12-2015

Analysis of the Euro and the European Monetary System and Its Effect on Greece in the Light of the European Financial Crisis

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Abstract of Thesis

ANALYSIS OF THE EURO AND THE EUROPEAN MONETARY SYSTEM AND ITS EFFECT ON GREECE IN THE LIGHT OF THE EUROPEAN FINANCIAL CRISIS

The ability to issue money used for transactions is a power usually reserved by a country's central government, and it is often seen as a part of a nation's sovereignty. A monetary union entails multiple countries ceding control over the supply of money to a common authority. The euro was introduced sixteen years ago and has since functioned well, with the European Central Bank keeping inflation low. However, the current Eurozone crisis provides a severe test of the euro's ability to survive. The Eurozone crisis is plagued by fiscal crises, which have taken their biggest toll on Greece. A competitiveness crises, which is evident in the large current account deficits along the Eurozone's periphery, and the even larger current account imbalances between Eurozone countries, and a banking crisis, which first unfolded in Ireland, has now spread in the euro area. This thesis asks one main question: will the euro survive the Eurozone crisis?

Mohamed Alinur

ACKNOWLEDGEMENTS

I would like to express profound gratitude to my advisor, Professor Ted P. Schmidt whose support, valuable advice and patience helped me throughout this thesis writing process.

I am grateful to my committee members Professor Curtis Haynes Jr. and Professor Joelle Leclaire for their useful suggestions and time.

I am grateful to all Economics Department faculty especially Professor Victor Kasper who has been a mentor and a friend.

I thank my family and friends for supporting me throughout all my studies at SUNY Buffalo State.

State University of New York

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Department of Economics and Finance

ANALYSIS OF THE EURO AND THE EUROPEAN MONETARY SYSTEM AND ITS EFFECT ON GREECE IN THE LIGHT OF THE EUROPEAN FINANCIAL CRISIS

A Thesis in

Economics and Finance

By

Mohamed Alinur

Submitted in Partial Fulfillment

Of the Requirements

For the Degree of

Master of Arts

December 2015

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Chapter 1: Introduction

When economist Robert Mundell theorized about a monetary union, also known as currency union or common currency area, in the twentieth century, most people did not pay much attention; however, recently many European countries established a monetary union with a common currency called the euro. A monetary union is in many ways similar to a fixed-exchange-rate regime, whereby countries retain distinct national currencies but agree to adjust the relative supply of these to maintain a desired rate of exchange. A monetary union is an extreme form of a fixed-exchange-rate regime, with at least two distinctions. The first is distinguished by countries switching to a new currency, the cost of abandoning the new system is much higher than for a typical fixed-exchange-rate regime, giving people more confidence that the system will last.

Secondly, a monetary union eliminates the transaction costs people incur when they need to exchange currencies in carrying out international transactions. Fixed-exchange-rate regimes have been quite common. For instance, most advanced countries participated in the Bretton Woods System, a regime from the 1940s until 1973; numerous European nations had one too until the creation of the monetary union; and many small or poor countries like Bhutan, and Botswana for example, continue to peg their exchange rates to the currencies of major trading partners.[1]

Before the current European Monetary Union, monetary unions were not that common in the world. From 1865 until World War I, all four members of the Latin Monetary Union—

[1] Barry Eichengreen, "European Monetary Unification," *Journal of Economic Literature* (1993): 1321-57, accessed May 26, 2015, http://www.jstor.org/stable/pdf/2728243.pdf.

France, Belgium, Italy, and Switzerland—allowed coins to circulate throughout the union. Luxembourg shared a currency with its larger neighbor Belgium from 1992 until the formation of the broader European Monetary Union in 1972. In addition, many former colonies such as the Franc zone in western African countries like (Benin and Burkina-Faso), and small poor countries (Ecuador and Panama) adopted the currency of a large, wealthier trading partner. The formation of the European Monetary Union by a group of large and wealthy countries is an unprecedented experiment in international monetary arrangements.

The creation of the European Monetary Union had political and economic motives. The economic motive was based on Mundell's Optimum Currency Area Theory, while politically the Europeans wanted to integrate Europe. However, once the European Monetary Union was created critics mentioned that the euro would not be able to survive.

In this thesis we begin with a discussion on the theory behind the creation of a monetary union and the benefits of having a common currency. In chapter three we give a brief history of the European monetary system, then in chapter four we analyze the euro and the European financial crisis, with a special emphasis on the case of Greece. We also try to answer the following important questions: Will the euro survive the Eurozone Crisis? Was Greece ready to join the union when it did? If the Maastricht treaty was supposed to stabilize the member countries, why didn't it help Greece? What policies must be put forward in order to restore stability and help Greece?

Chapter 2: Is the Eurozone an Optimum Currency Area?

Introduction

In this chapter the developments of the European Monetary Union will be discussed and the chapter will be concluded by evaluating whether or not the European Monetary Union meets the requirements of being an OCA. Mundell published his article in 1961, "A Theory of Optimum Currency Areas" and he asks a very important question: under what circumstances would it be acceptable for various regions of the world to adopt a common currency?[2] To answer this, Mundell gave an example of North America. This question is interesting because Mundell talked about a new global monetary map based on a regional, rather than a national viewpoint. Hence, a region like Germany could join with a region like France to create their own currency and abandon the mark and the franc.

In what circumstances could it be of benefit for Western Canada and the Western United States to join together to create a Western currency, or for the Eastern parts of the two countries to create a currency peculiar to the East of the continent? The relationship between these two new currencies, which would replace the Canadian dollar and the United States dollar, would be governed by a floating exchange rate.[3]

To answer this question, Mundell developed a cost-benefit analysis of the monetary union. The benefits of adopting a common currency include:

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[2] Robert Mundell, "A Theory of Optimal Currency Areas," The American Economic Review, no. 4 (1961): 657-65, accessed July 8, 2015, http://www.jstor.org/stable/1812792?seq=1#page_scan_tab_contents.
[3] Ibid., p. 659

1. A reduction of the transaction costs generated by the existence of various currencies and a gain in the liquidity of the currency, attributable mainly to the expansion of its area of transactions, from which all financial markets would also benefit.[4]

2. A single currency should end currency instability in the participating countries (by irrevocably fixing exchange rates) and reduce it outside of them. Because the euro would have the enhanced credibility of being used in a large currency zone, it would be more stable against speculation than individual currencies are now. An end to internal currency instability and a reduction of external currency instability would enable exporters to project future markets with greater certainty, and this will unleash a greater potential for growth.[5]

3. Consumers would not have to change money when travelling and would encounter less red tape when transferring large sums of money across borders. It was estimated by the European commission that a traveler visiting all twelve member states of the former EC would lose 40% of the value of his money in transaction charges alone. If a family made a large purchase or transaction across a European border, such as buying a holiday home or a piece of furniture, a single currency would help that transaction pass smoothly.[6]

4. Businesses would no longer have to pay hedging costs, in order to insure themselves against the threat of currency fluctuations. Businesses, involved in commercial transactions in different member states, would no longer have to face administrative costs of accounting for the changes of currencies, plus the time involved. It is estimated that the currency cost of

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[4] Special Report," *BBC news*, November 21 1997, accessed April 11, 2015, http://news.bbc.co.uk/2/hi/special_report/single_currency/25081.stm.
[5] Ibid.,1
[6] Ibid., 1

exports to small companies is 10 times the cost to the multi-nationals, who offset sales against purchases and can command the best rates.[7]

5. A single currency should result in lower interest rates as all European countries would be locking into German monetary credibility. The stability pact would force EU countries into a system of fiscal responsibility which will enhance the euro's international credibility. This should lead to more investment, more jobs and lower mortgage rates.[8]

The disadvantages associated with having a common currency would come from the elimination of the exchange rate between participants in the union:

1. It would no longer be possible to let the exchange rate absorb shocks asymmetrically affecting the various regions of a monetary union.[9]

To understand how the asymmetrical shock works and the role of the exchange rate, Mundell gives an example of Western Canada producing forestry products, and the East automobiles.[10] He imagines a change in consumer tastes that pushes up the demand for automobiles and compresses that for forestry products. This shock is asymmetrical to the extent that it creates a surplus demand for products from the East and a surplus supply of products from the West. The price of automobiles will tend to increase, leading to a general rise in prices in the East; conversely, prices will tend to decline in the West, as a result of a fall in the price of forestry products. The terms of trade between the West and the East deteriorates. In this example, if the two regions use the same currency, the Canadian dollar, the Canadian central

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[7] Ibid.,
[8] Ibid.,
[9] Robert Mundell, "A Theory of Optimal Currency Areas," The American Economic Review, no. 4 (1961): 664, accessed July 8, 2015, http://www.jstor.org/stable/1812792?seq=1#page_scan_tab_contents.

bank will be faced with a dilemma: should it combat the unemployment arising in the West or the inflation threatening the East? This dilemma can be resolved through mobility of the factors of production, and the labor factor in particular. If capital and labor shift from the industries that have suffered from a decline in demand toward those enjoying surplus demand, from the West toward the East in our example, balance can be restored in the stability of prices and employment.[11]

Where there is no mobility in the factors of production, asymmetrical shocks could be absorbed by a change in the exchange rate, but for that to occur, the affected regions must each have their own currency. In the previous example, if there were a central bank in the West, it could lower its interest rates to combat unemployment, while the central bank in the East could raise its interest rates to combat inflation. The Western currency would depreciate against that of the East, and balance would be restored at a lower adjustment cost than if the two regions had a common currency.

2. Unlike the U.S., where the labor market is mobile and there is a common language, the Eurozone includes fifteen separate countries with widely different economic performances and different languages. Without true integration among the member-states it can lead to depressed areas in which people cannot find work and areas where the economy flourishes.

3. If governments were obliged through a stability pact, to keep the Maastricht criteria no matter what their economic circumstances dictate, some countries may find that they are unable to deal with recession by losing their fiscal stance. For instance, they would be unable to

[11] Ibid., 665

devalue to boost exports, to spend more to boost job creation, or cut taxes when they see fit because of the public deficit criterion.

4. Loss of national sovereignty is another big disadvantage. The transfer of money and fiscal competencies from national to European levels would mean economically strong and stable countries would have to cooperate in the field of economic policy with other weaker countries which are more tolerant to higher inflation.[12]

In the next section of this chapter we discuss the developments of the European Monetary Union and we conclude the chapter by evaluating whether or not the European Monetary Union meets the requirements of being an OCA.

The Creation of the Monetary Union, The European Case.

Considering the fact that no pan-European currency has been in circulation since the fall of the Roman Empire, the advent of the euro in January 1999 indeed qualifies as an epochal event. The Roman emperor Gaius Diocletianus, A.D. 286-301, reformed the coinage and established a single currency throughout the realm. The advent of the euro also marks the first time that sovereign countries voluntarily have given up their monetary independence to foster economic integration. The euro thus represents a historically unprecedented experiment, the outcome of which will have far-reaching implications. If the euro survives the Eurozone crisis then it will, along with the dollar, dominate the world of international finance. In addition, a successful euro may give a powerful impetus to the political unionization of Europe.[13]

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[12] Special Report," *BBC news*, November 21 1997, accessed April 11, 2015, http://news.bbc.co.uk/2/hi/special_report/single_currency/25081.stm.

[13] Cheol Eun and Bruce Resnick, *International Financial Management*, 6th ed. (New York: The McGraw-Hill, 2012), 42-49

According to Eun and Resnick (2012), the euro should be viewed as a product of historical evolution toward an ever-deepening integration of Europe which began with the formation of the European Economic Community in 1958. The European Monetary System (EMS) was created in 1979 to establish a European zone of monetary stability as members were required to restrict fluctuations of their currencies. In 1991, the Maastricht European council reached agreement on a draft treaty on the European Union, which called for the introduction of a single European currency by 1999. With the launching of the euro on January 1, 1999, the European Monetary Union (EMU) was created. The EMU is a logical extension of the EMS and the European Currency Unit was the precursor of the euro. Indeed, ECU contracts were required by EU law to be converted to euro contracts on a one-to-one basis.[14] This will be discussed in more detail in the next chapter when we cover the background of the monetary unification.[15]

The development of monetary union in Europe was a gradual political process. Monetary union was a goal as early as 1969 when the Werner Report was published. It was however, only in 1989 that steps were put forward to achieve this by the Delors Commission. The euro is today used by seventeen member states of the European Union. To find out how the euro became this popular we will have to discuss the history of its formation.

Background of Monetary Unification

Barry Eichengreen, in his article *European Monetary unification*, gives a good narrative of how the euro was formed. The origins of the current movement for European monetary unification extend back at least to the founding of the Organization for European Economic Cooperation (OEEC) which subsequently became the Organization for Economic Cooperation

[14] Cheol Eun and Bruce Resnick, *International Financial Management*, 6th ed. (New York: The McGraw-Hill, 2012), 42-49

and Development, or OECD, in 1948. One of the OEEC's first accomplishments was the European Payments Union (established in 1950), in which the countries of Western Europe pooled their international reserves and coordinated their policies with the goal of reestablishing current account convertibility.[16]

The European Payments Union was established at the end of 1958. In 1962 the Commission of the European Communities drafted its first plan for monetary union, which included a deadline for completion within nine years. This plan, in retrospect, was overly ambitious for an association of nations whose only collective achievements had been the European Coal and Steel Community, an atomic energy community (EURATOM), a customs union (the European Economic Community), and the Common Agricultural Policy of farm-product subsidization. The sole accomplishment of the 1962 initiative was a Committee of Central Bank Governors (set up in 1964), which did not develop an operational role until the 1970s.[17]

So long as the Bretton Woods System persisted, pressure for exchange rate stabilization was minimal, because intra-European exchange rates were indirectly pegged by their parity commitments to the U. S. dollar, but once Bretton Woods began to unravel, the pressure intensified. At the Hague Summit in 1969, European governments appointed a committee chaired by Pierre Werner, then Prime Minister of Luxembourg, to draw up a new plan. The Werner Report, completed in 1970, called for monetary union within ten years. It sketched out a transition to take place in stages.[18]

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[16] Barry Eichengreen, "European Monetary Unification," *Journal of Economic Literature* (1993): 1321-57, accessed May 26, 2015, http://www.jstor.org/stable/pdf/2728243.pdf.
[17] Ibid., 1323
[18] Ibid.,1323

In the first stage, exchange rate fluctuations would be limited and governments would begin to coordinate their monetary and fiscal policies. **In the second stage**, exchange rate variability and price divergences would be further reduced. **In the third stage**, exchange rates would be irrevocably fixed, capital controls would be removed, and an EC system of central banks, modeled loosely on the U. S. Federal Reserve System, would assume control of the monetary policies of the member countries. The size of the EC budget would be increased dramatically, and the Community would coordinate national tax and expenditure program.[19] The authors of the Werner Report preferred single currency to fixed exchange rates between national currencies, but they suggested that both alternatives were viable and their benefits broadly comparable.

The Delors Report

In June 1998, the European Council meeting in Hanover, Germany, chaired by the president of the European commission, Jacques Delors, set up a committee to study the feasibility of supplementing the single market with a monetary union. The report, which came to be known as Delors Report, submitted in April 1989, indicated that monetary union would be achieved in three stages, moving toward economic and monetary coordination to a single currency with an independent European central bank and rules to govern the size and financing of national budget deficits. [20]

The Delors Report provided the framework for intergovernmental negotiations in 1991. Many of its conclusions found their way into the Maastricht Treaty. Nothing is more revealing of continuity and change in discussions of European monetary unification than the similarities and

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[19] Barry Eichengreen, "European Monetary Unification," *Journal of Economic Literature* (1993): 1321-57, accessed May 26, 2015, http://www.jstor.org/stable/pdf/2728243.pdf.
[20] Ibid., 1324

differences between the Werner and Delors Reports. The Delors Report, like its predecessor, sought to achieve monetary union in less than a decade. Both documents recommended proceeding gradually, The Delors Report described a transition in three stages. Like the Werner Report, the Delors Report emphasized the need for fiscal harmonization.[21]

But there were differences between the Werner and Delors Report. For instance, there was greater attention paid in the latter to mechanism design. The clearest illustration is the Delors Report's insistence on the early introduction of a single currency to insure "the irreversibility of the move to monetary union."[22]

The Maastricht Treaty

In December 1989, following the appearance of the Delors Report, the governments of the EC member states convened an Intergovernmental Conference to prepare amendments to the Treaty of Rome (the basic law of the European Community). The Conference commenced work in December 1990, one year later, producing draft amendments in the form of a treaty. Following the Delors Report, the Maastricht Treaty described a monetary union to be achieved in three stages. But where the Delors Report depicted the transitional stages in rather schematic terms, the Maastricht Treaty was specific about their features.

Stage one: was to be marked by the removal of capital controls, the reduction of international inflation and interest rate differentials, and the increasing stability of intra-European exchange rates. Member countries must strengthen the independence of their central banks and otherwise bring domestic laws into conformance with the treaty. The inauguration of

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[21]Barry Eichengreen, "European Monetary Unification," *Journal of Economic Literature* (1993): 1321-57, accessed May 26, 2015, http://www.jstor.org/stable/pdf/2728243.pdf.
[22] Ibid., 1325

this stage in July 1990 was marked by the removal of Europe's most important capital controls. Less progress was made, however, in achieving convergence of inflation and interest rates and their underlying determinants, and a foreign exchange market crisis in September 1992 led to exchange rate changes not anticipated by policy makers and to the re-imposition of some capital controls.[23]

Stage two, started at the beginning of 1994. It was to be characterized by the further convergence of national economic policies and by the creation of a temporary entity, the European Monetary Institute (EMI), to coordinate member country monetary policies in the final phases of the transition and to plan the move to monetary union. If during Stage 2 the Council of Ministers, made up of ministers of economics or finance from each national government, decided (by qualified majority, where each country's vote is weighted by its size) that a majority of member countries meet the preconditions for monetary union, which are detailed in the Maastricht Treaty, it may recommend that the Council of Heads of State vote (by qualified majority) on whether to inaugurate stage three. [24]

To prevent the indefinite continuation of Stage two, the treaty required the EC Heads of State or Government to meet no later than December 31st, 1996 to assess whether a majority of EC member countries satisfy the conditions for monetary union and to decide whether to set a date for the beginning of Stage three. If no date has been set by the end of 1997, Stage three will begin on January 1st, 1999.[25]

Stage three. Upon the inauguration of stage three, exchange rates would be irrevocably fixed. The EMI would be succeeded by the European Central Bank, which would assume control

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[23] Ibid., 1326
[24] Ibid.,1326
[25] Ibid.,1326

of the monetary policies of the participating countries. The Council of Ministers will decide when to replace their national currencies with the single European currency. It would do so on the first day of Stage three. If it chose otherwise, the ECB would simply instruct its operating arms, the national central banks, to convert their national currencies into one another at par until these were replaced by the single currency[26]

A Brief History of the Euro

The euro was launched in 1999. It was first introduced as the currency for electronic payments--including debit and credit cards, loans, and for accounting purposes. During this initial phase old currencies were used for cash only. The second phase was launched in 2002, when euro coins and bank notes appeared in physical form. It is important to note that each country has its own distinct form of the euro coin. The following table summarizes the major political decisions from 1989 to 2002 that led to the creation of the euro.[27]

[26] Barry Eichengreen, "European Monetary Unification," *Journal of Economic Literature* (1993): 1321-57, accessed May 26, 2015, http://www.jstor.org/stable/pdf/2728243.pdf.
[27] Lars Jonung and Eorn Drea, "It Can't Happen, It's a Bad Idea, It Won't Last: U.S. Economists on the Emu and the Euro, 1989-2002," A *Journal of the American Institute of Economic Research* , no. 1 (2010): 4-52, econjwatch.org/file download/403/jonungdreajanuary2010.pdf.

