The entire global financial system is currently influenced by the ongoing financial crisis symptoms, which has gradually spilled over into the economic crisis and more recently into the European debt and banking crisis. The beginning of the financial crisis has the origins in the end of summer 2007, when its initial phase (mortgage crisis) in the United States of America broke out. At the outbreak of the current financial crisis, it was thought to be an essentially Anglo-saxon affair. What is more, the eurozone was taken to be a victim of ‘collateral damage’ from an elsewhere occurring crisis (Perraton, 2011: 84). But the crisis subsequently moved to continental Europe and to the Asian financial markets. The crisis has become the result of long-term problems which are determined by the following factors: expansionary monetary policy and the inefficiency of regulation and supervision, irresponsible fiscal policy, real estate speculative bubble, excessive speculation and panic and inefficient credit ratings. Focusing on the years 2007 and 2009, there were serious financial issues involved in Eite-

* This paper was developed within the research project IGS (Faculty of International Relations, UEP) titled: „Podnikatelské prostředí v České republice a jeho vliv na konkurenceschopnost ČR“ – F2/09/2012, IG21012.

Between 2009 and 2011 the financial crisis gradually moved into the real economy and consequently into the public budgets of most developed countries. The eurozone has been one of the most affected by this development. Governor of the Czech National Bank Miroslav Singer defined the phases of the crisis in advanced economies as follows: ‘in the summer 2007 the latent phase of the financial crisis started and it has topped in the acute phase of the financial crisis at risk of collapse of the financial system in 2008. The crisis has continued by moving into the real economy in 2009 and has shifted in problems of public finance (extreme rise in public debt)’ (Singer, 2010: 6). At the same time the Eurozone was facing major debt problems connected with the banking problems. The Eurozone had to deal with debt problems of its ‘southern wing’ with potential negative financial impacts on the European Banking Sector (EBS), followed by the necessary recapitalizations of some European banks. The Financial Times report from October 24, 2011 shows that big European banks will have to raise an extra 108 billion EUR of fresh capital over the next six to nine months under a deal to strengthen the European banking system. This information was confirmed on December 8, 2011, when the European region’s bank regulator published the documents showing that ‘Europe’s banks will need to raise 114.7 billion EUR in a fresh capital as part of measures introduced in response to the euro area’s sovereign-debt crisis’ (Bloomberg, 2011).

Moreover, the International Monetary Fund (IMF) published an information about 200 billion EUR missing in bank’s balance sheets stemming from sovereign debt writedowns (Barker, 2011: 2). In addition, Acharya, Schoenmaker and Steffen, the three professors of finance, estimate that extra capital needs for 49 publicly traded European banks would be close to 443 billion EUR (Acharya, Schoenmaker, Steffen, 2011).

According to the author of this paper all three phases of crisis are currently interconnected in a systematic crisis, which could have significant negative effects on the well-being level of economic entities in the Western world. Prof. Mills says: ‘We do not know the full risks of what the financial sector has been doing – crazy loans and little-understood new products. But we know we are paying for it in many ways” (Mills, 2010: 12).

A separate question is whether the European Central Bank (ECB) participated in the outbreak of the global crisis. There are studies that suggest the ECB’s monetary policy is the source of both the current financial and debt crisis.

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1 But, during the first half of the year 2012, it seems to be much more.

2 Due to the globalization of financial markets the financial crisis has shifted over the whole world and caused great, not only economic, damages.
These studies are based on the fact that the eurozone is not an optimal currency area (Klaus, 2011). Other opinions are based on the fact that the ECB has not been discretionary enough. That means that the ECB should have operated in the financial markets more extensively and it should have bought government bonds of crisis affected countries or use some measures in order to prevent potential contagion. The ECB should have decreased the key interest rate and stimulate the economy (De Grauwe, 2011a: 1). Another Tudory involves the single European currency, the euro, operating within the eurozone. It can be considered the first of its kind. The euro is subject to centralized control of the ECB and not subject to the one fiscal policy. In other words, the fiscal policy in the eurozone is decided and is carried out at the national level of states. This may be regarded by some economists as one of the causes of current problems of the euro area (Bordo, Markiewicz, Jonung, 2011).

In both cases, the monetary policy may not have adequate capacity to respond to asymmetric shocks in various parts of the zone. At present, however, it is not logical to ‘cry over spilled milk’. On the contrary, it is essential to define, what can monetary policy of the ECB do to mitigate the current crisis? What is the reaction of the ECB and what are its short-term impacts? It is important to perceive the actual and acute problems, which require an appropriate response. This reaction should lead in a short-term relief following the principle ‘if the house is burning, it must be first extinguished as quickly as possible’. However, a longterm systematic solution has to be prepared in order to ensure a smooth and transparent functioning of financial markets, which would support long-term sustainable economic growth. Which long-term effects could be generated by the current monetary policy of the ECB? These questions are very difficult to answer.

The aim of the paper is not to find out whether there is the short-term monetary solution of the crisis, neither is it to compare the ECB’s monetary policy to other world central banks. The intent is empirically to point out how the monetary policy of the ECB has reacted to the crisis and how this monetary policy has been changing with the potential economic consequences. The first part of the paper analyzes the actual development of the European banking sector and the current development of monetary policy of the ECB. The attention is focused on the development of the interbank markets in the euro area and the interaction of the ECB in these markets. Further attention is also devoted to current issues of European banking sector with the concept of Financial Connectedness, which was developed by professor Yilmaz (2011: 1). The next part of the contribution

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3 It is appropriate to mention that if the situation in the system is unsustainable in both short and long term, it is necessary to let the house burn totally and build a new one, sustainable from the long-term point of view (i.e. change the whole system). From this perspective is interesting to ask: is there a time for a system change or not?
Zdeněk Pavlík analyzes the issues of the independence of the ECB and compares the conventional vs. unconventional ECB’s monetary policy with (in)sufficient sterilization of government bond purchases. The last part of the paper summarizes essential facts of that analysis.

