

# AN ANALYSIS OF THE EUROPEAN DEBT CRISIS: ITS ETIOLOGY, CURRENT STATUS, AND POSSIBLE FUTURE DIRECTION

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*The current European Debt Crisis has its roots in the long-term indebtedness of certain European countries that share a common currency and have no individual control over the setting of suitable interest rates for their economies. Competitive devaluations are thus not possible on a national basis, but government debt is still left up to individual nation states to control and repay. In 2008, a worldwide recession started and industrial output decreased by 20%, while developed and emerging economies' output fell by around 24% and 14%, respectively (Blundell-Wignall, 2012). This paper will first describe the pre-existing conditions, such as the requirements for admission to the EU and the background to the current crisis; secondly it will explore the impact of the credit crunch, and thirdly, analyse problems in Greece, Portugal, Spain, and Italy and the wider impact of Eurozone instability. It will then explain the types of sovereign bonds in existence and their valuation and further examine the action the EU has taken. Conclusions will be drawn as to three possible developmental scenarios, including the implications of a Eurobond, and recommendations will finally be made.*

## PRE-EXISTING CONDITIONS

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The European Union (EU) was formed through unification of different states that came together to form an economic and political conglomerate. The EU is made up of 27 member states; it has a rich history and an exclusive organisation that helped it attain its present status (Wihlborg, Willett, & Zhang, 2010). Unification commenced formally in 1949 with the formation of the Council of Europe followed by the European Coal and Steel Community in 1950. The Netherlands, Luxembourg, Italy, Germany, France, and Belgium participated in the first accord, and these nations are presently called "founding members". In order to further promote the interests of the EU in the 21st century a single currency called the Euro was proposed, and introduced in 2002 to facilitate inter-trade and reduce transaction costs (Banducci et al., 2009).

## EU MEMBERSHIP TERMS

There are various mandatory requirements that any interested country must fulfil before they can join the European Union. Accession of new member states to the EU is provided in Article 49 of the EU Treaty. Article 49 says that, "any European State which respects the principles set out in Article 6(1) may apply to become a member of the Union." The principles of Article 6(1) are "liberty, democracy, respect for human rights and fundamental freedoms, and the rule of law" (Penzkofer, 2012). New member states that fulfil these criteria and join the EU are called accession countries. Applicants must submit information concerning both overall financial surplus or deficit and the strengths and weaknesses of various areas of the economy and be accepted by a unanimous vote of existing members.

An entrant country should follow the goals of the European Union that focus on financial, economic, and political matters. Stein (2011) states that the union also requires all countries to be ready to participate in, and follow established judicial and administrative systems of the European Union. States have to meet convergence criteria (known as the Maastricht criteria) in order to adopt the Euro. The four main criteria, based on Article 121 (1) of the EC Treaty, are:

(I) Inflation Rate: Price stability is measured according to the rate of inflation in the three best performing member states. The inflation rate must not be more than 1.5% above the benchmark states.

(II) Long-term Interest Rates: The nominal long-term interest rate must not be more than 2% higher than the three best-performing member states.

(III) Government Finance: The government finance criterion covers the annual fiscal deficit. The ratio of this deficit to gross domestic product (GDP) should not exceed 3% at the end of the preceding fiscal year. If not quite within this limit, it is at least required to be moving rapidly towards this goal. Exceptional and temporary reliefs are granted for special cases. The ratio of gross government debt to GDP must not exceed 60% at the end of the preceding fiscal year. If the target cannot be achieved due to the specific conditions, the ratio must have sufficiently diminished and also be approaching the reference value at a satisfactory pace. Regarding the exchange rate, candidate countries should have joined the exchange rate mechanism (ERM II) of the European Monetary System for two consecutive years and should not have devaluated its currency during this period. The purpose of the ERM II is to reduce exchange rate variability and achieve monetary stability, as identified by Penzkofer (2012). It is based on the concept of fixed currency exchange margins, but with exchange rate variability within those margins.

Where a country applies for membership, it is monitored and advised of necessary actions to comply with these EU principles. When they are achieved the applicant is admitted. It can be seen from the above that the definition of a 'valid' deficit is very flexible, and this has engendered criticism from many quarters.

## THE BACKGROUND TO THE CURRENT CRISIS

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The European debt crisis was caused by Europe's struggle to repay debt it had built up in recent decades. Five of the region's countries, Greece, Portugal, Ireland, Italy, and Spain, have, to varying degrees, failed to generate enough economic growth to repay bondholders. Refinancing debt then became harder because of diminishing confidence.

Although these five are seen as being the countries in immediate danger of default, the crisis had far-reaching consequences that extend beyond their borders to the economy of the whole world. In fact, the head of the Bank of England referred to it as "the most serious financial crisis at least since the 1930s, if not ever," in October 2011. The crisis is magnified by the lack of ability of sovereign economies in the Eurozone to competitively devalue their currencies as they are locked into a single common unit. There had been no central control developed to tackle this problem. The idea of a "Eurobond" to underwrite debt issued from varying countries was not seriously considered even after the crisis first appeared in Greece in 2009 (BBC News, 2012).

The world economy has also experienced slow growth since the US financial crisis of 2008-2009, which first exposed the unsustainable fiscal policies of countries in Europe. Greece, which spent heartily for years and failed to undertake fiscal reforms, was one of the first to feel the effect of weaker growth. When growth slows, a country must borrow what is not received through tax receipts, unless it cuts public expenditure. Countries seldom repay capital of a maturing loan without immediately refinancing it. This is known as 'rolling over'. If investors think that the risk to their capital is increasing, they will demand a greater yield. This process feeds back positively and further increases the likelihood of default. An admission by the new Prime Minister of Greece, George Papandreou, in late 2009, was that previous governments had failed to reveal the true size of the nation's deficits from the start. This naturally cast serious doubts on the honesty and competence of their whole governmental system.