Table 2.1 Chronology of the European Union

February 1986 : Signing of the single European Act, advancing Economic and political integration within the European Community
April 1989: The Delors Report calls for Economic and Monetary Union (EMU) LEADING TO A SINGLE European currency through three stages.
June 1989: The Madrid Summit of the European council agrees that Stage one of EMU will start July 1, 1990. Stage 1 includes completing the internal market and removing all obstacles to financial integration.
October 1990: The Rome Summit of the European council agrees that stage two of EMU will begin January 1,1994
December 1990: The Dublin Summit of the European council marks the beginning of intergovernmental conferences on EMU and political union.
February 1992: Signing of the Maastricht treaty to establish the European Union, the successor of the European Community.
June 1992: Danish voters narrowly reject the Maastricht treaty
September 1992: Currency crises force Britain and Italy to abandon the Exchange Rate Mechanism
July 1993: Member states agree to widen the “narrow” band in the ERM from 2.25% TO 15% around the central rates.
January 1994: Stage two of the EMU starts.
May 1995: The European Commission adopts a green paper “ on the practical arrangements for the introduction of a single currency (a green paper is a document intended to stimulate discussion and start a process of consultation)
December 1995: The euro is officially adopted as the name of the new single currency
May 1998: Special meeting of the European council decides that eleven member states satisfy the conditions of adopting a common currency.
June 1998: The European Central Bank and the Eurosystem are set up
January 1999: Stage three of the EMU begins and the euro begins to trade on financial markets
January 2001: Greece adopts the Euro
January 2002: Euro notes and coins enter in to circulation in all participating member states.

Source: Lars and Drea (2010).

As the euro was introduced, each national currency of the 11 euro countries was irrevocably fixed to the euro at a conversion rate as of January 1 1999. The conversion rates are shown in Table 2.2.

Table 2.2. Euro conversion rates

Austrian schilling	13,7603
Belgian Franc	40,3399
Dutch guilder	2.20371
Finish markka	5.94573
French franc	6.55957
German mark	1.95583
Irish punt	0.78756
Italian lira	1936.27
Luxembourg franc	40.3399
Portuguese escudo	200.482
Spanish peseta	166.386
U.S. dollar	1.2519
Japanese yen	109.65
British pound	0.8245

Source: Eun Cheol S., and Bruce G. Resnick. (2012)

On January 1, 2002, euro notes and coins were introduced to circulation while national bills and coins were being gradually withdrawn. Once the changeover was completed by July 1, 2002, the legal tender status of national currencies was canceled, leaving the euro as the sole legal tender in the Eurozone countries. Monetary policies of the Eurozone countries are now conducted by the European Central Bank (ECB) headquartered in Frankfurt, Germany and whose primary objective was to maintain price stability. The independence of the ECB is legally

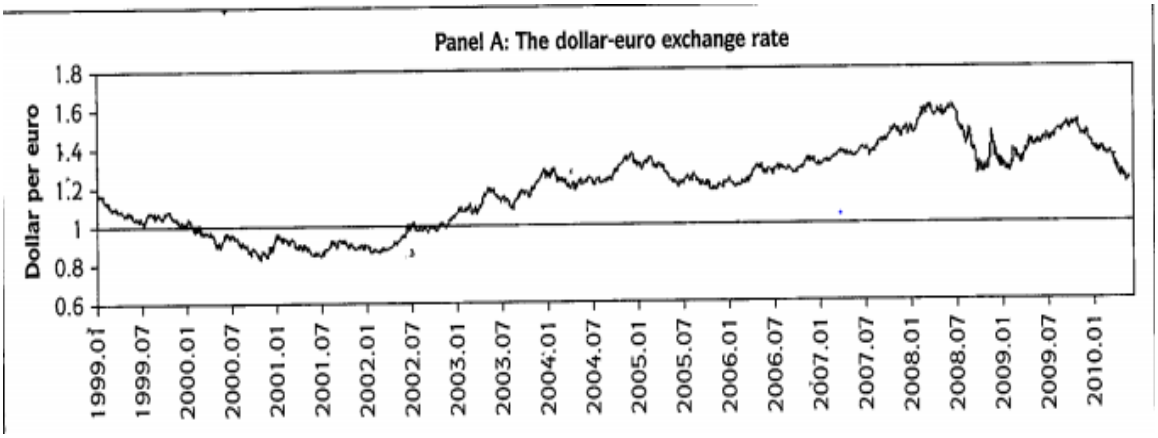
guaranteed so that in conducting its monetary policy, it will cannot be unduly subjected to political pressure from any member countries or institutions.[28]

It is important to note that the national central banks of the Eurozone countries will not disappear. They form the *Eurosystem* together with the European Central Bank which is in a way similar to the Federal Reserve System of the United States. The first function of the Eurosystem is to, define and implement the common monetary policy of the union. Second, it's to conduct foreign exchange operations and finally, to hold and manage the official reserve of the euro member states.[29]

In addition, Governors of national central banks will sit on the Governing Council of the ECB. Although national central banks will have to follow the policies of the ECB, they will continue to perform important functions in their jurisdictions, such as collecting resources and managing payment systems. [30] Figure 2.1 below shows the behavior of exchange rate between the dollar and the euro since the euro's inception.

[28] Lars Jonung and Eorn Drea, "It Can't Happen, It's a Bad Idea, It Won't Last: U.S. Economists on the Emu and the Euro, 1989-2002," A *Journal of the American Institute of Economic Research* , no. 1 (2010): 4-52, econjwatch.org/file download/403/jonungdreajanuary2010.pdf
[29] Ibid.,46
[30] Ibid.,46

Fig 2.1: The daily dollar-Euro exchange rate since the Euros inception



Source: Eun Cheol S., and Bruce G. Resnick (2012)

From the table above we can see panel A plots the daily dollar- euro exchange rate since the inception of the euro. As can be seen from panel A, since its introduction at $1.18 per euro in January 1999, the euro was steadily depreciating against the dollar, reaching a low point of $0.83 per euro in October 2000. The depreciation of the euro during this period reflected the robust performance of the U.S. economy and massive European investments in the United States. From the start of 2002 however, the euro began to appreciate against the dollar, reaching a rough parity by July 2002. This, in turn, reflected a slowdown of the U.S. economy and lessening European investments in the United States.[31]

The euro continued to strengthen against the dollar, reaching $1.60 per euro in July 2008 before it started to fall as the global financial crisis spread. During a crisis period, the dollar

[31] Cheol Eun and Bruce Resnick, *International Financial Management*, 6th ed. (New York: The McGraw-Hill, 2012), 42-49

tends to become stronger reflecting investors preference for the dollar as safe haven. Although the euro began to rebound in early 2009, it started to fall against the dollar as Europe's sovereign debt crisis hurt the euro's credibility.[32]

As the issue of the Euro crisis is very recent, there has been an ongoing debate, and articles have been written, trying to explain how the crisis could have happened that quick, noting the fact that the euro is only sixteen years old.

Did the Eurozone Meet the Criteria For OCA?

According to Robert Mundell, an optimal currency area is a geographic area in which a single currency would create the greatest economic benefit. To analyze if the Eurozone an optimal currency area this thesis will look at each of the requirements that Mundell outlines and use them in analyzing the Eurozone. This thesis will then use this information to determine if the Eurozone meets the criteria for an OCA.

Capital and Labor Mobility- According to the theory of optimal currency areas, the relevant criterion for identifying and designing a common currency zone is the degree of factor (i.e. capital and labor) mobility within the zone; a high degree of factor mobility would provide an adjustment mechanism providing an alternative to country specific monetary/currency adjustments. Considering the high degree of capital and labor mobility in the U.S., one might argue that the United States is an OCA; it would be suboptimal for each of the fifty states to issue its own currency.[33]

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[32] Cheol Eun and Bruce Resnick, *International Financial Management*, 6th ed. (New York: The McGraw-Hill, 2012), 42-49

[33] Ibid., p. 48

If we compare the high degree of U.S. capital and labor mobility to that of Europe we find that it is the opposite, with Europe having low labor mobility, the financial capital is mobile but physical capital seems to be less mobile; for instance, "unemployed workers in Helsinki are not very likely to move to Milan or Stuttgart for job opportunities because of cultural, religious, linguistic and other barriers".[34]

Fiscal transfers. Fiscal transfers are necessary in order for a region to become an OCA, the Eurozone does not seem to have a fiscal transfer system like that of the United States there is no large scale method of recycling the taxes raised in those parts of the Eurozone that are doing well in to higher spending for those part of the Eurozone that are doing poorly.[35]

These considerations taken, together suggest that the European monetary union will involve significant economic costs due to the recession. France and Germany often let the budget deficit exceed the 3 % limit. This violation of the stability pact compromises the fiscal discipline necessary for supporting the euro and makes the Eurozone not an OCA.[36]

Is the Eurozone an OCA? Mundell (1961) claimed that the Eurozone is not currently an OCA, but it can be if steps are taken to make labor more mobile and to facilitate supernational employment policies.

> In Western Europe the creation of the Common Market is regarded by many as an important step toward eventual political union, and the subject of a common currency for the six countries has been much discussed. One can cite the well-known position of J. E. Meade who argues that the conditions for a common currency in Western Europe do not exist, and that, especially because of the lack of labor mobility, a system of

[34] Ibid.,48
[35] Ibid.,48
[36] Ibid.,48

> flexible exchange rates would be more effective in promoting balance-of-payments equilibrium and internal stability. The apparently opposite view of Tibor Scitovsky who favors a common currency because he believes that it would induce a greater degree of capital mobility, but further adds that steps must be taken to make labor more mobile and to facilitate supranational employment policies. In terms of the language of this paper Meade favors national currency areas while Scitovsky gives qualified approval to the idea of a single currency area in Western Europe (A Theory of Optimum Currency Area Page 661)

Based on the theory and organization of the Eurozone, we can conclude that it is not an OCA, in the next section we are going to look at data from Eurostat to support the conclusion that it is not an OCA.

We base our reasoning on the following facts. First, the Eurozone has a low degree of capital and labor mobility, because of cultural, religious, linguistic and other barriers. Europeans cannot find employment in a different country if they do not speak the language. Different European countries have different cultures and this makes labor mobility difficult. Second, fiscal transfers are almost nonexistent as the well-off countries like Germany are reluctant to bail poorer countries like Greece because of political reasons**.**

The third reason why the Eurozone cannot be considered an OCA is that the Eurozone member countries are in different phases of the Business cycle**.** In other words, they experience different shocks and growth rates. It is important for all participants in the Eurozone to have similar business cycles so that economic booms are shared and the European Central Bank can fight economic recessions by promoting growth and containing inflation. The following data from Eurostat shows that the sector diversification of some members of the Eurozone are not

homogenous enough to result in similar business cycles. As some countries, like Belgium, rely heavily on retail trade while others, like Greece and Slovenia, rely on industrial production.

Table 2.3: Volume of Retail Trade

	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
EA19						
Total retail trade	3.2	2.5	2.4	1.8	2.7	2.4
Food, drinks, tobacco	2.1	2.1	0.9	0.1	1.5	1.7
Non-food products (except automotive fuel), of which:	4.0	3.1	3.6	3.2	3.8	3.4
Textiles, clothing, footwear	2.4	1.1	3.2	-0.1	3.2	:
Electrical goods and furniture	3.2	3.9	3.2	3.6	2.3	:
Computer equipment, books and other	4.6	5.5	5.6	5.1	6.0	:
Pharmaceutical and medical goods	4.1	3.6	3.8	4.1	3.7	:
Mail orders and internet	8.7	4.8	5.9	7.8	6.0	:
Automotive fuel in specialised stores	2.7	2.7	3.2	0.8	2.6	0.7
EU28						
Total retail trade	3.4	3.2	3.1	2.7	2.9	3.0
Food, drinks, tobacco	2.1	2.4	1.3	1.6	1.0	2.0
Non-food products (except automotive fuel), of which:	4.3	4.0	4.4	4.1	4.5	4.2
Textiles, clothing, footwear	2.4	1.8	3.7	1.1	4.3	:
Electrical goods and furniture	3.1	4.5	3.8	4.7	3.4	:
Computer equipment, books and other	5.3	5.5	5.3	4.5	6.1	:
Pharmaceutical and medical goods	4.9	4.3	4.3	4.8	4.0	:
Mail orders and internet	12.4	11.5	10.7	12.1	10.5	:
Automotive fuel in specialised stores	2.5	3.2	4.3	0.2	2.8	1.3

Total retail trade	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15
EA19	3.2	2.5	2.4	1.8	2.7	2.4
EU28	3.4	3.2	3.1	2.7	2.9	3.0
Belgium	2.8	-0.2	1.5	-1.2	0.8	-1.5
Bulgaria	6.1	4.3	4.2	0.8	0.5	0.8
Czech Republic	4.2	7.2	7.3	4.8	6.0	c
Denmark	0.8	2.3	0.9	3.0	0.6	-2.4
Germany	5.4	4.0	3.0	2.0	3.8	4.2
Estonia	7.8	2.8	5.1	2.6	1.7	5.7
Ireland	5.3	5.0	5.7	6.4	6.9	5.6
Greece	-1.3	0.6	-1.7	1.0	-1.9	c
Spain	6.4	4.0	2.5	3.1	4.0	3.4
France	2.2	2.3	3.3	1.6	3.2	1.9
Croatia	2.1	3.5	1.8	0.9	3.7	c
Italy	0.9	2.4	1.3	1.7	1.9	c
Cyprus	-2.7	5.1	3.9	-0.8	1.5	c
Latvia	3.0	6.9	9.0	6.4	3.6	4.9
Lithuania	6.1	2.6	5.4	5.7	5.3	2.4
Luxembourg	8.0	-13.8	-11.7	-5.0	-9.1	-10.6
Hungary	5.7	8.7	6.5	5.2	5.0	5.2
Malta	4.1	13.1	7.6	12.9	1.8	4.9
Netherlands	1.8	2.5	3.2	2.3	1.9	c
Austria	1.4	2.3	2.2	1.2	1.5	0.8
Poland	3.1	6.8	7.6	9.2	4.7	7.6
Portugal	2.0	3.4	3.1	2.0	3.4	1.8
Romania	6.0	7.3	3.7	-0.7	8.1	4.1
Slovenia	-1.7	0.0	2.7	0.1	-0.5	3.0
Slovakia	3.8	0.0	-0.3	1.4	-0.2	1.8
Finland	-2.9	-1.6	1.4	1.5	-1.3	0.0
Sweden	1.9	4.1	3.7	4.0	3.0	2.8
United Kingdom	4.3	4.9	4.8	5.3	3.2	4.7
Norway	2.5	1.5	1.8	1.6	3.7	-0.4
Switzerland	1.7	-1.1	-2.7	-2.4	1.7	:

Source: Eurostat

Table 2.4: Industrial Production

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15
EA19						
Total industry	0.2	0.5	0.0	1.0	-0.4	0.1
Intermediate goods	0.1	1.1	0.1	0.1	0.0	0.3
Energy	-0.5	1.0	1.4	1.4	-1.9	-1.6
Capital goods	-0.1	1.0	-0.3	0.6	-0.3	0.7
Durable consumer goods	0.8	1.9	-1.9	0.7	-0.6	1.0
Non-durable consumer goods	-0.1	-0.5	-0.6	2.1	0.5	-0.8
EU28						
Total industry	0.2	0.5	-0.1	0.9	-0.1	0.1
Intermediate goods	0.3	0.9	0.3	0.2	0.2	0.0
Energy	-0.7	0.4	1.2	0.6	-0.9	-0.4
Capital goods	0.1	1.3	-0.5	0.7	0.0	0.6
Durable consumer goods	0.8	1.8	-1.5	0.3	-0.3	0.5
Non-durable consumer goods	0.0	-0.3	-0.5	1.5	0.7	-1.2

Total industry	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15
EA19	0.2	0.5	0.0	1.0	-0.4	0.1
EU28	0.2	0.5	-0.1	0.9	-0.1	0.1
Belgium	1.5	-1.7	1.6	-3.4	3.2	:
Bulgaria	0.2	1.0	1.7	-0.7	-1.4	0.2
Czech Republic	1.2	1.1	-0.1	0.9	-0.1	0.8
Denmark	-0.4	1.2	-2.3	0.0	4.4	-1.4
Germany	0.1	1.0	-0.4	0.2	-0.5	0.8
Estonia	1.0	-0.6	-3.0	1.2	-0.6	1.2
Ireland	3.0	-6.9	-0.8	27.9	-9.8	1.3
Greece	0.5	-1.7	0.1	2.9	0.4	-2.3
Spain	-0.2	0.3	0.2	0.7	1.1	-0.1
France	-0.1	1.4	0.4	0.5	0.0	-1.0
Croatia	2.7	-0.2	-4.0	3.4	2.4	-4.1
Italy	0.3	0.6	-0.7	0.6	0.5	-0.3
Cyprus	-1.3	0.7	-0.4	0.4	0.4	:
Latvia	-1.9	0.2	-2.5	1.0	11.2	1.8
Lithuania	-1.0	-2.8	-3.9	6.0	-4.3	3.4
Luxembourg	3.7	3.6	-7.1	3.0	-1.0	:
Hungary	3.3	-1.5	5.1	-0.7	2.5	-0.1
Malta	-2.9	-3.2	6.8	-1.3	-0.1	-3.8
Netherlands	0.7	0.7	2.1	0.6	-4.0	-1.5
Austria	-0.7	2.4	0.6	0.3	-0.8	:
Poland	0.1	2.2	0.3	1.0	0.6	-2.1
Portugal	0.0	-1.8	1.8	-0.9	0.4	2.1
Romania	-0.2	0.1	1.1	0.2	0.2	0.1
Slovenia	-0.6	0.2	1.8	0.0	0.4	0.0
Slovakia	-1.2	1.7	0.0	0.2	1.8	-0.9
Finland	-0.7	-0.4	-1.7	-0.3	-0.4	0.0
Sweden	-0.1	1.3	-2.1	1.3	0.7	2.2
United Kingdom	0.2	-0.1	-0.1	0.2	0.6	0.4
Norway	-2.3	0.3	-2.9	2.6	1.3	-4.9

Source: Eurostat

Another reason why the Eurozone is not an OCA today is because some member countries are violating the Maastricht Treaty. The Maastricht Treaty was responsible for the creation of the Euro and as long as some countries keep on breaking the rules, the Eurozone will

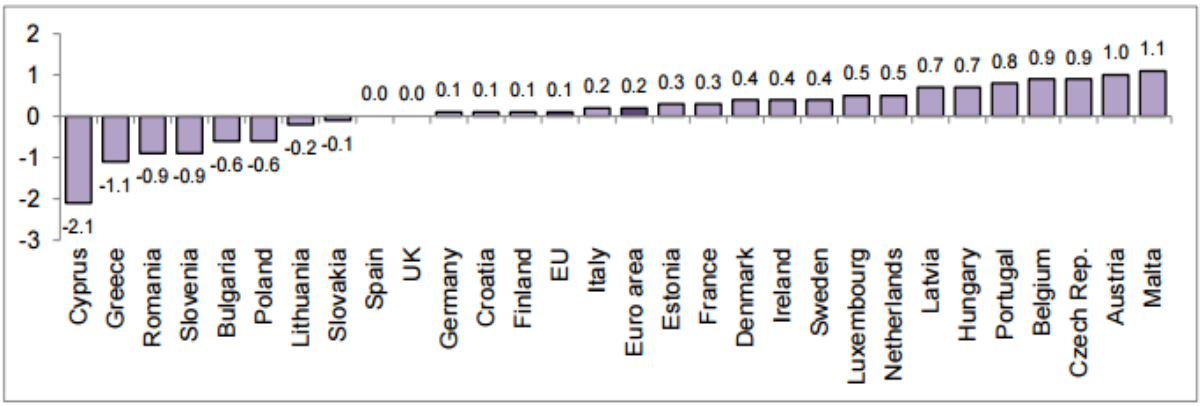
never achieve OCA status. The Maastricht Treaty specified a set of macroeconomic convergence criteria that EU countries would need to satisfy in order to qualify for admission to the EMU and once they are a member, they still need to maintain this. These main economic performance criteria are as follows:

1. The country's inflation rate must be no more than 1.5 % points above the average of the three EU member states with the lowest inflation.
2. The country must have maintained a stable exchange rate within the Exchange Rate Mechanism (ERM) without devaluing on its own initiative.
3. The country must have a public-sector deficit no higher than 3 % of its GDP.
4. The country must have a public debt that is below or approaching a reference level of 60% of its GDP.
5. The country's long-term interest rates must be no higher than 2 % points above those of the best three EU member states with the lowest long-run interest rates[37]

The criteria for convergence broken by some countries are discussed below. The first convergence rule broken is that a country's inflation rate should converge to a level not too far above that of the community's low inflation countries. Specifically, the average rate of CPI inflation over the preceding 12 months must not exceed the inflation rates of the three lowest-inflation member states by more than 1.5 percentage points in other words, all members with a single currency should maintain the same inflation rates.

