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CLAREMONT McKENNA COLLEGE

A STRUCTURAL ANALYSIS OF THE EUROPEAN MONETARY UNION AND ITS
EFFECT ON GREECE IN LIGHT OF THE EUROPEAN FINANCIAL CRISIS

SUBMITTED TO

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FOR

SENIOR THESIS

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Abstract

The intent of this paper is to analyze the structural composition of the European Monetary Union and its implications for the European Financial Crisis, specifically with respect to Greece. This analysis will be driven by a trend analysis of several economic variables from 1999-2010. These variables range from the 4 requirements set under the Maastricht criteria, competitiveness indicators, and relative European trade balances, to international investment position. A quantitative and empirical analysis of this data finds that the Greek crisis was a result of structural issues with the EMU and the Greek government. The ECB's inability to enforce the Maastricht Criteria and independent fiscal policy, as well as Greece's inability to implement efficient fiscal and economic policy, resulted in growing imbalances within the Euro area, as well as a loss of competitiveness and irresponsible rise in sovereign debt for Greece. It is inferred that the EMU was ineffective in achieving its goals of integration; that Greece was not ready to join the EMU when it did; and therefore Greece as a Member State of the EMU was destined to fail.

1. Introduction

The Economic and Monetary Union of the European Union had been a long time goal for the European area. Through the Copenhagen criteria and the Treaty of Maastricht, several conditions were set for the creation of the European Union (EU) and later the single European currency, the euro. The Maastricht Treaty specifically outlined convergence criteria for the third stage of integration, or the monetary union. These criteria included restrictions on a given country's inflation rate, annual government deficits, and government debt, exchange rate, and long term interest rates.¹ Despite these "strict" criteria only a little over a decade after the EMU of seventeen Member States was formed, two of its Member States have suffered large economic crises, and several others are on the verge of doing the same. A member since January of 2001, Greece was the first of these countries to spiral into an economic downturn and is currently on the verge of defaulting on its sovereign debt.

If the European states created guidelines that promoted the stability and growth of the euro and prevented its disintegration, how and why is the Greek economy faltering? Were the mechanisms set in place to monitor EMU members by the European Commission (EC), the Economic Financial Affairs Council (ECOFIN), and the European Central Bank (ECB) effective? If they were, should there have been additional criteria to more fully monitor the health of member economies, including trade balance,

¹ Panos Afxentiou, "Convergence, the Maastricht Criteria, and Their Benefits," *Economia Internazionale / International Economics* 53.4 (2000): 437-48. Camera Di Commercio Di Genova, Web, 18 Nov. 2011, <<http://www2.econ.iastate.edu/classes/econ353/tesfatsion/MaastrichtConvergenceCriteria.Afxentiou.pdf>>, p.249.

competitiveness indicators, and/or financial data? If the monitoring mechanism is a failure, can Greece truly be at complete fault for its situation, or is the EU also at fault?

In order to answer these questions, this thesis will analyze data since the creation of the EMU to the present. These data will include figures for the Maastricht Criteria, as well as information on factors mentioned above: relative European trade balances, productivity and competitiveness indicators, and investment position over the 10-year period since the EMU's creation. These data will be taken from institutions such as the International Monetary Fund (IMF), the ECB, and Eurostat. Mapping out these data over the 12-year period, will provide markers to establish points at which someone or some entity should have questioned Greece's stability, and in which various policies or lack thereof served to ameliorate or worsen the economic situation. This includes policy at the national level, by the Greek government, and the supra-national level, by the European Central Bank which is in charge of monetary policy for the EMU.

The issue of responsibility will be addressed through any failures in policy that are found. As well as how the leading European countries followed the Treaty criteria themselves. Questions will arise, such as Greece's entrance in the first place. Was it ready to join when it did? Was the monetary unification process rushed if appropriate safeguards were not set in place? For instance, were the Maastricht criteria sufficient indicators of stability considering other European countries did not follow them but are doing well? What institutions and policies must be implemented in order to restore stability to the Euro?

Going forward these will be pertinent questions to answer as the Euro area continues to struggle with repairing the EMU and keeping Greece and other members like Ireland and Portugal afloat. Finding what went wrong will potentially provide a guideline for updating the EMU structure, and promote its future stability.

2. Background

The idea for a single currency area began in the 1900's in the wake of "Black Friday," the 1929 New York Stock Exchange crash. This crash created an economic crisis that reverberated around the world that was only magnified with the use of "beggar-my-neighbor" policies, deflationary monetary policies, and tariff barriers.² Such tactics, which only served to worsen the economic strength and competitiveness of a country, made countries desire a stable economy.

As the Second World War continued to devastate Europe, international financial, economic, and monetary matters became increasingly important issues to address for life after war. On July 22, 1944, over forty countries signed the Bretton Woods Agreement, which created the rules and procedures that would govern the world economy. Bretton Woods led to the creation of what is now known as the World Bank and the IMF.³ In 1945, The United Nations was created and in 1957, the Treaty of Rome (Treaty) was signed by several European countries to establish the European Economic Community (EEC). After two destructive wars, the world had become aware of the importance in

²"Towards a Single Currency: a Brief History of EMU," EUROPA – EU Website, Web, 8 Nov. 2011, <http://europa.eu/legislation_summaries/economic_and_monetary_affairs/introducing_euro_practical_aspects/125007_en.htm>, p. 1.

³ Towards a Single 1.

increasing cooperation between countries; cooperation that could prevent further suffering.⁴ It is this need to maintain order and stability that makes the issue of integration amongst the European countries so important. Europe no longer wanted to be divided and frail. In a new economic order, they wished to be a cohesive thriving region that rivaled the United States.

By the end of the 1960's the Bretton Woods System seemed to be weakening, and the turbulent markets were disrupting the stability of European currencies. To address these new problems in 1969, the Barre report was published. It proposed more coordination of economic policies and greater monetary cooperation.⁵ This report gave momentum to the promotion and creation of a single currency area. A 1969 summit at The Hague determined the future of Europe when the heads of state chose to create an economic and monetary union, which had been an explicit goal of European Integration.⁶ The following year, the Werner report described the three stages that could lead to a European Monetary Union (EMU) over a period of 10 years.⁷

In 1979, the European Monetary System (EMS) was created, bringing monetary unification one-step closer. This system was based on fixed, but adjustable exchange rates. Over the following 10 years the EMS and strong political resolve to achieve economic convergence, did much towards reducing exchange-rate variability.⁸ In 1985, a single market was created amongst the European States, and in 1988, a second three stage

⁴ Toward a Single 1-2.

⁵ Toward a Single 2.

⁶ Toward a Single 2.

⁷ Burak Gündođdu, and Orkun Girban, "Greece's Integration to EMU and Lessons for Turkey," Web, 8 Nov. 2011, <http://www.tcmb.gov.tr/yeni/iletisimgm/B_Gundogdu-O_Girban.pdf>, 1.

⁸ Toward a Single 3.

plan emerged, the Delors report, to re-emphasize the ultimate goal of a strong and stable EMU.⁹ To achieve this goal, Member States would have to reinforce the coordination of their economic policies, meet a set of macroeconomic criteria to unite their economies, and relinquish monetary policy decision to an independent and newly created European Central Bank (ECB).¹⁰ Two years later the EMU became a reality with the Treaty of the European Union. This treaty contained the specifics of the stages of integration, and most importantly a list of economic convergence criteria, known as the Maastricht Criteria.¹¹

In the first stage Member States began to improve the free movement of capital and central bank debts. In the second stage, which began in 1994, Member States began to be supervised by the Commission on their public financing, and the base for the ECB was formed to advise states about their independence as central banks and a single currency. In order to move on to the third and final stage of integration, which was planned to start in 1997 or 1999 and would mark the beginning of the EMU, Member States were to meet the Maastricht Criteria.¹²

These criteria consisted of several factors, the first of which was the achievement of a high degree of price stability. This would be apparent with a rate of inflation that does not exceed the price stability of the three best performing states by 1.5% points¹³. The second is the Excessive Deficit Procedure in which the sustainability of the

⁹ Gündogdu 2.

¹⁰ Gündogdu 2.

¹¹ Gündogdu 2.

¹² Gündogdu 2.

¹³ European Central Bank, Convergence Report, May 2010, Web, 18 Nov. 2011, <<http://www.ecb.europa.eu>>, 9-10.

government financial position is determined. The requirements are to have a ratio of planned or actual government deficit to Gross Domestic Product (GDP) of 3% or less, and a ratio of government debt-to-GDP not exceeding 60%.¹⁴ The third criterion referred to exchange rate stability, governments had to participate in the Exchange Rate Mechanism (ERM) for two years without devaluing against the currency of another Member State. Exchange rate stability was given a band under which the rate could fluctuate. This band has ranged from +/- 2.25% to +/- 15% in the history of the ERM.¹⁵ The fourth criterion stated that a Member State must have an average nominal long-term interest rate no greater than 2 percentage points above that of the three best performing, in terms of price stability, Member States.¹⁶

By 1999, the third stage of integration was ready to be put in place with 11 EU Member States ready to join; including Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, and Spain. Despite its attempts, Greece was unable to join the first Euro area group due to its failure to meet the criteria. Greece was experiencing severe political unrest and economic failure at the time the Delors report was published. The Greek Drachma was also not a part of the EMS and was not perceived to be ready; their failure posed a problem for any deeper integration of the EU.¹⁷ Greece did not wish to be excluded from the benefits a possible EMU could bring. Over the course of 10 years, since the start of the first stage of integration to the third, the Greek government and Central Bank of Greece implemented hard monetary and

¹⁴ European Central Bank 11-12.

¹⁵ European Central Bank 13-14.

¹⁶ European Central Bank 15.

¹⁷ Gündogdu 2.

fiscal policies to fulfill the convergence criteria. It was not until June of 2000 that the European Council decided that Greece fulfilled the necessary criteria for entrance into the single currency area, and in January of 2001, Greece entered the Euro area.¹⁸ A year later, Euro coins and banknotes were introduced into the market.

Greece's entry into the EMU differed slightly from the 11 original members. It did not meet the criteria by the 1999 deadline, so in March of 2000, they submitted a new request to be re-examined. The ECB and the EC each examined the extent to which Greece had fulfilled the convergence criteria. They found that Greece's average rate of inflation was at 2%, which was lower than the reference value of 2.4%. The government deficit had fallen below the reference value of 3% in 1999, to 1.6%. While government debt stood at 104.4%, which was still above the 60% requirement. However, the ECB and the EC conceded on this point because this value had dropped 6.0 percent since 1996. Greece was participant of the ERM for at least two years. Lastly, Greece's nominal long-term interest rate was 6.4% which was also below the reference value. Despite the debt-to-GDP ratio Greece was granted admittance into the EMU.¹⁹

In its early years, the EMU proved to be a successful endeavor for the 12 original Member States. The positive effect can be seen in increased competition and transparency, a reduction in the volatility of exchange rates, and improved price stability. These three factors have indirectly affected output growth by reducing investment costs

¹⁸ Gündogdu 3.

¹⁹ "Assessment of Greece's Convergence Prior to Its Participation in the Euro Area on 1 January 2001," *Banque De France*, Dec. 2006, Web, 26 Nov. 2011, <http://www.banque-france.fr/gb/eurosys/telechar/europe/04_411EXAMEN_ENTREE_GRECE-GB.pdf>, 1.

and encouraging inflows of foreign direct investment (FDI) into the region.²⁰ Several reports found that monetary unions increased trade and by 2005, it was suggested that a 15% effect could be measured.²¹ At the time, it seems the Euro area contributed to an increase in cross-border trade in finance, goods, and services, or efficiency gains from this market integration.²² In terms of financial integration, the Euro area bond market was quick to adjust after the adoption of the single currency. Yield differentials across Member States fell sharply, the amount of private bond issues grew, and in general, the market structure converged to a common area-wide system.²³ This factor is significant because it confirms that investors regarded the bonds issued by each Member State as extremely close substitutes.

The goal of the EMU was to create a deeper level of integration in the EU. Therefore the convergence of economic variables amongst Member States is a positive and desired outcome of the formation of the EMU. Whereas a divergence of economic variables would signify failure to fully integrate member State economies into a single Euro area economy.

Apart from the positive economic benefits, an EC Eurobarometer survey suggested that the EMU held a good level of popular support, and that a majority of the Euro area

²⁰ Ray Barrell, Sylvia Gottschalk, Dawn Holland, and Olga Pomerantz, *The Impact of EMU on Growth and Employment*, 318th ed. Economic Papers, Brussels: European Commission, Directorate-General for Economic and Financial Affairs, 2008, European Commission Economic and Financial Affairs, Apr. 2008, Web, 18 Nov. 2011, 2.

²¹ Charles Wyplosz, *European Monetary Union: The Dark Sides of a Major Success*, *Economic Policy*, Vol. 21, No. 46, pp. 207-261, April 2006, Available at SSRN: <http://ssrn.com/abstract=895196> or doi:10.1111/j.1468-0327.2006.00158.213.

²² Philip R. Lane, *The Real Effects of EMU*, IIS Discussion Paper Series, London: Centre for Economic Policy Research, 2006, Ser. 115. The Institute for International Integration Studies, 5 Apr. 2006. Web, 18 Nov. 2011, 4.

²³ Lane 6.

population believed the introduction of the euro was beneficial. The EMU made 19% of its population “feel more European.” It is in these measures that we can see the political motivations for integration are being realized in the early years of the EMU.²⁴

Joining the EMU had particular positive effects for Greece. Greece experienced its highest growth rates since 1999; although this growth cannot be attributed to the EMU alone, we can attribute the EMU with a strong contribution to this growth.²⁵ The most important benefit that membership brought to Greece was the increase in credibility. This credibility brought with it a greater volume of trade and FDI, because as interest rates decreased, and an implied decrease in risk, borrowing from the Euro area and international sources became easier.²⁶ The backing of the ECB allowed poorer member countries like Greece to run extremely large current account deficits. Before the formation of the EMU investors required such countries to have a larger country risk premium to fund large deficits.²⁷

Despite what seemed like a success, there still existed issues that needed to be addressed. Since the first talks of a single currency region, experts, economists, and policy makers doubted the sustainability of such a region. Since integration was partially or mostly based on political considerations, a monetary integration seemed unfeasible with some of the poorer EU members. Before integration, research showed homogeneity amongst Germany, France, and the Benelux countries, while the EU-12 showed a

²⁴ Lane 17.

²⁵ Gündogdu 5.

²⁶ Gündogdu 5.

