RECOVERY IN THE EUROZONE

Using Money Creation to Stimulate the Real Economy

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PositiveMoney

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EXECUTIVE SUMMARY

Since the 2008 global financial meltdown, the Eurozone has experienced a sovereign debt crisis, a double dip recession, and is now on the brink of deflation. To spur growth in the Eurozone's flailing economies, it is necessary to stimulate aggregate demand by raising levels of spending. A fiscal stimulus however, seems extremely unlikely as Eurozone governments are primarily interested in running a budget surplus and applying austerity measures. Weak global demand suggests that an export-led recovery is not an option. Consequently, the responsibility for boosting aggregate demand and higher levels of spending has fallen to the European Central Bank (ECB).

To date the ECB's attempts to stimulate spending and aggregate demand have had limited success. The ECB has therefore chosen to replicate the Quantitative Easing (QE) policies used by Japan, the UK and the US. Between March 2015 and September 2016, the ECB will create €1.1 trillion of new central bank money and use this to purchase government bonds (and other asset-backed securities and covered bonds) from the financial markets. The ECB hopes that this process will result in higher spending, higher inflation, and a return to economic growth. But the channels through which QE works are weak and uncertain. Proponents of this policy have resorted to arguing that, although the effects of QE are unclear, the economy would surely be worse without it. The policy also has several undesirable side effects, such as increasing inequality and encouraging dangerous speculative bubbles in financial markets.

Even if QE is considered to be an effective policy, the conditions that justified the policy in the US and UK don't apply in the Eurozone. In the US and UK, bond yields were high when QE was implemented; in the Eurozone, bond yields were already extremely low. In the US and UK, banks were initially short of central bank reserves (as the fear in the market had caused the interbank market to freeze). In the Eurozone, banks were already flooded with central bank reserves as a result of the ECB's earlier schemes to provide liquidity to the banking sector.

More importantly, the ECB's QE programme is intended to boost spending by incentivising the banking sector to increase lending and enticing households and businesses to borrow more. The success of the QE programme depends upon the private sector taking on more debt. But the banking sector is reluctant to expand its volume of lending, as it is presently preoccupied with repairing its balance sheet. More significantly, bank lending is demand constrained: weak growth, low economic confidence, meagre potential for business expansion, and substantially high levels of unemployment mean that the private sector is more concerned with paying down existing loans than taking out new ones. It is highly unlikely that there will be a substantial increase in the level of private-sector borrowing, so this approach to generating a recovery in the Eurozone would almost certainly be ineffective.

If the Eurozone needs an economic stimulus to boost employment, output and a return to growth, then QE is the wrong tool to use. This paper argues for an alternative approach to a Eurozone stimulus, in which the ECB still creates new money, but injects this money into the real economy rather than the financial markets. The various proposals for this form of

monetary financing (where the state proactively creates money) have been referred to as QE for People, Overt Monetary Financing (OMF), Green QE, Helicopter Money, Strategic QE, and Sovereign Money Creation[1].

This report welcomes the wide range of proposals for using monetary financing to boost aggregate demand in the real economy[2]. However, due to space constraints, we focus on the two broad recommendations for how the ECB could distribute newly created money into the real economy.

In the first proposal, the ECB would transfer newly created money to the Eurozone national governments. These governments would then use the newly created funds to increase their spending. This additional spending could, for example, be focused on 'green' infrastructure projects.

In the second proposal, the newly created money could be distributed equally between every citizen of the Eurozone. This type of "citizen's dividend" would put additional purchasing power directly into people's pockets.

In both proposals, monetary financing offers a number of added benefits when compared to conventional QE. Most importantly, it would boost aggregate demand without relying on households and businesses to borrow more, and therefore would not cause a rise in already-high private sector debt. It would therefore compensate for the reduction in total spending caused by private sector deleveraging. Indeed, monetary financing aimed directly at the real economy increases the net financial assets held by the private sector, while the additional spending boosts private sector income and reduces the private sector's debt-to-income ratio. These two effects increase financial stability.

In simple terms, QE works by flooding financial markets with billions of euros and hoping that some of it 'trickles down' to the real economy. In contrast, the form of monetary financing proposed in this paper is a tool that would grant policymakers greater macro-economic control over the real economy; and would also ensure that the benefits of central bank money creation are more evenly distributed. Similarly, unlike QE, monetary financing for the real economy avoids the risk of creating destabilising asset bubbles, and thus makes the recovery more sustainable in the long run.

Monetary financing for the real economy can be expected to be many times more effective than QE in boosting demand and output. For the Eurozone, statistical analysis of income and consumption patterns suggests that €100 billion of newly created money distributed to citizens would lead to an increase in GDP of around €232 billion. Using IMF fiscal multipliers, our empirical analysis further suggests that using the money to fund a €100 billion increase in public investment would reduce unemployment by approximately one million, and could be between 2.5 to 12 times more effective at stimulating GDP than current QE.

Of course, these figures are estimates and not certain predictions. But it is clear that if the ECB wishes to boost employment and meet its inflation target, then it would be better off using the ECB's powers to create money to either finance public expenditure or distribute new money directly to citizens. Replicating the UK and US's approach of inflating financial markets and hoping that this increased financial wealth would 'trickle down' into the real economy is likely to be just as ineffective in boosting output and employment, and meeting inflation targets, as it was in the UK and US.

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1 For more detailed information on: 'QE for People' see Corbyn (2015), 'OMF' see Turner (2015), 'Green QE' see Anderson & Cato (2015), 'Helicopter Money' see Bernanke (2003), 'Strategic QE' see Ryan-Collins et al. (2013), and 'Sovereign Money Creation' see Jackson (2013).

2 A forthcoming technical guide to these different proposals will be made available on the Positive Money website. For more information see http://positivemoney.org/publications/

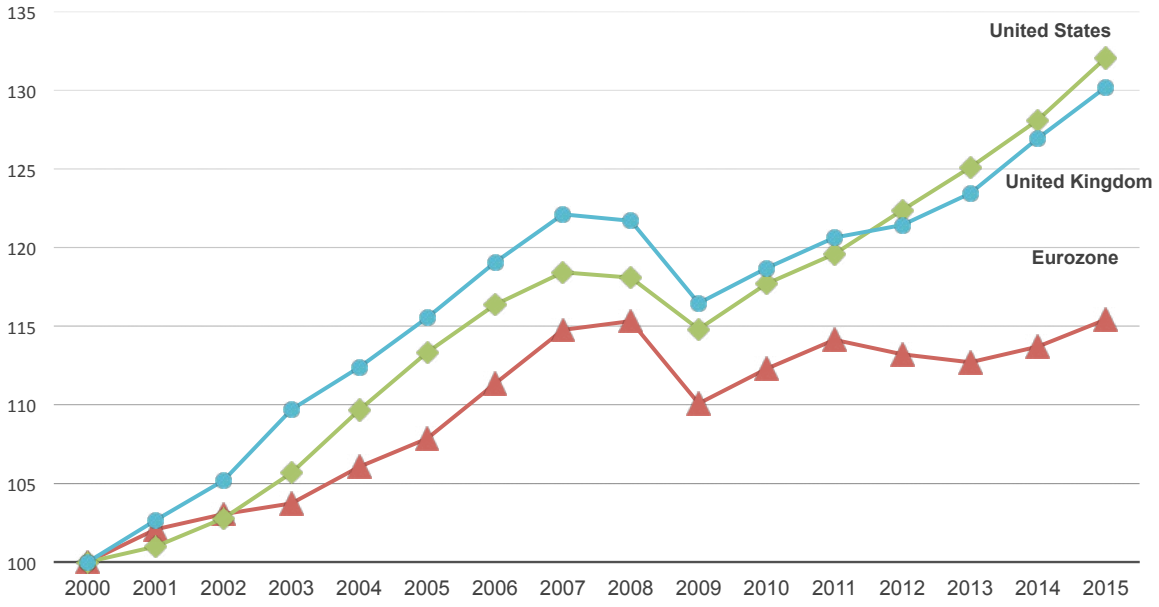
This paper shows that QE will fail to deliver benefits for ordinary people in the Eurozone, and argues that what is needed now is an alternative approach that puts new money directly into the real economy.

INTRODUCTION

While the 2008 financial crisis may have originated in the US, its economic effects seem to have been most profound in Europe. For example, the immediate impact of the crisis shrank the Eurozone's GDP by 6%, while US GDP contracted by only 4%. More worryingly, from 2008 to 2014 the US economy had grown by more than 10% and the UK by 5%; in contrast the Eurozone economy contracted by 1.6% (Figure 1). A similar trend for unemployment is noticeable (Figure 2). Since 2008, unemployment has decreased in the US and UK by 4% and 2.2% respectively. Conversely unemployment in the Eurozone has increased by approximately 2%.

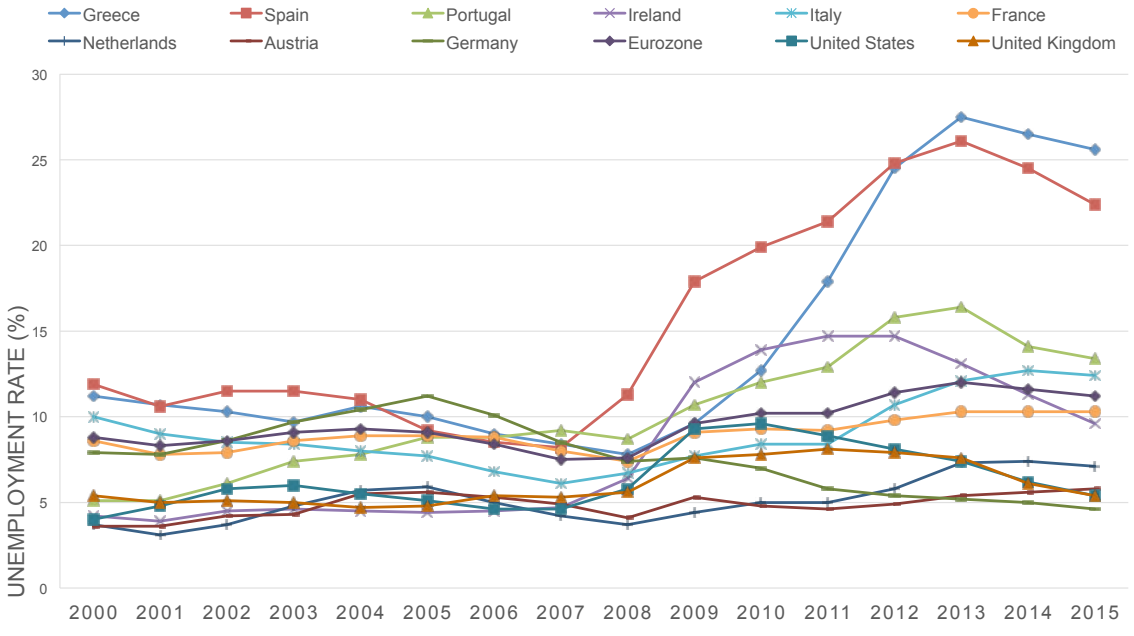
FIGURE 1: REAL GDP GROWTH IN EUROZONE, UK & USA

Relative to 2000



Source: AMECO

FIGURE 2: UNEMPLOYMENT RATE IN THE US, UK, AND EZ



Source: AMECO

An argument could be made that the primary difference in economic performance between the US and UK versus the Eurozone is due to the Quantitative Easing (QE) programmes undertaken by the former two countries. However, the evidence presented here shows that QE has a very limited effect on employment and output in the real economy. It does however have the negative side effects of increasing inequality and heightening the risk of financial instability. Proponents of QE have resorted to claiming that, while it is unclear as to *how* QE works in practice, we should assume that the 2008 recession would have been much worse without it.

This paper argues that QE is an unreliable and ineffective tool for boosting GDP and employment. The causal channels and expected effects of QE for the Eurozone economies are weak, and the exacerbation of inequality and financial instability is worrying. The ECB's emphasis on the role of QE in increasing bank lending shows that it relies on increased levels of private sector borrowing to boost aggregate demand (an increase in spending), thereby increasing employment. The Eurozone's economic recovery would therefore be dependent on the private sector taking on more debt.

Such a debt-based recovery however, is neither sustainable in the short term, nor likely to be successful in the long term. Banks are currently concerned about the condition of their own balance sheets, and are thus reluctant to increase their lending. Conversely, with high levels of unemployment and weak prospects of recovery, the private sector is more concerned with paying down existing debts than taking out new loans. When outstanding loans are being repaid to banks at a faster rate than new loans are being granted, money is withdrawn from the economy and effectively destroyed. Therefore, it is very unlikely that QE will succeed in triggering an increase in spending and boosting aggregate demand.

There is thus a need for policymakers and economists alike to consider alternatives that will have a greater effect on the real economy and that are not dependent on debt-financed spending by the private sector. We outline an approach that allows the ECB to create new money and inject it into the real economy, instead of financial markets. By directing central bank money creation at the real economy, levels of spending can be increased without the public or private sector taking on more debt.

This type of monetary financing, where the state proactively creates new money which is spent into the real economy, can take many forms and has consequently been given a number of different names, such as QE for People, Helicopter Money, Overt Money Financing (OMF), Green QE, Strategic QE, or Sovereign Money Creation. This paper focuses on two broad categories of proposals for monetary financing. In the first group of proposals, the ECB would transfer newly created money to the Eurozone national governments. These governments would then use the newly created funds to increase their spending. This additional spending could, for example, be focused on public or 'green' infrastructure projects.

In the second group of proposals, the newly created money would be distributed equally between every citizen of the Eurozone. This type of "citizen's dividend" would put additional purchasing power directly into people's pockets.

In both approaches, monetary financing directed at the real economy would boost aggregate demand and stimulate the economy directly, without increasing the debt burden of the private or public sector.

Therefore, while it may be possible to make the case that QE could prevent the Eurozone crisis from getting worse (although even this is questionable), we show that monetary financing directed at the real economy would be far more effective at stimulating aggregate demand and delivering a sustainable economic recovery.

In Part 1 we outline our understanding of the Eurozone crisis. We review existing policy responses to the crisis, and offer some insight as to why they failed to produce an economic recovery. In Part 2 we describe the mechanics of QE and theories by which its proponents believe it should work. We show that the evidence does not support these theories and that they may not be applicable to the European context anyway. In Part 3 we describe how monetary financing for the real economy could work in practice. Furthermore, we show that there are a number of added benefits in pursuing such a monetary financing program. Indeed, we show that many of the expected benefits of QE are more likely to be realized under a monetary financing program directed at the real economy. We then address some of the main arguments against monetary financing for the Eurozone's real economy. Part 4 concludes.

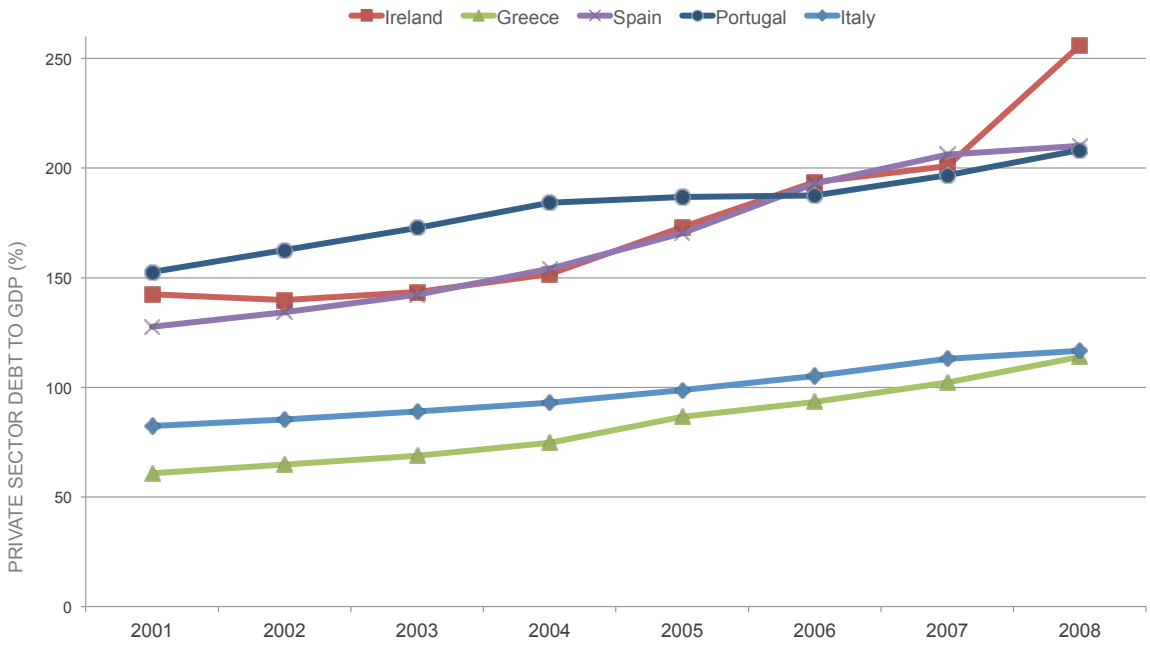
1. THE CONDITIONS LEADING UP TO THE EUROZONE CRISIS

1.1 The Growth of Private Sector Debt

The general theme of the period leading up to the financial crisis was the widespread accumulation of private debt – the debt of households and businesses. This debt was provided and financed by the private banking sector. In Europe, prior to the launch of the Euro currency, there were broad disparities across Eurozone countries in interest rates at which the public and private sectors could borrow (Whelan, 2013). With the establishment of the euro, the higher interest rates traditionally charged in the Eurozone's periphery (i.e. Greece, Italy, Ireland, Portugal, and Spain) gradually decreased until they had reached the same level as the most creditworthy borrowers within the Eurozone's core[3] (i.e. Germany, France, Netherlands, Belgium, Austria and Finland).

