

Credit Crunch in Europe: Comparing Austria, Italy and Greece

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Abstract Since the debt crises of some European countries in 2011, the European Central Bank and some credit and financial authorities have often spoken about a credit crunch in Europe. They have said that banks have curbed credit access to the economic system, creating persistent problems for the European economy. The aim of this paper is to analyze the problem of the credit crunch in Europe from 2007 to 2014, taking as our sample three European countries: Austria, Italy and Greece. These are countries with different economic structures, so they represent a significant sample for our purposes. Using statistical analysis, we will measure the entity of the credit crunch. We will find that the credit crunch is indeed present in Europe, but maybe is not as dramatic as has been described.

Keywords Banking System, Credit Crunch, European Economic Crisis

1. Introduction

Until mid-2014 the credit crunch was one of the most important problems for European firms. This phenomenon was particularly serious for enterprises without access to capital markets, because they could not make investments. So this fact had considerable influence on the economic growth of all countries.

The European institutions have dealt with this theme on many occasions and in various forums. The Bank of Italy, for example, said that in the first quarter of 2015, “the decrease of credit to production systems has continued, reflecting especially weakness of demand” [1]. The Italian bank has also made a contribution towards solving the problem. The President of the European Central Bank (ECB), Mario Draghi, in 2012 and 2013 frequently asked European banks to make loans, significantly lowering the rate on the main refinancing operations which, from September 2014, has been the lowest in ECB history - 0.05%. This has considerably influenced interbank market rates, which

dropped during the last months of 2014. The ECB has made numerous loans to Eurosystem banks (the so-called *Target Long Term Refinancing Operations, TLTRO*), aimed at disbursing loans to the production system.

The purpose of this article is to analyze the intensity of the credit crunch phenomenon in Europe and to understand if it has hit all European states equally during 2007-2014. In order to achieve these two aims, we will take a sample of three members of the European Union and of the Eurosystem: Austria, Italy and Greece. We will compare them not only among themselves, but also with the average level of Eurosystem credit supply, trying to interpret the data analysis in the light of economic happenings in the sample states.

We chose Italy and Greece for more than one reason:

- 1) From 2007 to 2014 they have had long periods of economic recession. In Greece this phenomenon was very marked: according to the Hellenic Statistical Authority, in the period under consideration, its GDP fell practically every year. In Italy the situation was not so dramatic. According to the Italian Statistical Authority, there was a fall between 2008 and 2009, and then from 2011 and 2013. Overall, Italy has had many periods of recession during 2007-2014.
- 2) They have a high public-debt-to-GDP ratio (Greece is in first place among European countries and Italy comes second). The increase in public debt is a permanent feature of the two countries. Nevertheless, in this case, we have to consider that Greece had a debt haircut in 2011 and was helped by the European Union and International Monetary Fund, while Italy did not need any help nor received any haircut.
- 3) The high public-debt-to-GDP ratio caused issues with the respective sovereign debts between 2011 and 2012, when there was a problem of financial resources provision on capital markets. Consequently, there was an increase of issuer risk and, as stated, the pressure of the debt was so high that Greece needed a haircut. [2]
- 4) Both countries are considered peripheral in comparison with the central Eurozone states, among which Germany stands out, with its sounder economy and

lower deficit/GDP ratio.

- 5) Their governments are normally less stable than those of the main Eurozone countries.
- 6) Their banks have needed and continue to need capital increases because of increased risks associated with their activities.

Italy and Greece have business links with many foreign countries, so a weak global economy influences their economies. Italy depends on her exports of manufactured goods some to Europe, and more to Asia [3], while Greece, after a period of weakness, in 2014, exported goods and services for 8.7% of GDP [4].