[37] Elias Dinopoulos and Iordanis Petsas, "Greece and the Euro," (2000): 1-20, accessed June 3, 2015,http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.199.5492&rep=rep1&type=pdf

Figure 2.2. Annual Inflation Rates in ascending order



Source: Eurostat

As we can see from the above table in the Euro-member countries, Greece is the nation with the lowest annual inflation rate of -1.8% and Austria is the highest with an inflation rate of 0.9%, and that is a difference of more than 1.5%. According to this data these countries are in violation of the above stated rule in the Maastricht Treaty as it clearly shows that these countries do not have the same inflation rates. It is important to note that these values include both inflation and deflation and this criteria only applies if the deflation values are included. The Maastricht rule does not mention deflation.

The second convergence condition mentioned in the Maastricht Treaty, and broken by some Eurozone members, is government debt. According to the treaty, budget deficits should be no larger than 3 % of GDP and gross public debts no larger than 60 % of GDP[38]. As we can see from the tables in the appendix, in the year 2014, only Denmark (+1.2%), Germany (+0.7%), Estonia and Luxembourg (+0.6% each) registered a government surplus. The lowest government

[38] Barry Eichengreen, "European Monetary Unification," *Journal of Economic Literature* (1993): 1321-57, accessed May 26, 2015, http://www.jstor.org/stable/pdf/2728243.pdf.

deficits in percentage of GDP were recorded in Lithuania (-0.7%), Latvia (-1.4%) and Romania (-1.5%).

Twelve Member States had deficits higher than 3% of GDP: Cyprus (-8.8%), Spain (-5.8%), Croatia and the United Kingdom (both -5.7%), Slovenia (-4.9%), Portugal (-4.5%), Ireland (-4.1%), France (-4.0%), Greece (-3.5%), Belgium, Poland and Finland (all -3.2%). At the end of 2014, the lowest ratios of government debt to GDP were recorded in Estonia (10.6%), Luxembourg (23.6%), Bulgaria (27.6%), Romania (39.8%) and Latvia (40.0%). Sixteen Member States had government debt ratios higher than 60% of GDP, and were in violation of the Maastricht Treaty with the highest registered in Greece (177.1%), Italy (132.1%), Portugal (130.2 %), Ireland (109.7%), Cyprus (107.5%) and Belgium (106.5%).

Based on the above data, it can be concluded that the EU is not currently an OCA, but it is headed in that direction. The European Union countries must have met the criteria prior to entry into the Union, but the crisis has caused them to exceed the Maastricht criteria, and the crisis is what every critic talked about as the test for whether the EU would survive**.** The fact that the Eurozone did not meet the criteria for an OCA led many economists to predict that the euro experiment would fail**.** In the next chapter a survey of the literature on the Eurozone critics, and the causes of the Eurozone crisis will be examined.

CHAPTER 3: THE EUROZONE BETWEEN AUSTERITY AND DEFAULT

From the previous chapter it was established that the Eurozone is not an OCA, and that the Eurozone is in crisis today for the following reasons: first the Eurozone is not an OCA because it has a low degree of capital and labor mobility, this is caused by cultural, religious, linguistic and other barriers. Second, fiscal transfers are almost non-existent, as the well-off countries like Germany are reluctant to bail out poorer countries like Greece. Economists, such as Lapavitsas, believe that the Eurozone crisis is the result of incorporating weaker peripheral countries like Greece, Spain and Portugal, and, without a fiscal transfer mechanism, the financial crisis was certain to bring about a Eurozone crisis.

It is interesting to note that a number of politicians, economist, and professors predicted the Eurozone crisis before it started in 2009. First, Warren Mosler predicted in 2001 that the European Central Bank will be forced to intervene, which it did in 2009. Mossler stated in an interview he participated in 2001, "History and logic dictate that the credit sensitive euro-12 national governments and banking system will be tested. The market's arrows will inflict an initially narrow liquidity crisis, which will immediately infect and rapidly arrest the entire euro payments system. Only the inevitable, currently prohibited, direct intervention of the ECB will be capable of performing the resurrection, and from the ashes of that fallen flaming star an immortal sovereign currency will no doubt emerge."[39]

Second, Margaret Thatcher, the former Prime Minister of the United Kingdom, warned back in 1990 that the single currency could not accommodate stronger and weaker economies.

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[39] Julie Verhage and Alex Balogh, "Nine People Who Saw the Greek Crisis Coming Years Before Everyone Else Did Ahead of Their Time?" *Bloomberg Business*, 2015, accessed August 10, 2015, http://www.bloomberg.com/news/articles/2015-07-15/nine-people-who-saw-the-greek-crisis-coming-years-before-everyone-else-did.

She stated “We had arguments which might persuade both the Germans — who would be worried about the weakening of anti-inflation policies — and the poorer countries — who must be told that they would not be bailed out of the consequences of a single currency, which would therefore devastate their inefficient economies (nine people who saw the Greek crisis coming years before everyone else did page 4). Third, Milton Freidman, in a keynote address to the Bank of Canada in 2000, offered some caution when asked about the future of the euro. He said,” I think the euro is in its honeymoon phase. I hope it succeeds, but I have very low expectations for it. I think that differences are going to accumulate among the various countries and that non-synchronous shocks are going to affect them.”[40]

Fourth, Arnulf Baring, a German political scientist offered predictions in his 1997 book *Schieter Deutschland*. The following quote was translated from his book:

> They will say that we are subsidizing scroungers, lounging in cafés on the Mediterranean beaches. Monetary union, in the end, will result in a gigantic blackmailing operation. When we Germans demand monetary discipline, other countries will blame their financial woes on that same discipline, and by extension, on us. Moreover, they will perceive us as a kind of economic policeman. We risk once again becoming the most hated in Europe. [41]

Another Economist who predicted the Eurozone crisis before it actually happened was Wynne Godley. Godley wrote about his concerns in 1992 for the London Review of Books:

> What happens if a whole country—a potential ‘region’ in a fully integrated community—suffers a structural setback? So long as it is a sovereign state, it can devalue its currency.

[40] Ibid.,
[41] Ibid.,

> It can then trade successfully at full employment provided its people accept the necessary cut in their real incomes. With an economic and monetary union, this recourse is obviously barred, and its prospect is grave indeed unless federal budgeting arrangements are made which fulfil a redistributive role**.** ... If a country or region has no power to devalue, and if it is not the beneficiary of a system of fiscal equalisation, then there is nothing to stop it suffering a process of cumulative and terminal decline leading, in the end, to emigration as the only alternative to poverty or starvation.[42]

Stephanie Bell Kelton, in an essay published in 2002, argued that it will be almost impossible to stabilize the Eurozone.

> Countries that wish to compete for benchmark status, or to improve the terms on which they borrow, will have an incentive to reduce fiscal deficits or strive for budget surpluses. In countries where this becomes the overriding policy objective, we should not be surprised to find relatively little attention paid to the stabilization of output and employment. In contrast, countries that attempt to eschew the principles of "sound" finance may find that they are unable to run large, counter-cyclical deficits, as lenders refuse to provide sufficient credit on desirable terms. Until something is done to enable member states to avert these financial constraints (e.g. political union and the establishment of a federal [EU] budget or the establishment of a new lending institution, designed to aid member states in pursuing a broad set of policy objectives), the prospects for stabilization in the Eurozone appear grim.[43]

[42] Ibid.,
[43] Ibid.,

Randall Wray was critical of the structure of the Eurozone, this is a quote from his 1998 book, *Understanding Modern Money*:

> Under the EMU, monetary policy is supposed to be divorced from fiscal policy, with a great degree of monetary policy independence in order to focus on the primary objective of price stability. Fiscal policy, in turn will be tightly constrained by criteria which dictate maximum deficit-to-GDP and debt-to-deficit ratios. Most importantly, as Goodhart recognizes, this will be the world's first modern experiment on a wide scale that would attempt to break the link between a government and its currency. ... As currently designed, the EMU will have a central bank (the ECB) but it will not have any fiscal branch. This would be much like a US which operated with a Fed, but with only individual state treasuries. It will be as if each EMU member country were to attempt to operate fiscal policy in a foreign currency; deficit spending will require borrowing in that foreign currency according to the dictates of private markets.[44]

All these criticisms have one thing in common, they all argue that the Eurozone will not work because of problems with fiscal transfers. In the next section we review the recent literature on the causes of the crisis.

As the euro is only sixteen years old, many economist have debated how the Eurozone crisis could have happened that quickly. Lapavitsas, Kaltenbrunner, Lindo (2010) claim that the Eurozone crisis that broke out at the end of 2009 was fundamentally caused by the precarious integration of peripheral countries in the Eurozone. Its immediate causes however lie with the global financial crisis of 2007-2009. Speculative mortgage lending by U.S. financial institutions

[44] Ibid.,

and trading of resultant derivative securities by international banks created a vast bubble in 2001-2007, leading to crisis and recession. The public debt crisis represents stage two of a problem that started in 2007, according to Lapavitsas et al. [45]

Another cause of the euro crisis is institutional bias and malfunction in the Eurozone. According to Lapavitsas et al, the European Monetary Union is supported by a host of treaties and multilateral agreements, including the Maastricht Treaty, the Growth and Stability Pact, and the Lisbon Strategy. It is also supported by the European Central Bank (ECB) in charge of monetary policy across the Eurozone. The combination of these institutions has produced a mix of monetary, fiscal and labor market policies with powerful social implications.[46]

The third factor that caused the crisis according to Lapavitsas et al (2010) is national competitiveness within the Eurozone which has depended on the conditions of work and the performance of labor markets. The European Employment Strategy has encouraged greater flexibility of employment as well as more part-time and temporary work. There has been considerable pressure on pay and conditions, a race to the bottom across the Eurozone. The actual application of this policy across the Eurozone has varied considerably, depending on welfare systems, trade union organization, and social and political history. This has deepened the crisis.[47]

Woods (2012) offered a different view of what caused the euro crisis. He argued that the crisis in Europe is about political opportunism and complacency rather than just debt. Woods explains that many factors have contributed to the European Union's debt crisis: turbo

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[45] Costas Lapavitsas et al., "Eurozone Crisis: Beggar Thyself and Thy Neighbor," (2010): 321-73, accessed July 14, 2015, http://www.tandfonline.com/doi/pdf/10.1080/19448953.2010.510012
[46] Ibid.,321
[47] Ibid.,322

capitalism, deficient regulations, and policy errors. These are the factors that commentators and an angry public readily point to because they appear more immediately connected to the current malaise. Less obvious but more profound are historical, sociological, psychological, opportunist and criminal influences, tiring economies with large state sectors, high taxation, expensive social security provisions, and extensive redistribution these features derive from and are the responsibility of national populations and their political classes. They indicate that the crisis is about more than debt alone.[48]

Finally, the institutions of the Eurozone are more than plain technical arrangements to support the euro as domestic common currency as well as world money; rather, they have had profound social and political implications. They have protected the interests of financial capital by lowering inflation, fostering liberalization, and ensuring rescue operations in times of crisis. They have also worsened the position of labor compared to capital.[49]

Kouretas (2010) noted that a number of factors have contributed to the fiscal crisis that Greece has been experiencing since October 2009. Some of these factors are endogenous, meaning that they have to do with the structure of the Greek economy itself; these include, but are not limited to, the prolonged macroeconomic imbalances that the Greek economy faces, and its credibility problem of macroeconomic policy. Other factors are exogenous and have to do with the implications of the recent financial turmoil and the timing of the response by the ECB to the Greek financial crisis. This will now be discussed in more detail.

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[48] Steve Wood, "The Euro Crisis," (2012): 32-37, accessed April 11, 2015, https://www.cis.org.au/images/stories/policy-magazine/2012-autumn/28-1-12-steve-wood.pdf.

[49] Costas Lapavitsas et al., "Eurozone Crisis: Beggar Thyself and Thy Neighbor," (2010): 321-73, accessed July 14, 2015, http://www.tandfonline.com/doi/pdf/10.1080/19448953.2010.510012

The two main endogenous causes of the Greek financial crisis are running consistently widening public deficits and declining external competitiveness. According to the EU statistics agency, the Greek budget deficit for 2009 increased to 15.4% of GDP. This increased public expenditure led to a dramatic increase in borrowing requirements and high levels of accumulated public debt. The statistics put the level of central government debt as of December 31, 2009 at €29,805 Billion. The worst part is that the debt-to-GDP ratio will continue to increase in the coming years because of the €110 billion EU rescue package,[50] and that the government debt under public debt agency's management represents 93% of the total central government debt that is outstanding (Figure 3.1 in the appendix)

Kouretas (2010) argues that Greece's public debt grew from the early 1970's to the present time in relation to the political regime and the different governments in office. The inauguration of the socialist government led by the late Andreas Papandreou implemented an economic policy program that was mainly based on the income of the average Greek household through extensive borrowing from the markets. This borrowing was used in an effort to raise the standard of living.[51] Figure 3.2 in the Appendix shows Greek public debt grew from the early 1970s to the present time in relation to the political regime and the different governments in office. We can see that the debt/GDP ratio was constant until 1979 at very low levels, about 25%, before the socialist government led by Papandreou took over.

The second endogenous cause of the Greek financial crisis is the decline in competitiveness since EMU entry led to a persistent deficit in the current account. Increased "twin deficits" together with the lack of structural reform in home regarding labor market flexibility, Social Security and market competition obliged Greece to issue new bonds at short

[50] Kouretas Georgios, "The Greek Crisis: Causes and Implications," (2010): 391-404.
[51] Ibid.,394

maturity periods and at higher interest rates as compared to other Eurozone countries like Germany. The ability of the Greek government to pay its debt has been questioned due to its high sovereign debt.[52]

As mentioned earlier, exogenous causes have to do with the implications of the recent financial turmoil and the timing of the response of Europe to the Greek financial crisis. Kouretas (2010) discusses three exogenous causes of the Greek Financial crisis. First, the Eurozone governments, especially Germany, refused to give a clear signal indicating their readiness to support Greece. Most of their unhelpfulness was partly political as some countries used the Maastricht Treaty as a reason not to support Greece.

According to Kouretas, the second exogenous factor that contributed to the instability of the Greek economy was the lack of fiscal transfers at the EU level. This is because the European Union is a monetary union and not an economic one with a federal budget. The EU common monetary policy is set at a supranational level, but its economic policy, like the budgetary policies and wage policies, is still in the hands of national policy makers. The third exogenous factor is the impact from the global economic crisis. Greece and its major trading partners in the Balkan Peninsula were also hit by the 2007 global crisis. This originated from the U.S. sub-prime loan market crisis. The recession may have hit Greece somewhat less than other countries because of its relatively small manufacturing sector and of the large share of the shadow economy which is estimated to be 25% to 30% of GDP.[53]

Gibson (2012) claims that the origins of the euro crisis were caused by the following reasons. One of the first origins of the crisis was Greece's entry in to the Eurozone because of its

[52] Ibid.,395
[53] Ibid.,397

competitiveness problem. Gibson admits that the entry of Greece into the Eurozone was a mixed blessing, as this entry enabled Greece to experience a period of prolonged and robust growth as well as low inflation, but the country continued to run large fiscal imbalances, and the country's competitiveness, already a problem upon euro area entry, continued to deteriorate.[54]

Gibson also noted that even though Greek inflation was low during the 2001-2009 period by the country's historical standard, inflation was relatively high by the euro area standards, as inflation was on average more than 1% higher per year than the rest of the euro area. In the period 2001–2009, competitiveness, as measured by consumer prices, declined by around 20%; and, as measured by unit labor costs, competitiveness declined by about 25%. With relatively high real growth rates and declining competitiveness, the current account deficit, which had already topped 7% of GDP in 2001, rose to about 14.8% of GDP in both 2007 and 2008.[55]

Jean (2012) argued, since the euro crisis erupted in early 2010, the European policy discussion has mostly emphasized its fiscal roots. Beyond short term assistance, reflection or reform has focused on the need to strengthen the fiscal framework at European Union and national levels. Jean questions if the Europeans are right to see the strengthening of the fiscal framework as the main, or possibly the only, precondition of restoring trust in the euro, or is this emphasis misguided?

Jean (2012) believed that just focusing on fiscal roots is not the proper solution as other things need to be fixed as well. Jean suggested the following three factors. One factor included

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[54] Heather Gibson, Stephen Hall, and George Tavlas, "The Greek Financial Crisis: Growing Imbalances and Sovereign Spreads," *Journal of International Money and Finance*, no. 3 (2012): 1, accessed May 20, 2015, http://ac.els-cdn.com/S0261560611001513/1-s2.0-S0261560611001513-main.pdf?_tid=5d2dab58-ff22-11e4-bcf8-00000aab0f02&acdnat=1432148558_af9f2ce7bd14f75d3d6398aa58c9fae5.

[55] Ibid.,502

credit booms and the perverse effects of negative real interest rates. Countries where credit to the non-tradable sector gave rise to a sustained rise in inflation are examples of issues that have been ignored and largely disappeared from the policy agenda at the head-of-state level.[56] Second, real exchange rate misalignments within the euro area and current account imbalances are largely considered to be of lesser importance or mere symptoms of the underlying fiscal imbalances and ignored. Third, the role of capital flows from northern to southern Europe and their sudden reversal are rarely discussed by academics and central bankers, though the sudden reversal of north-south capital flows inside the euro area is fragmenting the single market and creating major imbalances within the euro system of central banks. These three important conditions are ignored because fixing the fiscal framework is usually emphasized, according to Jean (2012).[57]

Wihlborg, Willet, and Zhang (2010) argue that the crisis in Greece and other mainly southern Eurozone countries has been discussed primarily as a fiscal issue. However, this crisis is not fiscal alone, and it does not only affect Greece, as current account deficits of countries like Spain and Portugal have received less attention in spite of the relatedness of current account and fiscal deficits. Wihlborg, Willet, and Zhang argue that the failure of many countries within the Eurozone to develop adequate internal adjustment mechanisms is also an important factor behind the crisis. The authors present data to support their argument by demonstrating the lack of price and cost convergence in the Eurozone since 1999.[58]

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[56] Psiani-Ferry Jean, "The Euro Crisis and the New Impossible Trinity," (2012): 1-16, accessed May 26, 2015, http://www.econstor.eu/handle/10419/72121.
[57] Ibid.,2
[58] Clas Wihlborg, Thomas D. Willet, and Nan Zhang, "The Euro Crisis: It Isn't Just Fiscal and It Doesn't Just Involve Greece,(2010): 1-37, accessed May 26, 2015, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1776133

Wihlborg, Willet and Zhang (2010) recommend that the responsibility of the European Debt Surveillance Authority (EDSA) should include surveillance of intra euro payments flow, imbalances and adjustments in labor and good markets, and setting benchmarks for the Eurozone guarantees of sovereign debt based on the ability to adjust internally; thereby a potential moral hazard problem of an implicit euro zone guarantee of countries sovereign debt could be avoided.[59]

Maurer (2010) claims that there are two hypotheses put forward to explain what caused the Eurozone debt crisis. First, it is a malign mixture of fiscal indiscipline and speculative attacks by markets that have gone out of control. Second, the crisis has been caused by a faulty design of the European Monetary Union:[60]

To explain the second hypothesis, Figures 3.1 and 3.2 show the development of the average government debt-to-GDP ratio of those Eurozone countries that suffer currently from increasing risk premiums on their sovereign debt. It is important to note that the very low interest rates which the governments of these countries faced after the beginning of the EMU did not give rise to a tremendous government borrowing boom. Instead, it was the private sector of these countries who ran into debt because they borrowed too much.

