the result.

The rationale behind this correlation is the following. An increase in value of the USDX represents the decrease in value of the currencies that form the index. For instance, from August to December 2008 the value of the USDX increased and the value of the currencies included in the index decreased. Simultaneously, the evolution of the Dem shows that from August to December 2008, the value of the U.S. dollar increased and the value of the Dem decrease. Hence, there is an inverse relationship between the
value of the U.S. Dollar Index and Dem exchange rate; however, graphically they both move in tandem.

Figure 6.4. The D-mark and the U.S. Dollar Index (USDX)

Figure 6.5 plots the evolution of the euro (€/$). Although the €/$ was first introduced on January 1, 1999, this figure represents a composite of the ECU/$ from 1978 to January 1, 1999, and the €/$ ever since. This graph shows how on January 1, 1999 the change over from $/ECU to €/$ took place above parity. On January 1, 2002 the common currency was physically introduced at a exchange rate under parity. However, since 2002 to mid-2008 the euro has been increasing in value, reaching an all time high of around €1.5/$ during the third quarter of 2008 (point A).
Figure 6.5 plots the evolution of the €/$ and the USDX since 1980. In this case, there is an inverse relationship between the U.S. Dollar Index and the €/$. This perfect inverse relationship generates a curious mirror image effect. Hence, as the €/$ goes up the value of the U.S. Dollar Index is going down. For instance, since 2002 to mid-2008’s the value of the euro has been increasing against the U.S. dollar and, at the same time, there is a decrease in the value of the U.S. Dollar Index.
Figure 6.6 plots the evolution of the €/$ and the $/Dem. Again, there is a perfect negative relationship between both currencies generating, again, a mirror image effect. As the euro appreciates in value against the U.S. dollar, the Dem is also gaining value against the U.S. dollar. The reason for this relationship is that the Dem is part of the euro and if the euro increases in value, the Dem must also increase in value.
Figure 6.7. The D-mark and the euro.

The same can be inferred from Figure 6.8 that graphs the relationship between the euro and the French franc (FRF). Although the FRF ceased to exist as a national currency with the introduction of the euro, the value of this currency has been continued by Future Source. If the FRF were to be reintroduced as a national currency in France, Figure 6.8 shows the evolution of its value since June 2002 until January 2, 2009. In fact, its value as of January 2, 2009 would have been FRF 4.6961/$. Since the FRF is part of the euro, there is a positive correlation in value; hence, as the value of the euro has been increasing against the U.S. dollar, the value of the FRF has increased its value as well. Therefore, this relationship generates a mirror image effect.
Figure 6.8. The French franc and the euro

Figure 6.9 plots the €/$ and the Spanish peseta/$ (ESP) and the same rationale applies. There is a positive correlation in value since as the euro appreciates against the U.S. dollar and so does appreciate the ESP. Figure 6.9 shows this relationship which generates a mirror image effect.

Figure 6.9. The Spanish peseta and the euro
Finally, Figure 6.10 graphs the evolution of the Italian lira (ITL) since June 2002 until January 2, 2009. Once again, there is a mirror image effect between the evolution of the euro and the ITL.

Figure 6.11 plots the evolution of the British pound (GBP) against the euro since 1994. The GBP is not part of the euro and there is a vast debate on whether the GBP should, or should not, join the euro. Since mid-2008 the lost in value of the GBP against the euro has, once more, stirred the debate. When in 1999 the euro was introduced, the value that the pound would have had against the euro was one of the reasons used to excuse the pound for not adopting the euro. On January 1, 1999 the value of the pound was very high against the euro, and joining would have meant a dramatic lost of purchasing power for those holding pounds. However, ever since January 1, 1999 the pound has been losing value against the euro. In fact, as of January 1, 2009 the value of the pound was close to parity with the euro. Curiously enough, it is now that the pound has almost reached parity with the euro, when the changeover would be monetarily beneficial for both parties.
A detailed analysis of the evolution of the GBP and the euro can be found in Figure 6.12. Figure 6.12 shows how since 2000 the pound has been moving with the euro but always with a higher value. Now, nonetheless, the fall of the pound is greater than the fall of the euro. In Figure 6.12 point A is very important because it marks the moment when the GBP had to leave the monetary snake suffering a dramatic lost of value. Right after exiting the snake, the pound dropped to an all times low level marked by point B; ever since, it began to free float against all currencies. Point C highlights the introduction of the euro and shows how the pound has been moving in tandem with the common currency. Finally point D marks the second most important drop in the value of the GBP since 1980; a drop that has made the GBP to come closer to parity with the common currency.
In summary, Figures 1 through 12 have brought across four interesting points. First, Figures 6.3, 6.8, 6.9, and 6.10 plot the evolution of a number of European currencies that do not exist anymore however their trading values are still been published by Future Source. Second, Figures 6.1, 6.2, 6.3, 6.4, and 6.5 have proved that the euro is basically the continuation of the Dem, and that there is perfect inverse relation between the euro and the Dem against the U.S. Dollar Index. Thirdly, Figures 6.3, 6.8, 6.9, 6.10 have shown that the euro, as well as all the currencies that form it, have been moving together, providing the euro with strength and stability. Finally, Figures 6.11 and 6.12 help
conclude that the euro has stabilized the value of the British pound, bringing it to a level which makes, for the first time in history, jumping onboard the “euro boat” interesting for the British.

The Euro and World Indexes

This section focus on how the euro has become a stabilizing factor for the Eurozone. In order to do so, this section analyzes how the euro has helped smooth the business cycle by studying the correlations between the euro and both the Dow Jones Industrial Average (DJIA) and the German Deutscher Aktien IndeX 30 (DAX). Moreover, this section will demonstrate that the euro has helped contained inflation in the eurozone.

