

---

---

# How more public deficit in the Euro Area can help the financial system

---

*Authors:*

**Giacomo Bracci**

*PhD candidate at Trento University (Italy) and responsible for the research area at FEF Academy (gbracci@fef.academy).*

**Daniele Della Bona**

*Responsible for educational and economic consulting area at FEF Academy (dellabona@fef.academy)*

OCTOBER 2016

# How more public deficit in the Euro Area can help the financial system

Giacomo Bracci and Daniele Della Bona

## Abstract

The 2007-08 subprime mortgage crisis in the US and the following European sovereign debt in 2011 have left their mark on the financial system of Eurozone nations. The crisis has first shown the degree of interrelatedness of the global banking system and the real effects of financial markets, that had been often disregarded by a great deal of the economic profession. Moreover, the financial sector is now threatened by the policy mix composed by a restrictive fiscal stance adopted by euro area member states and an expansionary monetary policy adopted by the ECB, characterized by ultra-low (even negative) interest rates. Hence, the paper suggests that a more expansionary fiscal stance by EU institutions is the most complete solution in order to prevent the financial sector from reducing its contribution to the allocation of resources and investments that are crucial for the growth of the euro area.

## 1. Introduction

The 2007-08 subprime mortgage crisis in the US and the following European sovereign debt crisis in 2011 have left their mark on the financial system of Eurozone nations.

The crisis has first shown the degree of interrelatedness of the global banking system and the real effects of financial markets, that had been often disregarded by a great deal of the economic profession.

Far from being a simple market in which agents choose their portfolio allocation on the basis of an intertemporal maximization problem, the modern financial system is a complex web of interrelated balance sheets, the connections of which are spread around the globe in an increasingly integrated network.

Whilst the greater degree of integration is a potential engine of growth for the global economy, it is also strongly correlated with an increasing degree of fragility and instability (Minsky, 1976). The disruptive effects of the default and/or illiquidity of an agent on the solvency and/or illiquidity of other closely related agents has led Koo (2012) to the definition of the crisis as a *balance-sheet recession*.

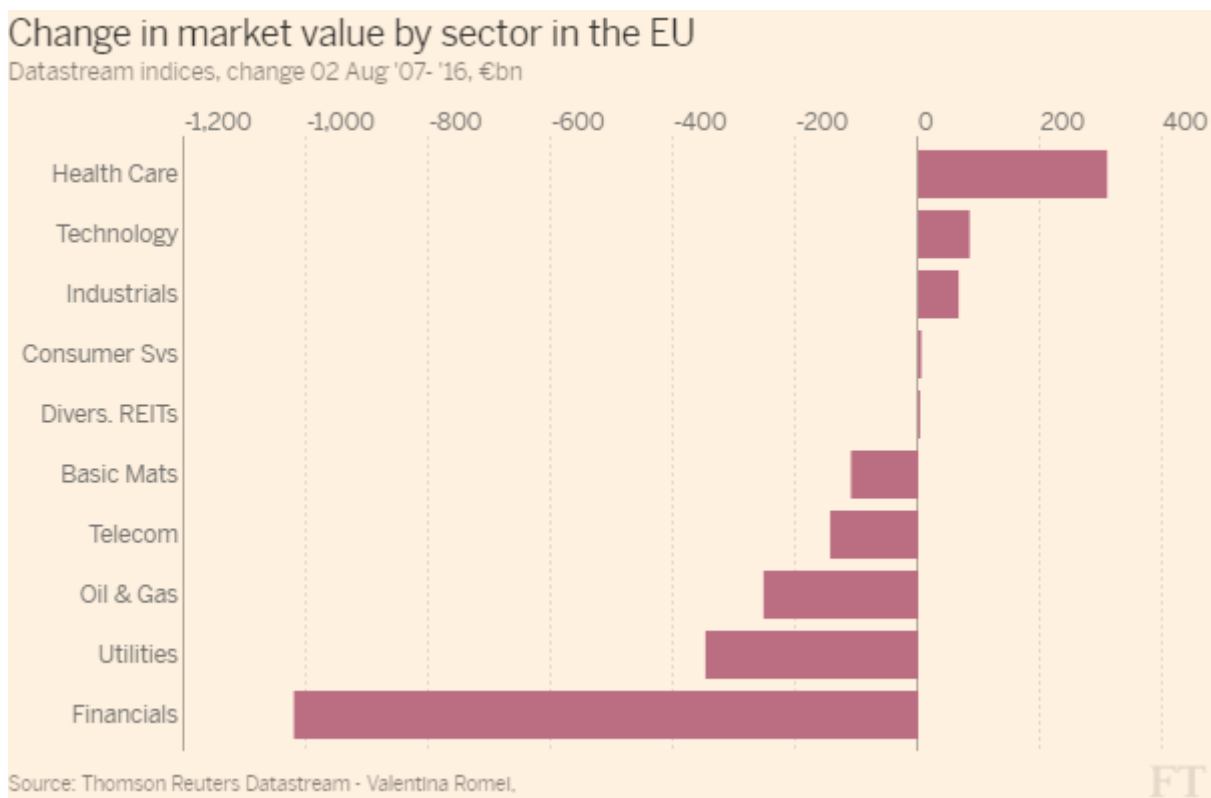
Therefore, the aim of this paper is to show that a more expansionary fiscal stance by the EU institutions is the most efficient and complete solution to the troubled situation of the EU financial system.

The paper is structured as follows. Section 2 provides a historical background of the spillovers of the 2007 subprime mortgage crisis on the European financial sectors and describes the complex policy response enacted by the European Central Bank in order to preserve financial stability and spur economic growth in the euro area. Section 3 evaluates the ECB's unconventional monetary policies, while Section 4 shows how more government deficit in the euro area can solve the issues posed by the ambiguous policy mix pursued by EU institutions in the post-crisis era. Section 5 concludes.

## 2. Background

The European economy has not fully recovered since the beginning of the first crisis and the financial system in the Euro Area has been paying a high price, as Figure 1 shows. As a matter of fact, according to Datastream’s indices the financial sector has lost more than €1,000 billion in terms of market value between August 2007 and August 2016.