As lower interest rates in financial markets fed through into lower rates charged by banks, this newly accessible cheap credit meant that the financial, household, and business sectors of the Eurozone's periphery could take on much more debt than before. Accordingly, from 1999 to 2007 private sector debt in the Eurozone's periphery grew substantially (Figure 3). The growth of private sector debt was so significant that even the Vice-President of the ECB has suggested that the crisis "originated mostly from rising private sector expenditures, which were in turn financed by the banking sectors of the lending and borrowing countries" (Constancio, 2013, p. 2).

FIGURE 3: PRIVATE SECTOR DEBT TO GDP



Source: EUROSTAT

3 Yields on long-term sovereign bond rates for Italy, Spain, and Portugal were all above 10% in 1995. By 1999, they had dropped dramatically, and all converged to 4% – the same rate for German sovereign bonds. For the next ten years, yields on Italian, Spanish, Irish and Portuguese bonds remained virtually the same as those offered on German bonds (Whelan, 2013).

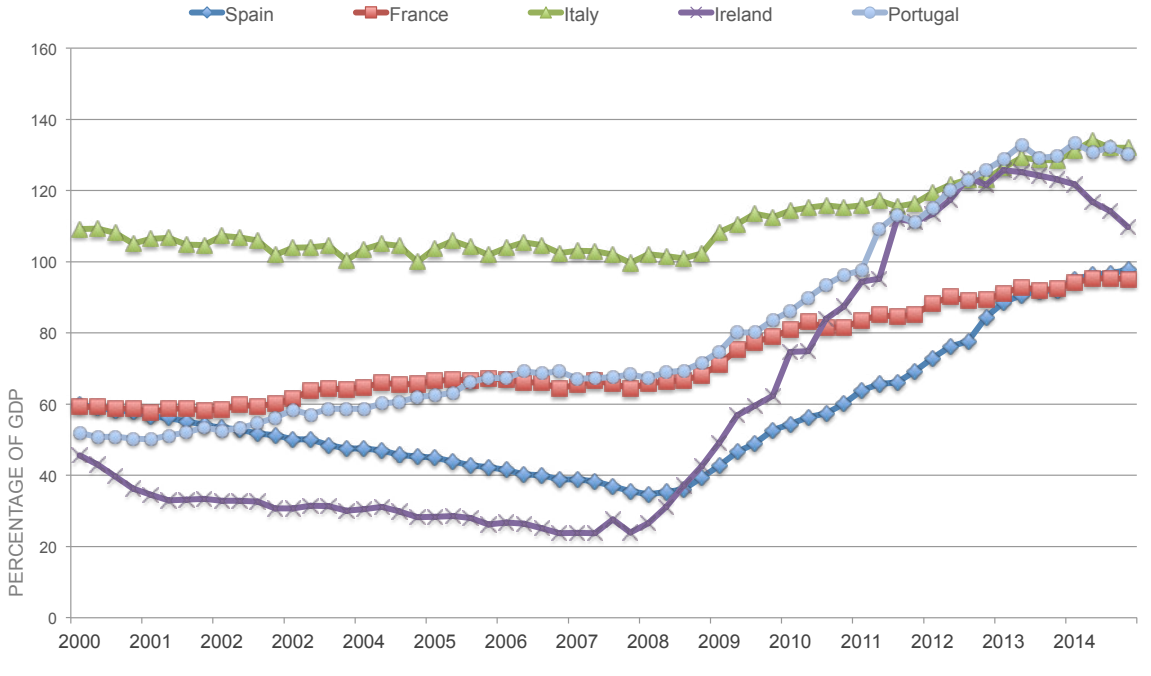
Once the global financial crisis struck in 2007, it soon became clear that private sector lending and spending had consistently exceeded income in the Eurozone's peripheral countries. The newly available spending power from private sector borrowing fuelled a significant increase in aggregate demand, especially for imports. Current account deficits consequently expanded, and the net investment position of the periphery dramatically declined (Figure 5). Moreover, booming aggregate demand led to high levels of inflation in the periphery, which made those countries less competitive (as labour costs increased).

1.2 Austerity and the Sovereign Debt Crisis

Public sector debt remained relatively stable in the period leading up to 2007-2008. In fact, Spain and Ireland were successfully reducing their stock of government debt. As a response to the financial crisis however, public debt levels soared (Figure 4). Banks needed bailing out and more social expenditures (i.e. unemployment benefits) were required, while tax revenues were declining due to the recession.

The rise in public sector borrowing of the peripheral nations eventually sparked fear in the financial markets (De Grauwe and Ji, 2015). When the true situation of Greek public finances first became known in early 2010, the Eurozone experienced a "Minsky moment". There was an abrupt downward revision of the prices of government securities. The levels of sovereign debt that were until then considered acceptable, were suddenly judged as unsustainable by the market. Concerns over liquidity shortages and potential default soon transcended into panic, and the costs to periphery governments of borrowing dramatically increased as the market no longer wanted to hold their bonds[4].

FIGURE 4: GOVERNMENT GROSS DEBT



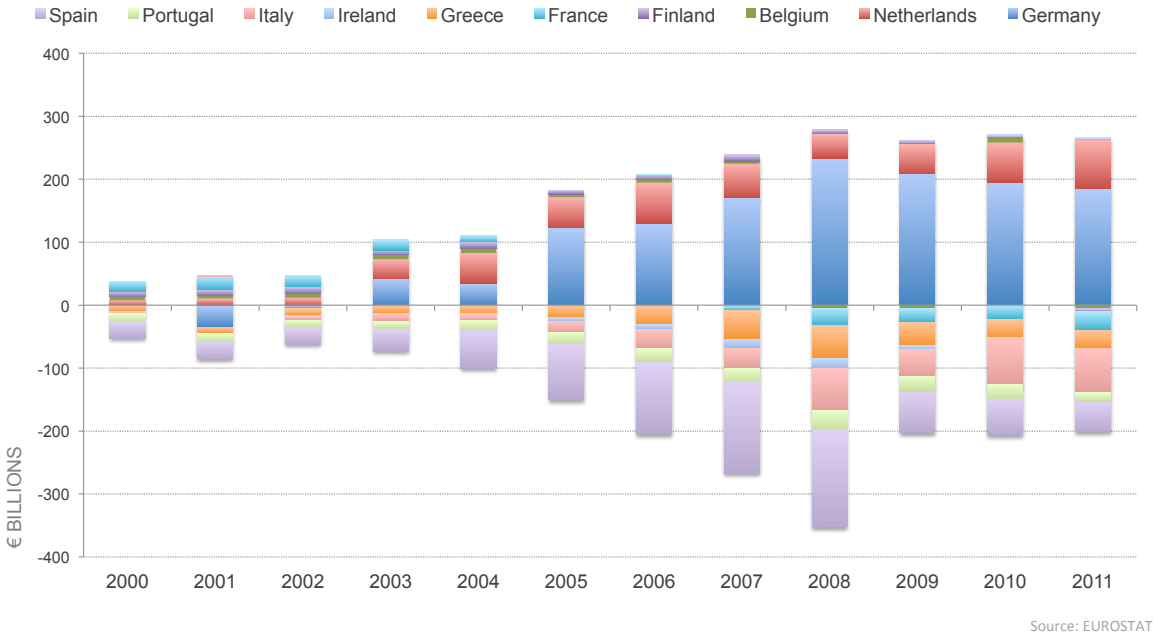
Source: EUROSTAT

4 Note that fear in the financial markets was worsened by the inability of NCBs in the Eurozone to intervene and buy the bonds issued by their respective governments (as this intervention would prevent a government's cost of borrowing from skyrocketing).

By 2010, financial panic and the potential of a sovereign default made it difficult for governments in the peripheral nations to borrow, forcing them 'to beg cap in hand' for funds from creditor countries (e.g. Germany) along with the Troika[5] (De Grauwe & Ji, 2013, p. 4).

Consequently, from 2010 to 2012, a series of loans were reluctantly made to Greece, Ireland, Portugal, and Spain. Concerned about the fiscal position and current account deficit of the peripheral countries (Figure 5), the core nations attached stringent austerity programmes to these funds – forcing the public sector of the Eurozone's periphery to make rapid and severe spending cuts (De Grauwe, 2015; Whelan, 2013; Constancio, 2011). On the other hand, many of the creditor nations were also under domestic pressure to do

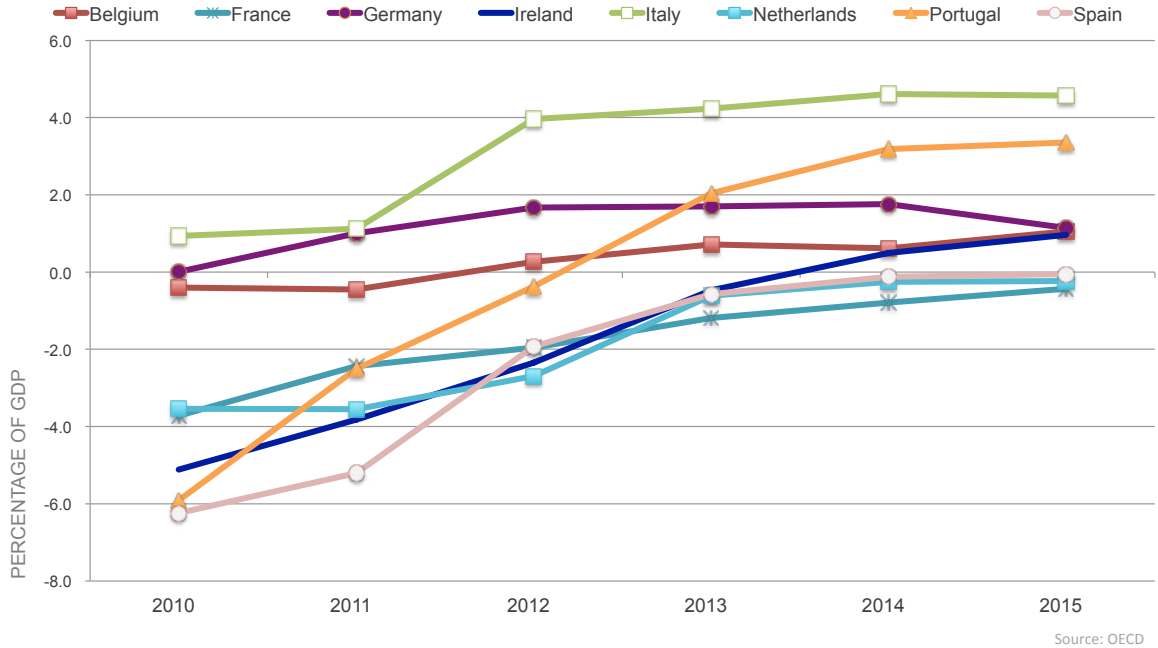
FIGURE 5: EUROZONE CURRENT ACCOUNT BALANCE: PERIPHERY VERSUS CORE



Source: EUROSTAT

FIGURE 6: GENERAL GOVERNMENT UNDERLYING SURPLUS/DEFICIT

Surplus (+) or deficit (-) as a per cent of potential GDP



Source: OECD

5 The tripartite committee consisting of the European Commission, the European Central Bank, and the International Monetary Fund, that organized a series of loans to Greece, Ireland, Portugal, and Cyprus.

some fiscal belt tightening of their own. Figure 6 aptly demonstrates how there has been a collective effort by Eurozone governments to reduce public spending and aim to run an account surplus since 2010.

By 2012, the financial panic had been largely abated due to the ECB's announcement of the Outright Monetary Transactions (OMT) programme and Mario Draghi's declaration "to do whatever it takes" to save the Euro. If the threat of default or of an exit from the Euro drove sovereign bonds rates too high, the ECB would begin buying those sovereign bonds from the secondary markets, pushing up their price and lowering their yield (and so lowering the cost of borrowing for governments). In doing so, the ECB committed itself to acting as a lender of last resort to governments. The mere announcement was enough to calm the financial markets, as no country to this date has applied for OMT funds from the ECB. However, Eurozone governments were still in precarious financial positions and thus still under immense pressure to implement austerity programmes.

1.3 Private Debt Overhang and Deleveraging

Meanwhile, the post-crisis debt overhang was still weighing heavily on the private sector. On the supply side, investors judged that the recent financial crisis related to 'oversized and over-leveraged financial institutions' (Whelan, 2012, p. 8) and withheld further financing to financial institutions. Despite the ECB attempting to make up for the shortfall in lending previously provided by bond markets, financial institutions from the periphery with large liabilities to the core were under pressure to contract their lending (*Ibid*). The troubled state of their own balance sheets meant the large banks of the Eurozone's core nations were also under pressure to contract their lending. Accordingly, these core country banks retreated from the lending markets in periphery countries[6].

On the demand side, the private sector was actively deleveraging, by repaying loans faster than new loans were taken out. Businesses and households were trying to pay down their loans, to alleviate themselves from the onerous burden of debt that they had accumulated in the run up to the crisis. High levels of unemployment placed downward pressure on wages in many of the peripheral countries, making it less attractive for households to borrow. Poor prospects for economic recovery also meant that businesses were not taking out new loans for investment[7].

Since banks were concerned with contracting the size of their balance sheets and the private sector sought to deleverage, private sector credit growth began to rapidly diminish. Figure 7 shows that after a brief, modest recovery in lending (from May 2009-July 2011), private sector credit growth quickly decreased. By 2012, private sector credit was contracting, and continued to do so for the following three years.

6 For a more in depth explanation see Whelan (2013).

7 The conclusions of Holton et al (2012) strongly support this line of reasoning, suggesting "those countries in which the private sector accumulated large volumes of debt in the pre-crisis era are unlikely to experience increased credit flows to the real economy until these debt levels have been reduced significantly."

FIGURE 7: EUROZONE PRIVATE SECTOR CREDIT GROWTH

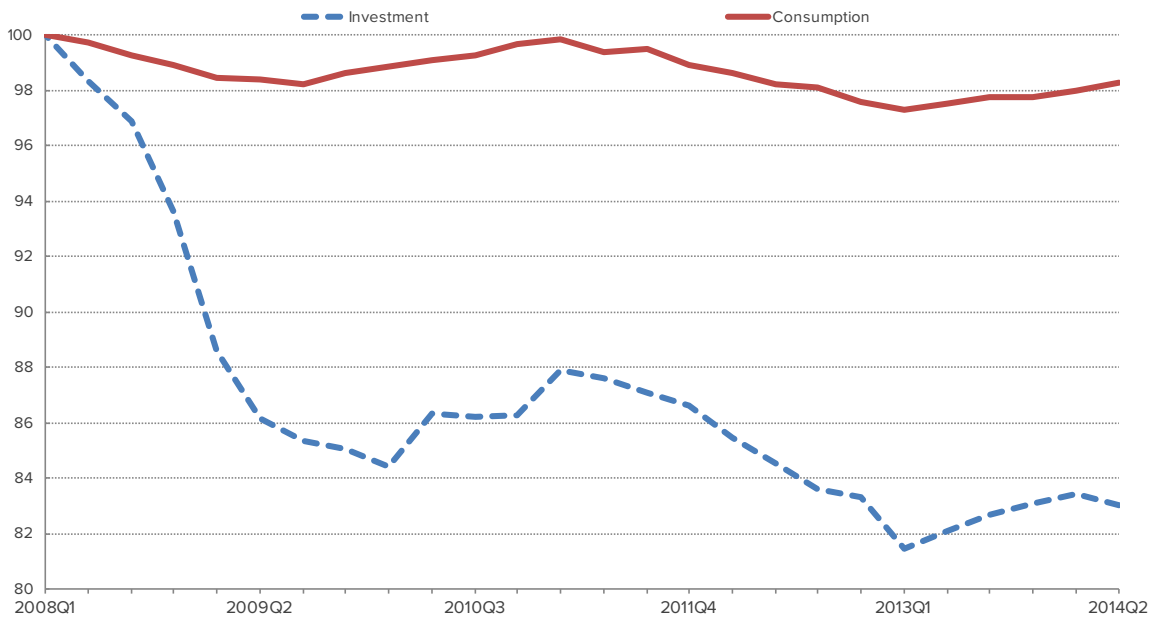
Source: TRADING ECONOMICS

1.4 Low Aggregate Demand and Falling Inflation

Austerity in the public sector and deleveraging in the private sector meant that most Eurozone countries witnessed extensive cuts in spending and thus a fall in aggregate demand (Figure 8). In peripheral nations, austerity policies led to a drop in private sector incomes and an increase in unemployment. This had the effect of lowering tax revenues, which led to further spending cuts and made it even more difficult for governments in peripheral nations to service their existing debts. At the same time, many core nations also implemented austerity programmes, despite running current account surpluses and being in

FIGURE 8: INVESTMENT & CONSUMPTION

Relative to 2008 Q1



Source: ECB

a relatively robust fiscal condition. This further depressed aggregate demand, especially demand from core countries for exports produced by the periphery[8], making it even more difficult for periphery countries to run a current account surplus.