Figure 6.13 graphs the evolution of the Dow Jones Industrial Average (DJIA) from 1980 to January 1, 2009. The DJIA measures since 1896 the daily performance of 30 of the largest ‘blue-chip’ corporations in the United States, making the DJIA the best-known measure of the performance of the stock market in the United States. The DJIA is traded in the New York Stock Exchange (NYSE) in U.S. dollars. In Figure 6.13, point A indicates that in mid-2007 the DJIA reached an all time high around 1,400 points after which it began to lose value to reach levels of around 7,500 points—levels tested in 2002 and 2004 (point B).
Figure 6.13. The DJIA since 1980

Figure 6.14 studies the DJIA when measured with an optimized 30-months moving average and the de-trend of the index. This Figure shows that when the moving average crosses the index a change of tendency follows. This change of tendency is supported by the de-trend because every time the moving average crosses the DJIA, a change of tendency follows and the de-trend simultaneously changes. This figure demonstrates the validity of a 30-months moving average to forecast a change in tendency when plotted with the DJIA.
Figure 6.14. The DJIA ‘de-trended’ and studied with a 20-months moving average

Figure 6.15 graphs the evolution of the Deutscher Aktien IndeX 30 (DAX) since 1978 to January 1, 2008. The DAX is a market index representing the 30 major German companies trading on the Frankfurt Stock Exchange and is one of the most important and leading stock index of the Eurozone. The value of the DAX was quoted in D-mark until December 31, 1999 and since January 1, 2000 in euros.

Figure 6.15 highlights that the DAX reached an all time high of around 8,000 points in the mid-2000 (point A); that is, right after the introduction of the euro. The DAX, however, has suffered an important loss of value when the index tested levels of around 2,000 points at the beginning of 2003 (point B). Since then, the DAX has gained value reaching a new high at around 8,000 points during 2007 (point C) just in time to begin a new decline (point D).
The DAX can be considered a leading economic indicator for the Eurozone since, as point C shows, the DAX began to decline in the last quarter of 2007. However, the German government did not declare that Germany has entered a recessionary period until November 12, 2008; that is, almost one year after the DAX began to decline.

Figure 6.15. Deutscher Aktien IndeX 30 (DAX) since 1978

Figure 6.16 plots the DAX together with the optimized 30-months moving average. When the moving average crosses the DAX there is a change in tendency that is reflected in the “de-trend”.
Figure 6.16. DAX with an optimized 30-months moving average and the de-trend

Further, the values of the DJIA and U.S. Dollar Index (USDX) since 1980 are plotted in Figure 6.17. This figure shows that there is not clear relationship between the USDX and the DJIA; that is, from this figure it cannot be inferred that as the value of the U.S. Dollar Index declines the value of the DJIA systematically increases or decreases.

Figure 6.17. The DJIA and the U.S. Dollar Index since 1980
The relationship between the DAX and the euro is depicted in Figure 6.18. If Figure 6.17 showed not clear relationship between the DJIA and the U.S. Dollar Index, Figure 6.18 plots a better relationship between the DAX and the euro. This shows that the strength of the ECU and the euro has helped the performance of the German index which, in turn, is a measure of stability.

![Figure 6.18](image1.png)

**Figure 6.18.** The relationship between the DAX and the euro since 1978

![Figure 6.19](image2.png)

**Figure 6.19.** The relationship between the DAX and the DJIA
This positive relationship between the DAX and the DJIA is further analyzed in Figure 6.20 by using an alternative way of presenting the traditional covariance. Figure 6.20 plots a positive covariance between both indexes which hints that the euro has helped harmonized and stabilized the business cycle on both sides of the Atlantic. However, data on the DAX traded in euro is only available since 1998 offering a very short time series of only 10 years. Moreover, since the covariance is based on 30-months, the result of the covariance is limited although robust.

Figure 6.20. Covariance between the DAX and the DJIA

Finally, Figure 6.21 plots the evolution of the DJIA, the DAX, and the Eurotop 100 indexes showing that all of them are moving in unison although the euro and the U.S. dollar are moving in opposite directions.
The next two figures, Figure 6.22 to 6.27, help conclude that the euro has harmonized and stabilized the prices in the Eurozone. Figure 6.22 plots the evolution of the Crude Oil (CO) and the CRB index. In the United States, the curve of the Crude Oil is the price—in U.S. dollars—of the light sweet crude oil future contract traded on the NYSE which represents the cost of imported crude oil. The CRB index curve is a world-renowned index comprised of 28 commodities that serves as the most widely recognized measure of global commodities prices which, in turn, are “responsible” for consumer prices, and, ultimately, inflation rates.

Hence, the price of the Crude Oil (CO) and CRB are two key indexes to measure and forecast inflation rates worldwide. Figure 6.22 shows that since 2007 both indexes have suffered an increase in price reaching all times highs during the summer months of 2008. Fortunately, since mid 2007 both indexes are experiencing a decrease in their prices which has helped alleviate not only inflation pressure worldwide but also economic prospects.
In fact, Figure 6.23 shows that there is a strong covariance between these two indexes since as the price of oil increases so does increase the price of commodities.

Figures 6.22 and 6.23 have demonstrated that there has been a systematic increased in the overall prices of both commodities since 2002. Both commodities are quoted in U.S. dollar and Figures 6.24, 6.25, 6.26, and 6.27 will explain what have been the effects of the increase in these values for the United States and the Eurozone.
Figure 6.24 plots the relationship between the U.S. Dollar Index and the CRB index. Curiously, as the CRB index increase in value the value of the U.S. Dollar Index is decreasing. This inverse relationship between both indexes explains that the United States has been suffering from the increase in price of these two important resources; in fact, the United States has been paying the rising prices with a weak dollar, which has negatively affected economy. Figure 6.24 shows that from June 2002 to June 2008 the U.S. Dollar Index has been losing value while the CRB index has been increasing. After June 2008, however, the CRB index began a steep decline and the U.S. Dollar Index timidly began to gain ground. This inverse relationship between the CRB and the U.S. dollar has been a devastating factor for the economy of the United States in the past year.