²⁷ Lane 8.

significantly lower level of homogeneity.²⁸ Hopes were that this would be remedied once the single currency had been implemented, but as it turned out most of the convergence of economies occurred before the EMU began, when countries were attempting to meet the requirements for entrance. Once the euro was in play, many countries lost the desire to continue stringent fiscal policies. A report by the Organization for Economic Cooperation and Development (OECD) showed that there was a slowdown in the reform process in EMU member States after the introduction of the euro.²⁹

Another policy that was implemented to promote convergence was the Stability and Growth Pact (SGP), an extension to the Maastricht Criteria. It said that the same rules set by Maastricht should apply once the Euro was in circulation. Once the Euro was launched many countries had trouble meeting the strict 3% deficit and 60% debt requirements. If a Member State broke the rules for three consecutive years, the EC could enact penalties, in the form of fines up to 0.5% of GDP, and order the culpable country to implement correctional mechanisms.³⁰ In March of 2005, the SGP was reformed to allow countries more flexibility, it created exceptions to what counted as spending considered debt. Exceptions included education spending, research, defense, aid, and the unification of Europe.³¹ However the SGP lost credibility and remains so because the adjustment time given to these countries to fix their fiscal policy, about three

²⁸ David McKay. "The Political Sustainability of European Monetary Union," *British Journal of Political Science* 29.3 (1999): pp. 463-485, Web, 465-466.

²⁹ Barrell 26.

³⁰ "EU Facts: Stability and Growth Pact," CIVITAS: the Institute for the Study of Civil Society, 21 July 2011, Web, 27 Nov. 2011, <<http://www.civitas.org.uk/eufacts/FSECON/EC10.htm>>, 1.

³¹ EU Facts 1.

years, was may be excessive³² This loosening of the restrictions did not help the convergence of fiscal and economic policies in the Euro area, instead it actually prevented it.³³

What seemed to be a flourishing economic area, with a few recognizable faults, became the struggling EMU that we see today. Many of the benefits of the EMU became a source of their troubles. The benefits, economic growth, coupled with fiscal indiscipline by several of the Member States caused increased imbalances within the Euro area. These problems in the context of the United States financial crisis in 2008 resulted in Europe's own crisis.

Following the 2007 euro area money markets freeze, and not being spared from the 2008 fall of Lehman Brothers, caused the Euro area to experience a recession for the first time since its creation. In October of 2009, the Greek public elected a new government headed by George Papandreou. As soon as the new government was in place, it admitted that the previous government had been falsifying national accounts for years and that the actual deficit was at about 13.6% and debt stood at 300bn Euros, 113% of GDP.³⁴ These figures prompted worries about the probability of a default on Greek debt, whether Greece would have to leave the Euro area, the possibility of contagion to other Euro area members, and the future of the EMU. Most people wondered why a seemingly

³² Guillaume R. Sarrat De Tramezaigues, "Assessing the 2005 Growth and Stability Pact Reform: A New Fiscal Policy Rule for the Euro Zone Is Required," *International Journal of Economics and Finance* 2.5 (2010): 140-50, *International Journal of Economics and Finance*, Canadian Center of Science and Education, Nov. 2010, Web, <<http://www.ccsenet.org/journal/index.php/ijef/article/view/7972>>, 141.

³³ Sarrat 147.

³⁴ "Europe's Sovereign-debt Crisis: Acropolis Now," *The Economist*, 29 Apr. 2010, Web. 24 Nov. 2011, <<http://www.economist.com/node/16009099>>, 1. "Timeline: The Unfolding Eurozone Crisis," *BBC News*, 27 Oct. 2011, Web, 20 Nov. 2011, <<http://www.bbc.co.uk/news/business-13856580>>, 1.

successful monetary union could have turned around so quickly. Many had not been aware of the growing spending, debt, and productivity imbalances amongst the Member States.

The crisis worsened in 2010. The Greek government began implementing drastic fiscal austerity policies to curb some deficit, as well as underwent a credit rating downgrade to below investment grade.³⁵ The yield on Greek bonds grew sharply; interest rates on ten-year bonds rose to 7.1%, which is the highest rate since the formation of the EMU and 4 percentage points higher than German bonds.³⁶ This began to spread to other countries like Ireland, and Spain; thus answering the question of whether or not the crisis would be unique to Greece or if it would cause a domino effect. As this problem grew, a need for a Greek bailout became more prominent, but issues of responsibility and whether or not the ECB, and other member countries like Germany, were allowed to bailout the failing state arose. Despite these questions in May of 2010 the IMF and Eurozone members agreed on a 110bn-euro bailout package to help Greece.³⁷

In 2011 the situation remains grave. Greece is still struggling with increasing deficit, debt, and interest rates, as well as the continuous enactment of new austerity measures. As of November of 2010, Greece has installed a new prime minister intent on tackling the debt crisis, economist and former vice president of the ECB, Lucas

³⁵ "TIMELINE-Euro Zone Debt Crisis," *Reuters.com*, 14 June 2010, Web. 20 Nov. 2011, <<http://www.reuters.com/article/2010/06/14/eurozone-crisis-events-idUSLDE65D0LR20100614>>, 1.

³⁶ "Greece's Sovereign-debt Crunch: A Very European Crisis." *The Economist*. 4 Feb. 2010. Web. 20 Nov. 2011. <<http://www.economist.com/node/15452594>>.

³⁷ BBC Timeline 1.

Papademos.³⁸ The crisis is starting to hit not only historically weaker governments, but others like Austria and France. As the Greek sovereign debt crisis has become a definite Euro area problem, it is important to understand what went wrong, who the key players were, and if the euro can regain stability.

3. Literature Review

As this issue is very current, there is a wide array of news and opinion articles that are circulating. These articles are attempting to make sense of the financial crisis that many had not conceived of. Many never believed this crisis would take place a mere 10 years after the formation of the euro zone and the common currency. In the past year, literature pertaining to the Greek financial crisis has examined the flaws in design of the EMU. A variety of explanations have been given as to the nature of these design flaws, and different solutions have been presented in order to re-stabilize the EMU and its monetary, fiscal, and regulatory policies.

An article by Wihlborg, Willett, and Zhang (2010) examines the crisis in Greece and other euro zone countries as a result of not only fiscal issues, but of current account deficits, and an inability to develop proper internal adjustment mechanisms. They present data showing that instead of price and cost convergence within the euro zone, the opposite occurred. In fact, instead of deficit countries adopting adjustment to their fiscal policies, it was the surplus countries that carried out the adjustments that kept these surplus countries in good standing and the deficit countries in the crises they face today.

³⁸ Suzane Daley, "Economist Named to Lead Greek Unity Government," *New York Times*, 10 Nov. 2011, Web, 12 Nov. 2011, <<http://www.nytimes.com/2011/11/11/world/europe/greek-leaders-resume-talks-on-interim-government.html>>, 1.

In the late 1990's, the creation of the euro was primarily motivated by political interests. It was an effort by several EU members to move Europe into the third phase of regional integration. Many at the time believed that the EU members were too many and did not meet the criteria of what was termed the theory of optimal currency areas. One of the most important of these criteria was that member countries should have the flexibility in factor mobility, and price and wage flexibility in order to allow economic adjustments without causing recessions in the absence of the ability to change exchange rates.³⁹ The EU's solution to pushing forward further integration was that by induction into the currency area those countries, whose economic policies and status were less than desired, would fix their policies to create the flexibility needed within and among the euro zone countries. However, increased flexibility in labor markets and better coordination of fiscal policies, which were also necessary to maintain the currency area, did not follow its formation and the euro zone members failed to consider political economic forces that could oppose such changes. The problem was that once entry was granted, many of the innovative fiscal policies ceased to occur, pressure to reform no longer existed.⁴⁰

One of the largest failures of the EMU was that countries were often treated as one entity, which was not the case. Even though these countries formed one currency area, fiscal policies remained largely at the control of the individual countries, and it was in this distinction that the current issues arose.⁴¹ Financial markets failed to see some of the early warning signs of some of the Euro area countries' deteriorating financial

³⁹ Clas Wihlborg, Willett, Thomas D and Zhang, Nan, The Euro Crisis: It Isn't Just Fiscal and it Doesn't Just Involve Greece (September 8, 2010), Claremont McKenna College Robert Day School of Economics and Finance Research Paper No. 2011-03, Available at SSRN: <http://ssrn.com/abstract=1776133>, 4.

⁴⁰ Wihlborg 5.

⁴¹ Wihlborg 6.

positions, such as the extent of the mounting debt and their inability to repay this debt because of decreased competitiveness.⁴² Wihlborg et al. (2010) comments that in the case of the Euro, there was a tendency towards excessive optimism and obliviousness in the early periods; financial excesses were made worse by a lack of differentiation among Euro area members in pricing Euro area debt. The current crisis seems to support the view that a single currency union without a political or at least a fiscal union is doomed to fail; therefore the EMU is at a point where it must either be abandoned or must be made stronger.⁴³

To illustrate the divergence amongst the Euro area countries, only considering the 12 countries that entered from 1999 to 2001, Wihlborg et al. executed an analysis of several factors. These included annual data of price and cost indices, such as consumer price index (CPI), Producer Price Index (PPI), Unit Labor Costs (ULC), and price convergence indicators.⁴⁴ They also examined a labor productivity index, and most importantly the REER 12. The REER 12 is the real effective exchange rate for each country based on the trade weights within the 12 country euro group. This variable analyzes the movements of competitiveness within the Euro area. Lastly, they include the current account balance as a percent of GDP for each Euro area country.⁴⁵

After completing this analysis they found, as they believed, little economic convergence amongst the countries. The currency area created unfavorable competitiveness between the more stable countries and the deficit countries. Inflation

⁴² Wihlborg 6.

⁴³ Wihlborg 9.

⁴⁴ Wihlborg 13.

⁴⁵ Wihlborg 14.

rates, ULC based REER-12, price convergence indicators, and ULC showed a divergence from the average, which means a lack of internal balance adjustments within the Euro area.⁴⁶ PPI showed a slight, but not significant convergence to the mean. Whereas CPI based REER12 and labor productivity showed reversion to the average for the time period studied.⁴⁷ The current account balance suggests that intra Euro area adjustment mechanisms did not work effectively to control divergences in competitiveness. Countries like Germany, Austria, and the Netherlands show increasing surpluses over the years, while Greece, Portugal, and Spain suffer from continuous negative balances.⁴⁸

From this analysis, several conclusions are derived to analyze the current state of affairs in the Euro area. Greece is surely responsible for their lack of fiscal discipline and tendency to conceal the true state of their debt crisis. However, part of the blame can be placed on other EMU members, like Germany and France. These countries took the need for internal adjustments seriously, while not exerting any pressure on the weaker countries to do so. As the years progressed the stronger economies became stronger and the weaker economies weaker.⁴⁹ The government debt crisis in the Euro area has prompted a desire for increased fiscal coordination within the Euro area, and a stronger enforcement of the deficit and debt limits placed by the Maastricht Criteria. In essence, a stronger emphasis on continuously meeting the conditions to enter and remain in the monetary union must exist in order for the union to remain.⁵⁰

⁴⁶ Wihlborg 15-16, 18-19.

⁴⁷ Wihlborg 17-18.

⁴⁸ Wihlborg 20.

⁴⁹ Wihlborg 21-22.

⁵⁰ Wihlborg 23.

Wihlborg et al. (2010) suggests that the creation of a “European Debt Surveillance Authority” would be beneficial in that it could establish benchmarks for debt for each individual country in the Euro area. Bond markets and financial markets would demand a risk premium associated with said benchmark and a perception of that specific government’s ability to service its debt. In an effort to reach higher benchmarks, the existing marks would incentivize individual countries to reform and enhance their labor market flexibility and competitiveness levels. This proposal for a surveillance authority stems from the recognition that the Greek crisis is not just a fiscal matter, and is not a problem unique to, or whose blame lies on just, Greece.⁵¹

Another recent paper by Maurer (2010) presents data to support the view that the EMU debt crisis, or Eurozone debt crisis, is not due solely to fiscal indiscipline and speculative attacks by financial markets but to internal imbalances between Eurozone members due to a design fault of the EMU.

A look at the government debt-to-GDP ratio of the Eurozone countries currently suffering from increased risk premiums on their sovereign debt, Greece, Portugal, Ireland, and Spain, shows that on average, this ratio was decreasing slightly until 2008 when the subprime crisis affected the world economy. Maurer (2010) suggests that because of this slight decline, the low real interest rates that these countries took advantage of at the beginning of the EMU did not cause an increase in government

⁵¹ Wihlborg 25-26.

borrowing that is called fiscal indiscipline. Rather, it was the private sector that ran up debt with the abundant amount of cheap credit available to them.⁵²

A comparison of nominal and real interest rates conducted in this paper showed that at the start of the EMU, nominal interest rate spread for the 12 original members virtually disappeared, while the variance coefficient of real interest rate grew because of significant differences in inflation amongst the Member States.⁵³ The reason for this difference in nominal and real terms can be explained through the differences in business cycles. The ECB must choose a uniform nominal interest rate across the Member States, which results in a divergence in the real interest rates. Low inflation countries (L) will experience an excess supply of credits, while high inflation countries (H) experience an excess demand. In a currency union, there is no exchange rate risk, therefore the excess supply from L is absorbed by the demand from H.⁵⁴ Firstly, H will begin to accumulate net debt while L accumulates net wealth. Secondly, if goods and services, and production factors are not perfectly tradable, mobile, or flexible a “negative self-reinforcing process is likely to evolve.”⁵⁵

Maurer (2010) points out that financial markets provide reasonably accurate measures of a country’s investment position. However they tend to be slow in processing information. In this case, they took too much time in realizing the deteriorating

⁵² Maurer, Rainer Willi. The Eurozone Debt Crisis - A Simple Theory, Some Not So Pleasant Empirical Calculations and an Unconventional Proposal (June 5, 2010). Available at SSRN: <http://ssrn.com/abstract=1621828>, 3.

⁵³ Maurer 4-5.

⁵⁴ Maurer, 6-7.

⁵⁵ Maurer 7.

international debt position of the struggling Eurozone countries. This fact also places doubts on credit rating agencies, which lack forward-looking abilities.⁵⁶

Maurer's (2010) empirical data suggested that the current account surplus gap had the strongest implication for interest rates of the Eurozone countries. Based on this conclusion Maurer (2010) presents several policy options. The first is a policy of fiscal austerity that will reduce the current account deficit through a decreased government budget deficit. However, the net effect of this type of policy cannot be determined beforehand. In a country where private demand is weak, the possibility of a fiscal austerity policy worsening the current account gap cannot be excluded.⁵⁷ Due to this weak private demand, the article also proposes a second option, a government deficit spending policy that may decrease the current account gap.⁵⁸

The third policy option is a default on sovereign debt. At first, the international net debt position (INDP) of the country would decrease, and by this means so will the surplus gap. However, if a large portion of the INDP of a country is private debt, the secondary effect of a default on sovereign debt would be that creditors would demand higher risk premiums. This increase in the interest rate would once again increase the gap in surplus. Therefore, a default would have an uncertain effect depending on the makeup of a country's debt. With a large share of private debt, a default on sovereign

⁵⁶ Maurer 13-14.