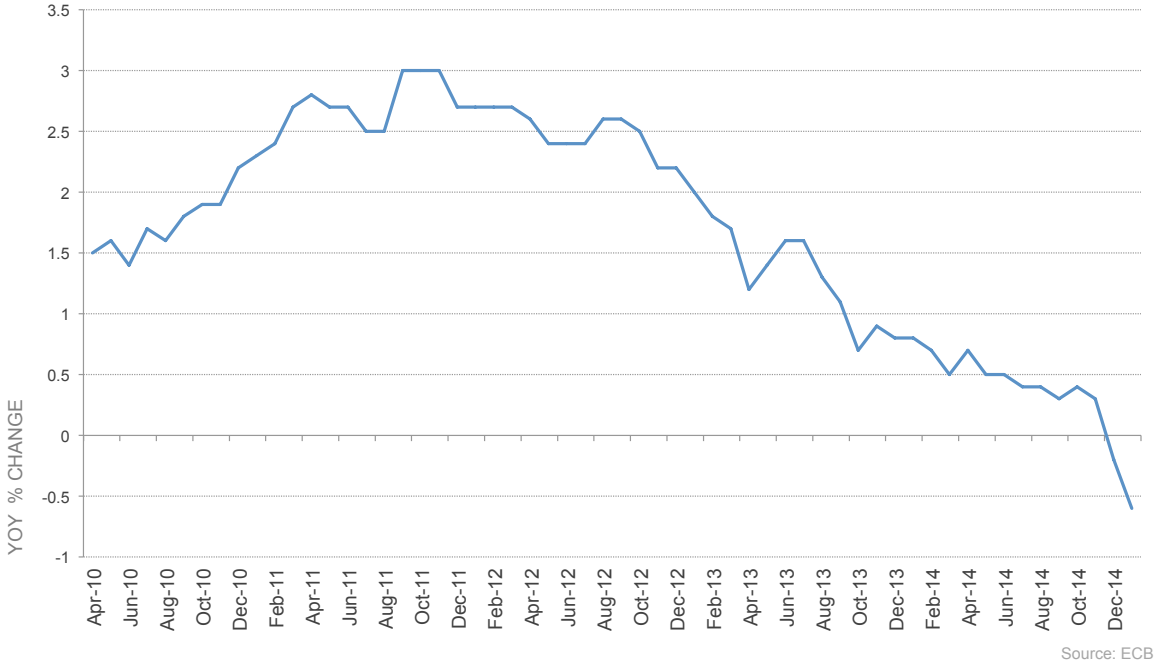
In the private sector, investment and consumption fell as households and businesses sought to deleverage and banks restricted their lending (Figure 8). For many of the Eurozone countries, the lower levels of investment and consumption translated into lower levels of spending and aggregate demand, lower income and profit for businesses, resulting in diminished incomes or increased levels of unemployment.

This instigated a vicious cycle, where lower prospects of income growth reduced demand for new loans, leading to lower spending and investment and lower incomes. This in turn further lowered the demand for new loans, leading to further drops in spending and investment. By the end of 2013 private consumption in the Eurozone was still 2% below what it was in 2007, and private investment was 18% below its 2007 level.

To better understand levels of aggregate demand in the Eurozone it is useful to review the rate of inflation (i.e. the rate of change of the consumer price index (CPI)). The persistent downward trend of inflation (Figure 9) implies a declining level of aggregate demand for goods and services. In other words, aggregate demand in the Eurozone has not been strong enough to prevent ongoing falls in the inflation rate.

However, decreasing inflation rates cannot be explained by weak aggregate demand alone. The recent drop in oil and commodity prices has played a significant role in explaining the Eurozone's low level of inflation and recent deflationary trend. However, it is worth noting: 1) a consistent fall in inflation was taking place well before oil and commodity prices began to fall, and 2) core inflation – consumer price inflation stripped of commodity and oil prices – was showing a similar downward trend (for example core inflation halved from 1.5% in March 2013 to 0.7% in March 2014).

FIGURE 9: EUROZONE INFLATION RATE



Source: ECB

8 Bossone and Wood (2014) explain: "In the Eurozone, the countries running external surpluses and enjoying relatively safe and sound fiscal conditions have deliberately decided against boosting internal demand, thereby withdrawing potential stimulus from the global economy and providing none of the powerful locomotive potential they could provide to revive the Eurozone block" (p. 2).

By the summer of 2014, Greece, Spain, Italy, and Portugal had gone from falling rates of positive inflation to outright deflation – a decrease in the general price of goods and services. The continuing drop in aggregate demand and the associated fall in prices threatened to spark a dangerous downward spiral of deflation. As Fisher (1933) demonstrated, a fall in prices leads to a fall in nominal income, which effectively raises the real burden of servicing outstanding debts, as these do not decrease when prices fall. As the real value of debt increases, both the private and public sector must sacrifice more spending and investment in order to service outstanding debts. As a fall in spending and investment reduces the revenue of suppliers and producers, this leads to more unemployment, wage cuts, and a general rise in non-performing loans (Figure 10). The result is lower spending and investment (a further drop in aggregate demand), which lowers nominal incomes, exacerbates the debt burden, and reduces spending, in a vicious circle.

FIGURE 10: NON-PERFORMING LOANS

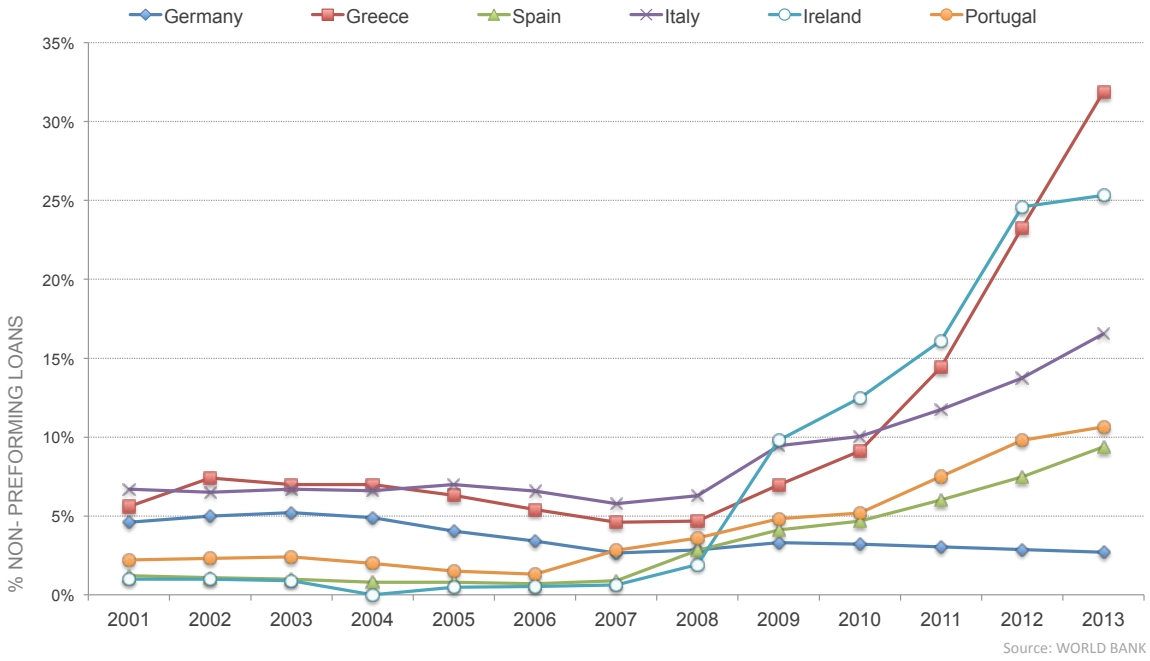
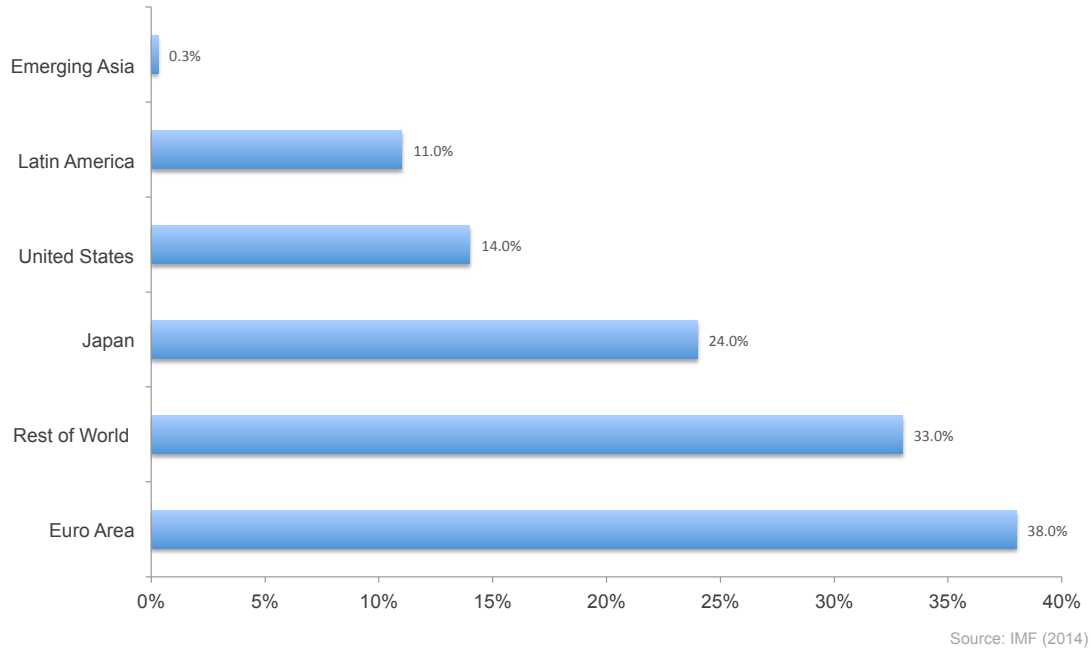


FIGURE 11: PROBABILITY OF RECESSION



In late 2014, the IMF concluded that falling aggregate demand and the threat of deflation was such a drag on the economic recovery that the chance that the Eurozone would re-enter recession had nearly doubled to 38% since earlier that year (Figure 11). Weak growth trajectories and the threat of deflation meant that "...a smaller negative shock is more likely to trigger a recession." (IMF, 2014, p. 14). A quote by Joseph Stiglitz, Nobel laureate in economics and former chief economist of the World Bank, sums up the problem of falling aggregate demand in the Eurozone:

> "The near-global stagnation witnessed in 2014 is man-made. It is the result of politics and policies in several major economies – politics and policies that choked off demand. In the absence of demand, investment and jobs will fail to materialize. It is that simple. Nowhere is this clearer than in the Eurozone..." (Stiglitz, 2015)

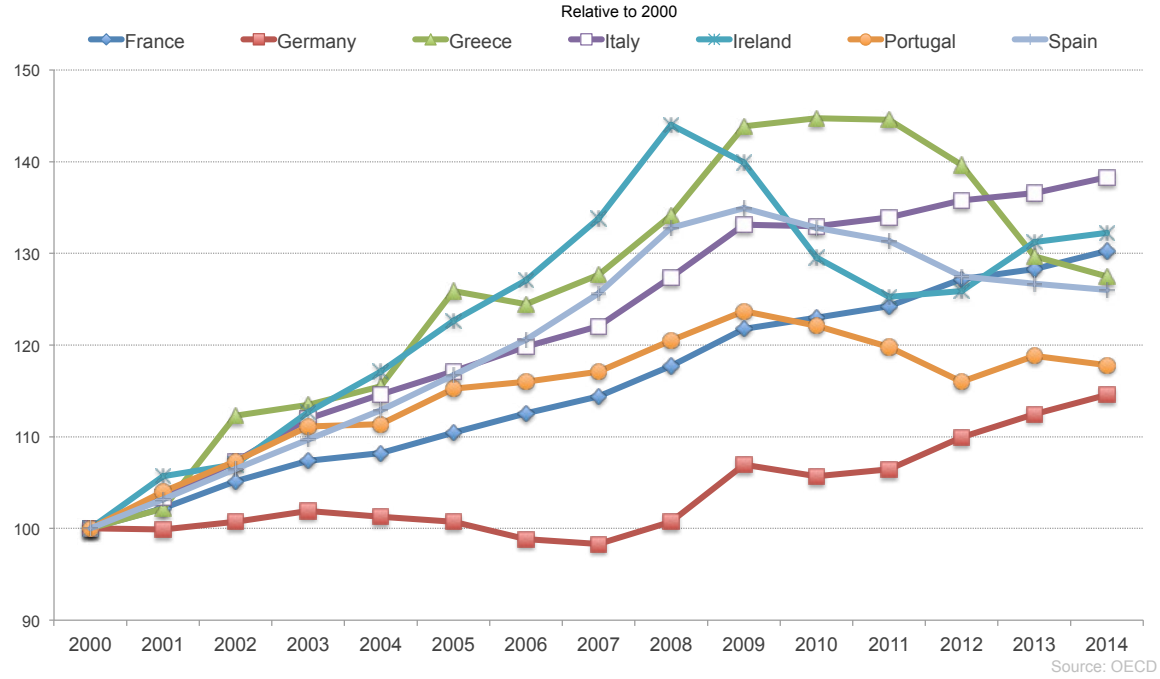
1.5 The Use of Monetary Policy

The strong support for austerity policies by the Eurozone's creditors suggests that fiscal stimulus won't be used to boost aggregate demand anytime soon. Moreover, countries that may want to use fiscal deficits to stimulate aggregate demand are limited by the Fiscal Compact within the Maastricht framework that underlies the composition of the Eurozone monetary union.

Historically, when aggregate demand falls, due to a simultaneous drop in public and private sector spending, the policy response has been to devalue the currency. This would make exports cheaper prompting a rise in foreign demand, helping to counteract the depression in domestic demand. The option of currency devaluation is however not available to the peripheral countries of the Eurozone, who are therefore required to pursue 'internal devaluation'. This entails cutting wages and reducing other costs in the economy, so as to make their exports more competitive. Figure 12 shows that unit labour costs in the Eurozone periphery (except for Italy) are being reined in.

However, there are limits to the success of such a strategy, since the attempt to cut costs and reduce spending has the effect of lowering aggregate demand and can intensify the possibility of a deflationary spiral (Societie Generale, 2013).

FIGURE 12: UNIT LABOUR COSTS



In the absence of an effective policy of fiscal stimulus, monetary policy is the only available tool that could potentially lead to a pick-up in aggregate demand. The monetary policy pursued by the ECB has been aimed at stimulating aggregate demand by getting banks to increase their lending and encouraging the private sector to go further into debt (Claeys, 2014). However, as the following section demonstrates, monetary policy in the Eurozone has been largely ineffective for a number of reasons.

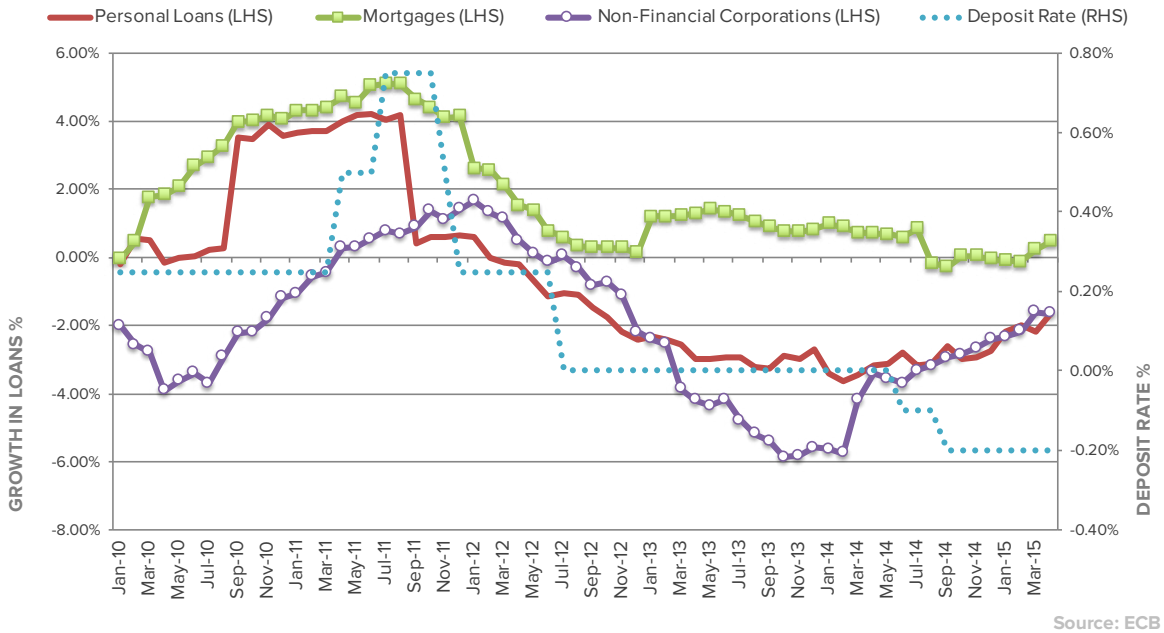
Conventional Monetary Policy: The most conventional monetary policy tool for stimulating aggregate demand in times of recession is the use of the base rate of interest set by central banks. The theory is that by lowering the interest rates on the reserves banks hold at the central bank, banks should be incentivised to increase lending and lower the interest rates they offer to borrowers. In turn, the lower interest rates should incentivise consumers/investors to borrow more, and thus spend more, boosting aggregate demand and employment.