![Figure 6.24](image)

Figure 6.24. The U.S. Dollar Index and the CRB Index

Almost the same pattern can be found in Figure 6.25 that plots the continuous increase in the price of CO and a decrease in the value of the USDX from June 2002 to June 2008. Due to North America’s dependency on oil, an increase in the price of crude oil and a decrease in the USDX has become a disadvantage for the U.S.
Figure 6.25. The U.S. Dollar Index and the price of Crude Oil

For instance, the relationship between the U.S. Dollar Index and the price of CO is depicted in Figure 6.26. This figure plots covariance between both the CO and U.S. Dollar Index. The result demonstrates that there is a negative covariance between both indexes; that is, as the price of CO was increasing, the value of the USDX was decreasing. In fact, the negative covariance is more significant from June 2002 to June 2008 when the price of oil was going up dramatically and the value of the U.S. Dollar Index was going down.
Figure 6.26. The covariance between the U.S. Dollar Index and the price of Crude Oil

Fortunately the Eurozone has not suffered this toll and Figure 6.27 plots that as the price of CO has been increasing since June 2002 so has increased the value of the common currency. This means that the Eurozone has had an advantage when paying the oil bill because; although the Eurozone Member States had to pay the price of crude oil in U.S. dollar, the value of the euro against the U.S. dollar has been very favourable for these countries. This has been an advantage for all Eurozone Member States particularly between 2002 when the price of crude oil increased from around $50 and mid-2007 when the price reached historic highs of around $150. In fact, from March to August 2008 the price of oil fluctuated between $120-150 and the value of the euro reached historic highs at around €1.50/$.
This section has therefore shown that the euro has been a major stabilizing factor for two reasons. First, the study has demonstrated that the euro has harmonized the business cycle bringing together stock indexes prices which are considered leading economic indicator. Second, the strong euro has helped pay the high prices of crude oil and commodities in the Eurozone which, in turn, has helped maintained inflation under control.

The Euro and Money Market Indexes

This section analyzes Figures 6.28 though 6.34 to study the relationship between the euro and the Money Market (MM). The MM is a subsector of the fixed-income market and consists of very short-term debt securities that usually are highly marketable. Analyzing the MM is important because the ECB uses the MM as escape valve to fight inflation and to maintain price stability. Whatever decision the ECB takes to fight
inflation and maintain stability will, in turn, affect the value of the euro. Moreover, understanding MM in the U.S. sets the ground to understand the MM in the Eurozone.

Figure 6.28 plots both the U.S. 2-years Treasury Note (T-Note) and the Eurodollar. The Eurodollar is the name given to all the dollar-denominated deposits at foreign banks, or foreign branches, of American banks. Despite the tag “euro”, these deposits are not in euros. Most Eurodollar deposits are for large sums with less than six months maturity. Based on these deposits, the Eurodollar futures contracts are futures contracts traded at the Chicago Mercantile Exchange (CME) in Chicago. U.S. 2-years T-Note is a U.S. government debt financing instrument issued by the U.S. Department of the Treasury. Figure 6.28 shows that both index move in unison although it seems as if the 2-years T-Note could lead changes in tendency.

Figure 6.28

Figure 6.28. The U.S. Treasury Note (2-years) and the Eurodollar (3-months)

Figure 6.29 explains the relationship between the U.S. T-Note (10-years ) and the German Bund. The U.S. 10-years T-Note has become the security most frequently used when analyzing the performance of the U.S. government-bond market and one of the most used instruments to convey the market's take on the long term macroeconomic expectations in the United States. The German Bund is the name of Germany’s federal
bond issued by the German government to finance spending. It is, therefore, a government-backed instrument of the highest quality as is the T-Note issued by the United States government.

Figure 6.29 plots the positive relationship that exists between both government debt indexes since September 2007 hinting to an harmonization in the debt market on both sides of the Atlantic.

Moreover, Figure 6.30 plots the relationship between the German Bund and the euro since June 2002. Figure 6.30 should be showing certain relationship between the evolution of the euro and the Bund, on the contrary, it plots no clear common pattern between them. The euro and the Bund were increasing in value from 2002 until 2005 when each one began follow an independent path.
There is also an interesting relationship between the Eurodollar and the London Interbank Offered Rate (LIBOR). The LIBOR is the interest rates at which banks borrow funds from other banks in the London interbank market. This rate, which is quoted in dollar-denominated loans, has become the premier short-term interest rate quoted in the European money markets, and it serves as a reference rate for a wide range of transactions. Hence, the LIBOR has become one of the most important interest rates benchmark because it is the rate at which most preferred borrowers can borrow money and it is rate used to make adjustments to adjustable rate mortgages. Figure 6.31 plots both the LIBOR 1-month and the Eurodollar 3-months demonstrating a close relationship between both index and proving a close relationship between the United States and British business cycle.
Figure 6.31. The LIBOR (1-month) and the Eurodollar (3-months)

However, Figure 6.32 plots a lack of relationship between the EURIBOR 3-months and Eurodollar. The EURIBOR stands for the Euro Interbank Offered Rate, and it is the average interest rate at which term deposits are offered between prime banks in the Eurozone money market. The EURIBOR is like the LIBOR because it is used as reference rate for euro denominated short-term interest rates. The relationship, or lack thereof, between these two indexes is represented in Figure 6.32; a very significant figure that shows that there is a gap between the business cycle in the U.S. and the Eurozone. The explanation is that while the Eurodollar began a clear downtrend in June 2004 demonstrating that it is a leading economic indicator, the EURIBOR did not begin the downtrend until 2006. This means that it took the ECB approximately one year to decide on reducing rates (point A). Further, point B shows how the Eurodollar was stable for almost a year (from June 2006 to June 2007) before it began to increase again in the third quarter of 2007. The Eurodollar has been erratic since then. However, the Eurozone is lacking this transition period and right after lowering rates at the end of 2007, it has began to follow an erratic path. All this shows that while the American index is a leading economic indicator, the EURIBOR is not.
Figure 6.32. The EURIBOR (3-months) and the Eurodollar (3-months)

Figure 6.33 curiously plots how the LIBOR and the EURIBOR lack correlation since the LIBOR began a downtrend in June 2005 while the EURIBOR did not begin decreasing in value until 2006. Hence, Figures 6.32 and 6.33 shows that there is an economic business cycle correlation between the United States and the United Kingdom in this market but not with the Eurozone.

Figure 6.33. The EURIBOR (3-months) and the LIBOR (1-month)
Finally, Figure 6.34 plots the relationship between the EURIBOR and the euro since June 2002. The graph below shows how in 2006 the EURIBOR began its decline lowering the price of money. Curiously, as the EURIBOR was declining the value of the euro began to increase. These two economic circumstances can be identified with a boost in inflation in major Eurozone member states in the past two years. However, the graph also points out that as interest rates began to be raised in summer 2008, the value of the euro began to decline.