⁵⁷ Maurer 14-15.

⁵⁸ Maurer 15.

debt must occur with a default on private debt as well, but this might cause bankruptcies of private debtors.⁵⁹ Therefore this option may not be suitable either.

A fourth possibility is the depreciation of the euro, which would cause higher net exports. In the short to medium term, higher net exports increase the primary current account surplus, raise domestic demand for goods, and increase GDP growth. In the long term, it might trigger inflation such that creditors will demand higher risk premiums. At best, this policy option will buy time, and in the meantime will incentivize countries to expand their domestic export sector.⁶⁰

Therefore, Maurer (2010) also proposes leaving the monetary union as an option for the troubled Eurozone members. Leaving would cause a depreciation of the domestic currency and the benefits described above. Since these countries have high international debt positions, reintroducing their own currency will worsen their debt problems and signify a partial default on debt. It will also be difficult for the country to regain international creditworthiness, and the only way to do so would be to strengthen its export sector without the help of international investors, which would be difficult to do.⁶¹ Nevertheless, leaving the union would be a tragedy for the symbolic value of the EMU, and given the precarious state of the market this exit might worsen the international financial system, which was already on its way to recovery before the Eurozone crisis occurred.⁶²

⁵⁹ Maurer 15.

⁶⁰ Maurer 16.

⁶¹ Maurer 16.

⁶² Maurer 17.

Since the EMU is facing several difficult decisions, the important question to answer is “what can be done to make the EMU— or its remains — more stable in the future?”⁶³ One solution is assigning an instrument to the ECB, such that it is able to differentiate national interest rates. An instrument capable of doing this would be a national value added tax for credits determined by the ECB. An ECB dictating some fiscal policy is unusual, but this is necessary in a currency region that selected countries for mostly for political reasons rather than economic criteria. In this sense it might be necessary for a supra-national organization to handle some fiscal regulation along with monetary policy.⁶⁴

The debt crisis emerged out of the strong divergence that existed and exists in business cycles amongst the member countries, which is responsible for the divergence in inflation rates, and created the debt-spirals. Maurer (2010) explains that a central bank determined VAT for credits would guarantee, in spite of any future restrictions of country-specific fiscal policies, one instrument to fight against country-specific business cycles. (Maurer, 2010)

4. Methodology

In researching and analyzing the dynamics of the Greek financial debt crisis it will be important to outline a variety of economic variables over a 12 year period, 1999-2010. This period includes the 2 years prior to Greece’s inclusion into the EMU in which the country attempted to gain membership, and the 10 years since it has been a member. For most of the variables presented for Greece, a comparison will be done against the

⁶³ Maurer 17.

⁶⁴ Maurer 18-19.

average for the Euro area excluding Greece, or an average of the Euro area as a whole, and/or another Member State. In order to have complete data for all the countries used, the member countries that will be used in this analysis of the EMU will be Greece and the 11 original members which include Austria, Belgium, Ireland, France, Luxembourg, Germany, Italy, Portugal, Finland, Spain, and the Netherlands.

The first economic variables analyzed will be the specific criteria required by the EMU for membership. These variables consist of a specific range for inflation, budget deficit as a percent of GDP, national public debt, and long-term interest rates. As these are the Euro area's definitive measures for a stable economy, it is necessary to evaluate whether or not these criteria were upheld since Greece joined the EMU.

Other variables included in this analysis will include economic growth rates, trade balance/deficit variables, labor productivity ratios, ULC, and unemployment rates within the Euro area. The purpose of including these other economic variables is to determine whether there were other factors that should have been taken into consideration when constructing the criterion for membership. As the current state of the Euro zone shows, there were clearly some faults in monitoring the Member States. Those criteria that were selected were not sufficient indicators of economic stability.

Evaluating these alternate variables will hopefully provide answers for Greece's current crisis. I expect there to be some correlation between Greece's deteriorating state and its relative economic competitiveness level, which is measured through the variables listed above, as compared to the rest of the Euro area. I expect the trade balance and

investment position of Greece to be decreasing primarily due to a loss of competitiveness with its Euro Area Member States.

5. Data Description

To obtain the time series data for each of the variables that will be analyzed, I accessed various statistical databases from the International Monetary Fund (IMF), The European Central Bank (ECB), Eurostat, and The World Bank. When available, I selected annual data beginning in 1999 until 2010, which is the latest data reported without estimates for actual values. If data were only reported on a monthly basis, then I calculated an average value for the 12 month period. When presenting the Maastricht criteria variables, I began the data in 1998 to attain a better sense of the effects of attempting to join and joining the EMU for Greece. Data labeled as EA-11 is an un-weighted average of a percentage value of the variable for the 11 original EMU members. Finally, the data labeled as Maastricht Criteria were either a fixed value set by the EDP or I calculated based on the data provided by the databases mentioned above.

To evaluate the first of the Maastricht Criteria, I used the CPI Inflation rate, expressed in annual percentages of average consumer prices on a year-to-year basis. This variable measures the changes in prices of goods and services, and changes in this rate will affect the purchasing power of consumers. For the Euro Area, a Harmonized Index of Consumer Prices (HICP) is used. The HICPs give comparable measures of inflation, and are the official measure of CPI inflation in the Euro Area for monetary policy and in

the assessment required under the Maastricht Criteria.⁶⁵ Figure 1 shows that from 1998 to 1999 Greece's inflation rate dropped significantly, from 4.5 to 2.2 percent, until it met the criteria and joined the EMU in 2001. After this point Greek inflation was above the allowed levels and well above the average inflation rate for the EA-11.

To verify whether the criteria to maintain fiscal stability, the EDP, were maintained, I included the data for government budget deficit to GDP, and gross government debt to GDP. These two measures are meant to maintain a smooth functioning of the EMU, and demonstrate a Member State's sound public finances.⁶⁶ Figure 2 demonstrates that once again Greece's deficit to GDP decreases in 1999 then stays close to the criteria of 3% around the time of its entrance to the EMU. Over the following years Greece quickly increased its budget deficit to a high of 7.4% of GDP before the financial crisis in 2008 and then to a high of 15.4% during the crisis. On average the deficit to GDP for the EA-11 states was below the 3% criterion until after the financial crisis when this value also went above the 3%.

Figure 3 illustrates Greece's extremely high levels of government debt to GDP versus the average of the EA-11 which maintains its debt-to-GDP percentage at the maximum allowed under the Maastricht Criteria. Pre-2008 the difference between the EA-11 and Greece is on average about 44%, and post-2008 there is an average difference of 70%.

⁶⁵ "HICP methodology" - Statistics Explained (2011/11/5)
<http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/HICP_methodology>
⁶⁶ "Glossary:Excessive deficit procedure (EDP)" - Statistics Explained (2011/11/6)
<http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Excessive_deficit_procedure>

Figure 4 is a depiction of the final criterion, long-term interest rates. Long-term interest rates are based upon government bond yields or comparable securities, taking into account the differences in national definition, on the secondary market, gross of tax, with a residual maturity of ten years.⁶⁷ In 1998, prior to the EMU, the differential between Greece and the EA-11 is approximately 3.7 percentage points. After the creation of the EMU interest rates converge and stay at virtually equal levels until the 2008 crisis. From 2009 to 2010, Greek interest rates significantly increase from about 5.2% to 9%, while the EA-11 slightly decreases from 4% to 3.7%.

To measure positive economic effects of EMU membership for Greece, I have included the annual percentage growth rate of GDP. This variable is at market prices based on the constant local currency. The aggregates are based on constant 2000 U.S. dollars, and the variable is calculated without deductions for depreciation of fabricated assets or for the depletion and degradation of natural resources.⁶⁸ Figure 5 shows that prior to 2001, the Greek GDP growth was below the EA-11. After it joined the EMU, Greece had higher GDP growth than the EA-11, on average about 2% higher with a maximum 4.8 percent difference in 2003. After 2008 however, GDP growth became negative for the Euro area as a whole, and in 2010 Greek GDP growth continued to be negative while the EA-11 grew to 1.7%.

To better understand the development of the EMU, several indicators of competitiveness are included in this analysis. Figure 6 illustrates a measure of labor

⁶⁷ "Exchange rates and interest rates" - Statistics Explained (2011/11/6)
<http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Exchange_rates_and_interest_rates>

⁶⁸ "GDP Growth (annual %)." *Data | The World Bank*. Web. 03 Nov. 2011.
<<http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>>.

productivity, which is the output that can be produced with a given amount of input of labor.⁶⁹ It is measured as an annual index value for person based labor productivity, which is neither seasonally nor working day adjusted, and is based on the total economy including the rest of the world (all sectors).⁷⁰ Over the 12-year period there is a convergence of the labor productivity index between Greece, and the index for the changing composition of the Euro area as a whole. From 2006-2009 Greece has higher productivity on average of about 0.8, but in 2010 Greece's value is 3 points below the Euro area.

Another measure of competitiveness included is an index of ULC. The ECB website from which this specific data was acquired, defines ULC as total labor costs per unit of output calculated for the euro area. This is set as a ratio of the total compensation per employee to GDP at constant prices per person employed.⁷¹ Figure 7 displays annual data for ULC, neither seasonally nor working day adjusted, derived from the total economy including the rest of the world.⁷² From its entrance into the EMU until about 2006 the index for ULC shows convergence between the Euro area and Greece. After 2006 ULC costs in Greece increase at a greater rate than in the Euro area. In 2009, ULC in Greece is at about 7 value points above the Euro area.

Figure 8 shows unemployment rates in Greece compared to the average unemployment rate in the EA-11. Throughout the 12 year period Greece has an

⁶⁹ "ECB: Statistics Glossary." *ECB: European Central Bank*. Web. 26 Nov. 2011. <<http://www.ecb.europa.eu/home/glossary/html/act2l.en.html>>.

⁷⁰ "Labour Productivity." *ECB Statistical Data Warehouse*. Web. 26 Nov. 2011. <http://sdw.ecb.europa.eu/browseExplanation.do?REF_AREA=566>.

⁷¹ ECB Statistics

⁷² "Unit Labour Costs." *ECB Statistical Data Warehouse*. Web. 26 Nov. 2011. <http://sdw.ecb.europa.eu/browseTable.do?REF_AREA=50>.

unemployment rate higher than the average for the EA. However, up until 2009 the Greek unemployment rate and the EA-11 rate show convergence. From 1999 to 2008 the unemployment rate for Greece fell on average by about 5%.

A common measure of competitiveness is the effective exchange rate index. The CPI-based real effective exchange rate which is included in this analysis is a measure of the change in competitiveness of a country. It takes into account the change in prices relative to other countries. A rise in this index would mean a loss of competitiveness.⁷³ Figure 9 plots the CPI-REER index for Greece, the Euro Area average, two Member States that are also undergoing economic problems (Ireland, and Spain), and two Member States whose economies are stable (Germany, and France). Over the 12 year period there is convergence of the REER in 2003. After 2006, the graph shows a trend of the low inflation countries like Germany and France begin to depreciate, while high inflation countries like Ireland, Spain, and Greece begin to appreciate. In 2010, Greece has value 10 points above the Euro area.

The implication of these competitiveness indicators can be seen in the balance of payments of a country. The current account of the balance of payments contains information on the international trade in goods and services. It records credits (exports) and debits (imports), where a negative balance reflects a current account deficit and implies a country is a net debtor and a positive balance reflects a surplus and implies a net creditor.⁷⁴ Figure 10A shows the current account balance as a percent of GDP for

⁷³ "Effective Exchange Rate Indices." Eurostat. European Commission. Web. 26 Nov. 2011. <http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/ert_eff_esms.htm>.

⁷⁴ "Balance of payment statistics" - Statistics Explained (2011/11/6) <http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Balance_of_payment_statistics>

Greece and the EA-11. Greece consistently remains at a deficit, on average 10 percentage points below the EA-11. There is a sharp increase of about 8 percentage points in the current account deficit from 2004 to 2007. Figure 10B depicts the current account balance in millions of Euros to show the actual values as compared to other Member States.

To further understand the inner workings of the current account I broke it down into the trade balance of goods and of services. Figure 11A depicts trade integration of goods as percent of GDP. This is a measure of average imports and exports of goods divided by GDP.⁷⁵ If these indexes increase over time then this means the country or area is becoming more integrated within the international economy. The Greek and EA-11 indexes stay relatively stable; both fluctuate within a 6% band. However the EA-11 trade integration percentage is significantly higher than Greece's, about 20 percentage points more. Figure 11B displays the trade balance of goods in millions of Euros; Greece is running a deficit in goods.

Figure 12A shows trade integration of services as a percentage of GDP—the same interpretation that applied to goods applies to this variable as well. The difference between Greece and the EA-11 is smaller, an average of about 6%. Figure 12B shows the balance of services in millions of Euros. In the service industry, Greece is running a trade surplus.

Figure 13 breaks down Greece's trade balance within and outside of the EU; as well as with its trading partners that make up larger than 5% of the trade value. This

⁷⁵ "Balance of Payments and International Trade in Services." *EUROPA – EU*. Eurostat. Web. 26 Nov. 2011. <http://europa.eu/estatref/info/sdds/en/bop/bop_q_its_sm.htm>.

graph demonstrates that over 50% of Greece's trade happens within the EU, and its largest EMU trading partners are Germany and Italy.

The final variable that is analyzed is the International Investment Position (IIP). The IMF describes the IIP as a statistical statement that shows an economy's stock of external financial assets and liabilities at a particular point in time. This stock is created from past external transactions measured according to current market prices and exchange rates at a specific point. It is composed of Direct Investment, Portfolio Investment, Financial Derivatives, and Other Investment.⁷⁶ Figure 14A displays IIP as a percent of GDP. While Greece and the EA-11 share similar IIP values at the beginning of the period examined, these diverge over the 12 year period to a maximum difference of 97 percentage points in 2010. Figure 14B shows the IIP in millions of national currency, including 'euro fixed' series for euro area countries.