According to this principle, the ECB has attempted to lower interest rates since October 2011. However, interest rate manipulation has had virtually no effect on lending to households or non-financial businesses. In fact, from October 2011 to April 2013 the lowering of interest rates coincided with a fall in lending – the exact opposite of what the theory would expect (see figure 13).

Jackson (2013) suggests that to understand why conventional monetary policy is not having its intended effect, it is necessary to understand the transmission mechanisms that are assumed to influence lending and spending. Namely, by lowering interest rates the cost of credit is made cheaper, and there is thus more of an incentive to borrow and spend. This suggests that in order to stimulate aggregate demand and the economy as a whole, (in the absence of fiscal stimulus and an export-led recovery) it is necessary for the private sector to go further into debt by borrowing and spending.

Current conditions, however, have rendered the transmission mechanism underlying the ECB's monetary policy ineffective. Most banks are actively trying to contract their balance sheets by restricting new lending. Moreover, high levels of unemployment and weak

FIGURE 13: PRIVATE SECTOR LENDING VS ECB DEPOSIT RATE



Source: ECB

prospects of economic recovery mean that the private sector is (on aggregate) more concerned with paying down pre-existing debts than taking out new loans. This explains why a former executive board member of the ECB stated:

> "Whenever the transmission channel of monetary policy is severely impaired conventional monetary policy actions are largely ineffective." (Smaghi, 2009)

In such conditions, trying to stimulate aggregate demand by encouraging more borrowing is, as John Maynard Keynes (1936) suggested, as good as 'pushing on a string'. Or, as many central bankers put it: "You can lead a horse to water, but you can't make it drink" (Euro-CEFG, 2015, p.2). Lowering interest rates will fail to prompt a pick-up in aggregate demand if banks aren't interested in lending and the private sector isn't interested in borrowing.

Unconventional Monetary Policy: The most popular type of unconventional monetary policy is Quantitative Easing (QE), where new central bank reserves are created to purchase financial assets outright from the secondary market. For a number of reasons, until recently the ECB has limited itself mainly to making massive injections of low-priced loans to the banking sector. Any attempts by the ECB to purchase assets outright have been small and economically insignificant[9]. Accordingly, by offering cheap liquidity to the banking sector, the ECB attempted to stimulate aggregate demand by trying to create the conditions that would incentivise banks to lend and the private sector to take on more debt.

In 2011 the ECB announced the establishment of two new tranches of its Long Term Refinancing Operation (LTRO). Aimed at injecting liquidity into the private banking sector, the programme offered a cheap loan scheme to Eurozone banks[10]. Banks could essentially acquire three-year loans at low rates from the ECB, provided they put up the necessary eligible collateral[11]. The idea was that by swapping their illiquid assets for liquid ones, banks would be able to pay off their maturing debts whilst still being able to extend new loans to the real economy. The new liquidity would supposedly get banks lending and the private sector spending again.

The 2011-2012 LTRO programmes provided Eurozone banks with up to €1 trillion worth of new low-interest loans, in the form of newly created reserves. Yet, despite the size of the programme, it failed to encourage the banking sector to offer cheap loans to businesses and households. Instead of increasing lending, banks utilised their newly acquired funds to build up their capital reserves or spent them on the high-yielding bonds of the periphery.

In 2014, the ECB attempted to rectify the ineffectiveness of the LTRO programme by ensuring that it was "targeted" (TLTRO). Briefly put, this on-going programme allows banks to apply for four-year loans in the same way as under the previous LTRO programme. The difference is that under this programme the banks that don't increase their lending to

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9 In comparison to the QE programmes conducted by other central banks, before 2015, the ECB's programmes designed to purchase financial assets outright has been extremely limited in size. For example, Societiee Generale (2013) notes, "In 2012, the ECB's Covered Bond Purchase Program (CBPP) along with the Securities Markets programme (SMP), which was launched in May 2010 in response to the heightening of the Eurozone sovereign debt crisis, amounted to only 3% of GDP."(p. 8).

10 The LTRO programme has actually been in existence since the establishment of the Euro in 1999, but was limited to offering 3-month refinancing options. In 2008, this remit was expanded to 6-months, and then 12-months in 2009. In late 2011, 3-year LTRO loans were offered, marking it as an unconventional monetary policy measure. Furthermore, more recently the standards for eligible collateral have also been loosened, allowing the banking sector easier access to liquidity.

11 The ECB had quite a bit of discretion in this regard, however, a number of instruments were accepted as collateral (i.e. sovereign bonds, loans, asset-backed securities), generally speaking with 'A' rating or higher.

the non-FIRE business sector have to repay their loans within two years, (as opposed to four). The programme, however, has generally been considered a failure due to the dismal up-take in TLTRO funds by banks.

With benchmark interest rates already close to zero or even negative, the apparent failure of the TLTRO was another demonstration of the private sector's unwillingness to take on extra debt regardless of the low rate of interest. As Stiglitz suggests:

> "Demand is what the world needs most. The private sector – even with the generous support of monetary authorities – will not supply it. ... The likelihood that loose monetary policies will restore global prosperity is nil." (Stiglitz, 2015)

1.6 The Dangers of the ECB's Policy Mix

In summary, both conventional and unconventional policies pursued by the ECB have been aimed at encouraging higher levels of lending. This ultimately implies that for the last five years, with little prospects for fiscal stimulus or an export-led recovery, the Eurozone has relied on a set of policies that are aimed at getting the private sector to take on more debt, in order to stimulate aggregate demand. When bank lending is required to stimulate a lack of aggregate demand and trigger economic growth, it is the private sector that is expected to take on more debt. However, as the events leading up to 2008 illustrate, excessive levels of private lending can lay the foundation for a financial crisis. Despite past events, the current policy solution is to lower interest rates and inject more liquidity into the financial markets in order to get banks lending more. These policies attempt to use the cause of the crisis as the solution to the crisis (Jackson, 2013).

Focused on trying to increase aggregate demand by getting banks to lend again, the ECB looked for other ways of injecting liquidity into the system. When other policies failed, the ECB turned to Quantitative Easing, as used in the USA, the UK, and Japan. Yet, as the following section suggests, this policy still depends heavily on trying to fuel aggregate demand by encouraging banks to lend more and the private sector to take on more debt.

2. QUANTITATIVE EASING AND ITS EFFECTS

By January 2015 the ECB announced that it would be launching an expanded asset purchase programme, otherwise known as Quantitative Easing (QE). The programme involves the ECB and National Central Banks (NCBs) purchasing up to €60 billion of financial securities from the secondary market each month. The programme is intended to last until September 2016, but may be extended if aggregate demand does not pick up and inflation remains lower than 2%. (For a more detailed summary of the operational procedures and technicalities behind European QE see Appendix 1).

While the programme entails a certain number of private sector securities being purchased (€10 billion per month), the majority of the programme will purchase sovereign debt securities (€50 billion per month). Accordingly, the following discussion is limited to discussing QE in the context of purchases of government bonds.

2.1 The Mechanics of Quantitative Easing

The immediate effect of QE is to increase the amount of central bank reserves in the banking system. Central banks issue newly created reserves and use them to buy pre-existing financial assets, primarily government bonds. If banks hold these financial assets, then the net result of the exchange is that banks swap bonds for central bank reserves, and there is an increase in the stock of central bank reserves held by banks. However, if these assets are held by non-banks (e.g. pension funds) then the exchange results in both an increase in central bank reserves held by banks and an increase in the amount of bank deposits held by the private sector.

Due to its complex nature and the differing contexts under which QE has been implemented, there are a number of theories on how QE influences an economy. The most commonly cited of these is the **bank lending effect**, which suggests that by injecting new central bank reserves (liquidity) into the banking system, banks' balance sheet constraints should be relieved, allowing them to increase their lending to the economy. In his announcement of QE, ECB President Mario Draghi explains that he expects the bank lending channel to be the primary mechanism for restoring inflation, employment and growth:

> "You basically substitute bonds with cash, and therefore banks, at that point, will have more incentive to lend to the private sector, households and companies." (Draghi, 2015b)

The second way that Draghi and the ECB expect QE to stimulate aggregate demand is through the **signalling effect.** The announcement of large-scale asset purchases gives investors an idea about the future course of action that the central bank is going to take. Buying considerable amounts of long-term securities shows the market that the central bank is committed to keeping interest rates low in the future. Accordingly, investors 'price in' this expectation and alter their investment portfolios based on the notion that the central bank will aim to keep rates low for an even longer period of time.

Another theoretical channel through which QE could influence the economy is through the **portfolio rebalancing effect**. By buying financial assets with newly-created money the

central bank pushes up the price of those assets, which simultaneously pushes down the yield (i.e. returns) earned by holders of these assets. The lower returns should force investors to move their investments into riskier assets with higher yields (such as corporate bonds and shares), hopefully directing more credit and investment towards businesses in the real economy. Similarly, lower yields show lower borrowing costs for businesses that issue bonds, making it cheaper for them to invest or spend more[12].

By increasing the price of financial assets, QE automatically increases the wealth of the asset owners. In theory, this results in a **wealth effect,** and is also one of the most commonly stated benefits of QE. This is because the increased financial wealth gained by asset holders should induce them to invest and spend more, prompting a virtuous cycle of growth and allowing the benefits of QE to 'trickle down' to lower income earners.

By influencing yields and interest rates QE can have a substantial **exchange rate effect**. Lower yields on financial assets such as bonds makes them less attractive to investors. As yields fall on assets priced in euros, investors will seek out foreign assets offering higher yields. This requires them to exchange euros for foreign currency to buy these assets, and that leads to capital outflows and a reduction in demand for the domestic currency, weakening its value relative to other currencies. A devalued currency may then have positive effects on the economy by making exports cheaper. Of course, it will also make imports more expensive, therefore pushing up inflation, which is one of the aims of QE.

QE can lead to positive spillovers for the economy through the **fiscal effect**. By pushing up sovereign bond prices and pulling down bond yields, QE lowers the interest rates governments have to pay on their bonds. In this fashion, QE can lower public sector borrowing costs. Moreover, as the central bank buys sovereign bonds issued by its respective central government, interest payments on those bonds go from the central government to the central bank. Any profits of central banks however, are remitted back to the central government. The net effect is that the interest payments the government pays out are eventually sent back to the government. The government bonds that are purchased by a central bank in effect become 'interest free' to the government. However, central banks do not commonly cite this as a benefit, as it would imply that the central bank is indirectly financing the government, a taboo in mainstream economics.

2.2 To What Extent Will QE Work According to Theory?

The extent to which QE actually works according to theory is still relatively unknown, and heavily debated. This is why Ben Bernanke, former chairman of the US Federal Reserve Bank, famously stated, "The problem with QE is it works in practice, but it doesn't work in theory". The following section will therefore shed some light on the degree to which QE can be expected to work according to mainstream theory.

Bank Lending Effect: There is significant reason to question whether the injection of newly created reserves will actually prompt an increase in bank lending to the real economy. Firstly, evidence from experiences of QE in the USA (Hinds, 2014; Fazi, 2014), England (Joyce et al., 2011; Butt et al., 2015) and Japan (Koo, 2014) suggests that QE has not resulted in increased lending to the real economy. Secondly, as the previous section

12 Draghi (2015a) for example explains, "Our (ECB) purchases reduce returns on safer assets. This encourages investors to shift to riskier, higher yielding assets. Pension funds, banks and other market participants that we buy securities from are likely to substitute these for other long-term assets, thereby eventually pushing up prices more broadly."

demonstrated, the ECB's own LTRO programme, which added €1 trillion of new reserves to the system, did not result in increased lending. Thirdly, bank lending is not constrained by the availability of reserves in the system.

The latter point is crucial as the premise of the bank lending effect is based on the text-book 'money multiplier' model, an inaccurate view of how the money system works. The money multiplier essentially suggests that banks require new reserves before they make new loans, thus an increase in reserves in the system (i.e. via QE) will automatically result in an increase in bank lending. The reality however, is that bank lending is not constrained by the stock of central bank reserves. In practice, banks lend first and look for reserves later. It is clear that the ECB was already aware of this in 2013, as ECB Vice-President Vitor Constancio explained:

> "It is argued by some that financial institutions would be free to instantly transform their loans from the central bank into credit to the non-financial sector. This fits into the old theoretical view about the credit multiplier according to which the sequence of money creation goes from the primary liquidity created by central banks to total money supply created by banks via their credit decisions. In reality the sequence works more in the opposite direction with banks taking first their credit decisions and then looking for the necessary funding and reserves of central bank money." (Constancio, 2013).

The implication is that bank lending is not determined exogenously by the supply of central bank reserves, but endogenously by demand from the private sector for new loans. Accordingly, if there is weak demand for new loans, and banks are fearful of lending in a depressed economy, then bank lending to the private sector will not increase regardless of how much new central bank reserves are injected into the system. Again, the ECB had already pointed this out in a 2012 bulletin[13]:

> "The occurrence of significant excess central bank liquidity does not, in itself, necessarily imply an accelerated expansion of...credit to the private sector. ... Ultimately, the growth of bank credit depends on a set of factors that determine credit demand and on other factors linked to the supply of credit" (ECB, 2012, p. 22).

With the ECB already offering unlimited liquidity, there is no lack of central bank reserves in the banking system. Instead, constraints on lending in the Eurozone come from a lack of demand for loans from the private sector and the fact that: *"Banks continue to deleverage, are capital constrained and are facing a host of new regulatory requirements – they simply do not want the risk of lending to uncertain markets such as struggling Eurozone states."* (Ruparel, 2015, p.1). Indeed, Eurozone banks are averse to lending, as there is significant credit risk because of the increasing levels of non-performing loans, especially in Greece, Ireland, Italy, Spain and Portugal.

The real constraint on bank lending is the adequacy of bank capital. Stricter regulations have increased the amount of capital banks must hold to support their lending in general, and as it becomes apparent that specific loans are likely to default then capital must be reserved in order to fully absorb the loss, requiring banks to raise more capital to maintain capital ratios against the remaining loans.

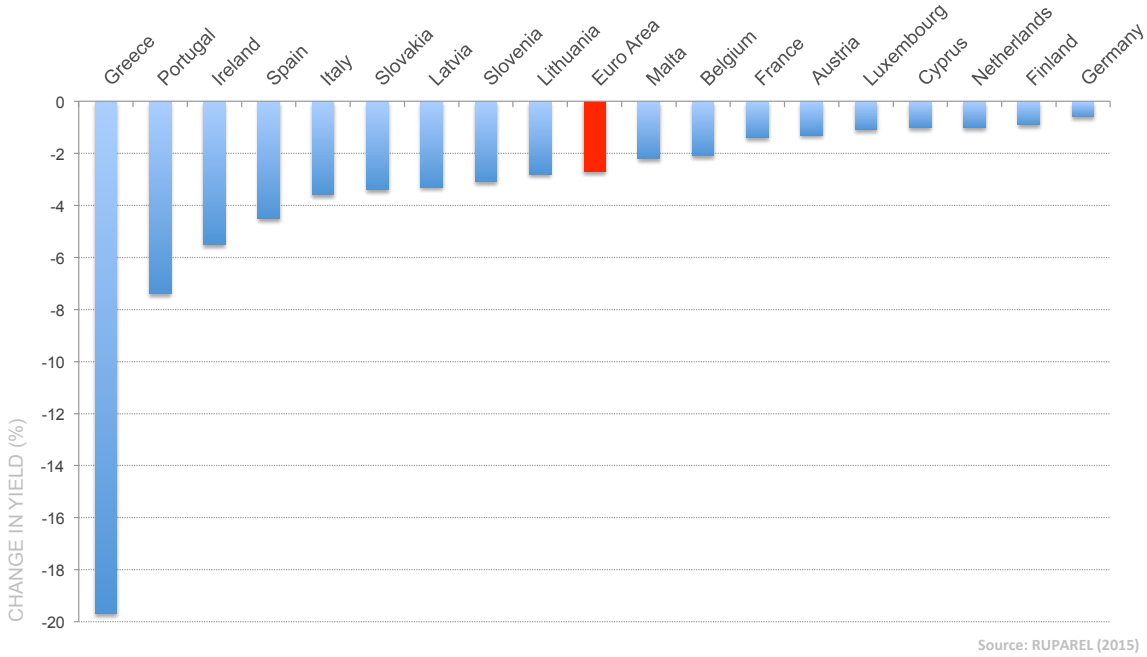
Portfolio Rebalancing Effect: While there is evidence from the US and UK that QE reduces the yields on low-risk bonds and thus incentivises investors to finance riskier asset classes (i.e. corporate bonds and equities), there is significant cause to question the extent to which the portfolio balancing channel will take effect in the Eurozone.

