A scenario analysis of potential mutualisation mechanisms for peripheral European countries.

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Abstract

Based on the optimum currency area theory the ESM and 'Six-Pack' responses to the sovereign debt crisis were deemed to be insufficient, therefore a more appropriate response is necessary, that being debt mutualisation. This research paper explores a quantitative scenario analysis of potential mutualisation mechanisms for peripheral European countries which could be employed in response to the sovereign debt crisis as part of creating an optimum currency area.

The scenario analysis was conducted by analysing the effect mutualisation of peripheral countries' debts have on the core countries contribution levels to the ESM fund, the impact a 30% increase of the ESM fund would have on key government finances, and an examination of the effect specific mutualisation percentages' of Greece's debt have on the peripheral countries. Furthermore, Spain was used for a comparison of Greek scenarios.

The research utilised secondary data from a cross-sectional internet based data set published on the statistical office of the European Union and a European Institution ESM. Potential mutualisation mechanisms were analysed for peripheral European countries by examining data which included national debt levels and ESM contribution fund figures of 2014.

The results of this scenario analysis demonstrate that the core country contribution levels have increased as a result of the mutualisation of peripheral country national debts. Additionally, 12% could be mutualised of all the peripheral countries' national debts however, the more Greece's national debt is mutualised, the less these peripheral countries' national debts can be mutualised under the €500 billion cap. Furthermore, under the increased €650 billion cap the peripheral countries' national debts can be mutualised by a higher percentage.

This research paper concludes that while debt mutualisation corresponds with optimum currency theory, it could lead to inefficiency in the Eurozone as the cost of excessive borrowing would be endured by other countries. Therefore fiscal federalism could be another potential response to the sovereign debt crisis.

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List of Used Abbreviations

ECB – European Central Bank

EDP – Excessive Deficit Procedure

EFSF – European Financial Stability Facility

EFSM – European Financial Stabilisation Mechanism

EMI – Economic Monetary Institute

EMU – Economic and Monetary Union

ESCB – European System of Central Banks

ESM – European Stability Mechanism

EU – European Union

FDI – Foreign Direct Investment

GDP – Gross Domestic Product

IMF – International Monetary Fund

MTO – Medium-Term Budgetary Objective

TSCG – Treaty on Stability, Coordination and Governance

U.S. – United States

UK – United Kingdom

Chapter 1

Introduction

When the euro was launched, the Stability and Growth Pact was established to ensure sound public finances through the various limits for budget deficits and public debt. Nevertheless, the global economic and financial crisis revealed non-compliance to these limits (Panagiotarea 2013). The sovereign debt crisis in the Eurozone is perhaps the main source of concern on the road to creating an optimum currency area and restoring financial stability (IMF 2012). In order for the euro currency to succeed it requires a risk sharing mechanism such as fiscal federalism or mutualisation of debt. However, fiscal federalism is difficult to implement as wealthier nations don't redistribute their revenue so easily (Mundell 1961). Also, in reality debts of Ireland, Greece, Portugal, Cyprus, Spain and Italy have accumulated to immense levels making it necessary for mutualisation. Based on the optimum currency area theory the ESM and 'Six-Pack' that were established in response to the sovereign debt crisis, are not sufficient, therefore fiscal federalism or debt mutualisation is needed.

The sovereign debt crisis caused a large deterioration of financial accounts in most advanced economies, particularly for Ireland, Greece, Portugal, Cyprus, Spain and Italy, also known as the peripheral countries (Caruana and Avdjiev 2012). The debt levels of these countries were then heightened by the flawed structure and system of the Eurozone which placed them in a position where they couldn't recover without financial assistance (Klaus 2012). While bailouts were eventually granted, countries such as Ireland and more recently Spain have managed to begin recovery while Greece almost defaulted and exited the Eurozone (Evans 2015; Dawber 2015). If the euro was an optimum currency area, these countries wouldn't have reached these devastating times, a more appropriate response that corresponds with the optimum currency theory would be debt mutualisation.

This research paper will explore a quantitative scenario analysis of potential mutualisation mechanisms for peripheral European countries that could be employed in response to the sovereign debt crisis as part of creating an optimum currency area. This will be accomplished by conducting an analysis on

the effect mutualisation of peripheral countries' debts have on the core countries contribution levels to the ESM fund, the impact a 30% increase of the ESM fund would have on key government finances, and an examination of the effect specific mutualisation percentages' of Greece's debt have on the peripheral countries. Furthermore, Spain will be used as a comparator for Greek scenarios.

The motivation behind conducting this scenario analysis is that economic policies and research papers have a tendency to study and examine the deleverage approach and alternatives for fiscal union on an individual basis. However, this approach is no longer an acceptable response to the sovereign debt crisis under an institutional framework where all member states of the Eurozone have relinquished a part of their independence and where national economic policies are constrained due to this institutional setting. Hence, mutualisation of peripheral countries' debts through the ESM fund would be a suitable response to the sovereign debt crisis. Also, Schmitt-Grohé and Uribe (2013) have stated that the solution to the sovereign debt crisis should come from a supranational fiscal stimulus as it is highly unlikely it will come from within national borders.

This research paper will provide a comprehensive understanding of the optimum currency theory, the policies that were put in place and the development of the euro, the crisis of public and private debt accumulation as well as the crisis response through the literature review.

Chapter 2

2.1 Introduction to Literature Review

The ability of the Eurozone countries to endure negative macroeconomic and financial shocks was recognised as the most substantial challenge in order to achieve an optimum currency area, from the beginning of its establishment. The national economies with a currency of their own undergoing a debt crisis could no longer choose currency devaluation as the traditional adjustment mechanism option between national economies as it was eliminated. The traditional solution previously consisted of obtaining finance from the IMF under compulsory fiscal consolidation and devaluation, which was amalgamated with an expansionary monetary policy (Lane 2012). Furthermore, the Eurozone design differed from the Dollar zone in areas such as it only collected a small share of total taxes at the EU level and it didn't commit to permanent fiscal transfers from the richer countries, like Germany, to the poorer countries, like Greece. Whereas, in the U.S. immense transfers of state taxes are transferred to the poorest states such as West Virginia, in the form of unemployment benefits and Medicaid (Thompson 2012). Moreover, the Eurozone monetary union was lacking a significant amount of fiscal or banking union as responsibility for fiscal policy and financial regulation was kept at the national level (Lane 2012).

On the one hand, Eurozone countries can be inclined to consume more and pay less than their share if national governments borrow in a common currency and there are compelling incentives to bail out countries that have over-borrowed (Beetsma and Uhlig 1999). The original system of the euro strived to tackle the emerged over-borrowing incentive problem in two ways. The first way was through the Stability and Growth Pact which limits public debt of 60% of GDP and the size of the annual budget deficits at 3% of GDP. The second way was the inclusion of a no bailout clause which meant that a sovereign default would only occur if the national government couldn't meet its debt obligations (Lane 2012).

On the other hand, the removal of national currencies allowed for national fiscal policies to become a tool for countercyclical macroeconomic policy (Gali and

Monacelli 2008). In addition, national governments continued to carry the risks of a banking crisis such as the direct fiscal costs that occur if the government has to recapitalise a bank, and indirect fiscal costs such as tax revenues and GDP which have a tendency to remain low in the aftermath of a banking crisis for a sustained period (Honohan and Klingebiel 2003).

The literature review will examine the optimum currency area theory, policy and development of euro, national and public debt accumulation, private debt accumulation and financial credit expansion, and response to the sovereign debt crisis which will demonstrate that there is a need for national debt mutualisation as Europe is currently not an optimum currency area and the response to the sovereign debt crisis isn't sufficient according to the optimum currency area theory.

2.2 Optimum Currency Area Theory

Prospective entrants to EMU evaluate whether the foreseeable costs of joining the currency union are lower than benefits such as lower costs associated with importing and exporting goods and services between nations with different currencies. Countries with close international trade relations would make gains from a common currency, hence the nature and extent of international trade is one of the conditions for EMU entry as well as membership of an optimum currency area (Frankel 1998).

Mundell (1961) established the pillar of an optimum currency area which laid the theoretical foundations for the EMU. In addition, he described the absence of an exchange rate mechanism as the cost of joining a currency union. In his article, he examined the conditions that are essential to establish a common currency amongst various regions or affiliate countries. Mundell (1961) portrayed various complicated situations which contained factors of mobility and immobility amongst nations as well as the effects of such for monetary policy. In his opinion, the main reason for using a flexible exchange rate policy is for overcoming a lack of factor mobility. Based on Ricardo's theory on international trade, he presumed that each country had internal mobility of factors of production and external immobility. If significant geographic factor mobility is

present amongst all regions of the same nation, then the regions unite and create an optimum currency area.

The fundamental condition that is necessary for a currency union to be successful is;

A risk sharing mechanism such as financial transfers so when a nation of the currency union is negatively affected by a lack of labour and/or capital mobility, it will receive finance from nations which haven't been affected, commonly through tax redistribution. A risk sharing mechanism is required for all economies to be permanently better off inside the Eurozone as well as to have the ability to share the impact of shocks through the mechanism (Juncker 2015). Europe may have a common currency, but it doesn't have fiscal union as spending decisions are made at the national level. Since the beginning of the euro, politicians and economists have argued that the monetary union could not survive in the long-term without fiscal union and a central body who has the power to transfer funds across the Eurozone (Hope 2015). Also, the 'Euro Summit' of 2014 called for development of robust mechanisms to facilitate stronger economic policy coordination, convergence and unity (Juncker 2015). Eurozone's monetary union will not be complete without a risk sharing mechanism that shares fiscal sovereignty (Hope 2015). This condition of a risk sharing mechanism is theoretically accepted, nonetheless it is difficult to implement as wealthier nations don't redistribute their revenue so easily (Mundell 1961). In theory, the Stability and Growth Pact of Eurozone has a no bailout condition, however this was deserted in 2010 when Greece received a bailout of €110 billion it desperately needed (IMF 2010).

Furthermore there are other conditions that are necessary for a currency union to be successful which are;

- Open labour movement throughout the region which includes established institutional agreements, employee rights to physically travel and lower cultural barriers (Mundell 1961).

- Openness concerning prices, wage elasticity and capital mobility is important across all EU member regions. The purpose of this is to ensure

that supply and demand as well as market forces will distribute capital and supplies in an automated manner to areas considered to be in need. However, due to a true wage flexibility having never existed, this practice is only considered to work partially (Mundell 1961).

- Comparable business cycles exist in participant countries and can be observed when an individual country encounters a recession or boom causing other member countries to follow suit. As a result, the ECB has the ability to control inflation during boom periods and encourage growth in recessions. If participant countries were to have individual and dissimilar business cycles it would result in the divergence of the optimal monetary policy which would likely result in EU members facing a particularly worse situation under a joint central bank (Mundell 1961).

Upon entry into a currency union, the international trade linkages increase thus increasing the benefits of joining the currency union. Also, as international trade ties become tighter between members of the union, newly joined member's business cycles will become similar to the other member nations. In theory, tighter international trade may result in looser or closer correlations of the national business cycles. However in practise, business cycles could become distinctive and due to tighter international trade, member countries could become more specialised in the production of goods in which they have a comparative advantage. Consequently, the member countries could become more susceptible to industry specific shocks which would result in further distinctive business cycles. Conversely, if demand shocks dominate for majority of trade and if trade increases among member countries, then the business cycles could become more comparable (Mundell 1961).

However McKinnon (1963) went further into Mundell's (1961) proposed criteria for an effective optimum currency area. He focused on the area of openness and what economic properties contributed to that. In his opinion, the countries that are highly open are most suitable for a common currency area amongst them. A country's openness is determined by the tradable to non-tradable goods ratio as it categorises tradable goods as those that can move into foreign trade, whereas non-tradable goods cannot move into foreign trade, due to

factors like very high transportation costs. However, only the actual volume of imports and exports is taken into the exploration as it's impossible to decide the quantity of various goods that should be moved into international trade. Therefore, knowledge of a country's total import and export levels will provide a good foundation indication of the extent of openness of the country's economy as McKinnon (1963) suggests.

Figure 1 displays the optimum currency area theory. The foremost question is, if asymmetric shocks were to occur, would they be frequent and strong enough to be a serious concern. If the answer is no, then the cost of adopting a shared currency is low. This answer is based on McKinnon's (1963) and Kenen's (1994) criteria. McKinnon (1963) states that the use of the exchange rate is limited if a country is vastly open. Kenen (1994) suggests that countries that produce, import and/or export an extensive selection of similar goods, will not encounter frequent asymmetric shocks.

Figure 1 Optimum Currency Area Theory
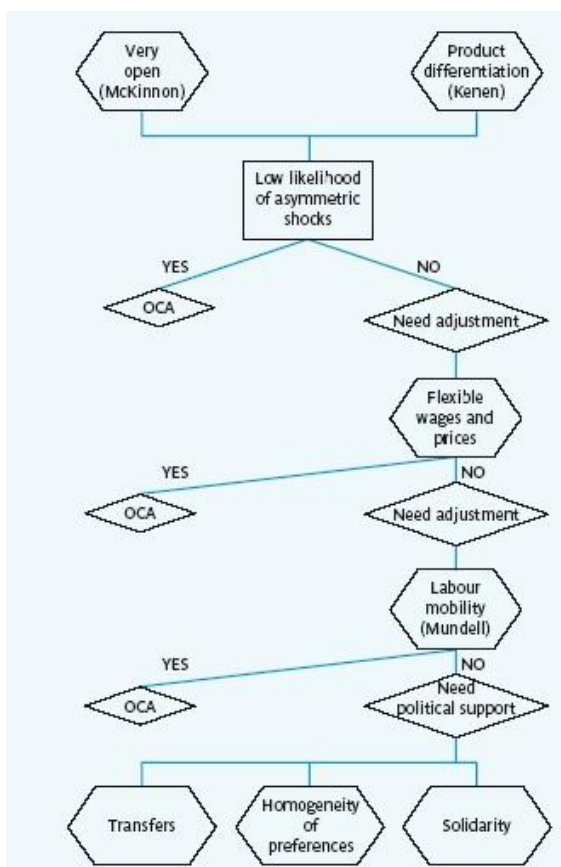
(Baldwin and Wyplosz 2009).

However, asymmetric shocks would be expected if this criteria wasn't fully met and the following question is, if that region is capable of dealing with them. Mundell (1961) states that, when there is a lack of wage and price flexibility, labour mobility will provide a way to lessen the effect of asymmetric shocks. But if labour mobility is non-existent, then asymmetric shocks will be harmful and expensive. Then the next question is if there is a possibility to compensate for these shocks. The most common form of compensation is financial transfers which can be conducted automatically through taxes, welfare payments etc. A transfer creates a risk sharing mechanism where a country that has been negatively affected will receive financial help and it will assist other member nations when they are hit by a shock. When an asymmetric shock occurs, the shared central bank will be faced with tough decisions such as how will it meet the various needs of individual member nations (Baldwin and Wyplosz 2009).

The EMU, which was established in 1999 is an example of the optimum currency area theory. But, if a country wants to join the EMU it has to meet the Maastricht criteria which is not linked to the optimum currency area theory. One may argue that the Maastricht Treaty was required to achieve price stability, sound public finances, sustainable public finances, durability of convergence and exchange rate stability (Europa 2015D). However, the present sovereign debt crisis of Eurozone is one of the outcomes of this treaty.

The Eurozone crisis has exposed numerous limitations and weaknesses of the EMU, for example vulnerability to asymmetric shocks and its incapability to work decisively. EMU's vulnerability to asymmetric shocks according to its member states resembles in openness and regional trade, economic structure, specialisation which will be be assessed in the next section.

2.2.1 Openness and Regional Trade

As McKinnon (1963) states, a country's openness can be determined by its degree of involvement in international trade. The ratio of total imports and exports to GDP for 2011 and annual growth rates from 2000 to 2011 was calculated for EU as well as U.S. The calculations prove that European nations, especially the smaller ones like Malta (96%) and Luxembourg (161%) are very open. Moreover, EU's average exceeds U.S. almost three times in relation to

openness (Jager and Hafner 2013).However, the average is lesser than it had been anticipated and the euro's effect wasn't substantial as it only increased trade inside the Eurozone by 8-16% (Rose and van Wincoop 2001). The increase isn't what it was expected to be may be due to politics. European countries are importing goods from their previous colonies instead of doing it regionally. For example, Ireland imports apples from South Africa but due to tensions between Europe and Russia, Poland has an overproduction of Apples as Russia placed a ban on fruit coming from Poland (Taylor 2014; Economist 2015). From an economic perspective countries like Ireland should be importing from Poland, one of the member states of Eurozone as it would reduce overproduction, transportation costs would be much lower, currency exchange risk would be avoided and regional trade improved (Economist 2015). But due to politics Ireland imports from South Africa that is almost 10,000 km away, a country that isn't part of Eurozone, exposing itself to currency exchange risk and increasing costs of transportation. Similarly like Belgium imports and exports from and to Congo, its previous colony (Trading Economics 2015).

2.2.2 Economic Structure

Income distribution is varied in Eurozone and there are significant income gaps amid EMU nations and the Eurozone average, from 65% in Slovakia to 115% in Finland. The inconsistencies in Eurozone are quite visible when observing the labour market condition, as in 2012 unemployment increased in Spain to 24.4% whereas in Germany it fell to 6.5% (Jager and Hafner 2013).