I conclude the data analysis with a breakdown of the liabilities section of Greece's IIP. Table 1 illustrates the full breakdown, including Direct Investment in the reporting Economy, Portfolio Investment, Financial Derivatives, and Other Investment. Figure 15A shows the percentage of liabilities by banks and other sectors in Equity Securities of Portfolio Investment. In this section foreigners are holding a larger portion of portfolio equity securities in other sectors. Figure 15B illustrates the percentage of liabilities by banks, government, and other sectors in Bonds and Notes of Portfolio Debt Securities. In terms of Bonds and Notes, foreigners are holding a huge portion of the government debt securities as compared to their holdings of banks and other sectors' securities. Figure

⁷⁶ "International Investment Position: A Guide to Data Sources." International Monetary Fund. Statistics Department, Oct. 2002. Web. <<https://www.imf.org/external/np/sta/iip/guide/IIPguide.pdf>>.

15C depicts the percentage of liabilities by government, banks, and other sectors of loans in other investment. In this section the largest portion of loans being held by foreigners is in the banks.

6. Empirical Findings

Given the trends in the data presented above, this section will draw inferences on the implications of these trends for the EMU and Greece. It will analyze what these trends meant for the EMU since its creation, the implications of these trends on the current situation, and the lessons we can draw from them for the future.

In the background section of this paper I described a phenomenon of countries attempting to join the EMU by imposing strict fiscal and monetary policies in order to meet the requirements for membership, but subsequently, easing up on these stringent policies once they were granted membership. This phenomenon is quantitatively visible in several of the graphs presented, particularly in the Maastricht Criteria variables. Not meeting the criteria presents a problem for the EMU since its stability relies on the convergence of the economies of Member States.

Greek inflation dropped significantly in 1999, but after it had qualified for membership in 2001, its inflation rate began to increase once again. Greece's high and increasing inflation rates leads to decreased competitiveness since their prices are now higher, and results in further divergence from the EMU economy as a whole. High

inflation rates also lead to an excess demand for goods and services, further leading the high inflation country to accumulate debt.⁷⁷

The two measures of fiscal stability, deficit and debt to GDP, also display Greece's significant divergence from both the average of the Euro Area and the criteria mandated by the EDP. These two variables display a policy failure on both the side of Greece and the ECOFIN's monitoring of the SGP.

The SGP has largely been ineffective in preventing, or maintaining stable fiscal levels in the Euro area. In 2003, Germany and France, the largest and strongest economies of the Euro area, broke the EDP rules. They were the first to do so. However, because of their position they were able to evade any strong action or penalties from the ECOFIN on a promise to reach the SGP targets soon.⁷⁸ If, as the Economist wrote, the SGP "is a political totem, a symbol that euro-using countries will not cheat each other," than the lack of penalty for some countries and not others was a sign that the SGP was weak and is the cause of political fallout between the small and large Member States.⁷⁹

When Ireland and Portugal broke the EDP penalties were applied more strictly. They see the unequal penalties as a case of double standards. A lack of penalties is also frustrating to a country like Austria that is putting forth much greater efforts to abide by the requirements⁸⁰ These double standards may have fostered some resentment; which in turn may explain why so many of the Member States began to break the EDP. They may

⁷⁷ Maurer 7.

⁷⁸ EU Facts 1.

⁷⁹ EU Facts 1.

⁸⁰ "What Is the Stability and Growth Pact?" *The Guardian*, 27 Nov. 2003, Web. 27 Nov. 2011, <<http://www.guardian.co.uk/world/2003/nov/27/qanda.business/print>>, 1.

have felt justified in breaking the budgetary requirements if the deficit was broken in the pursuit of economic growth. These were the justifications given by Germany and France for reforming the SGP in 2005.⁸¹

As described previously, the SGP began with a strict policy for deficit and debt levels. It was later reformed with much more flexible rules, at the request of Germany and France. This flexibility, however, makes it difficult to break its regulations.⁸² The SGP is not strong enough to control and affect budgetary discipline. It lacks credibility because of its uneven application of penalties. Ultimately, fiscal policy and statistic reporting are tasked to the Member States. Therefore, any changes coming from a supranational entity are difficult to implement without the compliance of the State itself.

This presents the failure on behalf of Greece. While the EMU is unable to properly coordinate and implement fiscal policy, it is Greece that failed to maintain a stable budget. While high inflation, higher prices, and an increased demand for goods required increased government revenues, the opposite occurred. The Greek government coupled greater spending for social services and goods, with fewer revenue streams due to their ineffective tax collection system. For example the difference between what Greek taxpayer's owed last year and what was actually paid to the government was a third of the total tax revenue. This approximately represents the size of its budget deficit.⁸³

⁸¹ EU Facts 1.

⁸² EU Facts 1.

⁸³ James Surowiecki, "Tax Evasion and the Greek Economy," *The New Yorker*, 11 July 2011, Web, 26 Nov. 2011, <http://www.newyorker.com/talk/financial/2011/07/11/110711ta_talk_surowiecki>.

After the 2009 sovereign debt crisis emerged, records and interviews showed that Greece had entered into a decade-long endeavor to hide actual levels of debt within the country. They were able to do so with the help of a deal made with Goldman-Sachs that hid billions in debt from the EC budget overseers. This deal was treated as a currency trade rather than a loan, which aided Greece in meeting the requirements, while continuing to spend beyond their means.⁸⁴ Greece has made a string of other similar deals in which cash was provided in exchange for future government payments. This deception begs the question of whether Greece should have ever been admitted into the EMU. As a result of its admittance, it is inferred that Greece's entrance was a result of the strong political motivations to move the EU into a stage of greater integration.

Although the magnitude of the actual numbers was not known, Greece never met the debt-to-GDP requirements. Despite the fact that even their falsified numbers did not meet the criteria, Greece was still admitted because they met the other requirements. Commencing in 2004, Eurostat questioned the reliability of Greek Statistical Data, and has subsequently needed regular audits of Greek numbers. Each audit found incorrect data.⁸⁵ It seems that Eurostat's futile attempts to improve methodological reporting in Greece, was another indicator that Greece was not ready to enter the EMU.

EMU membership allowed the Greek government to set low long-term interest rates. It allowed them to borrow at lower rates because of its association with the euro.

⁸⁴ Louise Story, Landon Thomas Jr., and Nelson D. Schwartz. "Wall St. Helped to Mask Debt Fueling Europe's Crisis," *The New York Times*, 13 Feb. 2010, Web. 24 Nov. 2011, <<http://www.nytimes.com/2010/02/14/business/global/14debt.html?pagewanted=all>>.

⁸⁵ "EU 2010 REPORT ON GREEK GOVERNMENT DEFICIT AND DEBT STATISTICS." European Commission, 8 Jan. 2010. Web. 27 Nov. 2011. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SPLIT_COM:2010:0001%2801%29:FIN:EN:PDF>, 12-19.

Credit was more readily available which complemented the excess demand for goods. The ease, with which some Member States could attain loans and FDI from many sources, helped the growth of unsustainable imbalances amongst the Member States. By showing no differentiation in lending amongst Member States, financial markets weakened rather than strengthened the permanence of fiscal discipline in states like Greece.⁸⁶

These low rates show a failure by investors and those providing loans to Greece, to properly assess the risk associated with providing loans to the Greek government specifically versus the EMU. The EMU is a union of monetary policy and with few ineffective fiscal regulations. It is more of a political union and not a cohesive economic unit. It was, therefore, necessary for a differentiation amongst Member States. Here too we can see where there existed a policy failure on behalf of the ECB who dictates monetary policy. The ECB should have implemented a system of varied interest rates, based on country specific information on a country's ability to repay the loan.

By looking at the breakdown of Greece's decreased IIP, we can see the portion of debt being issued to the Greek government, Greek banks, and other sectors in Greece by foreigners. The negative IIP is consistent with the amount of debt each of these sectors was accruing in the form of loans, equity and debt securities. The most important component of the IIP that can be used to offer a greater understanding of the debt crisis and possible future ramifications of Greece's large debt, is acquiring information on the countries that are most exposed to Greek debt. Data compiled by the Bank for

⁸⁶ Wihlborg 6.

International Settlements shows that France and Germany are most exposed to Greek debt. Figure 16 is a visual breakdown of the lending exposure between banks and private lending, and government debt exposure. Of the top eight countries exposed, half of them belong to the EMU and five out of eight are part of the EU. Because a significant portion of Greek debt was held by Euro members, we have to wonder why the large amounts of lending continued, and why these countries were not worried about Greece's ability to repay the loans.

This crisis is not only a story of rampant fiscal deficits and debt, it also a story of the EMU's effect on trade, productivity, growth, and overall competitiveness. For Greece, membership in the EMU provided a time of seeming prosperity. Growth rates were high, labor productivity was high, FDI inflows were abundant, and consumption was high. However, bank of Greece Governor George Provopoulos said "high growth rates in the past were mainly fuelled by domestic consumption, which outpaced the economy's production capacity and potential output."⁸⁷ In addition, high growth rates and productivity were coupled with high ULC rates. ULC in Greece was high because of the large amounts of social services, benefits and employee compensation. These benefits create a structural issue in which there is a large disincentive to both hire workers and seek employment.⁸⁸ Greece's issues with ULC are noted in a speech by current Greek Prime Minister, and then Vice President of the ECB, Lucas Papademos that is reproduced in an ECB report published in 2007. In this speech he describes that

⁸⁷ "UPDATE 1-Crisis Exposes Greek Economy's Weakness-cenbanker - Forbes.com." *Forbes.com*. Reuters, 27 Aug. 2011. Web. 27 Nov. 2011. <<http://www.forbes.com/feeds/afx/2008/11/27/afx5750865.html>>, 1.

⁸⁸ McKay 470.

“despite very strong productivity growth, increases in compensation per employee have resulted in relatively high ULC growth vis-à-vis the euro area average.”⁸⁹ He explicitly says that this should be a reason for concern because persistent ULC growth above the Euro area average can result in losses to competitiveness, and with adverse effects on the economy.

These losses in competitiveness can be seen in the large current account deficit Greece incurred over the 12-year period examined in which the EMU was active. Greece’s relative exchange rate was appreciating, and trade integration of goods and services did not occur. Even with recognition from the ECB, it was a little too late to implement adjustment mechanisms to alleviate the loss in competitiveness. Overall, it seemed that EMU was beneficial for the core EMU states, like Germany and France, who already had a strong economy; while leaving other countries, like Greece, in a worse condition. Whether or not Greece would have ended up in a similar crisis had it not entered the EMU can only be left to speculation.

7. Conclusion

The EMU was largely created by European political will for integration, stability, and economic strength in the global economy. It is for these reasons that the stability of the EMU is still being fought for today. These symbolic reasons are why the ECB and IMF refuse to let Greece and other faltering Member States default on their debt.

⁸⁹ Papademos, Lucas. "ECB: Inflation and Competitiveness Divergences in the Euro Area Countries: Causes, Consequences and Policy Responses." *ECB: European Central Bank*. 7 Sept. 2007. Web. 27 Nov. 2011. <http://www.ecb.int/press/key/date/2007/html/sp070907_2.en.html>.

The EMU was truly a leap of faith. Little theory existed on the creation of an optimal currency area. The designers of the EMU created criteria they felt would best induce a convergence of Member State economies. Ultimately it was the ECB's inability to effectively control fiscal policy and control divergences in competitiveness that hindered monetary integration. For the most part, Member States of the Euro area maintained relatively diverse economies.

The analysis conducted in this paper, in the context of research done by others, has illustrated a complicated story behind the current Euro crisis. First of all, the Maastricht criteria and monitoring organizations demonstrated a policy failure in enforcing the requirements meant to foster monetary integration. Secondly, the initial success of the EMU created a symbolic integration of Member States which resulted in fiscal account imbalances. Countries that normally would be deemed too risky to invest in, or required higher interest rates like Greece, were treated on par with stronger economies like Germany. This led to the high levels of sovereign debt in countries that should have always been considered too fiscally irresponsible to carry such a debt burden. Thirdly, the EMU caused positive growth rates, and levels of productivity in the smaller EMU countries. However these factors coupled with governments ill-equipped to handle this level of growth resulted in high inflation, high current account deficits, and ultimately a loss in competitiveness as compared to its largest trading partner, the Euro area.

The current situation in the Euro area looks bleak. In spite of this, the strong political resolve needed to fix the structural issues within the EMU and within Member

States exists. In order to regain stability the EMU must learn from the past imbalances and policy failures. The creation and/or strengthening of a monitoring agency that will not only implement and regulate the SGP but will also monitor factors of competitiveness should be considered. Stronger fiscal coordination, and how to ensure there is follow through within each Member States, should be considered. More research is needed to analyze the viability of these options, and others not mentioned here.

