



The Future of the Eurozone and U.S. Interests

Raymond J. Ahearn, Coordinator

Specialist in International Trade and Finance

James K. Jackson

Specialist in International Trade and Finance

Rebecca M. Nelson

Analyst in International Trade and Finance

Martin A. Weiss

Specialist in International Trade and Finance

September 16, 2011

Congressional Research Service

7-5700

www.crs.gov

R41411

CRS Report for Congress

Prepared for Members and Committees of Congress

Summary

Seventeen of the European Union's 27 member states share an economic and monetary union (EMU) with the euro as a single currency. Based on a gross domestic product (GDP) and global trade and investment shares comparable to those of the United States, these countries (collectively referred to as the Eurozone) are a major player in the world economy and can affect U.S. economic and political interests in significant ways. Given its economic and political heft, the evolution and future direction of the Eurozone is of major interest to Congress, particularly committees with oversight responsibilities for U.S. international economic and foreign policies.

Uncertainty about the future of the Eurozone began in early 2010 as a result of the onset of a sovereign debt crisis in Greece. Subsequently, concerns spread that Ireland, Portugal, Spain, and Italy also lacked sustainable fiscal positions. Fearing possible defaults, markets began demanding substantially higher interest rates for their bonds. The debt problems of these countries, while different, now constitute a serious risk to the European banking system, the viability of the euro, and the European integration process. Moreover, the debt crisis has intensified as the Eurozone economy stagnated during the second quarter of 2011, creating problems not only for Europe, but also for the world economy.

One important cause of the crisis stems from flaws in the architecture of the currency union, including the fact that the EMU provides for a common central bank (the European Central Bank or ECB), and thus a common monetary policy, but leaves fiscal policy up to the member countries. Weak enforcement of fiscal discipline, over time, facilitated rising public debts. Locked into the euro, members cannot inflate their way out of large public debt or devalue their currency to make their exports more competitive.

In response, European leaders and institutions have combined measures to ease the debt crisis with financial assistance packages for Greece, Ireland, and Portugal. The most highly indebted Eurozone members have been forced to cut government spending and programs and to raise taxes to improve their fiscal positions. A financial assistance facility, the European Financial Stabilization Facility, has been created to help stabilize the crisis. The ECB has made large purchases of these countries' public debt in order to calm markets. But many in Europe are now calling for more basic solutions, such as the issuance of Eurobonds, along with other institutional reforms that could provide a stronger fiscal foundation to the monetary union.

The reforms, if implemented, could strengthen the foundation of the Eurozone and bolster confidence in the euro. At the same time, a number of factors could weaken or perhaps even undermine the sustainability of the Eurozone. Public support in fiscally sound Eurozone countries, such as Germany, Finland, and the Netherlands, for resource transfers to highly indebted countries is wavering. If the Eurozone survives largely in its current form or strengthens, the impact on U.S. interests is likely to be minimal. However, if Greece or any other Eurozone member were to default on its debt, it could lead to another wave of credit freeze-ups and instability in the European banking sector that weakens a struggling U.S. economy. Longer term, if the Eurozone were to break up in a way that undermines the functioning of Europe's single market or resurrects national divisions, the impact on U.S. economic and political interests could be deeper and more damaging.

Contents

Introduction.....	1
Background on the Economic and Monetary Union (EMU).....	3
Origins, Rationale, and Economic Significance.....	3
Key Provisions of the EMU.....	5
Design Challenges.....	7
Economic Imbalances and Adjustment Mechanisms within the Eurozone.....	8
Imbalances within the Eurozone.....	8
Adjustment Mechanisms.....	11
Eurozone Crisis Measures and Reform Proposals.....	13
Financial Assistance to Greece, Portugal, and Ireland.....	13
New EU Financing Facilities.....	14
European Financial Stability Mechanism.....	15
European Financial Stability Facility.....	15
European Central Bank Response.....	16
Economic Governance Reforms.....	17
Fiscal Policy Reforms.....	17
Economic Growth Policies.....	17
Possible Scenarios for the Future of the Eurozone.....	19
Scenario 1. The Eurozone Breaks Apart.....	19
Exit by One or More Southern European Countries.....	19
Exit by One or More Northern European Countries.....	20
Scenario 2. The Eurozone Survives.....	20
Scenario 3. The Eurozone Becomes More Integrated.....	21
Implications for U.S. Interests.....	22
Economic Implications.....	22
U.S. Policy Options.....	24
Political Implications.....	24
Concluding Observations.....	25

Figures

Figure 1. Economic Trends in the Eurozone.....	10
Figure 2. Selected European Current Account Balances.....	12

Tables

Table 1. EU-IMF Assistance for Greece, Ireland, and Portugal.....	14
Table 2. Glossary of Terms.....	27

Contacts

Author Contact Information.....	28
Acknowledgments	28

Introduction

What has become known as the Eurozone crisis began in early 2010 when financial markets were shaken by heightened concerns that the fiscal positions of a number of Eurozone countries, beginning with Greece, were unsustainable. Fears that a possible Greek default could spread to other Eurozone countries, particularly Ireland, Italy, Portugal and Spain, were exacerbated by revelations of banking sector weaknesses and a delayed policy response from European leaders and institutions. After extended negotiations, European leaders and the International Monetary Fund (IMF) agreed in May 2010 to provide funding for a €110 billion (about \$158 billion) loan facility for Greece and a broader stabilization fund for other euro area countries should they require loans.¹ Both loan packages were backstopped by various forms of assistance from the U.S. Federal Reserve Board (FRB) and the IMF.² The Greek bail-out was followed in December 2010 by a €67.5 billion (about \$97 billion) rescue package for Ireland, and a €78 billion (about \$112 billion) loan for Portugal in May 2011. In July 2011, a second financial assistance package totaling €109 billion (about \$157 billion) was agreed to for Greece.³

These policy responses have not contained the crisis. Despite the large size of the financial packages, markets are now pricing in a high probability that these countries may default on their debt over the next few years. In addition, markets in the summer of 2011 began questioning Spain and Italy's fiscal position by demanding higher interest rates or risk premiums on their new bonds. Due to the much larger size of these two countries' economies, a financial rescue package for either could deplete the stabilization fund rapidly. As a result, speculation has increased that countries with large holding of foreign reserves, such as China and Saudi Arabia, may be asked to extend credit to an IMF financial assistance facility or to buy bonds of these larger countries directly.⁴

European policymakers concurrently have focused on the need to address flaws in the architecture of the Economic and Monetary Union (EMU) of the European Union (EU).⁵ Most

¹ Germany was widely criticized, including by U.S. officials, for waiting several months after the onset of the Greek crisis in February 2010 before agreeing to loan facilities for Greece and other Eurozone member states. German reluctance is thought to have stemmed primarily from strong domestic opposition to the proposed relief packages. Many Germans consider Greece's problems to be a consequence of Greek government profligacy and, as such, see Greece as a burden on the German taxpayer. In light of this opposition, German Chancellor Merkel insisted that the Greek government commit to significant austerity measures before giving her support to a European assistance package. Nevertheless, the significant German public opposition to assisting Greece suggests that the German government could have a difficult time winning support for future monetary transfers to other Eurozone countries. This could present a significant challenge as European leaders engage in ongoing efforts to reform the architecture of the currency union, as well as shore up the banking sector.

² The United States is the largest financial contributor to the IMF, and some Members of Congress have expressed reservations about the IMF loan to Greece. In response to the IMF loan to Greece, Congress included provisions in the financial regulatory legislation (P.L. 111-203) to protect IMF resources. For discussion and analysis of the role of the International Monetary Fund, see CRS Report R41239, *Frequently Asked Questions about IMF Involvement in the Eurozone Debt Crisis*, coordinated by Rebecca M. Nelson.

³ For elaboration and analysis of the Greek debt crisis, see CRS Report R41167, *Greece's Debt Crisis: Overview, Policy Responses, and Implications*, coordinated by Rebecca M. Nelson. Values for the financial packages denominated in euros are converted to U.S. dollars based on the exchange rate on August 10, 2011, when €1=\$1.4367.

⁴ Fareed Zakaria, "Can China Save Europe," *Washington Post*, September 15, 2011.

⁵ A total of 17 states (Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Spain, and Slovenia) of the 27-member European Union (EU) (continued...)

observers believe that reform of the currency union is needed in order to bolster the euro and avoid another fiscal crisis triggered by public debt and government deficits. How the members of the Eurozone address this overriding challenge to bolster the viability and stability of the currency union, in turn, has added significance. Unlike in countries such as Argentina or Mexico, where currency crises did not bring into question the existence or survival of the state, the euro bears weight in terms of Europe's political aspirations for an "ever closer union." As viewed by German Chancellor Angela Merkel, "the currency union is ... a question, no more or less, of the preservation of the European idea ... for if the euro fails, Europe fails."⁶

A broad range of views exists on the future of the Eurozone. Some academics and journalists maintain that fears about the long-term viability of the Eurozone are exaggerated. The most optimistic, in fact, see the crisis as an opportunity to advance the idea of an "ever closer union" by pursuing greater economic integration and joint coordination of fiscal policy on the European level. Other observers maintain that a potential break-up of the currency union, in part or in whole, cannot be ruled out, particularly given the difficulties the Greek government is having in servicing its debt. While such a development would not necessarily lead to the demise of the European Union, most observers agree that a break-up would be destabilizing. A middle-ground perspective holds that Europe has the option to muddle through the crisis by the introduction a combination of liquidity facilities and reforms that will lower fiscal deficits and raise economic growth in financially troubled member states.⁷

The Obama Administration, Federal Reserve (Fed), and Congress have been actively engaged in monitoring and working towards an orderly resolution of the Eurozone crisis. A major U.S. concern is that a sovereign default by Greece or other members of the Eurozone could risk another wave of credit freeze-ups, instability in the European banking sector, and spillover to U.S. and global financial markets. U.S. officials have urged their European counterparts to provide financial assistance to Greece and other vulnerable European economies. And the Fed on September 15, 2011, reactivated dollar loans or liquidity swap lines with the ECB in an effort to ensure that European banks do not incur any temporary shortages of liquidity.⁸

Congressional concerns have centered on the role that the IMF is playing in resolving the crisis. Other concerns have focused on the exposure of U.S. financial institutions, on how slower growth in Europe may affect the U.S. economy, and on how the evolution of the currency union could affect the U.S.-European political partnership. Given its economic and political importance to the United States, the evolution and future direction of the Eurozone is of major interest to Congress,

(...continued)

participate in an economic and monetary union (EMU) with the euro as the single currency. The other members of the EU are Bulgaria, Czech Republic, Denmark, Hungary, Latvia, Lithuania, Poland, Romania, Sweden, and the United Kingdom. All 27 members take part in the "economic union" through various forms of policy coordination, a single market, and single external trade policy, but 16 members have taken economic integration a step further, to the EMU. Denmark and the United Kingdom were granted special opt-outs of the currency union and are legally exempt from joining unless their governments decide otherwise, either by parliamentary vote or referendum. Sweden has gained a *de-facto* opt-out through the use of various legal provisions. All new members of the EU after 1994 need to adopt the euro as soon as they meet certain economic policy targets.

