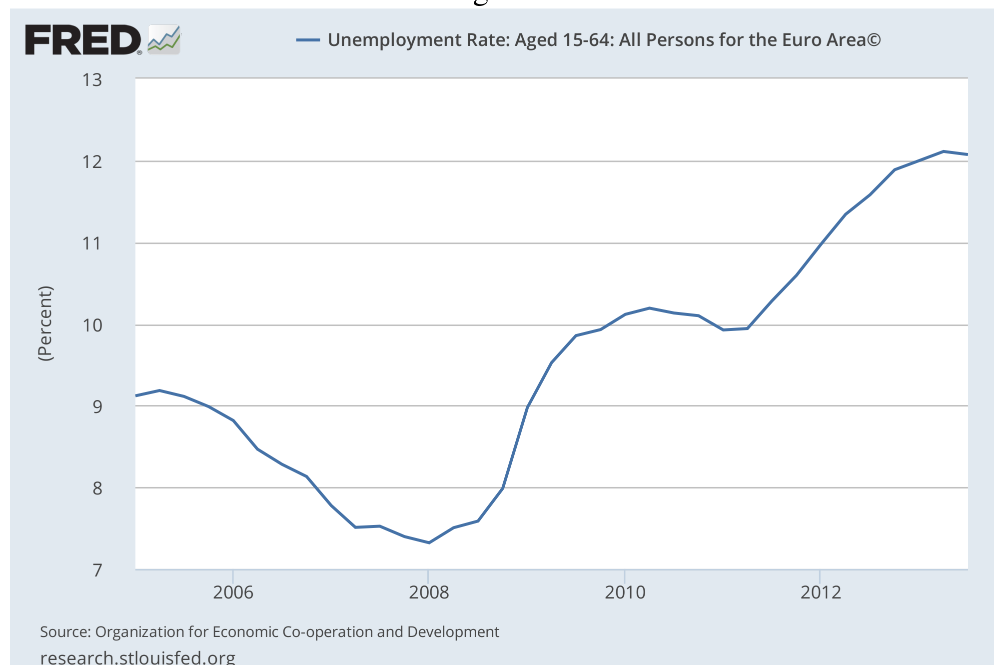
The European Debt Crisis[1]

The European debt crisis induced a second European recession in late 2012 through early 2013 and acted as a drag on the recovery in the United States. It has also raised fears of the breakup of the Euro or, less likely, the EU itself. To analyze this issues, we briefly discuss the economics behind both the European Union and the Eurozone. We then examine some of the countries most affected. Finally, we discuss the policy response of the European Central Bank (ECB).

Before starting, here is the unemployment rate in the EU:

Figure 1:



Note that the unemployment rate for the EU responds similarly to the Great Recession as compared to that of the United States. Unlike the U.S., however, the EU unemployment rate has continued to rise above 12%. This is mostly because of the debt crises that have affected Europe.

[1]These are undergraduate lecture notes. They do not represent academic work. Expect typos, sloppy formatting, and occasional (possibly stupefying) errors.

The EU

The European Union (hereafter EU) consists of 27 countries. The EU serves as a common market for goods, services, and inputs.

Figure 2: EU and Eurozone

By joining the EU, a country enacts the following:

1. Passport controls are people may generally move freely among member states.

2. Trade barriers are eliminated.

3. Immigration flows freely.

4. Make a commitment to free markets and democracy

5. Accept certain common regulatory policies.

The economic benefits of membership are fairly clear. Countries are able to receive the standard benefits of free trade. Administrative costs may be lowered, and movement within the region becomes less restricted. If we imagine a set of highly similar countries (in terms of preferences, technology, and wealth), this type of common market seems highly sensible.

The costs to this type of common market arise when nations are more heterogeneous. Very different countries may have different regulatory goals, for example, and a common policy can thus be inefficient. As the EU has expanded to include more Eastern European nations (generally poor compared to Western Europe), this type of heterogeneity has increased. Others object to the loss of national sovereignty that results from joining the EU.

The Eurozone

The Eurozone is a subset of the EU whose members use a common currency, the Euro, which was adopted in 1995. The UK and Denmark are two EU members with no plans to adopt the Euro. Most other EU members are obliged to do so in the future. The European Central Bank, based in Brussels, Belgium, conducts monetary policy for the Eurozone. We will focus on two main benefits for using the Euro:

1. For smaller economies, exchange rate volatility may be a large component of overall macroeconomic instability. The use of the Euro eliminates all exchange rate volatility within the Eurozone. Furthermore, being part of a large monetary union may reduce volatility versus other currencies, such as the dollar.