![Figure 6.34](image)

Figure 6.34. The EURIBOR 3-months and the euro

The ECB did not follow the downtrend that the U.S. and the U.K. monetary authorities began in June 2004 because of the high inflation rate in the Eurozone. This confirms the political independence of the ECB that waited until inflation was controlled in the Eurozone to reduce the rate. This is depicted in Figures 6.35 and 6.36. Both Figures measure the Consumer Price Index (CPI) in the United States (Figure 6.35) and in the Eurozone (Figure 6.36). The CPI is the monthly report of the changes in the price paid by an urban consumer for a representative basket of goods and services. By reporting the changes in price of the basket, the inflation rate can be calculated, the
higher the CPI the higher the inflation rate experienced in a given country. Further, during recession times the purchasing power of individuals and the CPI tend to decrease. This is what Figure 6.36 conveys because it shows that each time the United States entered a recession the index suffered a reduction; a reduction that is significant in the last recession. However, Figure 6.36 shows that in the Eurozone, despite the fact that it is suffering a deep recession; the CPI did not fall, maintaining a high purchasing power and preventing the ECB from reducing interest rates.

Figures 6.35 and 6.36. The CPI in the United States and the Eurozone
The Euro and the Labor Market

This section uses Figures 6.37 to 6.46 to analyze the evolution of the labor market in the Eurozone. These Figures have been obtained from Economagic.com and when plotted the “showing recession” option was chosen. For this reason, these Figures plot recession periods of the business cycle. The economy experiences periods of expansion and contraction although the length and depth of those cycles can be irregular. These recurring patterns of recessions and recoveries are called the business cycle. Business cycles are studied based on two major points. On the one hand, peaks which transition from the end of an expansion to the start of a contraction and, on the other hand, troughs which transition from the bottom of a recession to the start of a recovery. Recession periods plotted in these graphs are based on the announcements made by the National Bureau of Economic Research (NBER) as the official designator of peaks and trough points.

This section will study the evolution of the unemployment rate in the United States to set the groundwork. Figures 6.37 and 6.38 plot the evolution of the U.S. civilian unemployment rate and the U.S. Federal Fund rates since 1954. Most banks maintain deposits of their own at the Federal Reserve Bank (the Fed) because each member of the Federal Reserve System is required to keep a minimum balance in a reserve account with the Fed, plus vault cash. Funds in the bank’s reserve account are called Federal Funds, or Fed Funds. At any time, some banks have more funds than required at the Fed while other banks might have a shortage of Federal funds. Hence, banks with excess funds lend to those with a shortage. These loans, which are usually overnight transactions, are arranged at a rate of interest called the Federal Fund rate (Fed Funds).
Figures 6.37 and 6.38 are important to demonstrate the high correlation between the evolution of the unemployment rate and Fed Funds rate in the United States. In Figure 6.36 recession lines are shown right before unemployment begins to increase. Figure 6.38 shows that recession periods take place when the Fed Funds rates are going down.

In fact, in 2008 the NBER announced that the United States had entered a recession just when the unemployment rate was going up and Fed Funds rates were going down. By Figure 6.37 with Figure 6.38 it can be inferred that recession periods occur not only when the U.S. unemployment rate is at the minimum point and increasing but also when the Fed Funds rate is going down in order to make money cheaper to help jump-start the economy. In summary, every recession period is accompanied by an increase in unemployment rate and a decrease in the Federal Funds rate.
Figure 6.39 plots the evolution of the monthly U.S. civilian unemployment rate since mid-1974 with an optimized exponential 14 and 4 moving average that shows the ability of this statistic method to indicate a change in tendency. This moving average has been further programmed to draws a red mark to indicate that the unemployment is going down, and a green one when the unemployment is going up. Therefore, this particular statistical tool when used with this specific index has shown a perfect fit to predict a change in tendency from 1974 to December 31, 2008. This optimized exponential moving average is not commonly used in academia, however, its proven possibility to indicate a change in tendency in this time series, makes it viable to become a valid statistic tool.

![Figure 6.39](image)

Figure 6.39. The U.S. unemployment with an optimized exponential moving average
The next two figures—Figures 40 to 41—plot the United States and Eurozone civilian unemployment rate, and the U.S. Fed Funds rate and EURIBOR from January 1990 to December 2008. During this period of time, the NBER announced three major recession periods which affected world economies and are plotted in all four graphs.

The comparison between both unemployment rates reveals three important points. First, in the U.S. recessions begin months after unemployment rates had touched bottom and had been increasing for a few months (points A and B) corroborating that the unemployment rate in the U.S. is a leading indicator. In the Eurozone, however, points A and B show that unemployment is not a leading indicator since the unemployment rate increases with the recession. Secondly, while the highest U.S. unemployment rate is around 7.5%, the lowest unemployment rate in the Eurozone is around 7%. It seems as if the U.S. unemployment rate ceiling is the Eurozone unemployment rate floor. Moreover, if in the Eurozone during prosperous economic times the unemployment rate could not go below 7%, it is worrisome how high this rate could go during the recession, or even depression, periods of the business cycle. Thirdly, the previous two statements led to conclude that the natural rate of unemployment for the United States is around 4% while for the Eurozone it is around 7%.
Further, an analysis of the U.S. Fed Funds rate (Figure 42) and the U.S. unemployment rate (Figure 40) shows that as the unemployment rate begins to increase in the U.S., the government decreased the Fed Funds rates to ease monetary conditions aiming at boosting the economy. In fact, the Fed took action advised by the increased in unemployment and before the recession was even announced (points A and B). Hence, this demonstrates that U.S. Fed Funds can be considered an economic leading indicator.
However, a comparison between points A and B in Figure 6.43 shows that the EURIBOR during the 2001-2002 recession (point A) followed a downtrend; however, point B shows that the ECB kept on increasing the rate. Further, Figures 6.41 and 6.43 explain that in the Eurozone, although unemployment was increasing at the end of 2007, the ECB did not reduced the EURIBOR rate (point B) hinting at the existence of a high inflation rate.
Figures 6.41 and 6.43. Eurozone unemployment rate and the EURIBOR 3-months