**Figure 1. The change in market value by sector in the EU**



*Source: Financial Times, Why Europe’s banks will never be the same again, August 8, 2016*

This situation is closely related to a continuous process of deleveraging that was triggered by the financial crises (Chiesa and Filippini, 2014), driving house prices and other forms of collateral down as the euphoric stage of the financial cycle was trespassed.

After the beginning of the financial crisis in 2007, with the freezing of three investment funds owned by BNP Paribas and exposed to sub-prime mortgage markets, investors started to assume short positions in the euro and long positions in international reserve currencies such as the US dollar, the Japanese Yen and the British Pound.

The conditions of the European banking system started worsening after the discovery of irregularities in Greek public finances in 2009, which led to a flight to secure assets within the Euro Area from 2010 onwards, especially towards Central and Northern countries such as Germany. This process also repeated for Portugal, Italy, Ireland and Spain, while at the same time substantially increasing the exposures to “low spread” countries, primarily Germany (Arslanalp and Tsuda, 2012).

Given the existing ECB arrangements for collateral eligibility, assets such as the Italian 10-year government bond suffered an increase in haircuts applied by the ECB when banks posted collateral for central bank refinancing. This crucial event determined a decrease in the degree of liquidity of Southern European banks, thereby causing a credit crunch in the region (Chiesa and Filippini, 2014). Moreover, leveraged positions in Italian and other Southern sovereign bonds became no longer affordable, triggering fire sales of these securities and a dramatic drop in prices, ultimately causing the emergence of spreads and questioning the stability of the currency union.

The pro-cyclical bias of the architecture of Eurozone had been clearly forecast by Mosler (1999). Due to the absence of a lender of the last resort for the Eurozone governments (due to Article 123 of the TFEU), portfolio shifts by market forces can lead governments to act pro-cyclically.

In order to restore the markets' confidence in the governments' ability to generate sufficient primary surpluses to repay principal and interest on their bonds, EU institutions starting from 2010 enforced austerity policies. The latter were expected to slowly restore expectations of firms and consumers due to the *expansionary austerity* effect predicted by Alesina and Giavazzi (2016), and they were deemed inevitable due to the apparent correlation between high levels of public debt and low growth observed by Reinhart and Rogoff (2010).

Whilst the latter conclusion was proved to be based on computational mistakes (Herndon et al, 2013), the former clearly overestimated the impact of Ricardian policies on private agents' expectations. As a matter of fact, the share of gross capital formation as a percentage of GDP in the Euro Area fell from 23.6 % to 19.9% in the 2007-2015 period, with a -14.6% percentage change in the same period<sup>1</sup>. While the percentage change in GDP from 2007 and 2016 increased to 3.7% (June 2016)<sup>2</sup> and the unemployment rate skyrocketed from 7.3% to 10.1% (August 2016)<sup>3</sup>.

As a result of the demand shock and the restrictive fiscal policies applied thereafter, the share of Non-Performing Loans (NPLs) in the Euro Area banking system rose substantially, as well as the drop in the number of credit institutions, which ranged from roughly 10% to roughly 50% in the major European economies between 2007 and 2016.

The increase in deleveraging also worsened the conditions of households' and firms' balance sheet, thereby reinforcing and increasing the magnitude of insolvencies and bankruptcies in the region.

Hence, a process of credit crunch inevitably spread across the continent, threatening private investments and private consumption and thus creating a drag on the growth of EMU economies.

---

<sup>1</sup> Source: OECD.

<sup>2</sup> Source: Eurostat.

<sup>3</sup> Source: Eurostat.