In fact, as highlighted by BBC News Business (2012a), Greece's debts were so large that they actually exceeded the size of the nation's entire economy. Investors responded by demanding higher yields on Greece's bonds, which raised the cost of the country's debt burden to an insurmountable level and necessitated a series of bailouts by the European Union and European Central Bank (ECB). The markets also began driving up bond yields in the other heavily indebted countries in the region, anticipating problems similar to those in Greece (BBC News Business, 2012b).

## THE IMPACT OF THE 'CREDIT CRUNCH'

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The restriction of credit has affected countries used to treating money as a tradable commodity worldwide. The collapse of confidence is a classic example of positive feedback, which circularly amplifies the end product. In the past years, subprime (or high risk) loans were strongly promoted in the USA. These brought huge income to the banks through their high interest rates and initial charges. As discussed by Ferguson (2008), this was particularly prevalent in America before the collapse of Lehman Brothers funded by instruments known as Mortgage Backed Securities (MBS), packages that were re-traded often to distant third parties oblivious of their high risk. Certainly, such investments are only viable if the constituent small debtors repay their loans as contracted. European bonds were similarly grouped and sold as a package. Dadush (2010) acknowledges that increasingly the borrowers defaulted, and this left the banks bereft of loan funds for clients' commercial projects and indeed for their own expenses.

European banks have also directly contributed to the American loan pool. Many of those banks are also presently receiving aid from their governments to stave off insolvency. Some American banks like Lehman Brothers did not receive assistance and collapsed. Morgan Stanley and Goldman Sachs did receive assistance and remain today (concern has been expressed that the then US Treasury Secretary Hank Paulson was a former employee of Goldman Sachs and that assistance was not equally proffered). BBC News Business (2012c) in addition identifies Northern Rock, Lloyds TSB, RBS, and other United Kingdom banks that have been supported by the government (BBC News Business, 2012c).

The emphasis on quick returns in trading accelerated the arrival of the crisis. The system of semi-detached trading staff, whose income derives from risking others' money for their own gain, has greatly increased the instability of the market. It has been said that before the 1960s, traders opted for greed and principle, and since then simply for greed and more greed.

Banking structures are changing; not just in response to banks' activities, but due to the demands of world-wide trading and huge capital demands. Isolationism no longer exists. Duthel (2011) attributes the growth of electronic trading, high frequency share dealing, and arbitrage, as causes that even affect the minor economies. Trading success is increasingly a function of who possesses the fastest processor or best algorithm. National governments have had to rescue failing banks by guarantees and injection of funds, a process which just transfers debt from one source of high risk to another of lower risk backed indirectly by tax income.

Much of the 'bailout' funds lent by governments to prevent collapse have been used for just that – increasing the reserve liquidity ratio that had been so eroded by bad debts. This has not helped increase productivity, which is seen as an escape route from the present depression. Companies that have not had access to development funds are struggling and losing market share to non-EU manufacturers and service providers. In an attempt to increase lendable funds, several governments have resorted to creating new money in the hope that this will percolate out from banks to which it is sold to ameliorate the scarcity. Such a policy has not yet been tried in the Eurozone.

The result of the general loss of confidence resulted in raised interbank lending rates a 'gluing up' of the lending process, and for some, the previously described increase in the bond rate to levels impossible to repay. The trigger is usually in the secondary bond market, as the less 'bailoutable', investors are more nervous about getting their investments returned at maturity. This depresses the market price increasing the yield, which must be matched or exceeded by a new issue. A rate of above 7% is considered unsustainable and a borrower country is bound to subsequently default.

### **PROBLEMS IN GREECE, SPAIN, ITALY, AND PORTUGAL (KNOWN AS THE 'PIGS')**

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The serious debt issues of Greece in have still not been solved. Greece is negotiating with creditors to resolve a part of the debt crisis. That consists of a so-called 'voluntary' agreement for private investors to accept a 50% reduction on the bond redemption value (Lynn, 2009). The seniority rating of their debt ensures that the European banks that are big holders should receive most of their money back. The deal had to be designated as 'voluntary' to stop a type of insurance called "Credit Default Swaps" (CDS) from being triggered. Such invocation would have only caused further defaults in other organisations.

Greece has indeed made changes in its financial system, but not enough for other countries to release more funds without guarantees. A so-called 'Troika' of the International Monetary Fund (IMF), the European Commission (EC), and the European Central Bank (ECB) ensure that Greece meets tough standards of debt reduction before it obtains any further funds for day-to-day operations. Greece initially declined the idea as a violation of national sovereignty, and the government of Mr Papandreou wanted to hold a referendum. This idea was quickly dropped as it only added further uncertainty in volatile European markets. The threat is that Greece will not receive the next €14.5 billion bailout funds if it fails to meet the specified criteria to reduce debt. Hunter (2011) states that an unruly default would cause ripples through the worldwide financial structure. Granitsas and Paris state in the Wall Street Journal (2012) that the IMF now expects that the Greek economy could contract 7% this year, 3.5% next year, 1.5% in 2014, and 0.5% in 2015. Other Eurozone countries have similarly mismanaged their finances. Ireland, Portugal, Spain, and Cyprus have all requested help from Europe. Italy is in a parlous state and has established a 'technocratic' government under Mario Monti to attempt to reduce its deficit. The figure below illustrates the status of not only Greece, but those of other European countries. The numbers on top of the columns are peak values.