Figure 3.2 shows how the international net debt-to-GDP position of the current account surplus countries of the Eurozone has developed over the same period. Even though the numbers do not exactly match, the symmetry of the development is remarkable.

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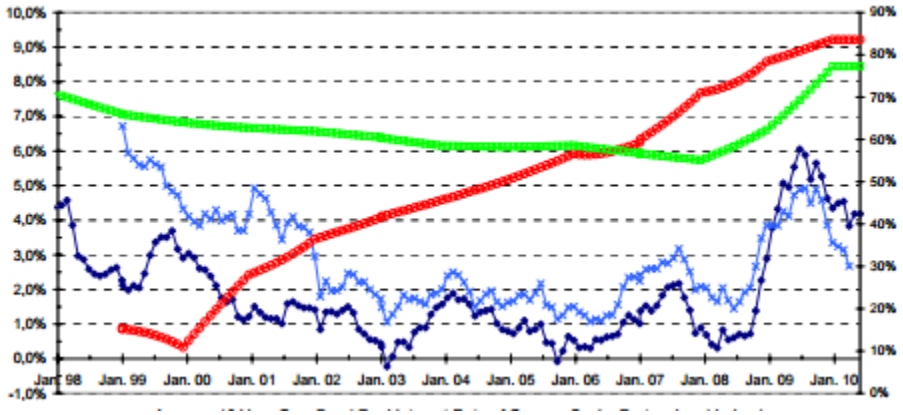
[59] Ibid.,1

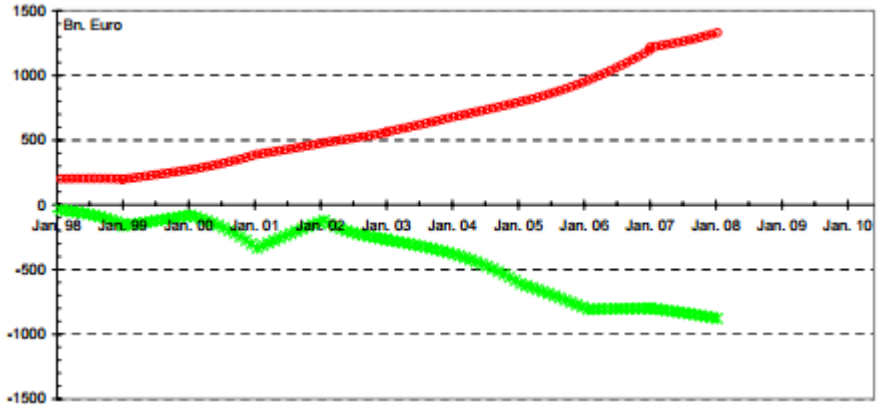
[60] Rainer Maurer, "The Eurozone Debt Crisis - a Simple Theory, Some Not so Pleasant Empirical Calculations and an Unconventional Proposal" (master's thesis, Hochschule Pforzheim University, 2010), 1-33, accessed June 24, 2015, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1621828.

Figure 3.1. Average long term interest rates and Debt-to-GDP ratios of Greece, Portugal, Ireland and Spain.



Source Maurer 2010

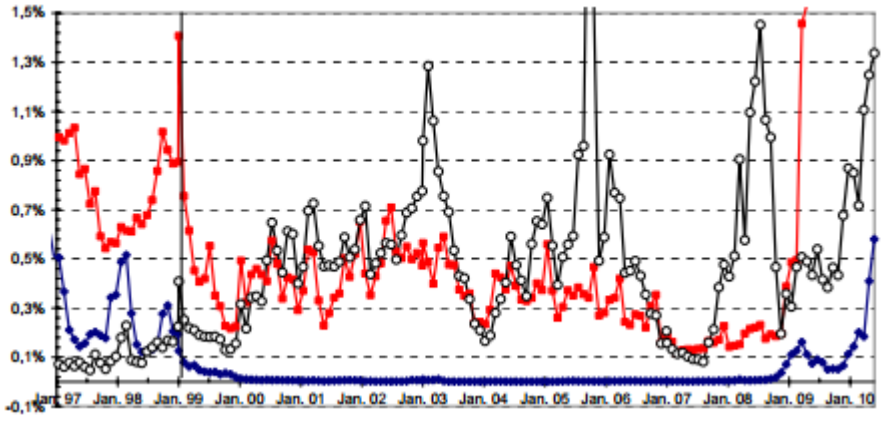
Figure 3.2. International net debt position of Eurozone debtor and creditor countries



Source: Maurer, 2010

The main question that arises is what caused the very low real interest rates which gave rise to a private sector borrowing boom? Figure 3.3 suggests that these low interest rates were caused by the formation of the EMU. If we observe Figure 3.3, we can see that with the start of the monetary union, the nominal interest rate spreads for long run government bonds of the 12 founding states of the monetary union literally disappeared as measured by the variance coefficient. Inversely to this development the variance coefficient of the real interest rate did significantly grow.[61]

Figure 3.3. Variance coefficients across the 12 EMU founding member states



Source: Maurer, 2010

[61] Rainer Maurer, "The Eurozone Debt Crisis - a Simple Theory, Some Not so Pleasant Empirical Calculations and an Unconventional Proposal" (master's thesis, Hochschule Pforzheim University, 2010), 1-33, accessed June 24, 2015, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1621828.

Before the monetary union, inflation rate differentials were more or less compensated by nominal interest rate differentials. This is suggested by the Fisher equation hypothesis, which is an economic theory that describes the relationship between inflation and both real and nominal interest rates. After the start of the monetary union, this mechanism did not work any longer. Instead, the convergence of nominal interest rates caused a divergence of real interest rates, because significant inflation differentials remained across the member states of the European Monetary Union.[62] This caused real interest rates in high inflation countries like Greece to be significantly lower than real interest rates in low inflation countries like Germany over most of the period in question.[63]

In summary, Maurer argues that the Eurozone crisis was a result of a private sector bubble. This occurred because there was a lot of private sector debt and much of the lending was done by German banks so the system was bailed out to save the German bank.

Global Financial Crisis and the Eurozone Reaction

This section will look at how the Eurozone responded to the global financial crisis. It will also discuss in detail the evolution of debt in the peripheral countries (Spain, Portugal and Greece) and how this accumulation of debt led to a banking crisis, and how this banking crisis combined with a continuing recession have made some governments in the Eurozone opt for contraction of public expenditure, causing society to pay the price caused by the crisis.

A profusion of debt: if you cannot compete keep borrowing

It is hard to determine just how much debt the peripheral countries have because governments are not giving accurate information regarding their own debt. This thesis analyzes

[62] Ibid.,5
[63] Ibid.,5

peripheral debt using information available as of December 31, 2009 based on data in Lapavitsas (2012).

Table 3.1. Aggregate peripheral debt (end 2009)

	Spain		Portugal		Greece	
	EUR Bn	%	EUR Bn	%	EUR Bn	%
Total Debt						
EUR Bn	**5,315**		**783**		**703**	
% GDP	**506 %**		**479 %**		**296 %**	
by issuer						
General government	676	13 %	121	15 %	293	42 %
Financial corporations	1,669	31 %	238	30 %	120	17 %
Non-fin corporations	2,053	39 %	246	31 %	165	23 %
Households	918	17 %	178	23 %	123	17 %
		100 %		100 %		100 %
by instrument						
Short-term	**1,586**	**30 %**	**271**	**35 %**	**189**	**27 %**
Non-resident deposits	549				106	
Bonds	156		44		11	
Loans	258		49		72	
Trade credit	623		32			
Long-term	**3,730**	**70 %**	**512**	**65 %**	**514**	**73 %**
Bonds	1,472		173		301	
Loans	2,258		339		212	
		100 %		**100 %**		**100 %**

External Debt		% of total debt		% of total debt		% of total debt
EUR Bn	1779	33 %	381	49 %	385	51 %
% GDP	169 %		233 %		162 %	
by issuer		% of ext debt		% of ext debt		% of ext debt
General government	299	17 %	98	26 %	206	53 %
Financial corporations	823	47 %	210	55 %	112	29 %
Other sectors	645	37 %	73	19 %	68	18 %
		100 %		100 %		100 %
by instrument						
Short-term	686	39 %	182	48 %	127	33 %
Non-resident Deposits	549		146		106	
Bonds	75		25		7	
Loans	17		1		13	
Trade Credit	45		10		1	
Long-term	1,093	61 %	198	52 %	258	67 %
Bonds	739		141		206	
Loans	354		58		53	
		100 %		100 %		100 %

Source: Lapavitsas et al (2012)

Based on the data contained in Table 3.1 we found that, first, Spanish debt was roughly three and a half times the sum of Portuguese and Greek debt, the last two being fairly similar to each other. Second, the composition of aggregate debt was quite different among the three countries. The proportion of domestic to external debt stood at 67% to 33% for Spain, compared to 53 % to 47 % for Portugal and 45 % to 55 % for Greece.

It seems that both Portugal and Greece were similarly indebted externally and domestically, while Spain had a lower proportion of external debt. However, it is important to note that all countries were heavily indebted abroad relative to GDP: Spain at 165% and Portugal at 218%, and Greece at 162%. Third, the composition of aggregate debt was even more strikingly different when the proportion of private to public debt was considered. Spain and Portugal were quite similar; for Spain it was 87 % to13 %, and Portugal was 84% to 16 %.[64]

[64] Lapavitsas Costas and et al, *Crisis in the Euro Zone* (Brooklyn: Verso, 2012), 1-239, Electronic Format.

Fourth, the composition of debt in terms of instruments was quite similar among the three countries, standing roughly at one third short-term to two thirds long-term. But there were significant differences in the composition of external debt, largely reflecting the different weight of public debt in external debt. Thus, Greek external debt was preponderantly long-term, since its dominant elements were public bonds. The external debt of the other two countries tended to be shorter term, reflecting the heavier presence of the private sector (Lapavitsas 2012, page 66).

Another important aspect of aggregate peripheral debt was the composition of holders by nationality. The data in Figures 3.4, 3.5 and 3.6 (in the appendix) refer only to securities, but this was still a large part of external debt as can be seen in Table 3.1 above. Figures 3.4 to 3.6 in the appendix show that the vast bulk of peripheral securities were held by the countries of the Eurozone core, primarily France and Germany.[65]

Rescuing the Banks Once Again

The accumulation of debt by the countries of the periphery eventually led to a major sovereign debt crisis in late 2009, starting with Greek public debt. Escalating public deficits and manipulation of statistical data in Greece led to downgrades by rating agencies, rising spreads and eventually loss of access to financial markets by the Greek state. The sovereign debt of Spain and Portugal also came under heavy pressure but the real threat posed by the sovereign debt crisis has been to the banks of the core countries of France and Germany.[66]

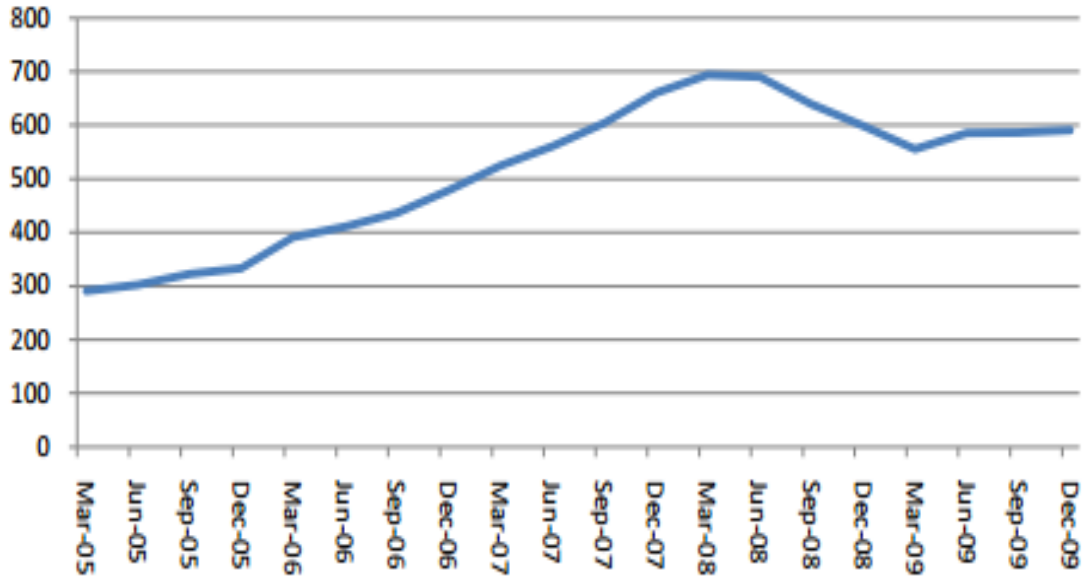
In early 2010, there emerged the danger of a full blown crisis for the banks of the core that held significant volumes of peripheral debt. The vulnerable position of European banks was

[65] Lapavitsas Costas and et al, *Crisis in the Euro Zone* (Brooklyn: Verso, 2012), 1-239, Electronic Format.
[66] Ibid.,99

directly related to the accumulation of debt (both private and public) by peripheral countries (Spain, Greece and Portugal), and the chief providers of credit to the periphery were banks of the core (German and French banks) which had taken advantage of the single currency and the associated removal of capital controls.[67]

The core banks exploited the new markets, generating revenues by lending to corporations and governments as well as to households for housing and consumption. The exposure of core banks to the periphery consequently rose throughout this period as shown in Figures 3.7, 3.8 and 3.9.

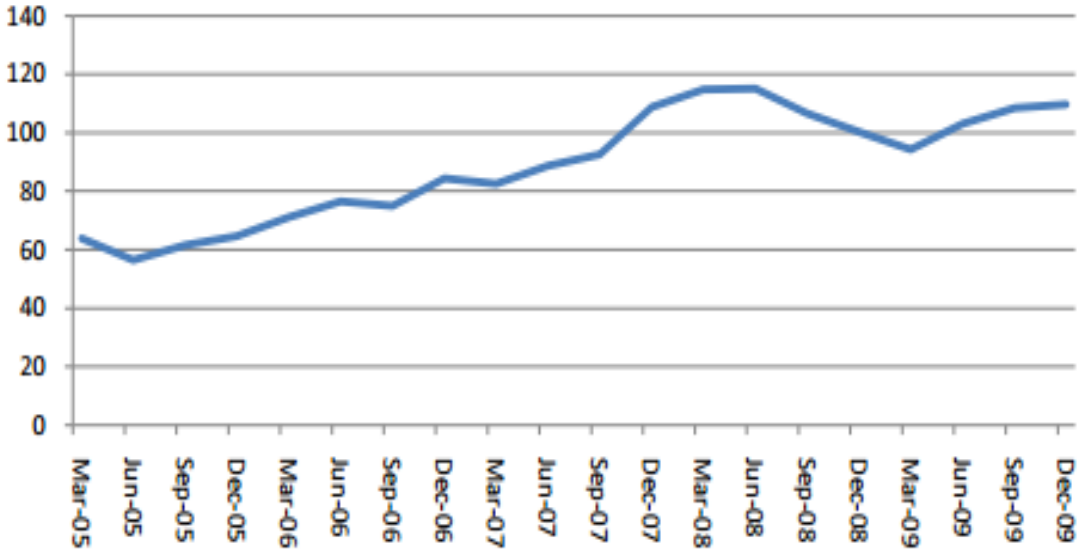
Figure 3.7 Eurocore bank exposure to Spain ($bn)



Source: Lapavitsas et al (2012) crisis in the Eurozone

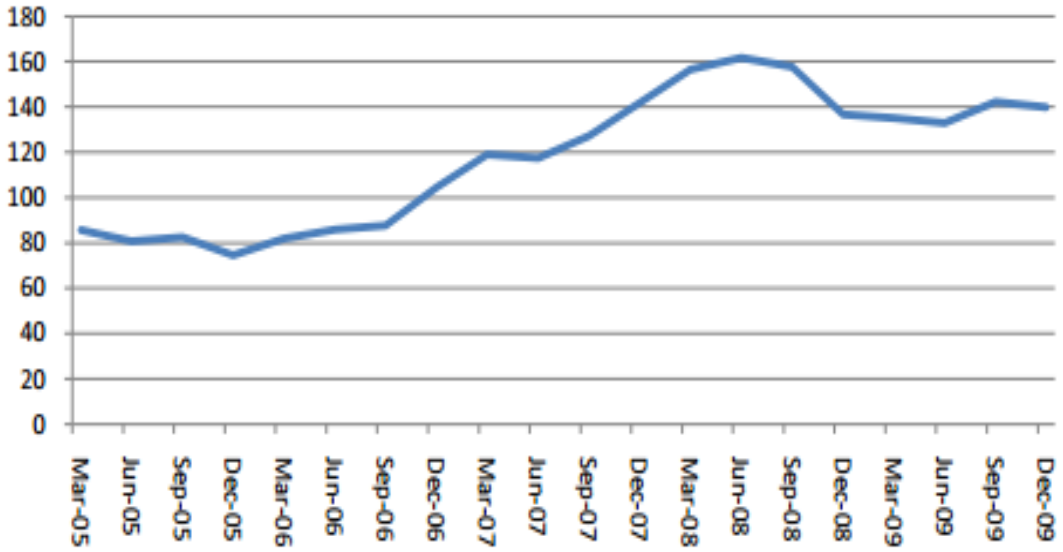
[67] Ibid.,101

Figure 3.8. Eurocore bank exposure to Portugal ($bn)



Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 3.9 Eurocore bank exposure to Greece ($ bn)



Source: Lapavitsas et al (2012) crisis in the Eurozone

The pressing need for public borrowing had been created by declining tax revenue due to the recession as well as by the attempt to rescue the financial system and to avoid a depression with cheap and abundant funding from the ECB. European banks were able to take advantage of this opportunity.

The euro became the new funding currency in a peculiar "carry trade" where banks obtained funds at low rates from the central bank to lend at much higher rates to states. During this time the banks showed no real concern about exposure to sovereign debt in peripheral countries and this is what caused the crisis according to Lapavitsas.[68]

The Aim of the European Support Package

In May 2010, after much procrastination, the European Union announced a support package for Greece of 110 billion euro that was jointly put together with the International Monetary Fund (IMF). The Greek intervention acted as a pilot for a larger package, announced on May 9-10th, of roughly 750 billion euros. The second package was aimed at European financial markets in general and received contributions from the EU, IMF, ECB and other major central banks. Although the European leaders tried to convince the public that they were doing this to save the European Monetary Union, by rescuing peripheral countries the underlying aim was to bail out the banks of the core countries who were facing a wave of losses and further funding difficulties.[69]

Another reason why the Europeans decided to bail out Greece was because a weaker euro would also become less acceptable as an international reserve currency, thus harming the

[68] Lapavitsas Costas and et al, *Crisis in the Euro Zone* (Brooklyn: Verso, 2012), 1-239, Electronic Format
[69]Lapavitsas Costas and et al, *Crisis in the Euro Zone* (Brooklyn: Verso, 2012), 1-239, Electronic Format.

potential for expansion of European financial capital. Not to mention that it would further worsen the funding problems that European banks faced on their balance sheets. The EU contributed to the package by establishing the European stabilization mechanism. This resulted in a new lending facility of 60 billion euro available to all EU member states. The facility was financed through issuing European commission debt and this meant that it could be advanced without the approval of national parliaments.[70]

The 60 billion euros pledge was too small an amount reflecting the limited resources directly at the disposal of the EU. Therefore, the European Financial Stabilization Facility (EFSF) was established and this would have up to 440 billion euros available to Eurozone members. The EFSF was funded through the issuing of bonds guaranteed by Eurozone members on a pro rata basis and the guarantees had to be approved by national parliaments and would come in to force only after approval by countries representing at least 90% of the shares of the EFSF; thus, the EU demonstrated a strong preference for market- based solutions to its financial problems. The EFSF further rested on dominance by the core countries. In short, the package has shown a profound lack of solidarity among the members of the Eurozone.[71]

The IMF also announced that it would cooperate with the EU by making available the equivalent of 250 billion euro of its own financial assistance to supplement the European stabilization mechanism. However, the IMF would only help if economic or fiscal adjustment programs were implemented in other words austerity would be imposed on member states in trouble as happened immediately in Greece.