Eurozone countries significantly differ in labour productivity. The productivity gap has grown over the years, placing Germany to be twice as productive as Portugal in 2011, for instance. Germany's competitiveness has grown from 2009, whilst it's been quite the opposite for the periphery countries. Also, labour costs in Germany have been steady, but in 2005 they were exceeded by the periphery countries as theirs have been growing from 1995 till 2008 and then coming to a halt (Jager and Hafner 2013).

2.2.3 Specialisation

In a study conducted by Persson (2011) it was found that European member states had a reasonable growth in specialisation. The author states that each country in Europe has specialised its industry portfolios and relocated to other countries where a relative advantage in the production of particular goods was present. Therefore, each Eurozone member nation's sensitivity to macroeconomic instability became different and vulnerability to asymmetric shocks increased.

Factor mobility, homogeneity of preferences and transfer payments will now be discussed to examine EMU's ability to manage and adapt to asymmetric shocks.

2.2.4 Factor Mobility

It has been found from numerous reports that European labour markets are one of the most rigid in the world due to continuous labour inflexibilities and low labour mobility as cross-border mobility is very low (Prodi 2002). However, the EMU does have deeply integrated and united financial markets and the international portfolio holdings of EMU's member countries' have significantly increase from 1997 to 2003. Also, the euro currency increased FDI amongst member countries as most of FDI went to countries in the Eurozone rather than to EU members who still hadn't adopted the euro. Even though capital market integration can be deemed to be completely developed in the EMU, capital flows in EMU cannot offset greater areas of economic shocks and thus, can only redistribute 15% of asymmetric shocks at the national level whereas U.S. can redistribute 48% of asymmetric shocks in output (Lane 2006).

2.2.5 Homogeneity of Preferences

When a set of countries give up their national currencies to form a shared currency union, it's usually done for a shared aim. However, ten years after the establishment of EMU, countries don't share the same objective of European integration. The German government is trying to change the EMU into a real fiscal union through the support of European integration. However, the periphery countries support the idea of Eurobonds to merge Europe's debts

which Germany is trying to resist. These dissimilar preferences for fiscal policies result from the different effects the crisis has had on various EMU nations and thus, European leaders preferences do not concur which makes the decision making process decentralised and limits Eurozone's power to act (Taylor 2015).

2.2.6 Transfer Payments

When dealing with asymmetric shocks, a transfer payment system is an important element in a currency union as it can assist in reestablishment of economic equilibrium. Unfortunately, fiscal federalism doesn't exist in EMU unlike in the U.S. (Jager and Hafner 2013). Fiscal federalism is the efficient and effective distribution of income, allocation of resources, and economic stability (Kapucu 2015). Central body intervention is essential when member states of the Eurozone don't have equal income levels. It would maximise economic efficiency as particular attention would be paid to regional digital and economic divides to make sure that each nation has a fair and equal chance of succeeding and to strengthen the economic union. Currency unions who have adopted fiscal federalism do better than unitary nations in political stability, equal income distribution, bureaucratic efficiency, and economic and fiscal management (Shah 2012). This is a potential response to the sovereign debt crises as through fiscal federalism funds could be transferred from the richer countries, like Germany, to the poorer countries, like Greece.

Debt mutualisation is another form of a transfer payment. National debts of peripheral countries could be mutualised to lift some of the financial burden from the peripheral countries and it would raise confidence in the viability of the union, as it would be supporting current crisis management efforts by itself. Also, in the long-term it would decrease the likelihood of a future crisis and if it did occur, it would be less critical (Allard et al. 2013). Debt mutualisation was the chosen focus of this research paper as the potential response mechanism to the sovereign debt crisis.

This assessment of the EMU as an optimum currency area shows that it does not epitomise it. There are numerous limitations and weaknesses that need to be attended to. Member nations are different in regard to structure and economic performance, especially when the euro brought on greater industrial

specialisation causing vulnerability to asymmetric shocks to increase in the Eurozone. Also, due to differing national preferences for crisis response and decision making, it has limited EMU's ability to act (Jager and Hafner 2013).The negative effects of asymmetric shocks could be lessened through labour mobility and transfer payments but EMU is lacking these factors (Prodi 2002). These limitations reveal EMU's struggles to address asymmetric shocks satisfactorily to serve all member countries. Even though efforts have been made to increase fiscal and economic unity, inconsistencies throughout Eurozone remain and factor markets aren't adequately unified. Thus, the Eurozone is 'a combination of rapid capital migration and limited labour migration' instead of an economically completely integrated currency union (Jager and Hafner 2013).

Following the analysis of the optimum currency area theory and its application by the EMU, Europe's progress in practise in relation to the optimum currency area theory will be analysed in the next section.

2.3 Optimum Currency Area Theory versus EU's Progress in Practice

2.3.1 Pre-Crisis Period

The Maastricht treaty was signed in 1992 by 12 leaders of the member nations, to integrate Europe under which they vowed to limit their debt levels and deficit spending. In November 1993 during the Delors Commission, the European Union was created which led to the creation of the euro as the single European currency of the single market to ensure the free movement of goods, services, persons and capital. The EU consists of three pillars; the European Communities, common foreign and security policy and police and judicial cooperation in criminal matters. The objectives of the Maastricht Treaty were to improve the effectiveness and democratic legitimacy of the institutions, establish economic and monetary union, establish a common security and foreign policy and improve the community social dimension (Europa 2015A).

The EMU consists of policies that aim to create a single currency and ensure its stability through prices and compliance with the market economy. It is essential for member states to coordinate their economic policies and provide for joint

surveillance of coordination as they are subject to budgetary and financial discipline. The Maastricht Treaty set out a three stage plan to introduce the EMU and establish a single currency. This was also known as the 'Maastricht convergence criteria' which was agreed to at the European Council, which meant that each member state would have to meet stage three in order to adopt the euro currency (Europa 2015A). From the period of 1990 to 1999 the following three stages took place;

- The first stage from 1990 to 1994, involved the completion of the internal market through the removal of exchange controls and the introduction of the free movement of capital (Europa 2015B).

- The second stage from 1994 to 1994, entailed the establishment of the European Monetary Institute (EMI) whose function is to strengthen monetary cooperation between member states and their national banks. Also, the Stability and Growth Pact was adopted to ensure member states pursue sound public finances in the Eurozone which will further be discussed in section 2.3.2. Moreover, the ECB and the European System of Central Banks (ESCB) which consists of the ECB and all the national central banks of EU member states whether they have the euro currency or not, is formed to reach economic convergence (Europa 2015B; ECB 2015).

- The third stage from 1999 and onwards, a single monetary policy is introduced, the exchange rates are fixed and the euro is launched as a virtual currency as it requires a three year transition period before physical euro notes and coins are introduced, thus national currencies don't legally exist anymore (Europa 2015B).

After three years, on the 1st of January 2002 the euro was no longer just 'book money' as euro banknotes and coins were launched making it the largest cash changeover in history as it happened in 12 EU countries; Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain (Europa 2015B).

Having discussed the Maastricht Treaty and its convergence criteria, it is essential to explore the Stability and Growth Pact in the next section and its application in the Eurozone as it originates from the Maastricht Treaty.

2.3.2 The Stability and Growth Pact

The Stability and Growth Pact 'is a set of rules designed to ensure that countries in the European Union pursue sound public finances and coordinate their fiscal policies' (Europa 2015C). These principal rules are; deficit cannot be more than 3% of GDP, government's debt cannot be more than 60% of GDP, long-term interest rates cannot be higher than 2% and each member state is expected to reach its own specific MTO or to be moving towards it by attuning its structural budgetary position at a benchmark pace of 0.5% of GDP per year (Europa 2015D; Europa 2015H). Also, it states that countries will face sanctions if they fail to respect the Stability and Growth Pact preventative or corrective arm rules. These sanctions can take the form of warnings and financial penalties such as 0.2% of GDP, if they don't abide by the preventive or corrective arm rules, 0.5% of GDP if they repeatedly continue to not abide by the corrective arm rules. Last of all, member states of the EU could face suspension of commitments or payments from the EU's investment and structural funds such as the European Social Fund (Europa 2015C).

As discussed in section 2.3.1, member states must meet the Maastricht convergence criteria to qualify for the euro which consists of five aims; price stability, sound public finances, sustainable public finances, durability of convergence and exchange rate stability. For this research, sound public finances and sustainable public finances are most noteworthy. In order for a member state to adopt the euro, the government's deficit cannot be more than 3% of GDP to meet the sound public finances criteria and the government's debt cannot be more than 60% of GDP to meet sustainable public finances criteria (Europa 2015D). The principal item here is that if countries breach these limits of the Stability and Growth Pact they will be sanctioned (Europa 2015C). Greece adopted the euro in 2001 and introduced the banknotes and coins on January 1st 2002. This was possible because the numbers Greece presented, showed that the government's deficit was under 3% of GDP and debt levels

were no more than 60% of GDP which made them eligible and thus, Greece joined the third stage of the EMU. However, in 2004 after Eurostat refused on three occasions to validate the data presented by the Greek government as there were doubts about the figures, the debt levels rose after each revision and the Greek government's balance which was a surplus became a deficit. Consequently, the Greek government conducted a new audit and submitted new figures to Eurostat which were accepted that time. The figures were as follows;

Government Deficit before Audit	*Revised Government Deficit*
1997: 4.0 % of GDP	1997: 6.6 % of GDP
1998: 2.5 % of GDP	1998: 4.3 % of GDP
1999: 1.8 % of GDP	1999: 3.4 % of GDP
(Europa 2004).	

Debt Figures before Audit	*Revised Debt Figures*
1997: 108.2 % of GDP	1997: 114.0 % of GDP
1998: 105.8 % of GDP	1998: 112.4 % of GDP
1999: 105.2 % of GDP	1999: 112.3 % of GDP
(Europa 2004).	

These new figures show that during the crucial period between 1997 and 1999 when the Greek economy was under inspection to decide on its eligibility to adopt the euro were false and that Greece did not qualify to join the Eurozone as the government deficit wasn't below 3% (Howden 2004). Some of the reasons behind the differences in figures are attributed to under-recording of government expenditure for the procurement of military equipment, over-estimation of the surplus of public entities, the recordings of EU grants as non-financial resources (increasing government revenue) and exited as financial transactions (no impact on deficit) , no application of recommended rules for calculating capitalised interest and the use of ESA79 instead of ESA95 methodology to calculate capital injections (OECD 2005).

While, Baralexis (2004) suggests that legitimate creative accounting was employed to meet the deficit criteria, as the law offered many opportunities to

practise creative accounting without consequences. Nevertheless, Greece did admit in 2004 that it falsified figures to gain entry to the euro and that it has been breaking the 3% deficit rule since 1997 (Howden 2004).

As a result, Greece only received a formal warning and was placed in the Excessive Deficit Procedure (EDP) as well as directed by the council to get its deficit below 3% by 2005. However, it didn't do enough to bring down the deficit and in 2004 it was at 6.6% partially due to Olympic Games which cost €9 bn, as well as the rate of inflation was at 3%, above EU average of 2% (Panagiotarea 2013; Europa 2015E; Malkoutzis 2012). Thus, the Council established a new deadline of 2006 and made recommendations to implement permanent measures such as pension reforms to meet the sustainability of public finances criteria and to improve the collection and processing of general government data. However, these recommendations lacked credibility due to the lack of reinforcement (Panagiotarea 2013).

From this it can be seen that the Stability and Growth Pact was meant to create and maintain financial stability within Eurozone, however ambiguities around it and compliance are appearing to be there since its establishment and raises questions on whether the proclaimed sanctions have any significance and the commitment to inforce them as there is no purpose to have a Stability and Growth Pact if will will continue to turn a blind eye to offenders. Therefore, the Stability and Growth Pact compliance and its decisions will now be further explored to make sense of the mechanism that is meant to keep the Eurozone financially stable.

2.3.3 Double Standards

As discussed in the previous section it is evident that the Stability and Growth Pact wasn't correctly enforced as Greece was able to gain admission despite never having respected the preventative or corrective arm rules of the pact and also was able to avoid sanctions under the qualifying procedure. As a consequence, many other countries in similar circumstances were enticed to do the same to gain admission resulting in the Maastricht convergence criteria being heavily overlooked (Panagiotarea 2013). Figure 2 illustrates that seven out of the twelve member countries had debt levels above 60%, prior to entering

the Eurozone, however according to the Maastricht Treaty if debt exceeds 60% of GDP then 'it should diminish sufficiently and approach the reference value (60%) at a satisfactory pace'. If this criteria was rigorously upheld, then Germany, Greece and Austria should have been ruled out since they exceeded 60% of GDP; Germany (59.7% to 60.3%), Greece (111.6% to 113.2%) and Austria (63.8% to 64.3%) (De Grauwe 2009).

Figure 2

Gross Government debt two years prior to entry
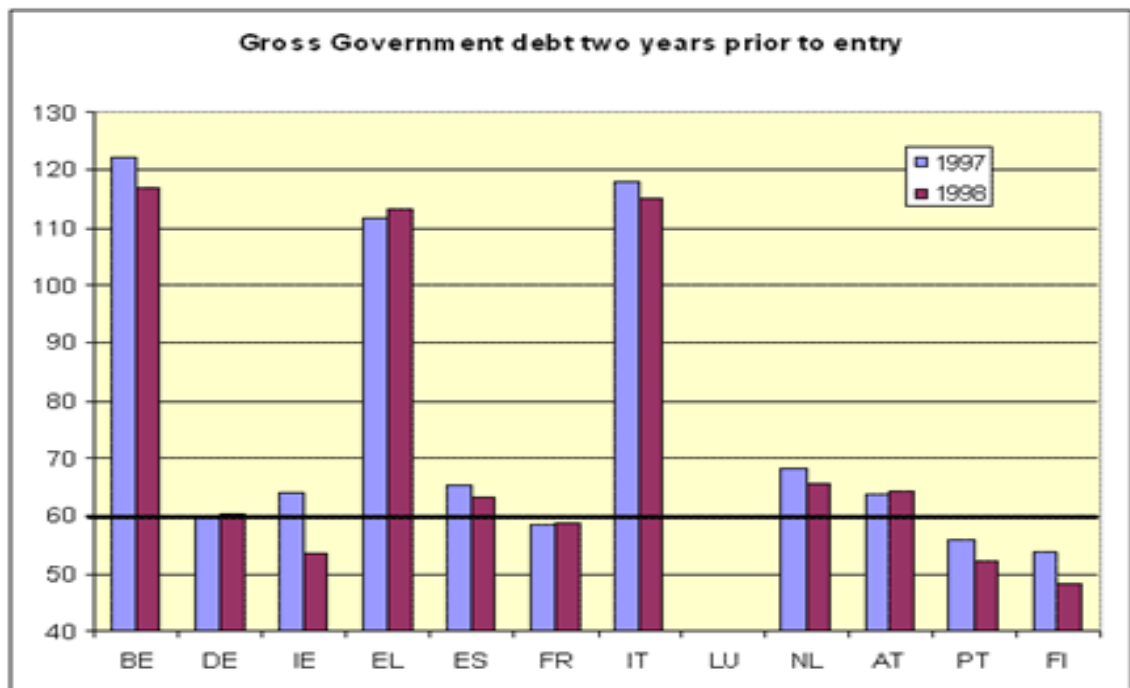
(De Grauwe 2009).

It could be argued that it is a strict interpretation of the Maastricht Treaty, but it is the same strict interpretation that was demonstrated by the judges from Germany who demand on employing the most literal interpretation of the treaty. In 2007, Lithuania was refused admission to the Eurozone on the premise that its inflation growth rate exceeded the Maastricht Treaty criteria by 0.1%. Conversely, Greece also exceeded the criteria far in excess of 0.1% but was granted admission despite the Maastricht Treaty claiming that the criteria needs strict adherence (Gricius 2006). Germany and Austria are further example of the indiscretion taken when implementing the criteria since both countries experienced no such concerns or sanctions when they didn't meet the criteria (Gow 2004; Europa 2015F). Moreover, there was also no literal interpretation of

the Stability and Growth Pact after Greece for the second time was placed in the EDP in 2009 for not meeting sustainable public finances criteria (Europa 2015G).

The Greek crisis symbolises the chaos that Europe has created beginning with the establishment of the euro as well as the indiscretion taken in relation to rules that govern monetary financing, deficit levels and bail-outs. Furthermore, Europe still claims to be a rule-based organisation despite rarely adhering to its 'strict' rules as evident by the double standards previously discussed (Lamont 2015). A Chief economist from the Centre for European Reform said "European Central Bank wants them [East European countries] to be holier than the Pope" (BBC 2004). After the real Greek figures were revealed a British official said "the answer is to make the existing system work better, not to give Eurostat control over national statistical agencies" (Howden 2004). Consequently, the existing system that was in place to ensure an optimum currency area, failed.

The crucial mistake Europe made was the failure to cancel more of Greece's debt in the first bail-out in 2010 as five years later in 2015 Greece is unable to repay and there's nothing that can be done apart from providing assistance to Greece. Even Olivier Blanchard, the IMF's chief economist has spoken of his disappointment at the illusoriness of the negotiations and requested for further debt relief to be provided and be the most fundamental factor of any agreement in the future (Lamont 2015).