⁶ Ben Hall and Quentin Peel, "Adrift Amid a Rift," *Financial Times*, June 24, 2010.

⁷ Jacob Funk Kirkegaard, "How Europe Can Muddle Through Its Crisis," *Peterson Institute for International Economics*, December 2010.

⁸ Neil Irwin and Michael Birnbaum, "Fed Move to Steer Dollars to Banks in the Euro Zone," *Washington Post*, September 16, 2011.

particularly committees with oversight responsibilities for U.S. international economic and foreign policies.

This report provides background information and analysis on the future of the Eurozone in six parts:

- the **first** part discusses the origins, rationale, economic significance, key provisions, and design challenges of the Eurozone;
- the **second** section describes how persistent economic imbalances are underlying causes of the Eurozone crisis and analyzes how the imbalances are related to inadequate adjustment mechanisms within the EMU;
- the **third** section focuses on proposals to defuse the Eurozone crisis and strengthen the framework of the currency union;
- the **fourth** section examines three possible scenarios for the future of the Eurozone: (1) the Eurozone breaks apart, (2) the Eurozone survives, and (3) the Eurozone becomes more integrated;
- the **fifth** section assesses the implications of the Eurozone crisis for U.S. economic and political interests; and
- a **sixth** and final section offers concluding observations.

Background on the Economic and Monetary Union (EMU)

EMU officially stands for Economic and Monetary Union, but it also commonly referred to as the European Monetary Union. EMU is the agreement among participating countries of the European Union to adopt a single currency, the euro, and a common monetary policy set by a common central bank, the European Central Bank.

Origins, Rationale, and Economic Significance

The origins of EMU are closely linked with the international monetary system established after World War II.⁹ As part of the post-war reconstruction efforts, countries returned to a gold standard and created a fixed, but adjustable, system of international exchange rates based on a fixed exchange rate between the U.S. dollar and the price of gold. The goal was to provide international monetary stability, facilitate trade, and prevent the competitive devaluations, unstable exchange rates, and protectionist trade policies of the interwar years. While European leaders had begun the process of economic integration immediately following World War II, consideration of monetary union did not begin in earnest until the international monetary anchor provided by the dollar-gold standard collapsed in 1971 and a new wave of currency instability emerged amidst divergent national policy responses to several 1970s economic shocks, including the oil crisis.

⁹ For more information, see Harold James, *International Monetary Cooperation Since Breton Woods* (Oxford: Oxford University Press, 1996).

In 1979, the nine member countries of the European Economic Community (EEC) created the European Monetary System (EMS). The EMS introduced fixed but adjustable exchange rates among participating countries' currencies in order to keep fluctuations of their exchange rates within acceptable bands. In 1988, the European Commission, then led by Jacques Delors, chaired a committee which proposed a three-stage plan to reach full economic union. The plan included the establishment of a European central bank and a single currency that would replace national currencies.

The EMU officially began on January 1, 1999, when 11 EU members pegged their currencies at a fixed exchange rate in preparation for adoption of a common currency, the euro. Participating countries have a common central bank, the European Central Bank (ECB), and by extension a common monetary policy. Fiscal policy, or decisions about spending and taxation were left to the individual member states, subject to the 1997 Stability and Growth Pact.

The primary rationale for the EMU was to provide momentum for political union, a long-standing goal of many European policymakers. Germany and France, Europe's largest economies, played the lead role in establishing the EMU, but they have not always agreed on the management and direction of the single currency. Most observers believe that Germany's initial support for monetary union was motivated more by political than economic interests—former Chancellor Helmut Kohl saw the currency union as an important way to anchor Germany securely in a united Europe. French leaders, on the other hand, are thought to have viewed the currency union as a key step to increasing French influence within Europe. Each country subsequently had different priorities in guiding the development of the monetary union. Germany has insisted that the Eurozone be anchored in a culture of tight money, low inflation policy, and fiscal discipline. Accordingly, the ECB's overriding commitment to price stability is thought to reflect German preferences. For its part, France has pushed for more flexibility in European monetary policy and for more political control over the inflation-fighting ECB.¹⁰

Although political goals were the driving force in the move towards monetary union, discussions of EMU also focused heavily on its economic costs and benefits. Generally, European monetary union was expected to make Europe's economy more efficient, thereby raising the living standards of Europe. For example, it would eliminate the transaction costs of changing one currency into another, which would benefit both consumers and producers. Additional economic benefits included lowering the cost of trading goods by removing exchange rate risk and currency conversion fees and by facilitating price comparisons of goods and services across national borders. Cost savings that arise from greater competition also induce direct investment from non-Eurozone countries as foreign firms attempt to locate facilities within the Eurozone area to access a larger market. Proponents of the EMU also wanted the euro to become one of the reserve currencies of international finance, alongside the dollar and the yen.¹¹

The now 17 members of the Eurozone have considerable economic heft. Comprising some 320 million people, the gross domestic product (GDP) of the entire Eurozone area was \$12.2 trillion in 2010,¹² or about 19% of world GDP. By comparison, the GDP of the United States in 2010 was

¹⁰ Katina Borsch, "Germany, The Euro and Politics of the Bail-out," *Centre for European Reform*, Briefing Note, June 2010.

¹¹ For further background on the economic costs and benefits of monetary union with a focus on the EMU, see Paul De Grauwe, *Economics of Monetary Union* (Oxford: Oxford University Press, 2009).

¹² World Bank's World Development Indicators database. Data in current US\$.

slightly larger at \$14.6 trillion. Within the Eurozone, economic weight is heavily concentrated in a few large countries. More than 76% of the Eurozone's total GDP is accounted for by just four countries (Germany, France, Italy, and Spain). In contrast, the Eurozone's five smallest countries (in decreasing size: Slovakia, Slovenia, Luxembourg, Cyprus, and Malta) accounted for less than 2% of the Eurozone's overall GDP in the same year.

The Eurozone is also a major player in the world economy. As a whole, it accounted for 29% of total world exports; 28% of world imports; and 23% of world net inflows of foreign direct investment (FDI) in 2010.¹³ The United States also has a strong bilateral economic relationship with the Eurozone.¹⁴ With respect to trade, U.S. exports to Eurozone members totaled \$176.7 billion in 2010, representing 14% of total U.S. exports. Likewise, the value of U.S. imports from the Eurozone in 2010 was \$242.7 billion, or 13% of total U.S. imports.¹⁵ In terms of capital flows, U.S. investors on net repatriated \$180.6 billion dollars from the Eurozone in 2010.¹⁶

Key Provisions of the EMU

The blueprint for the EMU was formalized in provisions of the 1992 Maastricht Treaty, the founding document of the present-day European Union. The Treaty established the conditions, or "convergence criteria," that countries are required to meet before they join the EMU.¹⁷ By requiring the members to adhere to similar economic policies, the convergence criteria are meant to promote a more balanced economic growth and development among the various members of the Eurozone. This, in turn, was thought to make it easier for diverse economies to share a single currency.

EU Treaties

The Treaty on European Union (TEU or the Maastricht Treaty) is the founding document of the modern European Union. Together, the TEU and the 1957 Treaty establishing the European Economic Community (also known as the Rome Treaty or the EEC Treaty, and recently re-named the Treaty on the Functioning of the European Union, or TFEU) define the objectives and principles of the EU and set out the EU's institutional architecture and organizational rules. The Lisbon Treaty, which entered into force in December 2009, is the most recent treaty amending these documents.

Consolidated versions of the TEU and the TFEU are available in the Official Journal of the European Union, March 30, 2010, available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:FULL:EN:PDF>

As an integral part of the EMU, a European Central Bank (ECB) was established to set monetary policy independent of any political influence. The ECB together with the central banks of all the

¹³ World Bank's World Development Indicators database. Data in current US\$.

¹⁴ For more on the bilateral economic relationship between the United States and the EU, see CRS Report RL30608, *EU-U.S. Economic Ties: Framework, Scope, and Magnitude*, by William H. Cooper.

¹⁵ Cost-in-freight data.

¹⁶ U.S. Department of Commerce, Bureau of Economic Analysis, <http://www.bea.gov>.

¹⁷ To participate in the initial formation of the EMU, each member had to meet the following five convergence criteria by 1998: (1) national legislation governing the country's financial system had to be compatible with the treaty provisions controlling the European System of Central Banks; (2) a rate of inflation within 1.5% of the rates in the three participating countries with the lowest rates; (3) reduction of its government deficits to below 3% of its gross national product; (4) currency exchange rates within the limits defined by the Exchange Rate Mechanism (ERM) (an intermediary step toward a single currency that attempted to stabilize exchange rates by fixing rates through variable bands) for at least two years; and (5) interest rates within 2% of the rates in the three participating countries with the lowest rates.

members of the European Union form the European System of Central Banks, or ESCB, which is charged by statute with maintaining price stability as its primary objective. The formulation of price stability as a primary ESCB objective, compared to the U.S. Federal Reserve's multiple mandates of price stability, full employment, and moderate long-term interest rates, was a German pre-condition for sacrificing the Deutsche mark.¹⁸

There was no provision in the Maastricht Treaty to allow the ECB to act as a lender of last resort to Eurozone members in the case of a financial crisis. According to the EMU's design, each member must finance its deficits by itself. A "no-bail-out" clause explicitly stipulates that neither the European Union nor any member state is liable for or can assume the debts of any other member state.¹⁹ However, EU financial assistance is allowed in case of "severe difficulties caused by natural disasters or exceptional occurrences beyond the control of a member state."²⁰

For the mutual assurance and stability of the currency, all members are constrained in their ability to adopt independent fiscal policies by the Protocol on Excessive Deficit Procedure (EDP) and the Stability and Growth Pact (SGP). The EDP is a procedure under which member states are obliged to avoid excessive deficits in national budgets.²¹ The SGP, agreed to in 1997, was intended to deepen multilateral surveillance and "speed up and clarify" implementation of the EDP.²²

Soon after the SGP took effect in 1999, EU members began criticizing the rules-based approach of the Pact for being too stringent and they questioned whether the rules could be enforced. In 2003, the weaknesses of the Pact were exposed when the European Council voted against applying the punitive procedures under the EDP to France and Germany, which had experienced rising levels of government debt. Some EU members argued that the Pact focused too heavily on the rules-based percentage guidelines without regard for the circumstances under which a

¹⁸ Paul De Grouse, *Economics of Monetary Union*.