None of this does, in fact, make any sense without explaining the difference between the unemployment rate in the United States and in the Eurozone. Figure 6.44 plots, on the top part, the evolution of both the US and the Eurozone unemployment rate. Both unemployment rates have been studied using the covariance statistic method which shows that there is a positive relation between both indexes. Unfortunately, due to the lack of data on the Eurozone unemployment rate before 1997, the covariance is very limited but enough to show a strong positive relationship between both unemployment rate. This demonstrates that since the introduction of the euro both economies are
merging with the business cycle. Based on this positive correlation, the bottom part of Figure 6.44 represents the percentage rate differential (DiffUnempl) between both unemployment rates. This differential has been studied using a 20-months moving average that when crosses with the index signals a change in trend. It is important to highlight that at the beginning of the 1990s, the percentage difference between both countries was close to 6%. However, during the 2008 this differential has been disappearing; in fact, the unemployment rate reported for the U.S in December 2008 was 7.20% and the Eurozone reported 8.1%. This means that the unemployment differential between them decreased to 1.1%. The reason is that the unemployment rate in the U.S. began increasing in the second quarter of 2007 while unemployment rate in the Eurozone was not yet increasing. In fact, most Eurozone Member States have experienced a disconcerting increase in their unemployment rates since the second quarter of 2008. For some countries the worst has come in the first months of 2009; in fact, Commissioner Almunia has reported that Spain’s unemployment rate might very well reach, during 2009, 18%. This sudden unemployment increase in the old continent will send the differential to close to 5% again in the next year.
This chapter has, so far, analyzed the relationship between the euro and many economic indicators and indexes to cover the most significant markets. However, a final and personal study is needed in order to draw specific and unique conclusions about the ability of the euro to act as a stabilizer for the Eurozone.

Phillip’s Curve and Okun’s Law: A Modern Approach
This chapter has strongly concluded that the euro has, among other things, helped maintain prices in the Eurozone under control. However, it is important to analyze the relationship between consumer prices and unemployment since economic theory explains via the Phillips curve, named after Alban W. Phillips, that as unemployment goes down and more people join the labor market, the price of goods and services increases to adjust for the increase in demand.

Hence, Figure 6.45 plots on the top part of the figure the evolution of both the Eurozone’s Harmonized Index of Consumer Prices (€HICP) and the Eurozone unemployment rate (€Unempl). On the bottom part, Figure 6.45 plots a “custom made” reproduction of the Phillips Curve in the Eurozone which is new way of analyzing the relationship between the HICP and the unemployment in the Eurozone. This new custom-made index has been named the Harmonized €Phillips Curve (€Phillips). The €Phillips has been statistically studied using a 20-months moving average that demonstrate its ability to forecast a change in trend: every time the Harmonized €Phillips Curve and the moving average crosses a change of tendency takes places. This study is represented in Figure 6.45 which on the top part shows a continuous general uptrend of the HICP and a continuous reduction of the unemployment rate suggesting that a decrease in unemployment results in an increase in the consumer prices.
Figure 6.45. U.S. and Eurozone Unemployment with the Harmonized €Phillips Curve

There is a second macroeconomic theory, Okun’s Law, that must be studied in order to conclude on the relationship between the euro and the labor market. Okun’s Law analyzes the relationship between the real gross domestic product (GDP) and the change in the unemployment rate. Okun’s Law is name after Arthur Okun who proved that in any given country as unemployment is going down, real GDP goes up since more people join the work force contributing to the production of goods and services. Figure 6.46 plots the real GDP (€RGDP) and the Eurozone unemployment rate (€Umpl) to “custom made” the Harmonized €Okun’s Law (€Okun). Further, this “custom made” index does prove the
relationship between unemployment and real GDP. Finally, the Harmonized €Okun’s Law (€Okun) has been analyzed using a 20-months moving average very helpful to signal a change in trend.

Figure 6.46. Real GDP and unemployment in the Eurozone and the Harmonized €Okun’s Law

Finally, Figure 6.47 studies if there is a correlation between these two newly created indexes: the Harmonized €Phillips Curve and Harmonized €Okun Law. Figure 6.47 shows that, in fact, there is a strong positive correlation between the two in the Eurozone. Hence, it is safe to conclude that for the past 10 years unemployment rate in the Eurozone has been decreasing and people have been entering the labor force; as the employment
rate has been increasing, so has increased the demand for goods and services which has sparked the production of goods and services, all of which have, in turn, pushed prices up.

Figure 6.47. The Harmonized €Phillip’s Curve and Harmonized €Okun’s Law

Since there has been an overall decrease in the unemployment rate, an increase in the amount of money in circulation has been inevitable. Figure 6.48 plots the evolution of both M1 and the Harmonized Index of Consumer Price (HICP) in the Eurozone. M1 measures of the availability of currency in circulation, checkable deposits, and traveler's checks in any economy. Basically, M1 represents the assets that strictly conform to the definition of money; that is, assets that can be used to pay for a good or service or to repay debt. Hence, the lower the unemployment rate the more people joining the labor
market increasing the demand for M1. Economic theory explains in the Quantity Theory of Money that when the money supply increases the price of goods and services increases as well. The spread between these two indexes is also represented in Figure 6.48 which demonstrate that in the Eurozone as M1 increased so did the HICP. This new index has been named the Inflation Money Supply Index (€M1/HICP).

Figure 6.48. The Eurozone M1 and Consumer Price Index with the Inflation Money Supply Index (€M1/HICP)

Since there is a correlation between amount of money in circulation and consumer prices, it is necessary to find out if there is a relationship between money in circulation and the unemployment rate in the eurozone. Economic theory explains that as more
people join the labor force the amount of money in circulation increases. Hence, Figure 6.49 studies if there is a relation between the amount of money in circulation (€M1) and the unemployment rate (€Unemp). Figure 6.49 shows that since 2000 the unemployment rate has been following a general downtrend in the Eurozone accompanied by an uptrend of the amount of money in circulation (M1). This relationship is clearly represented in the period of time between points A and B. Point C shows that the 20-months moving average has crossed the index indicating that the index is going to begin a downtrend correlated with the fact that the unemployment rate is going up and the M1 is going down in the Eurozone.
The statistical and technical analysis in this chapter has shown that the unemployment rate in the Eurozone has suffered a reduction since the introduction of the euro. This increase in employment has increased demand for goods and services that have increased production of goods and services. For this reason, it is necessary to show the relationship between the reduction in unemployment and the increased in production measured by the Industrial Production Index (IPI). The Industrial Production Index (IPI) is an economic indicator that measures the amount of output manufactured in the manufacturing, mining, electric, and gas industries. This index is published monthly by the Federal Reserve Board in the United States and the Eurostat in the Eurozone. The IPI is used to examine growth in different industries helping to conclude on the ‘health’ of the economy. Since the unemployment rates in the U.S. and the Eurozone have been increasing for some months now, the IPI on both sides of the Atlantic should show a decrease.