2. There is some reason to believe that the ECB may do a better job of controlling inflation than the decentralized Central Banks that previously conducted monetary policy.

Objections about national sovereignty aside (although this is a big deal in England, for example), if nations are homogeneous, then a monetary union makes sense. Few would, for example, suggest that the united States would be better off if each state adopted its own currency. There are, however, objections that generally become more significant as members become more heterogeneous:

1. The right monetary policy for the Eurozone as a whole may be different than for each member. Greece, for example, probably wants more inflation (to reduce the real value of its public debt) than Germany. Germany, as the largest economy in the EU, is often perceived as driving ECB policy.

2. The ECB has been criticized as bureaucratic and opaque.

No member has ever abandoned the Euro. And there are no formal procedures to expel members. As the Greek crisis especially has confronted the Eurozone with new situations, they are forced to come up with new policy on the fly.

European Fiscal Policy

Crucially, neither the EU nor the Eurozone are a fiscal union. Each member thus chooses its own levels of taxation and spending, and as a result, sovereign debt. Countries that join the EU must, however, pledge to keeping their public debt less than 60% of GDP. This provision, however, has turned out to be toothless and most members carry higher levels of debt.

The ECB is also, by law, unable to conduct many of the types of bailouts that the Federal Reserve has done. It is also harder for the EU to do these types of bailouts than in the United States.

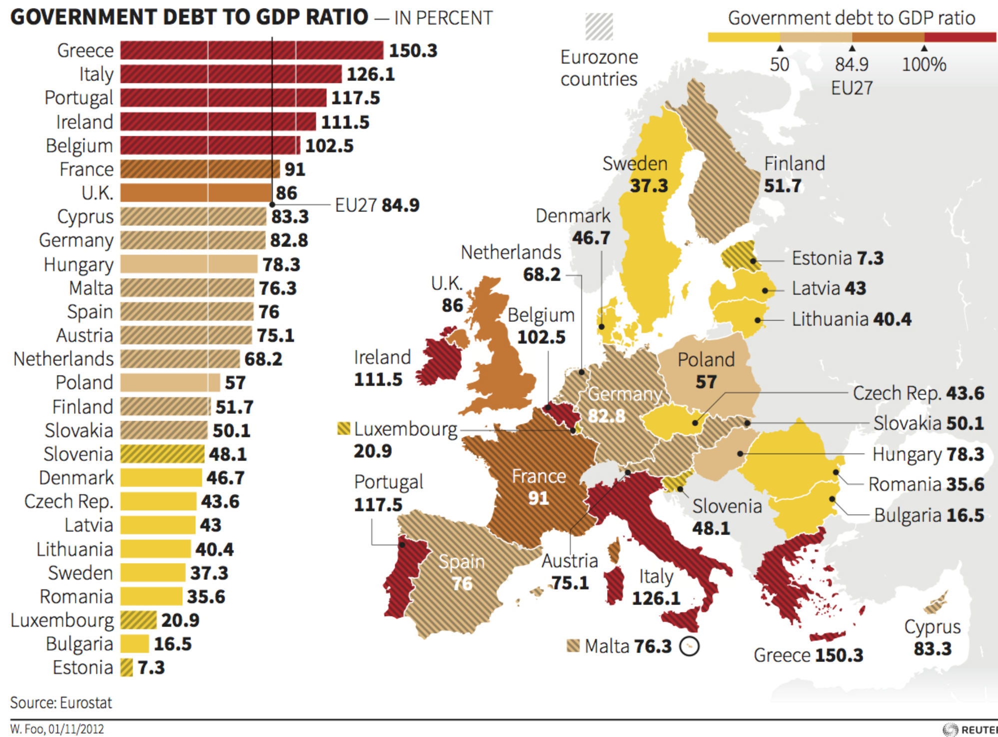
The current crisis has arisen because the global recession has increased most countries' debt to GDP ratios. This has also increased heterogeneity among member states, resulting in speculation that some countries could leave the Eurozone, or less likely, the EU. As debt has increased, so has concern over sovereign default.The following figure illustrates debt levels as of 2012Q2:

The following table shows governmental bond yields within Europe (as of 11/23/15):

Because these countries use a common currency, these different bond yields largely do not reflect different expectations about inflation.[2] The differences are almost all about default risk.