¹⁹ Article 125 TFEU is often referred to as the EU's "no-bailout" clause. It states:

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

²⁰ European leaders drew reference to these exceptions (Article 122(2) TFEU) in crafting new crisis management facilities. They explicitly based the bailout actions on the grounds that the debt crisis endangered the solvency of entire states and posed a serious threat to the euro and financial stability of the monetary union. For a contrary view that the euro was endangered by the crisis, see Hans-Werner Sinn, "Rescuing Europe," *CWSifo Forum*, Volume 1, August 2010. Sinn argues that the bailout was engineered primarily to protect French, and to a lesser extent, German banks.

²¹ The Protocol on Excessive Deficit Procedure established a mechanism for countries to meet the specific guidelines that are applied under Article 104 of the Maastricht Treaty. Under this protocol, EU members are expected to have an annual budget deficit no greater than 3% of GDP at market prices and government debt no more than an amount equivalent to 60% of GDP.

²² The Stability and Growth Pact (SGP) is an agreement by European Union members to conduct their fiscal policy in a manner that facilitates and maintains the EMU. The Pact is based on Articles 99 and 104 of the Maastricht Treaty, and related decisions. It consists of (1) a political commitment by all parties involved in the SGP to the full and timely implementation of the budget surveillance process; (2) regular surveillance aimed at preventing budget deficits from going above the 3% reference value; and (3) corrective elements which require member states to take immediate action when the 3% reference value is breached or face the imposition of sanctions.

government's level of debt or its deficit spending may rise, for instance as a result of a temporary increase in government spending to counter an economic downturn.²³

In 2005, the EU members adopted a number of changes to the Stability and Growth Pact. These changes made enforcement more flexible to take into account the economic conditions of the member states, and other factors. For example, the modified Pact provides for each EU member to develop its own medium-term objectives to bring its deficit spending and its debt level into compliance based on the unique economic conditions of each member. The changes also allow EU members to avoid the corrective measures in cases where their annual fiscal deficit exceeds 3% of GDP, if they can demonstrate that the deficit is caused by "exceptional and temporary" circumstances.

Design Challenges

From the start of the euro area, various academics and policymakers argued that a single currency for many different economies would face numerous challenges and some even argued that it was bound to fail. According to these critics, a big weakness of the project was the lack of a common fiscal policy to support it. This, in turn reflected the fact that it was a currency with a central bank but without a government that has taxation and spending authority. The creation of the euro also meant that members of the Eurozone lost their ability to use monetary and exchange rate policy tools as a way to respond to changes in economic conditions.²⁴

The loss of monetary and exchange rate tools, combined with a lack of a common fiscal policy, creates vulnerabilities and tensions because members of the Eurozone are constrained in how they respond to economic shocks such as a recession. Countries are different and in a recession are likely to experience different unemployment rates. In a currency union, the central bank will set a common interest rate that may end up too high for the high unemployment country, resulting in lost employment and output, and too low for the low unemployment country, resulting in excess spending and consumption, and exacerbating the business cycle in both countries.

Despite these costs, joining a currency union may be advantageous as long as there are adjustment mechanisms that ensure that the benefits of membership such as lower transaction costs and exchange rate certainty exceed the costs. These adjustment mechanisms, in the absence of a common federal budget and robust transfer mechanisms from countries experiencing booms to the countries experiencing recessions, include labor and capital mobility and wage and price flexibility. For example, the unemployment disparities could be reduced if workers from a country with high unemployment relocated to the one with low unemployment. Or, relative labor costs could fall in the high unemployment country to attract investment and create new jobs. In the absence of viable adjustment mechanisms, there are likely to be strains and tensions within a currency union.²⁵

The functioning of the dollar in the U.S. economy, despite major differences among its 50 states, is facilitated by adjustment mechanisms that are either absent or deficient in the Eurozone. For

²³ Beetsma, Roel M.W.J., and Xavier Debrun, *Implementing the Stability and Growth Pact: Enforcement and Procedural Flexibility*, IMF Working Paper WP/05/59, International Monetary Fund, March 2005.

²⁴ Martin Feldstein, "The Euro's Fundamental Flaws," *The International Economy*, Spring 2010, p. 11.

²⁵ Faltin, Dirk, and Katherine Klingensmith, "Eurozone Economics: The Future of the Euro in Jeopardy," *UBS Wealth Management Research*, July 13, 2010.

example, U.S. unemployed workers move much more freely from Maine to Minnesota than do European unemployed workers move from Spain to Slovenia because of differences in language and regulations. Prices of basic consumer durables vary little among the U.S. states but can be substantial among the members of the Eurozone. And the federal government in Washington collects roughly two-thirds of all taxes and provides net fiscal transfers to states with temporarily falling incomes. No such substantial fiscal transfers occur in the Eurozone.²⁶

Just as critical to lacking a common federal budget to transfer resources from countries experiencing booms to countries experiencing recessions, the single currency can weaken the market signals that would otherwise warn a member that its fiscal deficits were becoming excessive. When a country with excessive deficits needs to raise taxes and cut government spending, as many Eurozone countries need to now, the resulting contraction in output and employment cannot be moderated by a devaluation that increases exports and decreases imports. These shortcomings or design flaws inherent in the architecture of the currency union played a role in the sovereign debt crisis that hit Greece and several other Eurozone members in early 2010 and are discussed in the next section.

Economic Imbalances and Adjustment Mechanisms within the Eurozone

At the time of the euro's launch in 1999, a number of economists predicted that the monetary union would not survive because of shortcomings in its architecture. This section describes (1) the persistent economic imbalances that are at the heart of the current crisis; and (2) how the imbalances are related to the institutional constraints of the monetary union itself, particularly the lack of adequate adjustment mechanisms.

Imbalances within the Eurozone

When the euro was introduced, many economists expected that the national economies within the Eurozone would achieve additional convergence. However, many of the Eurozone economies have remained quite different or have actually diverged in a number of economic dimensions over the past decade. This divergence is generally thought to have occurred broadly between two groups of countries within the Eurozone: the Northern European countries, including Austria, Belgium, Germany, Finland, France, Luxembourg, and the Netherlands; and a group of mostly Southern European countries, including Greece, Ireland, Italy, Portugal, and Spain. These latter five countries are often referred to by the acronym "GIIPS."

Figure 1 shows average economic trends in these two groups of countries over the past decade. Prior to the outbreak of the global financial crisis in 2008, the GIIPS experienced higher rates of economic growth on average than the Northern European countries. However, the GIIPS also generally experienced faster growth in prices (inflation), including faster growth in the compensation for workers (adjusted for differences in worker productivity). This resulted in a loss of industrial competitiveness for the GIIPS and an increase in industrial competitiveness for the Northern European countries. As a result, the GIIPS on average ran trade deficits, while the

²⁶Martin Feldstein, p.12.

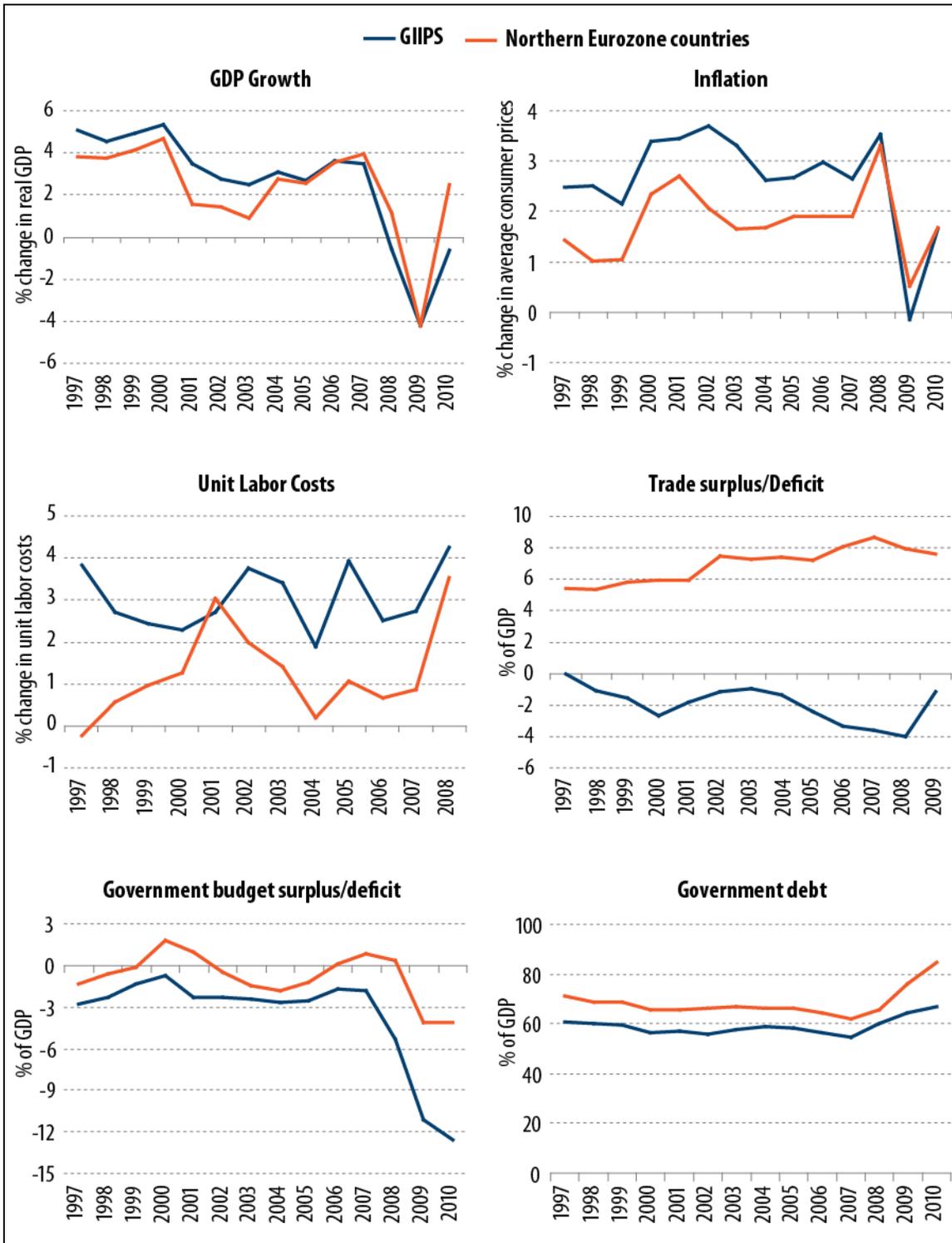
Northern European countries generally ran large trade surpluses. The GIIPS also generally ran larger government budget deficits (relative to GDP) and accumulated higher levels of government debt (relative to GDP) than Northern European countries.