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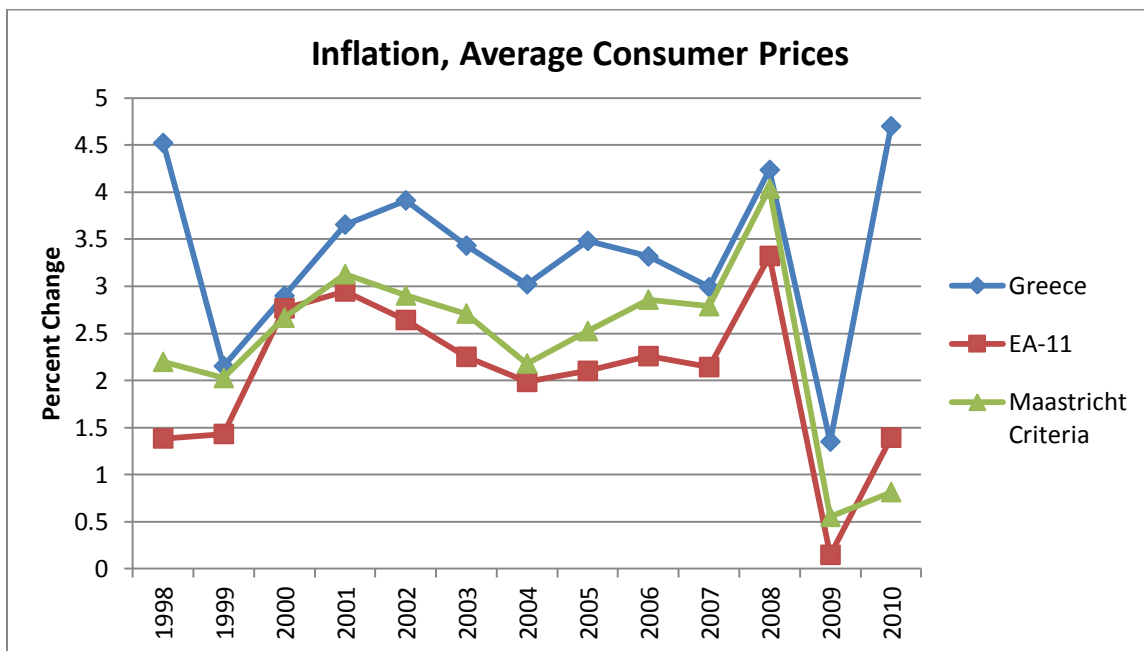
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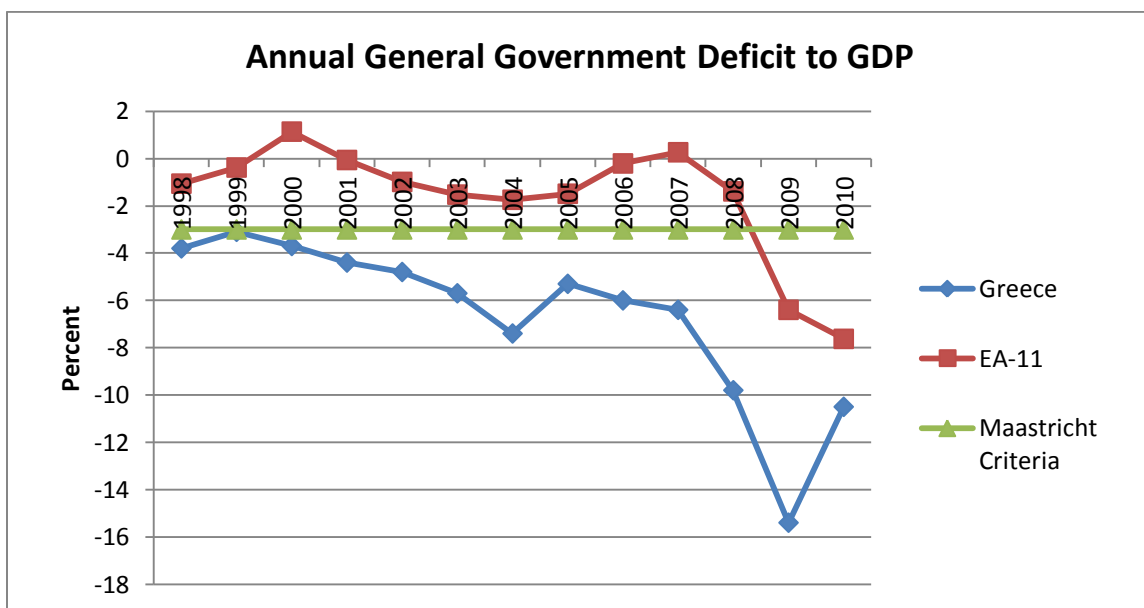
9. Graphs and Tables

Figure 1



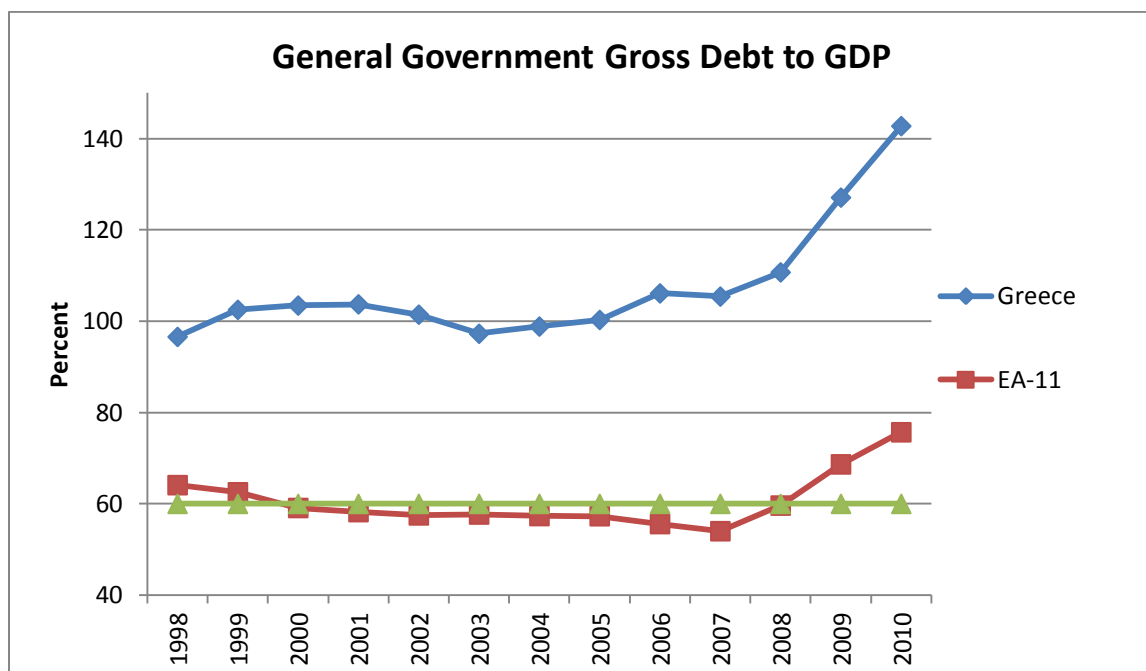
Source: International Monetary Fund, World Economic Outlook Database, September 2011

Figure 2



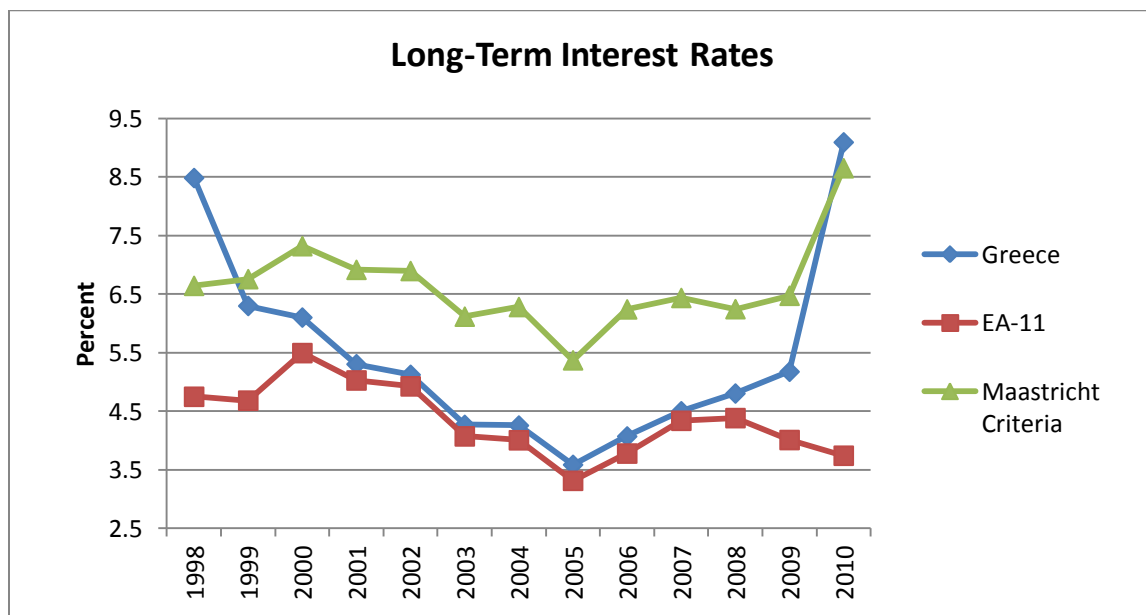
Source: European Central Bank, Government Statistics

Figure 3



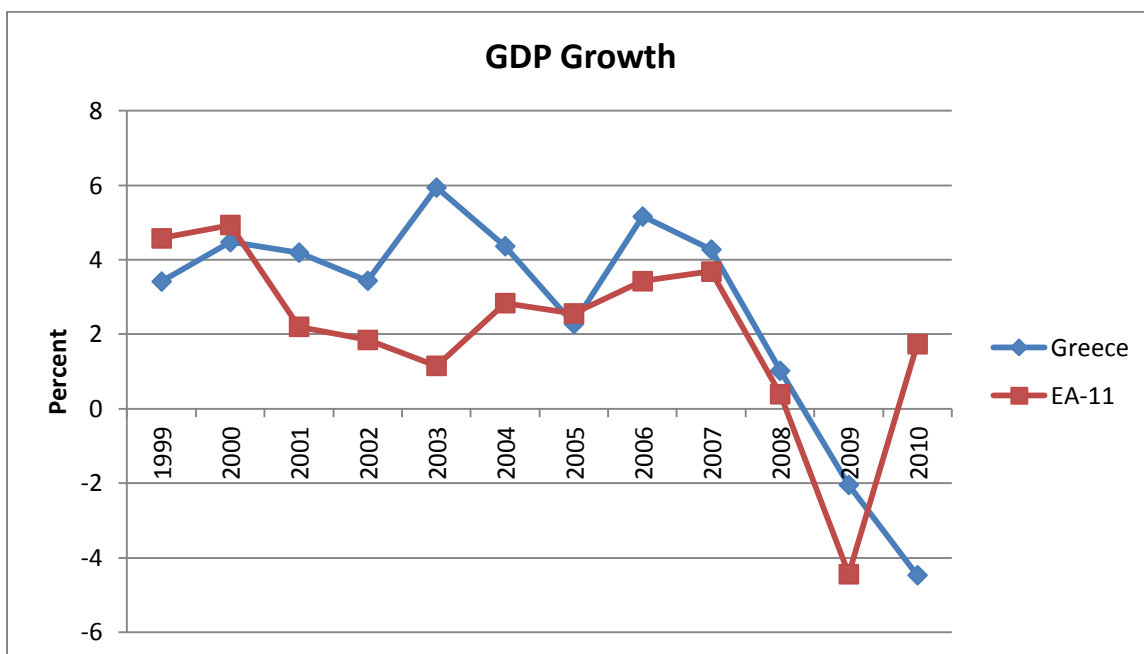
Source: International Monetary Fund, World Economic Outlook Database, September 2011

Figure 4



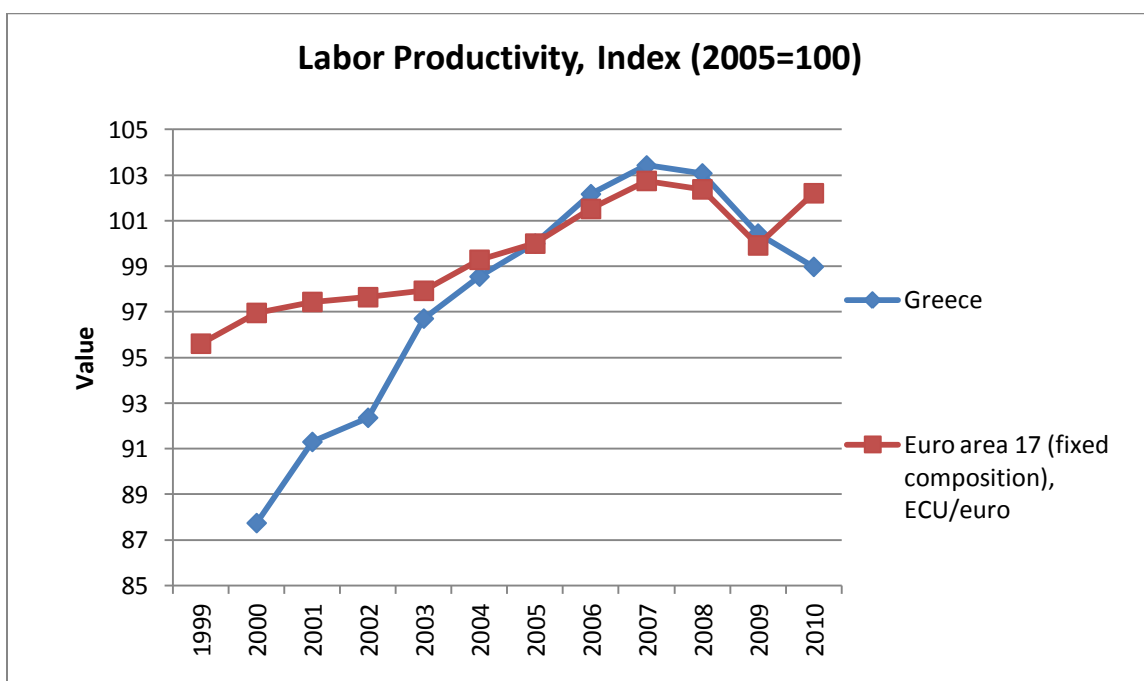
Source: European Central Bank, Interest rate statistics (2004 EU Member States & ACCBs). Maturity Category: 10 years. (*data available from January through October of 2011)

Figure 5



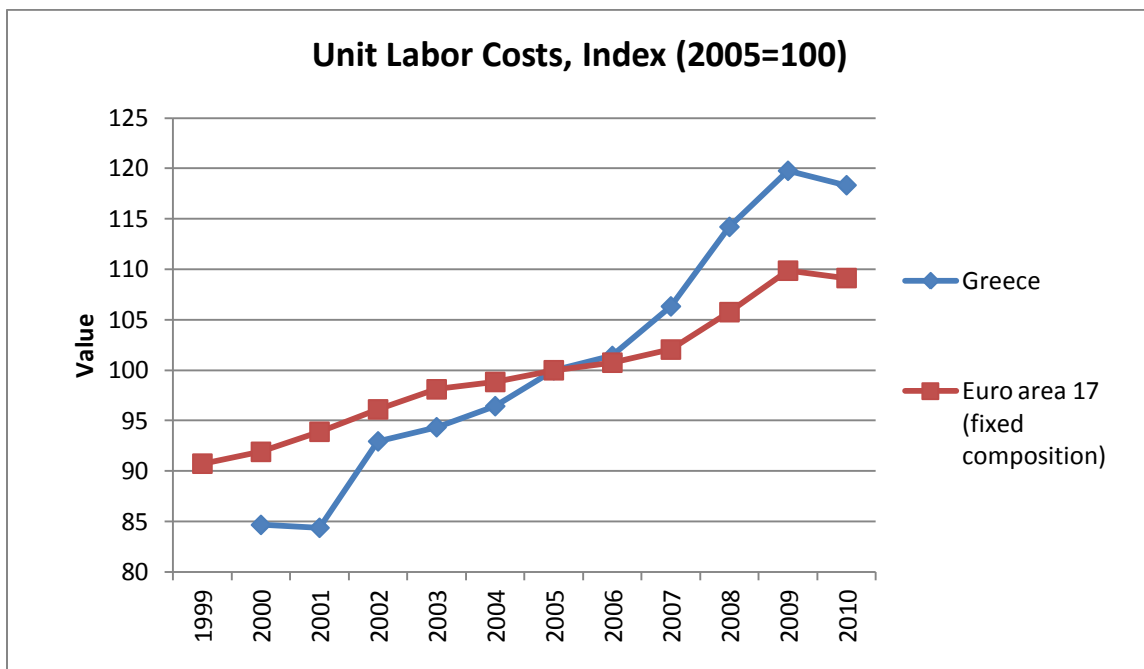
Source: The World Bank Group, World Development Indicators & Global Development Finance