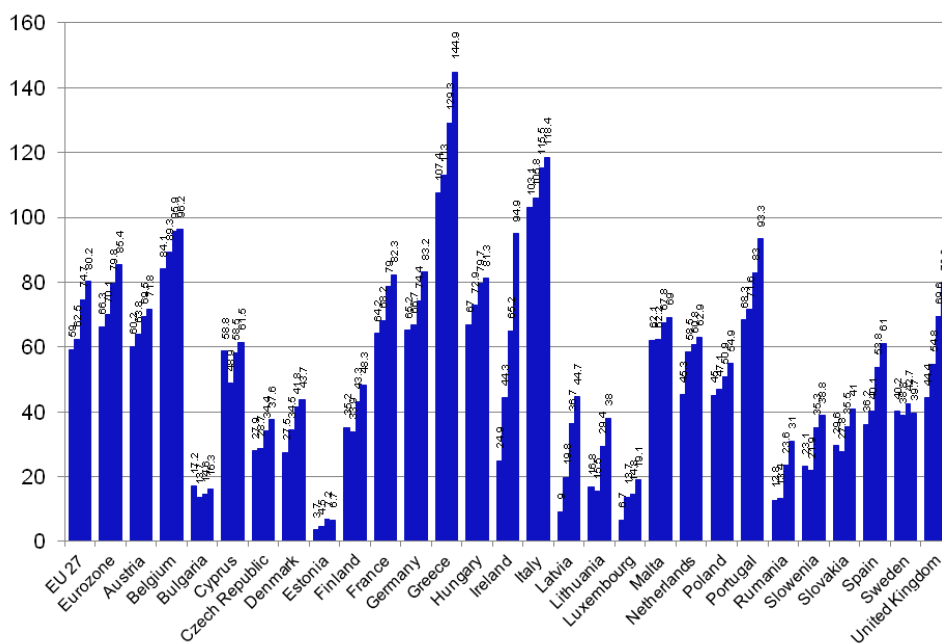


Figure 1: Public debt as percentage of GDP from 2007 to 2010. Note the parlous positions of Greece and Italy.

Although Greece was the first to encounter problems, they quickly spread to others. Ireland was badly affected, and then Portugal, and then a larger economy, Spain. Although the actions by European policy makers have helped stabilise financial markets in the short-term, they have been widely criticised as merely postponing a permanent solution. In addition, a larger issue looms: while the economies of smaller countries such as Greece are modest enough to be rescued by the European Central Bank, Italy by itself is too big to be saved. The perilous state of these countries' fiscal health was therefore a key issue for the markets at various points in 2010, 2011, and 2012. To a certain extent, it was linked with that of Spain. The Spanish government revealed that it would apply for more than 100 billion Euros from the Eurozone to support or enhance banking structures that were affected by over 200 billion Euros of toxic assets. Rising worries about the condition of Spanish public finances and banks made Spain's borrowing expenses close to a euro-era record and also had a 'knock on' effect on Italian rates that similarly rose. An injection of around \$125 billion was provided to banks in Spain and speculators then shifted attention to Italy. Italy, according to Young and Semmler (2011), has a debt of about two trillion Euros the largest in proportion to its existing

economy of any country, apart from Japan and Greece. Italy's accumulated debt is considered a larger credit risk than Spain. At the beginning of 2011, Italy's 10-year bond interest rate rose to 200 points above those of Spain. Then, as the degree of distress in Spanish banks became more apparent, its 10-year bond bounced to 50 points above Italy's. It was as the overall bond interest rate approached 7% that Spain requested a bailout.

The EFSF decided to trade above 40 billion Euros of bonds every month, which is above the yearly output of all three of the smallest EU affiliates (Malta, Cyprus, and Estonia). It was only the intervention of the EFSF that caused rates to stabilise. Contagion of the Greek crisis to other nations would certainly inhibit output, development, trade, and probably result in a worldwide economic recession, as Kolb (2011) construes. For this reason, a solution to the issues in Greece was of primary concern.

As of September 2012, Italy is on course to ensure its budget deficit complies with the EU standards of 3% of GDP. It is currently running a trade surplus apart from interest payments. This means that Italy's debt will peak rapidly at around 125% of Gross Domestic Product. The unemployment rate is less than half of Spain's 24%, and Italy did not undergo a property boom and bust, so its banks were not severely compromised by domestic lending. The budget deficit was 4% of Gross Domestic Product in 2011, below half that of Spain (Canstancio, 2012). Because of its high debt, it is in serious risk of a 'vicious circle' of inability to borrow funds at a rate that will allow it to reduce its overall debt. The critical fact here is that the current EFSF and ESM funds do not have enough capital to pay the debts of Italy.

Portugal has a much smaller economy than Spain or Italy and a smaller deficit, but the relative size of this debt is a problem. In mid-2011, Portugal revealed that it would request a financial bailout from the EU that would be around 80 billion Euros. Portugal's economy is not set to improve until 2013, but it has taken prudent action in this direction. Other smaller nations are affected. Ireland and Cyprus have required bailouts. Ireland has radically cut spending, and Cyprus is generally considered too small to have an effect on the European or world economy.