In contrast to these countries, with their problematic public and credit sectors, we consider a very different nation: Austria. The reasons for which we have chosen Austria are the following:

- 1) According to the Austrian Statistical Authority, the economy was very stable in 2007-2014, without great problems and with a positive trend, especially in 2013 and 2014;
- 2) it has a lower public-debt-to-GDP ratio than Italy and Greece (about 80%);
- 3) it did not suffer a crisis of its sovereign debt during the period 2007-2014;
- 4) it has a highly stable government and no financial problems.

The Austrian economy is bound to the German economy. Both are stable and dynamic, but Austria's growth is below that of Germany [5]. Austria exports both services and goods, in recent years more services than goods, while before the crisis it exported more goods than services. Overall, since 2013, Austria has started to increase its exports. [6]

Given the above, Austria is the ideal candidate for a comparison with less stable countries like Italy and Greece.

The last series considered regards the Eurosystem as a whole. This allows comparison of the historical series of the states with an average of the economic area to which they belong.

For our analysis, we will consider the trend of loans at aggregate level from the beginning of the subprime mortgage crisis, i.e. 2007, to 2014, last period for which we have complete data. By means of statistical analysis, we will measure the phenomenon and show that the credit crunch has been not the same in the three countries. Finally, we will draw some conclusions on this phenomenon.

2. Review of Literature

The credit crunch "is conventionally defined as a sharp decline in bank loans caused by supply factors such as risk-based capital standards imposed on banks" [7].

The literature on this theme is very wide and concerns first of all the causes and the effects of the credit crunch. Peek and Rosengren [8] study the link between regulatory enforcement actions and the credit crunch in New England

banks. Hancock and Wilcox [9] study the availability of credit to small business during credit crunch periods. They find that a Government loan guaranty program can help to overcome the problems of credit supply shocks. The connections between interbank liquidity crunch and the firm credit crunch has been studied by Rajkamal Iyer et al. [10] who argue that the interbank liquidity crunch caused a credit crunch particularly for entrepreneurial firms without other sources of finance. Kyojik Song and Yungjoo Lee [11] find that the financial crisis has changed the behavior of Asian firms which, as a precaution, hold more liquidity than before the crisis. It is possible to argue from this result that they need less credit than before. Frederick Adjei [12] using data from 2006-2008 for publicly traded firms comes to the conclusion that firms with low cash reserves had a lower performance during the subprime crisis. By contrast, firms with high levels of cash can better minimize the risk of bankruptcy. An economic aspect is studied by Dobromil Serwa [13] who finds no statistical connections between output growth and credit growth during banking crises. Presbitero et al. [14] study the Italian case after Lehman's collapse and they find that there was a significant contraction of loans in that period. Their analysis is very complete and involves data from many Italian provinces.

Another type of studies regards the connection between the credit crunch and the financial system. Christin Rudolph and Schwetzler [15] study the value of diversification in different regions during the 2007-2008 crisis and find that the diversification discount fell more in regions "with well developed capital markets and strong investor rights" than in regions "with less developed markets and low investor rights". Alexander Popov and Gregory F. Udell [16], studying more than 10,000 firms in emerging European countries, find that financial shocks have a significant impact on credit to firms. During the 2007-2009 financial crisis, US banks "were not as able to provide liquidity as would be implied by theory and evidence from other crisis" [17]. This implies that there have been problems with credit in the US banking system.

An economic approach to the credit crunch is taken by Agur [18] and Brzosa-Brezozina and Makarski [19].

Bernanke and Lown [20] study the credit crunch in the U.S.A. in 1990. In the first paragraph, entitled "Recent Developments in Bank Lending", the authors present a table containing the growth rates of nominal loans during the period considered as a measure of the developments in bank lending. We apply this method, modified for our purpose, to three historical series of European countries, to have a measure of the credit crunch in Europe. In fact, the studies cited in this review do not measure the credit crunch, but study in detail the causes and the consequences of this phenomenon. In this article, we research the entity of the European credit crunch, making our contribution towards understanding credit dynamics in Europe in 2007-2014.