13 Cited in Fazi (2014).

Firstly, despite QE reducing yields in the US and UK, such yields were not reduced by a huge amount (Whelan, 2014). For example, D'Amico et al. (2012) show that the FED's first QE programme worth $300 billion and the second programme worth $600 billion, reduced long-term treasury yields by only 45 and 35 basis points respectively.

Secondly, when QE was first introduced in the UK and USA, bond yields were already relatively high. In contrast, in the Eurozone sovereign and corporate bond yields were already extremely low before the ECB announced its QE programme. Indeed, borrowing costs have been falling and stock market prices increasing since 2012 when Mario Draghi pledged to do "whatever it takes" to stabilize the Euro (figure 14).

FIGURE 14: CHANGES IN YIELDS (JUNE 2012 – NOVEMBER 2014)



Thirdly, levels of investment and bank lending have been declining despite declining yields and the increasing price of equities since 2012. It is unlikely that a further decline in these yields and increase in equity prices will suddenly encourage an increase in lending and investment – especially considering that Europe's listed companies have been hoarding roughly €1 trillion-worth of cash reserves since 2012 (Deloitte, 2014). Indeed, business investment is much more likely to depend on prospects for growth and what returns an investment will yield. After all, lower borrowing costs will fail to stimulate investment if the borrower is unable to sell the extra goods and services such investment could produce.

Fourthly, there is significant danger that falling yields (and costs of borrowing) and higher equity prices will encourage risk taking in the financial markets – potentially leading to future economic instability.

Fifthly, in comparison to the USA, capital markets in the Eurozone economy are very under-developed, and businesses are primarily dependent on banks for finance. For example, more than 85% of lending to non-financial corporations comes from the banking sector in the Eurozone, while the figure in the USA stands at less than half of this (the securitization of loans is not common practice for banks in the Eurozone). Furthermore, the corporate bond market is much smaller in the Eurozone when compared to the US. In late 2014 there were €1.1 trillion in corporate bonds outstanding in Europe compared with €6 trillion in the US (Ruparel, 2015).

Finally, the uncertainty around the situation in Greece and the prospect of its exit from the Eurozone makes it less likely that investors will be prepared to switch to riskier assets.

Fiscal Effect: The fiscal benefits of QE ultimately depend on where sovereign yields stand when QE is being implemented. The yields on 10-year Treasuries in the US and UK were between 3.5% and 4% before QE began, so by bringing down sovereign bond yields QE lowered the borrowing the costs of these governments quite significantly. It is estimated that the Federal Reserve's holdings of sovereign bonds saved the US Treasury $80.5 billion (0.5% of GDP) of interest payments. The Bank of England's QE programme is estimated to have saved the UK Treasury about £8 billion (0.5% of UK GDP) worth of interest payments in 2012 alone (Claeys, et al., 2015).

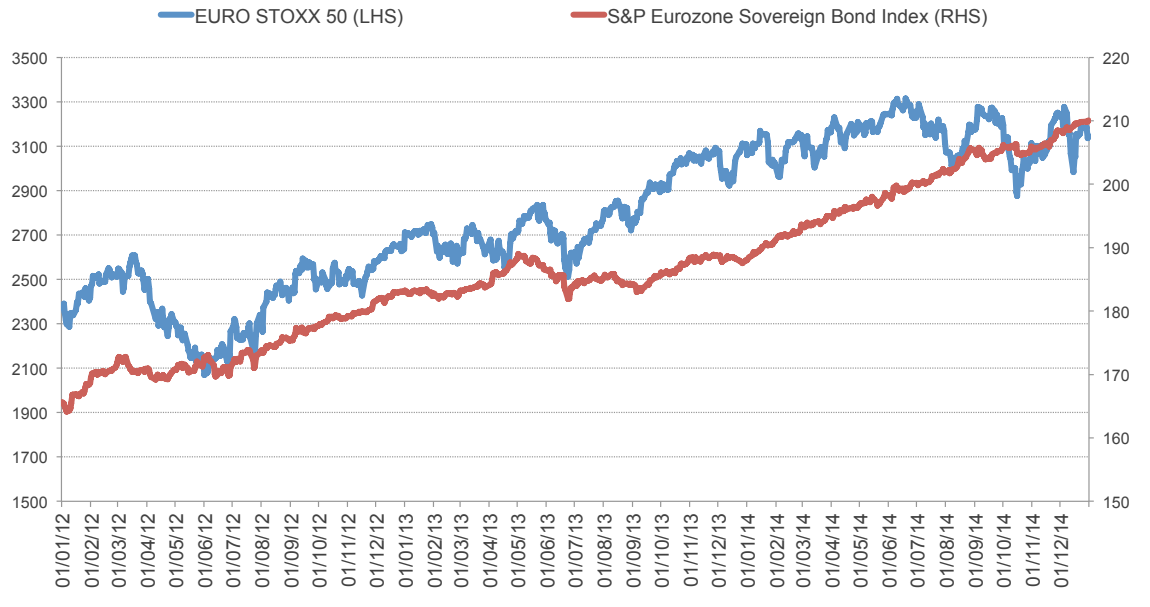
In the Eurozone, however, low-interest rates and the ECB's earlier pledge that it was "ready to do whatever it takes" meant that sovereign bond yields were already at exceptionally low levels before QE was even announced. In this sense, the lower borrowing costs accrued from QE would represent a negligible saving for Eurozone governments. For this reason, a study by Claeys et al. (2015) estimates that across the entire Eurozone, the aggregate profits accrued by NCBs (and paid to their respective treasuries) will amount to just €4 billion (0.04% of Eurozone GDP).

Wealth Effect: The extent to which Eurozone QE will have a wealth effect is also questionable. Financial asset prices have already been increasing since 2012, and yet this has not boosted consumption or investment in the real economy (figure 15). There is thus little reason to believe that a further increase in asset prices will suddenly boost aggregate demand.

While QE may have had a wealth effect in the US and to a lesser extent in the UK, the structure of the Eurozone economy is very different, and thus QE should be expected to have different effects. Ruparel (2015) shows that: 1) in Western Europe average financial assets per capita stand at €50,000, compared to about €115,000 in the US, and 2) the proportion of household wealth held in the form of financial assets is much smaller in the Eurozone (49%) than in the USA (82%). For this reason, Guggenheim (2015) estimates that any wealth effect of QE upon consumption will be at least 40% weaker in the Eurozone than in the USA.

Moreover, increases in asset prices are unlikely to result in significant increases in spending, as the wealthiest people in the Eurozone have a very low propensity to consume. A case study published by the ECB (2014) suggests that the richest 10% of the Eurozone population, who own over 52% of wealth in the Euro area, have a marginal propensity to

Figure 15: Eurozone Financial Markets



Source: Based on RUPAREL (2015)

consume of just 6% (Carroll et al, 2014). This suggests that of every extra euro of wealth gained by asset holders through QE, only 6 cents will actually be spent. Indeed, asset price inflation is more likely to encourage asset holders to speculate even more, rather than increase their level of consumption.

Exchange Rate Effect: There are also significant doubts about (a) the extent to which an exchange rate effect will occur and (b) the extent to which any exchange rate effect will actually help the Eurozone's situation. Firstly, a number of other central banks are also engaging in some form of monetary easing. For example, central banks in more than a third of the 46 advanced and emerging economies in the MSCI All Country World index have cut interest rates. In doing so, many countries have devalued their own currencies – which may negate the effects of a devaluation of the euro. Secondly, global growth is currently weak (OECD, 2015), so even a fall in the exchange rate is unlikely to lead to a significant increase in demand for exports. Thirdly, there is no guarantee that devaluation will lead to an increase in exports, as the case of Japan demonstrates (Ruparel, 2015). Finally, the majority of exports from Eurozone countries go to other Eurozone countries. One estimate suggests that only 20% of exports by Eurozone countries go to non-Eurozone countries (Valiante, 2015), so any exchange rate effect applies to just 20% of Eurozone country exports.

Signalling Effect: It could be argued that the signalling effect is perhaps the "simplest but possibly most effective channel for the Eurozone" (Ruparel, 2015, p. 13). However, the signalling effect is still likely to be limited and other alternatives could have the same intended effect. Firstly, as Coppola (2015) points out, justification for QE cannot come down to: "We need to do something. QE is something. Let's do it". Secondly, many investors have long anticipated QE, so it is likely that "the largest part of its bond-rate and exchange-rate consequences have already been priced in" (Pisan-Ferry, 2014). Thirdly, many of the benefits associated with the signalling effect can be achieved by the ECB conducting forward guidance or taking other positive actions, such as monetary financing for the real economy.

2.3 Disadvantages of Eurozone QE

Even if Eurozone QE were to have the effect that ECB policymakers hope for, there would be a number of undesirable side-effects:

Asset price bubbles: By injecting central bank money into the financial markets, QE is designed to inflate asset prices. But this has the potential to lead to dangerous asset price bubbles. While asset prices in the last few months have shown some signs of cooling, the Eurozone is still in serious danger of experiencing a bond market bubble. The Financial Times recently noted that demand for sovereign bonds is currently so high that over $2 trillion of sovereign bonds with negative yields have been purchased, mainly in Europe[14]. Indeed, the ten-year borrowing costs of Spain, Ireland, Italy, and Portugal are now at similar levels or even below the levels in the UK and USA. In addition, stock prices for corporates within the Eurozone during the first quarter hit 15-year highs, while the German DAX was up 22% since the ECB's announcement of QE. The artificial inflation of asset prices can lead to a false sense of market optimism which can encourage investors to take greater risks, leading to future financial instability.

Most worryingly, there has been no change in the economic fundamentals to justify these rising asset prices or greater risk taking. For example, asset prices are increasing with-

14 Financial Times "QE Draghi is Stoking Bond Bubble Risk" http://www.ft.com/cms/s/0/847de7c0-cc02-11e4-aeb5-00144feab7de.html#axzz3dbOxw5aZ.

out a corresponding increase in levels of incomes, employment, exports, investment, or consumption. If the prices of these assets continue to increase, without improvements in the economic fundamentals, the result would appear to be a financial market bubble, and there is no telling when it will eventually pop. William White, former chief economist at the Bank for International Settlements, who is recognised as foreseeing the Lehman Brothers crisis with 'uncanny accuracy'[15], states:

> "Sovereign bond yields haven't been so low since the 'Black Plague': how much more bang can you get for your buck? QE is not going to help at all. There are serious side-effects building up and we don't know what will happen when they try to reverse what they have done."

Inequality: By inflating the prices of assets, QE exacerbates inequality, as it is the wealthiest members of society who own the majority of such assets. Wood further elaborates on this when making reference to QE programmes in the USA and Japan:

> "Those players in the real economy that most needed financial support, the unemployed, low income households and the disadvantaged (all with high marginal propensities to consume) were not recipients of the new money provided under the asset purchase program [QE]: that new money never reached the 'real economy' in significant volumes.... Those who did receive new money under continued quantitative easing were commercial banks, traders, speculators, financial investors, high wealth individuals and hedge funds[16]." (Wood, 2015)

It is hardly surprising therefore that Krugman found that for the USA:

> "95% of the gains from economic recovery since 2009 have gone to the famous 1%. In fact, more than 60% of the gains went to the top 0.1%, people with annual incomes of more than $1.9 million." (Krugman, 2013)

In the UK, the Centre for Analysis of Social Exclusion (2015) at the London School of Economics found that the richest 10% have increased their wealth by 46.5% since 2008. Much of this effect can be attributed to the effect of QE (whilst the rest may be due to the inflated property market). Indeed, a study by the Bank of England (2012) found that QE had increased the price of financial assets (shares and bonds) by 26%, roughly £600 billion. If financial assets were held equally by all households, this would have translated into an increase in financial wealth of £10,000 per UK household. However, because the bulk of assets are owned by the wealthiest households, more than 40% of these gains went to the wealthiest 5% of households. The research further shows that QE could have increased the wealth of the richest 10% of households by up to £322,000 per household (Bank of England, 2012).

Our research finds that in the Eurozone, over 55% of financial assets are owned by the wealthiest 5% of the population. Our calculations reveal, in line with those of the Bank of England, that these households are likely to become at least €95,000 richer as a result of QE over the next 15 months.

Instability: Finally, by encouraging the private sector to take on more debt through the bank lending channel, the sustainability of any potential recovery is put at risk. Studies have shown that positive economic growth depends on private debt levels rising faster than growth in output (Turner, 2012). However, other studies have demonstrated that rising levels of private debt endanger financial stability, and tend to lead to a financial crisis

15 As described by Evans-Pritchard (2015) http://www.telegraph.co.uk/finance/economics/11358316/Central-bank-prophet-fears-QE-warfare-pushing-world-financial-system-out-of-control.html

16 Cited in Fazi (2014).

(Jorda, Schularick, and Taylor, 2011). Policy-makers therefore face a “catch 22” situation: to increase aggregate demand and grow the economy, the private sector must take on more debt, but this rise in the ratio of private debt to GDP increases the risk of financial instability and crisis.

2.4 In Summary: QE for the Eurozone is Ineffective and Undesirable

The official theory underlying QE is that funnelling billions of newly created money into financial markets will, through a number of indirect mechanisms, lead to an increase in spending. The resulting higher levels of investment and consumption will create jobs and increase people’s incomes. However, the empirical evidence does not support this theory. Consequently, proponents of QE have been limited to arguing that, although we can’t be sure *how* QE worked, we would surely have been worse off without it. Even if this is true, it could still be the case that other policies would have been far more effective, quicker, and without the negative side effects of QE.

Quantitative Easing in the Eurozone works through weak and possibly ineffective channels. QE may endanger financial stability and will exacerbate inequality. Worryingly, the President of the ECB has highlighted the bank lending channel as the primary channel through which QE is expected to influence aggregate demand, growth, and unemployment. But this attempt to stimulate the economy by encouraging private debt ignores the dangers this poses for financial stability.

Clearly a more effective policy is needed: one that stimulates aggregate demand in the Eurozone without relying on the private sector to become even more indebted.

3. MONETARY FINANCING FOR THE REAL ECONOMY

There are sufficient grounds to question whether the Eurozone needs a trillion-euro Quantitative Easing programme, since the policy appears to have a negligible effect on the real economy, apart from creating financial bubbles and worsening inequality. What's more, when announcing QE, the ECB and Mario Draghi admitted that for the programme to cause a pick-up in growth, more investment is required:

> "Finally, let me add something here, because it's actually quite important. … What monetary policy can do is to create the basis for growth, but for growth to pick up, you need investment…" (Draghi, 2015b)

As already demonstrated, such investment is not going to be forthcoming from the public or private sectors in the near future. There is a clear need for the ECB to explore alternative policies that would have a more direct impact on the real economy.

What would such an alternative policy look like? We need a policy that directly stimulates spending and investment, and therefore aggregate demand. We need a policy that does not rely on increases in public sector or private sector debt. So instead of trying to encourage debt-financed spending by the private sector, the ECB should use its power to create money in order to finance spending in the real economy. We refer to this type of newly created money on behalf of the state, as *monetary financing for the real economy*[17].

The following section outlines the benefits of monetary financing for the real economy. Most importantly, it is shown that monetary financing for the real economy can boost aggregate demand and stimulate the economy more directly than QE, without increasing public or private debt. We then show how monetary financing for the real economy would work in practice, before addressing some misconceptions about how such a proposal could work. Initially however, we show how monetary financing is not a new concept and a number of governments have managed to successfully use their money-creating powers to grow the economy.

3.1 Historical Precedents for Monetary Financing for the Real Economy

The use of a central bank's money creating powers to fund government spending into the real economy is not a new idea. As Jackson (2013) notes, a number of well-known economists advocated similar policies as a response to the Great Depression in the 1930s. These include Paul Douglas and Aaron Director (1931), Lauchlin Currie, Harry Dextor White and Paul Ellsworth (1932), John Maynard Keynes (1933), Jacob Viner (1933) and Henry Simons (1936). Later, the idea was further developed by Abba Lerner (1943) and Federal Reserve Chairman Mariner Eccles (1942). It was most notably endorsed by Milton Fried-

17 This form of monetary financing is also known as QE for People, OMF, Green QE, Helicopter Money, Strategic QE, and Sovereign Money Creation.

man in (1948)[18]. In 2003 the idea was resurrected by Ben Bernanke, prior to his becoming chairman of the Federal Reserve. Bernanke (2003) suggested that the Bank of Japan implement a form of monetary financing to thwart the economic stagnation that had been burdening Japan since the beginning of the 1990s.

Since 2008, in reaction to the post-crisis global recession, the idea has been endorsed by a number of notable economists, including: former Financial Services Authority chairman Adair Turner (2013); Citigroup's chief economist William Buiter, writing with Ebrahim Rahbari (2012); Richard Werner (2012); Richard Wood (2012); Martin Wolf (2013); Paul McCulley and Zoltan Pozsar (2013); Steve Keen (2013); Yanis Varoufakis (2014); Ricardo Caballero (2014); David Graeber (2014); John Muelbauer (2014); Mark Blythe, Eric Lonnergan and Simon Wren Lewis (2015); Paul Krugman (2015) and others[19].

