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IMPLOSION IN GREECE? AN ANALYSIS OF THE GREEK DEBT CRISIS AND ITS
IMPACTS ON EUROPE AND WORLD MARKETS

BY

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THESIS

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Abstract

This thesis seeks to address the impact of the Greek debt crisis on the stability of the euro and Eurozone, and the best solutions to the crisis. The chapters of this study explore currency unions in theory and practice, the operational components of the Eurozone, fiscal policy and its importance in Eurozone maintenance, and provide an overview of the events leading up to the Greek debt crisis. It analyzes strategies implemented so far to solve the crisis, looks at shifts in interest rates on Greek debt bonds, and performs a comparative analysis of previous currency unions that failed in an attempt to draw lessons from those examples. The study provides evidence that the current tools utilized to stabilize Greece are unsustainable over time, and if Germany does not provide adequate aid, Greece will further default on its debt, which will lead to significant implications for the Eurozone in the future.

The global financial crisis of 2008 was extremely detrimental to the financial and economic well-being of countries, organizations, and individuals worldwide. Those reaping the benefits of an economic boom suddenly found the world in economic turmoil, with the downward spiral of financial markets forcing many to question the stability the longevity of the crisis. Since late 2009, conservative investors have expressed their fears that a sovereign debt crisis will develop within Europe, and put the future of the Eurozone at risk. While increases in sovereign debt load have been most pronounced in only a few Eurozone member nations, they are becoming increasingly problematic for the currency union as a whole.

The European Union continues to call on Greece to implement austerity measures in order to reduce debt and cut spending. Past measures to counter the debt

crisis have focused on providing the country with multi-billion euro bailout packages in exchange for implementing austerity. The majority of Greek citizens continue to publicly reject these measures, even with knowledge of the benefits some austerity measures and bailouts will have for Greece.

As of this publication, Greece has partially defaulted. In March 2012, following a second EU/IMF bailout and austerity measures, private sector holders of Greek debt agreed to a debt-swap, with write off losses of \$141.4 billion as a part of the debt exchange. While the effects have not been widely felt, further default will severely impact the future of the Eurozone.

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Chapter 1: Introduction - Crisis in Greece

As of this publication, Greece has partially defaulted. In March 2012, following a second EU/IMF bailout and austerity measures, private sector holders of Greek debt agreed to a debt-swap, with write off losses of \$141.4 billion as a part of the debt exchange. While the effects thus far have not been too widespread, a further default will severely impact the Eurozone. The implications will be detrimental to the value of the euro, the financial stability of European countries, the stability of governments in the region, and the stability of banks invested in Greek debt as well as individual nations affected by a default. This financial turmoil will bring about increased changes in government with a potential for weak political leadership, and increased austerity measures to decrease national deficits.

This study seeks to address the impact of the Greek debt crisis on the stability of the euro and Eurozone, and what would be the best solutions to the crisis. It analyzes strategies implemented so far to solve the crisis, looks at shifts in interest rates on Greek debt bonds, and performs a comparative analysis of previous currency unions that failed in an attempt to draw lessons from those examples. The study provides evidence that the current tools utilized to stabilize Greece are unsustainable over time, and if Germany does not provide adequate aid, Greece will further default on its debt, which will lead to significant implications for the Eurozone in the future. The Latin Monetary Union of 19th century Europe provides a vivid example of what the Eurozone may evolve into if appropriate measures are not taken, while the 2002 Argentine financial crisis provides an example of what further Greek default may entail.

The research finds that recent measures taken by the European Union to counter the European sovereign debt crisis have begun to slightly improve the stability of the Eurozone. However, further political, economic, fiscal, and national integration, as well as a method to implement sanctions against member nations who do not abide by Eurozone guidelines, are imperative in order to return the euro's stability to pre-crisis levels.

The global financial crisis of 2008 significantly impacted the financial and economic well-being of countries, organizations, and individuals worldwide. Those who were accustomed to enjoying the benefits of an economic boom suddenly found themselves in economic turmoil, with the downward spiral of financial markets forcing many to question the stability of their home country, and the longevity of the crisis. Since late 2009, conservative investors have expressed their fears that a sovereign debt crisis will develop within Europe, and put the future of the Eurozone at risk. While increases in sovereign debt load have been most pronounced in only a few Eurozone member nations, they are becoming increasingly problematic for the currency union as a whole. Moreover, since April 2010, global markets have become concerned about the size of Greece's public debt, and how a Greek default would affect the Eurozone. The uncertainties surrounding it continue to instill fear and distrust in Greece's financial legitimacy amongst the international community. How will the Greek debt crisis impact the Eurozone, and what are the best solutions to the crisis?

The European Union (EU) has called on Greece to implement austerity measures in order to reduce debt and cut spending. Past measures to counter the debt crisis, however, have involved providing the country with multi-billion euro bailout

packages funded by the EU, IMF, and banks within wealthy Eurozone nations. The majority of Greek citizens continue to reject these measures, many publicly, even with knowledge of the benefits the austerity measures and bailouts will have for Greece. They often express their dissatisfaction in these measures with angry, and sometimes violent, street protests.¹ Shortly after Greek bailouts in 2010 and 2011 were approved by lenders and the appropriate organizations, credit rating agencies downgraded Greece's debt rating. Standard and Poor's (S&P) has recently downgraded Greek's debt to "selective default," from its previous CCC rating, and Fitch and Moody's have cut Greek debt to "junk" status amid fears of a default by the Greek government.

What continues to worry the markets, however, is a fear of a Greek "disorderly default" and the domino effect that may occur within the Eurozone.² Europe's banks alone, not including Greece or the European Central Bank (ECB), hold an estimated 27 percent of Greek debt at a face value of \$100 to \$120 billion,³ and a disorderly default will ensure that most of this debt will not be repaid to creditors. Even with Greece's recent debt forgiveness by its creditors, followed by the approval of a second bailout, together both of which have translated into a "partial default" on Greek debt, the argument of this paper still holds true based on the likely unsustainability of Greece's current government deficits.

Major Eurozone governments have also been criticized for a lack of political leadership, and there have been signs of divisions within the European Central Bank.

¹ Hewitt, Gavin. "Eurozone Approves Massive Greece Bail-out." BBC News. (2 May 2010). 3 October 2011.

² "Eurozone Crisis Explained." BBC News Business. (27 October 2011). 30 October 2011.

³ Source: "BIS Quarterly Review." Bank For International Settlements. (12 December 2011). 21 February 2012.

The governments in Greece and Italy have seen major changes since the crisis began to worsen in 2011, with more technocratic leadership in place designed to tackle the financial crisis, and perhaps provide a greater sense of authority to handle the problems. One main concern among investors is that the Eurozone's political structures do not have the authority to deal with the magnitude of the economic issues at hand.⁴

⁴ Eurozone Crisis Explained." BBC News Business. (27 October 2011). 30 October 2011.

Chapter 2: Currency Unions, the Eurozone, and the Importance of Fiscal Policy

2.1 - Currency Unions in Theory

There is a vast amount of literature on what economists, political scientists, bankers, politicians, and various experts believe to be the merits and disadvantages of currency unions in general, as well as heated discussion of particular historical examples. Chown notes that nearly all who contribute to the study of optimal currency areas refer back to Robert Mundell's classic article, "A Theory of Optimum Currency Areas."⁵

A currency union is an agreement among members of that union who share a common currency without necessarily being required to further integrate their individual economic and financial institutions into the organization as a whole. Typically, in addition to a customs union, a single monetary and foreign exchange policy is used, and a country with a currency board accepts the monetary policy of the union's organization without expecting to have any influence on it.⁶ Cohen elaborates further, noting that monetary union means "the complete abandonment of separate national currencies, and full centralization of monetary authority in a single joint institution."⁷ The European Central Bank plays the role of centralized monetary authority in the European Union.

⁵ Chown, John. A History of Monetary Unions. Routledge; New edition edition, 2003. p. 23.

*The referenced article is: Mundell, Robert A. "Theory of Optimal Currency Areas." The American Economic Review, 51.4. (1961): 657-665.

⁶ Rosa, Samuele. Ed. "Definition of Currency Union." IMF Committee on Balance of Payments Statistics. (May 2004). 03 December 2011. p. 2.

⁷ Cohen, Benjamin J. "Monetary Unions." Economic History Association Encyclopedia. (01 February 2010). 02 December 2011.

Currency unions fall into one of three types. The first and most simple is "the informal union;" a unilateral adoption of foreign currency by member nations for use in all member nations participating in the currency union. In the second approach, "the formal union," participating member nations sign a bilateral or multilateral agreement to adopt a foreign currency for use in each of their nations. The difference between formal and informal unions is that in the latter, foreign currency is used simultaneously with the member nation's currently issued domestic currency. The Eurozone is an example of the third currency union structure; "the formal union with common policy approach." It involves developing a common monetary policy among all member nations that includes forming an agreement for issuing a common currency for the entire union. This structure differs from the second approach that an entirely new currency is created for use amongst members, instead of using a currency type that already exists within the union.

A complicating factor in the Euro as an example of the formal union with common policy approach is the fact that some EU member nations continue to use their own national currency instead of the euro.⁸ These member nations' lack of adopting the euro as their sole national currency may prove to be detrimental to the Eurozone in the future, since the integration of monetary and fiscal policies of member nations have not been fully taken into consideration.

Currency unions have also been used as a form of regional currency reconstruction, and in some cases a motive for currency exchange. Chown notes that currency exchanges provide an opportunity for partial confiscation, or to check the activities of market operators, tax evaders, and monitor the deficit spending of

⁸ The largest are the United Kingdom with the British pound, and Sweden with the kronor.

prospective member nations. In fact, these may be the primary motives behind creating or expanding a currency union.⁹

When determining which geographical regions should share a currency in order to maximize economic efficiency, a key concept in the debate is the theory of an optimal currency area (OCA). An OCA is a geographical region which would maximize economic efficiency, while also creating the conditions of trade openness and mobility that determine which regions within the union should share a common currency in general. Krugman argues that academic economists in general were more skeptical of the Eurozone project, and pointed toward the difficulties of monetary integration for such a diverse and large union. Furthermore, he notes that many arguments over the desirability of the euro stemmed from general disagreements "over whether or not European countries constituted an optimal currency area."¹⁰

Two significant roles of the central bank of a currency union are determining exchange rates and issuing currency. Rolnick et al. look at various difficulties in maintaining a currency zone. First, monetary unions are difficult to maintain because of what we identify as a seigniorage incentive problem. For example, if member nations within a currency union retain the individual ability to issue currency, then they also have the ability to utilize money creation in order to "collect seigniorage from residents of other countries."¹¹ They also note that nations with money stocks growing faster than

⁹ Chown, John. A History of Monetary Unions. Routledge; New edition edition, 2003. p. 30.

¹⁰ Krugman, Paul. "Paul Krugman and the Euro." Economic Policies for the 21st Century. (28 November 2011). 04 December 2011.

¹¹ Rolnick, Arthur J., Bruce D. Smith, and Warren E. Weber. "The Origins of the Monetary Union in the United States." The Cliometric Society: Federal Reserve Bank of Minnesota. (2010). 04 December 2011.

average will collect seigniorage from residents in the other countries growing as a slower pace than average.

In the modern world, most of the world's currencies have a floating exchange rate, in which a currency's value fluctuates according to the foreign exchange market. However, some countries use a fixed exchange-rate system (also known as a pegged exchange-rate system), in which governments try to keep the value of their currencies constant against the value of another single currency, a grouping of other currencies, or another measure, such as gold.¹² A few governments and currency unions use an exchange rate mechanism (ERM), which is based on the concept of fixed currency exchange-rate margins, but confines the variability of exchange rates through the upper and lower end of the margins. The goal of these mechanisms is to reduce exchange rate variability and achieve monetary stability. Prior to the introduction of the euro in 1999, many European nations followed the European Exchange Rate Mechanism to ensure their own currency's stability.¹³

Chown argues that the adjustment process is the greatest challenge in maintaining a currency union. Arguments regarding fixed versus floating currencies, and how likely individual members will be subject to asymmetric shocks (given that the European Exchange Rate Adjustment Mechanism no longer exists), leads member nations and economists alike to question how effectively gold standard procedures as a pegged currency measure will work in the future.¹⁴ Chown also notes that a currency union offers more scope than a fixed exchange rate for a good adjustment mechanism,

¹² "Currency Exchange: Floating Rate vs. Fixed Rate." Investopedia. (12 March 2012). 18 April 2012.

¹³ "Exchange Rate Mechanism." Investopedia. (28 February 2012). 18 April 2012.

¹⁴ Chown, John. A History of Monetary Unions. Routledge; New edition edition, 2003. p. 24.

and that the commitment to a union expected to be permanent will encourage policies to converge by itself.¹⁵ However, once legal barriers and fiscal penalties are eliminated, transparency across borders will increase and open up travel to workers within the union. Many workers may be reluctant to work abroad, on the other hand, often because of the language or cultural barriers to entry in a foreign country.

Previous literature by Mundell discusses the problem and effect of differential preferences for inflation. Chown notes that although moderate inflation can be a source of seigniorage revenue and an alternative to taxation to a government, both inflation and taxation inflict additional costs on the private sector of the economy. These costs are typically higher than the yield of taxation.¹⁶ He further argues that a rational tax system "pushes each revenue-generating technique to the point at which the marginal costs to the economy per unit of revenue are equal," and that the trade-offs are different in various countries.¹⁷ However, the costs of a monetary union will be evident as some workers in a common monetary policy will be employed in less than optimal trade-off positions.¹⁸

2.2 - Currency Unions in Practice

Few currency unions are permanent. Breakups of currency unions are almost as common as their establishments. This section examines two relevant and significant breakups.

¹⁵ Chown, John. A History of Monetary Unions. Routledge; New edition edition, 2003. p. 24.

¹⁶ Chown, John. A History of Monetary Unions, p. 25.

¹⁷ Chown, John. A History of Monetary Unions, p. 25.

¹⁸ Chown, John. A History of Monetary Unions, p. 25.

2.2.1 - The Latin Monetary Union of the 19th Century

The Latin Monetary Union of the 19th Century provides an example of a failed currency union that did not fully integrate member nation fiscal policies nor legally require member nations to abide by the Union's currency regulations. As the Napoleonic Wars came to a conclusion in the 1860s and due to the postwar chaos that followed, there was a need for monetary system reform within Europe. At this time, currencies were based on a metallic standard, and most circulating coins were made of gold and silver. Chown argues that had this standard been gold *or* silver, there would have been no problems, and countries would instead have exercised an exchange of foreign currency based on coins of identical weight and value.¹⁹ However, since the standard was bimetallic, the shortage of silver at the time created problems which led to the international community seeking a solution. Hence the Latin Monetary Union (LMU) was formed.

Founded in December 1865 by France, Belgium, Italy, and Switzerland, members of the LMU agreed to change their national currencies to a standard of 4.5 grams of silver per 0.290322 grams of gold, at a ratio of 15.5 to 1 respectively, and make the currencies freely interchangeable via uniform and universal coinage.²⁰ The treaty came into effect in August 1866, and was quickly joined by the Papal States (predecessor to the Vatican) in the same year, followed by Greece and Bulgaria in 1867. By 1889, Spain, Romania, Venezuela, Serbia, and San Marino had joined.²¹ The LMU established uniform standards for member nation coinages, and by making each

¹⁹ Chown, John. A History of Monetary Unions. Routledge; New edition edition, 2003. p. 57.

²⁰ Chown, John. A History of Monetary Unions, p. 57.

²¹ Chown, John. A History of Monetary Unions, p. 59.

nation's currency legal tender throughout the Union, it created a wider area for circulation of a common currency and coordinated the supply of specie coins to the great convenience of travelers and traders. Cohen notes that it also created a formal exchange rate, where authority over participating member nation's currencies remained under management of each separate government.²²

The Union was regulated by stringent criteria within the treaty, and minting of coins corresponded to the reserves of gold and silver possessed by national banks. Issues arose when the administrator of the Papal Treasury began to increase its silver coinage without the prescribed amount of metal in them. This led to papal coins quickly becoming debased and widely circulated in other LMU nations, and the eventual ejection of the Papal States from the Union because they minted six times as many coins as they were allowed to.²³

Himmelreich argues that the Union was set to fail because it never really worked, and eventually disintegrated over time. When faced with dilemmas between Union and national interests, they pursued national interests and avoided integration that reduced state sovereignty.²⁴ Furthermore, there were little mechanisms of control in place, and the incompleteness of the treaty led to unilateral interpretations as each member nation utilized it for their own advantage. It is important to note that the treaty for the LMU does not mention paper-based banknotes, and left this issue to the discretion of individual

²² Chown, John. A History of Monetary Unions. Routledge; New edition edition, 2003. p. 59.