Figure 6



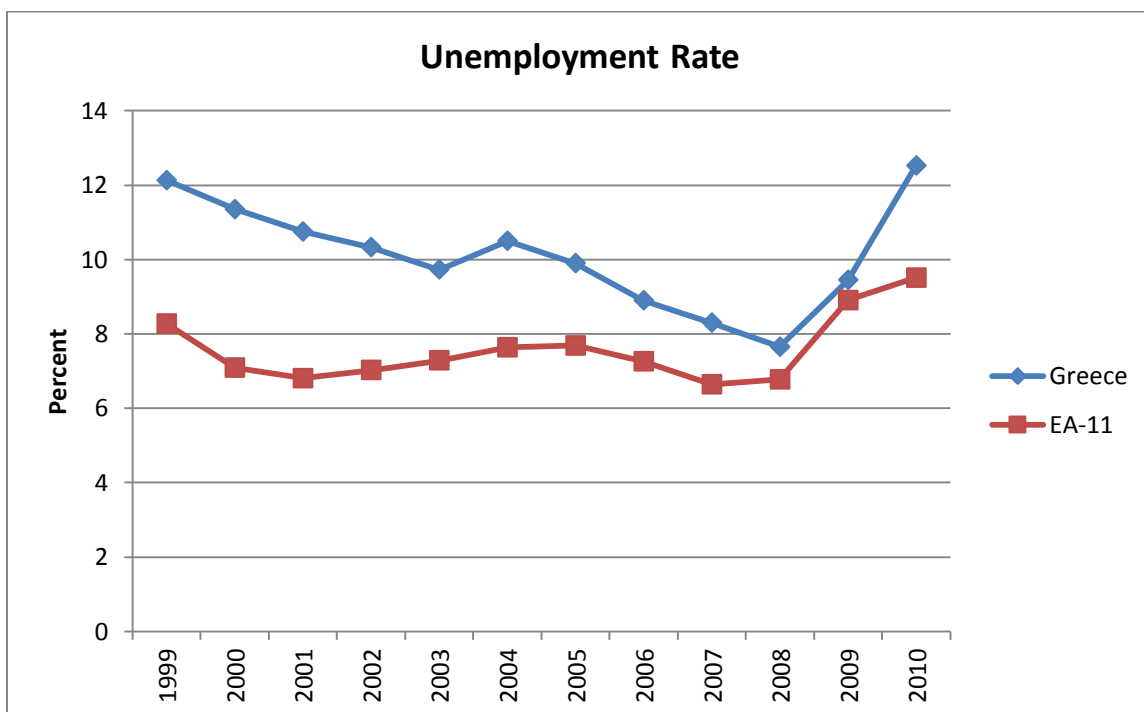
Source: European Central Bank, ESA95 National Accounts

Figure 7



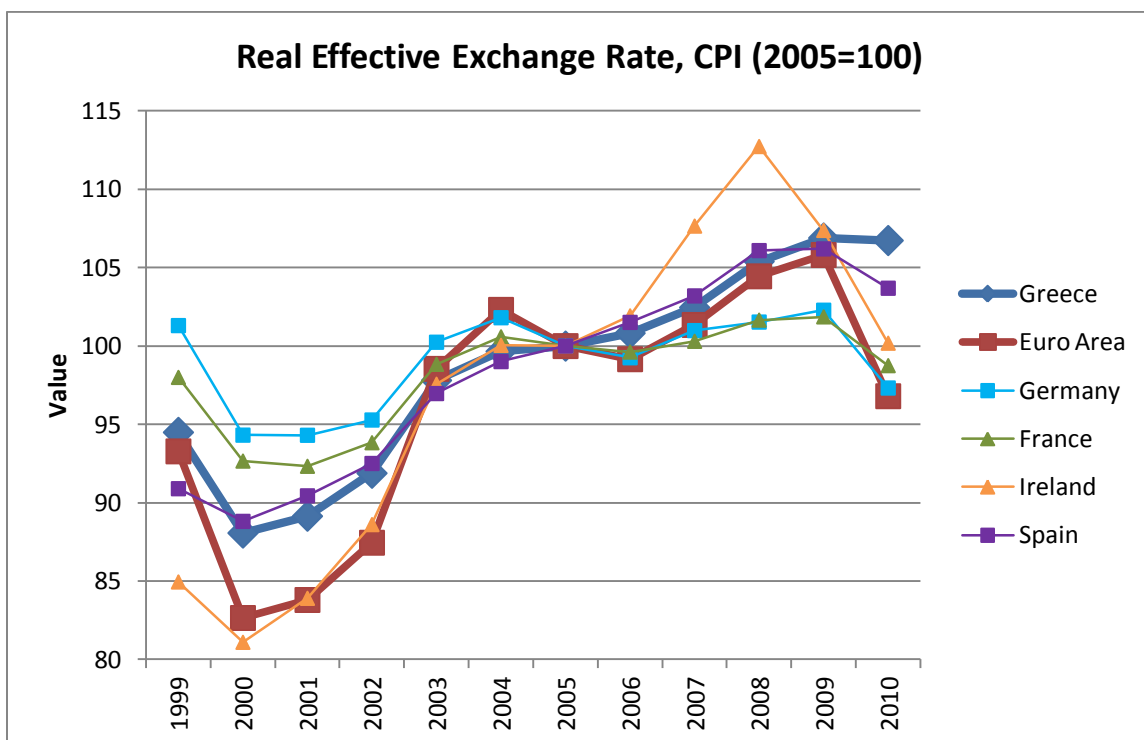
Source: European Central Bank, ESA95 National Accounts

Figure 8



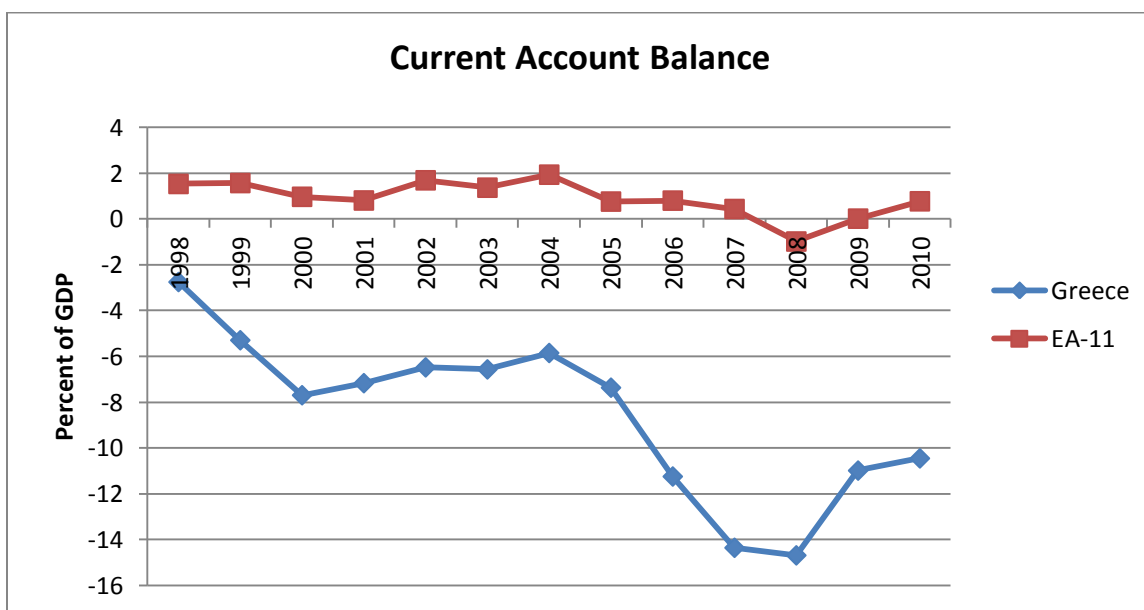
Source: International Monetary Fund, International Financial Statistics

Figure 9



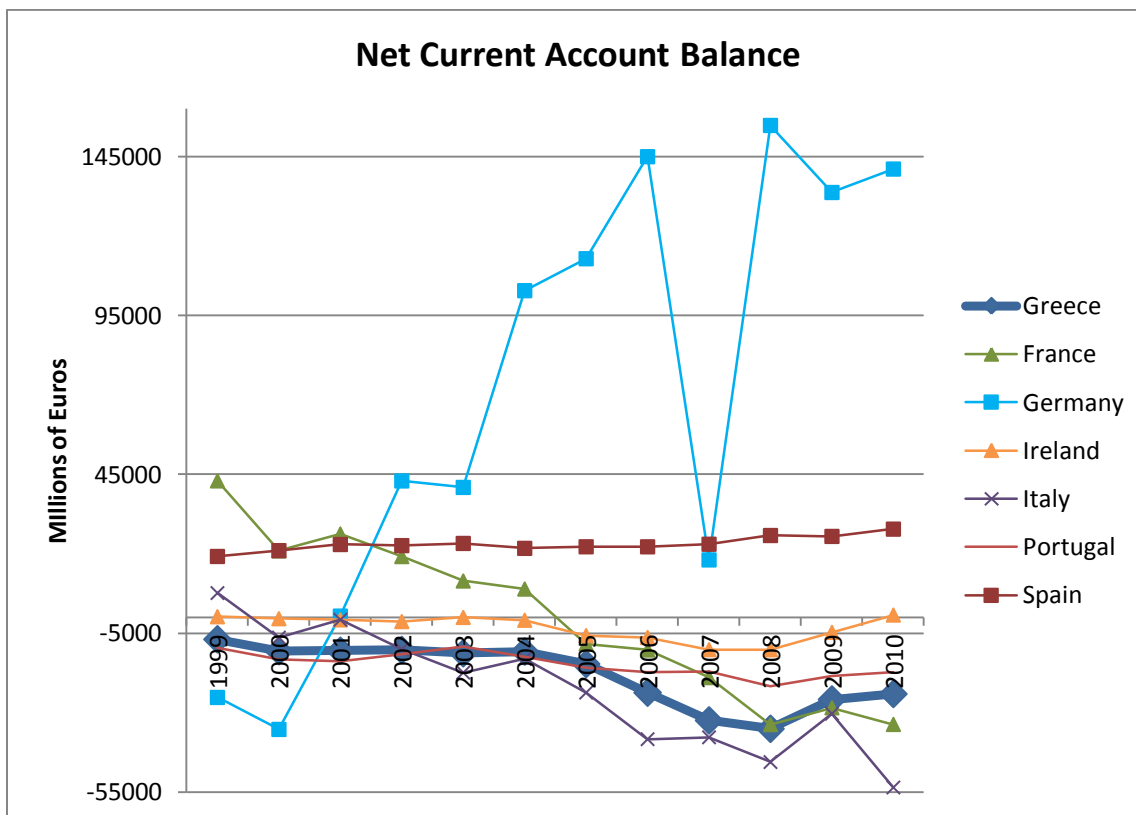
Source: International Monetary Fund, International Financial Statistics

Figure 10A



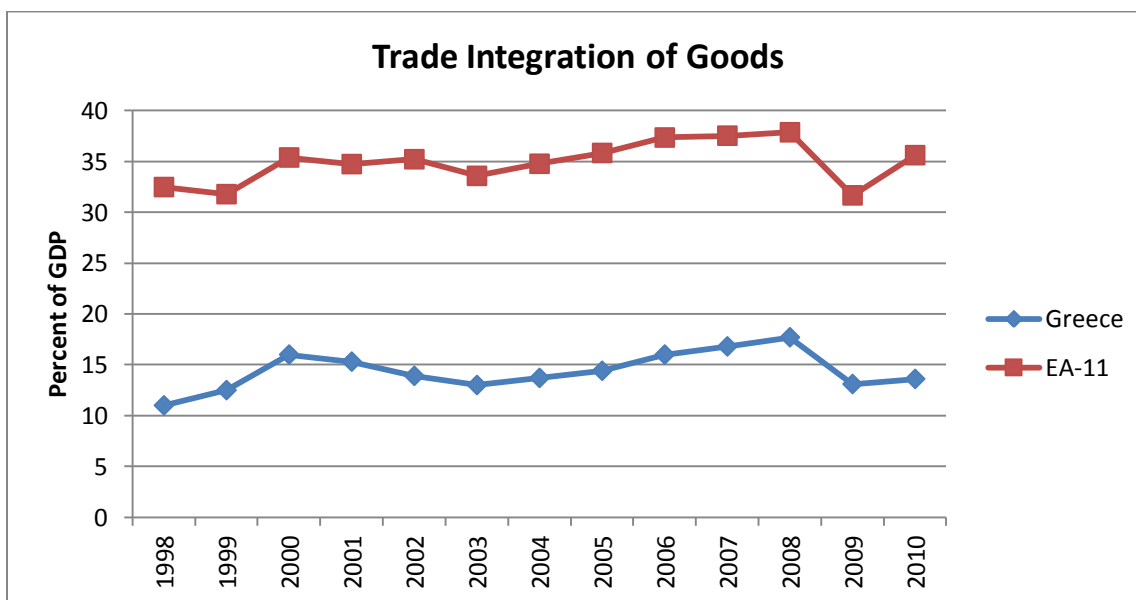
Source: International Monetary Fund, World Economic Outlook Database, September 2011