[2]Differences in inflationary expectations within the zero are not literally zero, however, because it is possible for countries to change their currencies.

Figure 3: European Debt Levels



Germany is the largest and most influential member of the EU and Eurozone. Its policy preferences (which carry great sway) are for a cautious monetary policy and it is reluctant to help fund bailouts of nations at greater risk of default. Countries such as Greece, Italy, and Spain, however, are much more inflationary minded and prefer more willingness to rescue troubled countries.

We can think of the German yield as being close to the risk free rate. Over the past few years, all of these yields have come down. This reflects dhree major factors. First, as the EU economy has struggled, inflationary expectations (part of any nominal rate) have declined. This explains why German yields are now less than those of the U.S. Second, default risk in countries such as Spain and Italy has decreased resulting in lower risk premiums. Third, the European Central Bank has initiated its own version of Quantitative Easing which has lowered yields just as it did in tehe

Table 1: European 10 year Bond Yields (%)

Country	
Greece	6.88
Portugal	2.55
Hungary	3.33
Iceland	6.28
Spain	1.64
Italy	1.49
Ireland	1.01
France	0.83
Germany	0.49

U.S.

This is the heterogeneity that has resulted in speculation that countries, such as Greece, might leave the Eurozone or EU. As of today, this is not imminent. But if default spreads from Greece to Italy or Spain, it could become a real possibility in the future.

The following chart shows EU, Eurozone, and US GDP growth:[3]

We now conduct a few brief case studies of individual EU members.

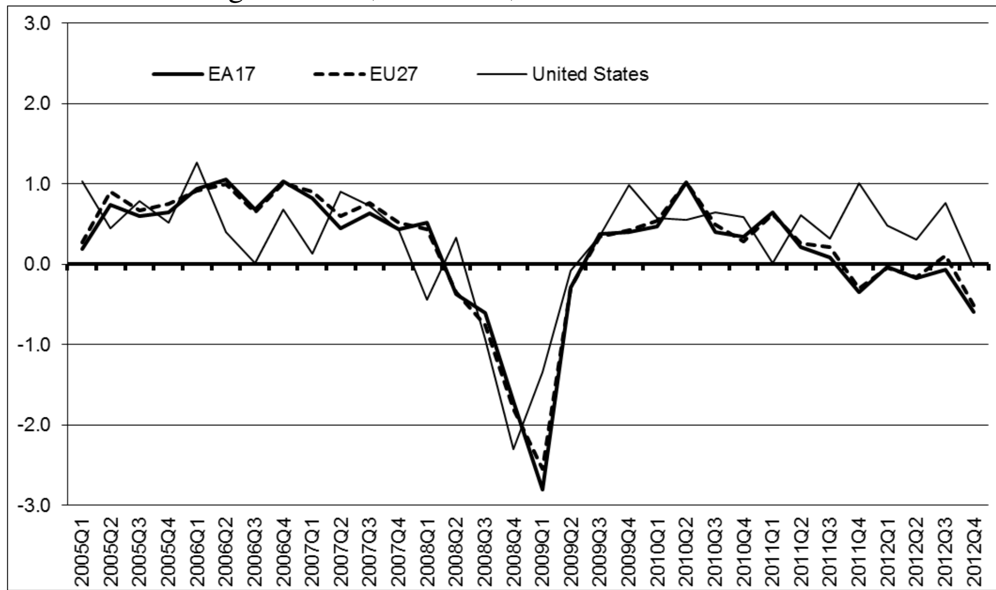
Ireland

Other countries, either deliberately or due to events beyond their control, have balanced their budgets in response to the downturn. Although causation is difficult to show, their experiences are suggestive of the effects of these policies. Ireland is our first example.

For most of recent history, Ireland has been poorer than most other Western European nations. In recent decades, however, subsidies from the European Union, a flexible labor market, low tax

[3]Source: Eurostat

Figure 4: EU, Eurozone, and U.S. GDP Growth



rates, and the emergence of a large financial sector resulted in explosive GDP growth. By 2007, Ireland was among the wealthiest countries in the European Union. Its food, however, continued to suck.