²³ "Latin Monetary Union." Encyclopedia Britannica. (2011). 08 December 2011.

²⁴ Himmelreich, Johannes. "The Euro's Ailing Parents - Latin Monetary Union." Europe and Me Magazine. (2011). 08 December 2011.

banks.²⁵ In the 1870s, new discoveries and better refining techniques increased the supply of silver, which led to the overvaluation of silver relative to gold on the fixed LMU exchange rate, and the eventual conversion to a pure gold standard in 1878. However, even though minting silver coins stopped, existing silver coins continued to remain in circulation, creating problems as the values of gold and silver fluctuated.²⁶

The Union continued to shrink, and in 1908, Greece was ejected after it had been discovered that Greece was decreasing the amount of gold in the coins they were minting. World War One brought about significant political, economic turmoil, along with the destruction of much of Western Europe, eventually ending the LMU in practice. However, remnants of the LMU were evident for some years afterward as coins remained in circulation until the Union's official dissolution and end in 1927.²⁷

The Latin Monetary Union collapsed in the end because it lacked a political union, evident in the cases of the Papal States and Greece knowingly breaking minting guidelines for coins, and subsequently being ejected from the union. The chance of creating a strong economic union was thus slim, as member nations did not integrate and change their political and economic policies. Moreover, they did not abide by the rules outlined in the original LMU treaty of 1865 to ensure success of the currency union.

²⁵ Chown, John. A History of Monetary Unions. Routledge; New edition edition, 2003. p. 59.

²⁶ "Latin Monetary Union." Encyclopedia Britannica. (2011). 08 December 2011.

²⁷ "Latin Monetary Union." Encyclopedia Britannica.

2.2.2 - The Dollarization of Argentina

The case of Argentina in the 1990s illustrates a good example of a currency union that failed in the short term. Even though its currency board provided some financial stability via dollarization, it did not change national fiscal policies or encourage monetary discipline. At the beginning of the 20th century, it was one of the richest nations in the world, with its central bank full of gold. However, after years of huge budget deficits financed by loans abroad and Argentinean citizens, the nation was so debt-ridden that it could not secure new loans. Government leaders combated this issue by printing more money, which ultimately led to widespread inflation.

For years, hyperinflation had been extremely problematic for Argentina. At the beginning of 1975, the highest denomination for paper currency was 1,000 pesos, but by 1992, after the 1992 currency reform, inflation was so great that 1 peso was equal to 100 billion pre-1983 pesos. In 1989 alone, Argentina's inflation was 5,000 percent.²⁸ However, the nation's inflation rates began to slow down after pegging its currency to the US dollar in 1998. De La Torre et al. note that the failure of Argentina to adequately address the currency-growth-debt trap at the end of the 1990s "precipitated a run on the currency and the banks, followed by the abandonment of the currency board and a sovereign debt default. The crisis can be best interpreted as a bad outcome of a high-stakes strategy to overcome a weak currency problem."²⁹

²⁸ "A History of Hyperinflation From Angola to Zimbabwe Via the USA." Bullion Vault: Gold Market Analysis & Investment Research. (16 October 2007). 15 December 2011.

²⁹ De La Torre, Augusto et. al. "Living and Dying With Hard Pegs: The Rise and Fall of Argentina's Currency Board." Monetary Unions and Hard Pegs: Effects on Trade, Financial Development, and Stability. Ed. Alexander, Volbert, Jacques Melitz, and George M. Von Furstenberg. Oxford University Press; First Edition, 2004. p. 183.

Another problem that lead to the dollarization of Argentina is that historically, the nation has had a significant amount of currency fluctuations because of market speculation. Markets were extremely volatile in terms of their market reaction to announcements to government policies or information. Currency traders were subject to great scrutiny as the currency market and policy-makers were at the mercy of how the traders responded to day-to-day events. This was one reason why Argentina pegged its currency to the dollar; because it wanted financial security for the nation.

In the face of the Brazilian 1998 financial crisis and its decision to devalue the real, Argentina decided to swap its currency, the peso, for US dollars in order to insulate the country from economic hardship. In fact, the benefits and costs that a country faces by dollarizing are similar to those of euroization.³⁰ By pegging a nation's currency to the dollar, it avoids the cost of exchanging the domestic currency for physical dollars, and eliminates the need to hedge foreign exchange risks. Furthermore, that nation experiences inflation rates similar to the United States as a result of commodity arbitrage, causing interest rates to fall near US levels. Salvatore explains that although dollarization eliminates the currency risk but not the country risk, it can still lead to reduction of country risk.³¹

To ensure financial stability, the goal of Argentina with its 1998 monetary union consisted of several components. First was to negotiate a treaty consisting of a monetary association with the US, and adopt the US dollar as its national currency. Next was to offer other nations across the Americas, primarily South and Latin America,

³⁰ Salvatore, Dominick. "Euroization, Dollarization, and the International Monetary System." Monetary Unions and Hard Pegs: Effects on Trade, Financial Development, and Stability. Ed. Alexander, Volbert, Jacques Melitz, and George M. Von Furstenberg. Oxford University Press; First Edition, 2004. p. 33.

³¹ Salvatore, Dominick. "Euroization, Dollarization, and the International Monetary System." p. 23.

the opportunity to join the union, and create a pan-American currency union. Heads of state and those responsible for drafting the treaty for the currency union wanted all member nations to abide by strict fiscal discipline, similar to the criteria in the Maastricht Treaty for Europe's Economic and Monetary Union. Members of this currency union would then receive a share of income that the US Federal Reserve receives for printing US dollars, and be expected to open their markets nationwide to imports from dollar-zone nations and negotiate better access to its products in the US market.³² However, even given the aggressive measures the Argentinean Central Bank wished to implement, and the regional benefits that would arise from the union, both the US and IMF denied their interest in becoming involved in the operations.³³

Salvatore argues that by retaining its own currency alongside the dollar, Argentina was left vulnerable to exchange rate and financial crises that could arise out of fear of devaluation of the nation's peso against the dollar.³⁴ These fears became reality as the financial crisis in South America began to deteriorate in fall 2001. Faced with the challenge of either devaluing its own currency or committing to full dollarization of the country, Argentina chose to slightly devalue the peso and then let it float fairly freely against the dollar. This proved to be detrimental to the peso's value, as it depreciated to approximately 3.0 pesos per dollar, and hovered there from 2002 to

³² "Argentina Plans Monetary Union." BBC News Business: The Economy. (22 January 1999). 09 December 2011.

³³ "Argentina Plans Monetary Union." BBC News Business: The Economy.

³⁴ Salvatore, Dominick. "Euroization, Dollarization, and the International Monetary System." Monetary Unions and Hard Pegs: Effects on Trade, Financial Development, and Stability. Ed. Alexander, Volbert, Jacques Melitz, and George M. Von Furstenberg. Oxford University Press; First Edition, 2004. p. 33.

2008.³⁵ The implications of the peso's devaluation and depreciation were significant; as bank deposits of pesos declined and dollars steadily increased, followed by a mass withdraw of deposits from national banks. By November 2001, 47 of the top 50 banks suffered significant withdraws of patron deposits.³⁶ In January 2002, Adolfo Rodríguez Saá, the new Argentinean president, repealed the Convertibility Law, adopted a new provisional fixed exchange rate, and converted all bank accounts denominated in dollars into pesos. The peso swiftly depreciated by 75 percent of its value with respect to the US dollar months after its peg was abandoned.³⁷

De la Torre et al. note that pegging its peso to the dollar was highly inconvenient because it ended up being devalued in the end, even though that was what Argentina was trying to avoid. In fact, Argentina was nowhere near meeting the conditions for an optimal currency area, and dollarization was chosen in-part as a response to hyperinflation in the 1980s and the following implosion of financial intermediation.³⁸ Argentine officials believed that dollarization would create a stable monetary union in South America, and steer the nation away from financial instability. Instead, it became

³⁵ Salvatore, Dominick. "Euroization, Dollarization, and the International Monetary System." p. 33.

³⁶ De La Torre, Augusto et. al. "Living and Dying With Hard Pegs: The Rise and Fall of Argentina's Currency Board." Monetary Unions and Hard Pegs: Effects on Trade, Financial Development, and Stability. Ed. Alexander, Volbert, Jacques Melitz, and George M. Von Furstenberg. Oxford University Press; First Edition, 2004. p. 201.

³⁷ "Peso in Longest Slide Since Peg Ended in 2002." Bloomberg Businessweek. (31 August 2010). 07 December 2011.

³⁸ De La Torre, Augusto et. al. "Living and Dying With Hard Pegs: The Rise and Fall of Argentina's Currency Board." Monetary Unions and Hard Pegs: Effects on Trade, Financial Development, and Stability. Ed. Alexander, Volbert, Jacques Melitz, and George M. Von Furstenberg. Oxford University Press; First Edition, 2004. p. 186.

subject to various economic shocks the US experienced, as much of US foreign trade was with nations whose currencies change against the dollar.³⁹

The case of Argentina provides a vivid example of why it is a poor decision to blindly peg one currency against another. Even though it was trying to stabilize its own currency and economy, Argentina failed to realize that it would be subject to the economic shocks that affect the US economy. The Argentinean people were fleeing the peso because it was unstable and was affected by the constantly changing investment conditions in the country. Dollarization ultimately did not work because Argentina did not change its monetary and fiscal policies. Instead, the peso needed to be devalued in order to stabilize the nation's economy, and reduce inflation.

2.3 - The Euro, Eurozone, and the European Central Bank

Officially adopted on December 16, 1995, and first entering circulation on January 1, 2002, the euro is the official currency of the European Union. It was introduced as a noncash monetary unit in 1999 and by February 28, 2002, the euro became the sole currency of Eurozone member states, replacing the former European Currency Unit (ECU). Today the Eurozone consists of 17 of the 27 member nations of the EU.⁴⁰ A study in 2007 placed the euro as the second largest reserve currency as well as the second most traded currency in the world after the United States (US)

³⁹ De La Torre, Augusto et. al. "Living and Dying With Hard Pegs: The Rise and Fall of Argentina's Currency Board." p. 186.

⁴⁰ "Euro." Encyclopædia Britannica Online. Encyclopædia Britannica Inc., 2011. 31 Oct. 2011.

dollar.⁴¹ However, as of 2009, the euro has surpassed the US dollar with the highest combined value of banknotes and coins in circulation in the world, with close to €890 billion in circulation.⁴²

The resulting single market that emerged from European Union treaties, including the creation of the Eurozone, has freed citizens from a wide array of restrictions, meaning that goods, services, and people can move freely throughout the EU. Furthermore, it has dismantled previous national frontiers between EU member nations, and opened up economic free trade and working opportunities, positively impacting the lives of the Europeans whom reside within its borders. Citizens of member nations now enjoy the freedom to travel, work and conduct business abroad, chose from a wide variety of goods and services, and enjoy full consumer rights and protection when shopping outside one's home country.⁴³ Anti-competitive practices, such as markets being artificially inflated by companies across borders in order to maximize profit, are dealt with swiftly in order to protect consumers. For example, on June 27, 2007, the EU passed Roaming Regulation 717/2007. This legislation created a set of maximum prices for data usage and phone calls made and received while abroad.⁴⁴

⁴¹ Aristovnik, Aleksander and Tanja Cec. "Compositional Analysis of Foreign Currency Reserves in the 1999-2007 Period: The Euro vs. The Dollar as Leading Reserve Currency." Munich Personal RePEc Archive. (26 March 2009). 31 October 2011.

⁴² Hewitt, Michael. "Fiat Currency in Circulation, How Much Money is There?" The Market Oracle. (25 June 2009). 31 October 2011.

⁴³ It's a Better Life: How the EU's Single Market Benefits You." European Commission. (August 2002). 29 November 2011. p. 3.

⁴⁴ "Telecommunication Statistics." European Commission: Eurostat. (September 2010). 30 November 2011.

Salvatore discusses some of the most significant benefits nations receive by joining the Eurozone, and notes that "the benefits are:

1. The elimination of the need to exchange currencies across borders or for Euros;
2. the elimination of excessive volatility of their currencies;
3. more rapid economic and financial integration within the EU members;
4. greater economic discipline;
5. sharing the revenues from issuing more Euros in the future with other Eurozone members;
6. elimination of national currencies and country financial risk, and, thus, a lower cost of borrowing in international financial markets;
7. greater economic and political importance."⁴⁵

As a result of not being forced to convert currencies upon entering a new European country, both consumers and businesses are able to make significant savings in the cost of transactions within the Eurozone. This is due to the single-currency model the Eurozone follows, which is in turn leading to the development of markets within Europe, especially the poorer regions. The European Commission (EC) notes that the achievement of the Eurozone and the EU is not just economic; it has helped EU member states become citizens of Europe without losing any of their national characteristics or cultural traditions.⁴⁶

Established by the Treaty of Amsterdam in 1998, the European Central Bank

⁴⁵ Salvatore, Dominick. "Euroization, Dollarization, and the International Monetary System." Monetary Unions and Hard Pegs: Effects on Trade, Financial Development, and Stability. Ed. Alexander, Volbert, Jacques Melitz, and George M. Von Furstenberg. Oxford University Press; First Edition, 2004. 31.

⁴⁶ "It's a Better Life: How the EU's Single Market Benefits You." European Commission. (August 2002). 29 November 2011. p. 3.

(ECB) is the institution of the EU that is responsible for the monetary system of the 17 Eurozone member nations and the euro currency. The ECB works with the other national banks of each Eurozone member "to formulate monetary policy that helps maintain price stability in the European Union."⁴⁷ The primary responsibilities of the ECB are to formulate monetary policy, conduct foreign exchange, hold currency reserves, authorize the issuance of bank notes, and promote the smooth operation of the financial market infrastructure for securities in Europe.⁴⁸ Furthermore, the ECB is to "ensure the smooth running of the Economic and Monetary Union by managing the European System of Central Banks (ESCB)."⁴⁹ Its primary objective is the maintain price stability by defining the monetary policy of the Union."⁵⁰

In its structure, purpose, and legal constraints, the ECB is a unique financial institution containing some important features of central banking, but lacks others. The ECB was created to be the central institution of a monetary union, and remains today the governing core of the Eurozone. Only the ECB is authorized to issue bank notes in the Eurozone. While member nations may issue lower-denominational coins, the ECB must first authorize the specific quantity of coins to be issued. It is also responsible for opening accounts with financial institutions that wish to conduct business with the ECB

⁴⁷ "European Central Bank - ECB." [Investopedia](#). 29 November 2011.

⁴⁸ "European Central Bank - ECB." [Investopedia](#).

⁴⁹ The European System of Central Banks (ESCB) operates in order to integrate the ECB and the central banks of all member states, regardless of whether or not they have adopted the euro. The primary goal of the ECB is to ensure the success of ESCB missions, and it acts jointly with the national central banks of the Member States. However, it is the ECB which decides on the conditions under which the national central banks are authorized to intervene. (Information retrieved from: "The European Central Bank (ECB)." [Europa.eu](#). 29 November 2011).

⁵⁰ "The European Central Bank (ECB)." [Europa.eu](#). 29 November 2011.

or national central banks.⁵¹ The ECB plays an important regulatory role in the financial system primarily through imposing requirements for credit institutions established in Member States to hold minimum account reserves with the ECB or the national central banks, and create regulations for efficient payment systems.⁵² The ECB is also in charge of monetary policy, which is conducted primarily through open market borrowing or lending claims.⁵³

The ECB is managed by three bodies: the Governing Council, the Executive Board, and the General Council. The Governing Council is the main decision-making body of the ECB, and consists of six members of the Executive Board, and the governors of the national central banks of the 17 euro area member nations.⁵⁴ It is responsible for adopting the guidelines and decisions required in order to achieve the ECB's missions, primarily formulating monetary policy for the Eurozone, and can set interest rates at which commercial banks can obtain capital from their central bank. The Executive board is comprised of the President and Vice-President of the ECB, and four additional members appointed by the European Council. It implements monetary policy as defined by the Governing Council, manages daily operations of the ECB, and provides national central banks with day-to-day instructions.⁵⁵ The General Council is comprised of the President and Vice-President of the ECB, and the central bank governors of all EU member nations, bringing together the central bank heads of

⁵¹ "The European Central Bank (ECB)." Europa.eu. 29 November 2011.