Much of the money that the GIIPS borrowed to finance trade and budget deficits came from banks located in the Eurozone, particularly French and German banks.²⁷ The exposure of French and German banks to the GIIPS rose from \$357.2 billion in December 1999 to \$1.6 trillion in December 2009, an increase of more than 450%.²⁸ In sum, the net borrowers (the GIIPS) were being financed by the net savers (Northern European countries).

²⁷ Bank for International Settlements (BIS), *International Banking and Financial Market Developments*, BIS Quarterly Review, June 2010, http://www.bis.org/publ/qtrpdf/r_qt1006.pdf.

²⁸ Bank for International Settlements (BIS), "Consolidated International Claims of BIS Reporting Banks," Publication data up to 2009Q4, June 2010, Table 9B: Consolidated Foreign Claims of Reporting Banks - Immediate Borrower Basis, <http://www.bis.org/statistics/consstats.htm>.

Figure I. Economic Trends in the Eurozone



Source: GDP growth, inflation, budget, and debt data are from the IMF's World Economic Outlook database. Unit labor cost are from the Source OECD database. Trade data is from the World Bank's World Development Indicators.

Notes: GIIPS refers to Greece, Ireland, Italy, Portugal, and Spain. Northern Eurozone countries include Austria, Belgium, Germany, Finland, France, Luxembourg, and the Netherlands. Five countries that have joined the Euro zone in 2007 or later (Cyprus, Estonia, Malta, Slovenia, and Slovakia) are not included. Unweighted averages used. Growth data is adjusted for inflation (real growth). Trade data are for goods and services. Budget and debt data are for general government (central, state, and local levels).

Adjustment Mechanisms

Differences between the economies of Northern Europe and the GIIPS can be attributed to a number of factors, including policy choices.²⁹ For example, Germany's export-led economic strategy and commitment to wage moderation is often cited as a factor for its low costs of production and trade surpluses.

However, many have suggested that the imbalances are caused by the institutional arrangements of the currency union itself and its inadequate adjustment mechanisms. This argument typically proceeds as follows:³⁰ After the GIIPS adopted the euro, investors viewed these countries as safer destinations for investment, and the interest rates paid by the GIIPS on their government bonds fell to the interest rates paid by Northern European countries. As a result, interest rates in the GIIPS were far too low, leading to distorted investment decisions and ultimately overinvestment in a number of sectors. As private sector borrowing and demand increased, the GIIPS launched investment projects to allow growth to take place with less inflation. This, in turn, required increased borrowing, particularly from banks in Northern European countries, and contributed to larger government budget deficits.

Capital inflows into the GIIPS fueled domestic demand, leading to high levels of growth, but also to inflation. Increasing prices in the GIIPS reduced their competitiveness, and consequently, caused the GIIPS to start running current account deficits (see **Figure 2**).³¹ Each year's current account deficits added to the public and private aggregate debt of the GIIPS. As part of this process, the GIIPS accumulated foreign debt which rose close to 80% of GDP.³²

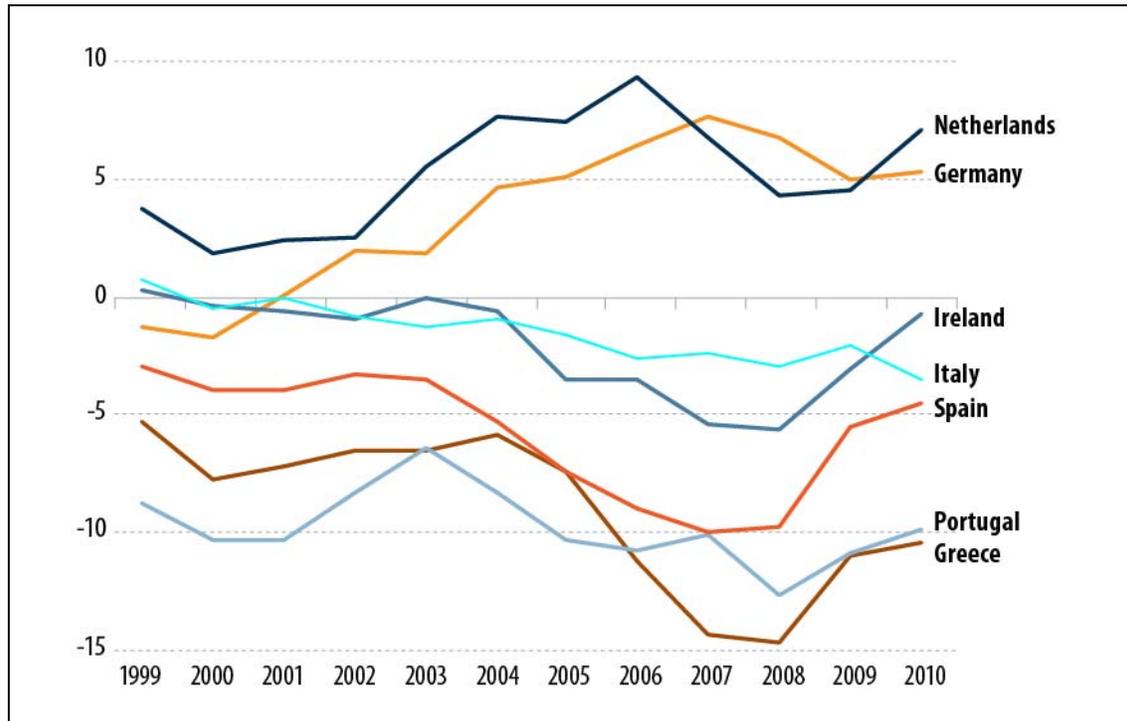
²⁹ Gilles Saint-Paul, "Is the Euro a Failure?," *VoxEU*, May 5, 2010.

³⁰ Uri Dadush and Bennett Stancil, "Europe's Debt Crisis: More than a Fiscal Problem," in *Paradigm Lost: The Euro in Crisis*, ed. Uri Dadush and Contributors (Carnegie Endowment for International Peace, 2010), pp. 9-15.

³¹ The current account is the sum of the balance of trade (exports minus imports of goods and services), net factor income such as interest payments and dividends, and net transfer payments such as foreign aid. Measures to reduce a current account deficit usually involve increasing exports or decreasing imports. Economists tend to argue that this can be accomplished most effectively by increasing domestic savings or reducing borrowing of households and government.

³² Dirk Faltin and Katherine Klingensmith, "Eurozone Economics: The Future of the Euro in Jeopardy," p. 6.

Figure 2. Selected European Current Account Balances
Percent of GDP



Source: International Monetary Fund

Meanwhile, most Northern European economies did not face dramatic reductions in their interest rates upon joining the Eurozone and did not have substantial increases in capital inflows. Combined with fiscal policies that aimed to contain domestic demand, the Northern European countries as a result had lower inflation and remained more competitive than their GIIPS counterparts. Partly due to their relative competitiveness, the Northern European countries were able to export to the GIIPS and run large current account trade surpluses.³³

Some suggest that being in the Eurozone constrained the ability of the GIIPS governments to respond to growing divergences from the Northern European countries.³⁴ For example, if the GIIPS countries had not been in the Eurozone, they could have reduced their trade deficits through currency depreciation. Likewise, the GIIPS countries could have raised interest rates to slow economic growth in response to a potentially over-heating economy. But as members of the Eurozone, neither devaluation nor an increase in interest rates is an option.

The GIIPS countries did retain some control over their fiscal policy and could have reined in government spending or raised taxes in order to curb consumption. Such a policy could have freed up resources for payments to foreign creditors. However, as discussed previously, the low interest rates resulting from Eurozone membership increased the attractiveness of government

³³ Given that about 75% of all Eurozone trade constitutes exports of one Eurozone member to another (so-called “intra-Eurozone trade”), the trade surpluses of one Eurozone country or group of countries are to a large extent matched by the deficits of others.

³⁴ Gilles Saint-Paul, “Is the Euro a Failure?”, *VoxEU*, May 5, 2010.

deficit spending, and the GIIPS countries generally borrowed, running budget deficits. Alternatively, given that inflation was twice as high in the GIIPS countries than the EMU average, real interest rates (i.e., nominal rates minus inflation) were extremely low, thereby discouraging savings and causing private firms and households to run up debt to finance consumption and housing construction, especially in Spain and Ireland.³⁵

Given their membership in the Eurozone, the GIIPS are left with using deflation (decreases in wages, incomes, and prices) in order to reduce their trade deficits. However, deflation may have little beneficial effect on the foreign debt positions of most of the GIIPS if they all pursue the same strategy simultaneously. This is because the negative effects on economic growth and employment could be compounded, weakening the economies of the GIIPS to the point where their debt-to-GDP ratios continue to rise.³⁶

In sum, the trade imbalances between the Northern countries and GIIPS provide evidence that the EMU's internal adjustment mechanisms are not working well. Whatever labor mobility and price flexibility that exists in the Eurozone, combined with limited fiscal transfers, did not prevent the accumulation of persistent trade imbalances and the sovereign debt crisis. While improved labor mobility and price flexibility may be long-term solutions, European leaders and institutions are now considering a range of proposals to increase fiscal coordination and integration as the best way to shore-up the EMU's institutional shortcomings.