Debts have accumulated to immense levels where now the Eurozone really needs to converge like it was supposed to at the beginning, through the mutualisation of debt and function by the rules set out to create and maintain an optimum currency as it will guide it towards a functional and robust single currency. Having discussed the failure of the mechanism that was meant to keep the Eurozone financially stable, it is also relevant to explore what further made the Eurozone unstable which is national and public debt accumulation, and private sector and financial credit expansion which will be discussed in the next section.

2.4 Debt Accumulation

2.4.1 National and Public Debt Accumulation

At a first glance the public debt for the Eurozone in 2005 didn't seem to be a forthcoming problem. During the 1990's, Eurozone and the U.S. generally shared similar debt dynamics. For example, in 1995 the ratio of public debt to GDP was 70% for the countries that would later adopt the euro, and it was roughly 60% for the U.S. Moreover, in the late 1990's the ratio of public debt to GDP declined in the U.S. and the Eurozone although it resumed to 1995 levels by 2007. Thereafter, the ratio climbed faster in the U.S. than in the Eurozone though the collective European data hid the substantial difference at the individual country level (Europa 2015N; Federal Reserve Bank of St. Louis 2015). Figure 3 displays the development of public debt ratios for peripheral and core countries.

Figure 3
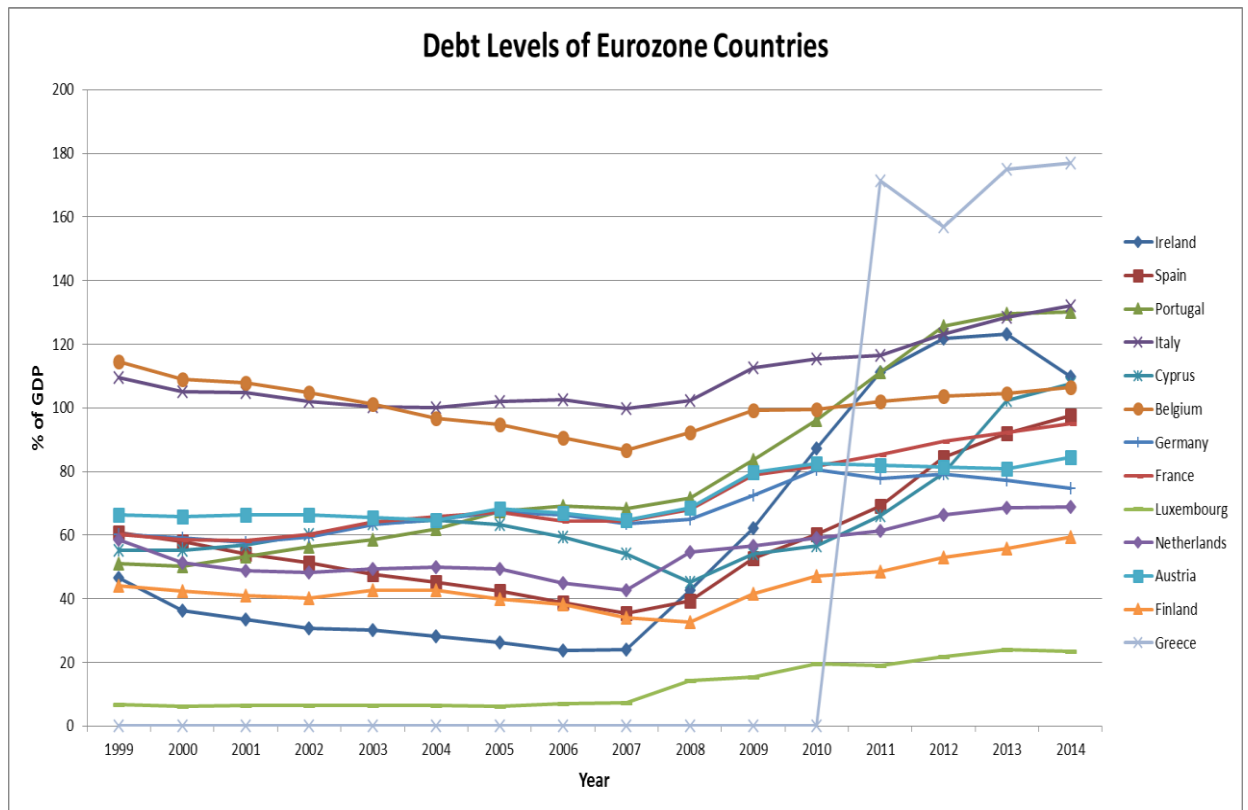
(Europa 2015P).

These countries were chosen because Germany, France, Netherlands, Belgium, Austria, Finland and Luxembourg are the most powerful countries in the EU, while the fiscal crisis so far has been most severe in the peripheral countries among which Ireland, Greece, Spain, Italy, Cyprus and Portugal are subject to the decisions made by the core countries. Undoubtedly, the chosen countries have reasonably different debt pasts (Lane 2012).

It can be seen from figure 3 that Greece and Italy not once accomplished the 60% debt of GDP limit specified in the Maastricht Treaty as Italy's ratio has been over 90% since the 1990's and Greece's truthful debt of GDP ratio was only revealed in 2009 therefore the previous figures are considered invalid . Portugal's debt ratio started increasing from 2000, rapid output growth in Spain and Ireland caused substantial decreases in debt to GDP ratios up to 2007. Last of all, Germany and France had steady at around 60% debt to GDP ratios before the beginning of the crisis which were much higher than the corresponding values for Spain and Ireland from 2002 to 2007. Therefore, the fiscal positions looked fairly healthy for Spain and Ireland, unfortunately sovereign debt levels increased for Italy and Greece, while the inclination for Portugal was also worrying. The debt levels of all the countries in figure 3 began to increase in 2008. Moreover, as trades were moving into the positive column earlier on in the sovereign debt period, it suggested that markets weren't expecting significant default risk and surely not a financial crisis of the scale that could crush the euro system. In retrospection, the period between 1999 and 2007 had good growth levels and a nonthreatening financial environment disguised the accrual of various macroeconomic, fiscal and financial susceptibilities (Caruana and Avdjiev 2012).

2.4.1.1 Failure to Tighten Fiscal Policy

From 2003 to 2007 the period in which the private sector was taking up more risk, national governments missed an opportunity to tighten fiscal policy. In countries like Spain and Ireland, housing and credit booms directly produced extra tax revenues as high construction activity, increasing asset prices and capital inflows enlarged the take from capital gains taxes, expenditure taxes and asset transaction taxes. Moreover, tax revenues were increased through non-

indexation of numerous tax categories by Eurozone countries who were growing quickly and had inflation rates higher than the Eurozone average. Last of all, due to low interest rates debt servicing costs were lower than historical averages. Nevertheless, fiscal positions were only partially improved from the significant revenue bonuses as the balance was paid out on tax cuts or either extra public spending. Consequently, fiscal policy turned out to be less countercyclical following the establishment of the euro, which undid the progress in cyclical performance that was present in the 1990's (Lane 2012).

2.4.1.2 From Financial to Sovereign Debt Crisis

In August 2007, the ECB began liquidity operations which signified the beginning of the global financial crisis. European banks had excessive exposure to losses in asset-backed securities in the U.S. market. The global crisis moved into a more critical period in September 2008 when the Lehman Brothers, the fourth largest U.S. investment bank began the largest bankruptcy proceedings in U.S. history. The grave global financial crisis from 2008 to 2009 greatly shook Europe as much as the U.S. (Wiggins, Piontek and Metrick 2014).

During 2008 and 2009, the attention was on the movements of the ECB and its response to the global financial shock while there was very little concern about the European sovereign debt. Along with other key central banks, the ECB dropped short-term interest rates, offered extensive euro-denominated liquidity, and entered into currency swap agreements to simplify access by European banks to dollar-denominated liquidity. However, the global financial crisis had asymmetric effects on the Eurozone member states which is the opposite of what the optimum currency area would require which is harmonised business cycles. Cross-border capital flows withered in late 2008 as investors were sending back funds to home markets and reconsidering their levels of international exposure (Milesi-Ferretti and Tille 2011). This greatly affected countries who were highly dependent on external finance and international short-term debt markets. In the Eurozone, Ireland is the most prominent example as Ireland's banking system had a high dependence on international short-term funding which drove its government to facilitate an extensive two year liability guarantee to its banks in September 2008 (Lane 2012).

Moreover, the global financial crisis stimulated a re-evaluation of growth predictions and asset prices, particularly for the countries that exhibited macro-economic imbalances. For example, Lane and Milesi-Ferretti (cited in Lane 2012) demonstrate that excessive current account deficits from 2005 to 2008 were linked with quick current account reversals and declining spending during 2008-2010. The end of the credit boom was particularly upsetting for Spain and Ireland as the construction industry in these countries had grown quickly. The deterioration of the construction industry was a big shock to domestic economic activity, whilst decreasing housing prices and deserted projects signified great forthcoming losses for banks who issued far too many property-backed loans (Lane 2012).

Nevertheless, Eurozone sovereign debt markets stayed reasonably calm throughout 2008 and mostly 2009 when the main focus was on the stability of the banking system while country specific financial risks stayed in the background. Additionally, quite low pre-crisis public debt ratios of Spain and Ireland provided some reassurance that these countries could handle the probable fiscal costs associated with a medium-size banking crisis. Demand for sovereign debt of Eurozone countries was also supported by banks who rated government bonds as a highly valued guarantee in getting short-term loans from the ECB (Buiter and Sibert 2005).

Near the end of 2009, the European sovereign debt crisis progressed as numerous of countries were reporting greater than projected increases in debt-to-GDP ratios. For instance, in Spain and Ireland tax revenues were highly sensitive to declines in asset prices and construction activity which consequently caused fiscal revenues to decrease more rapidly than GDP. Furthermore, the magnitude of the recession and increasing estimates of forthcoming banking losses from bad debts in numerous of countries, had a negative indirect effect on sovereign bond values, given that investors knew that a declining banking sector presented financial risks (Mody and Sandri 2012).

The most shocking revelation came from Greece in 2009 after the general election when the new government revealed an adjusted 2009 budget deficit projection of 12.7% of GDP which is more than double the prior projection of

6%. Moreover, after the previous years were revised, it was revealed that the Greek fiscal accounts exhibited considerably larger deficits than it had reported before. This admission of severe breach of Eurozone's fiscal rules influenced a political narrative of the crisis, which placed the main blame of fiscal irresponsibility on the peripheral countries, despite the fact that the underlying macroeconomic and financial imbalances were more significant factors. These unfavourable events were reflected in rising sovereign bond spreads. For instance, the ten year sovereign bond yields with an annual spread amongst Germany and nations like Ireland, Greece, Spain, Portugal and Italy were near zero before the crisis. It cannot be forgotten that the sovereign debts of these countries are all denominated in the euro, thus differences in anticipated profit largely signify perceived credit risks and variations in instability (Lane 2012).

Figure 4 displays ten year bond yields behaviour on a country level of seven Eurozone countries between October 2009 and June 2012. Three specific problematic periods are noticeable. Firstly, it can be seen that the Greek yield began to deviate from the Eurozone countries in early 2010, with Greece needing a bailout in May 2010. Secondly, throughout 2010 and first six months of 2011 there was quite similar movement of Portuguese and Irish yields (Ireland was next to require assistance in May 2010, followed by Portugal in May 2011). Thirdly, the Italian and Spanish yields moved together, positioning the spreads between bailed out countries and core countries; Germany and France. Furthermore, a clear spread arises between German and French yields in 2011 (Lane 2012).

Figure 4

Yields on Ten-Year Sovereign Bonds, October 2009 to June 2012
(percent)
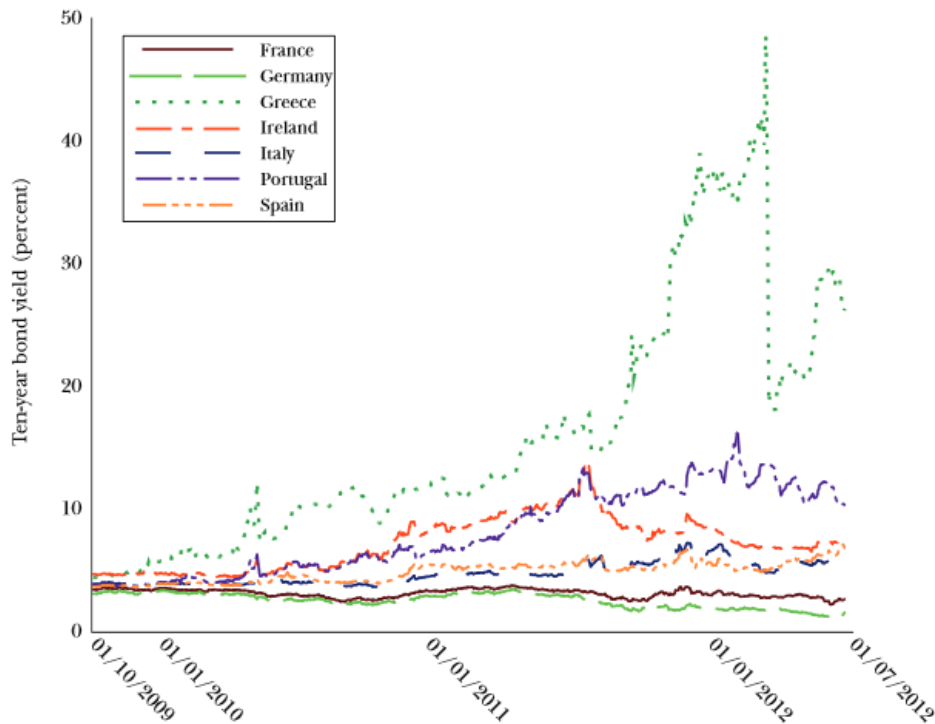
(Lane 2012).

2.4.2 Private Sector Debt Accumulation and Financial Credit Expansion

According to Gourinchas and Obstfeld (2012) a significant predictor of a banking crisis is the degree of previous national credit boom. Real currency appreciation and national credit expansion have been mainly considerable and robust predictors of financial crisis. Figure 5 displays the progression of credit in the euro area and it can be seen that since the early 1990's loans to the private sector have been growing steadily. The European periphery countries underwent strong credit booms, partially due to the ability to raise capital from transnational funds in the euro currency when they joined the Eurozone, rather than borrowing in British pounds or U.S. dollars and then hoping that the exchange rates will stay in their favour before joining the Eurozone. Moreover, lose credit controls and lower interest rates fuelled property and consumption-related borrowing (Fagan and Gaspar 2007).

Figure 5

EURO AREA LOANS TO PRIVATE SECTOR
EUR Million
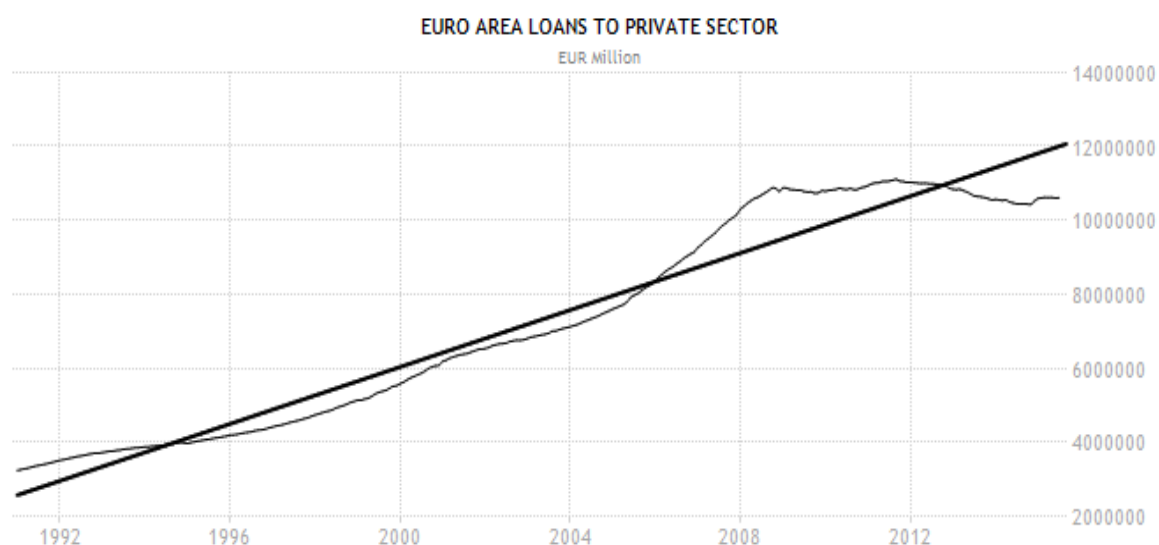
(ECB 2015B).

It is very risky for countries to be running continuous large external deficits inside a currency union. As when these countries run large external deficits and increase expenditure on the non-tradable sector, it squeezes the tradable sector by taking away resources from industries that have more possibility and opportunity for growth as well as increasing wages. However, when continuous large external deficit running is over, the only way to bring down the wages in a currency union is though a constant increase in unemployment. Therefore, a current account deficit can be very harmful for the medium-term growth performance (Blanchard 2007). Moreover, it poses short-term risks, if funding markets suddenly stop it can cause the deficit to contract in a short period of time and as a result increase unemployment and decrease asset prices (Freund and Warnock 2007).