⁵² "The European Central Bank (ECB)." Europa.eu

⁵³ "The European Central Bank (ECB)." Europa.eu.

⁵⁴ "The Governing Council." The European Central Bank. 29 November 2011.

⁵⁵ "The European Central Bank (ECB)." Europa.eu.

Eurozone and non-Eurozone members. It is considered to be a third decision-making body of the ECB, primarily responsible for collecting statistical information and producing activity reports, with the mission to contribute to the function of the ECB as a consultant.⁵⁶

The European Central Bank's independence of other European Union institutions is conducive to maintaining price stability, and both national governments and EU institutions are legally bound by treaties to respect the bank's independence. In particular, the ECB, national central banks, and members of decision-making bodies are not permitted to take any instructions from EU institutions, member nation governments, or their governing bodies.⁵⁷ The European Central Bank notes that the bank's independence is a key structural component in the institutional framework for the single monetary policy, and is supported "by extensive theoretical analysis and empirical evidence on central bank independence."⁵⁸ In order to shield itself from further influence exercised by public officials, the ECB is prohibited from granting loans to EU bodies or national public sector entities. However, it does have all required components necessary to efficiently implement monetary policy, and is freely permitted to decide how and when to utilize these tools.⁵⁹ It is important to note that the ECB is modeled

⁵⁶ "The European Central Bank (ECB)." Europa.eu.

⁵⁷ "Independence." The European Central Bank. 29 November 2011.

⁵⁸ "Independence." The European Central Bank.

⁵⁹ "Independence." The European Central Bank.

after the German Bundesbank, which traditionally has placed strong emphasis on low inflation and independence.⁶⁰

Security of tenure for important positions within the bank provide key evidence of the ECB's independence, as the minimum term of office for a national central bank governor is five years, and executive board members have non-renewable eight-year terms. If serious misconduct is discovered, or the official is unable to successfully fulfill his or her duties, then both can be removed from office.⁶¹ In order to offer accountability to the public, the ECB is obligated to make available to the public reports on all activities, and must present these findings to the European Commission, European Parliament (EP), the European Council, and the Council of the European Union. In addition, the EP is permitted to question the findings, and then voice its opinion on candidates to the executive board.⁶²

In recent years, the ECB's independence and distance from outside influence has been called into question. Since Sarkozy was sworn in as President of France in 2007, he has made attempts to influence the ECB politically and has criticized the bank's policies on interest rates in order to promote growth and job creation within the EU. In 2008, he attempted to introduce a European rescue fund during the global financial crisis.⁶³ These actions have caused the bank's independence to come under widespread scrutiny and criticism.

⁶⁰ This note is based on Dr. Kostas Kourtikakis' (University of Illinois at Urbana-Champaign) own research and experience with the ECB

⁶¹ "Independence." The European Central Bank.

⁶² "Europe - Organization of the ESCB and the Eurosystem." Banque De France. (January 2005). 29 November 2011. p. 1.

⁶³ Bagus, Philipp. The Tragedy of the Euro. Ludwig von Mises Institute; First Edition, 2010. p. 5.

2.4 - Fiscal Policy and its Importance in Eurozone Maintenance

In order to facilitate and maintain the stability of the Eurozone, the 27 member nations of the EU originally passed the Stability and Growth Pact (SGP), adopting it in 1997. It is an agreement that consists of fiscal monitoring by members of the European Commission and the Council of Ministers, and implementing sanctions against members who do not abide by it. Furthermore, member nations must respect EU and ECB recommendations to not have a budget deficit (which includes the sum of all public budgets, including municipalities, etc.) greater than 3 percent of gross domestic product (GDP), and must have a national debt lower than 60 percent of GDP.⁶⁴ These debt values were agreed upon in order to promote budgetary discipline of member nations and prevent economic instability in the Union. Currency values change daily (sometimes hourly). A government's national debt, budget deficit, and debt default rate all affect its nation's worldwide credit rating, making it either cheaper or more expensive to borrow new money. These components affect a currency's value accordingly, and should a member nation's debt level grow too large, the value and stability of the union will be negatively impacted. However, these values are not legally-binding.

In the face of the Greek debt crisis, skyrocketing deficit levels in the PIIGS (Portugal, Italy, Ireland, Greece, and Spain), and the possibility of a Greek default on its debt, the EU has modified its economic model and policymaking. Adopted in March 2011 as the more stringent successor to the SGP and using the EU's open method of coordination, the Euro-Plus Pact (EPP) created concrete commitments in which the member nations of the EU are forced to abide to a list of fiscal and political reforms

⁶⁴ "What is the Stability and Growth Pact?" The Guardian: Business. (27 November 2003). 05 December 2011.

intended to enhance their fiscal strength, discipline, and competitiveness.⁶⁵ This renewed effort for stronger economic policy coordination for competitiveness and convergences consists of four main strategic goals: fostering competitiveness, fostering employment, contributing to the sustainability of public finances, and reinforcing financial stability.⁶⁶ Recently, an additional fifth issue was added in order to successfully coordinate tax policy, which addresses all member nations of the pact.⁶⁷

Fiscal policy is defined as "government spending policies that influence macroeconomic conditions," such as tax rates, budgets, and government spending, in an effort to control the economy and limit public expenditures.⁶⁸ Trying to integrate an individual Eurozone member nation's fiscal policies was, and still is, a very sensitive subject area because it reduces national sovereignty. Fiscal coordination within the EU lies within broad guidelines which are written by each member nation, but relate primarily to the 17 current Eurozone members. However, these guidelines are not legally binding, as there is a great deal of opposition towards integration of Eurozone fiscal policies. Nations in general prefer to exercise individual control over what their expenses are and will be. Members are requested to respect the limits set by the Stability and Growth Pact for national debt and deficit ratios, and are threatened with fines should any exceed the limit.

⁶⁵ "Can Angela Merkel Hold Europe Together?" The Economist. (10 march 2011). 05 December 2011.

⁶⁶ "The Euro Plus Pact: Stronger Economic Policy Coordination For Competitiveness and Convergence." European Council - Europa.eu. (20 April 2011). 05 December 2011. p. 13.

⁶⁷ "The Euro Plus Pact: Stronger Economic Policy Coordination For Competitiveness and Convergence." European Council - Europa.eu. p. 13.

⁶⁸ "Fiscal Policy." Investopedia. (2011). 08 December 2011.

Fiscal policy in the EU consists of three macroeconomic issues which focus primarily on identifying an existing problem, stabilizing the problem, and then coordinating the solution to the problem.⁶⁹ It has played an important role in the survival of the Eurozone, as the burden of weaker nations, such as Greece, is transferred to wealthier members, and prevents a government default on its debt.

On December 9, 2011, all EU members, with the exception of the United Kingdom, agreed to strict caps on government spending and borrowing under the new European Fiscal Union.⁷⁰ This new treaty was proposed in order to promote increased fiscal integration of EU member nations, and prevent contagion from the current Greek debt crisis and any debt crisis in the future. States that agree to the treaty will have to concede some of their fiscal sovereignty, as it focuses on convergence of tax policies, welfare systems, and labor market regulations.⁷¹ Unfortunately for the Eurozone, the contagion effects have continued to spread, as the S&P downgraded the credit ratings of nine European countries on January 13, 2012. France and Austria saw their AAA credit ratings reduced one notch to AA+, whereas Spain and Italy had their ratings reduced by two notches. Portugal and Cyprus' debt ratings were both cut to "junk" status.⁷²

⁶⁹ Kenen, Peter B. Economic and Monetary Union in Europe: Moving Beyond Maastricht. Cambridge: Cambridge University Press. (1995).

⁷⁰ Weisenthal, Joe. "That Term 'Fiscal Union' Doesn't Mean What You Think It Does." Business Insider. (08 December 2011). 09 December 2011.

⁷¹ "A Reinforced Architecture For Economic and Monetary Union." Europa.eu. (12 September 2011). 09 December 2011.

⁷² Alderman, Liz and Racel Donadio. "Downgrade of Debt Ratings Underscores Europe's Woes." The New York Times. (13 January 2012). 14 January 2012.

On the other hand, monetary policy, which is the actions of a central bank, currency board, or other regulatory committee that determine interest rates, exchange rates, and size and rate of growth of the money supply, is much more readily agreed upon, and receives less opposition by dissidents and politicians in the long-term.⁷³ In order to influence the Greek debt crisis, the ECB changed its monetary policy by readjusting collateral requirements to ensure that the Greek public remained eligible to take out loans. On May 3, 2010 the ECB suspended its minimal credit rating threshold for collateral eligibility, and by May 10, it announced measures to address severe tensions in certain market segments.⁷⁴

The approval of the Euro-Plus Pact made integrated fiscal policy within the Eurozone a recommendation and not a requirement. The lack of authority in the Stability and Growth Pact led several member nations to stray from the minimum debt recommendations and fall into economic turmoil. Krugman argues that several countries did not follow the Maastricht Treaty norms because they found compliance with them difficult over the duration of the euro's adoption as a common currency.⁷⁵ A key concept of this argument was the notion that maintaining an optimal currency zone, even though it increases trade openness and mobility, was difficult because of the requirements to become a member, even though the PIIGS, with the exception of Greece, were very good at meeting the targeted requirements.

⁷³ "Monetary Policy." Investopedia. (2011). 08 December 2011.

⁷⁴ Pogorelec, Sabina. "Fiscal and Monetary Policy in the Enlarged European Union." European Central Bank - Working Paper Series No. 655. (July 2006). December 2011.

⁷⁵ Krugman, Paul. "Paul Krugman and the Euro." Economic Policies for the 21st Century. (28 November 2011). 04 December 2011.

Currently, the PIIGS are suffering from high government deficits, continued economic decline, and have had their debt ratings downgraded by various credit rating institutions. Banks within wealthier Eurozone member nations, such as Germany and France, hold PIIGS bond debt, notably Greece's, and have had their central banks' credit ratings downgraded because of their exposure to it.

Moreover, major Eurozone governments have been criticized for a lack of political leadership, and there have been signs of divisions within the European Central Bank (ECB). One main concern in the markets is that the Eurozone's political structures do not have the authority to deal with the magnitude of the economic problems at hand.⁷⁶

Recently, there have been notable shifts in government because of fiscal policy disagreements, and the Greek and euro debt crises (GDC and EDC, respectively). The Prime ministers of Greece and Italy, and their respective political parties have resigned from government because of the dissent created by the EDC. The political impact in Greece was significant, as Greek parliament called for a vote of confidence on Papandreou's political party shortly after he announced a Greek referendum regarding bailout funds to be voted on in November 2011 (later postponed to January 2012, and then scrapped altogether). Moreover, the November elections in Spain were swayed because of Spain's debt levels, and how the EDC has affected the nation as a whole. Angela Merkel and Nicholas Sarkozy's governments (Germany and France, respectively) may be up for a vote of confidence in the near future. In fact, Paul

⁷⁶ Eurozone Crisis Explained." [BBC News Business](#). (27 October 2011). 30 October 2011.

Krugman argues that Eurozone governments are beginning to lean towards the left because of the "right-wingers who so ardently supported the euro project."⁷⁷

⁷⁷ Krugman, Paul. "Paul Krugman and the Euro." Economic Policies for the 21st Century. (28 November 2011). 04 December 2011.

Chapter 3: "Story" of the Greek Debt Crisis

3.1 - Events Leading Up to the Crisis

On January 1, 2001, Greece became the twelfth nation to join the Eurozone, and accept the euro as its single currency. Former Greek Finance Minister, Yiannos Papantoniou, announced that by leaving its former currency, the drachma, Greece had entered an historic era "that would place Greece firmly at the heart of Europe."⁷⁸ However, even then some analysts feared that the euro's stability could suffer from the inclusion of weaker nations from Eastern Europe or the Mediterranean region.⁷⁹

In order to qualify for euro membership, the Greek government was required to agree to adopt strict austerity measures, mainly through deep cuts in public spending. When the euro was introduced to world financial markets in 1999, Greece was left out of the Eurozone for failing to meet the EU's economic criteria, known as the Maastricht criteria. These criteria, similar to those of the 1997 Stability and Growth Pact (SGP) for Eurozone member nations, include: inflation no greater than 1.5 percentage points above the average rate of the three best performing member nations of the EU, a national budget deficit at or below three percent of gross domestic product (GDP), national public debt not to exceed 60 percent of GDP, long-term interest rates no more than two percentage points above the rate in the three EU nations with the lowest

⁷⁸ "Greece Joins Eurozone." BBC News. (01 January 2001). 25 October 2011.

⁷⁹ Steinhäuser, Gabriele. "EU's proposal to aid weakest 6." The New York Times: Boston Business. (02 August 2011). 09 March 2012.

inflation over the previous year, and entry of the national currency into the euro exchange rate mechanism two years prior to Eurozone entry.⁸⁰

For Greece, membership in the Eurozone meant that bond markets no longer needed to worry about high inflation or devaluation. In addition, it decreased the interest rates by which the government could refinance its debt since the nation was deemed more financially stable. The net interest costs to GDP fell by 6.5 percentage points, and the under-pricing of Greece's default risk provided it with easier access to longer-term borrowing. General spending increased significantly because of these lower interest rates, and Greece experienced strong GDP growth each year until the global financial crisis of 2008.⁸¹

In November 2004 (and again in November 2009 after elections), the government admitted it had provided false statistical information to gain entry into the Eurozone, on the basis that figures showed Greece's budget deficit to be much lower than it really was.⁸² Even though Eurozone member nations are expected to have deficits less than 3 percent of gross domestic product (GDP), revised data and Greek press reports suggested that the country's budget deficit in 1999 was actually 3.38 percent.⁸³

⁸⁰ "Maastricht Criteria." Reuters. (2012). 28 February 2012.

⁸¹ "Greece's Sovereign-debt Crunch: A Very European Crisis." The Economist. (04 February 2010). 30 October 2011.

⁸² Thomopoulos, Elaine. The History of Greece. Greenwood; First Edition, 2012. p. 182.

*A similar incident occurred five years prior, in November 2004, but the 2009 announcement generated the greatest amount of speculation and worry amongst investors and world markets.

⁸³ "Greece Admits Fudging Euro Entry." BBC News. (15 November 2004). 03 November 2011.

The Greek government has a long history of problems with its public debt, spending more than half the years since its 1832 independence in default.⁸⁴ There are several "deeply entrenched" features of the general Greek economy and Greek society that have inhibited sustained economic growth, while also creating conditions that underlie the existing crisis. The most important issues are Greece's significant state control of the economy, its large and very inefficient public administration, widespread tax evasion, and its political clientelism.⁸⁵

By March 2005, the cost of hosting the 2004 Olympics, estimated at \$15 billion and said to be paid for mostly by the state, had begun to affect Greece's financial stability.⁸⁶ Furthermore, even though Greece was in noticeable financial trouble, the Greek government continued to spend more on general benefits for its citizens, while receiving less money in taxes to cover these expenses. Public spending as a whole, and public sector wages and benefits were at an all-time high, and much greater than most other Eurozone and EU member nations. As recently as 2009, "Greek government expenditures accounted for 50 percent of GDP, with 75 percent of non-interest public spending going to public sector wages and social benefits."⁸⁷ However, according to the Organization for Economic Cooperation and Development (OECD), while spending on public administration in Greece was the highest as a percentage of total public

⁸⁴ Nelson, Rebecca M., Paul Belkin, and Derek E. Mix. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." Congressional Research Service Report For Congress. 18 August 2011: 2.

⁸⁵ Nelson, Rebecca M. et. al. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." p. 2.

⁸⁶ Itano, Nicole. "As Olympic Glow Fades, Athens Questions \$15 Billion Cost." The Christian Science Monitor. (21 July 2008). 23 October 2011.

⁸⁷ Nelson, Rebecca M., Paul Belkin, and Derek E. Mix. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." Congressional Research Service Report For Congress. 18 August 2011: 2.

expenditures, there has been "no evidence that the quantity or quality of the services are superior."⁸⁸ In order to offset its growing debt problem, the new Greek government attempted to impose an austerity budget in order to decrease the country's deficit and "get public finances back on track."⁸⁹ By spring 2006, the austerity measures were seen to as have worked after GDP was estimated to have increased by 4.1 percent.⁹⁰

From 2000 until 2007, Greece had one of the fastest growing economies in the Eurozone, with GDP growing at an annual rate of 4.2 percent as foreign investment and capital entered the country. The Greek government was permitted to run large structural deficits as the economy became increasingly stronger, and bond yields fell.⁹¹ Its initial currency devaluation allowed it to help finance borrowing. Once Greece became a member of the Eurozone in 2001, it could borrow more due to the lower interest rates government bonds held. As recently as 1990, Greece held controlling stakes in approximately 75 percent of all business assets in the country, and tightly regulated other sectors of the economy, but by 2008, it had reduced its stake to about 50 percent.⁹²

It is important to note that public finances during this period were strained further with the influx of low interest rate capital, and were only exacerbated by the global financial crisis of 2008-2009. Furthermore, this increase in capital did not result in any

⁸⁸ Nelson, et. al. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." p. 2.