Eurozone Crisis Measures and Reform Proposals

Beginning in May 2010, European leaders and institutions adopted an unprecedented package of emergency measures to halt rising financial market tensions stemming from concern about the fiscal solvency of Greece and several other Eurozone countries. This section briefly discusses the current debt crisis and the emergency crisis measures adopted by to defuse the crisis. It then discusses reform proposals for economic governance and economic policies.

Financial Assistance to Greece, Portugal, and Ireland

Current concerns about the sustainability of domestic finances in several Eurozone countries began in late 2009 when investor sentiment turned against Greece, which had borrowed heavily in international capital markets over the past decade. Analysts argue that this borrowing was necessary to support high government spending, weak revenue collection, structural rigidities, and loss of competitiveness.³⁷ Access to capital at low interest rates after adopting the euro and weak enforcement of EU rules concerning debt and deficit ceilings helped set the stage for the current sovereign debt crisis.³⁸

³⁵ Dick Faltin and Katherine Klingensmith, "Eurozone Economics: The Future of the Euro In Jeopardy," p.5.

³⁶ Ibid., p. 8.

³⁷ For more information, see: CRS Report R41167, *Greece's Debt Crisis: Overview, Policy Responses, and Implications*, coordinated by Rebecca M. Nelson.

³⁸ For more information, see: CRS Report R41838, *Sovereign Debt in Advanced Economies: Overview and Issues for Congress*, by Rebecca M. Nelson.

To date, Greece, Ireland, and Portugal have received significant financial assistance packages from the IMF and Euro area and EU fiscal facilities (**Table 1**). The ECB has also contributed extensively to European economic stability, actively intervening to support European governments and banks. Despite this support, concerns have intensified and many analysts fear that the crisis may be spreading to the larger European economies, including Italy and Spain. Investor concerns about the likelihood of default in Greece and the other countries receiving financial assistance, as well as doubts about the ability of European authorities to agree on sufficient economic reforms, has pushed the cost of issuing European sovereign debt up sharply.³⁹ Sovereign default risk remains exceptionally high and many analysts expect at least one European country to default on its public debt in the near future.⁴⁰

Table 1. EU-IMF Assistance for Greece, Ireland, and Portugal

	Date Agreed	European Financial Assistance	IMF Financial Assistance	Total Financial Assistance
Greece	May 2010	€80 billion (about \$115 billion)	€30 billion (about \$43 billion)	€110 billion (about \$158 billion)
Greece ^a	July 2011	€109 billion (about €157 billion)		€109 billion (about €157 billion)
Ireland ^b	December 2010	€45 billion (about \$65 billion)	€22.5 billion (about \$32 billion)	€67.5 billion (about \$97 billion)
Portugal	May 2011	€52 billion (about \$75 billion)	€26 billion (about \$37 billion)	€78 billion (about \$112 billion)

Source: IMF press releases.

Notes: Figures may not add due to rounding.

- a. Pending ratification by participating countries.
- b. The headline number used by the IMF and in news reports for Ireland's total financial assistance package was €85 billion. This includes €17.5 billion (about \$25 billion) from Ireland's cash reserves and other liquid assets. Resources used by national authorities in the crisis response are not included in the table above.

New EU Financing Facilities

The primary institutions available for providing emergency financial support to European governments and financial institutions, in addition to national authorities, are the European Financial Stabilization Mechanism (EFSM), the European Financial Stability Facility (EFSF), the ECB, and the IMF.

³⁹ Art Patnaude and Mark Brown, "European Funding Costs Hit Record Highs," *Wall Street Journal*, September 12, 2011.

⁴⁰ Abigail Moses, "Greece has 98% Chance of Default on Euro-Region Sovereign Woes," *Bloomberg*, September 13, 2011.

On May 10, 2010, EU officials announced a rescue package of up to €750 billion to restore confidence in EMU members' fiscal sustainability. This consists of two new European financing entities, the European Financial Stability Mechanism (EFSM) and the European Financial Stability Facility (EFSF). The IMF is also expected to make contributions as well as play a coordinating role, as it has much expertise in financial surveillance and putting together sovereign debt packages.

European Financial Stability Mechanism

The EFSM is a new €60 billion supranational EU balance of payments loan facility available to any EU member country facing financial difficulties. It is similar in design to an existing €50 billion EU balance of payments facility that can only be drawn on by non-Eurozone EU member nations.⁴¹ Since 2008, Hungary, Latvia, and Romania have borrowed from this facility as part of joint EU-IMF economic adjustment programs.

Under the EFSM, the European Commission is allowed to raise up to an additional €60 billion on the international capital market by issuing bonds individually and collectively backed by all 27 EU member states.⁴² EFSM loans require a qualified majority vote of the Council of the EU. The borrowing nation would be subject to economic conditionality supervised by the European Commission, which would decide at regular intervals whether sufficient economic progress has been made to warrant the continued release of funds. Funds are available immediately and there is no sunset date for the EFSM. Beginning in January 2011, several bond offerings have been placed to partially fund the Ireland and Portugal assistance packages.

European Financial Stability Facility

European leaders decided to provide the majority of the initial rescue package, up to €440 million, in a temporary three-year crisis prevention facility, the so-called European Financial Stability Facility (EFSF), outside of the EU system. The EFSF has been established under Luxembourg law as a limited liability corporation.⁴³ This allows participating countries to have greater discretion over the use of the facility's resources—decisions are made by a board of directors from participating countries instead of the European Commission—and to limit their liability to the amount of their individual guarantee. The amount of a country's guarantee is to be derived from their respective contributions to the paid-in capital of the ECB. To date, the EFSF has placed bond offerings in support of the Ireland and Portugal packages.

In July 2011, the EFSF was amended to increase the maximum guarantee commitments that the EFSF could make to €780 billion. The EFSF was also made more flexible and is now authorized to provide precautionary loans and purchase European sovereign debt on the secondary financial markets.⁴⁴

⁴¹ The current balance of payments facility was created under Article 143 of the Lisbon Treaty, which limits assistance to "member states with a derogation," i.e., those outside the Eurozone.

⁴² Council Regulation (EU) No. 407/2010 of 11 May 2010 establishing a European financial stabilization mechanism. Official Journal of the European Union, December 5, 2010. L 118/1.

⁴³ Council of the European Union, Press Release, Extraordinary Council Meeting, Economic and Financial Affairs, Brussels, May 9/10, 2010.

⁴⁴ European Commission, Economic and Financial Affairs, "Treaty Establishing the European Stability Mechanism (continued...)"

European leaders also reached agreement in July 2011 on a permanent successor to the EFSF and the EFSM to be called the European Stability Mechanism (ESM). The ESM treaty needs to be ratified by all 17 Eurozone country parliaments. If ratified, the ESM will have total subscribed capital of €700 billion, consisting of €80 billion of paid-in capital and €620 billion of callable capital and guarantees. As in the current Greece, Portugal, and Ireland programs, the IMF is expected to co-finance any ESM loans.

A novel and controversial feature of the ESM is private sector involvement. According to the ESM agreement, private bondholders might have to share the burden of any future default by a Eurozone member. Private sector participation would not be automatic, but rather, decided on a case-by-case basis, following established IMF procedures. In the event of a default, the ESM would claim preferred creditor status, junior only to the IMF.

Furthermore, from 2013 onwards, all euro area government bonds will include collective action clauses (CACs), which allow a majority of bondholders to agree on a debt restructuring that would be binding for all bondholders. In the past, the absence of any international legal protection for bankrupt countries has complicated several previous defaults. CACs gained currency in 2003, following the failure of the IMF's Sovereign Debt Restructuring Mechanism proposal, which would have, broadly speaking, created a sovereign bankruptcy court. It remains undecided, however, which EU actor will decide whether the sovereign debt of a Eurozone country is unsustainable and needs to be restructured, and on what terms. While some analysts have proposed the European Commission (EC) as the deciding actor, others have pointed out that they would be inappropriate since EC, as well as the ECB and other European governments would likely be creditors and, thus, have a potential conflict of interest. Other concerns include the size of the ESM. One prominent analyst argues that for the ESM to be credible if larger European countries like Italy or Spain needed to borrow from, the fund would need to be increased five-fold to at least €2.5 trillion.⁴⁵

European Central Bank Response

Along with the creation of the EFSM and the EFSF, the European Central Bank has implemented several crisis-response measures to improve European financial stability. Arguably the most important of these measures is the ECB's decision to purchase European sovereign debt outright in the secondary markets. This was a significant policy reversal for the ECB, which had long viewed interventions in sovereign debt markets as compromising its independence, and a diversion from its core mandate of price stability. However, as it required several months to legally establish the EFSM and the EFSF, the ECB was able to provide immediate support following the worsening of the crisis in early May. The ECB began interventions on May 10, 2010, purchasing €16.5 billion of Eurozone sovereign debt.⁴⁶ It is believed that the ECB is now

(...continued)

(ESM) Signed," press release, July 7, 2011.

⁴⁵ Willem Buiter, *Global Economics View, Europe: Fear and Panic Make Poor Counsellors*, Citigroup, August 12, 2011.

⁴⁶ David Oakley, Peter Garnham, and Ralph Atkin, "ECB reveals €16.5bn bond purchases," *Financial Times*, May 17, 2010.

among the largest holders of Greek, Italian, and Portuguese debt. Given a sharp increase in buying beginning in August 2011, the ECB now holds €143 billion of European sovereign debt.⁴⁷

Other ECB policy measures include the reactivation of temporary liquidity swap lines with the U.S. Federal Reserve. In addition to the ECB, the Fed re-activated temporary reciprocal currency agreements, known as swap lines, with the Bank of Canada, the Bank of England, Bank of Japan, and the Swiss National Bank.⁴⁸ The swap lines with the Federal Reserve provide foreign central banks with a source of dollar financing should such immediate liquidity be needed.