Figure 5: Yummy

Because Ireland is smaller, poorer, and does not independently conduct monetary policy (it

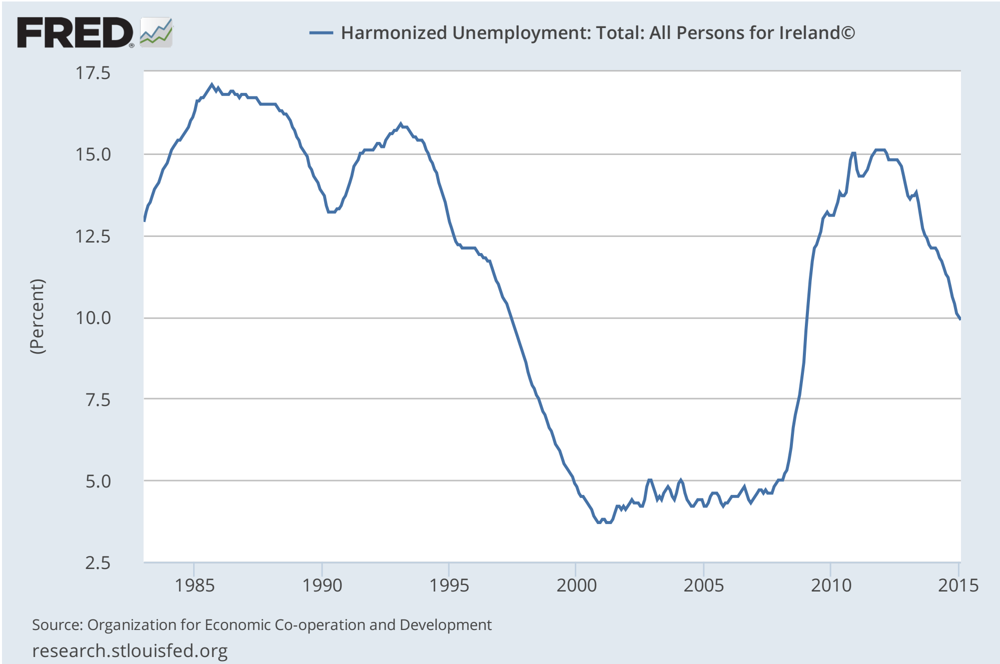
uses the Euro, hence its monetary policy is conducted by the European Central Bank), it cannot borrow like the U.S. Federal government. Like the United States, the Irish economy was hard hit by the housing bubble. In 2008, its deficit/GDP ratio exceeded 14%. Its debt/GDP ratio is now above 110% (See Figure 2)%.

When the downturn began, the Irish did not believe that they could continue to borrow for much longer. They thus committed to reducing their deficit to 3% of GDP by 2014, an approximately sustainable level. In practice, this policy is the opposite of American fiscal policy since 2007. Rather than increasing spending, the Irish government has slashed wages and reduced the rolls of government employees. Income taxes have also been raised.

The Irish economy has not performed well. Among the grim statistics:

1. As of February 2015, unemployment remains at 9.9%. It peaked at 15.1% in 2012.

Figure 6:



2. In 2009, the Irish economy shrunk by 7.1% (far more than in the United States). The

cumulative decline in national income was around 15%. Since this time, economic growth has recovered to about 2% annually.

3. Lenders are worried that the Irish will default on their government debt. Irish bonds must therefore offer higher interest rates than most other Western European economies. This is the exact opposite effect of what the Irish hoped for when they reduced their deficit. By 2015, however, austerity was successful at least in terms of lowering ten year bond yields to near 1%.

4. The Irish government has nationalized many of its banks to keep them afloat. This initially caused the deficit/GDP ratio to further increase.

5. In 2010, Ireland's deficit/GDP ratio exceeded 30%. For 2012, it fell to 7.6%. This caused Irish public debt to clear 123% by 2013. In 2014, however, Ireland's public debt fell to 109%. By 2016, Ireland is expected to run a surplus. [4]

In November 2010, the European Union and International Monetary Fund agreed with Ireland on a Ireland a $100 billion bailout. These bailouts often come with strings attached. As part of the bailout, Ireland had to target a 2012 deficit of 8.6% of GDP or less. Ireland did not have to increase its corporate tax rate above 12.5%. This very low rate has often been cited as a major cause of Irish growth prior to 2007.

Ireland is an example of "austerity," in that it instituted contractionary fiscal policy in response to the Great Recession. It isn't obvious how well this worked. It seems clear that austerity resulted in a higher unemployment rate for an extended period than if Ireland had been able to maintain its prior levels of spending and taxation. It is not clear, however, that such a policy was feasible. Supporters of the bailout can claim that it prevented a Greek like default crisis while allowing Ireland to slowly recover.