Figure 2. Bank NPLs as a percentage of total gross loans, 2007-2015

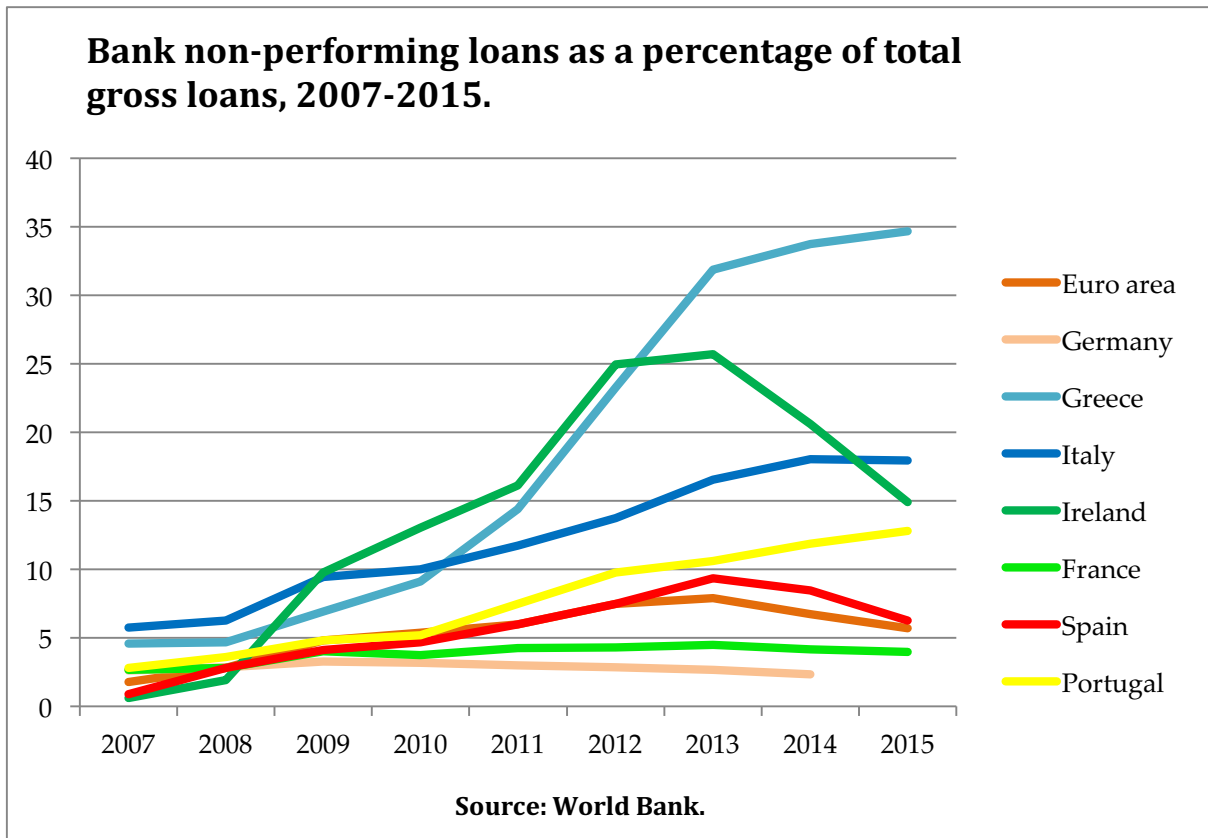
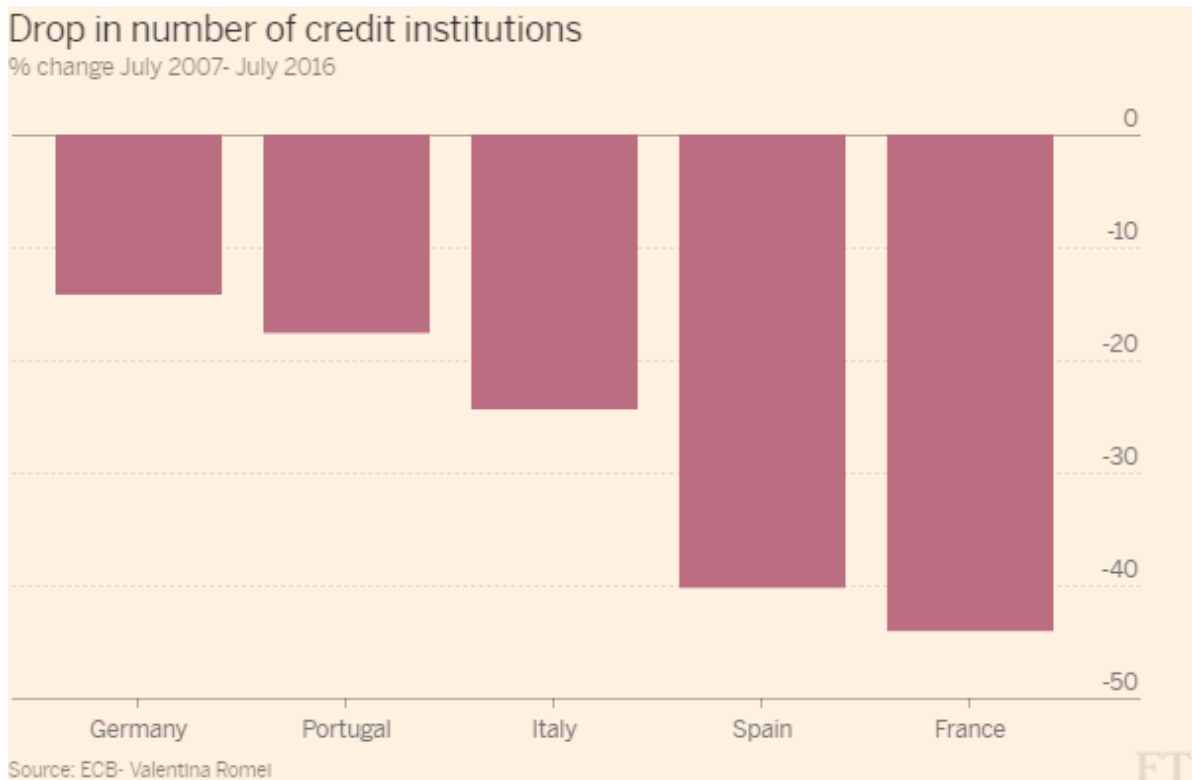


Figure 3. Drop in number of credit institutions



Source: Financial Times, Why Europe's banks will never be the same again, August 8, 2016

### 3. The ECB's post-crisis policy response

In order to cope with the initial credit crunch after 2008 and the subsequent stages of the crisis in the Euro Area, the ECB has strengthened its monetary expansion efforts, ultimately leaning on unconventional monetary policy tools (Borio and Disyatat, 2009). The ECB's monetary policy strategy can be analysed in three different stages (Cour-Thimann and Winkler, 2013): a) the post-Lehman period, b) the beginning of the Eurozone sovereign debt crisis in May 2010 and c) and the struggle for stability of the banking system from mid-2011 on.

In the immediate aftermath of the global financial crisis, the ECB increased its liquidity provision to banks in response to the spike in interbank rates, caused by the mutual uncertainty of financial institutions on the financial health of counterparties. Moreover, the ECB joined the temporary establishment of swap lines with other central banks, in order to address the pressure in short-term US dollar funding markets. Like other major central banks, the ECB cut the main refinancing rate to the historically low level of 1% as of May 2009. Moreover, it provided enhanced credit support to banks by switching to a fixed-rate full allotment system, extended the maximum maturity of LTROs and the eligibility of collateral, and began the Covered Bond Purchase Programme (CBPP).

In order to tackle the instability fostered by the euro area sovereign debt crisis, the ECB established a Securities Market Programme (SMP) to ensure depth and liquidity in dysfunctional market segments, the main one being the market for sovereign bonds. Due to the provisions of the TFEU, interventions were limited to secondary markets (Cour-Thimann and Winkler, 2013, p. 13).

Moreover, the ECB engaged in further interventions, under the OMT Programme, in order to preserve the proper transmission of the ECB's interest rates to the euro area economy and further alleviate the stress on sovereign bond markets. The distinctive feature of OMT Programme is that of conditionality: only those governments that commit to sound public finances (as defined by the Stability and Growth Pact) are allowed to be part of the OMT Programme.

Finally, from 2014 to 2016, the ECB enacted a set of quantitative measures as a complement to an increasingly expansionary monetary strategy that brought its deposit facility rate to the historical low of -0.40% in March 2016 (Cour-Thimann and Winkler, 2013).