Economic Governance Reforms

Crisis response measures have succeeded in calming financial markets, but they are temporary measures that do not address fundamental weaknesses in the architecture of the EMU. The temporary measures, however, have provided European leaders with time to consider changes in the governance of the currency union. Agreement has been reached on a permanent EU crisis fund. Reforms have also focused on developing more effective means of coordinating national fiscal policies and on promoting faster and more balanced growth. These are described briefly below.

Fiscal Policy Reforms

As discussed earlier, there have been efforts to reform the framework for European fiscal policy coordination and enforcement of European fiscal rules. On September 15, 2011, the EU Parliament announced agreement on new rules that would provide a limited amount of additional power to EU authorities in controlling public debt levels of member countries.⁴⁹ The agreement, if it becomes EU law, would introduce six new laws aimed at strengthening the SGP by improving budgetary surveillance of Member countries and controlling macroeconomic imbalances within Europe. If Member countries continue to run excessive budget deficits, the EC would eventually be able to impose a fine of up to 0.1% of GDP. Countries found to be falsifying their economic statistics could be subject to a fine of 0.2% of GDP.⁵⁰

Economic Growth Policies

Important for securing the long-term viability of the EMU is reversing several years of weak economic growth, which has gotten worse in recent months. Reportedly, the IMF in its forthcoming World Economic Outlook is cutting its 2011 Eurozone GDP forecast to 1.9% from 2% and cut the 2012 forecast to 1.4% from 1.7%.⁵¹ In an effort to halt or reverse the drop in GDP,

⁴⁷ Reuters, "ECB's spent 14 bln euros on bonds ahead of Stark exit," September 12, 2011.

⁴⁸ In response to the beginnings of the recent financial crisis, similar swap lines were established in December 2007 and expired in February 2010. On the re-establishment of these lines, see Federal Reserve, "Federal Reserve, European Central Bank, Bank of Canada, Bank of England, and Swiss National Bank Announce Reestablishment of Temporary U.S. Dollar Liquidity Swap Facilities," <http://www.federalreserve.gov/newsevents/press/monetary/20100509a.htm> and Federal Reserve, "FOMC Authorizes Re-establishment of Temporary U.S. Dollar Liquidity Swap Arrangement with the Bank of Japan," <http://www.federalreserve.gov/newsevents/press/monetary/20100510a.htm>.

⁴⁹ Claire Davenport, "EU Wins Battle Over National Debt Vetting," *Euractiv.com*, September 15, 2011.

⁵⁰ Honor Mahoney, "Deal Reached on EU Economic Governance Laws," *euobserver.com*, September 15, 2011.

⁵¹ "IMF slashes growth forecasts for US and Euro zone; warns against higher rates," *MercoPress*, September 16, 2011.

priority is being given to addressing structural problems such as labor and service sector barriers, as well as to macroeconomic policies and surveillance for promoting stronger and more balanced economic growth. To that end, all Eurozone and several other European leaders adopted the “Euro-Plus Pact” in March 2011, making commitments in a variety of public and private sectors to improve competitiveness.⁵²

For all Eurozone countries, the ECB and the European Commission have stressed the importance in their view of pressing forward with difficult structural reforms that have prevented the completion of the European common market. Removing remaining trade barriers, especially in the services sector, is viewed by the ECB and the EC as being particularly important for increasing growth. According to the ECB, only 20% of services provided in the EU have a cross-border dimension. A full implementation of the European Commission’s services liberalization proposals could increase EU GDP growth rates by 0.6-1.5 percentage points.⁵³ Other growth enhancing EU-wide reform efforts include promoting a common energy market and accelerating the implementation of new digital technologies in accordance with the objectives of the Europe 2020 growth strategy.

Proposals on stricter macroeconomic surveillance specify the use of a scorecard for assessing changes in competitive positions and flagging emerging macroeconomic imbalances in a timely fashion. While these proposals still need to be fleshed out, it is unclear how they will address the current account imbalances within the Eurozone. In this context, much concern and weight may be placed on Germany, the largest economy of the Eurozone, to increase internal demand and thereby buy more goods and services of the GIIPS as they become more competitive.⁵⁴ Recent movements in the exchange value of the euro are boosting exports from Eurozone countries, but the benefits are not being shared equally among the Eurozone members. Since movements in the exchange value of the euro do not affect the comparative levels of productivity among Eurozone members, those members with higher levels of productivity, such as Germany, tend to benefit the most. To the extent that other Eurozone members are similarly looking to spur their economic growth by increasing exports, they likely will provide little stimulus to Greece and Spain or to other Eurozone members.

From a different perspective, many Germans reject the notion that their exporting success and trade surpluses come at the expense of fellow Eurozone members. They argue that exports allow the German economy to grow faster, and in the process absorb more imports from their Eurozone neighbors. Furthermore, they maintain that other Eurozone countries, such as Greece and Spain, can increase their competitiveness just as Germany has done by cutting costs and making specialized products.⁵⁵

⁵² Clemens Fuest, “Will the Reform of the Institutional Framework Restore Fiscal Stability in the Eurozone,” *CESifo Forum*, vol. 2 (2011).

⁵³ Lorenzo Bini Smaghi, *Imbalances and Sustainability in the Euro Area*, European Central Bank, Presentation at the ECB and its Watchers Conference, Frankfurt, July 9, 2010.

⁵⁴ Michael Pettis, “The Risk of Another Global Trade War,” *Financial Times*, August 24, 2010, p. 9.

⁵⁵ Christian Riermann, “How Germany’s Export Strength Helps Its Neighbors,” *Spiegel Online*, August 24, 2010.

Possible Scenarios for the Future of the Eurozone

The current debt crisis has posed the most fundamental challenge to the Eurozone since the euro was introduced a decade ago and has led to speculation about the future of the Eurozone. Three scenarios have typically been discussed: (1) the crisis leads to a splintering or break-up of the Eurozone, with one or more members abandoning the euro; (2) the Eurozone survives the crisis largely intact, without major reforms; and (3) substantial reforms to the Eurozone architecture are implemented, leading to greater economic and political integration. It originally appeared that EU leaders were going to try to “muddle through” the crisis. As the crisis threatens to spread more broadly in the Eurozone, more comprehensive crisis response measures could be required if the Eurozone is to survive, increasing the likelihood of closer integration among European countries.

Scenario 1. The Eurozone Breaks Apart

It was once considered unthinkable that countries would leave the Eurozone, but the current debt crisis has raised the possibility that one or more countries could exit the Eurozone. Exiting the Eurozone would entail countries abandoning the euro as their national currency, issuing a new national currency, and allowing the new national currency to appreciate or depreciate against the euro.

Exit by One or More Southern European Countries

The Eurozone could break apart if one or more Southern European countries decide to leave the Eurozone, or are pushed out of Eurozone by Northern European countries. The biggest benefit to Southern European countries exiting the Eurozone would be new national currencies depreciated against the euro. This would help them regain competitiveness against the northern European countries, leading to an increase in exports and a decrease in imports. A surge in exports would spur economic growth, offsetting depressed demand at home due to austerity measures. Additionally, by increasing exports and lowering imports, Southern European countries would reduce their trade deficits and the borrowing needed to finance these deficits.

Exiting the Eurozone would involve potentially huge costs for the Southern European economies, however. First, the debt of Southern European countries is denominated in euros, and leaving the Eurozone in favor of a depreciated national currency could significantly raise the value of their debt in terms of national currency. Second, there are technical and legal obstacles to exiting the euro.⁵⁶ Legislation would likely be required to issue the new national currency, and all contracts involving euros would have to be rewritten for the national currency. Numerous electronic machines involving euros, including computers, ATMs, and vending machines, would have to be reprogrammed or replaced, and new printing presses would be needed. Third, as investors and consumers anticipated that the new national currency would depreciate in value against the euro, massive capital flight from the country could trigger a major financial crisis in the country and put pressure on other vulnerable European countries. Such a financial crisis could have acute, negative impacts on short-term economic growth. Fourth, leaving the Eurozone would likely

⁵⁶ Barry Eichengreen, “The Euro: Love It or Leave It?” *VoxEU*, November 17, 2007, <http://www.voxeu.org/index.php?q=node/729>.

strain the country's political relations with other countries in the EU, and could possibly even lead to the country having to depart from the EU.

Exit by One or More Northern European Countries

Another variant of the Eurozone-breaking-apart scenario is exit by one or more Northern European countries due to frustration with the current debt crisis.⁵⁷ When the Eurozone was created, there was concern among northern Eurozone members, particularly Germany, about the commitment of the ECB to price stability and the commitment of the Southern European countries to sustainable debt levels. Northern European countries did not want to be a “fiscal backstop” for the Southern European countries.⁵⁸ To address these concerns, the ECB was created with the primary goal of price stability (compared, for example, to the U.S. Federal Reserve, which has a dual mandate of price stability and full employment), the legal text establishing the euro included a “no bail-out” clause, and limits were put in place on the governments’ overall outstanding debt levels (60% of GDP) and annual budget deficits (3% of GDP).

However, the current debt crisis has thrown these commitments into question. Some have argued that the ECB’s decision to buy bonds of distressed Eurozone countries represents a loss of independence for the ECB, and political support in some of the Northern Eurozone countries for the financial assistance package for the vulnerable Eurozone countries has, at times, been ambivalent at best. Some have suggested that one or more Northern European countries could exit the Eurozone in favor of a new national currency. In Germany, four academics have, unsuccessfully, tried to challenge the constitutionality of Germany’s membership in the Eurozone in German courts.⁵⁹

Even if reverting to a new national currency could regain Northern European countries greater control over their monetary policy and reduce their financial commitments to the Southern European countries, leaving the Eurozone could be costly. A new national currency for one of the Northern European countries would likely appreciate against the euro, complicating the export-led growth strategies that several Northern European countries pursue. The Northern Eurozone countries would also face the same technical, legal, and political challenges to exiting the euro that face the Southern Eurozone countries, discussed above. However, some observers believe that banks in Northern European countries, even with new national currencies, could still accept debt payments in euros from Southern European countries without posing a risk to their solvency.⁶⁰ This scenario would also have significant repercussions for the EU and the future of European integration.

Scenario 2. The Eurozone Survives

A second possible scenario is that the Eurozone emerges from the crisis largely in its current form. The status quo in the Eurozone could be maintained if market pressures on vulnerable

⁵⁷ Gerard Baker, “Will Germany Leave the Euro?,” *The Spectator*, June 19, 2010, pp. 14-15.