Historical data on governments creating money is somewhat limited. There are number of case studies that illustrate the potential negative effects of allowing governments to create money, which we address in a later section. However, there is sufficient evidence to suggest monetary financing can have positive economic effects if conducted appropriately.

Before the era of modern banking, (towards the end of the 1600s), a number of nation states "...used simple accounting techniques, such as tally sticks, minted coins, or printed paper money to fund their activities and ensured their widespread adoption through taxation[20]". Ku (2015) shows that the ability of the Roman authorities to issue their own currency was critical to the expansion of their empire. Turner (2015) and Ku (2015) both make reference to how China had developed a paper currency dating back to the 4th century BC, where money was created and used in the public interest for centuries after. Dyson and Jackson (2012) demonstrate that in the 18th century the government of the Pennsylvania Colony was successful in its efforts to create money to stimulate demand, and managed to do so without prompting a high level of inflation. Ryan-Collins (2015) highlights that until the latter stages of the 1600s, the government-created monetary regimes in the US and UK showed few signs of instability; and that the governments of Germany, Japan, and the US issued significant amounts of money in the 1800-1900s.

Brown (2008) and Turner (2015) allude to how the US union government paid for a 'significant' portion of its civil war expenditure with 'Greenbacks' - paper currency issued by the government. Blain (1994) and Brown (2008) show how the government of the island of Guernsey was able, from 1815 to 1958, to finance public works through monetary financing without creating high levels of inflation.

Eichengreen (2015) shows that Finance Minister Korekiyo Takahashi was able to jump-start the Japanese economy in 1931 by allowing the central bank to create money to fund public works. Brown (2008) and Liu (2009) demonstrate how the government of Germany used its money creation powers to finance public investment from 1933 to 1937, transforming a bankrupt Germany into the strongest European economy in just four years. Ryan-Collins et al. (2013) in their 'Strategic QE' proposal, show that the government's money creating powers for public works was critical to the economic development of Canada (1935-1971) and New Zealand (1935-1939).

18 For Lauchlin Currie, Harry Dextor White & Paul Ellsworth (1932) see bibliography Laidler, D. E., & Sandilands, R. J. (2002); and for Eccles (1942) see bibliography Garbade (2014).

19 For links to Werner (2012), Keen (2013), Varoufakis (2014), Caballero (2014), Graeber (2014), and Krugman (2015) see: http://positivemoney.org/2015/03/prominent-economists-advocate-different-type-quantitative-easing/.

20 Ryan-Collins (2015), who also cites Knapp (1905), Grierson (1978), Ingham (2004), and Graeber (2011).

3.2 Monetary Financing for the Real Economy: Potential Options

The historical examples above suggest that monetary financing can be used to fund public spending in order to grow the economy. The proactive creation of money by the state offers policymakers a number of options, in terms of how the money can be spent. The following presents two recommendations as to how monetary financing could be used. It must be stressed however that these are suggestions and we welcome other ideas that aim to use monetary financing to boost aggregate demand in the real economy.

Monetary financing could be used to:

1. directly increase public spending, especially on infrastructure projects or,

2. distribute money individually to citizens for spending or paying down debts, as a type of Citizen's Dividend. By directly increasing spending in the real economy, a monetary financing programme will have a bigger and more direct impact on aggregate demand, when compared with QE.

Monetary financing for public spending: In contrast to QE, a more direct way to influence output and employment is to use monetary financing for public spending. In a similar fashion to that in which NCBs create new money to purchase assets from the financial market under conventional QE, this new money creation could be used to directly fund projects in the real economy. This spending would not only result in more public sector projects, but would also reduce unemployment and increase private sector incomes without heightening the public sector's debt burden. For this type of spending to be considered successful however, it needs to adhere to the general objectives of monetary policy and must meet some specific requirements.

Initiating public spending projects, especially for infrastructure projects, can take some time. So that newly created money can enter the economy relatively quickly the spending projects that are funded by monetary financing need to be predetermined and should be 'shovel-ready' projects that can be implemented quickly. If the spending of the money is lengthy and drawn over a few years, then the conditions that initially warranted the stimulus may have changed, and monetary financing may no longer be necessary.

Of equal importance, projects selected must be scalable and standalone. That is the successful completion of projects funded via monetary financing should not depend on any future funding being made available via monetary financing. In addition, selected projects would ideally be scalable, capable of absorbing higher or lower quantities of money. A massive infrastructure project aimed at constructing a new power station, which would take a number of years to complete, would be unsuitable. On the other hand, a programme that aims to improve the energy efficiency of houses and office buildings might be more desirable (as such a programme can be scaled to absorb greater or lesser amounts of new money).

Monetary Financing for a Citizen's Dividend: QE is designed to increase the wealth of financial asset owners. In theory, this increased wealth should encourage those asset owners to spend, so that income and wealth 'trickles down' to lower income earners. It would be more effective, however, if the money intended for each NCB to conduct QE were divided equally amongst all citizens. In effect, the money that would have been created through QE would be paid directly into people's bank accounts and would put additional purchasing power directly into people's pockets. This increased purchasing power should translate into increased consumer spending, which would lead to higher incomes, a rise in output of goods and services as well as reduce unemployment.

There are a number of ways that such a Citizen's Dividend could be distributed in practice. For example, it could be distributed to all holders of social security numbers receiving monthly payments from their respective NCB. Another possibility, as proposed by Muellbauer (2014), would be for monthly payments to be made directly to households according to the electoral register, as 90% of Eurozone residents are on the electoral register. If it were impossible to find a mechanism for delivering such funds to the local citizenry, it would be possible to use the money created by the NCBs to fund a tax cut, which would have very similar effects to a Citizen's Dividend.

The implementation of a Citizen's Dividend can be done quickly and is likely to have a much more immediate impact on spending when compared to monetary financing for public spending. Conversely, a Citizen's Dividend may not trigger the highest increase in spending and economic output, as only a portion of a Citizen's Dividend will be used for spending. This is because citizens may use some of their newly acquired money to either repay debt, to save, or to spend on imports, meaning that only a proportion of the money may be spent on activities that actually increase domestic economic output.

3.3 The Mechanics of Monetary Financing for the Real Economy

Monetary financing goes against the mainstream orthodoxy that monetary and fiscal policy should be completely separate. To carry out the proposal put forward here, monetary and fiscal authorities – that is, the ECB, NCBs, and national governments – would have to collaborate.

Accordingly, certain institutional procedures will be required to guarantee a transparent and accountable procedure and to prevent conflicts of interest. Therefore, it is proposed that the NCBs in cooperation with the ECB, determine how much new money to create. Meanwhile, national governments would determine how the money would be used.

Prior to determining how much money to create, the Eurozone governments would be required to make a decision as to how they would want monetary financing to be used (according to the two options mentioned above – or a mix of both). This is crucial, as the different uses of monetary financing will have different impacts on aggregate demand (further explained below). Accordingly, the amount of money (in the form of central bank reserves) created by the NCBs and the ECB will need to be adjusted depending on how the Eurozone governments intend to use it.

After learning how the government plans to use the newly created money, the ECB and NCBs can determine how much to create in order to generate the required stimulus. The accounting process of monetary financing would be similar to that of QE. The mechanics of QE allow for the NCBs to create new money in order to buy financial assets. With monetary financing, instead of buying financial assets from the secondary market, the national banks would instead buy (outright) a certain amount of "perpetual zero-coupon bonds" issued by their respective Treasuries. These bonds would be interest-free and would never have to be repaid. By purchasing these bonds, each NCB credits its Treasury's account with newly created central bank reserves. To ensure that each NCB's balance sheet would balance, the newly created money would appear as a liability of the NCB and an asset of the Treasury, while the bonds would appear as an asset of the NCB and a liability of the Treasury.

There are a few options for determining the precise figure of how much new money to create. Each NCB could be given the autonomy to create as much central bank money as is necessary to achieve the Eurozone's mandate of a 2% rate of inflation. A second option

would be to target a reduction in unemployment, so that for example aggregate unemployment falls to 6%. These options however, may not be so popular as they offer NCBs a substantial amount of autonomy. Thus, a third option would be to simply permit NCBs to create as much money as under the current framework of QE, in proportion to the ECB's capital key (see appendix). A fourth option would be for the ECB to give each NCB a cap on how much money it could create. Devising the cap would presumably take into account the contextual circumstances of each economy. There is naturally a possibility for other options to be pursued, but whichever option is selected, it is a decision that should be determined by national governments, the European Parliament, NCBs, and the ECB.

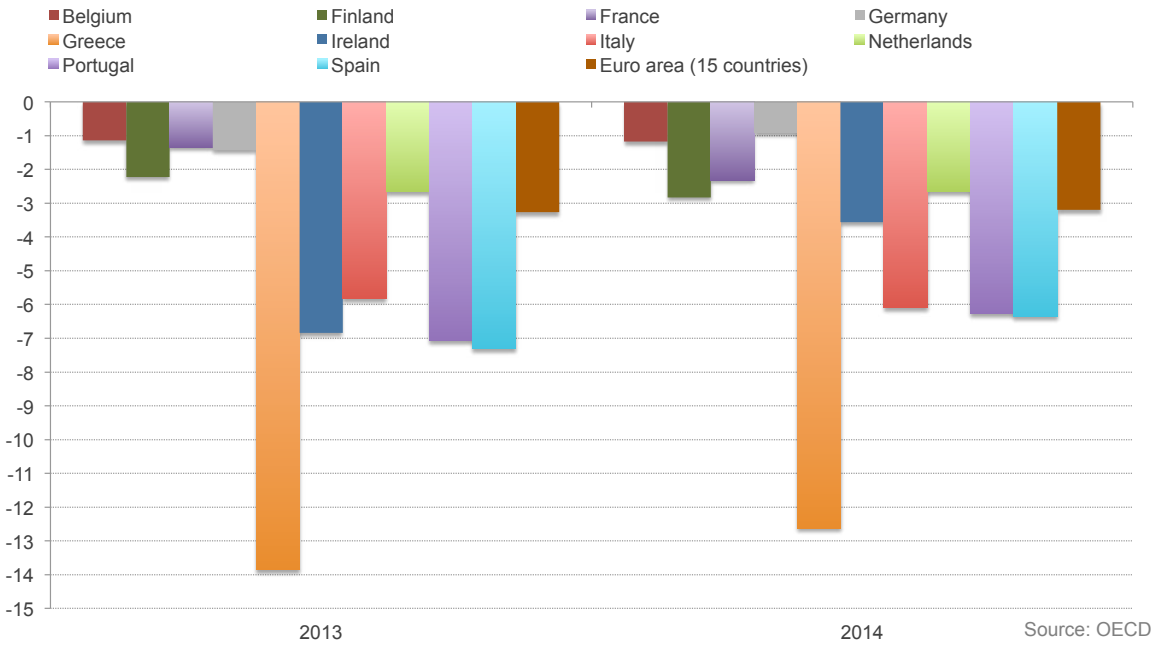
The decision regarding how to spend the funds however would always rest with national governments. As soon as the NCB determined how much money to create in order to reach the agreed target (i.e. 2% inflation), it would transfer these funds to the government to spend into the economy. The government could then transfer the newly created electronic money to each citizen's bank account or use it for additional public spending.

3.4 The Possible Impacts on Aggregate Demand

The effects of monetary financing for the real economy on aggregate demand will vary according to the conditions of the economy. In countries with a high degree of spare capacity, monetary financing will have a significant impact on demand, which will lead to a rise in productivity and growth. As money created by the state is spent into the economy, businesses are likely to hire more employees and increase their production, leading to an increase in output and real GDP. This will have mutually reinforcing multiplier effects, where higher levels of employment will result in increased incomes and thus more spending, leading to higher levels of demand, production, and employment.

Spare capacity relates to output gaps, and implies that productivity can be boosted without triggering an increase in inflation beyond the mandated target of 2%. Estimates of spare capacity are not exact science and should be treated with some caution. However, they do give some insight into how monetary financing for the real economy would influence aggregate demand.

FIGURE 16: SPARE CAPACITY IN THE EUROZONE



OECD estimates suggest that there is high degree of spare capacity in Greece and other peripheral countries. However, there is actually a lot of spare capacity in the core countries as well, with the Netherlands, France, and Germany having an output gap of around 3%, 2%, and 1% respectively in 2014 (see figure 16). This would suggest that there is scope for a well-managed monetary financing program to boost output and employment without increasing inflation.

On the other hand, when spare capacity in a country falls, increased spending through monetary financing will tend to increase prices and be directed increasingly to imports as rising domestic prices increase the attractiveness of foreign goods. To the extent that these imports are produced by other EU states, this will further increase demand for the products of those countries that do have spare capacity.

Equally, depending on how and where it is used, monetary financing will have different effects on aggregate demand. For example, a citizens' dividend will most likely result in a significant short-term increase in aggregate demand, including a significant short-term increase in consumption spending. Conversely, using monetary financing to fund public spending will most likely have a more sustained impact on aggregate demand over the long run.

3.5 How Monetary Financing for the Real Economy Achieves the Aims of QE

Monetary financing for the real economy achieves the aims of QE through a number of effects. The first of these is the **fiscal effect**. For example, public sector spending in the Eurozone was just over €2 trillion in 2014. If just 10% of current QE funds[21] were instead used for public spending, this would amount to just over €80 billion. On average, Eurozone governments would then see their yearly public budgets increase by roughly 4%. The fiscal effect of monetary financing for the real economy could be up to 20 times greater than that of QE (Claeys *et al.,* 2015).

Just like QE, monetary financing will result in an increased supply of central bank reserves held by the banking sector on aggregate. Usually, banks looking to borrow central bank reserves (either from the NCB or from other banks) would have to do so by putting up other liquid assets as collateral. By increasing the stock of central bank reserves, monetary financing "frees up banks' liquid assets" (Jackson, 2013, p. 20). More liquid assets and central bank reserves should improve the liquidity ratios of the private banking sector on aggregate; this can decrease the possibility of liquidity crises and enhance the capacity of banks to respond to potential runs.

The increased level of economic activity, combined with the growth in private sector incomes, could allow the private sector to deleverage and is likely to decrease the total value of non-performing loans. This could trigger an increase in the banking sector's profits (or a reduction in their losses) and allow capital to be rebuilt. In combination with a healthier economy, banks would most likely have a greater willingness to lend to the private sector. Stimulating aggregate demand via the **bank lending effect** seems more achievable under the proposed programme when compared to conventional QE.

Private sector expectations would most likely be improved, which should theoretically trigger higher levels of investment. In this sense, monetary financing offers a similar **sig-**

21 Our calculations show that of the €60 billion of monthly QE funds, the ECB will be allocating €44 billion to Eurozone countries to spend on sovereign bonds. This amounts to €528 billion a year. See appendix for more details.

nalling effect. By undertaking monetary financing, the NCBs would be showing that they are committed to increasing aggregate demand. However, unlike QE, where the signalling effect works in the financial markets but is weak in the real economy, the signalling effect of this policy would be stronger in the real economy than in the financial markets.

3.6 Further Advantages of Monetary Financing for the Real Economy

There are a number of added benefits that monetary financing offers when compared to QE. Most importantly, **it does not rely on the private sector taking on more debt in order to stimulate spending and aggregate demand**. Monetary financing means that newly created money can enter the economy, and spending can increase, without increasing levels of household and corporate debt. Bossone and Wood also explain that a monetary financing programme "...offers to deliver the most powerful stimulus possible without increasing interest rates or public debt" (Bossone & Wood, 2013). Policymakers therefore, will no longer be in the "catch-22" position of trying to encourage greater bank lending to stimulate a recovery, even though excessive bank lending was the cause of the crisis.

Monetary financing will also result in a net increase in the financial assets held by the private sector. Significantly, the increase in spending will boost private sector incomes relative to the private sector debt burden. This means that monetary financing will allow the private sector **to reduce its debt-to-income ratio**. By reducing the debt-to-income ratio – by raising the level of income relative to debt – monetary financing for the real economy increases financial stability and makes growth more sustainable.

Indeed, monetary financing offers policymakers much **more direct influence over the real economy. Money created by the state** can be injected directly into the heart of the economy. Monetary financing will therefore not only have a more significant impact on aggregate demand, but the impact will be far more immediate and direct when compared with QE. In this sense, monetary financing is a tool that grants policymakers greater macro-economic control.

By increasing spending in the economy without relying on additional private sector debt, monetary financing for the real economy **allows the private sector to actively deleverage without there being a reduction in net spending** in the economy as a whole. Normally, private sector deleveraging means that a certain portion of spending/investment is sacrificed so that debts can be repaid. The ensuing drop in spending lowers the prospects for growth, and can be economically damaging. Monetary financing compensates for the reduction in spending that results from the deleveraging process. This means that total debt can be reduced without a simultaneous reduction in aggregate demand.

Accordingly, economic recoveries should not only be **more stable**, but will also be **more sustainable** over the long-term (Jackson, 2013). Because the policy does not work by flooding the financial markets with newly created money (unlike QE), monetary financing for the real economy avoids the risk of creating destabilising asset bubbles. Furthermore, because it does not rely on increased levels of private debt to stimulate aggregate demand, financial stability is not jeopardized.