⁸⁹ "Timeline of a Crisis: How Greece's Tragedy Unfolded." The Telegraph. (16 June 2011). 12 October 2011.

⁹⁰ "Timeline of a Crisis: How Greece's Tragedy Unfolded." The Telegraph.

⁹¹ "Greece: Foreign Capital Inflows Up." Hellenic Republic Embassy of Greece in Poland Press & Communication Office. (17 September 2009). 06 November 2011.

⁹² Nelson, Rebecca M., Paul Belkin, and Derek E. Mix. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." Congressional Research Service Report For Congress. 18 August 2011: 2.

significant fundamental changes in how the Greek economy was managed, nor did it affect investments that would increase the competitiveness of the economy. Instead, the government took advantage of its increased access to cheap credit and used it to offset the country's low tax revenues, pay for government spending (which was already the highest in the EU), and pay for imports that were not offset by tariffs or exports overseas.⁹³

The initial austerity measures implemented to reduce Greek debt were ultimately unsustainable over time. Interest rates on loans increased significantly, and tax evasion remained at high levels. The general public began to hold public demonstrations against the austerity measures, and they focused specifically on the cutting of public sector pay and pensions, the reduction of benefits, and the increase of taxes. Over time, it became too expensive to borrow commercially because of the high interest rates being charged.

By 2009, economic recovery was seen as short-lived, as the 2008 global financial crisis hit with full force, affecting nations worldwide. Greek tourism and shipping, two of its largest industries, were both severely impacted and revenues sank 15 percent in 2009.⁹⁴ Moreover, government budget and trade deficits grew dramatically, and borrowed funds were not placed in income-producing investments that "would generate future growth, increase the competitiveness of the economy, and

⁹³ Nelson, Rebecca M. et. al. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." p. 3.

⁹⁴ Samaras, Harris A. "Greece Unlikely To Escape Its Worst Financial Crisis of Modern Times!" Pytheas Market Focus. (July 2009). 12 November 2011. p. 2.

create new resources with which to repay the debt."⁹⁵ Greece's national debt increased from \$228.5 billion in 2004 to \$356 billion in November 2009. To make matters worse, the government of former Prime Minister Georgios Papandreou revised its 2009 budget deficit estimate to 12.7 percent of GDP, more than twice the previous estimate of 6 percent.⁹⁶

Following these revisions, credit rating agency Fitch downgraded Greek debt from A- to BBB+, below investment grade for the first time in a decade.⁹⁷ The fallout that followed the downgrade was severe, as financial markets around the globe sold off, causing the European stock market to tumble and the euro to weaken amid investor worries. Smith notes that "European stock markets also took fright, with the pan-European FTSEurofirst index slipping 1.5 percent, while in London the FTSE 100 shed 1.65 percent to close at 5223.13, down 87.53 points on the day. The euro fell by 2 percent against the yen and by 0.6 percent against the dollar to \$1.472."⁹⁸

Since the Eurozone began to face a major debt crisis in early 2010, Greece has been the center of attention. With an estimated 2011 debt to GDP value of 161.8, it now has the highest level of public debt in the Eurozone, with one of the largest budget

⁹⁵ Nelson, Rebecca M., Paul Belkin, and Derek E. Mix. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." Congressional Research Service Report For Congress. 18 August 2011: 3.

*See also: Gros, Daniel and Cinzia Alcidi. "Adjustment Difficulties and Debt Overhangs in the Eurozone Periphery (Working Paper No. 347)." Center for European Policy Studies Working Document. (May 2011). 14 November 2011.

⁹⁶ "Timeline of a Crisis: How Greece's Tragedy Unfolded." The Telegraph. (16 June 2011). 12 October 2011.

⁹⁷ Smith, Helena and Ashley Seager. "Financial Markets Tumble After Fitch Downgrades Greece's Credit Rating." The Guardian. (08 December 2009). 27 October 2011.

⁹⁸ Smith, Helena and Ashley Seager. "Financial Markets Tumble After Fitch Downgrades Greece's Credit Rating." The Guardian

deficits, estimated to be approximately \$482.7 billion.⁹⁹ However, its budget deficit as a percentage of GDP has begun to decrease in recent years, from 15.8 percent in 2009, to 10.6 percent in 2010, and in 2011, as forecasted by Greek Finance Minister Evangelos Venizelos, the country's deficit fell to approximately 9 percent of GDP.¹⁰⁰ Nelson et. al. mentions that Greece was the first Eurozone member to come under intense market pressures, and also the first to look at other Eurozone member nations and the IMF for financial assistance.

Fears of a sovereign debt crisis began to develop among investors concerning Greece's ability to meet its debt obligations in late 2009, when Papandreou revised Greece's 2009 budget deficit estimate to over twice what it had been previously thought to be, and announced a significant increase in government debt levels. The economic downturn stemming from the global financial crisis had negatively affected public finances as government spending on public programs, such as unemployment benefits and pensions, increased, while tax revenues decreased.¹⁰¹ Greece's reported general government gross debt rose from 106.1 percent of GDP in 2006 to 129.3 percent of GDP in 2009, and then to 144.9 percent of GDP in 2010.¹⁰² Although a disorderly default on Greek debt was rumored to be in the near future, Eurozone, European, and EU leaders, the International Monetary Fund (IMF), and the ECB all agreed that a

⁹⁹ "International Monetary Fund." World Economic Outlook. (November 2011). Using forecasts for 2011.

¹⁰⁰ "Greek 2011: Budget Deficit To Be Around 9pct/GDP: government." Reuters. (11 November 2011). 12 November 2011.

*See also: Economy of Greece." The CIA World Factbook. (2012). 09 March 2012.

¹⁰¹ Nelson, Rebecca M., Paul Belkin, and Derek E. Mix. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." Congressional Research Service Report For Congress. 18 August 2011: 4.

¹⁰² "General Government Gross Debt," Eurostat, November 2011. General government gross debt as a percentage of GDP and mio Euro.

default would be extremely risky, and must be avoided at all costs. Even though Greece accounts for only 2.5 percent of the Eurozone economy, a default by Greece could ignite a major global sell-off of other Eurozone members with high debt levels as investors lose faith in other Eurozone countries. The result would leave major European banks that were exposed to Greek debt and other risky investments in Eurozone countries unable to rebound from such a significant loss on those investments, and may in turn require a bailout from other financial institutions.

3.2 - Early Attempts to Solve the Greek Debt Crisis

Nelson et. al. note that "over the past year, the IMF, European officials, the European Central Bank (ECB), and the Greek government have undertaken substantial crisis response measures" in order to avoid the fear of contagion and financial turmoil a Greek default would generate.¹⁰³ In January 2010, Greece announced an aggressive stability program that will seek to cut its deficit to 2.8 percent of GDP by 2012, and since then, Greece has adopted a number of austerity packages. On February 9, 2010, the first austerity package was implemented with the signing of memorandums with the IMF and ECB concerning potential bailout loans, should they be necessary. This package included a salary freeze of all government employees, a reduction of bonuses by 10 percent, a cut in overtime pay by 30 percent, and cuts in the number of public

¹⁰³ Nelson, Rebecca M., Paul Belkin, and Derek E. Mix. "Greece's Debt Crisis: Overview, Policy Responses, and Implications." Congressional Research Service Report For Congress. 18 August 2011: 1.

employees, and work-related travel compensation. However, public sector pensioners who earn less than \$2,700 per month will be granted an increase of 1.5 percent.¹⁰⁴

In March 2010, Greek civil servants were asked to accept lower bonuses and higher taxes, or the country could risk defaulting on its debt and falling into bankruptcy. Amid these fears, Greece's parliament passed a second austerity package on March 5; the "Economic Protection Bill." This package was expected to save another \$6.5 billion and offset budgetary measures proposed by the government.¹⁰⁵ It focused primarily on spending cuts and tax increases, and included a 30 percent cut in Christmas, Easter, and leave of absence bonuses, an additional 12 percent cut in public bonuses, a 7 percent cut in public and private employee salaries, an increase in value added tax (VAT) from 4.5 percent to 5 percent, 9 percent to 10 percent, and 19 percent to 21 percent, an excise tax increase by 15 percent on fuel, 65 percent tax increase on cigarettes, and an increase of 10 percent to 30 percent in taxes on imported cars.¹⁰⁶ This second plan sparked a fresh wave of protests and strikes against the government, primarily from labor unions who had initially kept quiet after the first austerity measures had been implemented. On March 11, street clashes broke out between police and youths in central Athens as riots and anarchy spread throughout the capital.¹⁰⁷

By April 11, Eurozone finance ministers approved a \$40.5 billion bailout package for Greece. While the Greek government initially rejected the notion of additional

¹⁰⁴ Becatoros, Elena. "Greek Unions Launch 1st Assault On Austerity Plan." The Seattle Times. (09 February 2010). 18 October 2011.

¹⁰⁵ "Greek Parliament Passes Austerity Bill." Reuters. (05 March 2010). 03 November 2011.

¹⁰⁶ Kostarelou, Helen. "An Unforgettable and Ominous March 3." Eleftherotypia. (04 March 2010). 08 November 2011.

¹⁰⁷ "Greece rocked by riots as up to 60,000 people take to streets to protest against government." Daily Mail Online. (11 March 2010). 10 November 2011.

bailouts, a few days later Greece's parliament admitted its need of help from the IMF, and estimated its bailout needs to be \$60.7 billion instead. On April 23, the EU and IMF approved the requested bailout package, with the first installment of \$11.5 billion to cover Greek bond debt, and requested that the Greek government agree to implement further austerity measures. Four days later, Greece's debt rating was downgraded to BB+, also known as "junk" status, by the S&P amid fears of default by the Greek government. The markets were unforgiving, as the FTSE 100 index dropped by 2.6 percent.¹⁰⁸

The negative reaction by credit rating agencies, global financial markets, and the Greek population to the second set of austerity measures and subsequent EU/IMF bailout generated increased concern of a Greek default, and many began to question the long-term consequences it may have on the stability of the Eurozone. On May 2, after talks between the Greek government and the EU and IMF, all parties agreed to a \$148.4 billion rescue package to be paid out over a span of three years, and submitted the bill Parliament on May 4. Former Greek Prime Minister George Papandreou described this new round of austerity measures as "unprecedented," as it would save an estimated \$50.7 billion through 2012 and represent the largest government overhaul in a generation.¹⁰⁹

These new measures addressed issues in pay cuts, pensions, implemented tax reform, and promoted privatization of companies. They significantly cut expenditures in Greece's public sector, including an 8 percent cut on public sector allowances, a limit or

¹⁰⁸ "Timeline of a Crisis: How Greece's Tragedy Unfolded." The Telegraph. (16 June 2011). 12 October 2011.

¹⁰⁹ Bilefsky, Dan. "Three Reported Killed in Greek Protests." The New York Times. (05 May 2010). 15 November 2011.

elimination of bi-annual bonuses, freezes and cuts in public sector employee salaries, return of a new special tax on high pensions, increased taxes imposed on company profits, increase in property taxes, another increase in value added taxes, a reduction in publically-owned companies, a decrease in municipalities by 60 percent, and increased the retirement age from 61 to 65 for workers in the public sector (amongst many other reforms).¹¹⁰ However, the agreement was followed with a 48 hour general strike, and massive nation-wide protests that left three bank employees dead after it was firebombed by protesters during business hours.

In order to prevent financial crises similar to Greece's, global policymakers installed an emergency financial safety net fund worth \$1 trillion on May 10, 2010. The purpose of the safety net was to "bolster financial markets and shore up the euro against contagion from the Greek crisis."¹¹¹ The idea of Greece's sovereign debt crisis infecting other weaker Southern economies generated fear amongst European nations, many of which held a significant amount of their government bonds. The purpose of the financial safety net was to signal to the markets that the EU has the ability to, and will cover its member-nations' debts.¹¹²

Greece received its first loan of \$19.3 billion from the EU on May 18 in order to repay its immediate debt. By July 7, Greek Parliament passed further pension reform measures, cutting benefits and raising the national retirement age from 60 to 65. Even in the wake of the increasing number of austerity measures and national reformations,

¹¹⁰ "Greece's Austerity Measures." BBC News - Business. (05 May 2010). 15 November 2011.

¹¹¹ "Timeline of a Crisis: How Greece's Tragedy Unfolded." The Telegraph. (16 June 2011). 12 October 2011.

¹¹² Schmidt, Vivien A. "The European Union's Eurozone Crisis and What (not) to Do About It." Brown Journal of World Affairs 32.1 (2010): 199.

six months later, Greek debt downgrades continued, as Fitch became the third credit rating agency to cut Greek debt to "junk" status, after S&P and Moody's. This downgrade followed an EU-IMF finding which called for further measures by Greece to reduce debt and cut spending.¹¹³

By mid 2011, as worries of a Greek default grew, former Greek Finance Minister George Papaconstantinou, along with additional EU, IMF, Greek, and world leaders, determined that a debt restructuring was not in their best interests. Instead, they recommended that Greece continue with budget cuts and privatizations in order to overcome its debt and financial problems. On May 23, 2011, Greece announced a plan consisting of a series of privatizations in order to partially fund the \$67.7 billion needed by 2015 to pay off some of the nation's debt. By June 8, Greece agreed to implement additional austerity measures and increase savings up to 2015 to cut deficits and continue to receive financial aid.¹¹⁴ Some of the new measures included: an increase in taxes for anyone with an income greater than \$11,000, an extra tax for annual incomes greater than \$16,000, a new 2 percent tax levied to combat unemployment, an increase in taxes for pensioners, and an increase in VAT in the housing industry.¹¹⁵

World markets reacted unfavorably to the new austerity measures, and on June 13, Greece received the lowest credit rating in the world after S&P downgraded Greek debt from B to CCC. Papandreou responded by removing Papaconstantinou and reshuffling his cabinet, appointing party rival Evangelos Venizelos as finance minister.

¹¹³ "Timeline of a Crisis: How Greece's Tragedy Unfolded." [The Telegraph](#).

¹¹⁴ Timeline of a Crisis: How Greece's Tragedy Unfolded."

¹¹⁵ "What's Included in the Mid-term Plan: Read All the Measures." [Real.gr](#). (24 June 2011). 20 November 2011.

The new cabinet received a vote of confidence shortly afterward, and by June 29, Papandreou won parliamentary majority in favor of the proposed five-year austerity plan, which increased access to new funding.¹¹⁶

In order to help Greece pay debts due for the month of July, the IMF disbursed \$4.3 billion of the bailout funds on July 8. This was followed by an agreement on July 21 by Eurozone leaders that Greece was in need of a second bailout package of \$145.3 billion, plus a \$66.7 billion contribution by private sector bondholders by mid-2014.¹¹⁷ From August through October 2011, Greece continued to adopt more austerity measures, including cutting high pensions by 20 percent (9/21) and passing a new and unpopular property tax (9/27), which were met with public sector worker strikes and violent protests. However, on October 2 Greece's government predicted a new national deficit of 8.5 percent of GDP, short of the previous goal set in 2010.¹¹⁸

On October 27, Eurozone leaders announced they had reached a deal with private banks and insurers in which they would accept a 50 percent loss on all Greek government bonds held by the respective institutions, a loss of over \$133.5 billion.¹¹⁹ Four days later, Papandreou called for a referendum on the second proposed bailout without consulting European leaders. While he won the support of his cabinet in backing the referendum, now set at \$173.3, French President Nicolas Sarkozy and German Chancellor Angela Merkel informed him on November 2 that Greece will not receive any more aid until Greek Parliament votes and agrees to its commitments to the

¹¹⁶ "Timeline: Greece's Debt Crisis." [Yahoo News](#). (16 November 2011). 22 November 2011.

¹¹⁷ "Timeline: Greece's Debt Crisis." [Yahoo News](#).

¹¹⁸ "Timeline: Greece's Debt Crisis." [Yahoo News](#).