⁵⁸ Ibid.

⁵⁹ Wolfgang Proissi, “Why Germany Fell Out of Love with Europe,” *Brueghel Essay and Lecture Series*, July 2020, pp.15-17.

⁶⁰At the same time, the value of Northern banks’ euro-denominated assets would still fall relative to their liabilities denominated in new currency.

Southern European countries are calmed by the magnitude of the financial assistance package, the ECB's bond purchases, austerity packages in the Southern Eurozone countries, and an orderly restructuring of Greek bonds. The austerity and structural reforms could also successfully lower prices in Southern European countries, reducing imbalances within the Eurozone and obviating the need for additional integration of fiscal policies at the Eurozone level. The new institutional arrangements being proposed could increase integration among European countries, but fall short of a creating a full fiscal or political union.

Some have expressed concern that if the Eurozone does emerge from the crisis in its current form, the underlying problems with the architecture of the Eurozone that led to the current crisis would not be addressed. Failure to address these issues, including coordination of fiscal policies at the European level and correction of the imbalances within the Eurozone that developed over the past decade, may mean that similar crises lie ahead.

The likelihood of this second scenario, the Eurozone survives in its current form, largely depends on whether financial markets have confidence in the current crisis response measures. Specifically, much could depend on whether financial markets have confidence in the soundness of the reforms implemented or whether markets are left wondering if reforms will lead to more sustainable fiscal positions. As the crisis threatens to spread more broadly in the Eurozone, it appears that markets are not reassured by the current policy responses. More decisive and comprehensive responses from EU leaders may be required if the Eurozone is to continue to survive. Current market turbulence suggests that the likelihood that the Eurozone will be able to survive the crisis in its current form is less likely than originally thought at the start of the crisis.

Scenario 3. The Eurozone Becomes More Integrated

A third possible scenario is that substantial reforms to the Eurozone architecture are implemented, leading to greater economic and political integration. This scenario would entail implementing reforms to reduce fiscal free-riding and to enhance the ability of the Eurozone to respond to future crises, if and when they arise. Greater fiscal federalism and a clear mechanism to provide emergency financial assistance to vulnerable countries would also be a goal. Several proposals, as discussed in the previous section, are currently being developed and are under consideration that are intended to accomplish these goals. Most concretely, European leaders have already taken steps to create a permanent fund to provide financial assistance to Eurozone members, the ECB has taken on new powers that increase its flexibility to respond to financial crises in the Eurozone, and the EU has been working on new legislation that would introduce significant reforms to economic governance. As the crisis has continued, EU officials have pushed for more integration. For example, they decided to make temporary facilities to provide financial assistance to Eurozone countries permanent when they expire in 2013.

However, particular details about the level of fiscal coordination are still being negotiated, and market turbulence has led to several statements by various EU officials about the need for even tighter fiscal coordination than currently being discussed in the EU legislative process. Control over fiscal policies still ultimately remains at the national level. Fiscal policies are an important issue of national sovereignty, and it remains to be seen whether, or to what extent, national governments in the Eurozone will be willing to concede control over national budgets to European authorities. Also, given the unpopularity of the financial assistance package for Greece and the broader support mechanisms for vulnerable Eurozone members with voters in Northern European countries, it is unclear whether countries will be willing to continue providing financial assistance to Eurozone members in crisis. Today, the EU budget represents about 1% of EU GDP

and proposals to boost that by even 0.1% have consistently drawn vetoes from several EU members. Likewise, proposals to create EU-wide bonds (“Eurobonds”) instead of bonds issued by national governments has been resisted by some EU members, most notably Germany. A recent German constitutional court decision that prohibits any future guarantees benefitting additional Eurozone members without the prior approval of the Bundestag may further constrain the German government from supporting the issuance of Eurobonds.⁶¹

While the likelihood of this third scenario—the Eurozone becomes more tightly integrated—has increased since the start of the crisis, it is by no means assured. As the crisis has unfolded, it has become clear that small, piecemeal steps by EU officials are not sufficient to calm markets about the crisis response. Given the public statements by EU leaders about the commitment to avoid countries leaving the Eurozone, it seems likely that more comprehensive response measures may be taken, leading to closer integration among European countries. Yet, the political obstacles to implementing measures that increase fiscal integration in meaningful ways remain formidable.

Implications for U.S. Interests

The Eurozone crisis can affect U.S. economic and political interests in important ways. A major U.S. concern is that a sovereign default by Greece or other Eurozone member could reverberate throughout the global economy in much the same way as the U.S. sub-prime crisis did in 2008. At a time when the U.S. economy is weak, another wave of credit freeze-ups and instability in the European banking sector could weaken U.S. financial institutions and nudge the U.S. economy into recession. Slower growth or a recession in the Eurozone could also adversely affect U.S. exports and sales of U.S. companies operating in Europe. While the Obama Administration, the Federal Reserve, and Congress have been engaged in monitoring and working towards an orderly resolution of the crisis, U.S. actions that could make a major difference are limited.

Economic Implications

The U.S. and Eurozone economies play major roles in the world economy and are crucially important for each other’s prosperity. The two sides combined account for around 40% of world GDP, 25% of world trade, 60% of world foreign direct investment flows, and 60%-70% of world banking assets and financial services. They also remain each other’s most important market for exports of goods and services, and are each other’s primary source for foreign direct investment. U.S. companies operating in Europe and European companies operating in the United States employ up to 15 million workers on both sides of the Atlantic.⁶²

Given these strong economic linkages, it is not surprising that the U.S. economy can be negatively impacted by the Eurozone crisis via both financial and trade linkages. Already there have been instances where concerns that the crisis is deepening have precipitated extreme volatility in U.S. stock prices. The unexpected resignation of an influential member of the ECB

⁶¹ George Soros, “Does the Euro Have A Future?” *The New York Review of Books*, October 13, 2011.

⁶² CRS Report R41553, *International Trade and Finance: Key Policy Issues for the 112th Congress*, coordinated by Raymond J. Ahearn, *The Transatlantic Economy 2011*, Johns Hopkins Center for Transatlantic Relations, 2011.

on September 9, 2011, for example, reportedly contributed to a 5% drop in European stock markets and over a 2% decline in major U.S. stock indexes.⁶³

The debt problems of Greece, Ireland, Portugal, Italy, and Spain constitute a serious risk to the European banking system—particularly German, French, and British banks, which have close ties to U.S. banks. There are continuing concerns how these banks would be able to absorb losses on bonds should one of these countries default or restructure its debt. Specifically, there are concerns that the crisis could be transmitted through the European financial sector, triggering broader instability, a freezing up of lending, and possible collapse of some banks. Given that U.S. banks have an estimated loan exposure to German and French banks in excess of \$1.2 trillion and direct exposure to the PIIGS valued at \$641 billion, a collapse of a major European bank could produce similar problems in U.S. institutions.⁶⁴

In terms of international trade, the U.S. and Eurozone countries have one of the largest bilateral relationships in the world. If the Eurozone economy stagnates this year or slips into recession, demand for U.S. exports and the sales and profits of U.S. multinationals operating in Europe will be depressed. If the euro begins to depreciate against the dollar due to slower growth and loss of confidence in the euro, these adverse impacts on the U.S. economy could be amplified.⁶⁵

A stronger dollar/weaker euro would also likely have some effects on U.S.-Eurozone foreign direct investment flows. Currently, Eurozone countries account for 26% of all U.S. direct investment abroad and for 44% of all foreign direct investment in the United States.⁶⁶ Based on slower growth in Europe, U.S. investors may look towards emerging markets for additional investments, particularly since profits generated in euros would translate into fewer dollars, hurting the bottom line of U.S. parent companies. An offsetting factor could be that European stocks and assets with a weaker euro would look cheaper and more attractive, attracting U.S. capital to Europe.

The economic impact could be much more substantial if the Eurozone were to break-up or splinter due to a deepening sovereign debt crisis. By one estimate, a complete break-up of the Eurozone could lead to a 10% cumulative loss of output over the first two years.⁶⁷ Combined with a likely adverse impact on the functioning of the EU's single market, U.S. exports of goods and services (which totaled over \$300 billion in 2010) could be significantly reduced.

⁶³ Jack Ewing and Nicholas Lulish, "A Setback for the Euro Zone: Central Bank Resignation Reveals a Widening Split on the Debt Crisis," *New York Times*, September 10, 2011.

⁶⁴ Howard Schneider and Anthony Faiola, "Markets Slump as Financial Angst Unsettles Europe," *Washington Post*, September 6, 2011; CRS Report R41167, *Greece's Debt Crisis: Overview, Policy Responses, and Implications*, coordinated by Rebecca M. Nelson.

⁶⁵ Given that a variety of factors such as relative growth rates, differential interest rates, and perceptions of stability can affect exchange rates, predictions of movements in the dollar/euro rate are difficult to make. Nevertheless, some current forecasts are for the dollar to appreciate, with a euro-dollar exchange rate reaching 1.36 at the end of 2011, as opposed to 1.43 in the beginning of August 2011. See *Morgan Stanley Research*, "Euroland Economics," August 8, 2011.

⁶⁶ U.S. Department of Commerce, *Survey of Current Business*, various editions.

⁶⁷ ING Global Economics, "EMU Break-up: Quantifying the Unthinkable," July 7, 2010.

U.S. Policy Options

Measures that the Obama Administration could consider to help defuse the Eurozone crisis are limited. The most direct option involves the Federal Reserve Board, which has the authority to provide foreign central banks with an unlimited amount of dollars for an equivalent amount of currency. In 2007, 2008, and again in September 2011 the Fed did just this, swapping dollars for euros in order to provide the ECB with liquidity to calm capital markets. The Fed can also make short-term loans to commercial banks in distress in order to protect the U.S. financial system. Some in Congress have voiced opposition to these activities on the grounds that they constitute a “bailout” of European banks and governments.⁶⁸

Beyond direct action by the Fed, the Obama Administration is left to exhorting European officials and U.S. financial institutions to do the right thing. Treasury Secretary Timothy Geithner, for example, recently implored European officials to take more forceful actions to deal with the debt crisis.⁶⁹ Alternatively, the administration could also encourage countries such as China and Saudi Arabia to help alleviate the crisis through additional purchases of European debt. Stable European financial markets and a growing world economy, it can be argued, are strongly in the interests of these countries as well as the United States.