### THE WIDER IMPACT OF EURO INSTABILITY

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Credit availability is an essential element of every country's economy. The reduction of credit availability across the world has been dubbed 'the credit crunch', a term aptly describing the squeezing of life out of a once vibrant system of interchange. The European Union generates around 25% of the global GDP (following market exchange rates) and 20% is consumed internally by the Eurozone itself. The Euro region makes up around 10% of the world equity market turnover, and the Euro makes up around 25% of the allotted world holding of reserves (Blundell-Wignall & Slovik, 2011). It is clear now that the original principles of its creation have been deficient. Because many European bond issues are deemed risky, and Quantitative Easing in the rest of the world creates inflation, the prices of commodities have risen as they are seen as less prone to lose value. A gold price of \$2,200 or over, per troy ounce, is likely to have been achieved in 2012.

The United Kingdom is not directly connected with the Euro and has acted resolutely and independently to rectify its own position. The result is that Germany and the United Kingdom have the lowest bond yield in the EU as investors consider them 'safe havens' for funds. The United Kingdom has not participated in the bailout of Greece since it is not part of the Eurozone, but it contributes through its involvement in the IMF, which funds countries worldwide. However, British banks had previously loaned money directly to Greece and would also be seriously affected if Greece defaulted. Stein (2012) points out that available funds for indigenous client loans would reduce, and the pace of economic activity, including employment, would be further slowed. Businesses in the United Kingdom perform around 47% of their trade with Europe and instability there would be contagious to the British economy (BIS, 2012).

European officials are looking for other approaches to resolve the debt crisis; they are exploring plans to pool the representation of Eurozone nations into a single seat at the International Monetary Fund, a move that could boost the currency block's influence and possibly cause friction at the institution. Viviane Reding, a Vice President in the commission, is quoted in a Wall Street Journal article by Fidler and Forelle (2011), "the Euro area will be strengthened because it speaks with one voice."

This however, is an oft quoted ideal and is seldom achieved.

***An organisation was set up to manage bailouts at arm's length from the European Central Bank (ECB). Established in 2010, it was named the European Financial Stability Facility (EFSF). It has recently been announced that a European Stability Mechanism (ESM) is to be set up by amendment to Article 136 of the "Treaty On the Functioning of The European Union". This is expected to have further capital of 700 billion Euros (BBC News Europe, 2012a) being fully funded by 2014.***

As the Eurozone debt crisis deepens, its effects spread worldwide. Developing nations lose markets to sell their goods, services, and investments. Some with natural resources are cushioned, especially if they have a stable political system, but not necessarily a full democracy. China and Brazil and other oil rich countries are in this category, as they all possess natural resources and cheap labour. However, BBC News Business (2012e) identifies recent signs of overcapacity and instability developing in China. All of these countries have a relatively small ruling elite and a large working peasant population and could be regarded as unstable. It has been suggested that to stabilise the world economy, countries with large trade surpluses such as Brazil, Germany, India, and China should invest in European debt. They are extremely reluctant to without a properly secured Eurobond.

## EXISTING TYPES OF EUROZONE SOVEREIGN BONDS

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Bonds are tradable contracts to repay to money lent to a country or other institution at a set rate of interest known as the 'coupon', with a fixed date of redemption. The current 'yield' of a bond is a function of its coupon, cost, and maturity date, and most importantly, its risk of default. There are 190 bonds currently traded denominated in Euros (Bond Market Prices, 2012).

The existing Eurobond is not an example of a particular bond denominated in Euros or a central bond funded by the ECB. It is in fact an international bond traded in a country's market, but not in the native country's currency, instead often in dollars. This type of bond is also called an external bond. 'Brady Bonds' which were issued for South American debt are examples of external bonds. At present, bonds traded in the Eurozone in Euros are still 'national', and the following table shows information on the level of debt of individual European Countries and the rating assigned to the bond by a credit rating agency. The Credit Default Swap (CDS) spread is a measure of how risky insurance is for loss on a bond. It is a financial derivative and not a full insurance in the conventional sense. Some countries, such as Germany or the Netherlands, with a highly federal structure have more government debt held outside central government. This debt is sometimes harder to reduce as the regime has only indirect control over it, and it follows that total national debt is less controllable.

Standard and Poors is a widely accepted American credit rating agency whose ratings range from AAA for the safest to D for those which will likely default. Other agencies publish similar scales.

Member State	General government debt			Central gov. debt	Gov. bonds yields	CDS spreads	Credit rating
	EUR billion, end 2010	% of GDP, end 2010	% of euro area, end 2010	% of GDP, end 2010	% p.a., 10 years, 8/11/2011	Basic points p.a.; 5-year contracts, 8/11/2011	Standard & Poor's, 8/11/2011
<b>Belgium</b>	340.7	96.2	4.4	87.7	4.3	292.9	AA+
<b>Germany</b>	2061.8	83.2	26.4	53.2	1.8	89.3	AAA
<b>Estonia</b>	1.0	6.7	0.0	3.3	n.a.	n.a.	AA-
<b>Greece</b>	329.4	144.9	4.2	155.6	27.8	n.a.	CC
<b>Spain</b>	641.8	61	8.2	52.3	5.6	400.1	AA-
<b>France</b>	1591.2	82.3	20.3	67.8	3.1	183.8	AAA
<b>Ireland</b>	148.0	94.9	1.9	94.3	8.0	729.7	BBB+
<b>Italy</b>	1842.8	118.4	23.6	111.7	6.8	520.7	A
<b>Cyprus</b>	10.7	61.5	0.1	102.6	10.1	n.a.	BBB-
<b>Luxembourg</b>	7.7	19.1	0.1	17.4	n.a.	n.a.	AAA
<b>Malta</b>	4.3	69	0.1	68.9	n.a.	n.a.	A
<b>Netherlands</b>	369.9	62.9	4.7	57.3	2.2	99.6	AAA
<b>Austria</b>	205.6	71.8	2.6	66.2	3.0	159.9	AAA
<b>Portugal</b>	161.3	93.3	2.1	91.2	11.6	1050.9	BBB-
<b>Slovenia</b>	13.7	38.8	0.2	37.3	6.0	304.25	AA-
<b>Slovakia</b>	27.0	41	0.3	40.1	4.0	221.2	A+
<b>Finland</b>	87.0	48.3	1.1	43.9	2.3	60.63	AAA
<b>Euro area</b>	7822.4	85.4	100	71.6	n.a.	n.a.	n.a.
<i>p.i.: USA</i>	10258	94.4			2.08	47.5	AA+