2.4.2.1 The 2003 to 2007 Boom

From 2003 to 2007, credit growth and current account imbalances underwent a discrete increase phase of dispersion. The timing of this intense phase of credit booms and current account deficits, is still missing a complete explanation. However the simultaneous timing of the U.S. subprime loan episode, securitization boom in international financial markets, and the fall in financial

risk indices insinuate that the explanation could possibly be located in the underlying forces of the global financial system as well as the dominant long-term abnormal low interest rates. Government borrowing is not predominantly responsible for the credit boom during this period. In fact, it was households that were the primary borrowers which fuelled debt accumulation. For example in Ireland and Spain, the government wasn't a net borrower for the period of 2003 to 2007, it was the households which created a housing bubble. However, in Greece and Portugal, the government was a substantial borrower, but the substantial net accrual of financial assets by the housing sector offset the government's negative flows (Lane 2012).

However Klaus (2012) states that the European crisis came from a much deeper existing issue within the form and the method of the undergoing European integration process. As well as from the European economic and social model that is characterised by government overregulation and an unproductive welfare state.

On the other hand Belkin et al. (2012) state that the Eurozone crisis occurred when the new Greek government revealed that its debts have reached €300 billion which is 113% of GDP, nearly double the Eurozone limit of 60%. From this, the crisis spread to Ireland, Portugal and Spain, as well as raised questions about the imbalances in the Eurozone and the European banking system. Belkin et al. (2012) also suggest that the Eurozone faces four big challenges; 1. Fragilities of the European banking system, 2. Public deficits and high debt levels in some Eurozone countries, 3. Relentless trade imbalances, and 4. High unemployment and economic recession in some Eurozone countries.

Having discussed the cause of debt accumulation it is important to explore Belkin's et al. (2012) proposed challenge for Europe; public deficits and high debt levels in some Eurozone countries in the following section.

2.4.2.2 Public deficits and high debt levels in some Eurozone countries

For this research, public deficits and high debt levels finances are most noteworthy. Many of the concerns surrounding the Eurozone crisis focus on government deficits and high levels of public debt. As mentioned, three of the

peripheral countries; Greece, Ireland and Portugal had to borrow capital from other Eurozone governments and the IMF to avoid defaulting on their debt. Nevertheless, in spite of receiving assistance, Greece still had to restructure its debt which created significant losses for private creditors. European Officials insist that Greece is an exceptional case however, investors are concerned that other governments would also do the same especially Spain and Italy because their economies are much bigger and could cause greater effect than Greece and Portugal. Consequently, the investors are demanding higher interest rates for buying and holding Spanish and Italian bonds. In fact, Italy's debt is greater than the combined debts of Ireland, Greece, Spain and Portugal. As the Italian and Spanish governments have refinanced their debts at these higher interest rates, consequently their debt levels have increased and concerns have developed regarding the sustainability of public debt in those countries (Belkin et al. 2012).

Having discussed national, public and private debt accumulation and financial credit expansion, it demonstrates that there is a lack of convergence, the Eurozone structure and its policies are constantly an issue and continue to contribute to the financial crisis. Also, it is evident that the crisis had great effects on mostly the periphery countries and while the blame was placed on the same countries for the crisis, the European commission failed to see that it was the system and structure of Eurozone that failed those countries. The Eurozone way is not creating an optimum currency area that is necessary for the euro to function. The aforementioned and discussed fragilities contrast with the underpinnings of optimum currency area theory. Therefore there is a need for fiscal federalism or debt mutualisation which is in correspondence to the optimum currency area theory. Mutualisation is necessary as the debt levels are so high in reality and any new policies such as the six pack which will be discussed in the next section aren't robust enough to tranquilise the debt. Moreover, the act of mutualisation itself will display convergence of the Eurozone that is necessary for the euro to function.

2.5 Response to the Sovereign Debt Crisis

In response to the sovereign debt crisis the European Financial Stability Facility (EFSF) was established in 2010 as a temporary crisis resolution mechanism. However, in 2012 the European Stability Mechanism (ESM) was created and it became the permanent rescue mechanism while EFSF stopped approving loans since June 2013 (Europa 2015J). The EFSF and ESM will be discussed in further detail in the following sections.

2.5.1 The European Financial Stability Facility

The EFSF was established on the 7th of June 2010 under the Luxembourgish law in Luxembourg. Its aim was to maintain financial stability of the monetary union by providing temporary financial assistance to Eurozone member states that require it. The EFSF acquired finance through the issuance of bonds and other debt instruments on capital markets. On June 24th its capacity was increased by the Head of Government and State from €440 billion to €780 billion (Europa 2015J). The EFSF provides loans to Eurozone countries such as Ireland, Portugal and Greece and then they use the funds to inject cash into their financial institutions which may happen within a macroeconomic adjustment programme (Europa 2015K). For instance, in the Irish programme it was decided that Ireland would use €35 billion out of the €85 billion funds to stabilise the banking sector (Europa 2015J). However in June 2013 EFSF stopped approving loans and on the 30th of June 2015 the final assistance programme for Greece expired. Nevertheless, it continues to function in order to make principal and interest payments to EFSF bond holders, obtain loan repayments from recipients of loans and roll over unpaid EFSF bonds as the maturity of the loans is no longer than the maturity of bonds that the EFSF issued (Europa 2015K).

2.5.2 The European Stability Mechanism

Similarly to the EFSF, the ESM provides financial assistance to Eurozone member states under severe financial pressure since 2012. Currently ESM is the only permanent financial assistance mechanism for Eurozone member states with a capped lending capacity of €500 billion and subscribed capital of

€700 billion. It needs the capital buffer so ESM's mechanism has an AAA rating from the credit rating agencies. It raises the funds by issuing medium and long-term debts as well as money market instruments. Moreover, the ESM works very closely with the IMF and when a Eurozone country requests financial assistance, a similar request is also submitted to the IMF (Europa 2015L).

The creation of the ESM is not the only response to the sovereign debt crisis, it is rather complementary to a string of measures started at national and EU level. The efforts made by European nations in regard to structural reforms and fiscal consolidation along with EU schemes and programmes such as the strengthening of the Stability and Growth Pact, the Treaty on Stability, Coordination and Governance in the EMU (fiscal compact) and the new European method of financial monitoring are all essential for tackling the root of the crisis and establishing an environment that favours and contributes to economic growth (Europa 2015L).

However, ESM doesn't have the necessary funds to provide financial assistance to the larger member states while providing funds to the rest of the peripheral countries, thus some may say that the ESM isn't functioning as it was intended to, as it was meant to be almost like a firewall that protected undamaged economies of Eurozone from the likes of economies in the peripheral countries (Lange 2012). Therefore, it should tackle the crisis head-on even if it means providing less funding for a little while to the smaller peripheral countries who are not on the brink of defaulting and more to those who are. It could also consider increasing its lending capacity beyond €500 billion in order to act as the financial assistance mechanism it was meant to from the beginning.

Moreover, the governance structure of the ESM has created bias in the decision making process. The Board of Governors which consists of the Ministers of Finance from the ESM member states is the highest decision making body of the ESM. This suggests that bias will be present in the decisions made by the ESM as the main figures are politicians who act in their own interests and of their own country of origin. As a result, ESM decisions will embody national interests rather than European interests. In addition, the decision making

process becomes prolonged and tough and it will reduce flexibility that is required in times of crisis because for decisions to be taken there has to be a mutual agreement. Most of all, the ESM has not considered the probability of a sovereign default in its framework therefore it cannot aid in the resolution especially in current times when the chances of a default are looking quite high (Europa 2015L; Europa 2015M).

Following the discussion of the response to the sovereign debt crisis, the current rules of Eurozone will be discussed in the next section.

2.5.3 Current Rules

When the euro was launched, the Stability and Growth Pact was established to ensure sound public finances through the various limits for budget deficits and public debt. Nevertheless, the global economic and financial crisis revealed non-compliance to these limits as discussed in section 2.3.3. Therefore in 2011 the 'Six-Pack' consisting of five regulations and one directive was instituted to strengthen the Stability and Growth Pact. It applies to the 27 European member states with some rules designed specifically for Eurozone countries like financial sanctions. The Stability and Growth Pact member states' budgetary balance will work towards not exceeding 60% of GDP public debt and deficit of 3% of GDP as well as meeting the individual country medium-term objective, also known as the preventive arm (Europa 2013A).

The purpose of the preventative arm of the Stability and Growth Pact over the medium-term is to ensure sound budgetary policies by establishing boundaries for member states' policies and fiscal planning for the period of calm and regular economic times, while also taking into consideration economic turbulence. Moreover, it ensures that national governments have enough space to manoeuvre and that a safety margin is present so EU's fiscal rules aren't breached (Europa 2015H).

Each EU member state has a budgetary target, identified as the Medium-Term Budgetary Objective (MTO) which tries to ensure that national governments meet their pledges to pursue sound fiscal policies and ensure the budgetary position is healthy. Each member state is expected to reach its own specific

MTO or to be moving towards it by attuning its structural budgetary position at a benchmark pace of 0.5% of GDP per year. However, each nation's economic state is taken into consideration and the nations with excessive debt levels are required to fasten their progress while other nations with favourable economic conditions are expected to do more so when economic conditions change they have more flexibility (Europa 2015H).

The corrective arm of the Stability and Growth Pact makes sure that member states implement appropriate policy responses to rectify excessive deficits through the implementation of the Excessive Deficit Procedure (Europa 2015I).

The six-pack strengthens the preventative and corrective arm of the pact in the following ways;

- The 'significant deviation' from the MTO or the corrective path towards it term is defined quantitatively in regard to the preventative arm, through this the six-pack ensures that there is stricter application of the fiscal rules (Europa 2013A).

- Instead of only placing a country in the EDP when its deficit goes above the 3% of GDP, now EDP may be launched if the debt ratio is above 60% of GDP (Europa 2013A).

- Reverse qualified majority voting (RQMV) will now be used for most sanctions for Eurozone member states which will increase the chances for a Eurozone member state to be sanctioned. This means that instead of The European Parliament and the Council deciding on the proposal using the qualified majority method, the Council will impose the financial sanction unless a qualified majority of its members vote against it (Europa 2013A).

2.5.4 Treaty on Stability, Coordination and Governance

This is an intergovernmental agreement that is compulsory for all Eurozone member countries. The fiscal portion of the TSCG is known as the "Fiscal Compact". It requires the Eurozone countries to respect and move towards country specific MTO as stated in the Stability and Growth Pact with a lower

limit on the structural deficit, so instead of 3% of GDP it will now be of 0.5% of GDP and 1.0% of GDP for member countries whose debt ratio is considerably below 60% of GDP. Also, corrective mechanisms will be automatically applied if a member country strays from the MTO, with escape clauses only used for unique circumstances (Europa 2013A).

Independent institutions would check that there is compliance with the rule and the European Court of Justice (CoJ) could possibly inflict financial sanctions of 0.1% of GDP if the new budget rules aren't incorporated into national law and if it neglects the CoJ ruling that requires it to do so (Europa 2013A).

The additional provision's aim is to reinforce the implementation of the Stability and Growth Pact but most importantly TSCG introduces reinforced monitoring and coordination of economic policies with forecasted coordination of debt issuance proposals amongst contracting parties and economic affiliation programmes for member states in EDP, which details structural improvements that are needed for an operational and robust correction of a nation's excessive deficit (Europa 2013A).

Once the Fiscal Compact as mentioned above is entered into force, it will run in parallel with the six-pack. On the one hand, few of the provisions that are in the TSCG are also in the Stability and Growth Pact which are reformed by the six-pack. On the other hand, several provisions in the TSCG are more strict and severe than in the six-pack, for instance if a Eurozone member state breaches a deficit standard all Eurozone member states will support the Commission's recommendations or proposals at every stage of the EDP, unless a qualified majority aren't in support of it. This means that in practise when a Eurozone member state breaches a deficit standard, RQMV will take place at all stages of the EDP, even if it's not outlined in the six-pack (Europa 2013A).

However there was still a high probability that there would be spill over effects of budgetary policies in the Eurozone, thus stronger mechanisms especially for Eurozone were required. In response to this, in 2013 the two-pack was introduced to increase transparency on budgetary decisions, recognise special needs of Eurozone countries with high financial burdens and to strengthen coordination in order to ensure a seamless continuity of policy monitoring. This

two-pack was needed to strengthen the economic pillar of the Economic and Monetary Union and in the tough times, it means that risks will be shared to a greater extent while in good times more wealth will be attained. The two-pack is grounded and complements the six-pack reforms of the Stability and Growth Pact, the European framework for fiscal monitoring, and the European Semester for economic policy coordination. The first regulation of the two-pack applies to all Eurozone countries and contains special rules for those in the corrective arm of the Stability and Growth Pact. The second regulation outlines simplified and clear rules for increased monitoring of member states under severe financial pressure, those obtaining financial support, and those leaving the financial assistance programme (Europa 2013B).

Through slow intervention and muddling through, the ECB created new policies when the European banking and financial system was on the brink of collapse. But, the ECB's commitment to austerity and great cuts to country spending have shoved the aim of a sturdier federal union further away than before (Drache 2014). Having discussed the response to the sovereign debt crisis, it is evident that the permanent financial assistance mechanism (ESM) is restrictive and the new methods of financial monitoring are limited. Europe has managed to come up with numerous of mechanisms, policies etc. that don't seem to be as effective as they should be. Europe needs a mechanism that can have an immediate effect as time is running out and countries like Greece who have already defaulted their debt with IMF need immediate assistance, thus making it once again necessary for mutualisation of debt to happen.

2.6 Conclusion to Literature Review

The literature review has highlighted throughout that Europe has been surviving due to ad-hoc and on the go policy innovation. On the go innovations saved Eurozone previously but in the present day it will not suffice. The Stability and Growth Pact is a prime example of ad-hoc policy making. Its first objective was to financially sanction the offenders by enforcing tough measures to rectify the imbalances. The pact became a mess straight away and the ECB abandoned the rules and collective responsibility was let-down (Drache 2014). Europe is not an optimum currency area and it requires integration but EU's refusal to create genuinely collective and joint policies to assist member states in stimulating growth and keeping finances stable is significantly responsible for structural discrepancies that work in opposition to European integration. Moreover, throughout the literature review it becomes evident that the structure of the Eurozone is a recurring issue.

Europe has a permanent rescue fund, stricter rules to monitor economic imbalances and budgets with the threat of partially automatic sanctions and a fiscal compact with national balanced-budget rules. While it is important to improve competitiveness and increase growth, Europe needs to realise that the euro's past is a story of survival and not success and that the periphery countries have fallen further into debt. Vastly growing unemployment levels and debt deflation in Greece are not signs of successful regulation and correction (Europa 2013B; Europa 2015L). The question isn't whether economies have to reach the lowest point in a continuously changing environment before they can start recovering, but whether the politicians reduce or worsen the crisis. European citizen's perceptions have changed of the European Commission who are claiming to bring Europe into recovery yet they don't provide the assistance required to the periphery countries, making them unable to compete with the core and only sinking deeper into debt (Lamont 2015). The Eurozone has a common currency and a common monetary policy, but it does not have a fiscal union which means it doesn't have a centralised budget authority or a system of fiscal transfers across member states. If the Eurozone had a tight fiscal union, a central budget authority could have been used to manage

expenditure of Eurozone countries as well as soothe asymmetric shocks within the Eurozone through the use of fiscal transfers (Belkin et al. 2012).

The Eurozone is in chaos, the existing system that was in place to ensure an optimum currency area, failed. Debts have accumulated to the point where the Eurozone desperately needs to converge through the mutualisation of debt and to function by the rules set out to create and maintain an optimum currency as it will guide it towards a functional and robust single currency. Therefore, the researcher will conduct a scenario analysis of the mutualisation option as the response to the sovereign debt crisis isn't sufficient according to the optimum currency area theory. A risk sharing mechanism and financial transfers such as debt mutualisation, will work towards harmonising business cycles in accordance with the optimum currency area theory. The primary objective of this research is to investigate, through a scenario analysis, potential European sovereign debt mutualisation mechanisms that could be implemented to reduce the funding risk in peripheral European countries.

Chapter 3 Research Question

3.1 Research Problem

This research within the dissertation, addresses the problem of the European sovereign debt crisis. Overall, it can be concluded that the aforementioned and discussed policies and fragilities of Eurozone contrast with the underpinnings of the optimum currency area theory. Therefore, it is necessary to conduct research that explores the scenario analysis of a potential mutualisation mechanism that is in accordance with the optimum currency theory for the peripheral European countries in response to the sovereign debt crisis.

3.2 Research Objective

The primary objective of this research is to investigate, through a scenario analysis, the potential European sovereign debt mutualisation mechanisms that could be implemented to reduce the funding risk in peripheral European countries.

This research will offer a relevant possible solution to the current day sovereign debt crisis based on the mechanisms currently in place in Europe to deal with the crisis, and project how much additional capital these funds would need to provide beneficial solutions to the current debt crisis. This analysis will concentrate on the potential transfers from the core European countries to peripheral nations, with a specific focus on Greece and Spain.

3.3 Secondary Objectives

Based on the literature the following secondary objectives are proposed:

1. Determine the effect of mutualisation of peripheral countries' debts on the core countries contribution levels to the ESM.