Political Implications

Over the years, a key U.S. political interest has been a prosperous, peaceful, and stable Europe. In support of this interest, successive U.S. administrations have supported European efforts at economic and political integration. U.S. policy on the euro and the EMU has generally been that if it is good for Europe, it will be good for the United States. For example, on January 4, 1999, then President Clinton issued the following statement:⁷⁰

We welcome the launch of the Euro, an historic step that 11 nations have taken toward a more complete Economic and Monetary Union (EMU). The United States has long advocated for European integration, and we admire the steady progress that Europe has demonstrated in taking the often difficult budget decisions that make this union possible. A strong and stable Europe, with open markets and robust growth, is good for America and good for the world. A successful economic union that contributes to a dynamic Europe is clearly in our long-term interests.

Given this history, if the Eurozone emerges from the crisis close to its present form or even stronger than before, strong U.S.-EU political ties are likely to continue. Only in the possible scenario of the Eurozone breaking apart are the effects likely to raise questions about the status quo. Major challenges to political ties could emerge if a break-up of the Eurozone were accompanied by growing divisions between key European countries, economic and social turmoil in selected countries, or a return to more nationalistic policies. The Obama Administration, like previous administrations, believes that a prosperous, secure, and increasingly integrated Europe that is capable of partnering with the United States in addressing mutual policy challenges is in the U.S. interest. On the other hand, it might also be argued that if a break-up were to occur, the

⁶⁸ Bruce Stokes, “Above the Fray No More,” *National Journal*, May 21, 2011.

⁶⁹ John Fraher and Ian Katz, “Geithner to Prod EU on Crisis Fight,” *Washington Post*, September 14, 2011.

⁷⁰ Website: <http://clinton6.nara.gov/1999/01/1999-01-04-statement-by-the-president-on-the-launch-of-the-euro.html>

United States might have greater influence with individual members of the EU. Those who held this view might also argue that a break-up could make the EU less of a rival to the United States.

Concluding Observations

The Eurozone crisis has highlighted cracks in the architecture of the currency union. Efforts to make the currency union more stable and sustainable in the long run represent one of the most fundamental challenges European leaders have faced in an over 50-year effort to advance political and economic integration. The U.S. stake in the outcome of these efforts, given the magnitude of U.S. economic and political ties with Europe, is considerable.

European proposals to date to reform the currency union center heavily on increasing fiscal coordination and integration in ways that do not surrender members' autonomy to make their own spending and tax decisions to a supra-EU entity. Rather, the proposals seek to strengthen current Stability and Growth Pact rules, partly through some form of sanctions, and to provide more policy coordination on budgets and other fiscal matters. Backed by the creation of liquidity facilities and the continued active involvement of the ECB in crisis management, European leaders have a limited period of time to calm financial markets and bolster confidence in the currency union. At the same time, the deepening crisis has prompted much stronger proposals such as the issuance of Eurobonds as a way to provide a stronger fiscal foundation for the monetary union.

Whether the currently contemplated reforms prove sufficient to ensure the sustainability and viability of the currency union is unclear. A number of factors and developments could either bolster or destabilize the currency union.

Factors and developments that could bolster the Eurozone include the following:

- Given that the EMU is largely a political undertaking and a major symbol of European integration, European leaders and elites may be highly motivated to keep the EMU intact.
- The proposals under consideration introduce institutions and policies that represent somewhat higher levels of integration and commitment to budgetary discipline—elements that are considered necessary to rebuild market confidence in the euro for the future.
- The creation of the European Stability Mechanism (ESM) to replace the EFSF after 2013 provides a permanent facility to ensure fiscal and financial stability in the Eurozone.
- The ECB has demonstrated willingness to help members in fiscal distress by buying their bonds, and it has the tools to continue playing an active role in crisis management.
- The rescue program put into place basically overturned the “no-bailout” rule of the EMU, making states, at least in theory, mutually liable for the sovereign debt of fellow Eurozone members.

- The acceptance by European policymakers of IMF involvement in managing any future fiscal crises reinforces the fiscal insurance mechanism provided by the EFSF.
- Proposed reforms of labor and product markets in all Eurozone countries, combined with stronger fiscal discipline, will improve the potential for economic growth and strengthen the euro in the long run.

Factors and possible developments that could weaken the sustainability of the currency union in its current form include the following:

- Partial solutions proposed to date create a moral hazard; if heavily indebted countries think they will receive financial assistance from the EFSF, they may have few incentives to get their fiscal houses in order.
- A number of reforms already agreed on have not been implemented yet due to the laborious process of gaining approval from 17 different national parliaments.
- A default or rescheduling of Greek, Irish, or Portuguese debt, which many analysts maintain is possible, could pose contagion effects on other highly indebted Eurozone countries.
- In the event of a possible sovereign default or defaults by Eurozone members, some French and possibly German banks could be undermined with unsettling effects on global financial markets.
- Fiscal measures and shared responsibility for defaults could lead to divisions among Eurozone members, causing some members to reconsider the costs and benefits of membership.
- Persistent current account imbalances within the Eurozone, perhaps even more than the build-up of debt, can over the long-term become a challenge to the future stability of the Eurozone.
- The problem of current account imbalances may be complicated in the future by the proposed entry of mostly smaller and poorer countries into the EMU.
- Greater labor mobility and wage flexibility may not prevent the accumulation of persistent economic imbalances that led to the crisis and threaten the existence of the EMU.
- The fundamental problem of countries at very different levels of development living with a single monetary policy and a single exchange rate will remain.

Table 2. Glossary of Terms

Term	Definition
Broad Economic Policy Guidelines (BEPG)	The <i>Broad Economic Policy Guidelines (BEPGs)</i> are adopted by the Council as a reference document guiding the conduct of the whole range of economic policies in the Member States and the European Union. They play a central role in the system of economic policy coordination, setting out economic policy recommendations which give a basis for economic policy in both the Member States and the EU as a whole in the current year.
Council of the European Union (“Council of Ministers” or “Council”)	The <i>Council of the European Union</i> is the Union’s main decision-making body and enacts legislation based on proposals from the European Commission. Its meetings are attended by the member state ministers, and is thus the institution which represents the member states. The Presidency of the Council rotates among the member states every six months.
Economic and Monetary Union (EMU)	<i>Economic and Monetary Union (EMU)</i> is the process of harmonizing the economic and monetary policies of the member states of the European Union with a view to the introduction of a single currency, the euro.
European Central Bank (ECB)	Founded on June 30, 1998, the <i>European Central Bank (ECB)</i> is the institution of the European Union responsible for setting the monetary policy of the 16 EU member states taking part in the Eurozone. The bank is headquartered in Frankfurt, Germany.
European Commission (EC)	The <i>European Commission (EC)</i> acts as the EU’s executive branch, and has the right of legislative initiative. There are 27 Commissioners—one from each country.
European Council	The <i>European Council</i> brings together the leaders of the member states and the Commission President. It acts as a strategic guide and driving force for EU policy.
European Financial Stability Facility (EFSF)	The <i>European Financial Stability Facility (EFSF)</i> was set up by the 16 Eurozone countries to provide a funding backstop should a euro area Member State find itself in financial difficulties. The EFSF has the capacity to issue bonds guaranteed by euro area members for up to € 440 billion in lending to Eurozone countries.
European Financial Stability Mechanism (EFSM)	The <i>European Financial Stability Mechanism (EFSM)</i> is a new €60 billion supranational EU balance of payments loan facility available to any EU member country facing financial difficulties.
The European System of Central Banks (ESCB)	The <i>European System of Central Banks (ESCB)</i> comprises the European Central Bank and the national central banks of all EU member states whether they have adopted the euro or not.
European Union (EU)	The <i>European Union (EU)</i> was established by the Treaty on European Union (Maastricht, 1992). The project of creating a Union has a long history, and was first mooted at the European Summit of 1972. The Union is both a political project and a form of legal organization.
Eurozone	The <i>Eurozone</i> , officially the <i>euro area</i> , is an economic and monetary union (EMU) of 16 EU members states which have adopted the euro currency as their sole legal tender. Monetary policy of the zone is the sole responsibility of the European Central Bank, though there is no common representation, governance or fiscal policy for the currency union. Some cooperation does, however, take place through the euro group, which makes political decisions regarding the Eurozone and the euro.
Excessive Deficit Procedure (EDP)	The excessive deficit procedure is governed by Article 104 of the Treaty establishing the European Community, under which member states are obliged to avoid excessive deficits in national budgets.
Lisbon Treaty	The <i>Lisbon Treaty</i> , the latest institutional reform treaty of the European Union (EU), went into effect on December 1, 2009. It seeks to give the EU a stronger

Term	Definition
Maastricht Treaty	and more coherent voice with the creation of a new position, President of the European Council. It also makes changes to the EU's internal decision-making mechanisms, and foreign policy apparatus, among other provisions. <i>The Treaty of Maastricht</i> , formally, the <i>Treaty on European Union</i> (TEU), was signed on February 7, 1992 by members of the European Community in Maastricht, Netherlands. Upon its entry into force on November 1, 1993, it created the European Union and led to the creation of the single European currency, the euro.
Sovereign debt	Sovereign debt is a financial liability of a national government.
Stability and Growth Pact (SGP)	The <i>Stability and Growth Pact</i> (SGP) pertains to the third stage of economic and monetary union (EMU), which began on January 1, 1999. It is intended to ensure that member states maintain budgetary discipline after the single currency has been introduced.

Source: Europa Glossary (<http://europa.eu/scadplus/glossary/index-en.html>).

Author Contact Information

Raymond J. Ahearn, Coordinator
Specialist in International Trade and Finance
rahearn@crs.loc.gov, 7-7629

James K. Jackson
Specialist in International Trade and Finance
jjackson@crs.loc.gov, 7-7751

Rebecca M. Nelson
Analyst in International Trade and Finance
rnelson@crs.loc.gov, 7-6819

Martin A. Weiss
Specialist in International Trade and Finance
mweiss@crs.loc.gov, 7-5407

Acknowledgments

The authors wish to thank the following CRS colleagues who provided helpful suggestions and comments on this report: Paul Belkin, Nils Bjorksten, William Cooper, Ian Fergusson, Marc Labonte, Derek Mix, and Dick Nanto.