Table 1: Scale of European Debt, Bond Yields, CDS Spreads, and Credit Rating

Bonds can be priced at a premium, discount, or at par. In the secondary market, which is not from bonds directly issued from a company or country but those re-traded, prices move in their own market to yield similar real funds to an investor. The interest rate that a security needs to offer in order to encourage investors to purchase it is in competition with other available investments. Usually the required yield on a bond is equal to or greater than the current prevailing bank interest rates.

Thus, fundamentally, the price of a bond is the sum of the present values of all expected coupon payments plus the present value of the par value at maturity. One must discount the value of future interest payments as they are subject to devaluation.

The following formula is used and shows the discounting of different interest payments at different dates in the future with correspondingly increasing rates of uncertainty. It can be seen eventual possible default of a long dated (say, 12-year) British bond in its final year is of less importance than a possible default in 5 years of a Eurozone debt instrument as the loss is more immediate.



$$\text{Bond Price} = \frac{C}{(1+i)} + \frac{C}{(1+i)^2} + \dots + \frac{C}{(1+i)^n} + \frac{M}{(1+i)^n}$$

Where:

$C$  = coupon payment,  $n$  = number of payments,  $i$  = interest rate, or required yield,  $M$  = value at maturity, or par value

## THE ACTION THAT THE EU HAS TAKEN

The EU has intervened to support countries financially and EU countries have been aided by international organisations as in the table below.

EU member	Time span	IMF [15][16] (bil. €)	WB [16] (bil. €)	EIB / EBRD (bil. €)	Bilat- eral [15] (bil. €)	BoP [16] (bil. €)	GLF [17] (bil. €)	EFSM [15] (bil. €)	EFSS [15] (bil. €)	ESM [15](bil. €)	Bail- out in total (bil. €)
<b>Cyprus I<sup>1</sup></b>	Dec. 2011 - Dec. 2012	-	-	-	2.5	-	-	-	-	-	002.51
<b>Cyprus II<sup>2</sup></b>	May 2013 - Mar. 2016	001.0	-	-	-	-	-	-	-	009.0	010.02
<b>Greece<sup>3</sup></b>	May 2010- Mar.2016	048.1 (20.1 + 19.8 + 8.2)	-	-	-	-	52.9	-	144.6	-	245.63
<b>Hungary<sup>4</sup></b>	Nov.2008- Oct.2010	009.1 out of 12.5	1.0	-	-	5.5 out of 6.5	-	-	-	-	015.6 out of 20.04
<b>Ireland<sup>5</sup></b>	Nov.2010- Dec. 2013	022.5	-	-	4.8	-	-	022.5	017.7	-	067.55
<b>Latvia<sup>6</sup></b>	Dec. 2008- Dec. 2011	001.1 out of 1.7	0.4	0.1	0.0 out of 2.2	2.9 out of 3.1	-	-	-	-	004.5 out of 7.56
<b>Portugal</b>	May 2011- May 2014	026	-	-	-	-	-	026	026	-	078
<b>Romania I<sup>7</sup></b>	May 2009- June 2011	012.6 out of 13.6	1.0	1.0	-	5.0	-	-	-	-	019.6 out of 20.67
<b>Romania II<sup>8</sup></b>	Mar 2011- June 2013	000.0 out of 3.6	-	-	-	0.0 out of 1.4	-	-	-	-	000.0 out of 5.08
<b>Spain I<sup>9</sup></b>	July 2012- Dec. 2013	-	-	-	-	-	-	-	-	41.4 out of 100	041.4 out of 1009
<b>Spain II<sup>10</sup></b>	Perhaps in 2013	(consid- ered)	-	-	-	-	-	-	-	(consid- ered)	(consid- ered)
<b>Total payment</b>	Nov. 2008 - Mar. 2016	120.3	2.4	1.1	7.3	13.4	52.9	48.5	188.3	50.4	484.6

Table 2: Interventions in the European Debt Crisis  
(Yellow signifies incomplete draw down of facility at time of publishing, GLF is Greek Loan Facility.)

There were previous arrangements to fund balance of payments problems in countries laid down in Article 143 of the Treaty of Rome in 1957. The facility to provide medium term financial assistance has been established by Council Regulation (EC) No 332/2002. Where needed, these facilities have been employed but usually for the smaller countries. The primary new course of action thus far has been a series of bail-outs for Europe's troubled economies. The Eurozone member states also created the European Financial Stabilisation Mechanism (EFSM) and later the European Financial Stability Facility (EFSF) to provide emergency lending to countries in financial difficulty. They then began debating the possibility of more direct intervention in the markets with a European Stability Mechanism (ESM) backed by the ECB. There have also been numerous other non-European interventions by the IMF and others (see table above). Those organisations from the EU can be characterised as developing from smaller to greater size as the scale of the problem became more apparent. A separate facility was initially set up for Greece when it was considered the central problem, but was enhanced later by further funds from the EFSF and IMF.