2. Investigate the effect mutualisation of 25%, 50%, 75% and 100% of Greece's debt would have on the remaining peripheral countries.

3. Explore the impact a 30% increase of the ESM fund would have on key government finances of the core countries and what impact would it have on the peripheral countries while Greece's debt is mutualised by 25%, 50%, 75% and 100%.

4. Explore Spain as a comparator for the Greek scenarios, to analyse what would happen if only Spain's debt was mutualised and what would be left over for the rest of the peripheral countries of the ESM fund as well as the impact of a 30% increase of the ESM fund.

Chapter 4 Methodology

4.1 Introduction

The primary objective of this research is to analyse the potential mutualisation mechanisms for peripheral European countries by examining data which include public debt levels of peripheral countries and ESM contribution fund figures (paid-in capital and callable capital). This chapter will discuss the research philosophy and design for this scenario analyses study as well as the data collection method along with analysis, ethical considerations and limitations of this study.

4.2 Research Philosophy

Proposed by Saunders et al. (2012) the 'Research Onion' describes the various stages a researcher must evaluate when devising a methodology. Five stages exist in the 'Research Onion' that each offer a comprehensive understanding of the various methods for data gathering as well as illustrating the methodological process. Please see figure 6 below;

Figure 6 The Research Onion
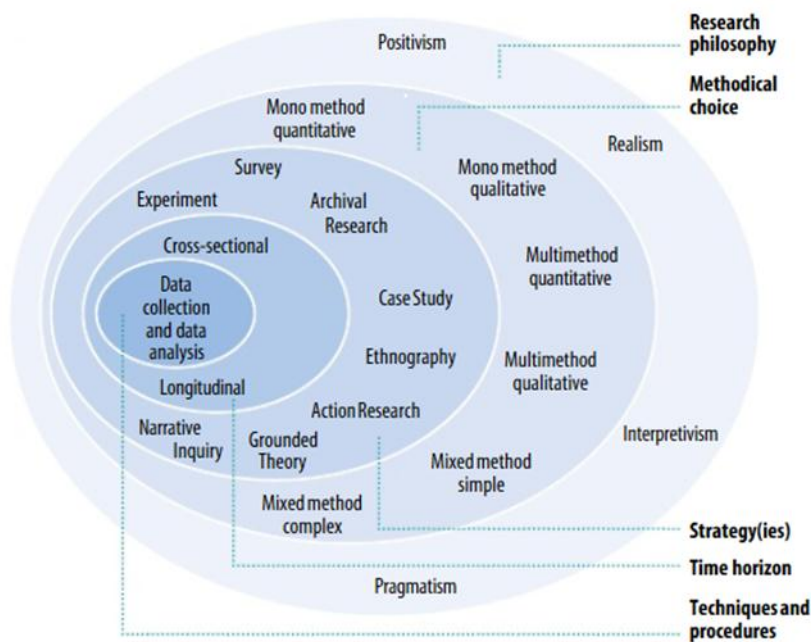
(Saunders et al. 2012).

The researcher must be aware of her philosophical approach to research as it will influence the research and how she analyses the area that is being explored and it will guide her approach to the subject in a particular way (Gill and Johnson 2010). The secondary data collected for this research, displayed public debt levels of peripheral countries and ESM contribution fund figures (paid-in capital and callable capital). A positivist epistemology was adopted by the researcher when collecting this secondary data. Positivist epistemology is a quantitative research approach consisting of numerical information that has been acquired through statistical interpretations of data gathered, it is a perspective that information is grounded on 'what can be observed and experienced' which means that the social world can be observed objectively without any contact between the researcher and the participant. Whereas an interpretivism viewpoint is that the social world is unlike the natural world and it focuses on an individual's experiences (Williamson 2006). In collecting data through an internet based statistical office of the European Union and a European Institution, it is evident that the researcher has a positivist stance as there was no direct contact between the researcher and the participants.

From an axiological perspective, this research is unbiased and free of researchers values as the internet-based secondary data collection approach, could have not been influenced by researcher's beliefs and values as there was no contact between the researcher and the participants. Axiology is where human environment value plays a role in the research methodology (Zou and Heng 2010).

4.3 Research Design

Qualitative secondary analysis involves the use of already gathered information to pursue a research interest that is distinctive from the original work (Irwin 2013). The use of secondary analysis applies a new perspective or theoretical focus to the original research issue. Secondary analysis is of great benefit when an 'elusive population' as Fielding (2004) calls it, is hard to access. Interviews of peripheral country politicians and the European Commission's members that have already been collected were considered for this study to uncover the

potential mutualisation mechanisms they believe should be employed to revive and rebuild the euro. The sample is difficult to access thus using already collected information provides access to rich data from the elusive population and at minimum cost. However, in this particular instance, the data may lack credibility as very often parts of data are left out and the parts that are included can be biased. Moreover, the researcher cannot be sure if the information will be interpreted the way the author has intended (Long-Sutehall et al. 2011). Thus, qualitative secondary analysis of interviews is not the most suitable research methodology for the scenario analysis of potential mutualisation mechanisms.

Quantitative research is the collection of numerical data which can be counted or measured to test a hypothesis, explain a particular event or answer a research question. Questionnaires are one of the most commonly used methods for collecting data and are more objective compared to interviews. Also, quantitative methods have usually been considered to be more robust than qualitative methods with controlled random trials and systematic reviews for determining evidence (Hoe and Hoare 2012). Questionnaires are excellent for collecting data from a relatively vast quantity of people especially when they are dispersed and perhaps in remote locations (Rowley 2014). This research method is relatively quick and low cost but the response rate could be low thus not providing an unbalanced picture. Also, the respondents may not provide truthful answers, may have not put a lot of thought into answering or may misinterpret the question. Overall it would lack validity and it couldn't tell the meaning behind the response as questionnaires limit the scope of answers. Therefore a questionnaire is not the most suitable research methodology for the scenario analysis of potential mutualisation mechanisms.

Secondary data is raw data that has been already collected and processed for a study or other purpose (Whiteside et al. 2012). Government departments carry out surveys and publish official statistics comprising of demographic, social and economic matters. Secondary data is excellent for obtaining information that is difficult to gather due to geographical or access to population constraints which is the premise for this study. Official statistics published by governmental

departments are highly valid and accurate thus a researcher can access rich data and perform an analysis that is based off valid and accurate data sets at no cost and in little time (Saunders et al. 2012). Survey secondary data will be used to achieve the sub-objectives outlined in section 3.2 and 3.3 and a cross-sectional research design will be applied. A cross-sectional design is 'the study of a particular phenomenon (or phenomena) at a particular time' and is used when there are limited resources or time constraints (Saunders et al. 2009). Survey secondary data is existing data that has been collected for another purpose through a consensus, continuous/regular surveys or ad hoc surveys. Censuses is carried out by governments where participation is compulsory and they are usually of high quality as they are clearly defined and well documented. Continuous and regular surveys are repeated over time thus comparable data is available for member states. Census and continuous and regular survey data will provide rich data that is difficult to obtain for this research (Saunders et al. 2012).

A data set will be compiled through extraction and combination of selected comparable variables from numerous surveys that have been repeated numerous of times to provide a time series of data which include national debt levels of peripheral countries and ESM contribution fund figures (paid-in capital and callable capital). These data sets will provide quantifiable information that will allow to perform a scenario analysis of potential mutualisation mechanisms for peripheral European countries. Therefore quantitative research through secondary data is the most suitable research methodology for this research as it will provide the necessary reliable and verified data to answer the research question and meet the secondary objectives.

4.4 Secondary Data and Analysis

The secondary data for this research was collected through a cross-sectional internet based data set published on the statistical office of the European Union and a European Institution. Below a table displays the methodology followed by the statistical office.

Type of Data	Methodology	Data Collection	Inclusion Criteria	Participants	Year Data was Collected
Public Debt Levels	Quantitative	Compiled and quality controlled national statistics that are collected and reported by the national statistics producers.	Peripheral Member States of the European Union.	Ireland, Greece, Spain, Italy, Cyprus and Portugal.	2014

(Europa 2015P).

Due to the subject of the research, this type of quantitative secondary data collection was considered to be the best by the researcher.

Nineteen euro members were chosen for this research; Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia and Spain. These countries are all the members of the Eurozone. They were split into two groups. The core countries on one hand, which include Austria, Belgium, Estonia, Finland, France, Germany, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Slovakia and Slovenia, and peripheral countries on the other, including Cyprus, Greece, Ireland, Italy, Portugal, and Spain. This division highlights one of the main causes of the euro crisis: most of the core countries displayed continuous significant current account surpluses before 2008 which was maintained after the crisis; peripheral countries, on the contrary, all experienced significant and unsustainable deficits, as exhibited in figure 3 (Europa 2015N). The rationale for splitting these countries is that the peripheral countries are posing a high risk to the stability of the Eurozone and some have been granted a bailout whereas the core countries are divergent.

The researcher analysed the potential mutualisation mechanisms for peripheral European countries by examining data which include national debt levels of peripheral countries and ESM contribution fund figures (paid-in capital and callable capital) of the 2014 period. A data set was extracted from Eurostat and compiled of 2014 public debt levels of Ireland, Greece, Cyprus, Spain, Italy and Portugal in to the Microsoft Office Excel programme. Also, secondary data was

extracted from the internet-based ESM database of the contribution figures to the fund which included the percentage amount, the paid-in capital and capital subscription. This data was collected to explore what would happen to contribution levels of the core countries if the peripheral countries' debts were mutualised. However for this research, callable capital figure was also calculated to complete the data set. Since the authorised capital stock is divided into paid-in shares and callable shares, the callable capital figure was calculated by subtracting paid-in capital from capital subscription as shown below.

(Capital Subscription – Paid-in capital = Callable capital)

Country	Capital Subscription (€bn)	Paid-in capital (€ bn)	Callable capital (€ bn)
Germany	190	21.7	168.3
France	142.7	16.3	126.4
Italy	125.4	14.3	111.1
Spain	83.3	9.5	73.8
Netherlands	40	4.6	35.4
Belgium	24.3	2.8	21.5
Greece	19.7	2.3	17.4
Austria	19.5	2.2	17.3
Portugal	17.6	2	15.6
Finland	12.6	1.4	11.2
Ireland	11.1	1.3	9.8
Slovakia	5.8	0.7	5.1
Lithuania	2.9	0.3	2.6
Slovenia	2.9	0.3	2.6
Latvia	1.9	0.2	1.7
Luxembourg	1.8	0.2	1.6
Cyprus	1.4	0.2	1.2
Estonia	1.3	0.1	1.2
Malta	0.5	0.1	0.4

Note: Capital subscription is the total sum of paid-in capital and callable capital. Paid-in capital is the capital that has been contributed to the ESM fund by ESM members through the purchase of stock which should reach €80 billion. Callable capital is the portion of subscribed capital that is authorised unpaid capital which can be called at any time when it is needed by the ESM and the payment must be made by the shareholders (ESM members) (Europa 2015T).

The calculated callable capital figure was inserted into the extracted data set from ESM which then created a new data set as shown below.

Figure 7

Country	%	Paid-in capital (€ bn)	Callable capital (€ bn)	Total
Germany	26.9	21.7	168.3	190
France	20.2	16.3	126.4	142.7
Italy	17.8	14.3	111.1	125.4
Spain	11.8	9.5	73.8	83.3
Netherlands	5.7	4.6	35.4	40
Belgium	3.5	2.8	21.5	24.3
Greece	2.8	2.3	17.4	19.7
Austria	2.8	2.2	17.3	19.5
Portugal	2.5	2	15.6	17.6
Finland	1.8	1.4	11.2	12.6
Ireland	1.6	1.3	9.8	11.1
Slovakia	0.8	0.7	5.1	5.8
Lithuania	0.4	0.3	2.6	2.9
Slovenia	0.4	0.3	2.6	2.9
Latvia	0.3	0.2	1.7	1.9
Luxembourg	0.2	0.2	1.6	1.8
Cyprus	0.2	0.2	1.2	1.4
Estonia	0.2	0.1	1.2	1.3
Malta	0.1	0.1	0.4	0.5
Total	**100**	**80.5**	**624.2**	**704.7**

(Europa 2015Q).

This data set is the base case from which scenario analyses 1 will be compared to.

4.4.1 Scenario Analyses 1

This data set was recalculated in scenario 1 to analyse what would happen to the contribution, paid-in capital and callable capital levels of the core countries if the peripheral countries' debts were mutualised. Ireland (1.6%), Greece (2.8%), Cyprus (0.2%), Spain (11.8), Italy (17.8) and Portugal (2.5%) are no longer in the ESM contribution data set because their debts are being mutualised by the fund. In order to calculate the new percentage contribution figure, the researcher had to calculate what 1% equals by dividing 100% by 63.3% which equals 1.58% (1% = 1.58%) as the core countries have to take on an extra 36.7% (Ireland (1.6%), Greece (2.8%), Cyprus (0.2%), Spain (11.8), Italy (17.8), Portugal (2.5%)) to make up 100%. Each core countries' percentage contribution, paid-in capital and callable capital figures were multiplied by 1.58% ,for example Germany; 26.9 x 1.58, 21.7 x 1.58 and 168.3 x 1.58.

A data set which was extracted from Eurostat and compiled of 2014 national debt levels of Ireland, Greece, Cyprus, Spain, Italy and Portugal as shown below is the base case for scenario analyses 1 to 7.

Figure 8

Country	National Debt in 2014 (€ bn)
Ireland	203,3
Greece	317,1
Spain	1 033,9
Italy	2 134,9
Cyprus	18,8
Portugal	225,3
Total	**3 933,3**

This data was organised into a table and a potential mutualisation percentage of 10%, 20%, 30%, 40% and 50% was attached to it and calculated by multiplying the mutualisation percentage by the country's debt figure for scenario analysis 1 to identify how much of peripheral countries' national debt could be mutualised under the €500 billion ESM fund cap.

4.4.2 Scenario Analyses 2

For scenario analyses 2, a data set was calculated to analyse what would happen if only Greece's debt was mutualised by 25% and what would be left over for the rest of the peripheral countries of the ESM fund by multiplying Greece's national debt figure (€317,1 billion) by 25%. Then subtracting the answer from €500 billion ESM fund cap to determine what is remaining for the rest of peripheral countries. To determine how much of national debt of the peripheral countries' can be mutualised from the remainder of the ESM fund, Ireland's, Cyprus', Spain's, Italy's and Portugal's national debt levels were divided by the remainder of the ESM fund.

4.4.3 Scenario Analyses 3

Scenario analyses 3 aimed to analyse what would happen if only Greece's debt was mutualised by 50% and what would be left over for the rest of the peripheral countries of the ESM fund. This was conducted by multiplying

Greece's national debt figure (€317,1 billion) by 50%. Then the answer was subtracted from €500 billion ESM fund cap to determine what is remaining for the rest of peripheral countries. To determine how much of national debt of the peripheral countries' can be mutualised from the remainder of the ESM fund, Ireland's, Cyprus', Spain's, Italy's and Portugal's national debt levels were divided by the remainder of the ESM fund.

4.4.4 Scenario Analyses 4

Analysation of what would happen if only Greece's debt was mutualised by 75% and what would be left over for the rest of the peripheral countries of the ESM fund was conducted for scenario analyses 4. This was calculated by multiplying Greece's national debt figure (€317,1 billion) by 75%. The answer was then subtracted from €500 billion ESM fund cap to determine what is remaining for the rest of peripheral countries. To determine how much of national debt of the peripheral countries' can be mutualised from the remainder of the ESM fund, Ireland's, Cyprus', Spain's, Italy's and Portugal's national debt levels were divided by the remainder of the ESM fund.

4.4.5 Scenario Analyses 5

For scenario analyses 5, a data set was calculated to analyse what would happen if only Greece's debt was mutualised by 100% and what would be left over for the rest of the peripheral countries of the ESM fund by multiplying Greece's national debt figure (€317,1 billion) by 100%. Then the answer was subtracted from €500 billion ESM fund cap to determine what is remaining for the rest of peripheral countries. To determine how much of national debt of the peripheral countries' can be mutualised from the remainder of the ESM fund, Ireland's, Cyprus', Spain's, Italy's and Portugal's national debt levels were divided by the remainder of the ESM fund.

4.4.6 Scenario Analyses 6

Scenario analyses 6 aimed to analyse what would happen based on the ESM contribution figures calculated in scenario 1, if the ESM fund was increased by 30% and how it would affect debt mutualisation of the peripheral countries if only Greece's debt was mutualised by 25%, 50%, 75% and 100%. The new

ESM contribution fund was calculated by multiplying each figure of the ESM contribution fund computed in scenario analysis1, by 30% and then adding the answer back onto the figure used to multiply by 30% in order to calculate the 30% increase. The new ESM contribution fund to the potential mutualisation data bases that were created in scenarii 2, 3, 4 and 5. The debt mutualisation table was reorganised to analyse what would be left over for the rest of the peripheral countries of the new €650 billion ESM fund if only Greece's debt was mutualised by 25%, 50%, 75% and 100%. This was calculated by subtracting the 25%, 50%, 75% and 100% of Greece's national debt that was computed in scenario analyses 2, 3, 4 and 5 from the new €650 billion ESM fund to determine what is remaining for the rest of peripheral countries. To determine how much of national debt of the peripheral countries' can be mutualised from the remainder of the ESM fund, Ireland's, Cyprus', Spain's, Italy's and Portugal's, national debt levels were divided by the remainder of the ESM fund.