Figure 6.50 shows that the U.S. Industrial Production index is more harmonious and the recession period clearly coincides with a reduction in the index systematic with an increase in the unemployment rate. However, the Industrial Production Index (Figure 6.51) in the Eurozone is much more volatile. Further, the decrease in production activity is quite significant although the drop in the unemployment rate is not that dramatic.
Finally, Figure 6.52 plots the evolution of the number of total houses sold in the United States since 1963; an index that the U.S. government considers to be a leading indicator of the economic cycle. This index directly relates to the actual recession: the subprime mortgage crisis in the United States triggered by the combination of very low interest rates and unprecedented levels of liquidity. The importance of including this graph rests in the fact that as a leading indicator, it anticipates the change in economic trends. In fact, point A shows that in 2005 the index reached an all time high at around 130. Further, the blue line at the bottom marks historic bottoms of the index. In fact,
during the 1971, 1975, 1981, and 1991 recessions, the index never broke the 25 thousand houses sold level. Since the actual downtrend is reaching historic low (point B) a change in tendency could be close, which would represent the beginning of the end of the recession period in the United States. Unfortunately, it has been impossible to locate a similar graph for the Eurozone although most countries, e.g. Spain, have suffered greatly from the bust of their house market industry.

Figure 6.52. U.S. Total Houses Sold: Thousands
Chapter Seven

Conclusion and Recommendations

The Eurozone’s stability, development, and its future depend largely on the success of the euro not only as a common but also as an international and global currency. This success rests on three important pillars: implementation of monetary policies, respect of economic policies, and implementation of specific structural reforms particularly in the labor market. This dissertation has studied whether these pillars have helped the euro succeed as a monetary, economic, fiscal, and social stabilizer in the Eurozone.

Chapter one reviews political and economic events that, from World War I, led to the introduction of the Economic Monetary System (EMS) in 1979. This chapter pays tribute to the role that Germany played in the construction of the new economic order, particularly at the time when the EMS was set up and the D-mark became the natural anchor currency. The Bundesbank developed into the model to imitate thanks to its ability to maintain inflation low in Germany. This chapter also looks closely at the creation and demise of major economic regimes, mainly the Bretton Woods System. The demise of Bretton Woods triggered the creation of the EMS as the solution to end historic currency instability. Hence, this chapter analyzes the internal dynamics and interactions between major international players such as the United States and core European countries during the construction of the new economic order that was born after the demise of the Bretton Woods System.

Chapter two provides an overview of all the theories that have shaped the construction of the European Union (EU), the Eurozone, and the euro as a common currency. While the construction of the EU and the Eurozone must be explained using
theories of regional integration, the introduction of the euro is explained using the Optimum Common Currency Area theory of Robert Mundell. The EMU and the introduction of the euro have, nonetheless, been greeted with skepticism by certain scholars. These eurosceptics are concerned with the negative impact of the euro not only in economic, political, fiscal, employment, and social policies but also they claim that the euro represents a loss of national sovereignty.

Chapter three explains that a common currency is a currency shared by a number of countries, which have agreed on eliminating their national currencies and adopting a common (or single) one. By agreeing to do so, they create and participate in a monetary union. This chapter explains that the Eurozone is the only de facto common currency area that exists today. It further points out that the euro has become a solid international currency due to its performance as a unit of account, as a store of value, and as a medium of exchange. However, the euro has not yet found its place as a global currency although it has gained ground against the U.S. dollar, which, as of today, remains the only global currency.

Chapter four analyzes how the introduction of the euro has been pushed forward with every new treaty. If the Single European Act (SEA) in 1987 set the basis for the creation of a single market, the Maastricht Treaty (1992) laid the foundations for the creation of the Economic Monetary Union (EMU) and the introduction of the euro to strengthen the single market. This Treaty introduces Title VI which forced Member States to implement specific monetary and economic policies by complying with a set of monetary and economic requirements. This chapter further demonstrates that up to December 2008 most countries have been obeying these requirements and improving
their economic and monetary performance helping, in turn, the euro become a stabilizing factor in the Eurozone. However, the economic recession that has globally unfolded is deeply affecting the economic performance of most Eurozone Member States. If Member States do not control their economic performance and stick to the stability requirements of the EMU, the euro’s role as a solid common, international and global currency might be jeopardized.

Finally, chapter five analyzes the performance of the labor markets since the introduction of the euro. In 2002 the Lisbon Agenda set a course of action to follow in order to reduce unemployment and add dynamism to the labor market. This chapter demonstrates that since the introduction of the euro the unemployment rate in Eurozone Member States has been on average significantly reduced. Despite improvements, the goals set in the Lisbon Agenda have not all been met and a significant amount of work remains to be done. It is particularly worrisome that unemployment has not been significantly reduced during the expansionary phase of the business cycle, casting a shadow over the future of the labor market now that most Eurozone Member State are immerse in an economic recession. Nonetheless, the EU, as an institution, has limited responsibilities for high unemployment rates in certain countries. Ultimately, it is the responsibility of each Member State to provide the national political means necessary for the required labor market reforms thereby reducing unemployment rates. Finally, Eurozone Member States have been blessed by a buoyant economic environment and a strong euro; however, as global economic conditions worsen, certain countries will be facing unprecedented labor market situations.
Qualitative and Quantitative Findings

From a qualitative standpoint, chapter three and four demonstrate that the euro has become a solid common and international currency, and a monetary and economic stabilizer. Chapter five shows that although the labor market has suffered a significant improvement, much still remains to be done. Chapter six uses a quantitative approach to analyze how solid these qualitative findings are.