3. Materials and Methods

The data used are public, taken from the institutional websites of the Central Banks of Greece, Italy and Austria, who periodically publish statistical data on their respective credit systems. For European data, we have used the ECB Statistics Bulletin, available on the institutional website of the bank.

The data considered are quarterly because Bank of Italy publishes quarterly statistical data, unlike the ECB, Greek National Bank and Austrian National Bank, which publish monthly statistical data. The removal of Italy from our sample would have brought more completeness for the aim of our research, but it would have removed the possibility of analyzing a country significant for overall amount of loans. Therefore, we decided to keep Italy in the sample, at the expense of a decrease in data completeness.

The methodology we will use has two steps.

Firstly, we will analyze the four series by calculating the percentage variation with base 2007, thereby making all the series comparable. We follow Bernanke and Lown [20], modifying their methodology for our purposes. We have to understand the entity of credit crunch in Europe, so it is useful for us to calculate the variation from the beginning of the series, and not by year of cyclical peak. With this methodology, we will obtain a measure of the credit crunch for the countries studied and for the Eurosystem.

As a second step, we will calculate the coefficient of variation for every series, in order to obtain the variability of

the credit supply. The lesser the variability, the more stable are the loans granted and, presumably, the wider is the credit crunch.

4. Results and Discussion

Our analysis considers the years between 2007 and 2014. We decided that the statistical series should start from 2007 because that was the beginning of the financial crisis in the United States. Considering, therefore, that in previous years there had not been any credit supply problems in Europe, we want to analyze the effect of the financial crisis on this aspect in the countries examined.

Let us start by analyzing the historical series of the loans made in the Eurozone. This, as we have said before, will be used as a term of comparison for the national historical series.

From March 2007 to December 2014, the trend of loans in Europe first grew and then decreased. It reached its peak in September 2011, when 18,844 million euros of loans were given. From that date, there was a decrease, which brought the datum to a minimum of 16,822 million euros in September 2014; after that date, there was a decrease from December 2014. The final balance from the beginning of the series (15,332 million euros in March 2007) is positive. The graph of the percentage variation based on 2007 shows exactly the trend described.