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[70] Ibid.,109

[71] Lapavitsas Costas and et al, *Crisis in the Euro Zone* (Brooklyn: Verso, 2012), 1-239, Electronic Format.

Society Pays the Price: Austerity and Further Social Cuts

The rescue package came with imposition of austerity on the periphery and increasingly on the core. Confronted with a continuing recession and renewed banking crisis, several governments of the Eurozone have opted for contraction of public expenditure; in effect, the costs of rescuing the euro and the banks have been shifted to society at large.[72] The mix of austerity and liberalization within the Eurozone has been harsh on working people, but also dangerous for the economy and society. Figures 3.10-3.15 (in the appendix) show the spread of austerity and its likely impact on society, by the evolution of the components of aggregate demand in three major Eurozone economies, Germany, France and Italy, as well as in three peripheral economies at the epicenter of the public debt crisis, Spain, Portugal and Greece.

From Figures 3.10-3.16 in the appendix, we can see that Germany, Italy, France and Spain performed much better when fueled by credit. The main source of growth for Germany was external demand, reflecting its rising competitiveness within the Eurozone. Private consumption played an important role in France, Portugal and Spain, but above all Greece. Private investment was significant in Spain, partly reflecting the real estate bubble, but it was generally weak across the sample. Italy experienced a stagnation in all respects.[73]

A complete collapse of aggregate demand was prevented through rising public expenditure, which reflected the role and weight of the state in the economy. The impact of recession on public finances was inevitable and predictable according to Lapavitsas, as tax revenues fell, the attempt by the state to prevent depression led to public deficits in most Eurozone countries, especially exceeding the limit of 3% of GDP imposed by the stability pact.

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[72] Ibid.,112
[73] Ibid.,113

Even France, Italy and Germany exceeded the limit (deficits for 2010 were 8%, 5.3% and 5% respectively) in Spain, Portugal and Greece, where the problems of integration into the Eurozone became sharply apparent, public deficits reached very high levels because this austerity was imposed across the Eurozone, even the biggest economies of the Eurozone were not spared as they aimed to comply with the 3% limit for the deficit within three years. [74]

Germany announced a plan to cut public spending by 80 billion euros, lowering civil servant wages, reducing the number of civil servants, reforming social security, cutting military expenditure and reducing public subsidies. France followed the same path, while remaining critical of Germany. The French government declared its intention to inscribe the limit to the budget deficits in the constitution, following Germany in this respect, public savings of up to 100 billion euro were to be made until 2013 through freezing central government spending, removing tax breaks and considering a pay freeze for public sector workers. Even Italy, which had a sound economy for more than a decade, announced an austerity program of 24 billion euro aimed at bringing its relatively small fiscal deficits down to 3% by 2012.[75]

The implications of austerity were likely to be severe since the policy was put on the only component of aggregate demand that showed resilience in 2009, namely public expenditure. Further pressure was also put on private consumption which was already in trouble.[76] On January 22nd, 2015, the ECB announced that it was launching a government bond buying program which will pump hundreds of billions of dollars into a sagging Eurozone economy, by purchasing sovereign debt from March of 2015 to the end of September 2016.

[74] Ibid.,116
[75] Ibid.,116
[76] Ibid.,117

Despite concerns from Germany that this could allow indebted countries to slacken economic reform. Whether this would work is yet to be seen, as the ECB claims that only 20% of purchases would be its responsibility. This means that the bulk of any potential losses, should a European government default, would fall on its national Central Banks.[77] From the literature, we know that the Eurozone crisis was caused by the following reasons: the Eurozone having no fiscal transfer mechanism and accumulation of debt. A good example are countries like Greece who have so much debt that regular investors stopped buying its bonds or lending it money.

As several critics mentioned, the Eurozone will be tested during an asymmetric shock like the global financial crisis. Indeed as a consequence of the financial crisis, the stability of the Eurozone was tested and the critic's prediction came true. A good example is Wray (1998), who predicted that the Eurozone will have problems because of it having no sound fiscal transfer mechanism. Margaret Thatcher, also warned against debt and the consequence that might occur if the poorer countries are not bailed out, just like Warren Mossler predicted the ECB was forced to provide liquidity through this bond buying program.

The critics were correct, that the financial crisis has raised the question of the Eurozone survival. And Greece is at the center of this question. The next chapter looks at a case study of Greece and raises the issue of whether Greece will remain in the Eurozone.

[77] Jonathan Gould and John O'Donnell, "ECB Launches 1 Trillion Euro Rescue Plan to Revive Euro Economy," *Reuters*, January 22, 2015, accessed August 31, 2015. http://www.reuters.com/article/2015/01/22/us-ecb-policy-idUSKBN0KU2ST20150122.

Chapter 4: Case Study Greece

This thesis will not be complete without addressing the Greek crisis. This is because it is Greece that triggered the Eurozone crisis, created fears of a global financial crisis and still throws in to question the viability of the Eurozone itself. This section addresses why Greece was allowed to join the Eurozone when it was not ready and did not meet the convergence criteria. The impact of austerity on Greece will also be discussed because the crisis is creating a severe impact on Greece which may force it to leave the Eurozone. Will conclude the section by answering the question of whether Greece remain in the Eurozone?

When the European Monetary Union began in 1999 Greece was the only country in the European Union that wanted to join the euro club, but was not allowed to, as it did not comply with convergence criteria. However, only two years later, in June 2000, the European Council (EC) made the final decision that Greece was ready to join the EMU. This was unexpected, given the fact that in 1992, when the Maastricht Treaty was established to make rules on who can join the EMU, Greece was the country with the greatest adjustment problems among the EU member countries. Inflation and fiscal deficits were well above the EU average while the Greek economy grew more slowly than that of the EU.[78]

This difficult economic situation occurred because of expansionary economic policies during the 1980s, as public consumption was increased by a policy of deficit spending. The expansionary fiscal policy supplemented by a loose monetary policy led to a high inflation and a steady depreciation of the drachma. This meant that the increasing current account deficit could only be financed by EU transfers and foreign loans.[79]

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[78] Lapavitsas Costas and et al, *Crisis in the Euro Zone* (Brooklyn: Verso, 2012), 1-239, Electronic Format
[79] Ibid.,125

So how did Greece overcome these economic problems and join the EMU? It all started when the new government came into office after the elections in fall of 1993, which introduced a new convergence program for the period 1994-1999 according to the requirements of Article 116 (2a) Treaty on European Community (TEC). Greece committed itself to an ambitious macroeconomic stabilization policy in order to reduce the inflation rate from 10.8% in 1993 to 3.3% in1999, and restrict the budget deficit from 13.2% of GDP in 1994 to 2.1% of GDP in 1999.[80]

The first phase of the convergence policy (1994-1999) did not help Greece join the EMU as it was characterized by an inconsistent and inappropriate policy mix, as the adjustment policy was based on higher tax revenues and higher interest rates. The government contained its expansionary income policy and did not cut real consumptive public expenditures, as structural reforms necessary to improve supply side conditions were postponed.[81]

As it became evident that Greece would not be allowed to join the EMU with the first wave of entrants, the government revised its convergence plan in December 1997. The aim of the new convergence program was to fulfill the convergence criteria by the beginning of 2000 so that Greece could join the EMU by 2001, one year before euro coins and bills were to replace the national currencies.

The revised convergence plan brought further improvements in monetary and fiscal policies. A process of labor market liberalization was initiated, several state enterprises were privatized, some of them partially, and first steps were made towards cutting the deficit in the social security system. The measures helped Greece improve the performance of its economy and Greece joined the EMU in 2001.[82]

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[80] Ibid.,171
[81] Ibid.,171
[82] Ibid.,180

If the Maastricht Treaty was Supposed to Stabilize The Eurozone, Why Didn't It Help Greece?

Some economists claim that Greece was not ready to join the European Monetary Union and that the only reason it was admitted is that the Greek government cheated the EU Maastricht deficit rules. Balzli (2010) claims that since 1999, the Maastricht rules threatened with hefty fines on euro member countries that exceed the budget deficit limit of 3% of gross domestic product. Total government debt must not exceed 60 % but the Greeks have never managed to stick to the 60% debt limit, and they only adhered to the 3% deficit ceiling with the help of blatant balance sheets.

At one time, for example gigantic military expenditures were left out. After recalculating the figures, the experts at Eurostat consistently came up with the same results: in truth, the deficit each year has been far greater than the 3% limit. In 2009, it exploded to over 12%.[83]

Another way the Greek government cheated the Maastricht Treaty was through fictional exchange rates. Europe's governments obtain funds from investors around the world by issuing bonds in yen, dollar or Swiss francs. However, they need euros to pay their daily bills. Years later the bonds are repaid in the original foreign denominations. But in the Greek case, the US bankers devised a special kind of swap with fictional exchange rates. This enabled Greece to receive a far higher sum than the actual euro market value of 10 billion dollars or yen. This was how Goldman Sachs secretly arranged additional credit of up to $1 billion for the Greeks.

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[83] Beat Balzli, "Greek Debt Crisis: How Goldman Sachs Helped Greece to Mask Its True Debt," *Spiegel Online*, 2010, accessed June 3, 2015, http://www.spiegel.de/international/europe/greek-debt-crisis-how-goldman-sachs-helped-greece-to-mask-its-true-debt-a-676634.html.

It is important to note that the credit disguised as a swap didn't show up in the Greek debt statistics. Eurostat's reporting rules don't comprehensively record transactions involving financial derivatives. "The Maastricht rules can be circumvented quite legally through swaps," says a German derivatives dealer.[84]

In brief, the Maastricht Treaty did not help Greece, because under the Maastricht convergence criteria, states joining the euro must have their economic houses in order, and the 1997 Stability and Growth Pact requires ongoing fiscal compliance. Specifically, states must ensure inflation below 1.5% budget deficits below 3% of GDP, and a debt-to-GDP ratio of less than 60%. To meet these criteria, many countries had to adopt strict budgetary reforms. Greece did not adopt these policies enabling it to join the euro.

Construction of Aggregate Debt Profile: Greece

This section provides more detail on the methods used to calculate the debt profile of Greece. This calculation is important for two main reasons. First, the European Central Bank (ECB) liquidity provision operations were largest in Greece. The changes in the balance sheet of the bank of Greece proves this. Second, there were discrepancies between different data sources, particularly with external debt. The primary source of data on Greek indebtedness was a set of "financial accounts' published by the Bank of Greece. These data sets provided in detail the nature of the stocks of financial assets and liabilities of each sector in the Greek economy.[85]

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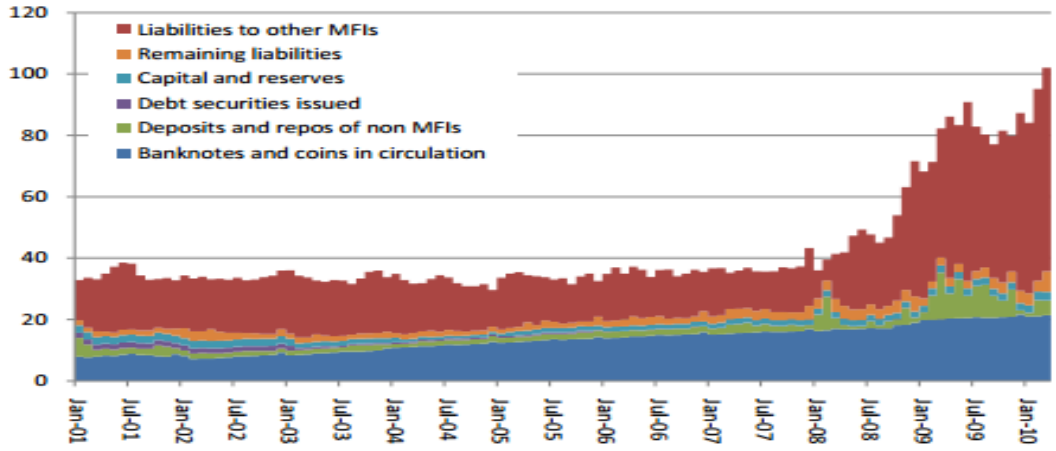
[84] Beat Balzli, "Greek Debt Crisis: How Goldman Sachs Helped Greece to Mask Its True Debt," *Spiegel Online*, 2010, accessed June 3, 2015, http://www.spiegel.de/international/europe/greek-debt-crisis-how-goldman-sachs-helped-greece-to-mask-its-true-debt-a-676634.html.

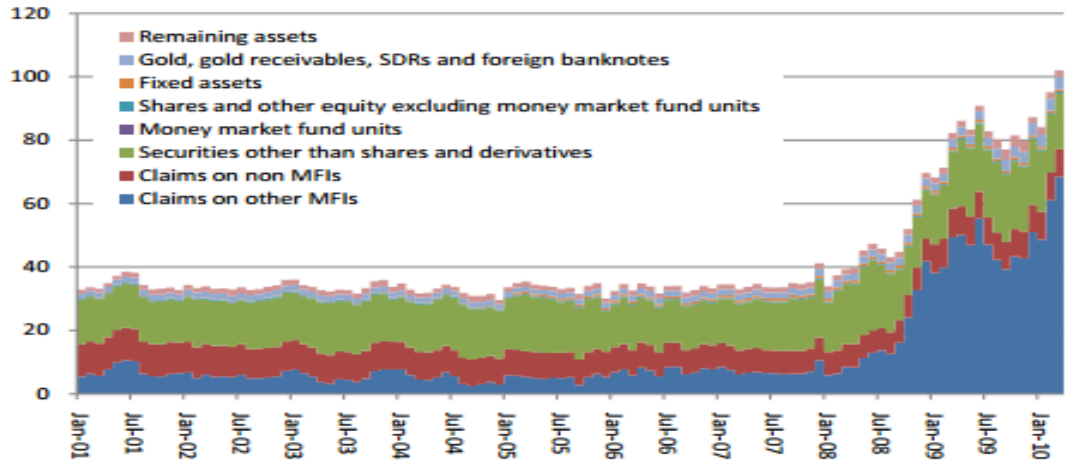
[85] Lapavitsas Costas and et al, *Crisis in the Euro Zone* (Brooklyn: Verso, 2012), 1-239, Electronic Format

Figure 4.1: Bank of Greece liabilities (euro bn)



Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 4.2: Bank of Greece assets (euro bn)



Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 4.2 shows that both the assets and the liabilities of the Bank of Greece have increased in recent years. This was confirmed with the balance sheet of the Bank of Greece. What was found was that liabilities to other euro area monetary financial liabilities accounted for this increase, while on the asset side corresponding claims were held against domestic monetary financial institutions. (Crisis in the Eurozone page 149)

From the graphs, we can see that liabilities to other monetary financial institutions increased sharply during the financial crisis. This increase was as a result of the liquidity provision. This means that repo operations take place through the home central bank, resulting in the expansion of both sides of the balance sheet, giving the appearance of increasing indebtedness at the country level. It is important to note that as these operations were essentially a domestic liquidity provision by the central bank, they do not constitute an expression of debt. This is the reason why the external liabilities of the bank of Greece were excluded from the total debt figures.[86]

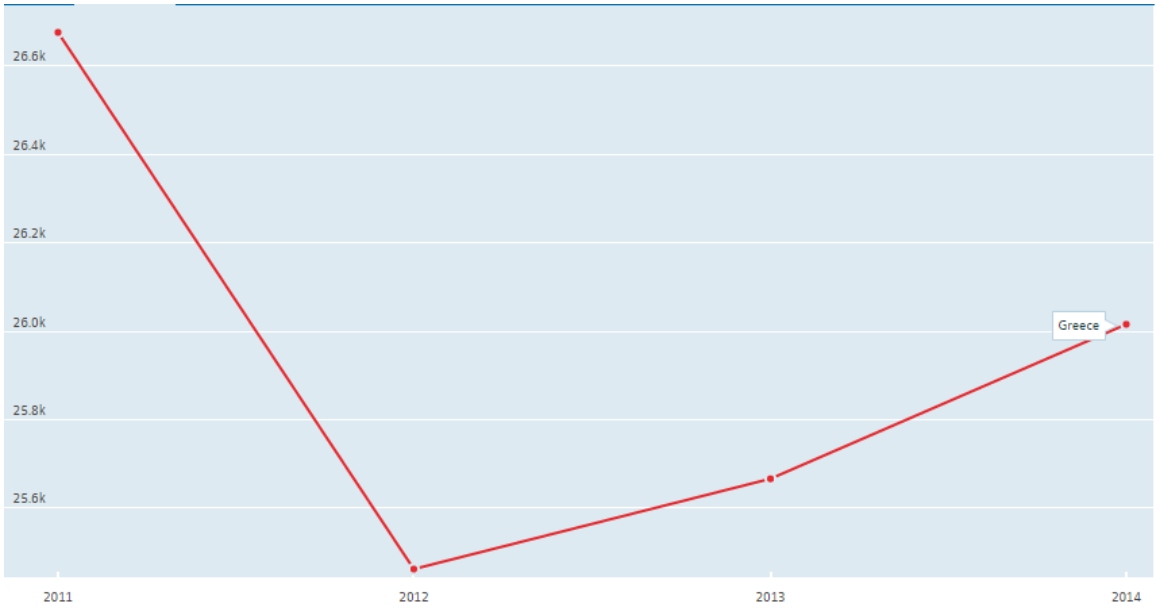
[86] Ibid.,151

The Impact of Austerity on Greece since 2010

Austerity measures have had a number of effects on Greece, ranging from economic to political to social.

(1) Economic Effects:

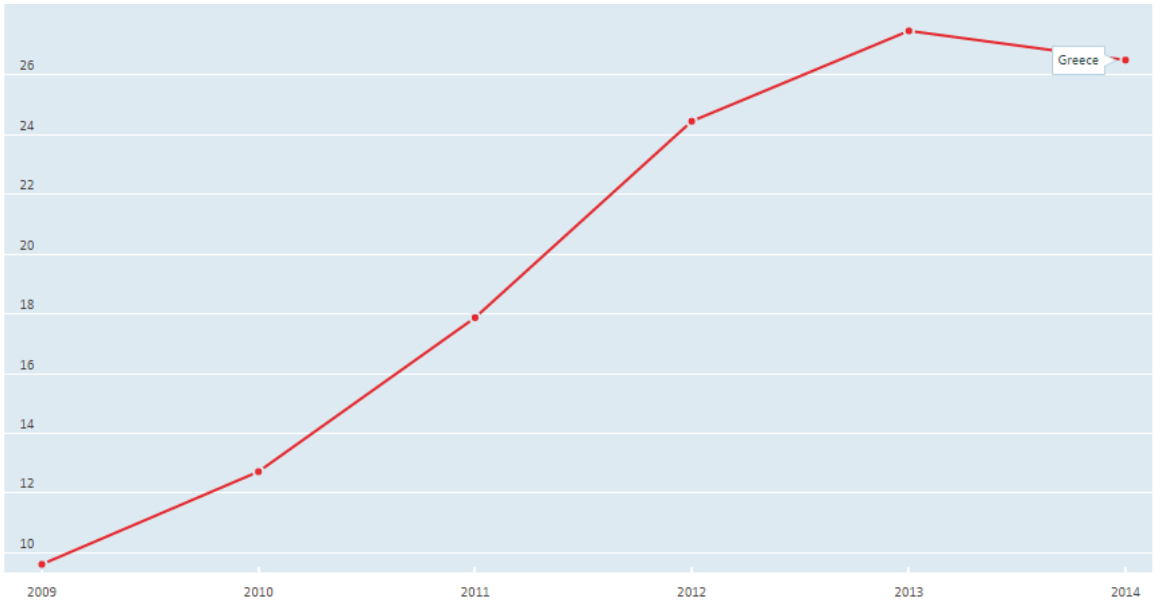
Figure 4.3. Gross domestic products 2011-2014



Source: OECD

Recession: the continuous drop in GDP in 2011 led to a rapid reduction in domestic demand, which led to loss of thousands of jobs.