Chapter six is divided into five sections. Each section aims to quantitatively analyze each of the chapters previously studied using a qualitative approach. The first section—the Euro and World Currencies—quantitatively confirms the conclusions reached in chapter three, mainly that the euro has become a solid common currency. To do so, this section examines the relationship between the U.S. Dollar Index and the D-mark to explain the creation of the euro. Further the evolution of the Spanish peseta, the Italian lira, and the French franc showed that, if those currencies were today in circulation they would be following the euro cycle. These quantitative results prove that the euro has become a de facto common currency for Eurozone Member States. Also, this section explains the relationship between the British pound and the euro and emphasizes that since early 2008 both currencies have been moving in tandem (and there has been a synergy in both currency cycles hinting to a possible long-time desired merger between the pound and the euro). The second section—the Euro and World Indexes—provides a thorough view of the behavior of the euro in compliance with the monetary policy requirements imposed by the Maastricht Treaty. To do so, this section first presents how the stock markets have reacted to the introduction of the euro. It further shows that there is a lack of relationship between the valuation of the Dow Jones Industrial Average
(DJIA) and the German DAX, and the U.S. Dollar Index and the euro. However, the data proves that since the introduction of the euro, the DJIA, the DAX, and the Eurotop 100 have been increasingly correlated. Moreover, this section presents data that support that the euro has helped maintain prices under control since 2007 when the value of both the CRB and Crude Oil reached all time record highs; in fact, these high prices were balanced out by the euro reaching record highs. Since 2007, the appreciation of the euro has helped offset the rise in commodity prices, especially oil. Therefore, the euro has so far helped maintain prices and inflation under control.

The third section—the Euro and Money Market Indexes—specifically presents a detailed analysis of the euro money markets, which are influenced by the ECB setting interest rates to control prices and inflation. This section presents the relationship between the euro and the EURIBOR, compared with the behavior of the U.S. Dollar Index, the U.S. T-Note, and the LIBOR. The statistic results demonstrate that the LIBOR and the U.S. T-Note money market cycle moved in unison until the euro was introduced. With the introduction of the euro, the LIBOR, particularly for the past year, has been converging with the EURIBOR. This proves that the euro has also acted as a stabilizer for the money market. The fourth section in chapter six—the Euro and the Labor Market—examines the evolution of the labor market since the introduction of the euro. The result is that the euro has stabilized the labor market by reducing the unemployment rate. However, a comparative study with the unemployment rate in the U.S. helps conclude that the unemployment rate in the Eurozone cannot be considered a leading indicator. This section shows how, in the case of United States, the unemployment rate, the money market rates, industrial production, and the consumer price indexes are closely
correlated. However, these economic indicators have not yet achieved such coherence in the Eurozone. Nonetheless, the last section of chapter six—Phillip’s Curve and Okun’s Law: a Modern Approach—shows that both, the Phillip’s curve and the Okun’s law, are still valid explanatory theories in the Eurozone. This section presents three innovative and custom made indexes. First, the Harmonized €Phillip’s Curve demonstrates that there is a positive correlation between consumer prices and unemployment in the Eurozone. Second, the Harmonized €Okun’s Law shows that unemployment decreases as real GDP is increases. Finally, the Inflation Money Supply Index demonstrates that as unemployment has been decreasing in the Eurozone, the amount of money in circulation has been increasing.

Limitations of the Study

As in most scholarly works, this study has its own specific limitations. One such limitation concerns the quality and variety of the economic and monetary time series available to study the economy of the Eurozone and its Member States.

The quality of the data found was at times weak for two reasons. First of all, the Eurozone was formally created on January 1, 1999; hence, most time series just cover the Eurozone from 1995. This means that most economic and monetary time series just provide fourteen years of information. The length of these series is in some cases not enough to apply a variety of relevant statistical methods which require a larger number of periods in order to eliminate “statistical noise.” As an example, Figure 6.44 compared the unemployment rate in both the United States and the Eurozone using a 30 period covariance. The result was that the covariance, although robust, was limited. This
limitation also applies to the times series such as the amount of money in circulation (M1), EURIBOR 3-months, Euroarea Industrial Production, and Gross Domestic Product, among others. Further, in some specific cases, information was lacking because some Eurozone Member States have not provided it. This is the case found when analyzing, in chapter five, public expenditure in active and passive measures. Figures 5.2 and 5.4 show that the Organization for Economic Co-operation and Development (OECD) not only stopped reporting this information in 2006, but also that some countries have not been properly reporting the information at all. This particular information would have been useful to properly conclude whether governments are helpful in improving their labor markets.

There is, moreover, a very limited variety of time series available to study economic, monetary, fiscal, and social issues in the Eurozone. This study has, in fact, been limited at times by the difficulty in comparing a number of time series that would have helped infer a stronger conclusion. For instance, the actual economic situation has been propelled by the demise of the construction sector measured by a dramatic drop in the number of houses sold in the U.S. While in the United States, the Census Bureau keeps accurate information of a number of relevant indexes related to this market such as Building Permits by Region, State, and Metro Areas, Housing in Construction, Construction Put in Place, Housing Vacancies and Homeownership, there is nothing of this sort published yet for the Eurozone. Had some of these indexes been available for the Eurozone, they would have warned of the situation that has unfolded in certain countries which have been greatly affected by the demise of their construction markets. For instance, Figure 6.52 graphs the number of houses sold in the United States since 1963,
which is considered a leading economic indicator that provides important information about business cycle in the United States.

This study has therefore been limited by the availability of the data and not by the tools necessary to analyze and interpret the data. In fact, the value-added of this work rests on the use of sophisticated computer programs used to transform the numerical data and to apply innovative statistical methods to infer conclusions. This study has demonstrated that the use of optimized statistics methods, such as the Optimized Exponential Moving Average used to study in Figure 6.39 can be of great help to ‘predict’ the trend of some time series. Although, this optimized statistical method has helped find repetitive patterns in this particular time series, there is no guarantee that these repetitive patterns could be found in every single one.

In conclusion, had all the data necessary have been available for the Eurozone, stronger statistical conclusions could have been reached on whether the euro has been a monetary, economic, fiscal, and social stabilizer for the Eurozone. Accurate and lengthy time series are a powerfully academic tool that arm any scholar with a competitive advantage to produce significant results. In fact, the superiority and importance of U.S.’s reports is based on the strength and accuracy of the data used. The United States has a structured system of well-defined time series organized by leading, coincident, and lagging economic indicators. Researchers using these tools are able, without a doubt, to come up with powerful conclusions about the state of the U.S. economy and even elaborate on its future. The Eurozone that is ‘under construction’ must understand the importance of having an organized and reliable set of harmonized data in order to facilitate robust and accurate research.
Recommendations for Future Research

There are three recommendations for future research. The first recommendation has to do with the economic situation that has recently developed. The Eurozone has entered a new period characterized by an economic recession. This is a worldwide phenomenon that due to globalization is affecting every country and every economic sector. Actions and measures taken by Member States to help countries through these tough times will have an impact on the euro and on the stability of both the Eurozone and the EU. Therefore, analyzing how Member States are complying with the requirements imposed by the Maastricht Treaty and how the EU deals with the non-compliers will seal the fate of both the EU and Eurozone. Further, the actual situation will also help evaluate if the requirements imposed are too rigid or if this rigidity was a necessary tool to safeguard the Union.