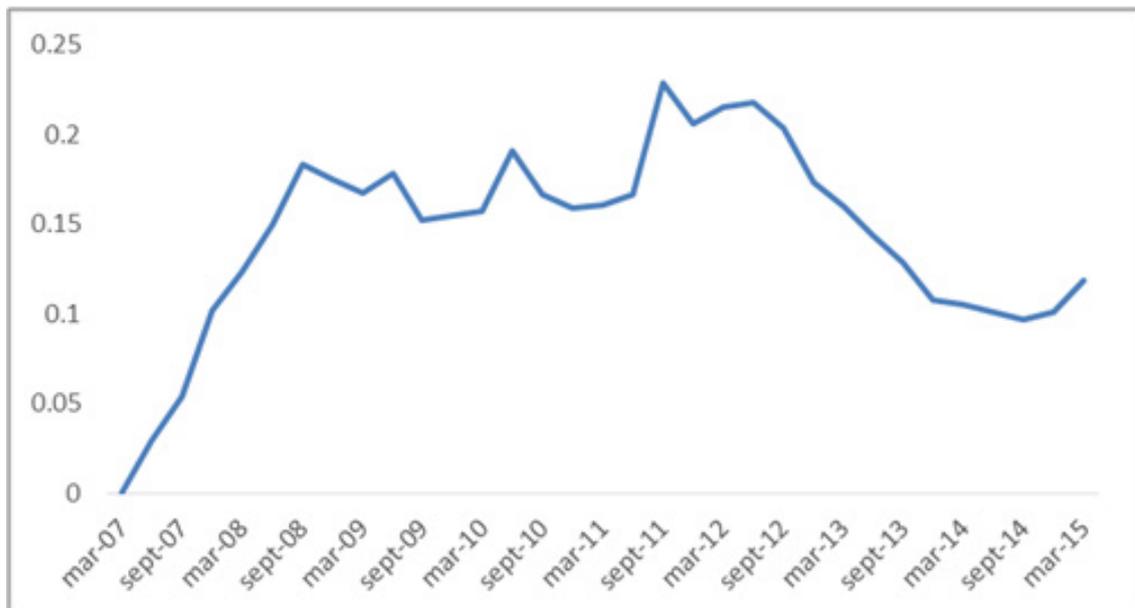


Figure 1. Percentage variation of the loans in the Eurosystem 2007-2014

The trend of the percentage variation of loans made in Greece does not follow that of the Eurosystem except in the final part, where there is a sharp and regular decline. Until the middle of 2010 its variation is very wide. In particular, we noticed a curve between the end of 2009 and the beginning of 2010, when the country's financial crisis began, and a big gap between March 2010 (210,561 million euros) and June (282,477 million euros) in the same year.

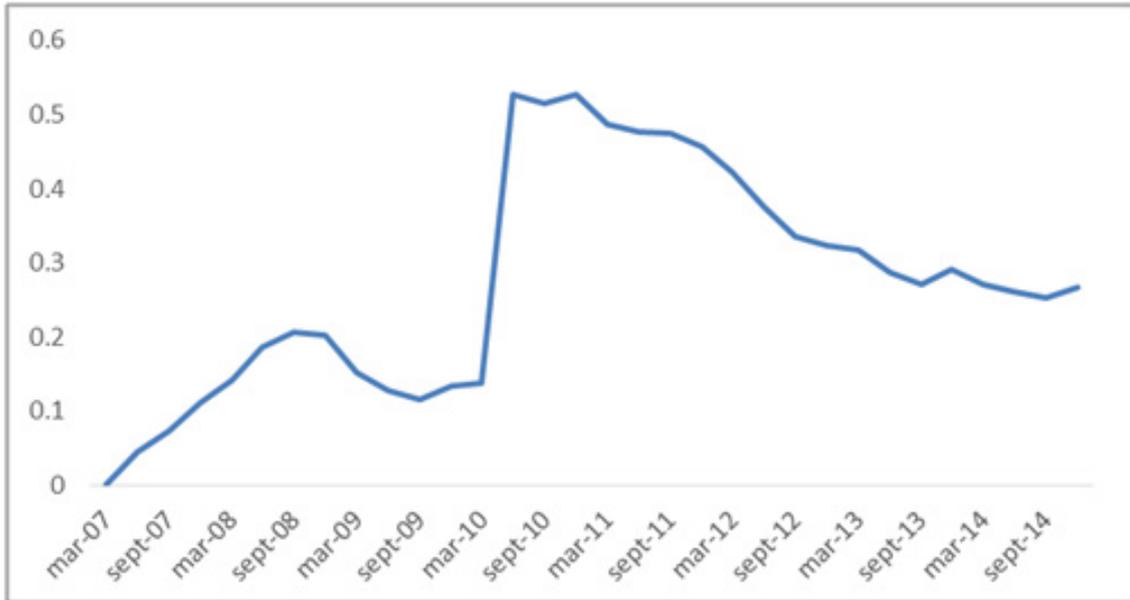


Figure 2. Percentage variation of the loans in Greece 2007-2014

The trend of loans made in Italy shows wide variations, especially from March 2010 to June 2011, after which there was a fairly linear decrease. We see a large increase in March (1,567,228 million euros) and June 2010 (1,655,209 million euros) and another one in March (1,714,330 million euros) and June 2011 (1,945,542 million euros).