These quantitative measures have first focused on asset-backed securities in 2014 (the Asset Backed Securities Purchase Programme), then they moved to a regular commitment on the purchase of government bonds (the Public Sector Purchase Programme) and corporate bonds (the Corporate Sector Purchase Programme).

The introduction of these measures, alongside the diminution of the deposit rate in the negative territory, shows that the ECB is now pursuing two complementary aims:

- 1) Ensuring financial stability across the euro area, as the extended flexibility provided to capital markets through lower rates made liquidity constraints less binding for private and public agents (Mehrling et al., 2013);
- 2) Promoting economic growth through the portfolio rebalancing channel, triggered by the ultra-low rates that forces banks to mobilize their idle resources and increase risk-taking, thereby also aiming at increasing the inflation rate up to the 2% statutory level pursued by the ECB.

Various authors have analysed the global monetary policy strategies enacted by the ECB and other central banks, the common elements of which lie essentially in the ultra-low interest rates and the *quantitative easing* policies pursued at the same time or as a last resort option (Borio and Disyatat, 2009).

Most academic analyses have focused on the positive impact of unconventional monetary policies on financial stability, and have written extensively about the expected positive relationship between official policy rates and the real economy. However, as pointed out by Goodhart and Wood (2016), the crucial point to understand in order to properly assess these policies' ability to influence economic growth is the link between macro-monetary policy and incentives to expand lending, primarily banks' profitability.

Hannoun (2015) summarizes the five main channels that expansionary monetary policies aim at exploiting in order to generate positive spillovers for the real economy: the credit channel, the asset valuation channel, the portfolio-rebalancing channel, the exchange rate channel and the reflation channel.

Figure 4 below shows the relationship between the growth of the monetary base in the euro area and the growth of bank credit: it is straightforward to see that this channel has not produced significant results in terms of boosting bank-funded investment. A correlated analysis is pursued by Hannoun (2015) with respect to the portfolio-rebalancing channel. As a matter of fact, the "tax" on banks imposed by ultra-low and negative rates has operated as intended – by forcing investors to shift out of government bonds and into riskier assets. However, the search for yield engineered by this policy has fuelled more risk-taking in financial markets than in the real economy so far, as GDP growth prospects and investment expectations remain weak (Hannoun, 2015, p. 4).

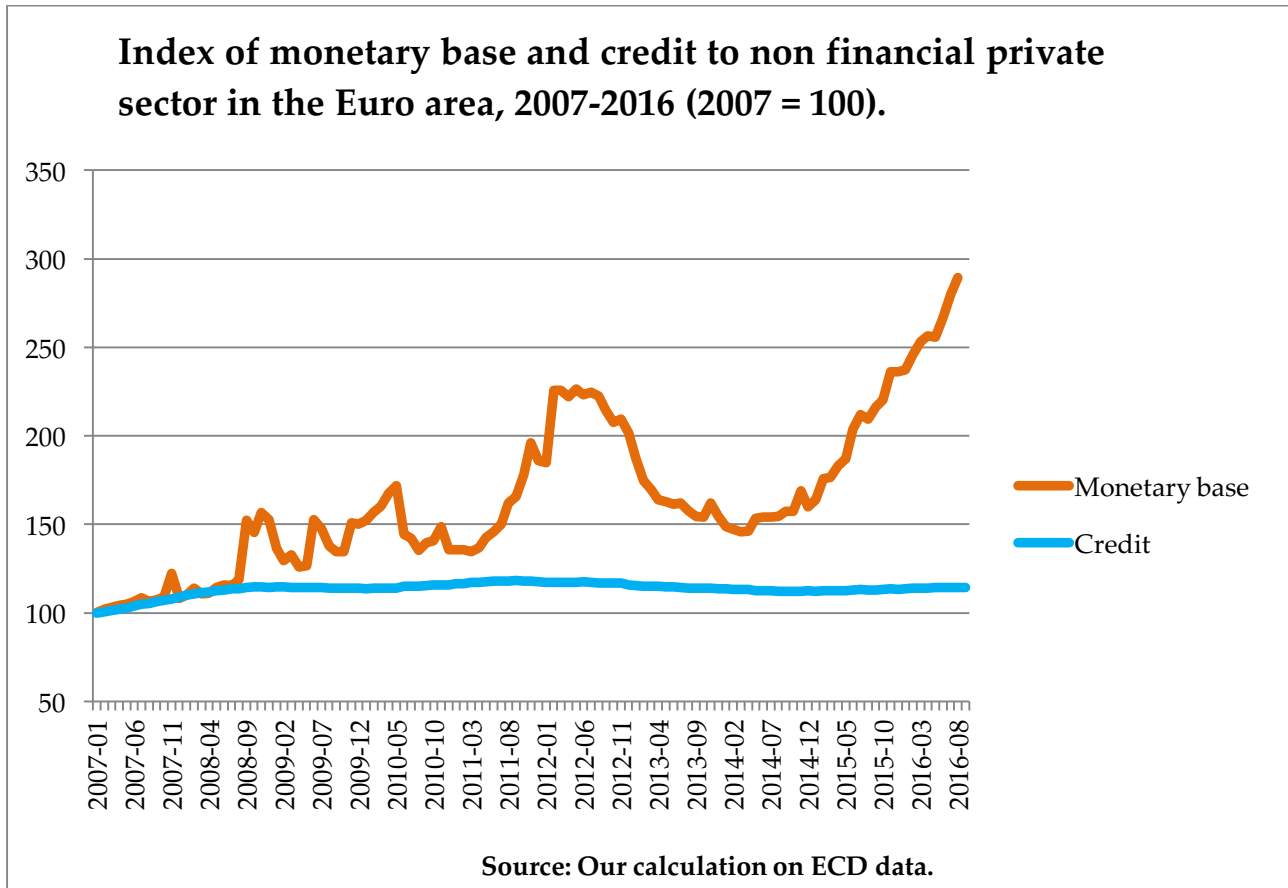
An intended effect of unconventional monetary policy is thus an income redistribution from savers to borrowers, both public and private, in order to reduce interest payments for governments and facilitate borrowing by firms and consumers. However, most optimistic assessments of this policy overlook the obstacles posed by the policy itself and the restrictive fiscal stance chosen by EU authorities towards the successful achievement of boosting borrowing.