The EFSM was, for example, activated for Ireland and Portugal, for a total amount up to €48.5 billion (up to €22.5 billion for Ireland and up to €26 billion for Portugal), to be disbursed over 3 years (2011 – 2013). Its capital was too small at 60 billion Euros to deal with the size of the problem, and it was joined later by the EFSF and ESM. Each new organisation did not, however, replace the older one, and subsequently all still exist.

The EFSF is authorised first to provide loans to Eurozone countries in financial difficulties; secondly, to intervene in the primary and secondary bond and debt markets (intervention in the market is only on the basis of an ECB analysis recognising the existence of exceptional financial market circumstances and risks to financial stability), and thirdly, to act on the basis of a precautionary programme. While lastly, it is authorised to finance recapitalisations of financial institutions through loans to governments. It is not authorised to directly intervene in sovereign bond markets.

To fulfil its mission, EFSF issues debt instruments on the capital markets. The EFSF is backed by guarantee commitments from the Euro Area Member States up to a total of €780 billion and has a lending capacity of €440 billion. The EFSF has been assigned the best possible credit rating - by Moody's (Aaa) and Fitch Ratings (AAA). It has been assigned a AA+ rating by Standard & Poor's. The EFSF is a Luxembourg-registered company owned by Euro Area Member States, and it is headed by Klaus Regling, former Director-General for Economic and Financial Affairs at the European Commission.

The EFSF also sells to the market. So far they have (as of September 2012) issued €109 billion of bonds. The bonds are backed by with an 'overcollateralisation factor'. This means that a certain price of bond is backed by assets that are at the time of issue; perhaps 120% of the value of the bond sold. Such instruments are thus considered comparatively safe forms of investment.

The European Central Bank also has become more closely involved. The ECB announced a plan in August 2011 to purchase government bonds in order to keep yields from spiralling to unaffordable levels. This will be operated in the future by the ESM. Lending institutions unsure of incoming funds are loath to commit to further advances. The dearth of advances has severely inhibited new enterprise. As a result, the ECB sought to boost the banks' balance sheets. In December 2011, the ECB made €489 (\$639 billion) in credit available to the region's banks at ultra-low rates, followed with a second round in February 2012. Current EU law does not allow the ECB to directly intervene in sovereign bond markets. It thus so provided cheap loans for three years to 523 banks who had solvency problems, but would act as 'proxies' in purchasing bonds. BBC News Business (2012d) identifies the name for this programme as the "Long Term Refinancing Operation", or LTRO.

A European Banking Authority (EBA) was established on 24 November 2010. This is a regulatory agency of the European Union headquartered in London. It inherited all of the tasks and responsibilities of the Committee of European Banking Supervisors (CEBS). Its activities include conducting stress tests on European banks to increase transparency and to identify weaknesses in banks' capital structures. The EBA has the power to overrule national regulators if they fail to properly regulate their banks. According to the European Banking Authority (2012), it will prevent regulatory arbitrage because banks established in jurisdictions with less regulation will no longer gain competitive advantage. The EU single market commissioner Michel Barnier has stated that he will push for new powers for the European Banking Authority with extended scope over all 6000 lenders in the EU. Evans-Pritchard (2012) states that such an organisation will regulate all banks, not just systemically important ones.

European leaders demanded that the Eurozone raise more buffer funds to combat the sovereign debt crisis in 2012, cautioning that this crisis posed severe risk to the world economy. The agreements reached, however, have not met with universal approval. The most important result was that EU authorities appear to have identified some fundamental truths. These include the fact that Greece is incapable of paying back its existing debt, that European banking structure requires more efficient quality control, and that there needs to be a solidly financed 'backstop' to intervene effectively in all markets.

## CONCLUSION

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Following this, the projected 'haircut' for debt restructuring in Greece was increased to 50%, from 20% with a larger bailout facility accompanying it. The Greek banking system is to be loaned around €105 billion to attain a liquidity ratio of 10% and the total pan-Eurozone recovery fund is to be increased from the residual €260 billion of the initial €450 billion, to above €1.2 trillion (Grobys, 2012). It appears that European leaders are specific only about short-term issues rather than long-term solutions.

From the vast plethora of institutions, reports, and analyses, three alternative courses of action (or inaction) have emerged.

### 1. DO NOTHING

Of all the outcomes, this is the most difficult to predict. Bond markets would be extremely volatile. Chaotic change would occur if internal strife made it impossible to make the planned changes needed to reduce borrowing and repay debt. In this case, companies and countries could collapse and civil unrest could be triggered. From the mire would emerge new enterprises and governments with new more principled practices. The change would be uncontrolled and the emergence long, and not just the imprudent would suffer. A country withdrawing from the Eurozone would re-introduce its local currency. This conversely would have the effect of increasing the value of the Euro in the remaining Euro states, disadvantaging Eurozone exporting countries that export throughout the world. The dominant example of such a country in the Eurozone is Germany.