Figure 10B



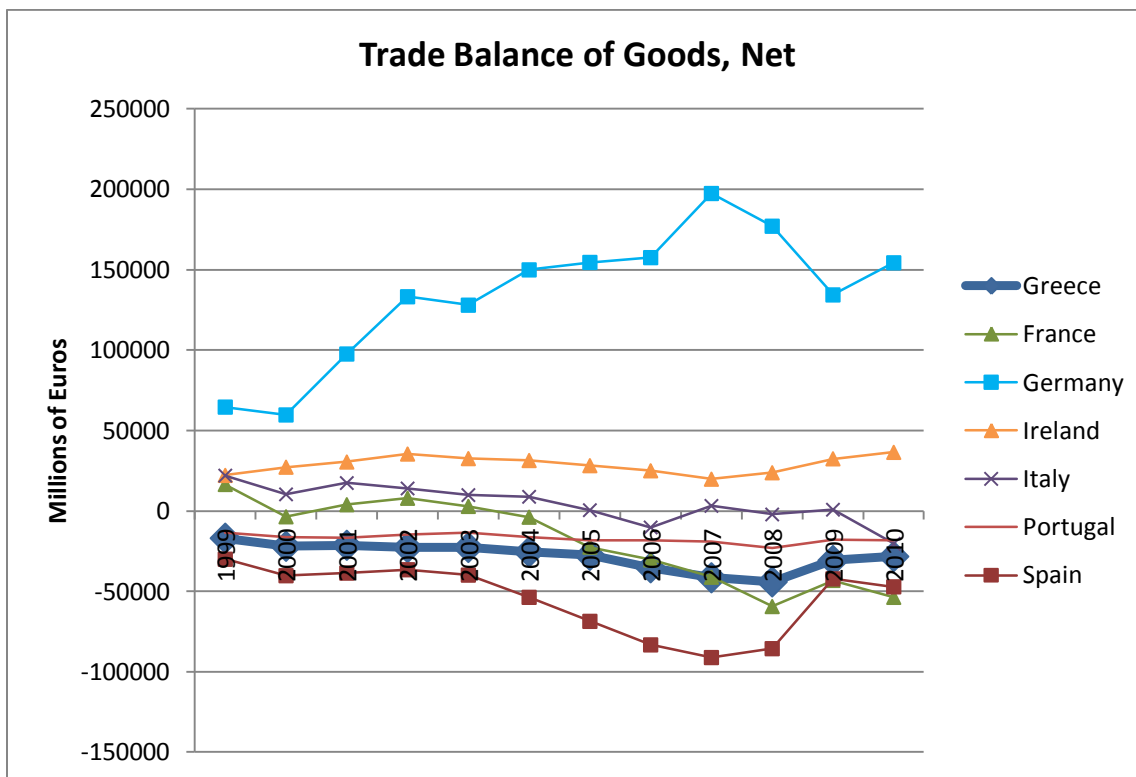
Source: International Monetary Fund, Balance of Payment Statistics 2010

Figure 11A



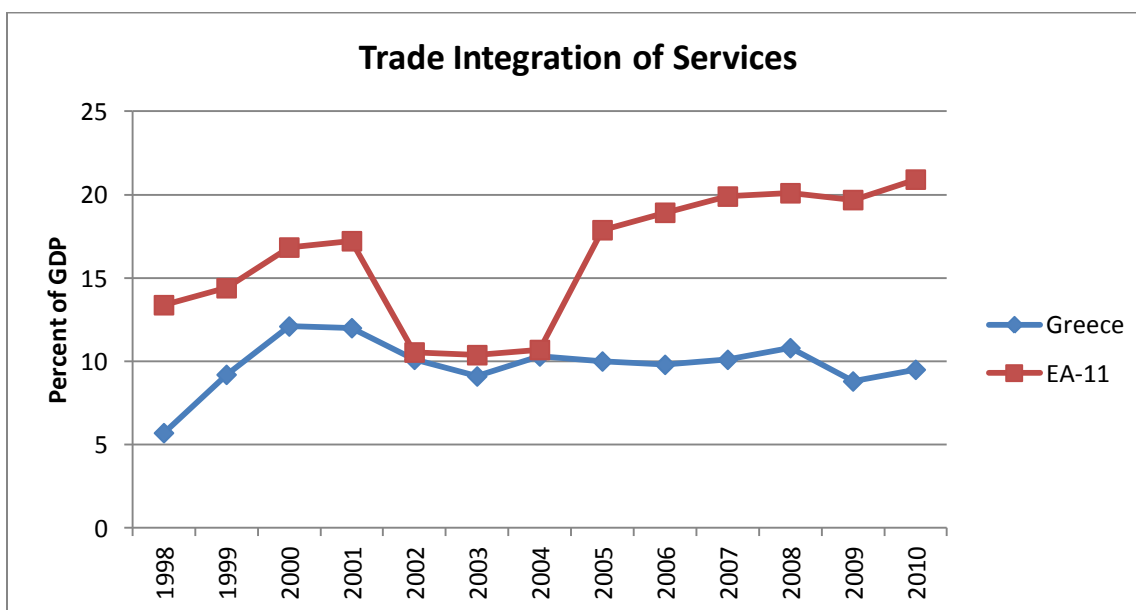
Source: Eurostat

Figure 11B



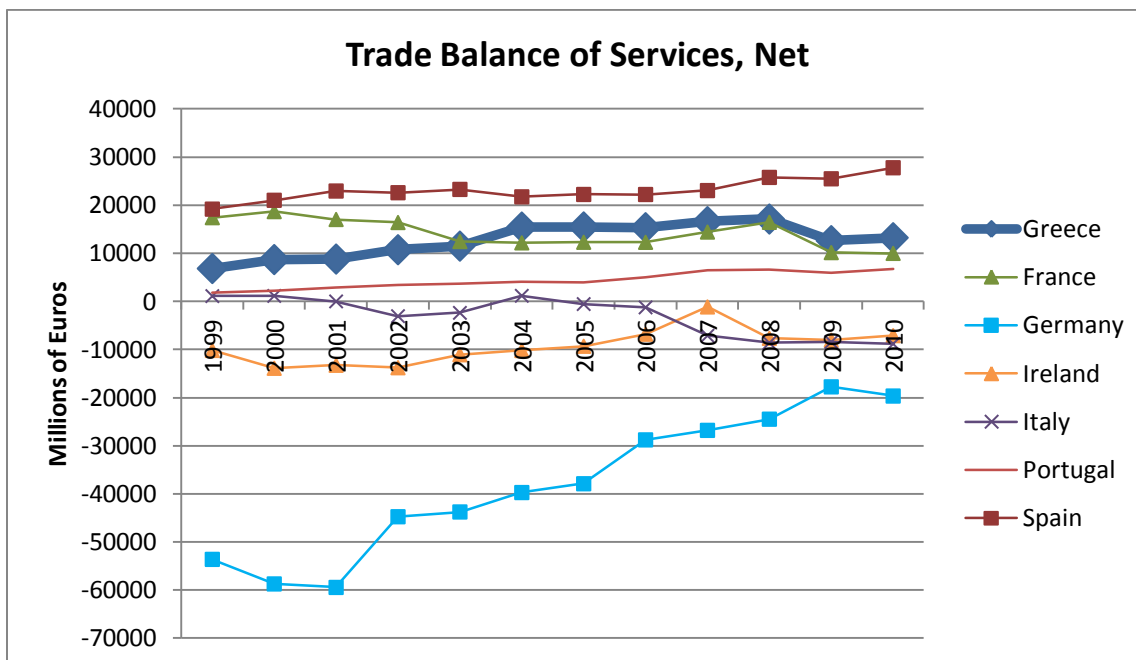
Source: International Monetary Fund, Balance of Payment Statistics 2010

Figure 12A



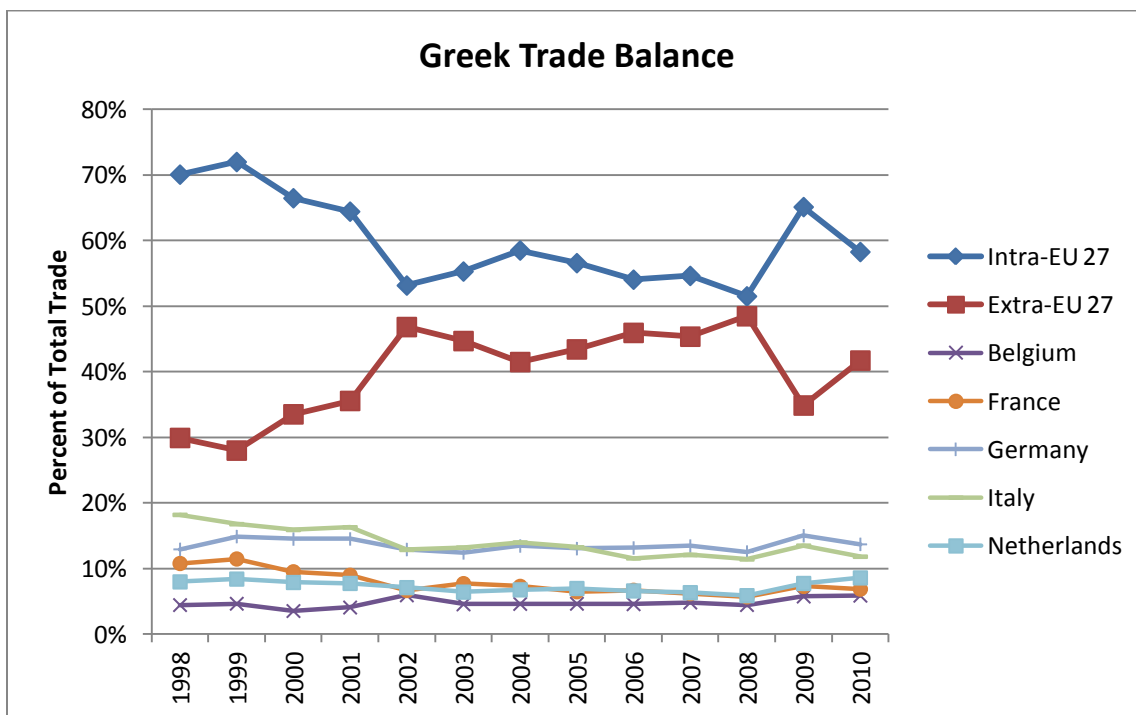
Source: Eurostat

Figure 12B



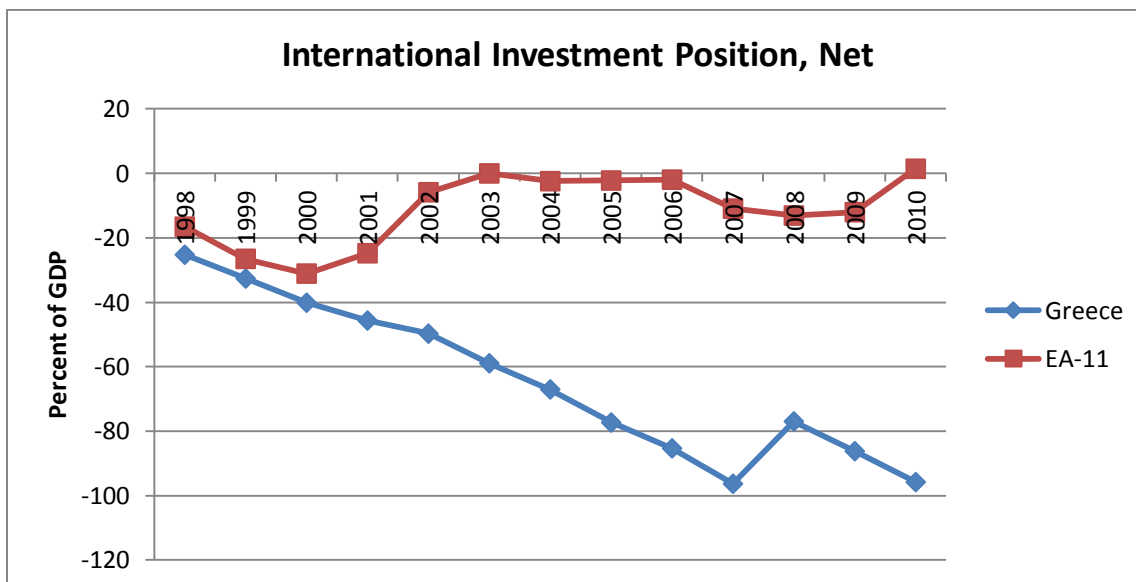
Source: International Monetary Fund, Balance of Payment Statistics 2010

Figure 13



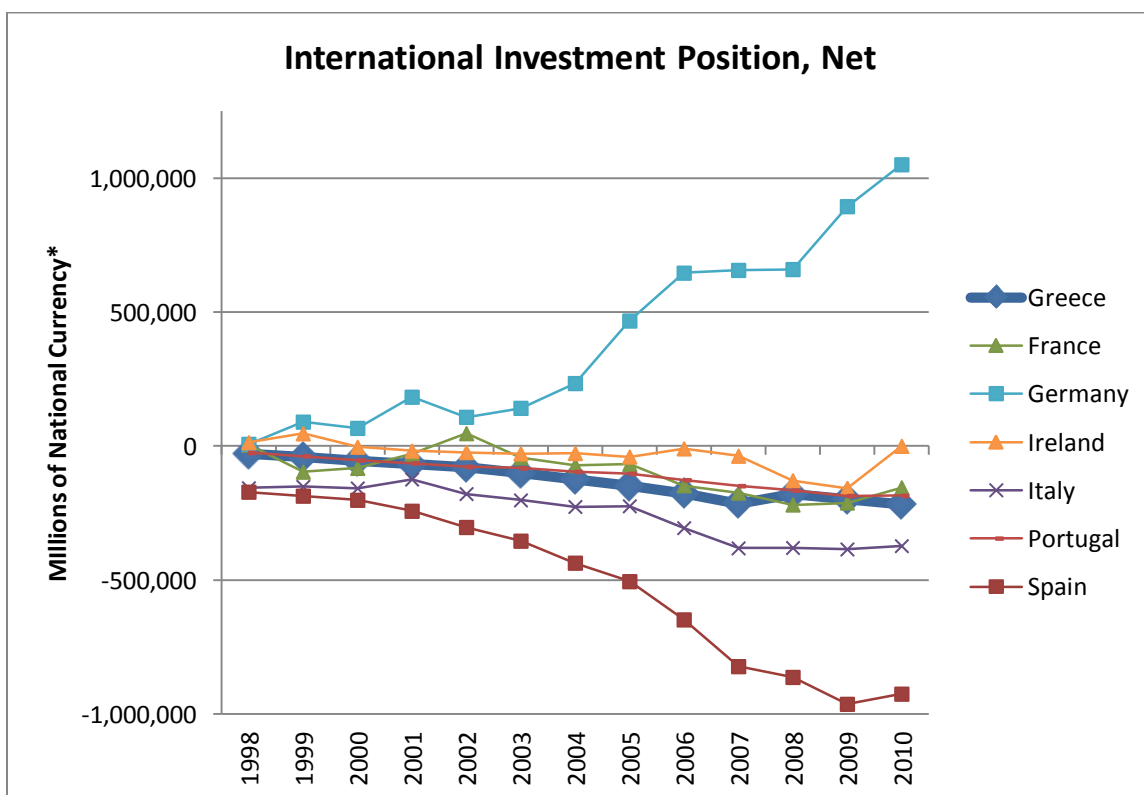
Source: Eurostat, External and intra-European Union Trade Statistical Yearbook Edition: 2008, 2010, and 12/2010