As a matter of fact, after a first period in which European banks benefited from substantial capital gains thanks to the lower interest rates, ultra-low rates have already started to affect the profitability of banks, and banks' expectations collected by recent *The euro area bank lending survey* (ECB, 2016) point to further decreasing returns of the PSPP. Whilst the initial capital gains have benefited banks' balance sheets due to the asset



valuation channel, the opposite effect due to decreasing interest rates is gradually outweighing the latter.

**Figure 4. Monetary base and banking credit in the Euro Area**



Hence, low profitability in the present and expected decreases of the latter in the future are likely to constrain credit growth in the future, thereby reinforcing the “decreasing returns” collected by PSPP. Several reasons can account for this phenomenon, in our view:

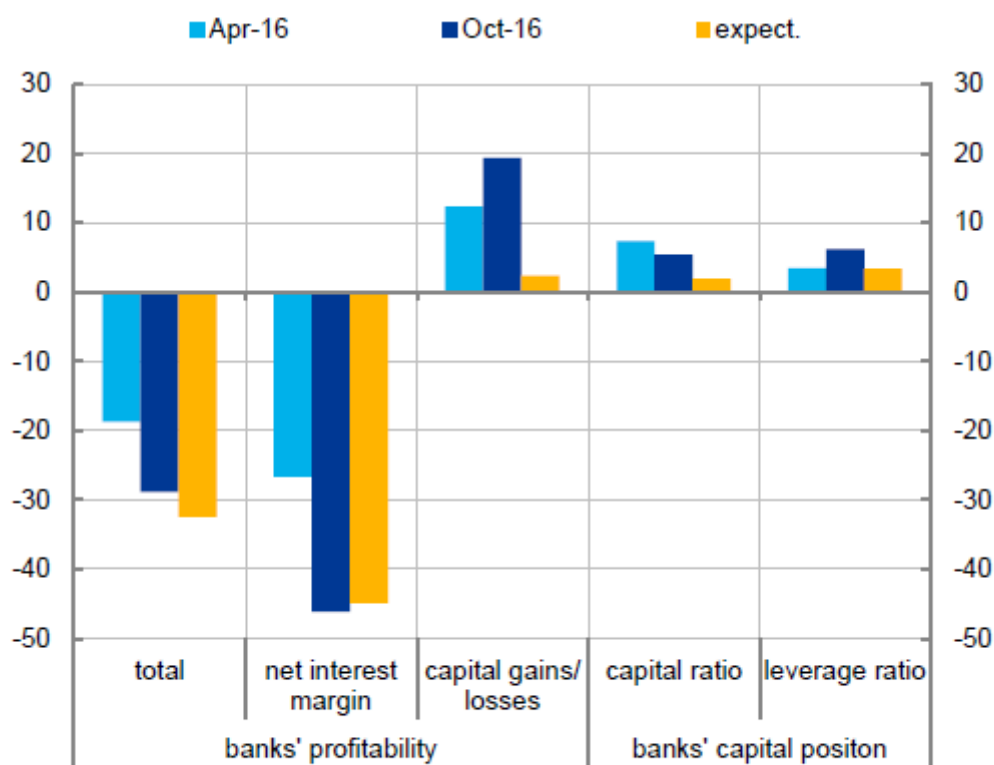
- 1) The persistent stagnation in households’ disposable income, especially in Southern European countries that were mostly hit by the recession, determines a sluggish growth of consumption. Moreover, the persistence of deflation leads households to delay their consumption patterns, as inflation expectations do not point at rising inflation in the near future.
- 2) Financial balances in the euro area shows that firms have turned to net saving in the aggregate, instead of spending in investment and productive capacity (Terzi, 2016). The light green bar in Figure 6 below shows that since 2009 the non-financial entrepreneurial sector as a whole has switched to net investing to net saving, reflecting the deterioration of profit expectations in the near future.

**Figure 5. Impact of the expanded APP on euro area banks' capital position**

**Chart 16**

**Impact of the expanded APP on euro area banks' profitability and capital position**

(net percentage of respondents)



Note: See the notes to Chart 14.

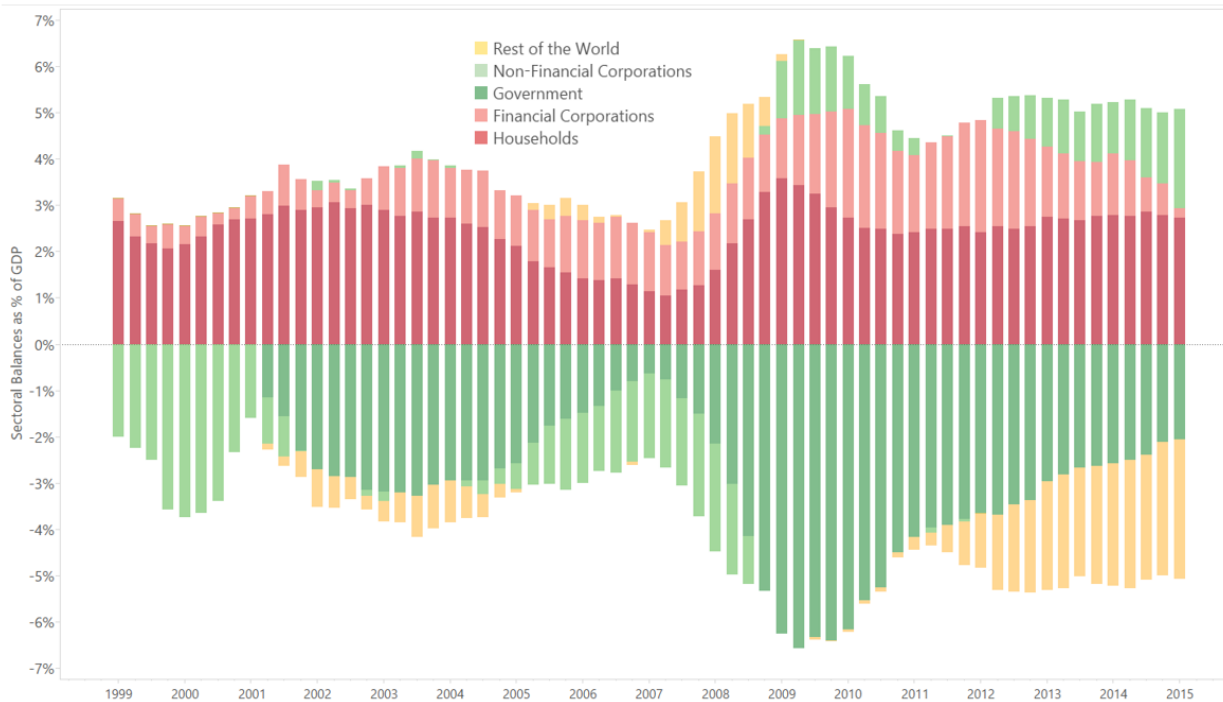
Source: ECB, *The euro area bank lending survey, October 2016*