¹¹⁹ Rooney, Ben. "Finally, Europe Has a Deal." [CNN Money](#). (27 October 2011). 20 November 2011.

Eurozone.¹²⁰ Furthermore, the referendum vote was postponed to be set in January 2012, creating unrest amongst global financial markets, and called into question the confidence Parliament had in the existing government. After additional pressure from European leaders, Greece's government announced it had dropped the referendum plans, followed by a parliamentary vote of confidence, which Papandreou barely survived. He instead recommended that Greece form a coalition to prevent a Greek default, and by November 6, he solidified a deal with the opposition to approve the second bailout before the next round of elections, and that he would step down from his role as Prime Minister.¹²¹

As promised, Papandreou resigned on November 9, and the next day the new government was accepted and sworn in. Even though the New Democracy (ND) party continued to openly reject new austerity measures in return for austerity to be accompanied with measures for economic growth, the Grand coalition government of the Panhellenic Socialist Movement (PASOK), New Democracy, and the Popular Orthodox Rally (also known as LAOS; a small party with rather extreme rightwing views), won a vote of confidence on November 16, setting up foundation for a second Greek bailout.¹²²

In the wake of the looming Greek debt crisis, on December 9, 2011, all EU members, with the exception of the United Kingdom, agreed to strict caps on government spending and borrowing under the new European Fiscal Union in order to

¹²⁰ "Timeline: Greece's Debt Crisis." [Yahoo News](#). (16 November 2011). 22 November 2011.

¹²¹ "Timeline: Greece's Debt Crisis." [Yahoo News](#).

¹²² "Timeline: Greece's Debt Crisis." [Yahoo News](#).

*This grand coalition was headed by technocrat Prime Minister Antonis Samaras, a former Vice President of the European Central Bank

promote increased EU member nation fiscal integration, and prevent the contagion from Greece and any debt crisis in the future.¹²³ However, by December 14, the IMF announced that Greece's reforms were running behind schedule in most areas, delaying its recovery.

Greece reached a tentative deal with its private creditors on January 28, 2012 to write off a substantial portion of its debt. However, Germany presented the most resistance to the talks, arguing that Greece must instead continue to implement more austerity cuts before additional loans could be disbursed.¹²⁴ Two weeks later, on February 9 after repeated delays, leaders from the EU, IMF, and the three parliamentary Greek coalition parties met again to further discuss how to alleviate the worsening crisis. In exchange for new loans and rescue funds, Greece was required to cut 22 percent off the minimum wage, 15 percent off pensions, and to cut 15,000 public sector jobs. Inman notes that unemployment in Greece at this time had risen to an all-time high of 21 percent even though significant austerity measures were already in place.¹²⁵

The early February talks were successful, and on February 21, Eurozone member nations agreed to provide Greece with a second bailout package of \$170 billion. This recent bailout is expected to bring government debt down to 120.5 percent of GDP by 2020 and will launch a bond swap with private investors to help reduce and

¹²³ Weisenthal, Joe. "That Term 'Fiscal Union' Doesn't Mean What You Think It Does." Business Insider. (08 December 2011). 09 December 2011.

¹²⁴ Inman, Phillip. "Greek Debt Crisis: timeline." The Guardian: Business. (09 March 2012). 09 March 2012.

¹²⁵ Inman, Phillip. "Greek Debt Crisis: timeline."

restructure Greece's debts.¹²⁶ However, S&P declared Greece in "selective default" on February 28 after banks agreed to write off more than half of their holdings of Greek debt.¹²⁷

On March 9, Greece secured a much-needed private-sector backing for this debt swap, with 85.8 percent of bondholders agreeing to take heavy losses on their investments. Financial institutions were expected to write off approximately \$130 billion of debt as banks and insurers will swap current bonds for longer-dated securities that pay a lower coupon.¹²⁸ Private sector holders of Greek debt were expected to write off losses of 53.5 percent on the nominal value of their bonds, equating to a 75 percent loss on the net present value (NPV) of the bonds as part of the debt exchange. This private creditor bond exchange was completed on March 12 for a value of \$141.4 billion.¹²⁹

¹²⁶ "Europe approves 2nd Greek bailout of \$170 billion." CBS News. (20 February 2012). 09 March 2012.

¹²⁷ "Greece in 'selective default' on debts." Al Jazeera Business. (28 February 2012). 09 March 2012.

¹²⁸ "Eurozone approves second Greek bailout." Al Jazeera Business. (21 February 2012). 22 February 2012.

¹²⁹ "Greek bond exchange under Greek law completed." Xin Huanet News. (13 March 2012). 15 March 2012.

Chapter 4: Analysis

4.1 - Effect of the Greek Debt Crisis on the Euro

The value of the euro has depreciated against other international currencies since the Greek debt crisis emerged in 2009. As a result, many have expressed their fears that the current debt crisis in Europe will put the future of the Eurozone at risk. The spread of contagion stemming from the Greek debt crisis has led to many nations invested in Greek bond debt to see their credit ratings reduced by S&P and other rating agencies, beginning with the PIIGS, and recently spreading to more stable nations, such as France.¹³⁰ As nations continue to expose themselves to Greek bond debt, and the debt of other nations at risk of a future default, we can expect credit rating agencies to continue to downgrade the credit ratings of countries and banking institutions worldwide.

Over the last few years, the value of the euro has fallen when compared to the United States (US) dollar. The fear of contagion brought forth by the Greek debt crisis, and the continued downgrades of Eurozone member nation credit ratings, have sent the value of the euro plummeting. Figure 1 below provides a graph of the exchange rate history of the euro compared to U.S. dollars since the euro's introduction in January 2002 to April 2012. The values are the averages of daily figures for bidding rates in New York City. The monetary units are in euros to one U.S. dollar.

¹³⁰ Alderman, Liz and Racel Donadio. "Downgrade of Debt Ratings Underscores Europe's Woes." The New York Times. (13 January 2012). 14 January 2012.

Figure 1

Euro to U.S. Dollar Foreign Exchange Rate

DATE: Jan 1, 2002 ► Apr 16, 2012

INTERBANK: +/- 0%

PRICE: Bid

VALUES: Rate

FREQUENCY: Monthly



SOURCE: "Euro / U.S. Foreign Exchange Rate." Board of Governors of the Federal Reserve System. (16 April 2012). 16 April 2012.

The data shows that since fears of a European sovereign debt crisis began to emerge in late 2009, the value of the euro relative to the US dollar has never risen to pre-crisis levels. The euro sank to a 5-year low when the Greek government first requested in 2010 that an EU/IMF bailout package be activated, and sunk even further following the downgrading of its debt to junk status by S&P amid fears of a disorderly

default. Even though the value of the euro is greater than when it first emerged in 2002, the amount by which it has fallen in recent years is significant and provides evidence that the Eurozone's stability may be faltering; an effect of the crisis.

Following the May 2, 2010 approval by the Eurozone and IMF of a 110 billion euro bail-out package, and upon receipt of loans from the EU for Greece to repay its immediate debt, we see the value to the euro relative to the dollar gradually return closer to pre-crisis levels. Since the spring of 2011, as the possibility of a Greek default on debt became more realistic, the euro continued to drop, and is expected to do so unless drastic measures are taken to prevent a total default from occurring. Figure 2 below provides a graph comparing Greece and Germany's government bond interest rates for the past three years. The values are the closing rates of daily figures with 10-year Greek and German government bonds acting as benchmarks. The units are in percentages.

Figure 2

Greek and German Government Bonds Compared (10 Year Acting as Benchmark)

(GGGB10YR:IND - German Bonds; GDBR10:IND - Greek Bonds)



SOURCE: "Greek and German Government Bonds 10 Year Acting as Benchmark." [Bloomberg](#). (16 April 2012). 16 April 2012.

When we look at the bond interest rates of Greek debt, we notice that interest rates have skyrocketed since the crisis first emerged. German interest rates, on the other hand, have gradually declined over time. We also see many similarities when comparing Greek bond rates to the value of the euro over time. When Greek interest rates increase and become high, the country begins to find itself in financial trouble, and we see the value of the euro decrease (and vice versa). This leads us to infer that there is a negative correlation between the value of the euro and the Greek debt crisis.

Should the euro continue to exist as a viable currency, regardless of whether Greece defaults or not, the tensions between lenders and borrowers will have to be overcome. There has been a significant amount of Greek debt that has been forgiven or written off by European financial institutions and Eurozone member nations alike, creating dissent toward nations responsible for causing this financial instability. In the immediate future, it will be extremely difficult and expensive for any of these heavily-indebted nations, especially Greece and the other PIIGS, to borrow new capital from financial institutions.¹³¹ Banks and other financial institutions that are willing to lend money to debtor nations will most likely force borrowers to abide by increasingly severe and painful measures to ensure they do not post a loss on their investment.

4.2 - A Look at the Attempted Solutions

The European Union and its member nations, the European Central Bank, International Monetary Fund, and the other actors involved in addressing the Greek debt crisis have relied heavily on two types of solutions: bailouts and austerity measures. Since its first bailout package was approved in August of 2010, Greece has continued to move closer to default, even though it has received a substantial amount of financial aid. The austerity measures passed by Greek parliament have had little effect on its fiscal woes, and have instead only stirred-up anti-governmental tension amongst the Greek population.

The majority of Greece's bailout funds have been provided as a monetarist solution by the IMF and EU in order to prevent Greece from defaulting on its debt.

¹³¹ Enright, Tadhg. "Latest Banking Action: Making It Simple." Sky News Business. (01 December 2011). 16 February 2012.

European leaders fear that a Eurozone member's default and exit from the Eurozone would be interpreted as a failure of not only the euro, but the EU as well. Thus, a member state defaulting on its loans has been determined by many Eurozone and ECB authorities to be an untenable outcome. It was thought that in the worst cases, the stronger member states (such as the France and Germany) would support the weaker ones.¹³² As the situation in Greece becomes more dire, it continues to receive additional funding, with each stage requiring additional austerity measures to curtail its excessive government spending.

Greece is also experiencing a decline in its relationship with public and private financial institutions that have lent Greece money, since many of these austerity measures include some component of debt forgiveness in exchange for implementing the required changes. Both types of solutions have only postponed the inevitable, as they are unsustainable over time. Furthermore, the continuous need of the Greek government for bailout referendums has increased uncertainty about whether Greece can deal with its debts.

Greece is not the only country to receive financial aid of this form from the IMF. In fact, it is quite typical for countries in danger of default, including those outside of Europe, to receive IMF bailout funds. During the Asian financial crisis of 1997 to 1998, the IMF dwarfed all previous bailouts, providing South Korea, Thailand, and Indonesia (amongst various other nations) with bailouts of \$57 billion, \$17 billion, and \$43 billion, respectively.¹³³ Greece, as a comparison, has received approximately \$27 billion in

¹³² Bagus, Philipp. "The Tragedy of the Euro." The Independent Review. 15.4 (2011): 567.

¹³³ "Past IMF Disbursements and Repayments for all members from May 01, 1984 to January 31, 2012." International Monetary Fund. (31 January 2012). 22 February 2012.

disbursements thus far from the IMF (\$97.9 billion total when including those from the Euro-area).¹³⁴ Table 1 below provides an estimated overview of disbursements made to Greece by the Euro-area and the IMF.

Table 1

Overview of disbursements made to Greece, in billions of dollars (as of December 2011).

Tranche	Disbursements	Euro-area	IMF	Total
1	May 2010	19.4	7.4	26.8
2	September 2010	8.7	3.5	12.2
3	Dec 2010 / Jan 2011	8.7	3.4	12.1
4	March 2011	14.6	5.5	20.1
5	July 2011	11.7	4.3	16.0
6	December 2011	7.8	3.0	10.7
	Total	70.9	27.0	97.9

SOURCE: "The Greek Loan Facility." Europa.eu: Economic and Financial Affairs. (31 December 2011). 27 February 2012.

It is important to note that the bailouts and austerity measures have not been complete failures. The Greek debt crisis has increased the transparency of Greece's financial institutions and its government, and helped identify areas of wasteful spending. Low tax rates, high pensions, and low retirement ages have all since been modified to be more in-line with European norms and standards. Taxes, although still difficult to levy and collect in Greece, have been raised. Pension reform has decreased the amount of money pensioners receive, and increased the age required to be eligible to receive such funds.¹³⁵ In fact, more than half of the money Greece has been loaned by the IMF and

¹³⁴ "The Greek Loan Facility." Europa.eu: Economic and Financial Affairs. (31 December 2011). 27 February 2012.

¹³⁵ "Timeline: Greece's Debt Crisis." Reuters. (13 February 2012). 17 February 2012.

EU member nations has gone to pay off the nation's bondholders, instead of funding Greece's overspending as some had feared.¹³⁶

4.3 - What Would Happen If Greece Defaulted?

Countries have repeatedly defaulted on their debts throughout history, including the United States.¹³⁷ Most nations that suffer from acute insolvency issues are advised by lenders and regulators to restructure their national debt preemptively via an "orderly default." When a country defaults, its national debt is restructured, and in most cases, a significant portion of its debt is forgiven or written off by creditors. In fact, economists recommend this type of default as a solution to solve national debt crises because of its simplicity and minimal economic attrition. Orderly defaults are much less painful as far as defaults go, and it is common for lenders to forget about these debts very quickly, again providing loans within a few years to nations that recently defaulted.¹³⁸ Prial argues that whether Greece will default or not seems moot at this point, and that it is already in the process of defaulting.¹³⁹ However, if Greece does officially default on its debt, be it orderly or disorderly, there will be more of an impact on the Eurozone because of the multitude of regional implications.

The biggest fear of Greece defaulting on its debt is not the default itself, but the implications within the Eurozone and worldwide. Other Eurozone member nations facing

¹³⁶ Schneider, Howard. "Most Greek bailout money has gone to pay off bondholders." The Washington Post. (22 October 2011). 22 January 2012.

¹³⁷ Borensztein, Eduardo and Ugo Panizza. "The Costs of Sovereign Default." Working paper, International Monetary Fund. (October 2008). 28 January 2012.

¹³⁸ Borensztein, et. al. "The Costs of Sovereignty Default."

¹³⁹ Prial, Dunstan. "Greek Default: Orderly or Disorderly?" Fox Business. (01 February 2012). 16 February 2012.

severe austerity measures and large debt repayments may look at Greece as an example of an alternative to paying off debt by choosing to stop all payments and go into default. In this scenario, countries exposed to the debts of other Eurozone member nations would see their debt ratings sink almost overnight, as the domino effect of multiple Eurozone member nation defaults spreads throughout the region. The value of the euro would plummet against international currencies and fear of a complete Eurozone collapse would plague international markets.

However, the Eurozone will be better off by allowing Greece to default by treating it as a learning experience, and identifying the root causes leading up to the crisis and how to prevent them in the future. Even though officials are afraid that the default of one Eurozone member nation may lead to significant implications for all other members, a total default may be in its best interests. It is important to note that EU member nations and private banking institutions are the primary holders of Greek bond debt. With Greece's partial default in March 2012, even though it is not evident now, those holding this debt may be sent into financial turmoil in at least the short-term. Table 2 below provides an estimated breakdown of Greek bond and debt holdings, not including its debts for bailout disbursements. Recently, European banks holding large amounts of Greek debt have had their credit ratings downgraded. The credit ratings of Societe Generale and Credit Agricole were both cut by Moody's in mid-September 2011 because of their exposure to Greek debt.¹⁴⁰

¹⁴⁰ "Credit agency downgrades two French banks." Al Jazeera Business. (14 September 2011). 15 September 2011.

Table 2**Estimated holders of Greek bonds and debt**

Country	Amount Held (in billions of US \$)	Percentage Held
Greek Banks	74.2	19.3%
ECB (direct holdings, nominal value)	66.2	17.3%
Central Bank of Greece	13.2	3.4%
Greek Social securities/other government	39.7	10.3%
France	56.9	14.8%
Germany	26.8	7.0%
United Kingdom	3.2	0.8%
Italy	2.6	0.7%
United States	1.8	0.5%
Spain	0.6	0.2%
Japan	0.5	0.1%
Other Eurozone Countries	13.1	3.4%
Other Investors	84.8	22.1%
Total	383.6	100%

SOURCE: "BIS Quarterly Review." Bank For International Settlements. (12 December 2011). 21 February 2012.