Figure 4.4: Unemployment Rate



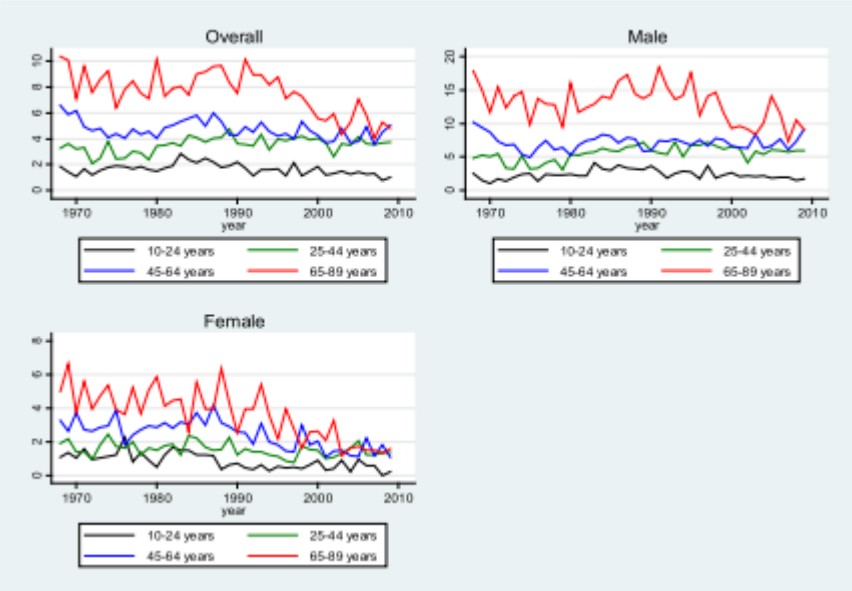
Source: OECD

Unemployment more than doubled within the first three years of austerity, going from 9.616 in 2009 to 24.442 in 2012. As thousands of jobs were lost the new unemployed became the chronic unemployed.

(2)Social Effects

Spending cuts in Greece have had a devastating social impact, since governments tend to be both large employers and social nets. Migration of younger and highly educated people raised brain drain while those studying abroad are reluctant to come back. Homelessness and suicide rates have also increased.

Figure 6.4.3. Suicide rates by age group and gender in Greece



Source: Antonakakis and Collins (2014)

Antonakakis and Collins (2014) argue that spending cuts in Greece have caused some 500 male suicides since their implementation. For each 1% decrease in government spending resulted in a 0.43% rise in suicide rates according to the study. [87]

(3) Political effect

Austerity measures can have a number of effects on a country's politics. Since most austerity measures target developmental and social spending, social unrest is one of the most

[87] Nikolaos Antonakakis and Alan Collins, "The Impact of Fiscal Austerity on Suicide: On the Empirics of a Modern Greek Tragedy,"(2014): 39-50, accessed July 11, 2015, http://www.sciencedirect.com/science/article/pii/S0277953614002433#.

common after effects of austerity implementation. For example, Greece saw a number of violent protests to measures undertaken in 2011 and 2012.

Conclusion

Greece was in economic crisis long before it joined the euro. That is why they needed to manipulate statistics to meet entry into the euro. When the inevitable crisis hit in 2009, Athens could not make its debt payments. It could no longer borrow at affordable rates, nor could it devalue its currency to make its product and services more competitive. The main question that arises now is will Greece stay in the euro? This thesis argues that Greece will stay in the euro for the following reasons.

1. If Greece leaves the euro and goes back to the drachma, the drachma would lose value causing inflation. Interest rates will double all mortgages, business loans and other borrowing will become much more expensive. The lack of credit offered to Greek banks would mean serious shortages in basic commodities like oil, medicine and food. This will be catastrophic.

2. The Eurozone will also be affected as the exit of Greece would prove that the euro was not built to last and investors will quickly begin to assess who would be next to exit. This would not be good for a growing economy.

3. The Eurozone is backed by a profound political commitment as leaders in political and business circles have invested substantial political capital and success in the Euro.

The concluding chapter will evaluate the broader question: will the Eurozone survive?

Chapter 5: The Future of the Euro: Will The Euro Survive The Eurozone Crisis?

According to Lapavitsas (2010) in order for the euro to survive the Eurozone crisis three solutions have to be met. The first solution is to adopt austerity measures, the second solution is to reform the Eurozone and the third solution is to force Greece out of the Eurozone. This thesis will now explore this three solutions in more detail.

The first alternative is to adopt austerity by cutting wages, reducing public spending, and raising taxes in the hope of reducing public borrowing requirements. Austerity would have to be accompanied by bridging loans, or guarantees by core countries to bring down commercial borrowing rates. It is likely that there would also be 'structural reform', including further labor market flexibility, tougher pension conditions, privatization of remaining public enterprises, and privatization of education. [88]

The aim of such liberalization would presumably be to raise the productivity of labor, thus improving competitiveness. This is the preferred alternative of ruling elites across peripheral and core countries, since it shifts the burden of adjustment onto working people. [89] The second alternative is to reform the Eurozone. There is almost universal agreement that unitary monetary policy and fragmented fiscal policy have been a dysfunctional mix. There is

[88] Lapavitsas Costas and et al, *Crisis in the Euro Zone* (Brooklyn: Verso, 2012), 1-239, Electronic Format
[89] Ibid.,326

also widespread criticism of the ECB for the way it has provided abundant liquidity to banks, while keeping aloof of borrowing states, even to the extent of ignoring speculative attacks.

A range of reforms that would not challenge the fundamentals of the Maastricht Treaty, the Stability Pact, and the Lisbon agenda might well be possible. The aim would be to produce smoother interaction of monetary and fiscal forces, while maintaining the underlying conservatism of the Eurozone.[90]

The only problem with this alternative, is that very little in such reforms that would be attractive to working people or that would indeed deal with the structural imbalances within the Eurozone. Hence, there have been calls for more radical reforms, including abolition of the Stability Pact and altering the statutes of the ECB to allow it regularly to lend to member states. The aim of such reform would be to retain monetary union while creating a 'good euro' that would be beneficial to working people. The 'good euro' strategy would involve significantly expanding the European budget to deliver fiscal transfers from rich to poor countries.[91]

The main reason why the good euro strategy may not work is that the Eurozone lacks a unitary state and there is no prospect of acquiring one in the future. The current machinery of the Eurozone is entirely unsuited for this task. The strategy would face a continuous conflict between, on the one hand, its ambitious pan-European aims and, on the other, the absence of state mechanisms that could begin to turn these aims into reality.[92]

The third alternative is to exit from the Eurozone. It is not clear if this will save the euro, as economist argue that they cannot think of a time when a developed country with an open economy dropped out of a shared currency and set up its own new currency. That's one of the

[90] Ibid.,326
[91] Ibid.,326
[92] Ibid.,327

reasons why there is so much hesitation to do it; no one really knows what will happen.[93] There are two types of exits mentioned by Lapavitsas, a conservative exit and a progressive exit**.** The conservative exit would aim at devaluation. Some of the pressure of adjustment would be passed on to the international sphere, and exports would revive. But there would also be losses for those servicing debt abroad, including banks. Workers would face wage declines as the price of tradable goods would rise. Devaluation would probably be accompanied by austerity and liberalization, compounding the pressure on workers.[94]

The progressive exit would require a shift of economic and social power toward labor in peripheral countries. There would be devaluation accompanied by cessation of payments and restructuring of debt. To prevent collapse of the financial system, there would have to be widespread nationalization of banking, creating a system of public banks. Controls would also have to be imposed on the capital account to prevent outflows of capital. To protect output and employment, finally, it would then be necessary to expand public ownership over key areas of the economy, including public utilities, transport and energy.[95]

Eun and Resnick disagree with Lapavitsas and argue that we will find out when the Eurozone experiences a major asymmetric shock. The global financial crisis IS in an asymmetric shock today, and so far the euro has managed to survive. A successful response to these shocks will require wage, price, and fiscal flexibility. A cautionary note is in order: a symmetric shock can occur even within a country. In the United States, for example, when oil prices jumped in

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[93] Peter Davis, "If Greece Is Shut Out of the Eurozone, It Will Sail into Uncharted Waters," *New York Times*, 06/28/2015, accessed September 4, 2015, http://www.nytimes.com/2015/06/29/business/fears-of-greece-leaving-euro-are-fears-of-the-unknown.html?_r=0.
[94] Ibid., 327
[95] Ibid., 328

the 1970s, oil consuming regions such as New England suffered a severe recession, whereas Texas, a major oil producing state, experienced a major boom.[96]

But the U.S. has managed its economy with a common national monetary policy. Although asymmetric shocks are no doubt more serious internationally, one should be careful not to exaggerate their significance as an impediment to monetary union. In addition, since the advent of the EMS in 1979, the EMU member countries have restricted their monetary policies in order to maintain exchange rate stability in Europe. Considering that intra-euro zone trade accounts for about 60 % of foreign trade of the Eurozone crisis, benefits from the EMU are likely to exceed the associated costs.

Furthermore, leaders in political and business circles in Europe have invested substantial political capital in the success of the euro. So long as Europe can resolve internal frictions and imbalances, as revealed in the Greek debt crisis, it seems safe to predict that the euro will survive.[97]

Before the launch of the euro in 1999, Milton Friedman predicted that the Eurozone would not survive its first economic crisis. He noted that in a world of floating exchange rates, if one country faces a shock, it could simply respond by letting the exchange rate change. But with the arrival of the euro, that option is no longer available. Friedman might be right amid a deepening banking crisis in Greece and with the election of a left wing party led by Alexis Tsipras that could make or break the nation's ties with the euro zone, the idea of a euro break up has increasingly become a possibility. The main objective of this thesis was to prove to critics like

[96] Cheol S. Eun and Bruce G. Resnick, *International Financial Management*, 6th ed. (New York: McGraw-Hill Irwin, 2012), 45-49.
[97] Ibid.,49

Friedman and the others that the euro will survive the Eurozone crisis. I believe the euro will survive for the following reasons:

1. The long-term interest of the participating countries are behind it as the euro collapse will not only affect the poor counties but the well-off ones as well. As George Soros said "euro zone keeps Germany's exports cheap and therefore competitive. What's more, it keeps other euro nations from defaulting on their debts. And much of those debts are owed to German financial institutions. So if the ship sinks, all on board, including Germany, will sink with it." (Financial post)
2. The Eurozone is backed by a profound political commitment as leaders in political and business circles have invested substantial political capital in the success of the euro. That is why a tentative agreement was reached on July 13, 2015 by a summit of Eurozone leaders for a bailout program. If this agreement was not reached, Greece could have faced bankruptcy and a possible exit from the euro.
3. Europe's economic and monetary union is not only much stronger than many fear, it is also much better than the system of fixed but adjustable exchange rates that it replaced, thus the Eurozone is more likely to get larger than it is to get smaller.
4. Even if *Grexit* were to occur, the euro will still survive.

A number of proposals have been put forward by various parties to deal with the Eurozone crises, these include both short term and long term proposals. In the short term it has been suggested that the ECB should make bond purchases to provide a bailout, and in the long term a fiscal transfer mechanism will be necessary to solve the Eurozone crisis permanently.

It is still unknown if the euro will survive the Eurozone crisis in the near future. We will find out if this conclusion is correct in the near future. This will depend on two factors: first will Greece accept the new terms of the bailout; and there was an election recently held on September 20, 2015. Alexis Tsipras was reelected and we do not know what this new government might do.

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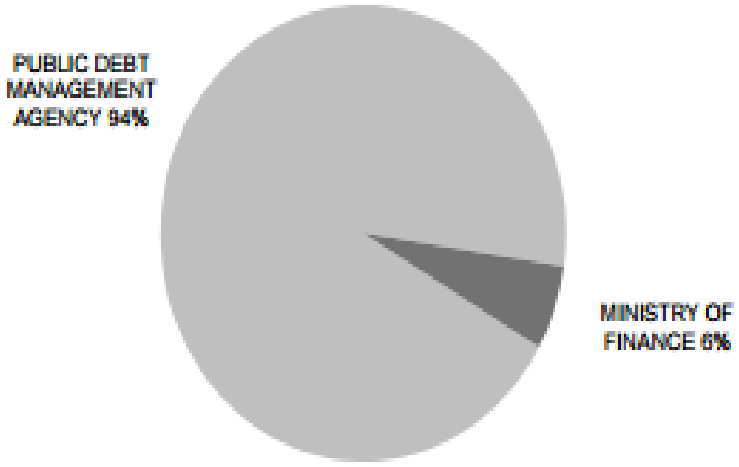
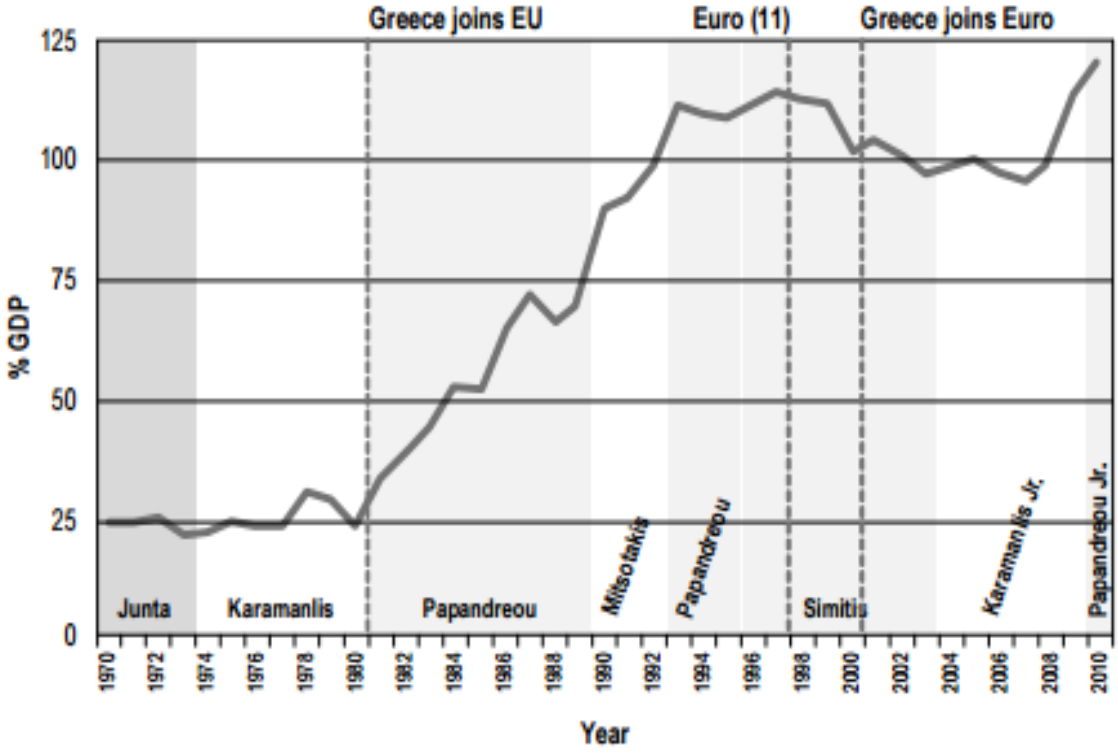
Appendix

Figure 3.1: composition of the Greek government debt



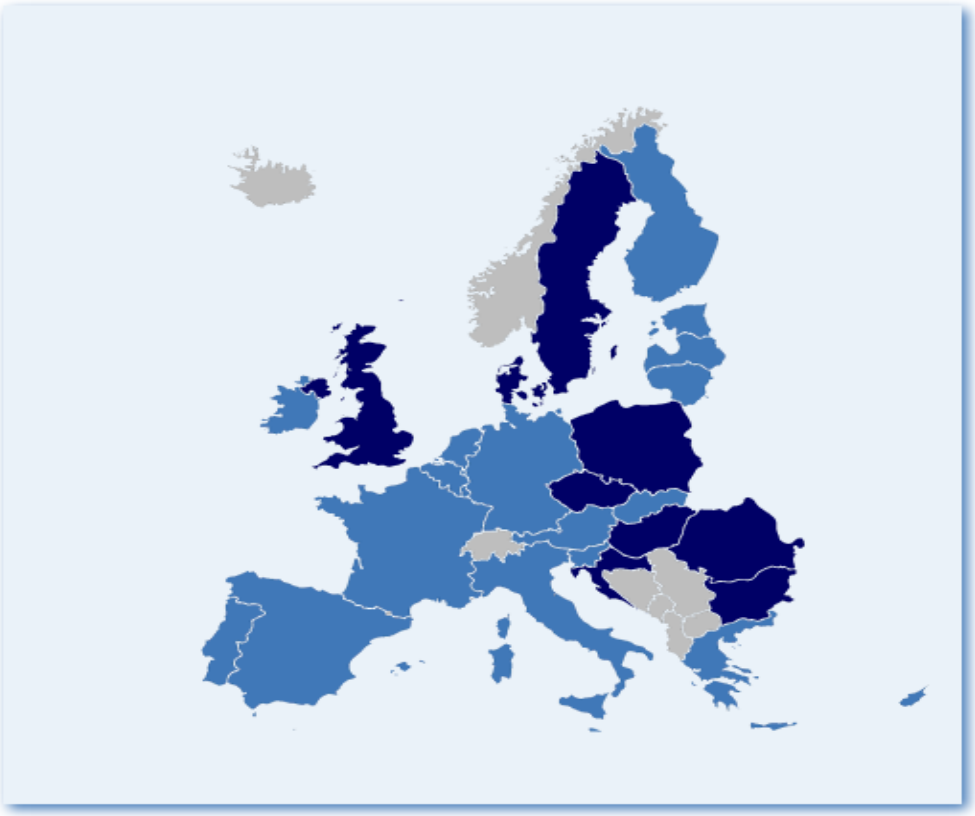
Source: Kouretas Georgios(2010)

Figure 3.2.: Evolution of the Greek Public Debt



Source: Kouretas Georgios (2010)

Table I Euro area 1999-2014



The following members of the European Union use the euro:

- Austria
- Belgium
- Cyprus
- Estonia
- Finland
- France
- Germany
- Greece
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- The Netherlands
- Portugal
- Slovenia
- Slovakia
- Spain

The following members of the European Union do not use the euro:

Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Poland, Romania, Sweden and the United Kingdom.