4.4.7 Scenario Analyses 7

Subsequently for scenario analysis 7, Spain was the chosen comparator for scenarios 2, 3, 4, 5 and 6 as it has one of the highest debt levels in the Eurozone. Based on the base case of 2014 national debt levels, Spain's debt (€1033,9 billion) was multiplied by 25%, 50%, 75% and 100% to analyse what would happen if only Spain's debt was mutualised and what would be left over for the rest of the peripheral countries of the ESM fund. Then the answer was subtracted from €500 billion ESM fund cap to determine what is remaining for the rest of peripheral countries. To determine how much of national debt of the peripheral countries' can be mutualised from the remainder of the ESM fund, Ireland's, Cyprus', Greece's, Italy's and Portugal's national debt levels were divided by the remainder of the ESM fund. Then the data set was recalculated to establish what would be left for the peripheral countries if the ESM fund was increased by 30%, by subtracting Spain's mutualised figure of 25%, 50%, 75% and 100% from the new ESM fund figure of €650 billion. To determine how much of national debt of the peripheral countries' can be mutualised from the remainder of the ESM fund, Ireland's, Cyprus', Greece's, Italy's and Portugal's, national debt levels were divided by the remainder of the ESM fund.

4.5 Ethical Considerations

Ethical consideration should be made when carrying out any research, such as the issues of nonmaleficence, confidentiality, fidelity and informed consent which all apply to the use of secondary data. Heaton (1998) (cited in Long-Sutehall et al. 2010) states that informed consent cannot be assumed when using secondary data, and the researcher cannot depend on the nebulousness of the primary and original consent form. Thorne (1998) suggests that the researcher may need to make a professional judgement about whether the reuse of data breaches the contract that was made between the primary researcher and participants. Eurostat's mission from which the data was reused is 'to be the leading provider of high quality statistics on Europe' and its main task is to provide the EU with statistics at European level that facilitate contrasts between countries, which further suggests that the reuse of data doesn't breach the contract (Europa 2015O). Moreover, Eurostat has a copyright notice and reuse of data notice which states that it has a policy to encourage the reuse of the data without any payment or written license (Europa 2015R).

This study did not involve any vulnerable groups and individuals as it focused on countries of the European Union thus not infringing on confidentiality, fidelity or nonmaleficence as the data collected didn't contain personal demographics, beliefs or attitudes.

4.6 Limitations

In presenting the research methodology, the researcher is aware that even though the secondary data is guaranteed to be of high quality by the official institutions, there is still a possibility that it is not always the case and the researcher doesn't have real control over data quality. Also, the data collected by secondary research is not as extensive as a questionnaire because questionnaires can provide answers which can be compared to theoretical foundations (Saunders et al. 2012).

Chapter 5 Analyses and Findings

5.1 Scenario Analysis 1

Figure 7: Base case for scenario analysis 1

Country	%	Paid-in capital (€ bn)	Callable capital (€ bn)	Total
Germany	26.9	21.7	168.3	190
France	20.2	16.3	126.4	142.7
Italy	17.8	14.3	111.1	125.4
Spain	11.8	9.5	73.8	83.3
Netherlands	5.7	4.6	35.4	40
Belgium	3.5	2.8	21.5	24.3
Greece	2.8	2.3	17.4	19.7
Austria	2.8	2.2	17.3	19.5
Portugal	2.5	2	15.6	17.6
Finland	1.8	1.4	11.2	12.6
Ireland	1.6	1.3	9.8	11.1
Slovakia	0.8	0.7	5.1	5.8
Lithuania	0.4	0.3	2.6	2.9
Slovenia	0.4	0.3	2.6	2.9
Latvia	0.3	0.2	1.7	1.9
Luxembourg	0.2	0.2	1.6	1.8
Cyprus	0.2	0.2	1.2	1.4
Estonia	0.2	0.1	1.2	1.3
Malta	0.1	0.1	0.4	0.5
Total	100	80.5	624.2	704.7

Figure 9 Core country contribution levels after the mutualisation of peripheral country national debts

Country	%	Paid-in capital (€ bn)	Callable capital (€ bn)	Total (€ bn)
Germany	42.5	34.3	265.9	300.2
France	32	25.7	199.7	225.4
Netherlands	9	7.3	55.9	63.2
Belgium	5.5	4.4	33.9	38.3
Austria	4.4	3.5	27.3	30.8
Finland	2.8	2.2	17.6	19.8
Slovakia	1.3	1.1	8.1	9.2
Lithuania	0.6	0.5	4.1	4.6
Slovenia	0.6	0.5	4.1	4.6
Latvia	0.5	0.3	2.7	3
Luxembourg	0.3	0.3	2.5	2.8
Estonia	0.3	0.2	1.8	2
Malta	0.2	0.2	0.6	0.8
Total	100	80.5	624.2	704.7

Figure 9 shows the proportion of paid-in capital and callable capital from core European countries in the ESM fund based on updated 2014 figures (researcher's own calculations) following the choice to mutualise Ireland's, Greece's, Spain's, Italy's, Cyprus' and Portugal's national debt as these countries would no longer be funding the contribution fund. The total updated ESM sum is still €704.7 billion, however each core countries' contribution levels have changed. Germany is the most significant contributor with a total potential capital contribution of €300.2 billion which is an increase of €110.2 billion. While the core countries Germany, France and the Netherlands account for an accumulated contribution of 83.5% that is an increase of 30.7%.

This data set shows that the core country contribution levels have increased due to the mutualisation of peripheral country national debts. The following figures show the effect mutualisation has on the core countries' each component of the ESM contribution fund.

Figure 10 Percentage Contribution

Country	Base Case %	After Mutualisation %	Difference %
Germany	26.9	42.5	15.6
France	20.2	32	11.8
Netherlands	5.7	9	3.3
Belgium	3.5	5.5	2
Austria	2.8	4.4	1.6
Finland	1.8	2.8	1
Slovakia	0.8	1.3	0.5
Lithuania	0.4	0.6	0.2
Slovenia	0.4	0.6	0.2
Latvia	0.3	0.5	0.2
Luxembourg	0.2	0.3	0.1
Estonia	0.2	0.3	0.1
Malta	0.1	0.2	0.1

Note: This data set displays the difference in percentage contribution before mutualisation of peripheral countries' national debts and after.

Figure 11 Paid-in Capital

Country	Base Case (€bn)	After Mutualisation (€bn)	Difference (€bn)
Germany	21.7	34.3	12.6
France	16.3	25.7	9.4
Netherlands	4.6	7.3	2.7
Belgium	2.8	4.4	1.6
Austria	2.2	3.5	1.3
Finland	1.4	2.2	0.8
Slovakia	0.7	1.1	0.4
Lithuania	0.3	0.5	0.2
Slovenia	0.3	0.5	0.2
Latvia	0.2	0.3	0.1
Luxembourg	0.2	0.3	0.1
Estonia	0.1	0.2	0.1
Malta	0.1	0.2	0.1

Note: This data set displays the difference of paid-in capital before mutualisation of peripheral countries' national debts and after.

Figure 12 Callable Capital

Country	Base Case (€bn)	After Mutualisation (€bn)	Difference (€bn)
Germany	168.3	265.9	97.6
France	126.4	199.7	73.3
Netherlands	35.4	55.9	20.5
Belgium	21.5	33.9	12.4
Austria	17.3	27.3	10
Finland	11.2	17.6	6.4
Slovakia	5.1	8.1	3
Lithuania	2.6	4.1	1.5
Slovenia	2.6	4.1	1.5
Latvia	1.7	2.7	1
Luxembourg	1.6	2.5	0.9
Estonia	1.2	1.8	0.6
Malta	0.4	0.6	0.2

Note: This data set displays the difference in callable capital before mutualisation of peripheral countries' national debts and after.

Figure 13 Total ESM Fund Sum

Country	Base Case (€bn)	After Mutualisation(€bn)	Difference (€bn)
Germany	190	300.2	110.2
France	142.7	225.4	82.7
Netherlands	40	63.2	23.2
Belgium	24.3	38.3	14
Austria	19.5	30.8	11.3
Finland	12.6	19.8	7.2
Slovakia	5.8	9.2	3.4
Lithuania	2.9	4.6	1.7
Slovenia	2.9	4.6	1.7
Latvia	1.9	3	1.1
Luxembourg	1.8	2.8	1
Estonia	1.3	2	0.7
Malta	0.5	0.8	0.3

Note: This data set displays the difference of the total ESM fund sum before mutualisation of peripheral countries' national debts and after.

The following data set in figure 14, exhibits the amount of peripheral countries' national debt that can be mutualised under the €500 billion ESM fund cap.

Figure 14

Country	Debt in 2014 (€ bn)	National Debt Mutualisation (€ bn)				
		10%	20%	30%	40%	50%
Ireland	203,3	20,3	40,6	60,9	81,3	101,7
Greece	317,1	31,7	63,4	95,1	126,8	158,6
Spain	1 033,9	103,4	206,8	310,2	413,6	517,0
Italy	2 134,9	213,5	427,0	640,5	854,0	1 067,5
Cyprus	18,8	1,9	3,8	5,6	7,5	9,4
Portugal	225,3	22,5	45,1	67,6	90,1	112,7
Total	**3 933,3**	**393,3**	**786,7**	**1 179,9**	**1 573,3**	**1 966,9**

From the constructed table it can be seen that if the national debts of peripheral European countries were mutualised by 10%, it would cost the ESM fund €393,3 billion which is feasible as the fund is capped at €500 billion. However, it wouldn't be feasible if the debts were mutualised by 20% as shown in the table because the total would exceed the ESM capped figure by €286,7 billion. If the debts were mutualised by 30%, the total mutualisation figure would exceed the

ESM fund €500 billion cap by €679,9 billion. Mutualisation of 40% of the national debts would exceed the ESM fund €500 billion cap by €1 073,3 billion. Last of all, 50% mutualisation of the national debts would exceed the ESM fund €500 billion cap by €1 466,9 billion. Thus, if all debts were mutualised they could only be mutualised by 10% to stay within the fund boundaries. More specifically, 12% could be mutualised of all the peripheral countries' national debts as shown below in figure 15 as the total sum almost reaches the ESM fund €500 billion cap at €472,1 billion, leaving €27,9 billion to remain in the fund.

Figure 15

Country	Debt in 2014 (€ bn)	National Debt Mutualisation (€ bn) 12%
Ireland	203,3	24,4
Greece	317,1	38,1
Spain	1 033,9	124,1
Italy	2 134,9	256,2
Cyprus	18,8	2,3
Portugal	225,3	27,0
Total	**3 933,3**	**472,1**

5.2 Scenario Analyses 2

If Greece's debt was mutualised by 25%, then €79,2 billion would be mutualised as shown below in figure 16, which would leave €420,8 billion in the fund for the rest of the peripheral countries.

Figure 16

	National Debt in 2014 (€bn)	25% (€ bn)
Greece	317,1	79,2

From figure 17 as shown below, it can be seen that only 11% of Irelands, Spain's, Italy's, Cyprus's and Portugal's debts could be mutualised if Greece's debt was mutualised by 25%.

Figure 17

National Debt Mutualisation (€ bn)

Country	Debt in 2014 (€ bn)	5%	6%	7%	8%	9%	10%	11%	13%	15%	20%
Ireland	203,3	10,1	12,1	14,2	16,3	18,2	20,3	22,4	**26,3**	30,5	40,6
Spain	1 033,9	51,6	62,0	72,3	25,4	93,0	103,4	113,7	**134,3**	155,1	206,8
Italy	2 134,9	106,7	128,0	149,4	170,8	192,1	213,5	234,8	**277,4**	320,2	427,0
Cyprus	18,8	0,9	1,1	1,3	1,5	1,6	1,9	2,0	**24,4**	2,8	3,8
Portugal	225,3	11,2	13,5	15,7	18,0	20,2	22,5	24,8	**29,1**	33,8	45,1
Total	**3 616,2**	**179,6**	**216,7**	**252,9**	**232,0**	**325,1**	**361,6**	**397,7**	**491,5**	**542,4**	**723,3**

Note: This table is the result for scenario analyses 2, 3, 4, 5 and 6. Under the €500 billion ESM fund cap, 13% is the largest amount that could possibly be mutualised.

5.3 Scenario Analyses 3

If Greece's debt was mutualised by 50%, then €158,5 billion would be mutualised as shown below in figure 18, which would leave €341,5 billion in the fund for the rest of the peripheral countries.

Figure 18

	National Debt in 2014 (€ bn)	50% (€ bn)
Greece	317,1	158,5

From figure 17, it can be seen that only 9% of Irelands, Spain's, Italy's, Cyprus's and Portugal's debts could be mutualised if Greece's debt was mutualised by 50%.

5.4 Scenario Analyses 4

If Greece's debt was mutualised by 75%, then €237,8 billion would be mutualised as shown below in figure 19, which would leave €262,2 billion in the fund for the rest of the peripheral countries.

Figure 19

	National Debt in 2014 (€ bn)	75% (€ bn)
Greece	317,1	237,8

From figure 17, it can be seen that only 7% of Irelands, Spain's, Italy's, Cyprus's and Portugal's debts could be mutualised if Greece's debt was mutualised by 75%.

5.5 Scenario Analyses 5

If Greece's debt was mutualised by 100%, then €317,1 billion would be mutualised as shown below in figure 20, which would leave €182,9 billion in the fund for the rest of the peripheral countries.

Figure 20

	National Debt in 2014 (€ bn)	100% (€ bn)
Greece	317,1	317,1

From figure 17, it is evident that only 5% of Irelands, Spain's, Italy's, Cyprus's and Portugal's debts could be mutualised if Greece's debt was mutualised by 100%.

5.6 Scenario Analyses 6

Figure 9 Core Country Contribution Levels after the Mutualisation of Peripheral Country National Debts

Country	%	Paid-in capital (€ bn)	Callable capital (€ bn)	Total (€ bn)
Germany	42.5	34.3	265.9	300.2
France	32	25.7	199.7	225.4
Netherlands	9	7.3	55.9	63.2
Belgium	5.5	4.4	33.9	38.3
Austria	4.4	3.5	27.3	30.8
Finland	2.8	2.2	17.6	19.8
Slovakia	1.3	1.1	8.1	9.2
Lithuania	0.6	0.5	4.1	4.6
Slovenia	0.6	0.5	4.1	4.6
Latvia	0.5	0.3	2.7	3
Luxembourg	0.3	0.3	2.5	2.8
Estonia	0.3	0.2	1.8	2
Malta	0.2	0.2	0.6	0.8
Total	**100**	**80.5**	**624.2**	**704.7**

Based on the ESM contribution figures calculated in scenario 1 as shown in figure 9, the following data set in figure 21 displays the new ESM contribution figures after the 30% increase of ESM contributions.

Figure 21

Country	%	Paid-in capital (€ bn)	Callable capital (€ bn)	Total
Germany	55.2	44.6	345.7	390.3
France	41.6	33.4	259.7	293.1
Netherlands	11.7	9.5	72.6	82.1
Belgium	7.2	5.7	44.1	49.8
Austria	5.7	4.5	35.5	40
Finland	3.6	2.9	22.9	25.8
Slovakia	1.7	1.4	10.5	11.9
Lithuania	0.8	0.7	5.3	6
Slovenia	0.8	0.7	5.3	6
Latvia	0.7	0.4	3.5	3.9
Luxembourg	0.4	0.4	3.2	3.6
Estonia	0.4	0.2	2.3	2.5
Malta	0.2	0.2	0.8	1
Total	**130**	**104.6**	**811.4**	**916**

Figure 21 displays the proportion of paid-in capital and callable capital from core European countries in the ESM based on updated 2014 figures (authors own calculations) following a 30% increase of ESM contribution fund. The total updated ESM sum is now €916 billion, which represents a 30% increase on the base case figure. Germany is the most significant contributor with a total potential capital contribution of €390.3 billion, which is an increase of €90.1 billion. While the core countries of Germany, France and the Netherlands account for an accumulated contribution of 108.5% which is an increase of 25% when compared to the previous constructed contribution fund data set in figure 9.

The ESM fund increased by €150 billion and is now capped at €650 billion due to the 30% increase. The effect of a 30% increase of ESM contribution figures on the debt mutualisation of the peripheral countries was as follows;

If Greece's debt was mutualised by 25%, then €79,2 billion would be mutualised, which would leave €570,8 billion in the fund for the rest of the peripheral countries. From table 3, it can be seen that 15% of Irelands, Spain's, Italy's, Cyprus's and

Portugal's debts could be mutualised if Greece's debt was mutualised by 25%. That is 4% more debt mutualised, due to the 30% increase of the ESM fund.

If Greece's debt was mutualised by 50%, then €158,5 billion would be mutualised as, leaving €491,5 billion in the fund for the rest of the peripheral countries. From table 3, it can be seen that 13% of Irelands, Spain's, Italy's, Cyprus's and Portugal's debts could be mutualised if Greece's debt was mutualised by 50%. That is 4% more debt mutualised, due to the 30% increase of the ESM fund.