Greece

Unlike Ireland, Greek food is awesome.

[4] Source: Tradingeconomics.com

Figure 7: The Greek Deli in D.C. is glorious and magnificent.

Like Ireland, Greece has been hard hit by the economic downturn. Greece has also run very large budget deficits in recent decades. Government spending has been high. One cause of this spending was been a staggeringly low retirement age where workers begin collecting pensions. Estimates vary, but it may have been as low as 58 years old. Tax evasion is also a major problem in Greece.

The Greek deficit/GDP ratio was 15% in 2009. Its debt/GDP ratio is now over 170%. In the Summer of 2010, the Greek government appeared to be on the verge of defaulting on its debt. Fears of default spreading throughout Europe caused global stock markets (including in the United States) to plummet. The European Union and International Monetary Fund thus arranged a $150

billion bailout.

This bailout required that Greece enact austerity measures, including dramatic reductions in government spending. These austerity measures included higher taxes, privatization of some governmental assets, stricter retirement rules which raised the retirement age to 65, and wage cuts for government workers. The Greek parliament passed them in May 2010.

Despite these measures, Greece once again appeared on the verge of default by October 2011. The EU then arranged with private banks a 50% writedown on much of Greece's public debt. This represents a major default, although policymakers have tried to avoid using this term. In addition for continuing bailout payments, the Greek government continues with austerity measures.

These measures have proven unpopular with much of the Greek electorate. In November 2011, the Greek Prime Minister infuriated the EU by calling for a referendum on the bailout. A few days later, he reversed course and then resigned.

The EU has continued to insist on further austerity measures in exchange for continued bailout payments. These include raising the retirement age to 67 and cutting public wages by about 20%. The Greek parliament barely passed this round of austerity measures in November 2012.

Due in part to both the debt crisis and austerity, the Greek unemployment hit 27.6% in May 2013 and has only fallen by a little since that time.

Among young workers, the unemployment rate is 65%. Because of Greece's partial default and atrocious fiscal situation, there has been talk of them quitting the Eurozone or even being kicked out. French President Sarkozy has said it was a mistake to allow Greece into the EU. By dropping the Euro, Greece could potentially reduce its debt burden through a more inflationary policy than that of the European Central Bank. As a small and struggling economy, however, Greece would lose the long term advantages of the currency union.

Greece has already defaulted (a "haircut" is a default). In order to avoid a more comprehensive default, Greece has had to rely on loans from the IMF, the ECB, and the EU. These loans are

Figure 8: How a Bill Becomes a Law, Greek Style

Figure 9:

conditional, Greece must maintain austerity in order to receive the funds. The political will to do so has varied. In early 2015, a new government was elected that was more generally opposed to austerity. To avoid default, a renegotiation with the IMF, ECB, and EU was necessary. A deal could not initially be reached, however, and the Greek government missed a scheduled payment to

the IMF entering default. On July 5, 2015, the Greek electorate rejected the proposed bailout terms and it seemed likely that Greece was headed toward a major default. The aftermath included:

1. Lacking the Euros needed to pay for spending, it seemed plausible that the Greek government might issue its own currency in addition to or in replace of the Euro. Such a new currency would almost surely have been devalued.

2. Facing a possible devaluation of their Euros, depositors wanted to withdraw their Euros from financial institutions. To prevent a collapse of the banking sector, the Greeks imposed capital controls where people could only withdraw 60 Euros a day.

3. By defaulting, Greece risked being kicked out of the Euro or EU.

On July 13, 2015, the crisis ended when Greece and the EU reached a deal. In exchange for 86 billion Euros of financing, Greece agreed to tax increases and pension reforms. This agreement ended the immediate risk of Greece leaving the Euro ("Grexit."). The Greek government felt that additional austerity was less painful than the costs of default and likely leaving the Euro.

Despite that July 2015 agreement, Greek debt remains over 170% and the deal does little to lower this figure. It seems likely that there will be another crisis in the future and that the Greek situation will end either with major debt relief (not part of any prior deal) or a Greek exit from the Euro.

Greece and Ireland are only two examples. There are many others. Iceland, for example, has had an experience similar to Ireland's. France's struggles with raising the retirement age are similar to those of Greece.