Source: European central bank

Table II GDP, government deficit/surplus and debt in the EU

		2011	2012	2013	2014
Belgium					
GDP mp	(million euro)	379 991	388 254	395 262	402 270
Government deficit (-) / surplus (+)	(million euro)	-15 547	-16 073	-11 534	-13 057
	(% of GDP)	-4.1	-4.1	-2.9	-3.2
Government expenditure	(% of GDP)	53.4	54.8	54.5	54.3
Government revenue	(% of GDP)	49.3	50.7	51.5	51.1
Government debt	(million euro)	387 629	403 175	412 770	428 365
	(% of GDP)	102.0	103.8	104.4	106.5
memo: intergovernmental lending	(million euro)	2 586	7 198	8 600	8 956
in the context of the financial crisis	(% of GDP)	0.7	1.9	2.2	2.2
Bulgaria					
GDP mp	(million BGN)	78 434	80 044	80 282	82 164
Government deficit (-) / surplus (+)	(million BGN)	-1 590	-522	-694	-2 337
	(% of GDP)	-2.0	-0.7	-0.9	-2.8
Government expenditure	(% of GDP)	34.7	35.2	38.3	39.2
Government revenue	(% of GDP)	32.6	34.5	37.4	36.4
Government debt	(million BGN)	12 291	14 388	14 731	22 694
	(% of GDP)	15.7	18.0	18.3	27.6
memo: intergovernmental lending	(million BGN)	0	0	0	0
in the context of the financial crisis	(% of GDP)	0.0	0.0	0.0	0.0
Czech Republic					
GDP mp	(million CZK)	4 022 410	4 047 675	4 086 260	4 266 141
Government deficit (-) / surplus (+)	(million CZK)	-108 860	-157 889	-47 206	-84 558
	(% of GDP)	-2.7	-3.9	-1.2	-2.0
Government expenditure	(% of GDP)	42.4	43.8	41.9	42.0
Government revenue	(% of GDP)	39.7	39.9	40.8	40.1
Government debt	(million CZK)	1 604 009	1 803 585	1 839 726	1 816 137
	(% of GDP)	39.9	44.6	45.0	42.6
memo: intergovernmental lending	(million CZK)	0	0	0	0
in the context of the financial crisis	(% of GDP)	0.0	0.0	0.0	0.0
Denmark					
GDP mp	(million DKK)	1 833 404	1 866 779	1 886 393	1 919 192
Government deficit (-) / surplus (+)	(million DKK)	-37 966	-68 442	-20 024	23 942
	(% of GDP)	-2.1	-3.7	-1.1	1.2
Government expenditure	(% of GDP)	56.8	58.8	57.1	57.2
Government revenue	(% of GDP)	54.8	55.1	56.0	58.5
Government debt	(million DKK)	850 862	850 553	849 761	867 947
	(% of GDP)	46.4	45.6	45.0	45.2
memo: intergovernmental lending	(million DKK)	0	1 500	2 984	2 977
in the context of the financial crisis	(% of GDP)	0.0	0.1	0.2	0.2
Germany					
GDP mp	(million euro)	2 699 100	2 749 900	2 809 480	2 903 790
Government deficit (-) / surplus (+)	(million euro)	-23 272	2 606	4 172	19 423
	(% of GDP)	-0.9	0.1	0.1	0.7
Government expenditure	(% of GDP)	44.6	44.2	44.3	43.9
Government revenue	(% of GDP)	43.7	44.3	44.5	44.6
Government debt	(million euro)	2 101 823	2 179 813	2 166 021	2 170 000
	(% of GDP)	77.9	79.3	77.1	74.7
memo: intergovernmental lending	(million euro)	19 994	56 091	67 024	69 804
in the context of the financial crisis	(% of GDP)	0.7	2.0	2.4	2.4

Source: Eurostat

Table III GDP, government deficit/surplus and debt in the EU

		2011	2012	2013	2014
Estonia					
GDP mp	(million euro)	16 404	17 637	18 739	19 526
Government deficit (-) / surplus (+)	(million euro)	195	-39	-40	121
	(% of GDP)	1.2	-0.2	-0.2	0.6
Government expenditure	(% of GDP)	38.0	39.8	38.8	38.8
Government revenue	(% of GDP)	39.2	39.6	38.5	39.4
Government debt	(million euro)	984	1 712	1 888	2 073
	(% of GDP)	6.0	9.7	10.1	10.6
memo: intergovernmental lending	(million euro)	14	355	458	485
in the context of the financial crisis	(% of GDP)	0.1	2.0	2.4	2.5
Ireland					
GDP mp	(million euro)	171 042	172 755	174 791	185 412
Government deficit (-) / surplus (+)	(million euro)	-21 804	-14 065	-10 152	-7 629
	(% of GDP)	-12.7	-8.1	-5.8	-4.1
Government expenditure	(% of GDP)	46.3	42.3	40.7	39.0
Government revenue	(% of GDP)	33.5	34.2	34.9	34.9
Government debt	(million euro)	190 123	210 238	215 328	203 319
	(% of GDP)	111.2	121.7	123.2	109.7
memo: intergovernmental lending	(million euro)	347	347	347	347
in the context of the financial crisis	(% of GDP)	0.2	0.2	0.2	0.2
Greece					
GDP mp	(million euro)	207 752	194 204	182 438	179 081
Government deficit (-) / surplus (+)	(million euro)	-21 221	-16 871	-22 498	-6 356
	(% of GDP)	-10.2	-8.7	-12.3	-3.5
Government expenditure	(% of GDP)	54.0	54.4	60.1	49.3
Government revenue	(% of GDP)	43.8	45.7	47.8	45.8
Government debt	(million euro)	355 977	304 714	319 178	317 094
	(% of GDP)	171.3	156.9	175.0	177.1
memo: intergovernmental lending	(million euro)	0	0	0	0
in the context of the financial crisis	(% of GDP)	0.0	0.0	0.0	0.0
Spain					
GDP mp	(million euro)	1 075 147	1 055 158	1 049 181	1 058 469
Government deficit (-) / surplus (+)	(million euro)	-101 265	-108 903	-71 291	-61 391
	(% of GDP)	-9.4	-10.3	-6.8	-5.8
Government expenditure	(% of GDP)	45.4	47.3	44.3	43.6
Government revenue	(% of GDP)	36.0	37.0	37.5	37.8
Government debt	(million euro)	743 531	890 978	966 170	1 033 857
	(% of GDP)	69.2	84.4	92.1	97.7
memo: intergovernmental lending	(million euro)	8 717	24 542	29 342	30 566
in the context of the financial crisis	(% of GDP)	0.8	2.3	2.8	2.9
France					
GDP mp	(million euro)	2 059 284	2 086 815	2 116 565	2 144 546
Government deficit (-) / surplus (+)	(million euro)	-104 961	-100 448	-86 397	-84 839
	(% of GDP)	-5.1	-4.8	-4.1	-4.0
Government expenditure	(% of GDP)	55.9	56.8	57.0	57.2
Government revenue	(% of GDP)	50.8	52.0	52.9	53.2
Government debt	(million euro)	1 754 356	1 869 155	1 953 409	2 037 772
	(% of GDP)	85.2	89.6	92.3	95.0
memo: intergovernmental lending	(million euro)	14 929	42 030	50 266	52 362
in the context of the financial crisis	(% of GDP)	0.7	2.0	2.4	2.4

Source: Eurostat

Table IV GDP, government deficit/surplus and debt in the EU

		2011	2012	2013	2014
Croatia					
GDP mp	(million HRK)	332 587	330 456	330 135	328 927
Government deficit (-) / surplus (+)	(million HRK)	-25 038	-17 504	-17 672	-18 844
	(% of GDP)	-7.5	-5.3	-5.4	-5.7
Government expenditure	(% of GDP)	48.5	47.0	47.7	48.0
Government revenue	(% of GDP)	41.0	41.7	42.4	42.3
Government debt	(million HRK)	211 898	228 790	266 134	279 569
	(% of GDP)	63.7	69.2	80.6	85.0
memo: intergovernmental lending	(million HRK)	0	0	0	0
in the context of the financial crisis	(% of GDP)	0.0	0.0	0.0	0.0
Italy					
GDP mp	(million euro)	1 638 857	1 615 131	1 609 462	1 616 048
Government deficit (-) / surplus (+)	(million euro)	-57 154	-48 310	-47 455	-49 056
	(% of GDP)	-3.5	-3.0	-2.9	-3.0
Government expenditure	(% of GDP)	49.1	50.8	50.9	51.1
Government revenue	(% of GDP)	45.6	47.8	48.0	48.1
Government debt	(million euro)	1 907 479	1 988 901	2 068 722	2 134 920
	(% of GDP)	116.4	123.1	128.5	132.1
memo: intergovernmental lending	(million euro)	13 118	36 932	44 156	45 998
in the context of the financial crisis	(% of GDP)	0.8	2.3	2.7	2.8
Cyprus					
GDP mp	(million euro)	19 487	19 411	18 119	17 506
Government deficit (-) / surplus (+)	(million euro)	-1 122	-1 130	-891	-1 544
	(% of GDP)	-5.8	-5.8	-4.9	-8.8
Government expenditure	(% of GDP)	42.8	42.1	41.4	49.1
Government revenue	(% of GDP)	37.0	36.3	36.5	40.3
Government debt	(million euro)	12 869	15 431	18 519	18 819
	(% of GDP)	66.0	79.5	102.2	107.5
memo: intergovernmental lending	(million euro)	144	405	393	362
in the context of the financial crisis	(% of GDP)	0.7	2.1	2.2	2.1
Latvia					
GDP mp	(million euro)	20 297	22 043	23 222	24 060
Government deficit (-) / surplus (+)	(million euro)	-678	-175	-172	-347
	(% of GDP)	-3.3	-0.8	-0.7	-1.4
Government expenditure	(% of GDP)	38.8	36.5	36.0	36.9
Government revenue	(% of GDP)	35.5	35.7	35.3	35.5
Government debt	(million euro)	8 659	9 013	8 876	9 633
	(% of GDP)	42.7	40.9	38.2	40.0
memo: intergovernmental lending	(million euro)	0	0	0	0
in the context of the financial crisis	(% of GDP)	0.0	0.0	0.0	0.0
Lithuania					
GDP mp	(million euro)	31 247	33 314	34 956	36 288
Government deficit (-) / surplus (+)	(million euro)	-2 796	-1 049	-917	-242
	(% of GDP)	-8.9	-3.1	-2.6	-0.7
Government expenditure	(% of GDP)	42.5	36.1	35.5	34.9
Government revenue	(% of GDP)	33.6	33.0	32.9	34.3
Government debt	(million euro)	11 629	13 265	13 550	14 826
	(% of GDP)	37.2	39.8	38.8	40.9
memo: intergovernmental lending	(million euro)	0	0	0	0
in the context of the financial crisis	(% of GDP)	0.0	0.0	0.0	0.0

Source: Eurostat

Table V GDP, government deficit/surplus and debt in the EU

		2011	2012	2013	2014
Luxembourg					
GDP mp	(million euro)	42 410	43 812	45 288	47 107
Government deficit (-) / surplus (+)	(million euro)	166	56	388	289
	(% of GDP)	0.4	0.1	0.9	0.6
Government expenditure	(% of GDP)	42.3	43.5	43.6	44.0
Government revenue	(% of GDP)	42.7	43.6	44.4	44.7
Government debt	(million euro)	8 104	9 612	10 891	11 123
	(% of GDP)	19.1	21.9	24.0	23.6
memo: intergovernmental lending in the context of the financial crisis	(million euro)	183	516	617	643
	(% of GDP)	0.4	1.2	1.4	1.4
Hungary					
GDP mp	(million HUF)	28 035 033	28 548 800	29 846 259	31 890 602
Government deficit (-) / surplus (+)	(million HUF)	-1 537 890	-659 282	-733 710	-817 646
	(% of GDP)	-5.5	-2.3	-2.5	-2.6
Government expenditure	(% of GDP)	49.9	48.7	49.8	50.1
Government revenue	(% of GDP)	44.4	46.4	47.3	47.6
Government debt	(million HUF)	22 720 746	22 414 051	23 085 005	24 525 014
	(% of GDP)	81.0	78.5	77.3	76.9
memo: intergovernmental lending in the context of the financial crisis	(million HUF)	0	0	0	0
	(% of GDP)	0.0	0.0	0.0	0.0
Malta					
GDP mp	(million euro)	6 903	7 226	7 571	7 961
Government deficit (-) / surplus (+)	(million euro)	-178	-264	-194	-168
	(% of GDP)	-2.6	-3.6	-2.6	-2.1
Government expenditure	(% of GDP)	40.9	42.4	42.3	43.8
Government revenue	(% of GDP)	38.3	38.7	39.7	41.7
Government debt	(million euro)	4 809	4 872	5 241	5 417
	(% of GDP)	69.7	67.4	69.2	68.0
memo: intergovernmental lending in the context of the financial crisis	(million euro)	66	187	223	232
	(% of GDP)	1.0	2.6	2.9	2.9
Netherlands					
GDP mp	(million euro)	642 929	640 644	642 851	655 375
Government deficit (-) / surplus (+)	(million euro)	-27 835	-25 330	-14 629	-15 035
	(% of GDP)	-4.3	-4.0	-2.3	-2.3
Government expenditure	(% of GDP)	47.0	47.5	46.8	46.6
Government revenue	(% of GDP)	42.7	43.5	44.5	44.3
Government debt	(million euro)	393 872	426 145	441 039	451 006
	(% of GDP)	61.3	66.5	68.6	68.8
memo: intergovernmental lending in the context of the financial crisis	(million euro)	4 187	11 791	14 096	14 684
	(% of GDP)	0.7	1.8	2.2	2.2
Austria					
GDP mp	(million euro)	308 675	317 213	322 595	328 996
Government deficit (-) / surplus (+)	(million euro)	-7 907	-6 919	-4 144	-7 916
	(% of GDP)	-2.6	-2.2	-1.3	-2.4
Government expenditure	(% of GDP)	50.8	50.9	50.9	52.3
Government revenue	(% of GDP)	48.2	48.7	49.6	49.9
Government debt	(million euro)	253 293	258 526	260 977	278 089
	(% of GDP)	82.1	81.5	80.9	84.5
memo: intergovernmental lending in the context of the financial crisis	(million euro)	2 038	5 741	6 863	7 149
	(% of GDP)	0.7	1.8	2.1	2.2

Source: Eurostat

Table VI GDP, government deficit/surplus and debt in the EU

		2011	2012	2013	2014
Poland					
GDP mp	(million PLN)	1 553 582	1 615 894	1 662 678	1 728 677
Government deficit (-) / surplus (+)	(million PLN)	-76 174	-60 433	-66 735	-55 241
	(% of GDP)	-4.9	-3.7	-4.0	-3.2
Government expenditure	(% of GDP)	43.9	42.9	42.2	41.8
Government revenue	(% of GDP)	39.0	39.2	38.2	38.6
Government debt	(million PLN)	851 429	878 415	926 115	866 501
	(% of GDP)	54.8	54.4	55.7	50.1
memo: intergovernmental lending	(million PLN)	0	0	0	0
in the context of the financial crisis	(% of GDP)	0.0	0.0	0.0	0.0
Portugal					
GDP mp	(million euro)	176 167	168 398	169 395	173 053
Government deficit (-) / surplus (+)	(million euro)	-12 967	-9 450	-8 181	-7 717
	(% of GDP)	-7.4	-5.6	-4.8	-4.5
Government expenditure	(% of GDP)	50.0	48.5	50.1	49.0
Government revenue	(% of GDP)	42.6	42.9	45.2	44.5
Government debt	(million euro)	195 690	211 784	219 645	225 280
	(% of GDP)	111.1	125.8	129.7	130.2
memo: intergovernmental lending	(million euro)	1 212	1 119	1 119	1 119
in the context of the financial crisis	(% of GDP)	0.7	0.7	0.7	0.6
Romania					
GDP mp	(million RON)	565 097	596 682	637 583	666 637
Government deficit (-) / surplus (+)	(million RON)	-30 210	-17 467	-13 906	-9 921
	(% of GDP)	-5.3	-2.9	-2.2	-1.5
Government expenditure	(% of GDP)	39.1	36.4	35.2	34.9
Government revenue	(% of GDP)	33.8	33.5	33.0	33.4
Government debt	(million RON)	193 201	222 796	242 194	265 391
	(% of GDP)	34.2	37.3	38.0	39.8
memo: intergovernmental lending	(million RON)	0	0	0	0
in the context of the financial crisis	(% of GDP)	0.0	0.0	0.0	0.0
Slovenia					
GDP mp	(million euro)	36 868	36 006	36 144	37 246
Government deficit (-) / surplus (+)	(million euro)	-2 451	-1 445	-5 380	-1 819
	(% of GDP)	-6.6	-4.0	-14.9	-4.9
Government expenditure	(% of GDP)	50.0	48.6	59.9	49.8
Government revenue	(% of GDP)	43.3	44.6	45.0	45.0
Government debt	(million euro)	17 134	19 336	25 427	30 133
	(% of GDP)	46.5	53.7	70.3	80.9
memo: intergovernmental lending	(million euro)	325	972	1 162	1 210
in the context of the financial crisis	(% of GDP)	0.9	2.7	3.2	3.2
Slovakia					
GDP mp	(million euro)	70 160	72 185	73 593	75 215
Government deficit (-) / surplus (+)	(million euro)	-2 887	-3 036	-1 902	-2 157
	(% of GDP)	-4.1	-4.2	-2.6	-2.9
Government expenditure	(% of GDP)	40.6	40.2	41.0	41.8
Government revenue	(% of GDP)	36.4	36.0	38.4	38.9
Government debt	(million euro)	30 480	37 614	40 174	40 297
	(% of GDP)	43.4	52.1	54.6	53.6
memo: intergovernmental lending	(million euro)	173	1 494	1 895	1 997
in the context of the financial crisis	(% of GDP)	0.2	2.1	2.6	2.7

Source: Eurostat

Table VII GDP, government deficit/surplus and debt in the EU

		2011	2012	2013	2014
Finland					
GDP mp	(million euro)	196 869	199 793	201 995	204 015
Government deficit (-) / surplus (+)	(million euro)	-1 999	-4 240	-5 122	-6 435
	(% of GDP)	-1.0	-2.1	-2.5	-3.2
Government expenditure	(% of GDP)	54.4	56.1	57.8	58.7
Government revenue	(% of GDP)	53.3	54.0	55.2	55.5
Government debt	(million euro)	95 490	105 667	112 682	121 050
	(% of GDP)	48.5	52.9	55.8	59.3
memo: intergovernmental lending	(million euro)	1 316	3 708	4 432	4 617
in the context of the financial crisis	(% of GDP)	0.7	1.9	2.2	2.3
Sweden					
GDP mp	(million SEK)	3 656 577	3 684 800	3 775 016	3 907 518
Government deficit (-) / surplus (+)	(million SEK)	-2 893	-34 097	-51 821	-73 684
	(% of GDP)	-0.1	-0.9	-1.4	-1.9
Government expenditure	(% of GDP)	51.4	52.6	53.3	53.0
Government revenue	(% of GDP)	51.4	51.7	51.9	51.1
Government debt	(million SEK)	1 323 279	1 347 018	1 462 486	1 714 957
	(% of GDP)	36.2	36.6	38.7	43.9
memo: intergovernmental lending	(million SEK)	0	2 575	5 321	5 657
in the context of the financial crisis	(% of GDP)	0.0	0.1	0.1	0.1
United Kingdom*					
GDP mp	(million GBP)	1 617 677	1 655 384	1 713 122	1 791 490
Government deficit (-) / surplus (+)	(million GBP)	-123 540	-137 607	-98 330	-101 798
	(% of GDP)	-7.6	-8.3	-5.7	-5.7
Government expenditure	(% of GDP)	46.9	47.0	45.5	44.4
Government revenue	(% of GDP)	39.2	38.6	39.8	38.7
Government debt	(million GBP)	1 323 681	1 420 649	1 495 731	1 600 862
	(% of GDP)	81.8	85.8	87.3	89.4
memo: intergovernmental lending	(million GBP)	403	2 016	3 629	3 629
in the context of the financial crisis	(% of GDP)	0.0	0.1	0.2	0.2
Financial year (fy)		***2011/2012***	***2012/2013***	***2013/2014***	***2014/2015***
GDP mp	*(million GBP)*	*1 626 236*	*1 663 096*	*1 732 833*	*1 809 117*
Government deficit (-) / surplus (+)	*(million GBP)*	*-124 656*	*-126 036*	*-101 595*	*-93 484*
	(% of GDP)	*-7.7*	*-7.6*	*-5.9*	*-5.2*
Government debt	*(million GBP)*	*1 345 202*	*1 420 611*	*1 521 156*	*1 599 306*
	(% of GDP)	*82.7*	*85.4*	*87.8*	*88.4*
memo: intergovernmental lending	*(million GBP)*	*1 210*	*2 823*	*3 629*	*3 629*
in the context of the financial crisis	*(% of GDP)*	*0.1*	*0.2*	*0.2*	*0.2*