If Greece's debt was mutualised by 75%, then €237,8 billion would be mutualised as, which would leave €412,2 billion in the fund for the rest of the peripheral countries. Table 3 exhibits that 11% of Irelands, Spain's, Italy's, Cyprus's and Portugal's debts could be mutualised if Greece's debt was mutualised by 75%. That is 4% more debt mutualised, due to the 30% increase of the ESM fund.

If Greece's debt was mutualised by 100%, then €317,1 billion would be mutualised, which would leave €332,9 billion in the fund for the rest of the peripheral countries. From table 3, it can be seen that 9% of Irelands, Spain's, Italy's, Cyprus's and Portugal's debts could be mutualised if Greece's debt was mutualised by 100%. That is 4% more debt mutualised, due to the 30% increase of the ESM fund.

Figure 22 Summary:

Greece National Debt Mutualisation	Peripheral Countries' National Debt Mutualisation under €500 billion ESM Fund Cap	Peripheral Countries' National Debt Mutualisation under €650 billion ESM Fund Cap
25%	11%	15%
50%	9%	13%
75%	7%	11%
100%	5%	9%

5.7 Scenario Analyses 7

If Spain's debt was mutualised by 25%, then €258,5 billion would be mutualised as shown below in figure 23, which would leave €241,5 billion in the fund for the rest of the peripheral countries.

Figure 23

	National Debt in 2014 (€ bn)	25% (€ bn)
Spain	€1 033,9	€258,5

From figure 24, it can be seen that only 8% of Irelands, Greece's, Italy's, Cyprus's and Portugal's debts could be mutualised if Spain's debt was mutualised by 25%.

Figure 24

National Debt Mutualisation (€ bn)

	Debt in 2014 (€ bn)	5%	7%	8%	9%	10%	11%	12%	13%
Ireland	203,3	10,1	14,2	16,3	18,2	20,3	22,4	24,4	26,3
Greece	317,1	15,9	22,2	25,4	28,5	31,7	34,9	38,1	41,2
Italy	2 134,9	106,7	149,4	170,8	192,1	213,5	234,8	256,2	277,4
Cyprus	18,8	0,9	1,3	1,5	1,6	1,9	2,0	2,3	24,4
Portugal	225,3	11,2	15,7	18,0	20,2	22,5	24,8	27,0	29,1
Total	**2 899,4**	**144,8**	**202,8**	**232,0**	**260,6**	**289,9**	**318,9**	**348,0**	**398,4**

If Spain's debt was mutualised by 50%, then €517 billion would be mutualised as shown below in figure 25, which would drain the fund and position it at -€17 billion leaving nothing in the fund for the rest of the peripheral countries.

Figure 25

	National Debt in 2014 (€ bn)	50% (€ bn)
Spain	€1 033,9	€517,0

However, the ESM fund is capped at €500 billion therefore only 48% (€496,3 billion)of Spain's debt could be mutualised. In order to mutualise all of Spain's current debt levels, the fund would have to increase by 101.6 %.

If the ESM fund was increased by 30%, Spain's national debt could only be mutualised by 62% before draining the ESM fund. The effect of a 30% increase of ESM contribution figures on the debt mutualisation of the peripheral countries was as follows;

If 25% of Spain's national debt was mutualised, it would leave €391,5 billion in the ESM fund allowing for 12% of debt mutualisation for the remaining peripheral countries and 50% would leave €133 billion in the ESM fund allowing for 4% debt mutualisation as exhibited in figure 24. However, if Spain's national debt was mutualised by 75% it would clear out the ESM fund positioning it at -€125,4 billion and if 100% of Spain's national debt was mutualised it would position the fund at -€968,9 billion, leaving nothing for the remaining peripheral countries.

From the figures below, it is evident that under the €500 billion ESM fund cap peripheral countries' can be mutualised by a higher percentage compared to Spain. If Greece's debt was mutualised by 25%, the peripheral countries' debts could be mutualised by 11% but if Spain's debt was mutualised by 25% the peripheral countries' debts could only be mutualised by 8%. If Greece's debt was mutualised by 50%, the peripheral countries' debts could be mutualised by 9% but if Spain's debt was mutualised by 50% the peripheral countries' debts could not be mutualised. If Greece's debt was mutualised by 75%, the peripheral countries' debts could be mutualised by 7% but if Spain's debt was mutualised by 75% the peripheral countries' debts could not be mutualised once again. If Greece's debt was

mutualised by 100%, the peripheral countries' debts could be mutualised by 5% but if Spain's debt was mutualised by 100% the peripheral countries' debts could not be mutualised.

If the ESM fund was increased by 30% to a €650 billion ESM fund cap the peripheral countries' can be mutualised by a higher percentage compared to Spain. If Greece's debt was mutualised by 25%, the peripheral countries' debts could be mutualised by 15% but if Spain's debt was mutualised by 25% the peripheral countries' debts could only be mutualised by 12%. If Greece's debt was mutualised by 50%, the peripheral countries' debts could be mutualised by 13% but if Spain's debt was mutualised by 50% the peripheral countries' debts could only be mutualised by 4%. If Greece's debt was mutualised by 75%, the peripheral countries' debts could be mutualised by 11% but if Spain's debt was mutualised by 75% the peripheral countries' debts could not be mutualised. If Greece's debt was mutualised by 100%, the peripheral countries' debts could be mutualised by 9% but if Spain's debt was mutualised by 100% the peripheral countries' debts could not be mutualised once again.

Figure 26 Summary:

Greece National Debt Mutualisation	Peripheral Countries' National Debt Mutualisation under €500 billion ESM Fund Cap	Peripheral Countries' National Debt Mutualisation under €650 billion ESM Fund Cap
25%	11%	15%
50%	9%	13%
75%	7%	11%
100%	5%	9%

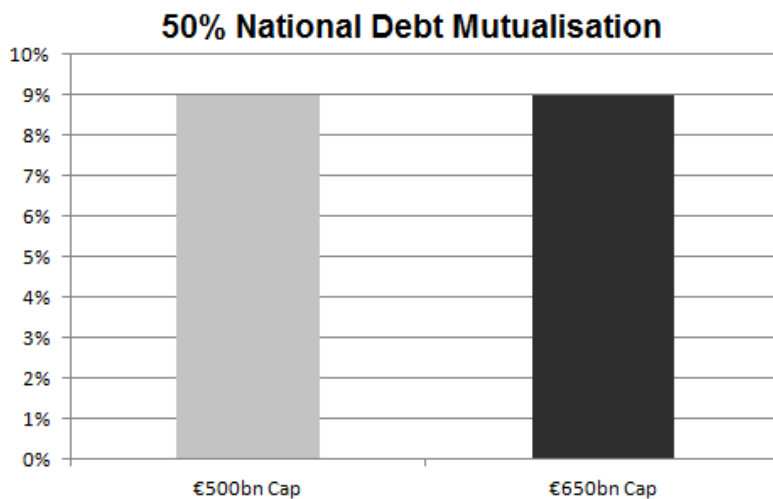| Spain's National Debt Mutualisation	Peripheral Countries' National Debt Mutualisation under €500 billion ESM Fund Cap	Peripheral Countries' National Debt Mutualisation under €650 billion ESM Fund Cap
25%	8%	12%
50%	0%	4%
75%	0%	0%
100%	0%	0%

The following bar charts display the mutualisation of peripheral countries' debts differences under Greece's and Spain's debt mutualisation of 25%, 50%, 75% and 100%.

Figure 27
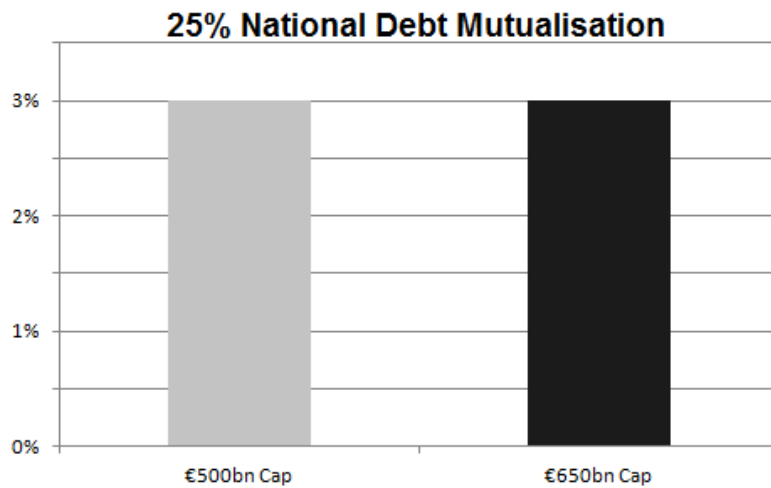
25% National Debt Mutualisation

Under the €500 billion cap the difference under Greece's and Spain's debt mutualisation of 25% of national debt is 3% likewise under the €650 billion cap.
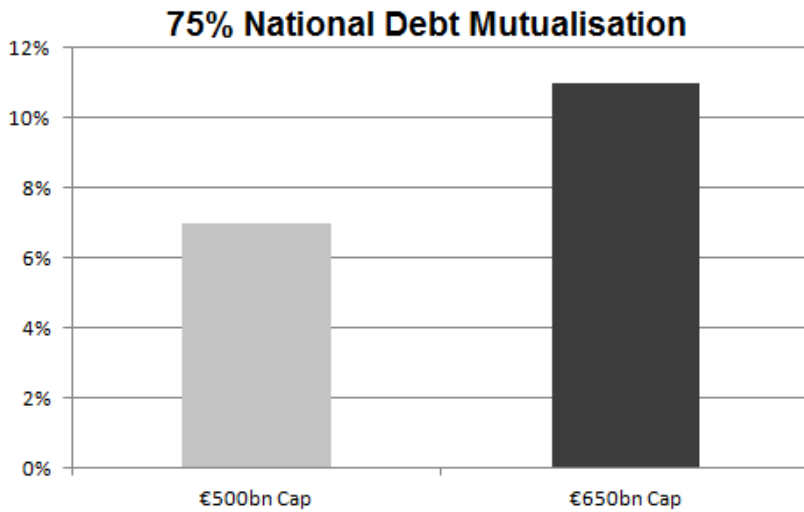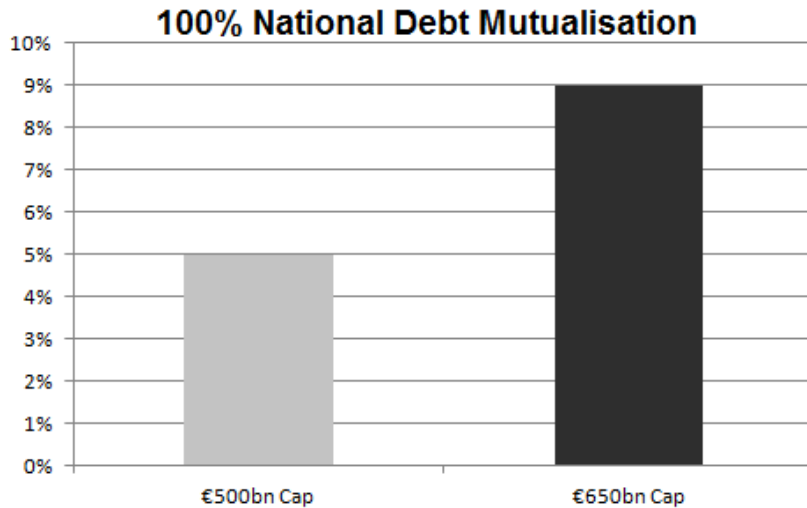
Figure 28

50% National Debt Mutualisation

Under the €500 billion cap the difference under Greece's and Spain's debt mutualisation of 50% of national debt is 9% likewise under the €650 billion cap.

Figure 29

75% National Debt Mutualisation

Under the €500 billion cap the difference under Greece's and Spain's debt mutualisation of 75% of national debt is 7% whereas the difference is 11% under the €650 billion cap.

Figure 30

100% National Debt Mutualisation

Under the €500 billion cap the difference under Greece's and Spain's debt mutualisation of 100% of national debt is 5% whereas the difference is 9% under the €650 billion cap.

Chapter 6 Discussion

6.1 Introduction

The aim of this research was to investigate one of the mechanisms Europe may choose to employ in response to the sovereign debt crisis by running a scenario analysis of the potential mutualisation mechanisms for the peripheral European countries. The research paper also sought to provide insight into the sovereign debt crisis phenomena through the literature review. The seven analysed scenarios reveal the implications of mutualisation of peripheral European countries' debts through leveraging existing and proposed funds within the current ESM fund. However, mutualisation could lead to issues of inefficiency in the Eurozone as the cost of excessive borrowing would be endured by other countries who followed the Stability and Growth Pact and stayed within the limits (Reinhart and Rogoff 2013). This section will discuss the investigated mutualisation scenarios and will also encompass alternate solutions to the current European debt crisis and investigate their feasibility in the current European setting.

6.2 Scenario Analyses 1

From the first scenario analysis conducted, it was discovered that only 10% of 2014 peripheral countries' debts could be mutualised as the ESM fund is capped at €500 billion and the total of 10% mutualisation comes to €393,3 billion. If 20% of 2014 peripheral countries' debts were mutualised, it would exceed the €500 billion cap to €786,7 billion. In addition, the contribution levels to the fund by the core countries would increase as they would have to cover an extra 36.7% amongst them.

On the one hand, mutualisation of as little as 10% would provide a boost towards quicker recovery and it would greatly benefit countries such as Ireland, Cyprus and Portugal as it would reduce the financial pressure. These three peripheral countries are slowly returning to growth; Cyprus experienced its first growth in the first quarter of 2015 since the recession began in 2011, as the recession in Cyprus has become milder it's expected for the recovery to begin in 2015 and strengthen in 2016 (Barley 2015), Ireland's economy is improving, Standard & Poor's agency raised Irelands credit rating to A+ and it is expected that in 2015 it will return to its pre-recession peak as its one of the fastest growing economies in the Eurozone (Kelpie 2015; The

Journal 2015), Portugal's economy is slowly picking up , jobs are being created and consumer confidence is growing but there has been very little growth which raises fears over its ability to service debt (Wise 2014). These countries debts are manageable in the paying themselves outlook, but if their debts were mutualised by 10% it could provide them with a push to further move forward and recover. It would relieve some of the debt pressure which could enhance growth and improve financial stability in order to move closer to the Stability and Growth Pact objectives which are designed to achieve similar business cycles as the optimum currency area theory requires the member states of the Eurozone to have. For example, when a Greek exit was looking highly likely to happen after the bailout referendum results of a 'no' vote the euro dropped against the dollar because investor confidence dropped but in August 2015 when a deal in principle was reached that Greece will receive a third bailout and will not exit the euro, the value of the euro increased against the dollar because the deal was a signal of confidence to investors (Scally 2015; Evans 2015).

Also, due to mutualisation, the core countries would have to contribute more in order to cover 36.7% of the ESM contribution fund as the peripheral countries' will be using it instead of contributing to it. While in theory it is feasible, in reality the smaller core countries would protest to this as they have been already forced by the EU institutions led by Germany to disproportionately pay for the sovereign debt crisis caused by failures of these very institutions and the design of the euro currency (Hearne 2015). Also, the German society is opposing the extension of a lifeline to Greece as there is belief that it will leave Germany financially disadvantaged and 61% of Germans believe that Greece should exit the European Union if it continuous to back out of its international obligations (Wagstyl and Bryant 2015).

6.3 Scenario Analyses 2, 3, 4 and 5

25%, 50%, 75% and 100% mutualisation of the 2014 Greek debt would have a significant impact for the country as it would partially of fully relief it from financial pressure. Greece was the chosen peripheral country because it was on the brink of defaulting and running out of money, thus it was more in a fragile position compared to other peripheral countries. If 25% (€79,2 billion) of Greece's debt was mutualised, 11% mutualisation of the remaining peripheral countries would still be feasible as it's within the ESM capped limit. However, 25% mutualisation may not be sufficient as in

2010 when Greece received a bailout of €110 billion to prevent it from defaulting, the recession became worse and in 2012 it was granted another bailout of €130 billion and in 2015 a third programme was agreed on a €86 billion bailout (Zettelmeyer et al. 2013; Chan 2015).

25% mutualisation may not be enough to harmonise Greece's business cycle with the rest of Eurozone countries which is a condition in the optimum currency area theory in order for the euro to succeed. This indicates that the Greek economy cannot be recovered without significant intervention and 75% or 100% mutualisation of debt as it keeps putting in place deficient policies that do not coordinate with the other peripheral countries' policies and work against economic efficiency which contrasts the optimum currency area theory. Spain is one of the peripheral countries and its debt stands at €1033,9 billion, almost four times greater than Greece's debt of €317,1 billion, but Spain will be contributing to the third bailout programme of Greece as shown below, even though its debt levels are much greater because while it did build up its debt, Spain has managed to follow the conditions of the bailout which were designed to bring Spain's business cycle into harmonisation with the rest of Eurozone and it exited the bailout programme 18 months after the bailout as well as began paying back its bailout loans ahead of time as optimum currency area theory was applied (Frayer 2014; Horgan 2015).