### 2. CONTROLLED DISENGAGEMENT OF PORTUGAL, GREECE, AND SPAIN

The orderly withdrawal of these countries would decrease the speculative risk to the Euro, but to an unknown extent. This course of action would alter the parity of the Euro with other currencies resulting first in an increase and then a corrective fall. By controlled staging of the withdrawal of such countries, these fluctuations could be cushioned. The vacillations in the exchange rate would make transacting business into and out of the Eurozone difficult, as they would decrease certainty. The exact date and intention to leave the would have to be kept secret in order to hinder 'capital flight', but speculation would be rife and only increase the instability. The governments and citizens of the solvent Eurozone countries are strongly

opposed to absorbing liability for others' bond debt, and thence suffering higher interest rates themselves. The Bundesbank, the German Central Government, and indeed public opinion is implacably opposed. Certainly, German leaders have stated that the treaties of European Union outlaw joint debt liabilities, yet a recent German Supreme Court Decision has allowed such support up to a point (BBC News Europe, 2012a).

Greece and other countries could be forced to quit by the European authorities, or allowed to leave voluntarily. It appears that neither of these alternatives is presently contemplated. There are no protocols present in the European Union for the cessation of membership of the Eurozone. Members feel that constructing such would possibly create an open door for other stressed regimes. Some people propose Greece ought to leave the Eurozone willingly with the intention of re-establishing sensible currency parities with other trading partners. Analysts such as Ferguson (2008) even cite the example of Argentina, that after experiencing serious monetary problems around 10 years ago, unlocked from a US dollar parity and devalued the peso to promote exports. However, unlike Argentina, Greece does not have the indigenous assets with which to trade in the world marketplace and hence is unlikely to be a practical solution for that country.

Rothenhöfer (2011) states that without natural assets, Greece would probably experience further financial strictures as available funds diminished through 'capital flight', and most banks could face bankruptcy. The re-issue of the Drachma would also cause a temporary lack of liquidity in the basic cash economy.

Sturdy economies like the Netherlands and Germany would be released from the requirement to subsidise economically decadent nations in Southern Europe. A reduced Eurozone consisting of sensibly controlled Northern European economies would endure to fulfil the original vision of the Economic and Monetary Union.

### 3. EURO BONDS

Bond speculation has been a major factor in the Euro crisis. Foremost in this is 'short selling', i.e. selling shares and bonds before you actually fully own them, and speculating that you can purchase them before the day of settlement at a lower price. Sometimes shares are 'rented' for a fee or a more modern variant called 'naked short selling' removes the need for rental and replaces it with a period (usually 28 days) where the shares are paid for by the purchaser, and purchased later by the seller before delivery at hopefully a lesser figure, a broker taking a fixed rate fee. Diagram 1 describes the short selling process.

Short selling exacerbates the problems of a faltering system. It is open to manipulation by fraudulent ruse of powerful 'players'.

To curtail speculation, it is necessary to make the failure risk to speculators as high as possible by creating a fully backed Eurobond. This would need to be guaranteed by the European Central Bank as it is the only institution with enough resources to cover the aggregated debt of all the countries.

Diagram 2 explains this. Notice the supporting role of the ECB.

Here any speculator attempting to sell bonds for a higher price and source them for a cheaper one, by any type of short selling, will find that the price they have to buy at to complete the operation does not drop below a certain level (in our case, €100 per bond). It is therefore not worth attempting to short. The discouraging effect will be the same for basic and naked short selling.

A European Commission discussion paper on Eurobonds released recently suggests three possible approaches for issuing common government bonds in the Eurozone (European Commission, 2012a). The 40-page paper entitled, "GREEN PAPER on the Feasibility of Introducing Stability Bonds", highlights the danger that issuing Eurobonds could weaken budgetary discipline among Eurozone governments. Thus, issuing such bonds would require new safeguards to tighten discipline and improve economic competi-