Whereas QE works by increasing the wealth of the richest, with the hope that they may increase their spending, leading to a potential 'trickle-down' of wealth, monetary financing for the real economy is specifically designed to benefit the public at large. Whether through public spending or a citizens' dividend, the benefits of monetary financing will be far more direct and much **more evenly distributed throughout society**.

3.7 Empirical Analysis of Impacts of QE vs. Monetary Financing for the Real Economy

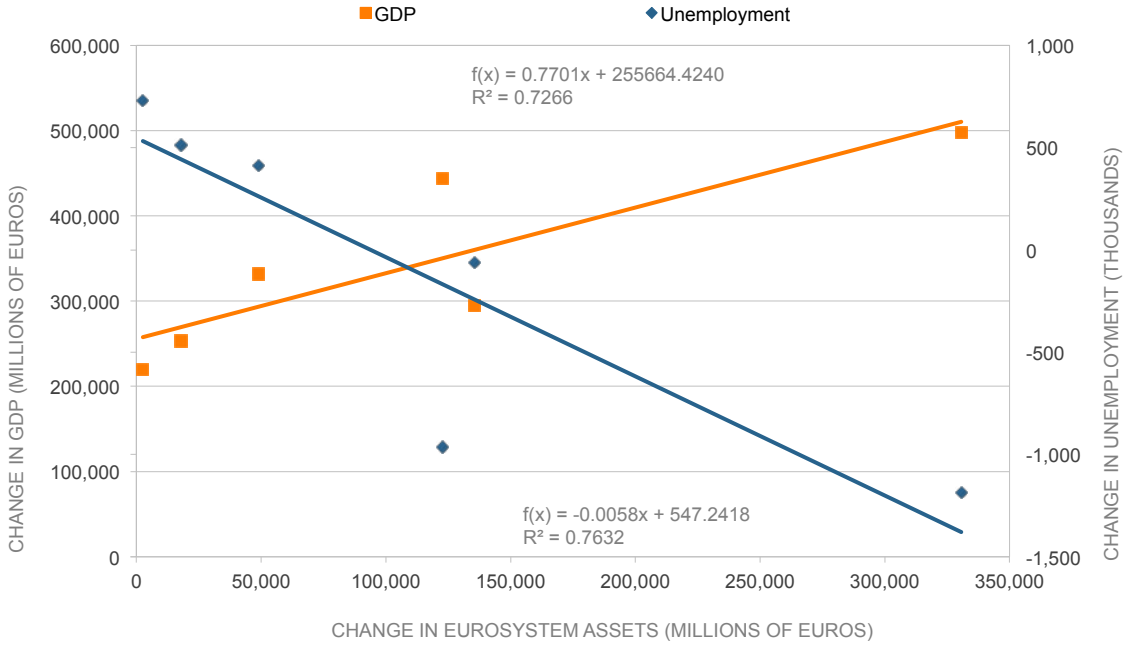
Quantitative Easing: Empirical analysis also seems to support the case for monetary financing for the real economy as a better alternative to QE in the Eurozone. Looking at QE and its impact on the UK, the Bank of England (2011) estimates that £375 billion of QE boosted the size of the British economy by around 1.5-2.0% of GDP. Put differently, every £100 billion of QE funds injected into the financial markets resulted in the real economy growing by just £8 billion (or prevented the economy from shrinking by £8 billion).

After barely six months, it is too early to estimate the impact of QE on the Eurozone economy. However, an idea of the likely impact can be derived from comparing previous changes in the Eurosystem's balance sheet (i.e. changes in central bank reserves) and the level of economic activity in the Eurozone. To perform these calculations, we use ECB data for the Eurosystem's balance sheet (which are available weekly), and data on the economy of the Eurozone economy from the European Commission's Eurostats[22]. While correlation does not necessarily imply causation, it does provide some insight into how QE is likely to affect growth.

Figure 17 shows the correlation between changes in Eurosystem assets (central bank reserves) and changes in Eurozone GDP and unemployment between 2002 and 2007. Prior to the crisis there was a fairly robust correlation between central bank balance sheets and economic activity. A €100 billion expansion of the Eurosystem was associated with a €77 billion increase in GDP and a fall in unemployment of 580,000.

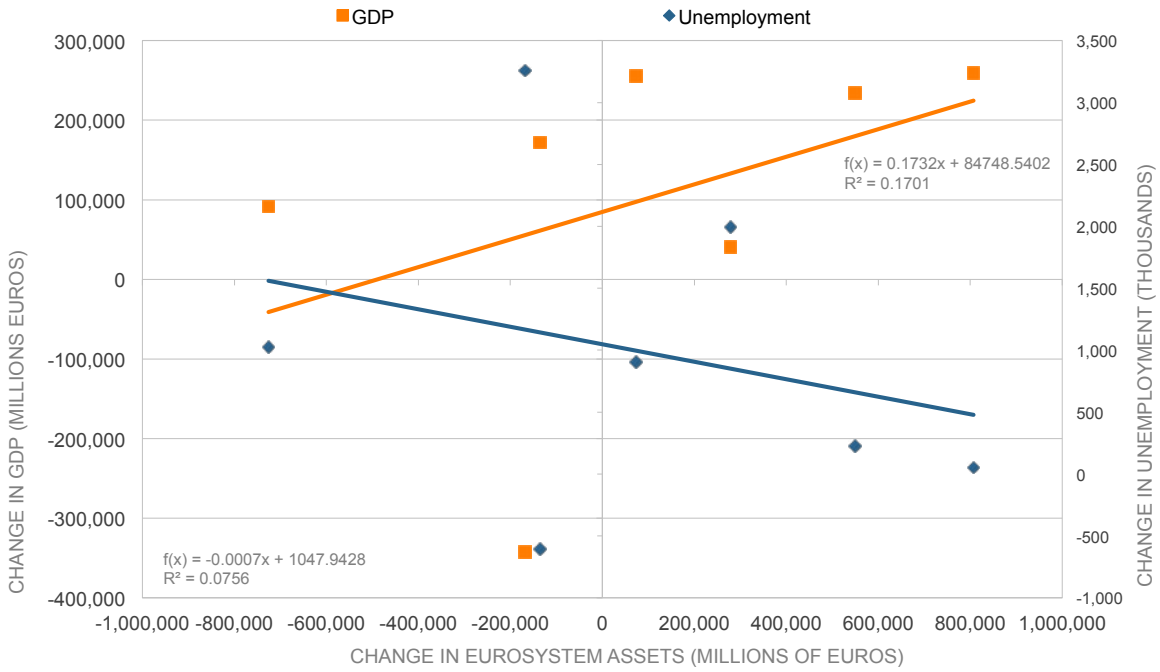
Figure 18 shows the situation between 2008 and 2014. Since the crisis, any correlation between central bank balance sheets and economic performance has become considerably weaker. What correlation might remain suggests that each €100 billion expansion will be associated with a mere €17 billion in additional GDP and a 71,000 drop in unemployment. The latter correlation suggests that in times of an economic downturn the expansion of central bank reserves may not be the most appropriate mechanism for triggering economic growth.

FIGURE 17: EUROSYSTEM AND EUROZONE ECONOMY 2002-2007



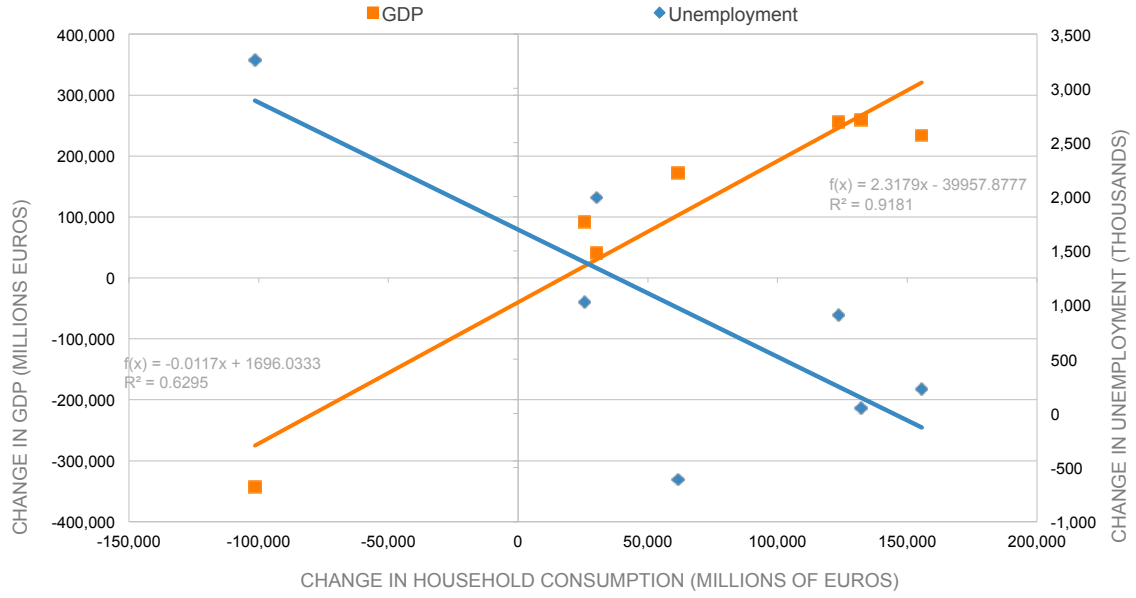
22 For the ECB balance sheets see http://www.ecb.europa.eu/home/html/index.en.html; and for the European Commission's Eurostats see http://ec.europa.eu/eurostat/web/main/home.

FIGURE 18: EUROSYSTEM AND EUROZONE ECONOMY 2008 - 2014



A Citizens' Dividend: Instead of using newly created central bank money to prop up financial markets and inflate the price of assets, this money could be divided equally amongst the Eurozone's citizens. To see what effect such a Citizens' Dividend might be expected to have, figures on final household consumption were collected from the European National Accounts at Eurostat and these were compared to the data on GDP and unemployment. The results are shown in figure 19, and relate to the period after the most recent crisis.

FIGURE 19: HOUSEHOLD CONSUMPTION AND THE EUROZONE ECONOMY 2008-2014



Before the crisis the correlations between final household consumption and changes in GDP and unemployment were even stronger. However, what figure 19 suggests is that as final consumption increases so does GDP, whilst unemployment is reduced. This implies that every €100 billion distributed to households in the Eurozone and spent by them could

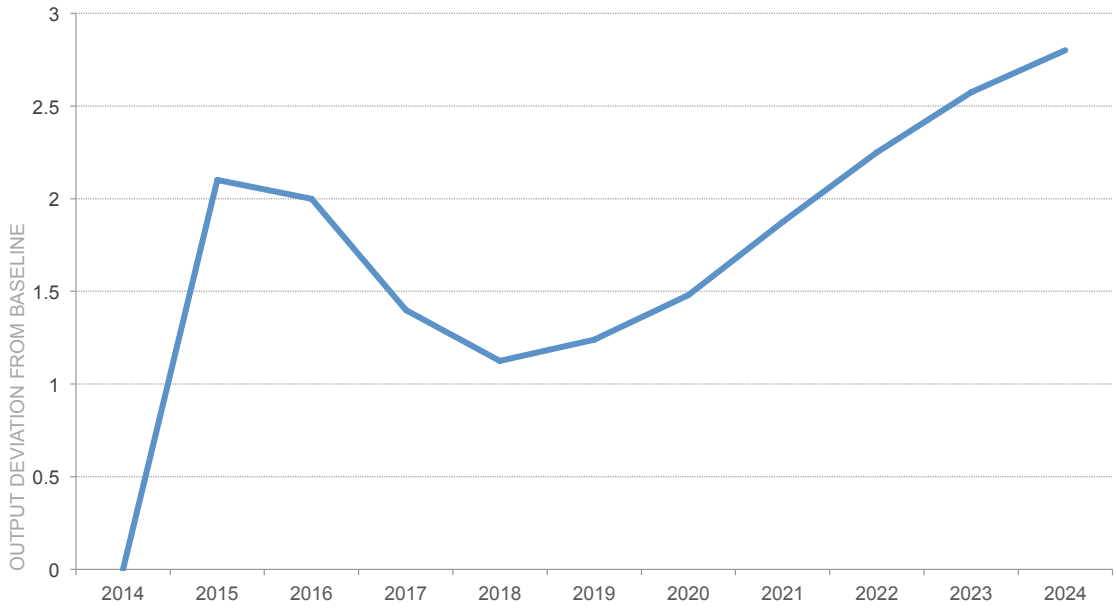
lead to an increase in GDP of up to €231.8 billion and a reduction in unemployment of up to 1.17 million[23]. According to our estimates, therefore, a citizens' dividend could be between 3 and 14 times more effective than QE at boosting GDP.

It is important to note that not all citizens receiving the dividend would use it for spending on goods and services. Indeed, the stimulus to spending of a citizens' dividend will be inhibited to the extent that households use the money to pay down their debts to the banking sector. But even in this case, the resulting reduction in debt servicing costs will free up more household income for spending at a later date. On the other hand, countries with higher propensities to save, such as Germany, would be expected to experience less of a spending impact, when contrasted to those with higher propensities to spend, such as Portugal, Spain, and Greece.

Public Spending: To better understand the potential impact of monetary financing for public spending on the Eurozone economy, we use estimates for fiscal multipliers provided by the IMF (2014). These multipliers are derived from simulations for advanced economies using the IMF's Globally Integrated Monetary and Fiscal model. Significantly, the IMF's estimate of multipliers takes into consideration today's historical context of zero floor nominal interest rates and the current environment of extremely low real interest rates.

The results of the IMF (2014) simulation indicate that a 1% of GDP permanent increase in public investment in infrastructure will increase GDP output by just over 2.1% in the first year (figure 20). This would suggest that a €100 billion increase in investment in infrastructure will raise GDP by approximately €210 billion. Based on correlations of GDP and unemployment from 2008-2014 (see figure 21), a €100 billion increase in public investment would thus reduce unemployment by approximately one million. This would imply that monetary financing for public spending could be from 2.5 to 12 times more effective at stimulating GDP than QE.

FIGURE 20: IMF MULTIPLIER THROUGH TIME

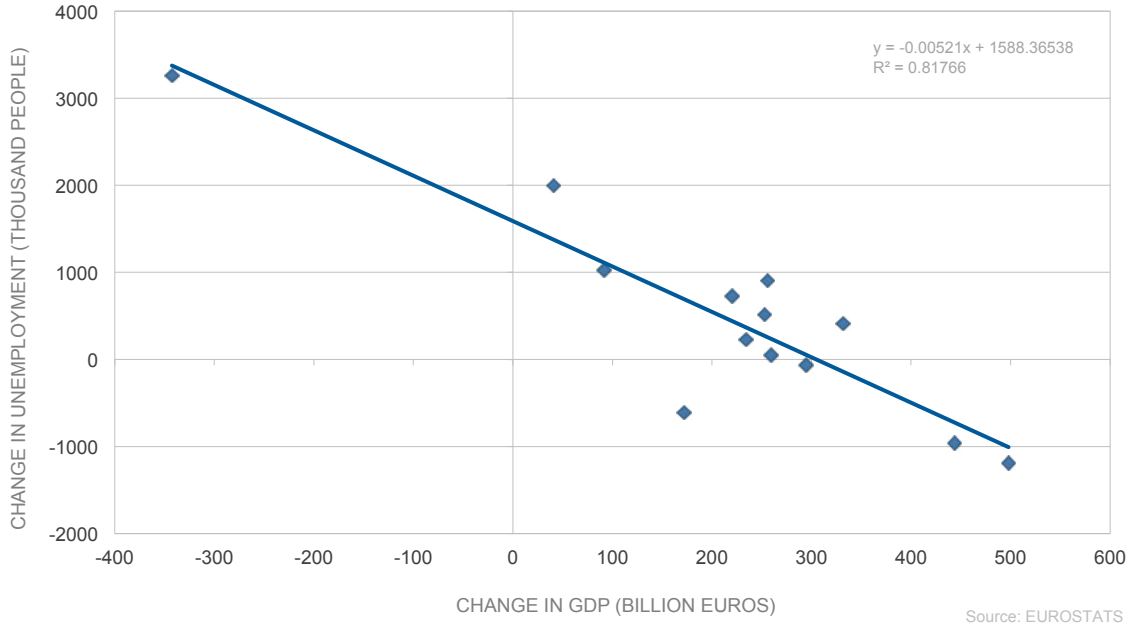


Soure: IMF (2014)

It is important to note that these estimates are based on the effect of either a citizens' dividend or increased public spending for the given year, and do not cover the effects of the

23 This estimate is based on our assumption of a marginal propensity to consume of about 90-100% in a one-year time frame.

FIGURE 21: EUROZONE GDP AND UNEMPLOYMENT



stimulus in later years. In contrast, the effect of the citizen's dividend is likely to be quick and immediate, monetary financing for public spending may have more of an effect over the long-term (as shown in figure 20).

These estimates are all based on simple correlations, taken for the Eurozone as a whole, which are not enough on their own to form the basis for reliable forecasts. The effects of monetary financing for the real economy and QE will most likely be different for each individual Eurozone country. It should be emphasized that the design of monetary financing programmes should be tailored to the specific context of each Eurozone country. Nevertheless, the calculations presented here highlight the likely scale of the differences in economic benefits between programmes of QE and monetary financing, and give the reader some perspective on what could happen if newly created funds were injected directly into the real economy rather than into the financial markets.