The previous cases of the 1998 dollarization of Argentina and the 19th century Latin Monetary Union show us that in order for currency unions to exist long-term, member nations must abide by the rules set forth in the original agreement of the union itself. Even if there are stringent regulations derived from a large-scale union with centralized banking institutions, it does not necessarily mean that member nations will abide by the guidelines. Member nations must be unanimous in agreement regarding minimum standards for new members to enter the union. They must also determine appropriate sanctions to be taken against those who stray from the minimum standards, and how to implement such measures. As we have seen in the exposure of others, currency union member nations need to integrate not only politically via a political union, but also economically with common fiscal and monetary policies.

Greece is not alone in its need to change spending methods in order to ensure the situation does not grow worse. Other Eurozone member nations, especially newer members in Eastern Europe, are now required to make their financial records readily available to banking institutions and the EU in general. This increase in transparency has and will further improve the flow of information, and help identify which countries need to take further measures in order to prevent further financial system degradation, as well as avoid the contagion from Greece. Although several Eurozone member nations have not or currently do not abide by the financial guidelines required to be a member, the crisis has been slowed in part because of Greece's bailouts and austerity measures, and recent fiscal policy integration of all EU members under the new European Fiscal Union.

Analysts cannot yet place an exact figure on how much financial aid Greece, or even the rest of the Eurozone requires in order to remain stable. However, based on what nations such as Germany, who are exposed to Greek debt, are set to lose in the event of a Greek default, economically stronger Eurozone member nations will be better off financially if they help sooner rather than later. The exposure of French and German banks in particular to Greek debt could force these nations to bail out their own financial institutions more than in 2008 if Greece were to default.

When the Latin Monetary Union of 19th century Europe and the Eurozone of today are compared, we see several similarities; notably their lack of proper economic and fiscal integration. After the first LMU member nation was expelled from the union, in this case for not abiding by the guidelines for minting new coinage, we soon saw similar cases of other member nations expelled for similar transgressions. Although this was

not the sole reason for the dissolution of the LMU, one member nation leaving the union, followed by another, started a domino effect that ultimately played a significant role in the downfall and break-up of the LMU. European leaders seem to fear that if Greece leaves the Eurozone, it too will start a domino effect of weaker nations leaving the euro and lead to its demise. To combat the euro debt crisis, there have been tens of billions of euros (with hundreds of billions promised in the future) in the form of loans and bailouts pumped into several faltering Eurozone nations, much of it into Greece, in order to prevent a breakup from occurring.

If the Greek government fails to get its debt under control and defaults, it would set off a chain of events that, if not dealt with properly, would create substantial economic contagion with severe consequences. Sanati argues that a Greek default on its debt would lead to a complete lockup of the Greek economy, which could lead to a collapse and freeze of the Greek banking system, which holds billions of euros of Greek government bond debt.¹⁴¹ In addition, other banks worldwide would refuse to lend to Greek banks in order to limit their exposure to Greek debt, and the European Central Bank would cut off aid to Greece. The financial chaos that would ensue would trigger an estimated \$5 billion in credit default swaps that investors in Greek bonds took out to protect themselves from a default. Sanati notes that the financial institutions that issued the credit default swaps "would need to pay the face value of the bonds immediately, putting a dent in their bottom line. Furthermore, foreign banks holding Greek government debt would need to write down or even write off the value of that debt given

¹⁴¹ Sanati, Cyrus. "End of the line: What a Greek default means." CNN Money. (17 June 2011). 31 January 2012.

the default."¹⁴² At this time, Greece is insolvent, and should the nation default, any remaining liquidity would dry up, if it has not already done so, and there would be no money remaining in Greece.¹⁴³

Since Greece began passing austerity measures to control and reduce government spending, there has been a great amount of unrest amongst the Greek people. A disorderly default would lead to a drastic increase in general unrest as the Greek government would be unable to pay wages, pensions, or government-related expenses of any kind, causing the country to become impoverished. If Greece's banks are closed, and money unable to be withdrawn, its citizens will be unable to purchase basic necessities such as food, clothing, or water, which will lead to further unrest and ultimately large-scale riots.

In addition but equally detrimental, the ECB will now have bad debts that cannot be collected, which other European nations will have to make up for at greater cost. However, European banks located in Greece under strain from the impending financial situation will be able to survive on their own, so long as they are distanced far enough from Greece's debts.

We have already established that in order for the Eurozone to survive, member nations of greater economic strength, as well as the ECB, will need to invest in weaker member nations in order to ensure they do not default or leave the Eurozone because of financial distress, while also strengthening it as a whole. The ECB in particular is already providing greater financial assistance to struggling member nations, by making

¹⁴² Sanati, Cyrus. "End of the line: What a Greek default means." CNN Money. (17 June 2011). 31 January 2012.

¹⁴³ Ewing, Adam and Marcus Bensasson. "Greece Is Insolvent, Will Default on Debt: Fitch." Bloomberg. (17 January 2012). 31 January 2012.

money available to banks at low rates, but could arguably do more. What many of these stronger member nations have failed to fully realize, especially Germany, is that a Greek default will be more expensive for them in the long-term. Germany and its banks currently hold the second most Greek bond debt of any European nation at \$26.8 billion, which equates to 7 percent of all debt held, or 26 percent of Greek bond debt held by Eurozone member nations (not including Greece or the ECB).¹⁴⁴ German banking institutions, mainly non-quoted banks, would be one of the biggest potential losers from either a Greek default, or even forgiveness of a portion of Greek debt because of their total exposure to peripheral nations in the Eurozone that are tied to Greece through their lending to Greek banks.¹⁴⁵

The financial implications of Greece further defaulting on its debt are not only substantial for Germany, but other holders of Greek debt. Individual nations, banks, pension funds, and other institutions exposed to Greece would lose most of their debt holdings, receiving pennies on the dollar, if anything at all. Private sector holders of Greek debt wrote off losses of 53.5 percent on the nominal value of their bonds, equating to a 75 percent loss on the net present value of the bonds as part of the debt swap on March 12. The loss thus far has been calculated to be valued at roughly \$141.4 billion.¹⁴⁶ On April 3, Fitch forecasted that at the end of 2012, Greek debt will total about \$430 billion, compared to the estimated pre-swap total of about \$468 billion. Official creditors, primarily governments, will hold approximately 75 percent of that debt,

¹⁴⁴ Table 2 on page 55 provides an estimated breakdown of Greek bond and debt holdings, not including its debts for bailout disbursements.

¹⁴⁵ Whitten, Darrel. "The GIIPS' Iceland Option." iStockAnalyst: Wall Street Tools. (20December 2011). 03 February 2012.

¹⁴⁶ Greek bond exchange under Greek law completed." Xin Huanet News. (13 March 2012). 15 March 2012.

compared to only 38 percent prior to the swap.¹⁴⁷ As of the third quarter ended 2011, the total government debt of the European Union, consisting of all 27 member nations, was 10.32 trillion euros (\$13.5 trillion). For the euro area, consisting of all 17 member nations, total government debt was 8.2 trillion euros (\$10.76 trillion).¹⁴⁸ While Greek debt only makes up 5.7 percent of the total Eurozone debt outstanding (3.5 percent of EU debt), there are many European nations and financial institutions invested in Greek debt, and further default will only worsen conditions for its creditors. The debt-swap in March paints a vivid picture of what these potential future losses may entail.

In the event of a further Greek default, the value of the euro would fluctuate and may drop significantly against international currencies as investors begin to lose confidence in the Eurozone as a currency union and the ECB as a central banking institution. Currency strategists have noted that the value of the euro versus the dollar would drop from current values to around \$1.20 or less.¹⁴⁹ Buying power for Eurozone member nations would decrease as well due to the euro being undervalued. However, a drop in the euro value may make European exports more competitive and increase exports. Ultimately, this drop may push Europe into another recession that could stretch to the US and even China.

Even though borrowing costs in Italy and Spain have been gradually decreasing in recent months, a Greek default would again cause these costs to rise as the fear of contagion spreads quickly throughout the region. Both Italy and Spain have large

¹⁴⁷ "New Greek Debt Little Better Than Old Greek Debt." Fitch. (03 April 2012). 16 April 2012.

¹⁴⁸ "Euro area government debt: Third quarter 2011 compared with second quarter 2011." Eurostat. (06 February 2012). 17 April 2012.

*See Appendix C on page 86 for additional data on government and public debts of European nations.

¹⁴⁹ Da Costa, Ana Nicolaci. "Scenarios: Potential market impact of a Greek default." Reuters. (16 September 2011). 01 February 2012.

economies with heavy debt loads, which has been responsible for additional concern amongst Eurozone member nations. Portugal, with its already high bond debt yield, would be the country next on the worldwide "default list." A Greek default would be especially detrimental to its money-holding citizens. If Greece were to leave the Eurozone, euros sitting in Greek banks would be converted to drachmas, and likely be devalued.

There are some similarities between the Greek debt crisis and the 1998 dollarization of Argentina that may help forecast the implications in the event of a Greek default. Three years after Argentina pegged its currency to the US dollar in 1998, an economic crisis swept over the country. By late 2001, Argentina's suffocating debt load left it veering toward the biggest government default in history, as the nation's economic crisis boiled over into riots and looting. Brought on by this exponentially increasing debt load, Argentina's interim president Adolfo Rodríguez Sáa decided to suspend its debt payment to creditors. As goods, services, and cash became more of a rarity for average citizens, riots and poverty became rampant. Day-to-day transactions became increasingly more difficult to conduct without the infrastructure and financial means to do so. Similar to Greece, Argentina's government forced banking restrictions, raised taxes, and cut state worker salaries and pensions, but did not change its monetary and fiscal policies. In the end, in order to maintain national stability and prevent a default on debt, Argentina's currency was de-pegged, and no longer allowed to float freely against the US dollar. Soon afterward, the peso needed to be devalued in order to stabilize the nation's economy, and reduce inflation. This does not seem to be an option for Greece

because of possible contagion effects on other Eurozone countries -- an important difference from Argentina.

Ultimately, Argentina had no other choice but to default on its debt of \$82 billion in 2001.¹⁵⁰ We see similarities between the historical examples of the Latin Monetary Union of the 19th century, and the recent Argentinean financial crisis from a decade ago when compared to the Greek debt crisis of today. The impacts of the Argentine protests in 2001 following extremely unpopular IMF-sponsored austerity measures were problematic for its government, and in some instances, the country was essentially shut down. Riots and protests led to dozen of deaths, and the overthrow of former President Fernando de la Rúa. Argentina's presidential turnover increased during 2001 to 2003 to an all-time high, with three presidents serving in two years (four total in four years, including de la Rúa). Greece's history of unrest amongst its general population when austerity measures are passed leads one to infer that the response to similar instabilities will be anything but subtle. Instead, we will see the opposite, with widespread protests followed by riots. If an extended duration of this turmoil and government shutdown persists, then we can expect to see looting throughout the nation, which will in turn feed into political, and further economic, instability. This instability will be evident with widespread general strikes, a significant reduction in labor productivity, and other economic and political degradation.

¹⁵⁰ Thomas, Landon. "Greece Nears the Precipice, Raising Fear." The New York Times. (19 September 2011). 06 February 2012.

4.4 - Potential Solutions and Outcomes to the Greek Debt Crisis

The outlook for Greece at this time is negative, with a limited number of possible outcomes. In one scenario, in which Greece realizes it cannot repay its loans on time, it informs foreign banks of the situation, and then restructures its debt. This seems to be the way that Greece is going thus far with the March debt swap. Thomson argues that most economic experts expect that a restructuring of Greece's debt is inevitable, and will force huge losses on primarily international and private banks. He further notes that these bank losses could require them to receive additional rounds of bailouts from European governments. If Greece undergoes a partial default, analysts expect at least 60 percent to 80 percent of Greek debt to be forgiven by banks and financial institutions.¹⁵¹

The second option is that Greece defaults on its debt.¹⁵² A default would relieve Greece of the mountain of debt it cannot afford to pay off, currently estimated by Fitch to be at \$430 billion by the end of 2012,¹⁵³ no matter how many austerity measures it passes and jobs it cuts to reduce government spending. Greece's economy has already begun to shrink, and the longer the inevitable is prolonged, the worse off Greece's economy will be in the future. In fact, Greece defaulting is beginning to look like a better alternative than keeping it barely afloat. However, the fear of contagion is still widespread, and many are worried that a Greek default would create a domino effect of other nations following suit. The outcome, while not as severe as the 2008 financial

¹⁵¹ Thompson, Derek. "3 Scenarios for the Greek debt crisis." The Atlantic. (11 May 2010). 07 February 2012.

¹⁵² This outcome has arguably already happened with the recent "haircut" of privately held Greek bonds in March 2012.

¹⁵³ "New Greek Debt Little Better Than Old Greek Debt." Fitch. (03 April 2012). 16 April 2012.

crisis, would still impact markets world-wide, with output contracting by 1.3 percent in 2012.¹⁵⁴

In the wake of a default, Greece would most likely take the opportunity to protect all Greek banks and depositors, and ensure that all Greek bank deposits, certificates of deposit, and pension payments are guaranteed. It is also assumed that Greece will continue to pay interest to its national banks on debts they currently hold. Sheetz argues that foreign banks and credit institutions would be the major losers in this situation, and lose most if not all, of their investment in Greek bond debt. Other financial institutions would become vulnerable as well, specifically the European, American, and Asian insurance companies that would have to pay out credit default swaps to investors who placed their bets against a Greek default. If they have to pay out these insurance claims, these financial institutions will then risk having low capital reserves, with bankruptcy possible in the near future.¹⁵⁵ Lindauer argues further that Greek national banks may be one of the few winners if Greece were to default.¹⁵⁶

Greece could also elect to leave the Eurozone, and return to the drachma as its national currency. This can be considered a default as well, Landon argues, because if Greece decides to leave or is forced to leave the euro, its debt write-off would be close to 100 percent, and the effects would be much more severe on international markets.¹⁵⁷ Furthermore, Greece does have good economic reasons to leave the Eurozone. If

¹⁵⁴ Thomas, Landon. "Greece Nears the Precipice, Raising Fear." The New York Times. (19 September 2011). 06 February 2012.

¹⁵⁵ Sheetz, Mark S. "Why It Won't Be a Tragedy if Greece Defaults." The Washington Post: ForeignPolicy.com. (06 February 2012). 08 February 2012.

¹⁵⁶ Lindauer, John. "Picking Winners When Greece Default." Seeking Alpha. (24 November 2011). 04 February 2012.

¹⁵⁷ Thomas, Landon. "Greece Nears the Precipice, Raising Fear."

Greece were to leave the Eurozone and re-adopt the drachma, it would then have the option to devalue its currency and become more competitive economically. If it can devalue its currency, exports will rise as more nations and companies do business with Greece and Greek companies, which will bring in cash to the nation. In the case of Argentina, one of the first actions of its new president was to first de-peg the peso from the dollar, and then once deemed necessary, devalue the peso to eliminate hyperinflation and return inflation rates to pre-crisis levels. The Argentinean economy stabilized afterward. However, if Greece was the first country to leave the Eurozone, it could lead to a massive bank run by those with euro deposits in national banks who do not want their euro-denominated deposits changed into drachmas. This response is expected, because once Greece officially adopts the drachma as its currency, it will be devalued at least slightly. It is important to note that the Argentinean economy was more competitive than Greece today (in terms of market flexibility, lower labor costs, etc.), which is an advantage over Greece.

Finally, Greece could continue to lobby harder for more debt forgiveness through European agencies, and continue to move along under the protective shield of bailouts, austerity measures, and Europe's emergency fund, the 2010 European Financial Stabilization Mechanism (EFSM). Running under the supervision of the European Commission, and using the budget of the EU as collateral, the EFSM was initially designed to stem the Greek debt crisis. Its purpose now is to preserve the financial stability of Europe by providing EU and Eurozone member nations in economic turmoil with financial assistance.¹⁵⁸ At this time it has been successful in preventing the crisis

¹⁵⁸ Thompson, Derek. "3 Scenarios for the Greek debt crisis." The Atlantic. (11 May 2010). 07 February 2012.

from escalating any further, evidence of which is seen via multiple bailout packages and debt-forgiveness plans preventing a Greek default. However, the EFSM has virtually no chance to resolve the crisis. Thomson notes that the solution proposed by the EFSM is basically financial pain, consisting of austerity measures and small tax increases to curtail exorbitant government spending. He argues that these spending cuts would cause Greece's economy to shrink. A down economy, in which there is a period of temporary economic decline, generates fewer tax dollars for the government. Furthermore, fewer taxes pay for even less spending, so in order to reach deficit goals, Greece would have to cut spending again, further weakening its economy.¹⁵⁹ Ultimately, these measures are unsustainable over time, and only prolong Greece's inevitable default and/or exit from the Eurozone.