The second recommendation has to do with improving economic time series for Member States. It would help future research if the current time series were completed with accurate data. Moreover, it would help if the limited set of indexes was expanded and harmonized with data and time series available in different countries. Finally, both the actual and the future economic series should be grouped into leading, coincident, and lagging time series as a way to provide more information regarding changes in the European economic business cycle. The advantages of implementing these recommendations are twofold. On the one hand, both the quality and quantity of research will grow exponentially; on the other hand, the scholars and experts on the Eurozone and EU will gain research competitiveness.
Finally, this study opens a new window of opportunity to incorporate not only innovative statistical tools, but also sophisticated and avant-garde computer programs to proved accurate and trustworthy statistical results to the study of economic indexes and time series.

Final Thoughts

The EU and the Eurozone are under construction and much is still to be done. The introduction of the euro in 1999 has meant that a number of countries with disperse economic, monetary, fiscal, political, and social backgrounds have made a number of sacrifices and compromises to adopt the common currency. The adoption of the euro has been, therefore, a tough economic, monetary, fiscal, political, and social learning process for some countries.

This dissertation has proved that the euro has helped Member States in many different ways and that overall, the euro has been so far a monetary, economic, fiscal, political and social stabilizer for all the Eurozone Member States. In fact, this study has proved that every single Member State that has joined the Eurozone has improved its economic, monetary, fiscal, political, and social schemes.

The euro was introduced, nonetheless, at the very beginning of the expansionary phase of the business cycle. The National Bureau of Economic Research (NBER) announced (2001, 1) that “the Business Cycle Dating Committee of the National Bureau of Economic Research … determined that a trough in business activity occurred in the U.S. economy in November 2001. The trough marks the end of the recession that began
in March 2001 and the beginning of an expansion. This expansionary phase has lasted until December 1, 2007, when the NBER announced that the economy of the United States had reached a peak in economic activity and that the beginning of the recession was imminent. The current U.S. recession is having an impact worldwide.

During these years of prosperous economic activity the requirements set to maintain the EMU and the euro have been reasonably respected by most Member States; in turn, the euro has functioned adequately and has conveyed to the rest of the world an image of stability, success, and integration. Consequently, most of the countries that joined the EU in 2004 and 2007 are working towards meeting the Convergence criteria and adopt the euro. Further, other countries in Africa and in South America are looking at the euro and the Eurozone as the role model to follow in order to achieve economic, monetary, fiscal, and social stability.

However, the euro has turned ten and, as a child who has grown to adulthood, is being put to the test as a brutal recession is unfolding worldwide and affecting the EU and the Eurozone. When the euro was first introduced, Milton Friedman, the late Nobel laureate, predicted that the euro would not survive a recession. A limited group of scholars and experts, the Eurosceptics, is claiming that the euro will not be able to survive the current economic crisis.

Needless to say, this current financial crisis and recession have frightened consumers and businesses, and the usual recovery tools used by government, mainly monetary and fiscal stimuli, may be not only ineffective but also counterproductive under the

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circumstances. Recently, countries such as Spain, Italy, Greece, Portugal, and Ireland (the PIG countries) have been reporting that the “one-size-fits-all” monetary and economic requirements imposed by the single currency are asphyxiating their economies. However, these countries are the same countries that this study has demonstrated have neither followed nor kept up with the requirements necessary to maintain a stable economy. These countries are now in trouble and are unfairly jeopardizing the entire system. In fact, Desmond Lachman\textsuperscript{106} (2008, 1) explained that

in 1998, when the euro was launched, Milton Friedman famously warned that the euro would be truly tested by the first major global economic recession. He issued this warning in the belief that, lacking labor and product market flexibility, Europe was not an optimum currency area in the sense that was the case of the U.S. economy.

This situation has been raising a number of questions lately. First of all, although joining the Eurozone has been a highly regarded goal, it seems that the cost of participating has increased over the last six months and it has discouraged some countries from joining the Eurozone. Countries outside the Eurozone are appreciating the fact that they are free to implement whatever monetary and fiscal policies they see better fit their countries’ situation. Further, increasing the number of participants in the euro club will increase the divergence of economic experiences and put more pressure in an already stretched situation.

There is a bigger concern, the possible breakup of the Euroarea. The Eurozone might breakup for a number of reasons. First, if some Member States identify that, given the current difficulties, they could be better off if they were outside the Eurozone. This

voluntary exit could be an option that might be contemplated by Germany whose economy has been outperforming the economies of the rest of the Member States. This would mean that the Eurozone has not been an “optimal currency area” implying that there is an economic cost associated with belonging to the Eurozone. However, this option is unlikely because a voluntary exit will have such a high economic and political cost for those countries leaving the union that the cost of staying within the monetary union will remain small in comparison. Further, it is highly unlikely that the country that leaves the euro can remain a fully functioning member of the EU since the act of leaving will be considered a unilateral breach of the Treaty of Maastricht.

Secondly, there is also the unlikely option that certain countries, whose economic, monetary, fiscal, and social situation are jeopardizing the unity and proper functioning of the Euroarea, be ‘invited’ to leave the club for the sake of saving the Eurozone. This option seems to be adequate for countries such as Greece, Spain, Italy, and Portugal whose economies are suffering a major downturn as the global recession deepens. This exit will not be a severe rupture and might imply some negotiation agreement between the seceding states and the rest of the European Union.

Despite the current economic situations, the introduction of the euro has demonstrated that Member States have adequate monetary, economic, fiscal, political, and social maturity to make the necessary efforts to meet the requirements to adopt the euro. Nonetheless, the current economic downturn is hinting that some adjustments to the institution are necessary and as Romani Prodi (2001, 12) declared “[he is] sure the euro will oblige us to introduce a new set of economic policy instruments. It is politically
impossible to propose this now. But some day there will be a crisis and new instruments
will be created.”\textsuperscript{107}

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