Source: Eurostat

Table: VIII Annual inflation rates

Inflation rates[3] (%) measured by HICP

	Annual rate							Monthly rate
	Apr 14	Nov 14	Dec 14	Jan 15	Feb 15	Mar 15	Apr 15	Apr 15
Euro area	0.7	0.3	-0.2	-0.6	-0.3	-0.1	0.0p	0.2p
EU	0.8	0.3	-0.1	-0.5	-0.3	-0.1	0.0p	0.3p
Belgium	0.9	0.1	-0.4	-0.6	-0.4	-0.1	0.4	0.3
Bulgaria	-1.3	-1.9	-2.0	-2.4	-1.7	-1.1	-0.9	0.5
Czech Republic	0.2	0.6	0.1	-0.1	-0.1	0.1	0.5	0.4
Denmark	0.5	0.2	0.1	-0.3	0.0	0.3	0.4	0.2
Germany[4]	1.1	0.5	0.1	-0.5	0.0r	0.2r	0.3	-0.1
Estonia	0.8	0.0	0.1	-0.5	-0.2	0.0	0.4	0.6
Ireland	0.4	0.2	-0.3	-0.4	-0.4	-0.3	-0.4	-0.1
Greece	-1.6	-1.2	-2.5	-2.8	-1.9	-1.9	-1.8	0.4
Spain	0.3	-0.5	-1.1	-1.5	-1.2	-0.8	-0.7	0.7
France	0.8	0.4	0.1	-0.4	-0.3	0.0	0.1	0.1
Croatia	-0.1	0.3	-0.1	-0.6	-0.4	0.0	-0.1	0.4
Italy	0.5	0.3	-0.1	-0.5	0.1	0.0	-0.1	0.4
Cyprus	-0.4	0.0	-1.0	-0.7	-0.8	-1.4	-1.7	0.3
Latvia	0.8	0.9	0.3	-0.3	0.0	0.5	0.6	0.6
Lithuania	0.3	0.4	-0.1	-1.4	-1.5	-1.1	-0.6	0.7
Luxembourg	0.9	0.2	-0.9	-1.1	-0.3	0.1	0.0	0.1
Hungary	-0.2	0.1	-0.8	-1.4	-1.0	-0.5	0.0	0.4
Malta	0.5	0.6	0.4	0.8	0.6	0.5	1.4	2.8
Netherlands	0.6	0.3	-0.1	-0.7	-0.5	-0.3	0.0	0.8
Austria	1.6	1.5	0.8	0.5	0.5	0.9	0.9p	0.1p
Poland	0.3	-0.3	-0.6	-1.0	-1.3	-1.2	-0.9	0.4
Portugal	-0.1	0.1	-0.3	-0.4	-0.1	0.4	0.5	0.4
Romania	1.6	1.5	1.0	0.5	0.4	0.8	0.6	0.2
Slovenia	0.5	0.1	-0.1	-0.7	-0.5	-0.4	-0.7	0.1
Slovakia	-0.2	0.0	-0.1	-0.5	-0.6	-0.4	-0.1	0.3
Finland	1.3	1.1	0.6	-0.1	-0.1	0.0	-0.1	0.0
Sweden	0.3	0.3	0.3	0.4	0.7	0.7	0.5	0.2
United Kingdom[5]	1.8	1.0	0.5	0.3	0.0	0.0	:	:
Iceland	1.3	-0.6	-0.4	-0.1	-0.8	-0.1	-0.3	0.2
Norway	1.5	2.0	2.0	1.9	1.8	1.7	1.8	0.4
Switzerland	0.1	0.1	-0.1	-0.1	-0.4	-0.5	-0.8	-0.2

p = provisional r = revised : = not available

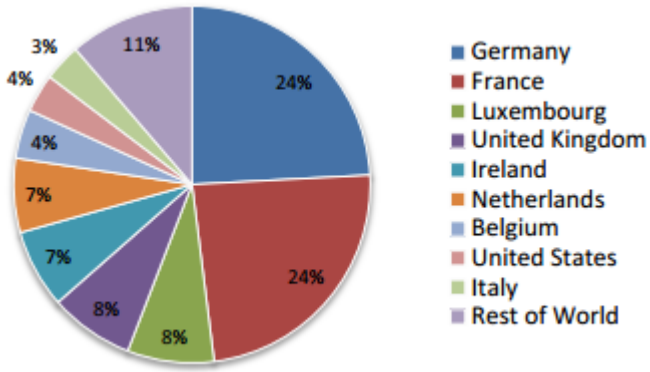
Source: Eurostat

Table IX Quarterly Government debt by Member State

		Millions of national currency		% of GDP		Difference in pp of GDP, 2014 Q4 compared with 2014 Q3
		2014 Q3	2014 Q4	2014 Q3	2014 Q4	
Belgium	euro	433 663	428 365	108.2	106.5	-1.8
Bulgaria	BGN	19 340	22 694	23.6	27.6	4.0
Czech Republic	CZK	1 821 584	1 816 137	43.0	42.6	-0.5
Denmark	DKK	895 334	867 947	47.0	45.2	-1.8
Germany	euro	2 162 668	2 170 000	75.1	74.7	-0.3
Estonia	euro	2 018	2 073	10.5	10.6	0.2
Ireland	euro	208 208	203 319	114.3	109.7	-4.6
Greece	euro	315 462	317 094	175.8	177.1	1.3
Spain	euro	1 020 303	1 033 857	96.8	97.7	0.9
France*	euro	2 035 429	2 037 772	95.3	95.0	-0.3
Croatia**	HRK	270 038	279 569	82.2	85.0	2.8
Italy	euro	2 133 306	2 134 920	132.0	132.1	0.1
Cyprus	euro	18 428	18 819	104.7	107.5	2.8
Latvia	euro	9 635	9 633	40.4	40.0	-0.4
Lithuania	euro	13 718	14 826	38.1	40.9	2.8
Luxembourg*	euro	10 883	11 123	23.3	23.6	0.3
Hungary	HUF	25 103 247	24 525 014	80.0	76.9	-3.1
Malta	euro	5 627	5 417	71.7	68.0	-3.6
Netherlands	euro	448 892	451 006	69.0	68.8	-0.1
Austria	euro	264 707	278 089	80.8	84.5	3.7
Poland*	PLN	839 083	866 502	48.9	50.1	1.2
Portugal	euro	228 918	225 280	132.2	130.2	-2.0
Romania	RON	252 828	265 391	38.3	39.8	1.6
Slovenia	euro	28 813	30 133	77.7	80.9	3.2
Slovakia	euro	41 418	40 297	55.4	53.6	-1.9
Finland	euro	118 405	121 050	58.2	59.3	1.2
Sweden	SEK	1 562 084	1 714 957	40.4	43.9	3.5
United Kingdom	GBP	1 558 170	1 600 862	87.8	89.4	1.5

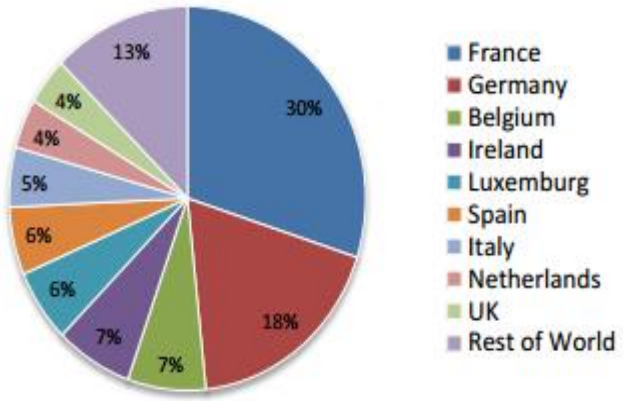
Source: Eurostat

Figure 3.4: external holders of Spanish debt securities (end 2008)



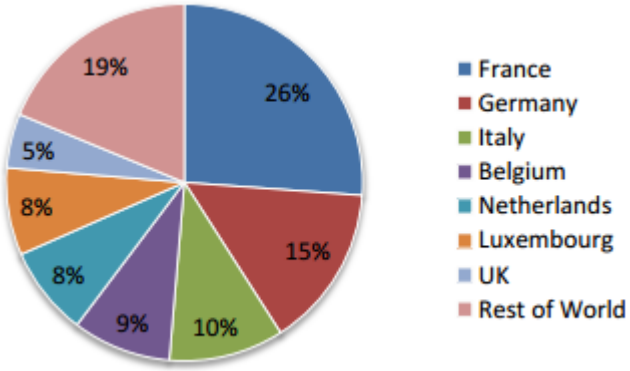
Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 3.5 External holders of Portuguese debt securities (end 2008)



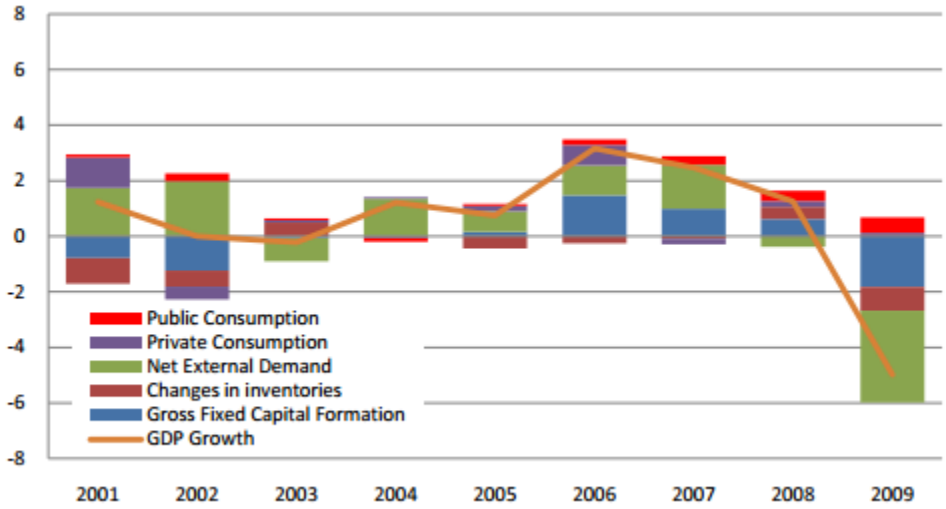
Source: Lapavitsas et al (2012) Crisis in the Eurozone

Figure 3.6: external holders of Greek debt crisis (end 2008)



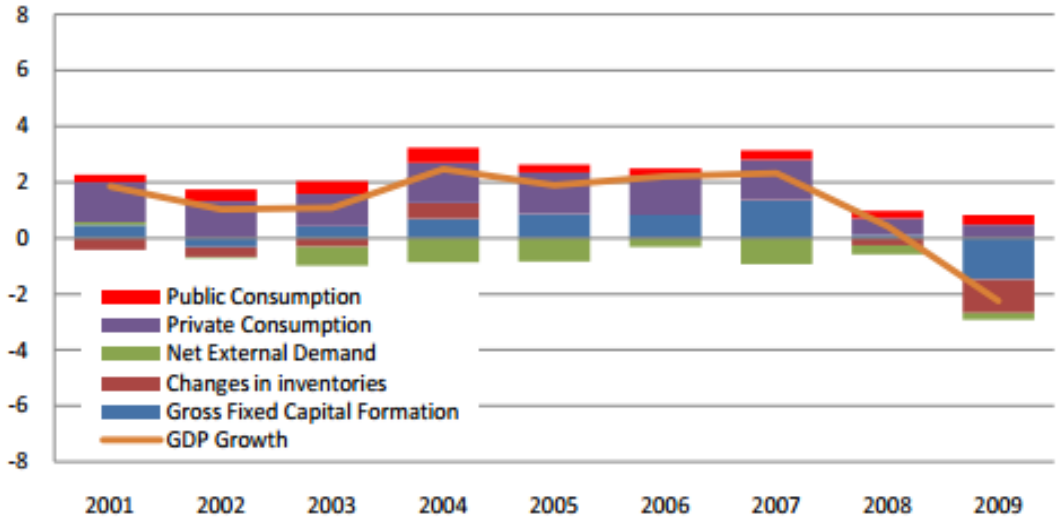
Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 3.10 GDP growth rate by aggregate demand category-Germany (%)



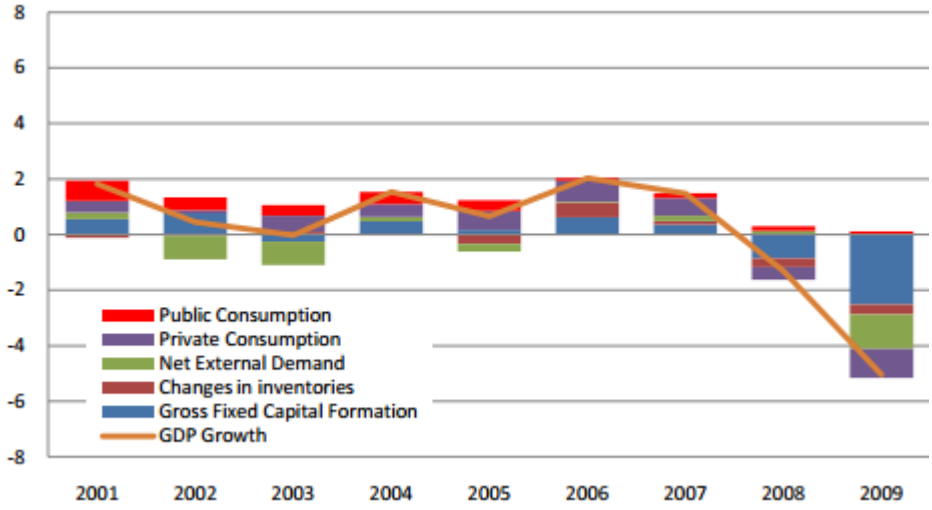
Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 3.11 GDP growth rate by aggregate demand category- France (%)



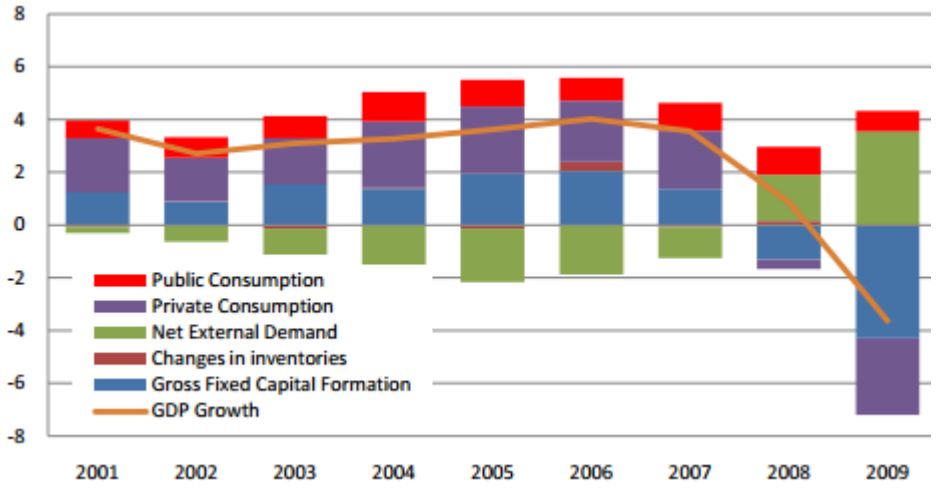
Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 3.12 GDP growth by aggregate demand category- Italy (%)



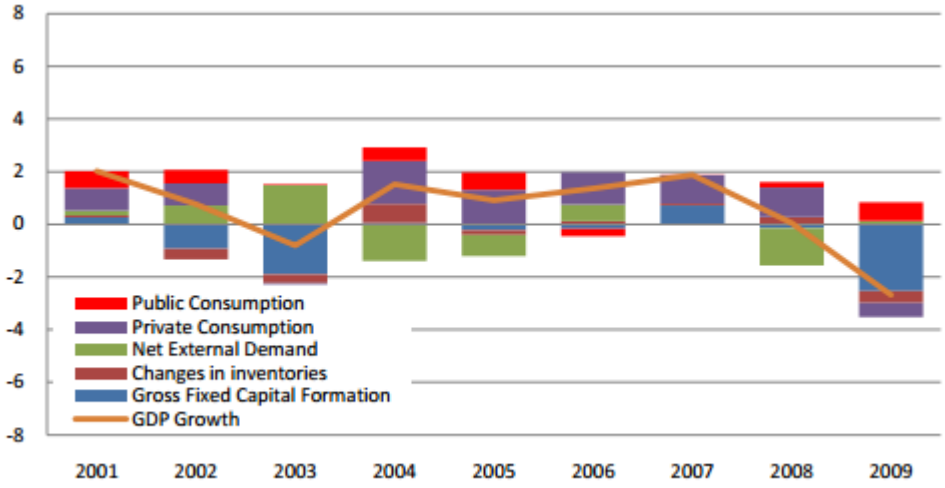
Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 3.13: GDP growth by aggregate demand category- Spain (%)



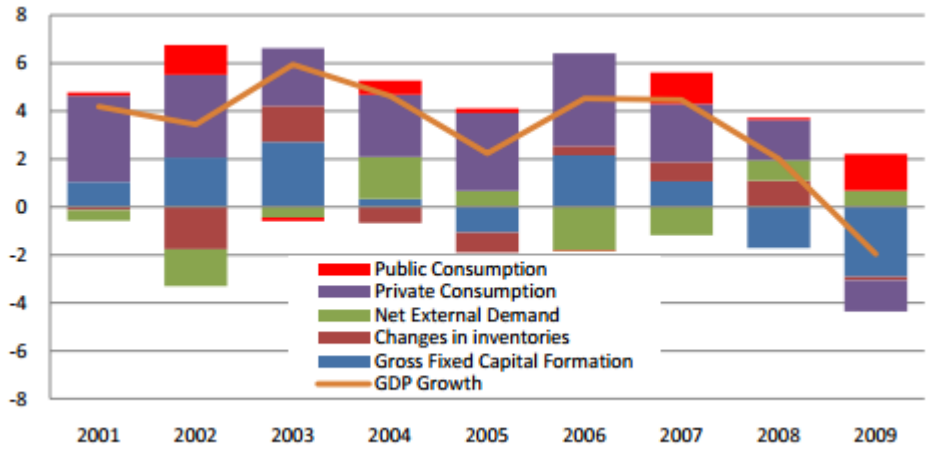
Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 3.14: GDP growth rate by aggregate demand category-Portugal (%)



Source: Lapavitsas et al (2012) crisis in the Eurozone

Figure 3.15: GDP growth rate by aggregate demand category-Greece (%)



Source: Lapavitsas et al (2012) crisis in the Eurozone

GLOSSARY

BOG: Bank of Greece

CB: Central Bank

CPI: Consumer Price Index

EC: European Council

ECB: European central bank

ECU: European currency unit

EDSA: European Debt Surveillance Authority

EFSF: European Financial Stability Pact

EMI: European Monetary Institute

EMS: European Monetary System

EMU: Economic and Monetary union of the European Union

ERM: Exchange Rate Mechanism

EU: European Union

EURATOM: European Atomic Energy Community

GDP: Gross Domestic Product

IMF: International Monetary Fund

IRC: International Reserve Currency

MFI: Monetary Financial institution

OCA: Optimum Currency Area

OECD: Organization for Economic Corporation and Development

TEC: Treaty on Economic Community