- 3) Whilst it has contributed to prevent a wide category of assets to become illiquid and the euro to be torn apart by widening spreads on Eurozone government bonds, the ECB's and other major central banks' aggressively expansionary monetary policy are eroding the profitability of banks and other important financial institutions such as pension funds. Ultra-low interest rates are in fact reducing the net interest income of insurance companies, thereby compelling them to put shares of their profits into their pension funds (Goodhart and Wood, 2016). However, this prevents firms from investing in their own businesses, thereby breaking the transmission mechanism from reduced interest rates to increased investments. Furthermore, pension funds are facing the risk of being unable to meet their future obligations unless sponsors will be willing to provide more capital and EIOPA's first stress test of the industry in Europe showed that occupational pension fund assets only represent 76% of liabilities on average, with several countries showing a funding gap. As Goodhart and Wood (2016) point out, a

worsening in the balance sheets of insurance companies caused by ultra-low interest rates could actually lead consumers to *increase* their savings in order to ensure sufficient income for their retirement period, instead of *decreasing* it via additional spending.

**Figure 6. Euro area sectoral financial balances**

Euro area (19 countries): **Sectors' financial balances**  
(Source: ECB)



Source: Andrea Terzi, *Debt and savings in the euro area: An update (and how net exports have been keeping the EA afloat so far)*, May 17, 2016.

- 4) The restrictive fiscal stance that existing EU budgetary arrangements are forcing upon national governments, combined with the €80 billion monthly purchases, are drying up bonds market as investors gradually seek other higher-yielding alternatives to government bonds (Gerba and Macchiarelli, 2015). Moreover, the number of outstanding bonds is decreasing at a slow pace due to the scarce public deficit in the euro area, thereby potentially leading to an end of ECB's available purchases without a different fiscal stance.
- 5) Government bonds are an important part of institutional cash pools' demand for insured alternatives to bank deposits (Molteni, 2014), but several studies such as Poszar (2013) show that the amount of outstanding short-term government guaranteed instruments greatly lagged the former demand. Moreover, Molteni (2014) shows that the demand for liquid collateral in the interbank market has increased substantially due to the rise of secured funding in the aftermath of the crisis. The problem of scarcity of government debt in the EU is even greater than in the US, due to the low degree of

substitutability between public and private debt in the region (Krishnamurthy and Vissing-Jorgensen, 2012).

- 6) Despite the standard economic models imply that interest rate cuts bring about an increase in inflation, the post-crisis reality has shown that negative rates and negative inflation are strongly correlated in the euro area (and the case of Japan is similar). In a recent paper at the Jackson Hole conference in August 2016, Sims (2016) argues that this correlation is not surprising: interest cuts have an inflationary effect only if the reduced interest expenditure is expected to decrease the government's primary surplus. However, if a government is forced to maintain its primary surplus invariant – or to increase it – due to the EU budgetary rules, the effectiveness of monetary policy in causing inflation is undermined. Mosler (2012) clearly explains the monetary-fiscal nexus underlying this mechanism: as governments are the among the largest payers of interest in the economy, ultra-low interest rates imply a sharp diminution of income for the private sector. Without a recycling of these savings by the government back into the real economy via public investments, the net effect of unconventional monetary policy is a reduction in private sector demand, which is likely to generate a deflationary bias.

#### **4. Why can more public deficit be useful?**

The analysis in Section 2 shows that the European post-crisis economic policy is currently challenged by a fatal contradiction. On the one hand, the ECB's interest rate cuts have allowed the recovery of financial stability across the European financial system and they have rescued Eurozone from a high risk of fragmentation and default of troubled member States such as Greece and Italy, due to high government bond spreads with respect to the German bund. Moreover, they have generated additional fiscal space for national governments by reducing the interest expenditures on public debt.

On the other hand, fiscal policy is bound to comply with the budgetary rules of the Stability and Growth Pact, thereby restricting private sector demand due to a stagnant growth of disposable income. Therefore, the combination of an expansionary monetary policy with a neutral fiscal stance across the euro area is simultaneously generating unprecedented losses for the financial sector, a persistent deflationary bias and a shortage of safe assets to be used in repo transactions. On top of that, economic recovery is still too weak to bring the income of the region back to its pre-crisis levels, and slack in the labour market is still intolerably high.