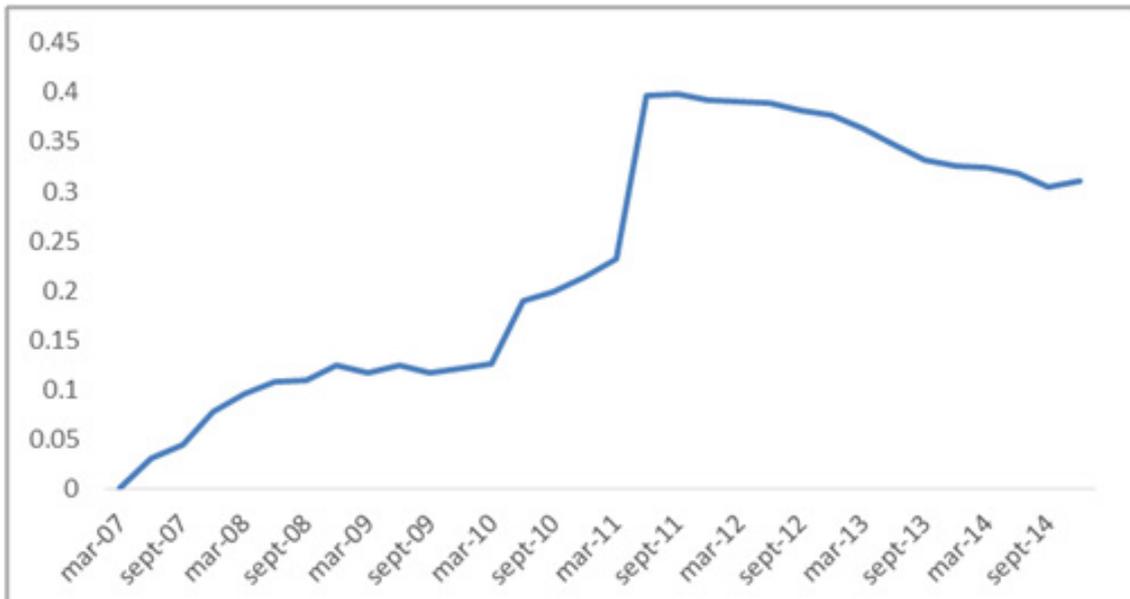


Figure 3. Percentage variation of the loans in Italy 2007-2014

Finally, we consider Austria, the most regular country of the series. The scale of the graph should not deceive: the variations are very limited, from -0.3% to +0.6%. Furthermore, we notice that Austria is the only country with a negative variation, in 2008 and between 2009 and 2011.