The problems of Greece have led to speculation that other countries could soon experience a debt crisis, Heavily indebted Southern European economies such as Spain, Greece, and Italy have been suggested as possibilities. Their vulnerability depends on their debt levels, but also their perceived ability to lower projected budget deficits. Spain, for example, has a usually tolerable

level of debt, but 25% unemployment and other structural problems make this debt level appear dangerously high.

A Fiscal Union

One suggested solution to the European debt crisis has been a fiscal union. Such a union would centralize European fiscal policy and pool together existing debt, which aggregated across the EU is comparable to that of the United States. Some American economists have spoken of a "Hamilton moment," comparing the European situation to the U.S. Federal governments pooling of state debt after the Revolutionary War.

As of November 2015, a significant fiscal union appears highly unlikely.

ECB Policy

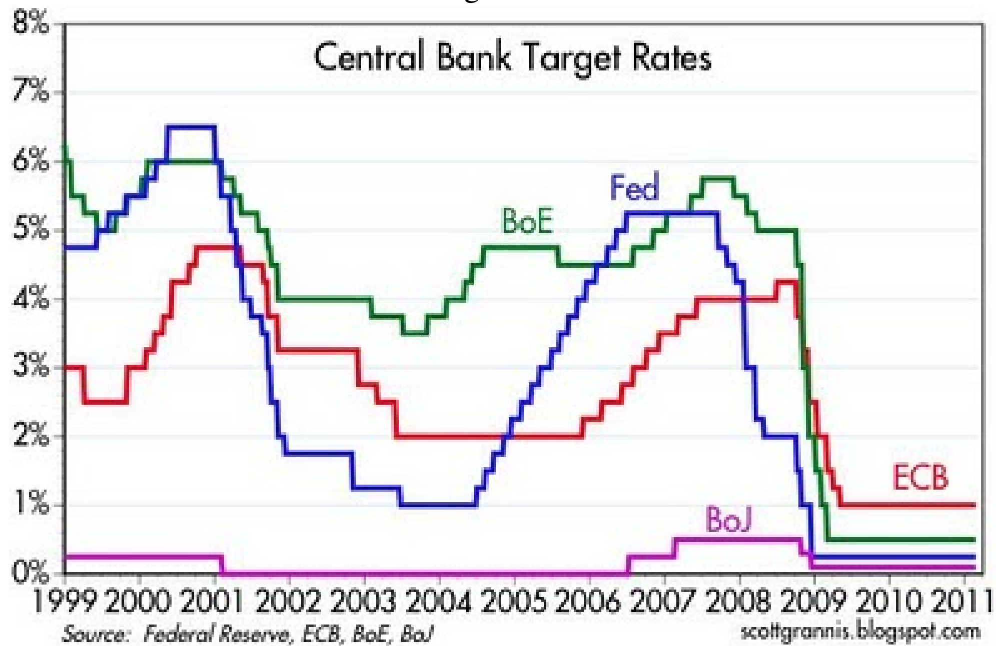
Note that the Federal Reserve typically conducts monetary policy by buying (mostly public) bonds. Because the Eurozone is strictly a monetary Union, the ECB has not conducted monetary policy in this manner. It instead influences its target interest rate by engaging in debt contracts with private banks.

Prior to 2013, the ECB was far less aggressive than the Federal reserve at combating the economic downturn.[5] The ECB did lower short term rates dramatically, but not as low or quickly as the Fed. It also, citing its inability to buy bonds, did not engage in most of the non conventional monetary policies pursued by the Fed. The following chart compares the ECB's response to that of other Central banks:[6]

The ECB changed policies in the Summer of 2012. ECB President Mario Draghi said that the bank would do "whatever it takes" to save the Euro. The ECB also announced a bond buying plan that may allow it to finally pursue less conventional policies. This is the ECB's version of

[5]Fed officials like to cite this as an explanation for the divergence of unemployment in the U.S. versus Europe.
[6]Source: .

Figure 10:



Quantitative Easing and as of November 2015, the ECB is buying 60 billion Euros a month of various government bonds. Inflation, however, has remained near zero and shows little signs of reaching its 2% target (the ECB and Fed have the same target).

Another interesting policy has been negative interest rates. Presumably, the ECB's goal is to mess up those of us who teach that negative interest rates are impossible because agents could costlessly choose to hold cash. The ECB is both paying negative interest on reserves (isomorphic to a tax), and has set its targeted overnight rate on reserves (similar to the U.S.'s Federal Funds Rate) below zero too. That such rates are sustainable suggests that holding cash is not costless.