A global understanding of economic phenomena should instead translate into a coherent policy framework. We thus argue that financial stability and the health of the financial sector can be best preserved through an increase in public deficit beyond the SGP constraints within the euro area. Accordingly, there are several channels through which a well-designed expansionary fiscal stance can benefit the financial sector:

- 1) Through an increase in households' disposable income and firms' profitability, a higher government deficit can improve the sustainability of private debts and decrease the number of non-performing loans which are currently posing a heavy burden on banks' balance sheet. Terzi (2015) shows that the government's fiscal position is strongly correlated with unemployment due to automatic stabilizers, and several empirical analyses conclude that government fiscal multipliers tend to be very large when monetary policy is at the zero lower bound (Christiano, Eichenbaum and Rebelo, 2009). Therefore, consumption expectations are likely to increase in response to the increase in disposable income, and so are firms' investment plans, with the demand for credit being largely a function of the latter.
- 2) For the same reasons, the creditworthiness of the private sector can be greatly improved by a well-designed deficit expansion. Nikiforos (2014) shows that, in the context of a flow-of-funds analysis, private sector net worth is a positive function of the government deficit as well as of asset prices inflation. Hence, the current policy mix envisaged by the EU falls short of recognizing that the private sector as a whole could be better off by enacting expansionary monetary and fiscal policies at the same time. In fact, this alternative policy mix creates the conditions to make a credit expansion sustainable.
- 3) An increase in government deficits can also allow the ECB to confidently hike interest rates with inferior risks of disrupting public finances or the stability of the EU banking system. Moreover, it can help tackle the increased financial fragmentation that may be even reinforced by proposals to apply standard risk-weighting practices to government bonds in banks' balance sheets.
- 4) In line with Molteni (2014), we stress that a higher government deficit at the euro area level financed by an increased issuance of government bonds can respond effectively to private sector demand for assets. In fact, it can contribute to close the gap between the demand for safe and liquid assets by institutional cash pools and financial institutions, which remains high in spite of ultra-low interest rates, and by banks and pension funds, which are often forced to hold substantial amounts of government bonds for regulatory and macro-prudential purposes (Gerba and Macchiarelli, 2015; Molteni, 2014).
- 5) A higher profitability in the aggregate, coupled with the diminution of NPLs, can also lead to a rise in the stock prices of several distressed banks, such as in Southern European countries.
- 6) These conditions create a better environment for the expansion of bank credit, which in turn can raise the aggregate profits of the banking system.
- 7) Finally, the above conditions can make the stricter capital requirements enforced by Basel III and its hard law applications such as the MIFID II directive in the EU sustainable. As stressed by Goodhart and Wood (2016) the need to allocate more capital and for increased ring-fencing of assets and liabilities clashes with the monetary-fiscal stance pursued by EU institutions, which contributes to the deterioration of assets such as loans and the compression of bond yields. Therefore, a

greater share of Tier 1 capital on banks' global net worth is a likely outcome of a shift in favour of greater expansionary fiscal policies.

The benefits of a greater fiscal deficit at the euro area level that have been outlined in Section 3 are clearly to be weighed against the political and institutional costs that are needed in order to achieve the approval of such a proposal. However, we argue that several options are available in order to shift the current restrictive policy stance of the euro area into a more growth-friendly position.

First off, a moratorium on the 3% limit of the deficit/GDP ratio for all the euro area countries can be engineered by an appropriate majority of member states (Sims, 2016). The negotiations related to the Greek debt in 2015 have shown that coordinating member states on a deviation of a single euro area country from existing rules is not a successful strategy. It is so since governments that have a preference for a "sound" budget – such as Germany and the Northern block - cannot justify a relaxation of incentives for other countries to their electorate.

Moreover, the Greek case has shown that Greek citizens themselves, despite having voted to reject the Eurogroup's bail-out programme with a large majority, manifest a preference towards a European rule-based economic management with respect to discretionary fiscal policy managed by national politicians.

Hence, as envisaged by Mosler and Silipo (2016), the deficit limit should be considered as a policy tool anchored to the achievement of an objective, non-discretionary common rule. For instance, Sims (2016) proposes to enact a moratorium on the Maastricht budgetary rules "to be kept in place until area-wide inflation reaches and sustains the target level".

We suggest that an immediate and practical way to achieve this goal, which was discussed with Warren Mosler, is a coordinated reduction of the VAT tax across the euro area, so as to spur consumption growth. For instance, the moratorium on Maastricht rules could increase the deficit limit from 3% to 6% for the 2017-2019 period, at the end of which the limit can be brought again to 3% if the inflation target will have been reached and a set of indicators will have shown an improvement of economic conditions. In a nutshell, the deficit limit can become the fiscal equivalent of the ECB policy rate for the whole euro area. A European Fiscal Policy Committee (EFPC) – which resembles the ECB Monetary Policy Directorate – can be created in order to discuss the factors which are able to shift the policy stance from "hawkish" or "dovish".

Alternatively, or in addition to the institutional setting above, a Transition Job Programme (TJ) as defined by Mosler and Silipo (2016) could be anchored to the definition of price stability to which the ECB is committed. The Programme would provide a fixed wage to all unemployed citizens in the euro area, and it can be funded by bonds issued by the EFPC and guaranteed by the ECB. Such a measure enforces the Transition Job wage as the effective minimum wage across the euro area, and it turns the latter into an effective tool for managing a wage-driven inflation across the region. For instance, with a 0% productivity growth, a 2% growth in TJ wages is a suitable tool to drive the inflation rate towards the statutory 2% yearly level.

Finally, a less demanding alternative in terms of institutional changes can focus on the estimation criteria of the output gap, which are used to determine the cyclically-adjusted budget for euro area governments. Whilst existing rules for the determination of the output gap are based on the idea that economic output over the long term is primarily determined by aggregate supply, economic theory and institutions are starting to recognize the importance of demand factors as important drivers of aggregate supply. The model implemented by the EU Commission is currently based on a production function approach and a Non-Accelerating Wage Rate of Unemployment (NAWRU) that is estimated as a moving average of previous unemployment rates. As Costantini (2015) stressed, this approach neglects any influence of demand factors on potential output and brings about a pro-cyclical bias to the structural deficits of member states, thereby making them unable to respond to short-term fluctuations in a more growth-friendly fashion.

On the other hand, Anzoategui et al. (2015) augment a workhorse New Keynesian DSGE model with an endogenous Total Factor Productivity mechanism, which shows that demand factors play an important role in the slowdown or acceleration of capacity growth. Moreover, the FED Chairman Janet Yellen, in a recent speech at the Federal Reserve Bank of Boston, clearly stated that the “post-crisis experience suggests that changes in aggregate demand may have an appreciable, persistent effect on aggregate supply--that is, on potential output” (Yellen, 2016).

Therefore, a reassessment of the determination of TFP within output gap estimation models can be an immediate solution to reduce the pro-cyclical bias of the euro area fiscal stance, and increase public deficit through a non-discretionary rule which also provides additional safe assets to the banking and financial systems.