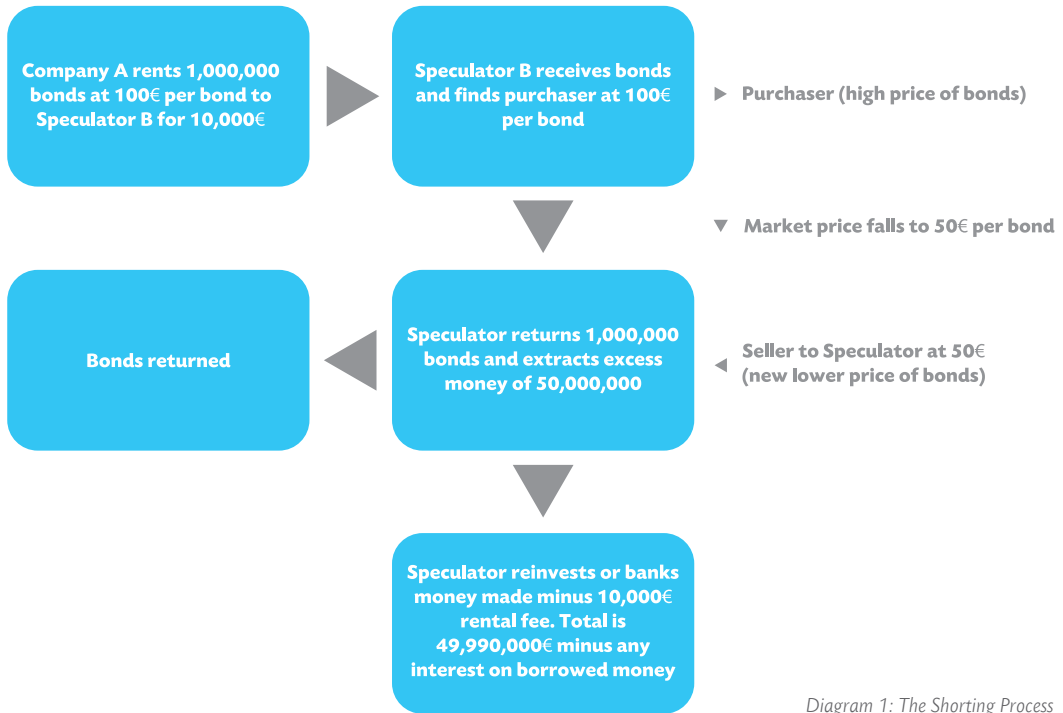


Diagram 1: The Shorting Process

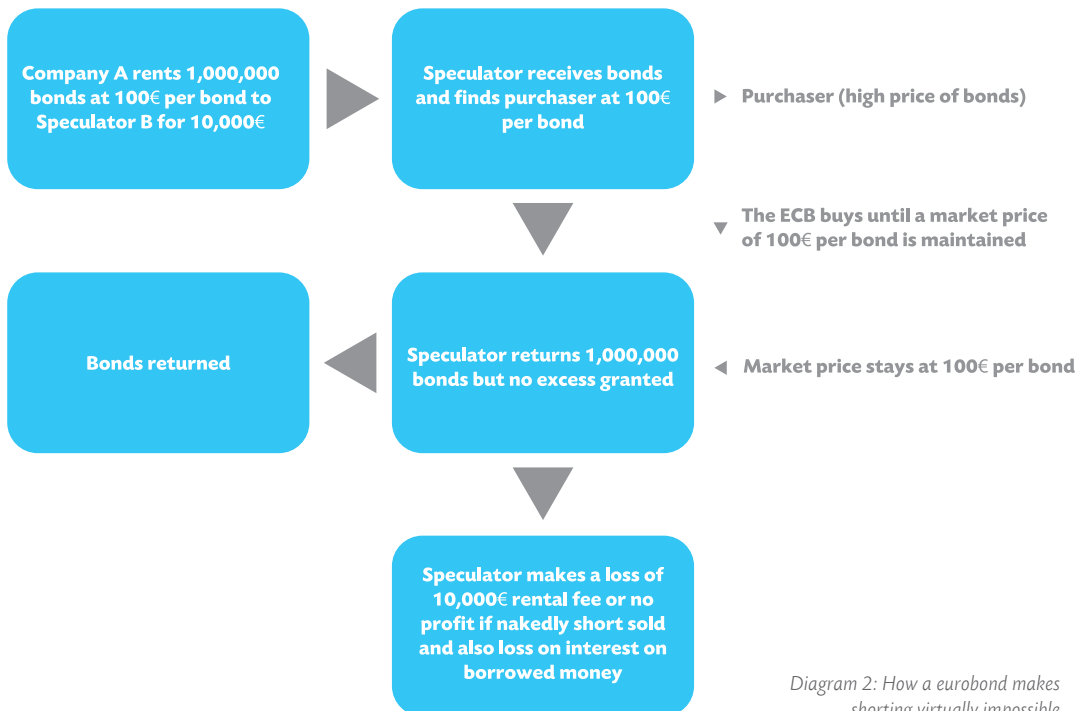


Diagram 2: How a eurobond makes shorting virtually impossible

tiveness. This would require treaty changes, as sovereignty of financial matters has to be ceded to central direction. Most contributors agreed that Eurobonds would have the required stabilising effect. The maximum credit quality would be secured mainly through guarantee structure and/or seniority status. Two basic guarantee regimes emerge from the literature: (i) joint and several (Jones, Delpla and von Weizsäcker, Barclays Capital, Favero and Missale, and J.P. Morgan) where each country each year guarantees the entire Eurobond issuance and (ii) pro-rata (Juncker and Tremonti, De Grauwe and Moesen) where a country guarantees only a fixed share of the issuance (European Commission, 2012b). This topic is not new; it was considered by the Giovanni Group in the late 1990s, and later the “Europe@10” report in by the Commission in 2009.

The first option would be to substitute all national bond issues with euro bonds with a ‘joint and several’ guarantee. Under this scheme, all new government bond issues would be Eurobonds, and existing sovereign bonds would be converted into Eurobonds. The second option is for each nation to guarantee a proportion of the total debt. These proportions do not have to be equal or even based on the proportion of each country’s GDP. The third way is for the participating countries to guarantee a fixed proportion of any individual country’s debt, the debtor country itself guaranteeing the remainder.

### RECOMMENDATIONS

The EFSM, EFSF, and ESM should be merged into one clearly defined fund designed to support a Eurobond. This bond will be used to fund all nation states in the Eurozone who must submit to international audit to benefit from the bond. This will be paid into the common fund in some prescribed proportions that are agreed at a conference of the Eurozone members of the European Union. The fund needs only to be drawn down when it is needed but be permanently available. Other international investors in the Eurobond should be encouraged to dilute the burden as far as possible. Effective support of a Eurobond by the ECB must be such that there is no profit in ‘shorting’ the instrument. The proportions of guarantee of each participant should be agreed openly and put into effect rapidly. ■

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### DIAGRAMS

Diagram 1: *The Shorting Process*.

Diagram 2: *How a Eurobond Makes Shorting Impossible*.

### FIGURES

Figure 1: *Public Debt as Percentage of GDP from 2007 to 2010*.

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### TABLES

Table 1: *Scale of European Debt, Bond Yields, CDS Spreads, and Credit Ratings*

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