3.8 What about Article 123 of the Lisbon Treaty?

The proactive creation of money by the state, in the form monetary financing for the real economy, would violate article 123 of the Lisbon treaty, which effectively prohibits newly created central bank reserves from being used to directly fund government spending. Official endorsement of a monetary financing proposal would implicitly involve the acceptance that certain treaties would require amending. Since the start of the Eurozone crisis, legislation has been amended, new legislation has been passed, and in some instances regulations have been bent if not ignored, so that the ECB could implement its desired programmes (for example, OMT or QE). There is no reason why this should not apply to a monetary financing programme.

If European legislation were to become an issue, there may still be some scope for implementing a monetary financing programme, as proposed by Bossone (2013) and Bossone and Wood (2013). The authors argue that this could be done through the Eurozone's current Emergency Liquidity Assistance (ELA) facility, which provides newly created central bank money to "...temporarily illiquid domestic institutions and markets over and above the

European System of Central Bank assistance, in exceptional circumstances on a case-by-case basis" (Bossone, 2013). There are, of course, restrictions that apply to the use of ELA, prohibiting:

1. The provision of overdraft facilities for official bodies;
2. The purchasing of government bonds;
3. Undertaking tasks that go beyond those of a central bank (ECB 2012).

Yet, as noted by Bossone (2013), ELA has been used as a means of supplementary bailout funding in Germany, Belgium, Ireland and Greece[24]. Accordingly, based on these precedents, Bossone and Wood (2013) suggest that the ELA could extend its legal interpretation to incorporate the policy precedent in the ECB's OMT programme, which allows NCBs to buy government bonds outright. The authors therefore conclude that, "ELA could be used as last-resort demand management tool to fight local recessions and preserve monetary and financial stability in the Eurozone." (Wood and Bossone, 2013).

Naturally, this may limit the scope of a monetary financing programme, as certain core countries may not qualify for ELA, yet at least it would be legally possible. Of course, not all commentators are convinced that ELA can be used with OMT without an explicit treaty change.

Muellbauer (2014) suggests that in light of EU legislation, a citizens' dividend might be a more reasonable option. This is because the ECB could simply create new money and transfer the money directly to Eurozone citizens, effectively bypassing Eurozone governments and NCBs. As suggested above, payment could be made according to all citizens with social security numbers or all those on the electoral register. Accordingly, Muellbauer (2014) argues that by independently transferring newly created money directly to Eurozone citizens, the ECB would not actually be breaking any EU laws[25].

One benefit of crediting governments with the new money rather than distributing it directly to citizens is that the government then decides how to spend it. Policymakers will be better equipped to tailor the spending to the specific needs and local context of their respective country. As noted by Fazi (2014), we expect the implementation of a monetary financing programme to come down to 'political will', in which case we believe that Euro-

24 Bossone (2013) for example writes, "...during the crisis Emergency Liquidity Assistance was used by the Bundesbank in 2008 to save Hypo Real Estate against €42 billion guarantee by the German government, and by the National Bank of Belgium in 2009 to bail out Fortis Bank with €54 billion on the eve of its collapse. It was also used in Ireland and Greece, although for a completely different purpose than the one originally intended for the facility...Ireland had reportedly had a constant use of the facility since 2008 with the central bank providing anything between €40 and €60 billion since 2010, and Greece had resorted to Emergency Liquidity Assistance for about €55 billion. Such constant use of the facility was not envisioned under the European System of Central Banks statute, and suggests that Emergency Liquidity Assistance has been used during the crisis as a source of additional bailout funding."

25 Muellbauer (2014) states "Nothing in EZ law forbids the ECB from undertaking such an independent action. There is an important difference between the ECB implementing a €500 per-adult-citizen hand-out as part of monetary policy and governments doing this as traditional fiscal policy. Economists have long worried about myopic politicians over-spending, for example, just before an election in order to influence the voters and thus creating a 'political' business cycle, or simply perpetually spending too much, and as a result running too high government deficits. That is an important reason why the ECB is not allowed to directly finance government spending. But it is quite a different matter for an independent central bank, subject to its governing council and the representation of different countries on that council, to directly hand out cash to households as part of its method of meeting its inflation mandate. That is why I would classify this as monetary policy and not just a devious way of by-passing Eurozone rules."

zone governments will be able to come up with the necessary legislation and potential treaty amendments. However, if this proves completely unfeasible, then a citizens' dividend may be the only option.

3.9 Objections to Monetary Financing for the Eurozone: Hyperinflation and Irreversibility

As noted by Turner (2013), for many generations academic economists and policymakers have treated monetary financing as a 'taboo' topic. This is mostly because, as Friedman suggests:

> "Explicit control of the quantity of money by government and the explicit creation of money to support actual government deficits may establish a climate favourable to irresponsible government action and to inflation". (Friedman, 1948, p.247)

This is why there is a necessity for institutional guidelines and regulations to prevent politicians using excessive money creation for short-term political gain. The separation of powers discussed above prevents this from happening.

Yet, monetary financing is still a topic of 'taboo' as the so-called "printing" of money is notoriously associated with hyperinflation. Indeed, the 1923 case of the Weimar Republic in Germany is still cited by many Germans as a reason not to endorse a monetary financing style of proposal, or even QE. There are, however, many reasons that a monetary financing programme would not result in excessive inflation, let alone hyperinflation.

Firstly, regarding the Weimar Republic, as noted by Benes and Kumhof (2012) the hyperinflation of the Weimar Republic was not the result of the government printing substantial amounts of money to fund public investment. Rather, it was due to the central Reichsbank being transformed into a private entity (upon insistence of allied forces), which then proceeded to convert speculative loans made by private banks into new money on demand[26]. Thus, the case study of the Weimar Republic is not applicable to the case of the Eurozone today.

Other popular examples of government money creation resulting in hyperinflation include: the American use of "Continentals" to fund the War of Independence against the British; the use of "Assignats" to finance a bankrupt French government during the French revolution; the increased issuance of the Pengö by the insolvent Hungarian authorities in 1946; and the infamous case of Zimbabwe under Robert Mugabe. However, these episodes show that when the economy collapses, tax revenues fall and desperate politicians may

26 Benes and Kumhoff (2012) explain, "Specifically, in May 1922 the Allies insisted on granting total private control over the Reichsbank. This private institution then allowed private banks to issue massive amounts of currency, until half the money in circulation was private bank money that the Reichsbank readily exchanged for Reichsmarks on demand. The private Reichsbank also enabled speculators to short-sell the currency, which was already under severe pressure due to the transfer problem of the reparations payments pointed out by Keynes (1929). It did so by granting lavish Reichsmark loans to speculators on demand, which they could exchange for foreign currency when forward sales of Reichsmarks matured. When Schacht was appointed, in late 1923, he stopped converting private monies to Reichsmark on demand, he stopped granting Reichsmark loans on demand, and furthermore he made the new Rentenmark non-convertible against foreign currencies. The result was that speculators were crushed and the hyperinflation was stopped." (p. 16).

resort to financing their government's spending through money creation[27]. Therefore, the lesson from these episodes of hyperinflation is that strong governance, as well as checks and balances, are vital to ensuring that monetary financing does not result in economically damaging levels of inflation.

Accordingly, whether a monetary financing programme will result in inflation depends ultimately on how much money is created, how that money is used, the state of the economy, and whether there are appropriate institutional mechanisms to prevent the abuse of government money creation. This is a point made by Adair Turner in citing former Bank of England governor Mervyn King:

> "It is important to distinguish between "good" and "bad" money creation. "Good" money creation is where an independent central bank creates enough money in the economy to achieve price stability. "Bad" money creation is where the government chooses the amount of money that is created in order to finance its expenditure." (Turner, 2013)

It is therefore important that the appropriate institutional checks and balances are used. This is why the independent administrative branches of the ECB and NCBs would decide how much money to create, whilst elected politicians would decide how monetary financing is used. This separation of powers would prevent politicians from being given direct control over money creation, as there is a risk that political pressures could lead governments to abuse this power. Similarly, this process is designed so that the administrative branches of the central bank have no say in how public money is used.

Moreover, decisions regarding the amount and use of monetary financing need to be decided according to what is best for price stability (or whatever is the current target of monetary policy). Money creation is only likely to become inflationary if it exceeds the productive capacity of the economy (or if all the newly created money is injected into an area of the economy that has no spare capacity). Monetary financing proposals generally state that the NCBs would have a primary mandate to keep prices stable and inflation low. If money creation feeds through into inflation, the NCBs would need to slow down or cease creating new money until inflationary pressures fell.

Another common argument made against the use of monetary financing, is that QE is temporary and the creation of central bank reserves can be reversed by the NCB selling bonds back to the private sector, allowing the NCB to withdraw reserves from the banking system when economic circumstances improve. In contrast, a monetary financing programme is often perceived as the permanent creation of central bank reserves. As central bank reserves are effectively liabilities of the NCB (and therefore the public), making these permanent is often considered undesirable.

However, Turner (2013) argues there is no need for a reversal of QE to take place, citing the example of the FED's purchases before and after World War II that were never reversed. Indeed, many analysts do not expect a reversal of QE in any country to ever take place (Elliot, 2014), and no central bank has to our knowledge put forward a viable plan for reversing QE.

On the other hand, there are ways of reversing or at least offsetting the effects of monetary financing if needed. Firstly, when the economy seems to be in relatively good condi-

27 A Cato Institute study of all 56 recorded hyperinflations (Hanke and Krus, 2012) found that hyperinflations only occur under extreme conditions such as war or a complete collapse in the productive capacity of a country. Hyperinflation has never been a consequence of monetary policy or politicians turning on the printing press just before an election; rather, hyperinflation is a symptom of a state that has lost control of its tax base.

tion and price stability achieved, the government could run fiscal surpluses, which would effectively equate to a withdrawal of central bank reserves, deposits and spending power from the system (Turner, 2013; Friedman, 1948, and Simmons, 1936). Of course, this may not be a popular course of action for politicians. Therefore, the alternative would be to use macro-prudential policy tools. Turner (2013) points out that raising the minimum reserve requirements of central banks can reverse the apparent permanent monetization. In sum, there is no reason to believe that QE is actually temporary or reversible, nor that monetary financing is absolutely permanent or irreversible.

CONCLUSION

Since the 2008 global financial crash, the Eurozone has suffered a sovereign debt crisis and a double dip recession, and is now slowly slipping into deflation territory. To get the Eurozone economies growing again, there is a clear need to boost aggregate demand, by increasing spending.

However, with the governments of most Eurozone economies focused on maintaining budget surpluses and implementing austerity measures, a fiscal stimulus seems out of the question. An export-led recovery is also highly unlikely, due to weak global demand. The responsibility for triggering a higher level of spending and a pick-up in aggregate demand has thus fallen to monetary policymakers at the ECB.

Having already implemented a number of unsuccessful monetary policies aimed at increasing aggregate demand, the ECB has now followed in the footsteps of the USA and the UK and resorted to a massive programme of Quantitative Easing. However, evidence shows that QE has very little effect on the real economy, and is an ineffective tool for growing GDP and reducing unemployment. Indeed, the channels through which QE works are often weak and ambiguous. Worse, the circumstances that justified the use of QE in the US and UK don't even exist in the Eurozone. Moreover, QE has various detrimental consequences, exacerbating inequality and heightening financial instability.

Most importantly, at the heart of the ECB's QE programme is the hope that it will drive an increase in spending by encouraging the banking sector to lend more and the private sector to take on more debt. The Eurozone's recovery is therefore predicated on a plan to boost economic growth by encouraging more debt-financed spending by the private sector.

It is highly unlikely that such a debt-based recovery will successfully stimulate aggregate demand and economic growth. The banking sector is currently concerned with repairing its balance sheet, and is generally unwilling to increase its level of lending. Poor prospects for growth and extremely high levels of unemployment mean that the private sector is attempting to deleverage, and is unlikely to significantly increase its current level of borrowing. A recovery financed by private sector borrowing therefore seems unfeasible.

The Eurozone thus needs a stimulus programme that is directed at the real economy, which can spark an increase in spending without the private or public sector taking on more debt.

A monetary financing programme as described here would accomplish this feat. By injecting newly created money into the real economy rather than the financial markets, monetary financing for the real economy not only achieves the aims of QE, but also has a number of added advantages.

Whilst QE permits central banks to purchase assets from the financial markets with newly created money, monetary financing for the real economy works by allowing central banks to create new money, which is either transferred to governments, or paid directly to citizens, to fund spending in the real economy. This form of monetary financing would thus stimulate the real economy directly, quickly leading to an increase in aggregate demand. Significantly, this would all be realized without increasing the debt burden of the private *or* public sector.

It is possible that QE may stop the Eurozone crisis from getting any worse. However, even if this were true, the ECB has a responsibility to explore policies that could be more effective. Such an approach could begin with considering the benefits of a monetary financing program aimed at the real economy, which would be far more effective than QE at stimulating aggregate demand and delivering a sustainable economic recovery to the ordinary people of the Eurozone.

APPENDIX: HOW DOES EUROPEAN QE WORK?

Size and Quantity: ECB and national banks will purchase €60 billion of financial assets each month, including on-going programmes for buying asset-backed securities and covered bonds (i.e. the asset-backed securities purchase programme (ABSPP) and the covered bond purchase programme (CBPP3)).

Duration: From March 2015 to September 2016, but will be extended if necessary. Mario Draghi, ECB president, stated that:

"[The asset purchases] are intended to be carried out until end-September 2016 and will in any case be conducted until we see a sustained adjustment in the path of inflation which is consistent with our aim of achieving inflation rates below, but close to, 2% over the medium term." (Draghi, 2015b)

Types of assets being purchased: The previous programmes spent about €10 billion per month on Asset Backed Securities and Covered Bonds, so about €50 billion per month on other types of assets can be expected.

Of the additional €50 billion, 12% (€114 billion) is to be spent on securities issued by European institutions, e.g., ESF, ESM, EIB. The remaining 88% (€836 billion) will be used to purchase sovereign bonds.

Quality of Assets: The ECB accepts as collateral, investment grade securities only. Bonds rated BBB and above are considered investment grade (so Greek government bonds are excluded from the scheme).

Limits on Assets being purchased: *"The first one is an issuer limit, which is 33%, and another one is an issue limit, which is 25%. In other words, we won't buy more than 25% of each issue, and not more than 33% of each issuer's debt"* (Draghi, 2015b, p.1). (Again, this should include what has already been purchased via ABSPP and CBPP3).

Who is doing what: Of the additional assets being bought, the ECB itself will purchase 8% of them, amounting to €76 billion, €9 billion of which will be used to purchase securities of EU institutions. The remaining €67 billion will be used to purchase national bonds. The figure of 8% is based on how profits from seigniorage are split. *NCBs* will use the other 92% to buy assets, in proportion to their ECB capital key. So €769 billion of national sovereign bonds and €105 billion of other securities will be purchased.

Risk and Profit Division: The risk related to the 12% of QE funds used to buy debt issued by European institutions will be shared by all member states, as well as the 8% of funds used by the ECB to purchase Sovereign Bonds. So 20% of the total risk of the QE scheme will be shared between Eurozone member states. For the remaining 80%, the risk is taken by the member state of the NCBs which purchases particular bonds. However, because the risk is not shared, the profits are also not shared[28].

28 The Appendix is largely based on Whelan (2015) and Claeys et al. (2015).

Table 1: ECB's and NCBs Purchase of National Debt Securities

(Based on ECB Capital Key)

Country	ECB capital key (%)	Monthly purchases of sovereign and agency (EUR 44bn total, capital keys, EUR bn)	Total Purchases through Sept 2016 (EUR bn)	Gross central govt bond issuance - 2015 forecast (EUR bn)	Annual ECB buying as percentage of gross issuance	Net central govt bond issuance - 2015 forecast (EUR bn)	Annual ECB buying as percentage of net issuance
Germany	25.7	11.3	215	159	85%	4	3394%
France	20.3	8.9	169.4	210	51%	71	152%
Italy	17.6	7.7	147	260	35%	62	151%
Spain	12.6	5.6	105.6	142	47%	56	119%
NL	5.7	2.5	47.8	50	60%	13	231%
Belgium	3.5	1.6	29.6	34	56%	10	197%
Greece	2.9	1.3	24.3	10	153%	-7	-232%
Austria	2.8	1.2	23.4	17	87%	4	380%
Portugal	2.5	1.1	20.8	10	132%	-1	-1644%
Finland	1.8	0.8	15	12	79%	7	135%
Ireland	1.7	0.7	13.9	11	80%	9	99%
Slovakia	1.1	0.5	9.2	7	90%	5	124%
Slovenia	0.5	0.2	4.1	5	52%	4	69%
Total	**100**	**44**	**837**	**933**	**57%**	**238**	**222%**

Source: Whelan (2015) * Assuming €60 billion of monthly asset purchases of which around €10 billion of combined covered bonds and ABS as well as €4 billion (12% of €50 billion) of supranational agency debt, not included in the table.

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