## 5. Conclusions

In this paper, we have argued that the EU financial system has been suffering a consistent amount of losses since the beginning of the financial crisis in 2007. Moreover, the financial sector is now threatened by the policy mix composed by a restrictive fiscal stance adopted by euro area member states and an expansionary monetary policy adopted by the ECB, characterized by ultra-low interest rates.

Caught between the two fires of shrinking profitability via a reduced interest income channel and increased capital requirements due to the enforcement of new regulatory standards after the introduction of Basel III rules, financial institutions in the euro area express an unsatisfied demand for safe and liquid assets. Moreover, the major central banks are struggling to find suitable conditions in order to raise interest rates in order to put an end to the unprecedented cuts in interest rates that have dominated the post-crisis era.

Hence, we suggest that a more expansionary fiscal stance by EU institutions is the most complete solution in order to prevent the financial sector from reducing its contribution to the allocation of resources and investments that are crucial for the growth of the euro area. A relaxation of the Maastricht budgetary rules – or a reassessment of

structural balance estimation models – is beneficial for the financial system due to its positive effect on the creditworthiness of the private sector and its ability to increase the amount of safe and liquid assets that are appropriable by the private sector.

Furthermore, it can increase the capitalization of the banks through an increase in their profit margins, thereby making the most recent regulatory standards enforced by the MIFID II directive more sustainable.



## References

- Alesina, A., & Giavazzi, F. (2008). *The future of Europe: reform or decline*. Mit Press.
- Anzoategui, D., Comin, D., Gertler, M., & Martinez, J. (2016). *Endogenous Technology Adoption and R&D as Sources of Business Cycle Persistence* (No. w22005). National Bureau of Economic Research.
- Arslanalp, S., & Tsuda, T. (2012). *Demand for Government Debt of Advanced Economies: A New Database*. IMF Working Paper
- Borio, C., & Disyatat, P. (2010). *Unconventional monetary policies: an appraisal*. The Manchester School, 78(s1), 53-89.
- Chiesa, G., & Filippini, L. (2014). *Economic crises, what we learn from history and economic theory*. *Rivista Internazionale di Scienze Sociali*, 126(3), 331-348.
- Christiano, L., Eichenbaum, M., & Rebelo, S. (2009). *When is the government spending multiplier large?* (No. w15394). National Bureau of Economic Research.
- Costantini, O. (2015). *The cyclically adjusted budget: history and exegesis of a fateful estimate*. Institute for New Economic Thinking Working Paper Series, (24).
- Cour-Thimann, P., & Winkler, B. (2012). *The ECB's non-standard monetary policy measures: the role of institutional factors and financial structure*. *Oxford Review of Economic Policy*, 28(4), 765-803.
- European Central bank (2016), *The euro area bank lending survey*, October 2016
- Gerba, E., & Macchiarelli, C. (2015). *Interaction between monetary policy and bank regulation: Theory and European practice*. Available at SSRN.
- Goodhart, C.A.E. and Wood, G. (2016), *The internal contradictions of QE...or should it be quite erroneous?*, *Telegraph Online Edition*, Retrieved at <http://www.telegraph.co.uk/business/2016/10/03/the-internal-contradictions-of-qe--or-should-it-be-quite-erroneo/>
- Hannoun, H. (2015), *Ultra-low or negative interest rates: what they mean for financial stability and growth*, Remarks for the BIS at the Eurofi High-Level Seminar, Riga, 22 April 2015, Retrieved at <http://www.bis.org/speeches/sp150424.pdf>
- Herndon, T., Ash, M., & Pollin, R. (2014). *Does high public debt consistently stifle economic growth? A critique of Reinhart and Rogoff*, *Cambridge journal of economics*, 38(2), 257-279.

Koo, R. (2011). The world in balance sheet recession: causes, cure, and politics. *Real-world economics review*, 58(12), 19-37.

Krishnamurthy, A., & Vissing-Jorgensen, A. (2011). *The effects of quantitative easing on interest rates: channels and implications for policy* (No. w17555). National Bureau of Economic Research.

Mehrling, P., Pozsar, Z., Sweeney, J., & Neilson, D. H. (2013). *Bagehot was a shadow banker: shadow banking, central banking, and the future of global finance*. Central Banking, and the Future of Global Finance (November 5, 2013).

Minsky, H. P. (1976), *John Maynard Keynes*, Springer

Molteni, F. (2014). *Liquidity, Government Bonds and Sovereign Debt Crises*. Manuscript, University of Paris.

Mosler, W. (1999). *The Launching of the Euro: A Conference on the European and Monetary Union*. NY: The Bard Center, 11-15.

Mosler, W. (2012), *The Fed is Starving Econoy of Interest Income*, CNBC.com, Retrieved at <http://www.cnbc.com/id/46115110>

Mosler, W., & Silipo, D. B. (2016). *Maximizing Price Stability in a Monetary Economy*, Levy Institute Working Paper No. 864

Nikiforos, M. (2015). *A Nonbehavioral Theory of Saving*. Levy Economics Institute of Bard College Working Paper, (844).

Pozsar, Z. (2013). *Institutional cash pools and the Triffin dilemma of the US banking system*. *Financial Markets, Institutions & Instruments*, 22(5), 283-318.

Sims, C. (2016), *Fiscal Policy, Monetary Policy and Central Bank Independence*, Retrieved at <https://www.kansascityfed.org/~media/files/publicat/sympos/2016/econsymposium-sims-paper.pdf?la=en>

Terzi, A. (2016), *Debt and savings in the euro area: An update (and how net exports have been keeping the EA afloat so far)*, Retrieved at <http://www.ateconomics.com/2016/05/17/debt-and-savings-in-the-euro-area-an-update-and-how-net-exports-have-been-keeping-the-ea-afloat-so-far/#more-1265>

Yellen, J. (2016), *Keynote Speech at "The Elusive 'Great' Recovery: Causes and Implications for Future Business Cycle Dynamics"*, October 14, 2016, Retrieved at <http://www.federalreserve.gov/newsevents/speech/yellen20161014a.htm#f5>