Figure 31

Who's bailing out the Greeks?
Contribution to ESM guarantees
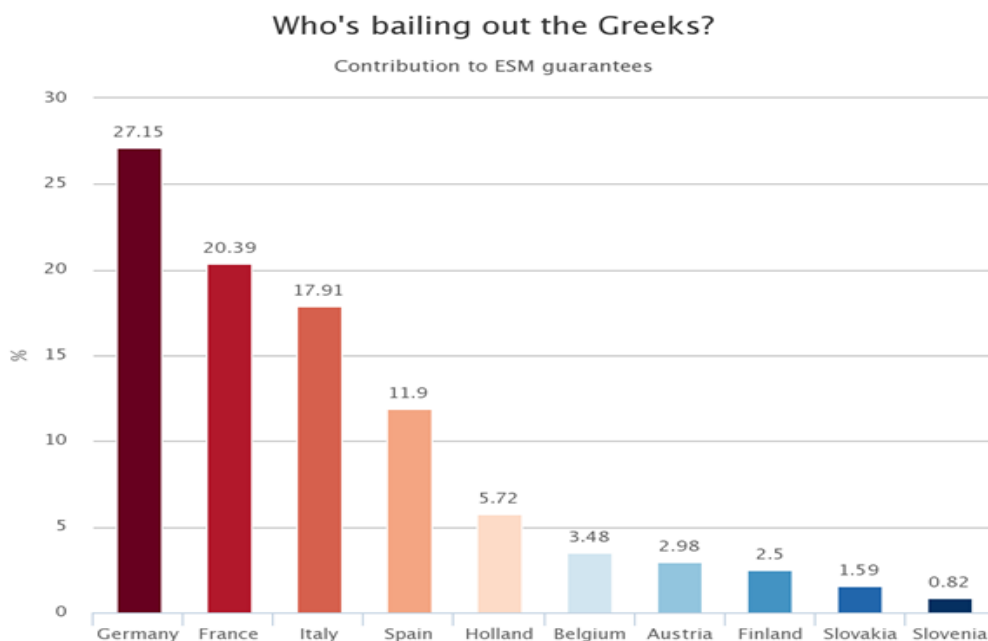
(Chan 2015).

From figure 31, it can also be seen that Germany will be the biggest contributor to Greece's third bailout to which many German MPs opposed and said "this is betrayal" and "we need this money to support health care and the elderly. This government hates the elderly" (Chan 2015).This is the German's response to a 27.15% contribution but the mutualisation of debt would increase Germany's contribution to the ESM fund from 26.9% to 42.5%, therefore it can be expected for the response to be very similar to this.

6.4 Scenario Analyses 6

If the ESM fund was increased by 30% more funds would be available to mutualise the remaining peripheral countries' debts after Greece's debt mutualisation of 25%, 50%, 75% and 100%. Also, this would be a form of a risk sharing mechanism the optimum currency area theory states should exist in order for the euro to succeed as it would aid in the creation of coordinated Eurozone business cycles so one area of Eurozone isn't facing a recession while the other area is experiencing growth .

As discussed in section 5.6, 10% mutualisation would be significant for Ireland, Cyprus and Portugal. But the 30% increase of the ESM fund would facilitate as much as 15% debt mutualisation for the peripheral countries creating a greater significance. But for mutualisation to make an impact for Greece, at least 75% would have to be be mutualised and it would leave 11% for the peripheral countries which still would can be considered significant for all of the peripheral countries. However, the core countries would be funding this 30% increase of the ESM fund which is a substantial amount considering it increased from the base of 26.9% for Germany to 42.5% and then to 55.2% due to the 30% increase. In reality there would be immense opposition against this as Germany has already protested against the 26.9% contribution stating it is unconstitutional and that "we (Germans) succeed in ensuring the burden on taxpayers will not get out of hand". However Germany's highest court ruled that as long as the fund contribution doesn't hinder domestic spending, it is constitutional (Scally 2014). Thus, if the 30% increase will impede on domestic spending of the core countries it will be considered unconstitutional and therefore not implemented.

6.5 Scenario Analyses 7

For this scenario analyses Spain's debt was mutualised by 25%, 50%, 75% and 100% to be used as a comparator with the Greek scenarios. If 25% of Spain's debt was mutualised it would only leave €241,5 billion in the ESM fund for the rest of the peripheral countries which is less than half of the fund. Therefore the peripheral countries' debts could only by mutualised by 8%. But if Greece's debt was mutualised by 25% it would leave €420,8 billion in the ESM fund for the remaining peripheral countries, almost double the amount when compared to Spain.

If 50% of Spain's debt was mutualised it would clear out the ESM fund completely and position it at -€17 billion leaving nothing for the remaining peripheral countries. Whereas, if Greece's debt was mutualised by 50% it would leave €341,5 billion in the fund. If the ESM fund was increased by 30% then the mutualisation of Spain's debt by 25% would leave €391,5 billion allowing for 12% of debt mutualisation for the remaining peripheral countries and 50% would leave €133 billion allowing for 4% debt mutualisation.

Spain's debt is almost 4 times bigger than Greece's and it could only be mutualised by 48% before clearing out the ESM fund and leaving nothing for the rest of the peripheral countries. If the ESM fund was increased by 30%, Spain's debt could only be mutualised by 62% before draining the ESM fund whereas Greece's debt could be mutualised by 100% and still leave €182,9 billion in the fund which could mutualise 5% of the remaining peripheral countries' debts without increasing the ESM fund. Therefore, if Greece's rather than Spain's debt was mutualised it would be more efficient. Also, Spain is recovering from the deep recession with growth predicted for 2015 to be 3,1% and by 2016 to be back to 2008 levels leading to lower unemployment levels and in theory better standard of living (Dawber 2015). Whereas, Greece's economy is expected to contract by 2.3% in 2015 and by 1.3% in 2016 (Elliott and Henley 2015). Greece's economy is affecting the rest of Eurozone negatively as investors' confidence in the euro drops whenever the Greeks make unfavourable decisions while Spain is starting to retract its big investors (Evans 2015; Dawber 2015). Moreover, Spain is making its bailout payments ahead of schedule due to the application of the optimum currency area theory as discussed in section 6.3 while Greece needs further financial assistance and has agreed on a

third bailout. (Horgan 2015; Scally 2015).Thus, Greece requires debt mutualisation more than Spain does.

Following a discussion of potential mutualisation scenarios using the current ESM fund, and potential additions to the fund, an investigation of alternate strategies to the sovereign debt crisis in Europe will now be undertaken.

6.6 Eurobonds

A Eurobond is a debt contract that documents the debtor's responsibility to pay interest at a specific rate on a specified date and the main amount of a bond. Eurobonds are tradeable as they are intended to be bought and sold during the period up to its maturity and these bonds are issued in a foreign currency. Debt can be mutualised if debt was issued as Eurobonds in order to tackle the sovereign debt crisis. Also, Eurobonds are not subject to tax and are mostly free from governmental regulations (Eurobonds 2014).

This response to the sovereign debt crisis is in correspondence to the optimum currency area theory as it would federalise European debt obligations. This would get rid of speculations of a Greek exit from the Eurozone as well as the possibility of any member state exiting the Eurozone. Also, the budgets of peripheral countries as well as balance sheets of banks would increase. The budgets would move into surplus, financial stimulus would replace austerity, growth of the economy would increase and the debt to GDP ratio would decrease. However, Eurobonds are not the complete solution, each member state would have to undertake structural reforms and the EU would need to create a banking union so loans could be made available to each country on equal terms (Soros 2013). The rationale behind Eurobonds is that it will make Europe's debt appear not that high when compared to the U.S. debt level. Also, it would allow weaker economies such as Greece and Ireland benefit from union with stronger economies as investors would be more confident to buy bonds from an entire region rather than Italy for example. However, the core countries, especially Germany would fear that this would increase their interest rate costs and bring them closer to the Eurozone average (Boyle 2012).

6.7 Mutualisation

Mutualisation of national debt can have short-term and long-term benefits. In the short-term it would lift some of the financial burden from the peripheral countries and it would raise confidence in the viability of the union, as it would be supporting current crisis management efforts by itself. Also, it is a shared approach with some elements of centralised fiscal policy which would facilitate improved fiscal coordination as well as a risk sharing mechanism that is required for the euro to succeed and maximise economic efficiency as the optimum currency area theory states should exist. In the long-term it would decrease the likelihood of a future crisis and if it did occur, it would be less critical (Allard et al. 2013).

While mutualisation of peripheral countries debts by Eurobonds or ESM fund is a feasible response to the sovereign debt crisis, it could lead to inefficiency in the Eurozone as the cost of excessive borrowing would be endured by other countries who followed the Stability and Growth Pact and stayed within the limits. This could cause moral hazard as peripheral countries who exceeded the Stability and Growth Pact limits would walk away with a warning while the core countries who avoided the debt crisis through fiscal responsibility would be the ones paying for the mistakes of the peripheral countries. This may encourage the core countries to exceed their borrowing limits as there is no incentive to reduce it. The same situation of a moral hazard could be caused if Eurobonds were implemented because if the countries benefited from an overall Eurozone average then there would be no incentive to reduce careless spending and borrowing (Eurobonds 2014).

Mutualisation would be using taxpayer funds to bailout the periphery countries which could potentially slow down the already slow growth or create a recession in the core countries, increasing the peripheral countries' existing sustainability challenges. Germany would be the highest contributor to the mutualisation initiative followed by other member states who are in surplus (Reinhart and Rogoff 2013). Moreover, as there is no banking union, member states of the Eurozone make their own private decisions for which many believe there should be private consequences. Therefore, mutualisation could create inefficiency in the Eurozone system where members take their private national gains when the economy is healthy, but mutualise debts when it doesn't go the right way for the country (Lilico 2012). The Stability and Growth Pact

sets out rules to be followed by all member states as well as the consequences if a nation strays from those rules. Thus, in theory the countries which stay within the set out limits shouldn't be sanctioned, but mutualisation forces countries who stayed within the set out limits of the pact to bailout the countries who strayed away from the rules which is awarding the rule breakers and punishing the rule followers. This would further fracture the European Union which is opposite of what the EU was set up to be.

6.8 Central Banking System

Before the sovereign debt crisis, member states' banks and financial institutions operated by their own rules and policies. The mechanisms to ensure sound public finances, financial stability were all nationally based therefore some countries did it effectively while others such as Greece are still continuing to do it ineffectively. This framework proved to be ineffective in managing the risks throughout Europe's financial system as fiscal federalism wasn't present (Jager and Hafner 2013).

A banking union would be a move in the right direction towards an optimum currency area as it is the relocation of responsibility for banking policy to the European level from national level. Therefore, all member states' banking policy would coordinate with one another and produce similar business cycles so when there is a recession, it is in all member states and likewise for growth. Whereas currently, Europe is fragmented as some member states are experiencing growth while others are in a recession. A banking union could be another response to the sovereign debt crisis as it would converge the European Union to move in the right direction towards an optimum currency area as it could reverse the fragmentation of European financial markets and break the harmful escalating sovereign and private borrowing costs within the monetary union. Also, it would offset the loss of some stabilization capacity at the national level resulting from stricter control on national budgets and the relocation of some fiscal responsibility to the European level as it would increase the scope of available counter-cyclical tools when national policies are constrained by limited market access and fiscal rules (Allard et al. 2013).

The banking union should contain a single managerial mechanism to supervise the rules and control the accumulation of risks, a single resolution power to manage weak or failing banks and mutual safety nets to maintain depositor confidence when

shocks occur (IMF 2013). The centralised banking system would set out shared rules for all 28 member states in a single rulebook which would be the foundation of the banking union. The shared rules would foremost aid in preventing a banking crisis, and if banks run into trouble it would deal with it through a shared framework that would recover the banks (Europa 2015S). It would move the responsibility of financial support to the international level which would disengage the banks' search from sovereigns with weak finances, safeguard sovereigns from fragilities of the banking sector and as a result increase confidence (IMF 2013). Also, the taxpayers would no longer be funding bank's missteps (Europa 2015S).

6.9 Coordinated Policy

Another potential response to the sovereign debt crisis is a coordinated policy between Eurozone members. In this coordinated policy the EU core countries would agree to take on a 1% increase for the inflation target, raising it to 3% and slow down their rate of fiscal consolidation, while peripheral countries would concentrate on fiscal consolidation with a low positive level of inflation (Peon and Rey 2013).

Fiscal consolidation is the reduction of government deficit and debt accrual through a policy (OECD 2014). This would ensure that the business cycles of the peripheral and core countries would begin to move towards the same position so they would become similar as this is one of the conditions that needs to be met in order for Eurozone to become an optimum currency area. This would allow the ECB to promote growth during recessions and contain inflation during booms. This would also reduce the risk of deflation in the peripheral countries as the core countries would undertake an inflation goal higher than set out by the ECB by 1% (Europa 2015E).

In a scenario analyses study conducted by Peon and Rey (2013) it was found that the peripheral countries should focus on fiscal consolidation as it wouldn't hinder growth and deflation should be evaded. A coordinated policy would be the effective choice compared to an isolated strategy where the peripheral countries would concentrate on internal devaluation of prices and wages. A coordinated policy would ensure stability of debt for peripheral and core countries without a disproportionate inflation target which is what the Fiscal Compact is aiming to achieve, increase the competitiveness of the peripheral countries without deflation and create the

possibility for a financial inducement that will enhance demand in the core countries and as a result increase demand in the peripheral countries indirectly. This combined policy for fiscal consolidation of the peripheral countries would aid in the solving of the sovereign debt crisis as it's in accordance with optimum currency area theory and it would benefit core and peripheral countries of the EU at the same time (Peon and Rey 2013).

Chapter 7 Conclusion

From the literature review, it has made it possible to better understand where the Eurozone issues and mistakes lay and the need for mutualisation as a mechanism to bring back stability and convergence into the Eurozone.

Three conclusions can be drawn from this research paper. The first is, the original institutional design of the euro increased financial risks throughout the pre-crisis stage. The second is, those euro design errors intensified the fiscal impact across multiple channels when the crisis happened. The third is, the restrictions that were imposed by the monetary union, influenced the speed and duration of the awaited post-crisis revival period, along with Europe's chaotic political response and failure to establish institutions for crisis management (Lane 2012).

Since the establishment of the EMU, member states haven't shared the same objectives of European integration because the dissimilar business cycles have caused a difference in opinion, which are a condition of the optimum currency area theory. The German government is trying to change the EMU into a real fiscal union through the support of European integration as in future it doesn't want to pay for the mistakes made by the peripheral countries. Moreover, it doesn't want a repeat of the sovereign debt crisis. However, the periphery countries support the idea of Eurobonds to merge Europe's debts because they are struggling to pay for their mistakes and are hesitant to implement restrictive policies. These dissimilar preferences for fiscal policies result from the different effects the crisis has had on various EMU nations due to dissimilar business cycles and thus, European leaders preferences do not concur which makes the decision making process decentralised and limits Eurozone's power to act (Taylor 2015). This proves how the absence of one optimum currency area theory condition, hinders the achievement of another condition.

The Greek crisis symbolises the chaos that Europe has created of the single currency. From the establishment of the euro, the rules that were put in place relating to monetary financing, deficit levels and bail-outs to create an optimum currency were and are still ignored. The crucial mistake Europe made was the failure to cancel more of Greece's debt in the first bail-out in 2010 as five years later in 2015

Greece cannot pay it back and there's nothing that can now be done about it apart from receiving assistance (Lamont 2015).

Europe now has a permanent rescue fund, stricter rules to monitor economic imbalances and budgets with the threat of partially automatic sanctions and a fiscal compact with national balanced-budget rules. While it is important to improve competitiveness and increase growth, it needs to realise that it is not sufficient according to the optimum currency area theory and that the periphery countries have fallen further into debt. Vastly growing unemployment levels and debt deflation in Greece are not signs of successful regulation and correction (Europa 2013B; Europa 2015L).

Debts have accumulated to immense levels where now the Eurozone really needs to converge, through a risk sharing mechanism such as the mutualisation of debt and function by the rules set out to create and maintain an optimum currency as it will guide it towards a functional and robust single currency. This research paper illustrates that Greece's national debt could be partially or completely mutualised while the remaining peripheral countries' national debts could also be mutualised to a certain extent. While this would relieve Greece's economy as well as the peripheral countries' to a certain extent, it could create a political rift within Eurozone as the cost of excessive borrowing would be endured by other countries who followed the Stability and Growth Pact and stayed within the limits.

The Eurozone has a common currency and a common monetary policy, but it does not have a fiscal union which means it doesn't have a centralised budget authority or system of fiscal transfers across member states. If the Eurozone had a tight fiscal union, a central budget authority could have been used to manage expenditure of Eurozone countries as well as soothe asymmetric shocks within the Eurozone through the use of fiscal transfers (Belkin et al. 2012). Also, a tight fiscal union would prevent moral hazard because if the Eurozone did experience another recession it would be experienced by every member state as their business cycles would coordinate and it wouldn't fracture the Eurozone. While mutualisation of debt is in accordance with the optimum currency area theory, it is not the complete solution, it would need to operate alongside the already established responses to the sovereign

debt crisis just like Eurobonds would have to. The EU needs to create a tight fiscal union to prevent fragmentation and create an optimum currency area (Soros 2013).

Further research should explore a scenario analysis of fiscal federalism as another potential response to the sovereign debt crisis as it corresponds with optimum currency area theory.

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