4.5 - The Future of the Eurozone

Greece has effectively partially defaulted on its debt, and further default is possible. It is merely a matter of when and how. If it does, the default will severely impact its main creditor nations (France, Germany, and the UK), and create a domino effect for the financial institutions and nations throughout the Eurozone that are heavily exposed to Greek debt. Currencies are extremely volatile, and markets very unforgiving. Losing a member nation due to rising debts will cause the euro to fall in value, and negatively impact its future as a currency. As it is, the Eurozone will require several years to recoup the damage its instability has created, and may even be deemed too risky to be held as a global currency in the near future.

¹⁵⁹ Thompson, Derek. "3 Scenarios for the Greek debt crisis." The Atlantic. (11 May 2010). 07 February 2012.

While Greece's troubles are situated as the most extreme of cases, they draw attention to similar problems in the Eurozone that also apply to the economies of other southern European countries. These nations have run up enormous government and household mortgage debts over the past decade, in addition to enjoying rapidly rising wage levels.¹⁶⁰ As time draws closer to the date these nations must pay back what is owed, the worsening debt crisis makes it more difficult for them to repay debts, and instead must pass legislation to cut spending, raise taxes, and get national borrowing under control.

In the meantime, the IMF and ECB continue to do everything in their means to prevent a Greek default, while Greece is limited in its ability to raise additional capital and prevent a default. On February 12, 2012, Greek members of parliament passed an additional austerity plan that was demanded by the Eurozone and IMF in exchange for a \$170 billion bailout to avoid default in March.¹⁶¹ In addition to the bailout, Greece completed a bond exchange with private creditors on March 12, at a loss for its creditors of approximately \$141.4 billion.¹⁶² Without a payout in the form of financial aid to cover its March 2012 bond debt repayment, Greece was almost certain to default. Greece is now insolvent, and will require additional outside financial help in order to be able to repay not only this payment, but several more payments in the future. Its debt outlook downgrade to "probable default" in January 2012 has stirred up significant speculation skewed toward Greece defaulting in the near future. Since the bailouts and austerity

¹⁶⁰ "Eurozone Crisis Explained." BBC News Business. (27 October 2011). 30 October 2011.

¹⁶¹ "Greek MPs Pass Austerity Plan Amid Violent Protest." BBC News Europe. (12 February 2012). 12 February 2012.

¹⁶² "Greek bond exchange under Greek law completed." Xin Huanet News. (13 March 2012). 15 March 2012.

measures began in mid-2010, its government debt-to-GDP ratio has continued to rise at levels that make it extremely difficult to repay debts. The nation is barely surviving on the 8 billion euro loan paid in December 2011 by the IMF, EU, and the proceeds from treasury bill sales.¹⁶³ On March 30, 2012, Greek Prime Minister Lucas Papademos conceded that the country may require a third bailout in the near future.¹⁶⁴

The only means Greece has to raise additional capital is by selling treasury bills or from outside loans. Significant expense-related changes have already been made, in addition to all the austerity measures to cut spending, yet none have proven to be successful. As the nation's debt-to-GDP ratio continues to rise, the need for capital to pay off debts is ever more imperative. Creditors, banking institutions, and those invested in Greek bond debt have continued to try and postpone a default via the bailout packages and austerity measures for almost two years now. Although the exact repercussions of a default are difficult to predict, it would instill fear in global financial markets that contagion from the events could spread to other weak Eurozone member nations, causing the value of the euro to drop significantly. In the wake of a Greek default, Greece would certainly either leave the Eurozone on its own, or at least discuss exit strategies with the ECB in order to lessen the impact of political, economic, and social ramifications.

Postponing a Greek default via bailouts and austerity measures will be detrimental to the Eurozone in the long run. Thomas argues that new projections, in light of Greece's continuously shrinking economy and staggering debt load, cast new

¹⁶³ Ewing, Adam and Marcus Bensasson. "Greece Is Insolvent, Will Default on Debt: Fitch." Bloomberg. (17 January 2012). 31 January 2012.

¹⁶⁴ Smith, Helena. "Greek PM says third bailout may be needed." The Guardian. (30 March 2012). 16 April 2012.

doubt on whether Greece will ever be able to rise out of its downward financial spiral without defaulting on its debts.¹⁶⁵ A recent IMF forecast notes that after ten years of austerity measures, spending cuts, tax increases, and bailouts, Greece's 2020 debt burden will remain at levels similar to its current load. Portugal, another recipient of bailout funds, has seen its borrowing costs rise recently. Portuguese bonds are closing in on 14.3 percent, reflecting the growing concerns that Portugal may default on its loans in the future as well.¹⁶⁶

The euro sovereign debt crisis in 2010 has caused a shift toward Populist policies, with increased government representation by members from political parties that stress representation of ordinary citizens. In Greece and Italy especially, political parties and high-level officials that once dominated parliament and public opinion polls are being gradually replaced by others whom are Populist in nature. EU and member nation governments are continuing to scramble to prevent member state defaults, while also distancing themselves financially as far away as possible to avoid a contagion effect on their economy.¹⁶⁷ Talks of a more integrated euro area are currently under way, and recently passed EU legislation and treaties are forcing Eurozone member nations to give up some of their sovereignty via control over their fiscal policies. While increases in sovereign debt load have been most pronounced in only a few Eurozone

¹⁶⁵ Thomas, Landon. "For Greece, the Outlook Is Still Grim." The New York Times. (26 January 2012). 31 January 2012.

¹⁶⁶ Thomas, Landon. "For Greece, the Outlook Is Still Grim."

¹⁶⁷ Hastings, Laura. "The Euro and the ECB: History and Crisis." Euro 501. University of Illinois at Urbana-Champaign. Urbana, 01 November 2011.

member nations, they are becoming increasingly problematic for the currency union as a whole, creating fear of contagion.¹⁶⁸

The variety of solutions recommended and implemented to combat the Greek debt crisis has been limited. Given past measures to resolve the crisis, which at this time consist of only bailouts and austerity measures, it seems as if the European Central Bank prefers to wait out the existing crisis as long as possible in order to determine what the outcome will be and see what future prospects will hold. EU member nations with strong economies, such as Germany and the UK, have elected to follow similar paths, and continued to observe from afar while proposing solutions to the crisis.

However, these nations especially have not helped out in much regard, merely proposing solutions without taking any action themselves. How long will it take for Germany to fully realize they have to pay out of their own pocket to help member nations in trouble financially before the Eurozone falls apart? The nation already knows in a sense, but politically it is unfeasible because it risks politicians losing office. The fact is the probability that Germany will ultimately "pay," providing financial assistance to Eurozone member nations in need of it, is high. Nevertheless, the longer Germany plays the role of an observer nation (even though it has contributed worthy amounts of capital to the bailouts) and waits to see what happens, the more money it will be forced to pay in the future. The contagion effect from the Greek debt crisis has been as predicted, affecting countries and financial institutions worldwide. Those exposed to Greek bond debt have seen their debt ratings downgraded by credit rating institutions

¹⁶⁸The article by Philipp Bagus (Bagus, Philipp. "The Tragedy of the Euro." *The Independent Review*. 15.4 (2011): 563.) focuses on what he calls "the tragedy of the euro" and compares it to the external-costs problem of the "tragedy of the commons."

(notably by S&P), with an increase in the number of nations and banks downgraded as the crisis worsens. Until economically stronger nations such as Germany take a more active role in providing financial assistance to Greece, and ultimately Eurozone member nations in need, the Greek debt crisis is going to worsen the euro debt crisis, and spread the contagion outward at an exponential rate.

Greece is the current candidate to be the first to default on its debt and/or leave the Eurozone. Should any scenario prove to be true, the implications on those holding Greek bond debt will be severe, and we can expect those majority holders to be at risk of future downgrades themselves. Moreover, stocks worldwide will continue to stumble on Greek debt fears, and eventually fall if a Greek default occurs.

Haan, Berger, and Jansen argue that the major problem of the Stability and Growth Pact is its weak enforcement mechanisms.¹⁶⁹ In order to abide by the rules outlined in the SGP, the European Central Bank must more effectively decide which bonds are worth investing in, or stop accepting government bonds as collateral. Even though there is a minimum rating bonds must hold before they can accept them, it was reduced from A- in 2008 (prior to the global financial crisis), to BBB- (junk-bond status), making them extremely risky to hold.¹⁷⁰ For years the ECB has been too accommodating with its acceptance of government bonds as collateral, and as Bagus notes, it may be time for the ECB to stop its acceptance of them.¹⁷¹

¹⁶⁹ Haan, Jakob de, Helge Berger, and David-Jan Jansen. "Why has the Stability and Growth Pact Failed?" International Finance 7.2 (2004): 236.

¹⁷⁰ Bagus, Philipp. "The Tragedy of the Euro." The Independent Review. 15.4 (2011): 567.

¹⁷¹ Bagus, Philipp. "The Tragedy of the Euro." p. 567.

Another approach to solving, or at least improving the situation of the entire euro debt crisis, of which its origins are becoming more evident, is to implement a structuralist solution, and further integrate Eurozone member nation fiscal policies. One primary reason the Latin Monetary Union dissolved was because member nations did not integrate enough economically, which led to no political or economic union being formed. However, trying to integrate an individual Eurozone member nation's fiscal policies was, and still is, a very sensitive subject area because it reduces national sovereignty, but for the future of the Eurozone, it is imperative. Further integration will increase transparency and coordination of government financials, and prevent another tragedy similar to what the Eurozone has experienced thus far.

In order to stabilize the faltering Eurozone and promote European integration, some speculate as to whether Eurobonds should be introduced into the Union. In the United States in the 1940s, the US government advertised "buy war bonds, get behind your country" to raise capital.¹⁷² Perhaps now it should be "buy Eurobonds, get behind your European community." German Chancellor Angela Merkel, who has been adamantly opposed to Eurobonds because of what her administration noted to be insolvency issues, briefly considered them as a potential solution to the euro debt crisis under increasing pressure from other Eurozone member nations. However, on November 24, 2011, Merkel reverted back to her original stance against Eurobonds, calling the proposal "extraordinarily distressing" and "inappropriate."¹⁷³ The stance of Germany on Eurobonds and Merkel's lack of support for them places any notion of

¹⁷² "U.S. War Bonds." United States History. (2012). (16 February 2012).

¹⁷³ Hawley, Charles. "Why Merkel Remains Opposed To Euro Bonds." Spiegel Online. (24 November 2011). 17 January 2012.

using them as an alternative to bailouts dead in the water. Until Germany gets on board with using Eurobonds, there will not be enough political support to potentially move them forward. Many will agree that Germany and Merkel are in-line with their stance on Eurobonds, as the euro debt crisis is too far out of hand to rely solely on bonds to solve it. Policy changes must be considered equally as important.

In addition to needing Germany's support on any Eurobond legislation, the European Union's treaties would have to be modified as well. Yousuf argues that since changes need to be ratified and approved by each of the 27 EU member nations, the process for a Eurobond to even be formally approved could take years.¹⁷⁴ He also notes that under a second scenario, Eurozone member nations would be permitted to issue common Eurobonds up to a certain percentage of their annual GDP. However, beyond this pre-determined level, individual governments would be responsible for issuing and backing the bonds they issue.¹⁷⁵ This version of a Eurobond plan would require all member nations, including those fiscally responsible and irresponsible, to be liable for a portion of each member nations' debt. It does not address the Eurozone's structural debt problems over the longer term, and would most likely be met with the same resistance as the original Eurobond plan.¹⁷⁶

Bagus argues that for now, a 750 billion euro bailout plan, and the ECB incentive to buy government bonds have stopped the rise of bond yields, and been responsible

¹⁷⁴ Yousuf, Hibah. "Eurobonds: The 'solution' that just won't stick." CNN Money. (23 November 2011). 06 February 2012.

¹⁷⁵ Yousuf, Hibah. "Eurobonds: The 'solution' that just won't stick."

¹⁷⁶ Yousuf, Hibah. "Eurobonds: The 'solution' that just won't stick."

for this debt crisis containment, but government deficits must be controlled and restricted (effectively) by credible sanctions and penalties.¹⁷⁷

¹⁷⁷ Bagus, Philipp. "The Tragedy of the Euro." The Independent Review. 15.4 (2011): 574.

Chapter 5: Summary and Conclusions

This research finds that recent measures taken by the European Union to counter the European sovereign debt crisis have begun to slightly improve the stability of the Eurozone. However, further political, economic, fiscal, and national integration, as well as a method to implement sanctions against member nations who do not abide by Eurozone guidelines, are imperative in order to return the euro's stability to pre-crisis levels.

Greece's admission into the Eurozone in 2001 is a decision that some fellow member nations are beginning to regret.¹⁷⁸ Its long history of problems with its public debt was disguised by several years of strong economic growth, with one of the fastest growing economies from 2000 to 2007.¹⁷⁹ However, the 2008 global financial crisis brought light to Greece's poor spending practices, and its national debt skyrocketed to \$468 billion by early 2012.¹⁸⁰

Since 2010, Greece has required bailouts and external financial aid to prevent a default on its debt. The EU, IMF, ECB, and wealthier Eurozone member nations have provided these bailout funds and loans in exchange for Greece agreeing to implement austerity measures in order to decrease its debt and reduce spending. While the crisis at hand has been postponed in the short term, the amount of money Greece requires to pull itself out of debt continues to increase, leading credit rating agencies to downgrade

¹⁷⁸ "Eurozone states want Greece out, says Venizelos." BBC News Europe. (15 February 2012). 28 February 2012.

¹⁷⁹ "Greece: Foreign Capital Inflows Up." Hellenic Republic Embassy of Greece in Poland Press & Communication Office. (17 September 2009). 06 November 2011.

¹⁸⁰ "New Greek Debt Little Better Than Old Greek Debt." Fitch. (03 April 2012). 16 April 2012.

Greek bond debt. The EU and IMF's heavy reliance on bailouts and austerity measures to combat the crisis are tools that are unsustainable over time. This will become more evident as the crisis worsens. Currencies have been very unforgiving as well, with Greece's instability negatively affecting the value of the euro.

Falling investor confidence has weakened the euro significantly, as many continue to question the future of the Eurozone if Greece were to further default on its debt. Over the last few years, the value of the euro has seen a downward trend in relation to the US dollar. Fear of the spread of contagion from Greece seems to be the main issue, and many are worried that a Greek default and exit from the Eurozone would cause other Eurozone member nations to follow suit. Greece's debt crisis has decreased the EU's financial stability, as investors ponder the effect a default would have on economic ties between Eurozone member nations and the international community. Major Eurozone governments have been criticized for a lack of political leadership, and signs of division within the European Central Bank are evident. Financial markets have shown concern in recent months that the Eurozone's political structures do not have the authority to deal with the economic problems at hand. However, in light of all these issues, one main underlying theme responsible for the turmoil plaguing the Eurozone is the lack of proper European integration.

The 1997 Stability and Growth Pact (SGP) has done little to properly monitor the fiscal policies and situation of Eurozone member nations.¹⁸¹ Although members must abide by EUC-recommended budget deficit and national debt levels, many Eurozone member nations have not, and continue to not abide by these recommendations.

¹⁸¹ Haan, Jakob de, Helge Berger, and David-Jan Jansen. "Why has the Stability and Growth Pact Failed?" International Finance 7.2 (2004): 236.

Eurozone budget discipline does not seem to be actively practiced because these values are not legally-binding. The March 2011 Euro Plus Pact was introduced as a more stringent successor to the SGP, requiring more integrated fiscal policy within the Eurozone. However, it is too early to tell if it has been successful in practice.

The cases of the Latin Monetary Union of the 19th century and the dollarization of Argentina in the early 2000s provide insight as to why not all currencies and their unions are set to succeed. When Argentina pegged its peso to the US dollar in 1998 to offset hyperinflation and stabilize the economy, it failed to significantly change enough of its monetary and fiscal policies. After less than three years, Argentina's economy suffered to such a great extent that the peso was unfixed against the dollar once again. Its value quickly depreciated, and was devalued shortly afterward. This devaluation was needed from the beginning in order to offset hyperinflation and increases in rising government debt. Argentina's lack of implementing the necessary policy changes is primarily responsible for the failure of its dollarization by 2002. The 19th century Latin Monetary Union's lack of political and economic integration led to member nations minting coins using illegal methods, causing them to be removed from the union. Even though there was a formal agreement on the rules of being a member and what they entailed, members did not follow membership guidelines.