Figure 14A



Source: Eurostat

Figure 14B



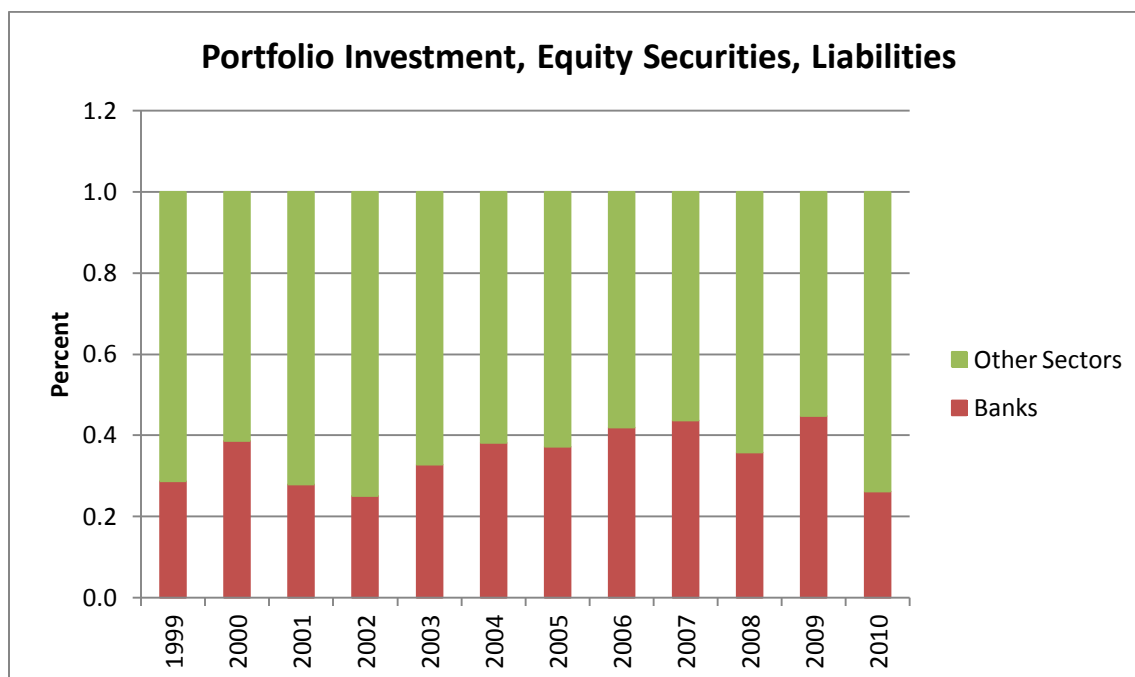
Source: Eurostat. *National Currency: including 'euro fixed' series for euro area countries

Table 1: International Investment Position- Standard Components Liabilities⁹⁰

Concept	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Net Assets (A- L)	-43317.0	-53157.0	-68061.0	-82864.0	-101557.0	-124122.0	-149187.0	-178164.0	-214467.7	-179182.4	-199406.3	-210261.3
Total Liabilities	102195.0	114659.0	135894.0	162956.0	191607.0	226884.0	279281.0	327200.0	404527.1	404337.0	459797.0	441118.0
1. Direct Investment In Reporting Economy, (L)	15316.0	13412.0	15819.0	14838.0	17778.0	20910.0	24743.0	31350.0	36153.0	27390.0	29222.0	26213.0
1.1 Equity Capital and Reinvested Earnings, Liabilities	14481.0	12414.0	14884.0	13926.0	17118.0	20131.0	22859.0	29303.0	33731.0	24538.0	27162.0	23088.0
1.2 Other Capital, Liabilities	835.0	998.0	935.0	912.0	660.0	779.0	1884.0	2047.0	2422.0	2852.0	2060.0	3125.0
2. Portfolio Investment (Excluding Financial Derivatives), (L)	52516.0	61573.0	71277.0	81423.0	105990.0	138357.0	171326.0	194368.0	236437.1	208979.0	238565.0	160001.0
2.1 Portfolio Investment, Equity Securities, Liabilities	15141.0	10300.0	8750.0	8034.0	12779.0	20840.0	32180.0	45746.0	63547.0	17168.0	19516.0	12802.0
2.1.1 Banks, Liabilities	4331.0	3976.0	2440.0	2010.0	4198.0	7956.0	11956.0	19203.0	27736.0	6149.0	8736.0	3339.0
2.1.2 Other Sectors, Liabilities	10810.0	6324.0	6310.0	6024.0	8581.0	12884.0	20224.0	26543.0	35811.0	11019.0	10780.0	9463.0
2.2 Portfolio Investment, Debt Securities, Liabilities	37375.0	51273.0	62527.0	73389.0	93211.0	117517.0	139146.0	148622.0	172890.1	191811.0	219049.0	147199.0
2.2.1 Bonds and Notes, Liabilities	36655.0	50900.0	62355.0	73378.0	93198.0	117465.0	139070.0	148446.0	171684.1	186326.0	210862.0	146030.0
2.2.1.2 General Government, Liabilities	36256.0	46963.0	58572.0	69745.0	89334.0	113129.0	134100.0	142768.0	165211.5	176317.0	203418.0	140267.0
2.2.1.3 Banks, Liabilities	0.0	0.0	0.0	26.0	31.0	30.0	27.0	1.0	1.0	1300.0	1300.0	0.0
2.2.1.4 Other Sectors, Liabilities	399.0	3937.0	3783.0	3607.0	3833.0	4306.0	4943.0	5677.0	6471.6	8709.0	6144.0	5763.0
2.2.2 Money Market Instruments, Liabilities	720.0	373.0	172.0	11.0	13.0	52.0	76.0	176.0	1206.0	5485.0	8187.0	1169.0
2.2.2.2 General Government, Liabilities	720.0	373.0	172.0	8.0	5.0	52.0	76.0	176.0	1206.0	5485.0	8187.0	1149.0
2.2.2.3 Banks, Liabilities	0.0	0.0	0.0	3.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.2.2.4 Other Sectors, Liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0
3. Financial Derivatives, (L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4. Other Investment, (L)	34363.0	39674.0	48798.0	66695.0	67839.0	67617.0	83212.0	101482.0	131937.0	167968.0	192010.0	254904.0
4.1 Trade Credits, (L)	646.0	1151.0	1708.0	1807.0	1384.0	1257.0	1048.0	1316.0	1354.0	1254.0	626.0	1236.0
4.1.1 General Government, Liabilities	154.0	172.0	180.0	150.0	40.0	7.0	5.0	5.0	5.0	4.0	3.0	3.0
4.1.2 Other Sectors, Liabilities	492.0	979.0	1528.0	1657.0	1344.0	1250.0	1043.0	1311.0	1349.0	1250.0	623.0	1233.0
4.2 Loans, (L)	33717.0	38523.0	47090.0	64888.0	66455.0	66360.0	82164.0	100166.0	130583.0	166714.0	191384.0	253668.0
4.2.1 Monetary Authorities, Liabilities	0.0	0.0	8093.0	17411.0	15353.0	6546.0	7217.0	8183.0	10797.0	35348.0	49036.0	97612.2
4.2.2 General Government, Liabilities	7759.0	9325.0	11281.0	11218.0	11164.0	11496.0	11049.0	11711.0	10683.0	10179.0	13338.0	29958.8
4.2.3 Banks, Liabilities	16475.0	20254.0	16883.0	25224.0	28011.0	37482.0	52472.0	68623.0	97423.0	109894.0	111561.0	116422.0
4.2.4 Other Sectors, Liabilities	9483.0	8944.0	10833.0	11035.0	11927.0	10836.0	11426.0	11649.0	11680.0	11293.0	17449.0	9675.0
4.3 Currency & Deposits, (L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4.4 Other Liabilities, (L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

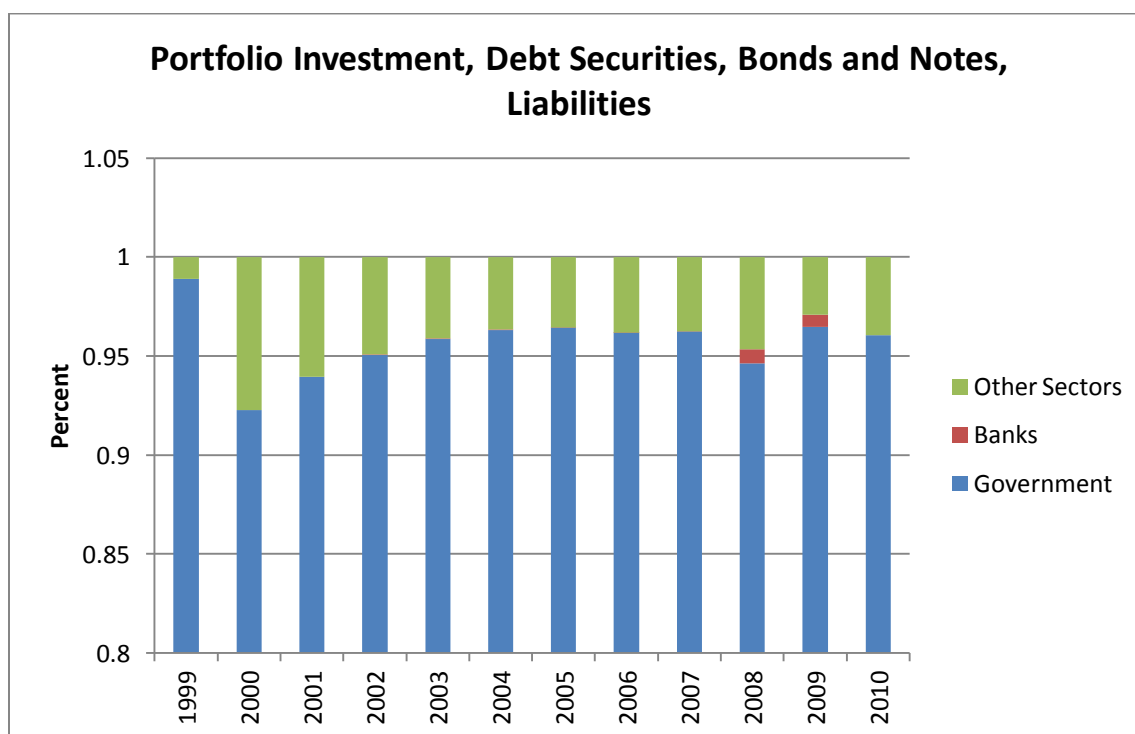
⁹⁰ Source: IMF, BOP. Millions of Euros

Figure 15A



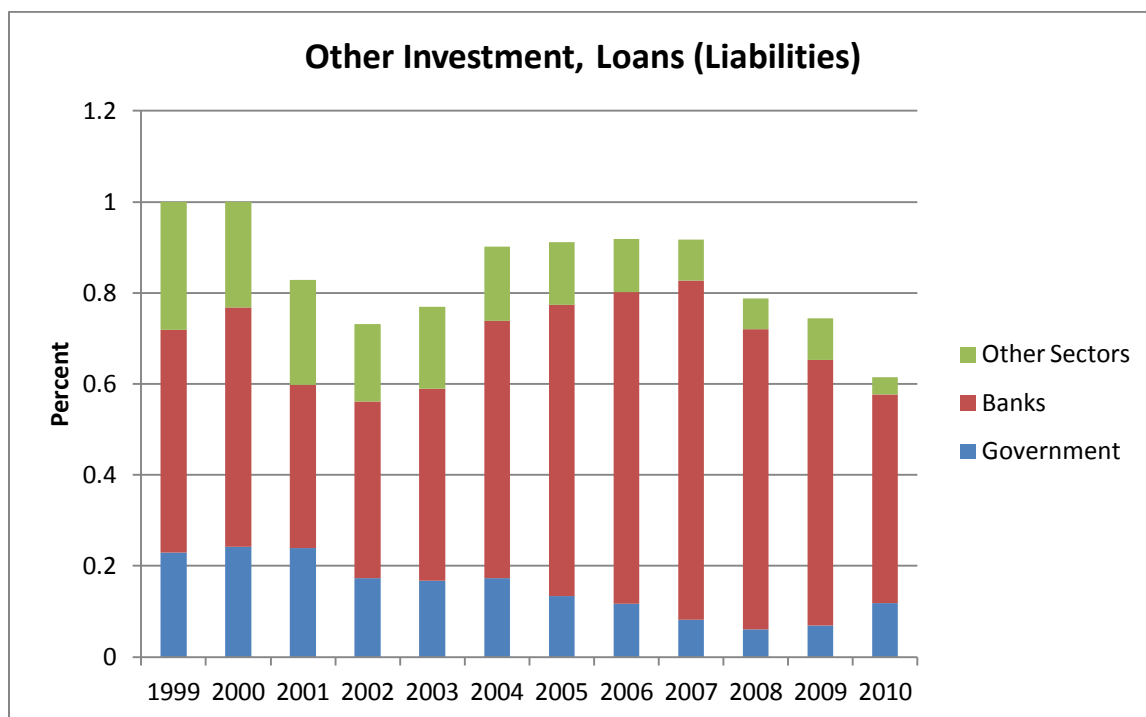
Source: International Monetary Fund, Balance of Payment Statistics

Figure 15B



Source: International Monetary Fund, Balance of Payment Statistics

Figure 15C



Source: International Monetary Fund, Balance of Payment Statistics

Figure 16

<http://www.bbc.co.uk/news/business-13798000>

Source: Bank for International Settlements Quarterly Review⁹¹

⁹¹ "Q&A: Greek Debt Crisis." *BBC News*. BBC, 10 Nov. 2011. Web. 26 Nov. 2011. <<http://www.bbc.co.uk/news/business-13798000>>.

Table 2

Country	Total lending exposure to Greece (millions)	Total Government debt exposure to Greece (millions)
Total of 24 countries	145,783	54,196
European banks	136,317	52,258
Non-European banks	9,466	1,938
France	56,740	14,960
Germany	33,974	22,651
Italy	4,085	2,345
Japan	1,631	432
Spain	974	540
UK	14,060	3,408
US	7,318	1,505

Source: Bank for International Settlements Quarterly Review⁹²

⁹² "The Countries Most Exposed to Greek Debt - Telegraph." *Telegraph.co.uk*. 15 June 2011. Web. 27 Nov. 2011. <<http://www.telegraph.co.uk/finance/economics/8578337/The-countries-most-exposed-to-Greek-debt.html>>.