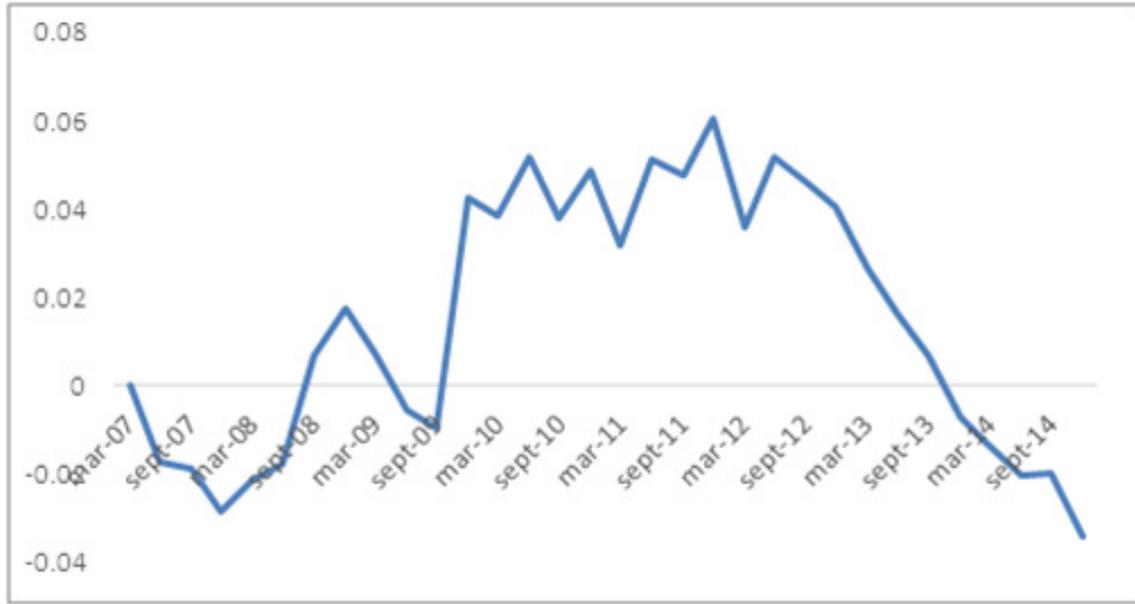


Figure 4. Percentage variation of the loans in Austria 2007-2014

To conclude, we have a graph that sums up all four series, in order to have a more complete view of the situation.

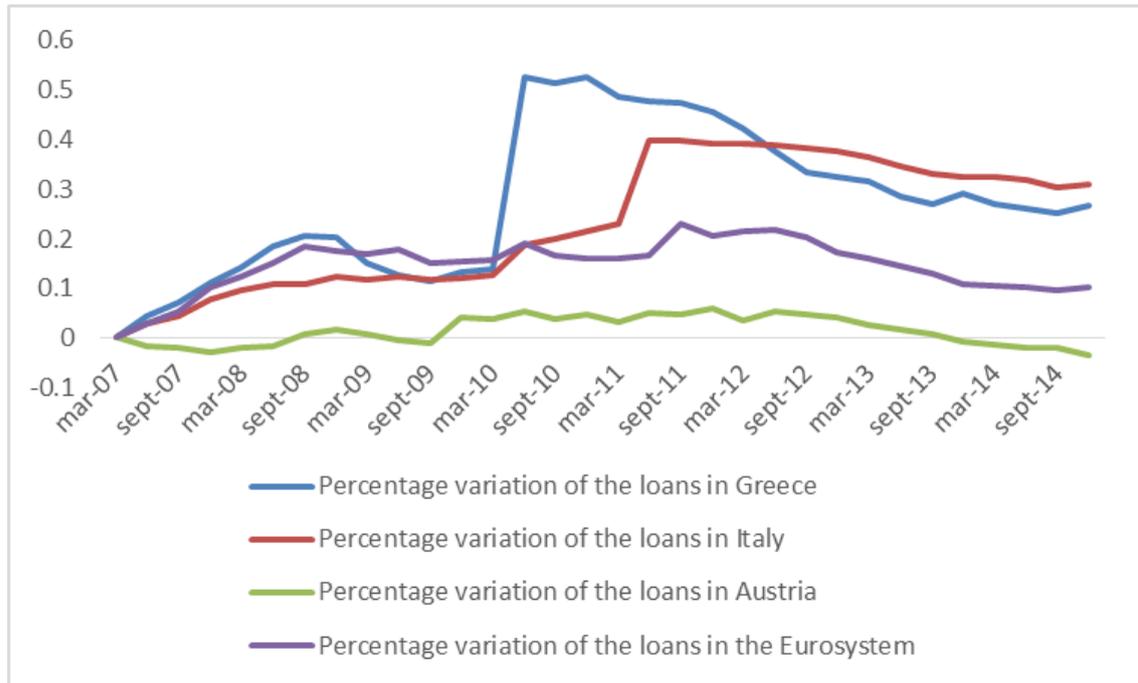


Figure 5. Percentage variation of the loans in the Eurosystem, in Greece, in Italy and in Austria 2007-2014

As was foreseeable, the percentage variation of the Eurosystem, from one quarter to the next, lies in median position between Greece and Italy, countries within the average, and Austria, country below average. These data are confirmed by the coefficient of variation: the highest is the coefficient of Greece, followed by Italy; the lowest is the coefficient of Austria.