The case of the LMU is similar to Greece in the Eurozone today, and many of the other Mediterranean nations, such as Portugal, Italy, and Spain. Eurozone member nations lack sufficient integration, which has caused them to stray from the guidelines outlined in the Stability and Growth Pact, and the Euro Plus Pact. Many continue to

worry that further instability will create a domino contagion effect, spreading from Greece to the other PIIGS nations, in the future.

Beyond the default itself, the Greek debt crisis has severe implications for the Eurozone, and international financial markets as a whole. Some fear that other Eurozone member nations facing severe austerity measures and large debt repayments may look at Greece as an example of an alternative to paying off debt by choosing to stop all payments and go into default. Appendix C on page 86 provides a table of government and public debts of European nations. Even though the Stability and Growth Pack requires EU member nations to have a debt to GDP ratio of no more than 60 percent, slightly more than half are not abiding by these guidelines. In fact, the EU's debt to GDP ratio as of the third quarter of 2011 was 82.2 percent, more than one-third higher than required.¹⁸²

Any country significantly exposed to the debts of other Eurozone member nations, notably Germany and France, would see their debt ratings sink almost overnight, as the domino effect of multiple Eurozone member nation defaults spills over and spreads throughout the region. The value of the euro would plummet against international currencies and fear of a complete Eurozone collapse would plague international markets. A further Greek default may also risk a complete lockup of the Greek economy, which would lead to a collapse and freeze of the Greek banking system.

There are few alternative solutions and outcomes to Greece's debt crisis, and none of them are particularly pleasant. The first option, in which Greece defaults on its

¹⁸² Euro area government debt: Third quarter 2011 compared with second quarter 2011." Eurostat. (06 February 2012). 17 April 2012.

debt, would see Greece expelled from the Eurozone, and the implications of a default evident overnight, including a lockup of the Greek economy, collapse and freeze of the Greek banking system, the refusal of international banks to lend Greece new money, and cutoff of aid from the ECB. In a second option, Greece can inform foreign banks it cannot repay its loans on time, and then restructure its debt. This would be known as a partial default, where analysts expect at least 60 to 80 percent of Greek debt to be forgiven by banks and financial institutions.¹⁸³ Just because it looks like this option is being chosen presently, it does not necessarily make it the permanent solution as the crisis continues. Greece could also choose to leave the Eurozone on its own in a third option, and return to the drachma as its national currency. This is considered a default as well, because Greece's debt write-off would be close to 100 percent. The last option for Greece is to continue to lobby harder for more debt forgiveness through European agencies, and continue under the protective shield of bailouts and austerity measures, Europe's emergency fund, and the EFSM. However, this scenario may be unsustainable over time, and prolonging a Greek default will only exacerbate the problems at hand and increase the cost of the default in the future. Eurobonds have also been proposed as an alternative solution to the crisis, in which each Eurozone member nation would be permitted to issue common Eurobonds up to a certain percentage of their GDP and be liable for a portion of each member nations' debt. However, until Germany and other significant Eurozone member nations can agree on the core components of this plan, it will continue to remain dead in the water and unfeasible.

¹⁸³ Thompson, Derek. "3 Scenarios for the Greek debt crisis." The Atlantic. (11 May 2010). 07 February 2012.

Although some may argue that the value of the euro falling is evidence that the Eurozone is in trouble, there is the possibility that the euro may benefit from being devalued. As goods and services become cheaper in Europe, and the cost of conducting business drops, there may be a significant increase in foreign direct investment in the region. These additional revenues will bring in tax dollars to both the host nation, and the EU as Europe again becomes competitive in different industries. The same argument holds true should Greece elect to leave the Eurozone, re-adopt the drachma as its currency, and then devalue it. At this time, it may be in Greece's best interests to leave the Eurozone, and try to improve its economy through an alternative venture.

All things considered, the failures of the LMU and the dollarization of Argentina help us determine which components of currency union operations are most vital to their longevity. The recent measures taken by the EU to reduce deficit spending and the EPP have slowed the spread of the European debt crisis, but deficit spending nations must stabilize their public debts, or risk their own default, as well as the Eurozone's potential demise. Recent measures taken by the EU, such as the Euro Plus Pact in March 2011, and more recently, the new European fiscal union from December 9, have begun to slightly improve the stability of the Eurozone, and counter the European sovereign debt crisis. However, further political, economic, fiscal, and national integration, as well as a method to implement sanctions against member nations who do not abide by Eurozone guidelines, are imperative in order to return the euro's stability to pre-crisis levels.

APPENDIX A

Timeline of the Greek Debt Crisis

2001

- **January 1** -- Greece becomes the 12th nation to join the Eurozone, dropping the drachma

2002

- **January 1** -- Euro coins and banknotes enter circulation

2004

- **August** -- Greece holds 2004 Summer Olympics at an estimated cost of \$15 billion

2005

- **March** -- Cost of hosting the 2004 Olympics is beginning to have a noticeable effect on Greece's financial stability, as new government tries to impose an austerity budget to reduce Greek debt

2007

- **March** -- Austerity measures seem to be effective, as Greece's GDP increases by 4.1%

2007

- **February** -- Subprime mortgage crisis begins to affect the financial sector, which in turn leads to the 2007 to 2010 global financial crisis

2008

- **September** -- Irish government officially announces the country has entered a recession

2009

- **November 5** -- Greek national debt increases from \$225 billion in 2004 to \$350 billion in 2009, while former Prime Minister Georgios Papandreou says 2009 Greek budget deficit will increase to 12.7% of GDP
- **November** -- Greece admits the data it submitted to gain entry into the Eurozone was falsified (its deficit has not been below 3% since 1999), similar to a previous announcement made by the conservative government in 2004
- **December 2009** -- Fitch becomes the first credit rating agency to cut Greek debt, lowering it from A- to BBB+ (below investment grade)

2010

- **January 14** -- Greece unveils its new stability and growth program which aims to cut the Greek deficit from 12.7% in 2009 to 2.8% in 2012

- **February 9** -- Greece's first austerity package implemented (10% cut in bonuses, 30% cut in overtime pay, salary freeze for all government employees, cuts in the number of public employees, and cuts in work-related travel compensation), with widespread strikes following
- **March 5** -- Greek parliament passes "Economic Protection Bill;" a second austerity package in which Greek citizens asked to accept lower bonuses and higher taxes, with widespread strikes following
- **April 11** -- Eurozone finance ministers approve \$40 billion aid package for Greece, but it is rejected by Greek parliament, who admits the government may need additional help
- **April 23** -- EU, IMF, and Greek government approve \$60.7 billion Greek bailout
- **April 27** -- Greek debt downgraded to BB+ (junk) status by S&P
- **May 2** -- Greece announces fourth round of austerity measures in exchange for \$148.4 billion rescue package from the EU and IMF, to be paid out over three years
- **May 10** -- Global policymakers in the Eurozone install an emergency financial safety net fund worth \$1 trillion to try and prevent the spread of contagion from the Greek debt crisis
- **May 18** -- Greece receives its first loan of \$19.3 billion from the EU in order to repay immediate debt
- **July 7** -- Greek parliament passes pension reform measures, cutting benefits and raising the national retirement age from 60 to 65.
- **November 28** -- EU, IMF, and Irish government agree to a Irish \$115 billion bailout in exchange for Ireland agreeing to implement austerity measures

2011

- **January** -- Fitch becomes the third credit rating agency to cut Greek debt to "junk" status.
- **May 2** -- former Greek Finance Minister George Papaconstantinou rules out a debt restructuring plan for Greece
- **May 21** -- Papandreou and senior ECB officials reiterate that Greece must avoid debt restructuring and continue with budget cuts and privatizations to overcome the debt crisis
- **May 23** -- Greece announces a plan of privatizations in order to partially fund the \$68 billion needed by 2015 to pay off some of its debt
- **June 8** -- Greece agrees to implement additional austerity measures and increase savings up to 2015
- **June 13** -- S&P downgrades Greek debt from B to CCC, giving it the lowest credit rating in the world. Papandreou removes Papaconstantinou as finance minister and reshuffles his cabinet

- **June 29** -- Papandreou wins parliamentary majority in favor of the proposed five-year austerity plan, which increases access to new funding
- **July 21** -- Eurozone leaders agree that Greece is in need of a second bailout package of \$145 billion, plus a \$67 billion contribution by private sector bondholders by mid-2014
- **September** -- Greece adopts austerity measures, cutting high pensions by 20%, and passes a new property tax
- **October 27** -- Eurozone leaders reach a deal with private banks and insurers in which they will accept a 50% loss on all Greek government bonds held, for a total loss of over \$134 billion.
- **October 31** -- Papandreou calls for a referendum on the second proposed bailout, but it is postponed until January 2012, and then withdrawn altogether
- **November 6** -- Papandreou solidifies a deal with opposition leaders to approve the second bailout before the next round of elections, and notes that he will step down from his role as Prime Minister
- **November 9** -- Papandreou resigns as Prime Minister, and the new government is sworn in
- **November 16** -- Greek government wins a vote of confidence, setting up the foundation for a second Greek bailout
- **December 9** -- All EU members, with the exception of the UK, agree to strict caps on government spending and borrowing under the new European Fiscal Union in order to promote increased EU member nation fiscal integration, and prevent the contagion from Greece and any debt crisis in the future
- **December 14** -- IMF announces that Greece's reforms are running behind schedule in most areas, and delaying its recovery

2012

- **January 28** -- Greece reaches a tentative deal with its private creditors to write off a substantial portion of its debt, while Germany argues for more austerity cuts before additional loans can be disbursed
- **February 9** -- The EU, IMF, and the three parliamentary Greek coalition parties meet to discuss how to alleviate the worsening crisis. In exchange for new loans and rescue funds, Greece is required to cut 22% off the minimum wage, 15% off pensions, and to cut 15,000 private sector jobs. Unemployment in Greece raises to an all-time high of 21%
- **February 21** -- Eurozone member nations agree to provide Greece with a second bailout package of \$170 billion, which is expected to bring government debt down to 120.5% of GDP by 2020, and will launch a bond swap with private investors to help reduce and restructure Greece's debts

- **March 9** -- Greece secures private-sector backing for the debt swap, with 85.8% of bondholders agreeing to take heavy losses on their investments. The write off is estimated to forgive approximately \$130 billion of Greece's debts, equating to 53.3% loss on the nominal value, and a 75% loss on the NPV of the bonds
- **March 12** -- Private creditor bond exchange completed for an estimated loss of \$141.4 billion
- **March 31** -- Greek prime minister Lucas Papademos concedes that Greece may require a third bailout in the near future
- **April 3** -- Fitch announces that Greek debt will total about \$430 billion at the end of 2012, compared with an estimated pre-swap total of \$468 billion. Official creditors, primarily governments, will hold approximately 75% of that debt, compared to only 38% prior to the swap.

APPENDIX B

Acronyms

EC - European Commission

ECB - European Central Bank

ECU - European Currency Unit

EDC - European Debt Crisis

EFSM - European Financial Stabilization Mechanism

EP - European Parliament

EPP - Euro Plus Pact

ERM - Exchange Rate Mechanism

ESCB - European System of Central Banks

EU - European Union

GDC - Greek Debt Crisis

GDP - Gross Domestic Product

IMF - International Monetary Fund

LAOS - Popular Orthodox Rally

LMU - Latin Monetary Union

ND - New Democracy

NPV - Net Present Value

OCA - Optimal Currency Area

OECD - Organization for Economic Cooperation and Development

PASOK - Panhellenic Socialist Movement

PIIGS - Portugal, Italy, Ireland, Greece, and Spain

S&P - Standard and Poor's

SGP - Stability and Growth Pact

US - United States

VAT - Value Added Tax

APPENDIX C

Government and Public Debts of European Nations

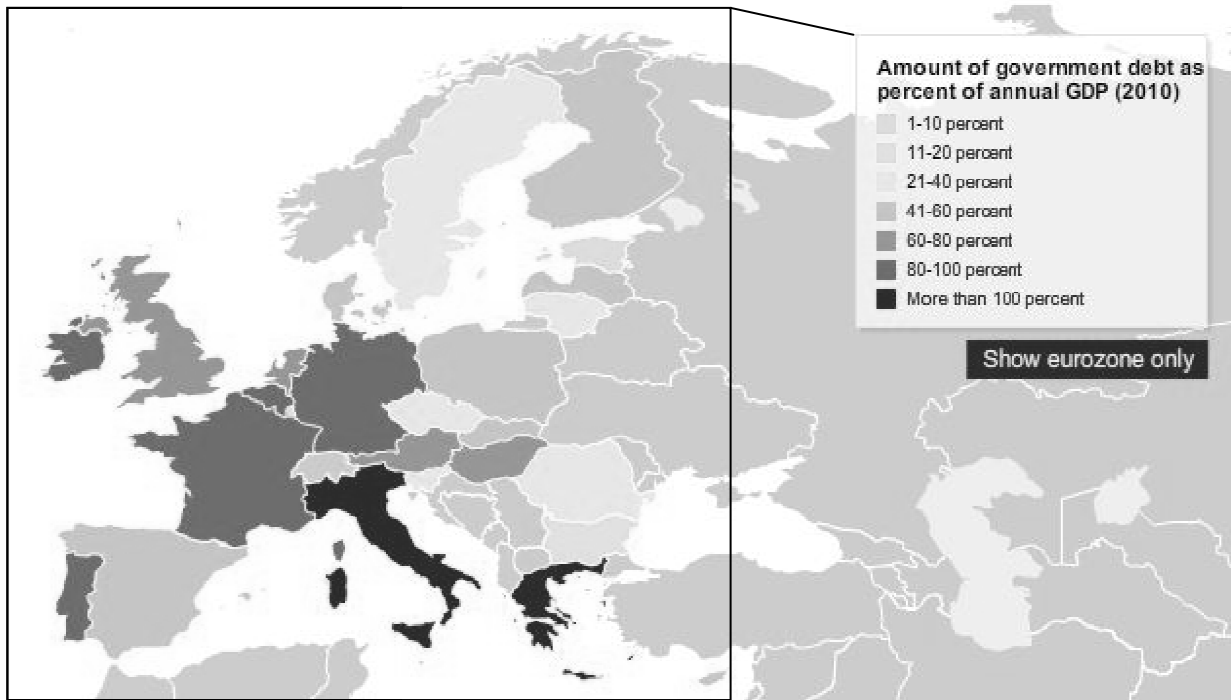
Government Gross Public Debt (in millions of euros)

GEO/TIME	Government debt in 2011Q3, €	Debt as % of GDP 2010Q3	Debt as % of GDP 2011Q3	From government securities, % of GDP
European Union (27 countries)	10,320,106	78.5	82.2	81
Euro area (17 countries)	8,191,295	83.2	87.4	80.9
Belgium	361,378	98.8	98.5	87.5
Bulgaria	5,816	15.9	15	9.4
Czech Republic	61,388	39.3	39.8	35.3
Denmark	118,199	44.5	49.3	41.4
Germany	2,089,756	75.7	81.8	57.4
Estonia	951	6.8	6.1	1.5
Ireland	162,200	88.4	104.9	58.1
Greece	347,204	138.8	159.1	111.7
Spain	706,340	58.7	66	54.7
France	1,688,890	82	85.2	73.6
Italy	1,883,738	119.1	119.6	101
Cyprus	11,872	59.9	67.5	48.8
Latvia	8,614	43.2	44.6	12.5
Lithuania	11,210	36.8	37.6	30.5
Luxembourg	7,826	19.9	18.5	9.5
Hungary	78,382	82.4	82.6	59.5
Malta	4,473	70.4	70.3	65.8
Netherlands	388,829	63.1	64.5	51
Austria	214,115	71.9	71.6	60
Poland	190,475	55.4	56.3	47.5
Portugal	189,700	91.1	110.1	70.6
Romania	41,956	28.8	33.3	19.2
Slovenia	15,884	38.3	44.4	39.9
Slovakia	28,784	38.2	42.2	38.6
Finland	89,354	47	47.2	39.3
Sweden	137,851	38.6	37	27.6
United Kingdom	1,474,920	78.3	85.2	70.5

SOURCE: "Euro area government debt: Third quarter 2011 compared with second quarter 2011." *Eurostat*. (06 February 2012). 17 April 2012.

APPENDIX D

European Public Debt at a Glance



SOURCE: "European public debt at a glance." CNN Business. (21 July 2011). 12 December 2011.¹⁸⁴

¹⁸⁴ *This data is collected from Eurostat quarterly reports on Euro area government debt.

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