Table 1. Coefficient of variation of the Eurosystem, Greece, Italy and Austria

Coefficient of variation of the Eurosystem	Coefficient of variation of Greece	Coefficient of variation of Italy	Coefficient of variation of Austria
0,04	0,12	0,11	0,03

From the graphs, we can observe that the widest percentage variations for Greece and Italy occur at the beginning of 2010 and the end of 2011, when the problems of the respective sovereign debts escalated violently. Following this, Greece decided to cut about 200 billion euros off its own debt of 350 billion, coming to an agreement with its institutional creditors, while Italy put drastic measures into place to correct its own public accounts. The empirical analysis underlines a decrease in credit dating precisely from these events.

The credit crunch has taken place all over Europe, not only in peripheral countries like Italy and Greece. As we have shown, Austria, a country with a good economy, suffered, at least in part, the same destiny. A wider sample would perhaps highlight this even better. So the admonitions of Draghi cited at the beginning of this article were well founded: since mid-2011 the European banks have given less credit than previously. This was partly due to the more restrictive criteria introduced by the banks, which considered more risks than formerly when making loans, and partly to lower credit demand from the economic system [21]. In fact, it is obvious that banking activity is based on credit supply and, if this does not happen, it cannot be exclusively a free choice of the banks.

We notice furthermore that a very stable economy like Austria had, between 2010 and 2012, lower credit growth rates than Greece and Italy. This fact can be explained by the very stability of the Austrian economy: if there were no great economic variations, it is unlikely that credit supply would vary much.

Thus far, we can argue that the credit crunch in Europe particularly hit peripheral countries with high financial and economic instability, while it had less effect on the central countries.

5. Conclusions

Our aim was to verify what many sources in Europe have been saying over recent years, that European banks are making fewer loans than in the past, as well as to measure the size of the credit crunch. We consequently analyzed data from three Eurozone countries, then compared this with the aggregated datum at European level. We deduce that the credit crunch has been and is still present in Europe, as is commonly stated, although we note a slight increase in loans at the end of 2014. We observe that the credit crunch was perhaps smaller than normally perceived. The re-elaborated data, in fact, show that, since the beginning of the crisis in 2007, there has still been an increase in credit supply. What emerges from our analysis is that since mid-2011 (for Greece, from mid-2010) the decrease in credit supply was steady and without interruptions until the end of 2014. It is difficult to say today if the increase of loans will last or not but, in addition to the facts examined in this article, we might also consider the Single Supervisory Mechanism (SSM), the new European banking supervision. This, together with the new

rules on capital for the banks (Basel 3), will result in many mergers among European banks. The mergers will create more efficient banks, granting loans to the most worthy firms. Credit selection will be better than today and credit crunch should be, at least in part, avoided.

While awaiting the new rules on credit, credit crunch has had and continues to have remarkable consequences on the European economy. At the end of April 2014, the President of ECB, Mario Draghi, said that perhaps there will be one or more target long term refinancing operations (TLTRO) in the future for European banks. The aim of the operation would be to mitigate the credit crunch in Europe through the introduction of a large amount of liquidity. Such an operation will surely be useful for the European banks. We point out, however, that credit system has for a long time been traversing a constant phase of crisis. Many banks made capital increases after 2011 because of the worsening of their assets and, in particular, of the increase in junk credits. The outlook at a general level is not so comforting [22] (Dirk Schoenmaker and Toon Peek 2014). To give an example, in Italy the most important credit groups have closed many branches in recent years and intend to close many more shortly. In our modest opinion, while it is undoubtedly useful to insert liquidity into the system, in order to see the European banks starting to give loans again like before the crisis, their problems of equity must first be solved.

The TLTROs of the ECB are part of a larger program to inject liquidity into the system, of which Quantitative Easing (QE) is an important feature. QE is the purchase of government bonds from Eurozone countries, for 60 billion euros every month until September 2016, in order to provoke inflation and to devalue the euro. Even if not a specific aim of QE, it is possible that this operation contributes towards improving the credit situation in Europe.

The state of credit in Europe is continuously evolving and is worth watching. Nevertheless, it is strictly linked to the European economy and, if this does not improve, it is unlikely that the situation of loans in Europe will do so.

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