1. Recent Development of the European Banking System and the Monetary Policy of the ECB

The primary objective of the ECB’s monetary policy is to maintain price stability while reflecting a broad consensus in society. This explanation could be very misleading from two points of view: (1) what is the definition of price stability and (2) what is a broad consensus in society? Thanks to the statistics (ECBa or Eurostat) which show the inflation (incorrectly defined as an increase in consumer price index), we could see that the inflation is very close to inflation target of the ECB. Then, it can be said that the ECB helps to reach the defined price stability. A broad consensus is based on the issue that maintaining stable prices is the best contribution the monetary policy could make to economic growth, creation of jobs and social cohesion (ECB, 2011: 7). But, in recent times, the current problems with debts of European ‘south wing’ and the connection with European banks have emerged. That causes substantial concern for the European financial stability. From that point of view the latest decisions regarding the monetary policy have been made by the ECB. This paper is not focused on such theoretical problems, but instead of it, it will analyze the development in the European banking sector and the behavior of the ECB in the time of crisis (empirical analysis).

1.1 Current Development in European banking sector (EBS)

European banks are experiencing hard times in connection with the debt crisis in the Eurozone. As mentioned above, the big European banks will with the highest likelihood have to raise an extra 108 billion EUR, resp. 114 billion EUR of fresh capital over the next six to nine months. Some reports show that it could be more than 200 billion EUR (the IMF report) or even 275 billion EUR to cover the gaps in bank’s balance sheets stemming from sovereign debt writedowns (Barker, 2011: 2). Current European problems regarding the huge Greek debt and the debt problems of others countries from the ‘south wing’ are demonstrated by the question: how much debt should be written off? According to the July agreement between European politicians and banks, it should have been a 21% write-off. It might not have been enough. Europe, led by Germany, was requiring to cut off
60% of Greek government debt, which would be equivalent to a 75–80% reduction in net present value. But the financial houses have offered only 40% write-off in net present value (Spiegel, Wiesman, Carnegy, 2011: 1). At the end, the compromise has been done and there has been a 50% write-off of Greek government bonds. This fact demonstrates huge problems present in the EBS, which are now outgrowing to other developed countries.

According to Yilmaz (2011) and his concept of the Financial connectedness (FC) of the EBS, stock prices of major European banks can be determined so that the EBS passes the period of high volatility and therefore a period of high risks in their activities. FC uses the concept of daily share valuation of 14 major European and Swiss banks in order to measure systematic risk within the EBS. In Figure 1 below, it is possible to observe the evolution of the index FC (as an indicators of the systemic risk for the European banking sector) for the period from Jan. 1, 2004 to Dec. 02, 2011.

The development can be considered as a quiet period from January 2004 (index FC started) to half of the year 2006. During this period the FC index rose above 70%. After this period the index became highly volatile. In May 2006 the Federal Reserve System decided to raise its key interest rate by 25 percentage points which might have impressed the direction of increased volatility in many stocks (not just shares, but also various asset classes). Once again there was a steady period, but not for long. In March 2007 first signs of problems appeared with substandard mortgages in the USA and also some groups of securitized assets. These problems were followed by a smaller liquidity crisis in August 2007, the ‘Black Monday’ January 21, 2008 on world stock markets and finally the collapse of Lehman Brothers on September 15, 2008. All of the aforementioned events always led to some increase in the index FC.4 They did not alter the fact that every negative event occurring with dramatically increased systemic risk in the European banking sector. After a calm, when the index value of FC was about 70%, it began to rise again in spring 2009. In May, however, markets calmed down with reaction to report on stress tests of U.S. banks, but at the end of the year began to appear full information about the current European debt problems. In May 2010, the FC index reached 87%, mainly because the market perceived the solution to Greece’s debt by the eurozone leaders rather negatively. In late 2010 and 2011 the index fell to FC of 75% in response to authorization of a rescue package in Greece. However, since the spring of 2010 the FC index did not get below 75%. With the greatest probability that the information have indicated that markets have been convinced for future bankruptcy of Greece, in the shape of debt write-off and the need to recapitalize some of the major European banks. Moreover, in summer 2011, when the ECB started to purchase Italian and

4 However, the index value is closer to 100%, thereby increasing its relatively lower range.
Spanish bonds, the index climbed to its highest ever value of 89% (September 7, 2011), which generated high systematic risk for the EBS.

**Figure 1: Index of total financial connectedness – FC in the EBS**  
(01/01/2004 – 12/02/2011)

The political uncertainty in Europe over the past few weeks has led to a strong negative impact on the confidence of the markets, especially in the banking sector. The mentioned increase in systematic risk in the EBS and a decline in share prices of European banks led to the fact that even the U.S. money market funds operating in the global currency markets limit the provision of resources for European banks. The first victim of a systematic increase in the risk in the European banking sector has been a French-Belgian group Dexia (Pignal, 2011). Figures 2 and 3 show the European bank’s exposure to the most problematic countries in the euro area: Greece, Portugal and Ireland. In the figures it can be seen that the German and French banks have had the greatest exposure to Greece, which together make up more than 50% of the total exposure of all banking institutions to Greece. Spanish and Italian banks have also held considerable

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5 In this atmosphere there have been some new critical comments of representatives of major financial institutions and banks toward the proposed regulation of financial markets. This may be a response to ongoing concerns that have large banking groups from the new stricter regulation and oversight of the banking sector. The fact that the European banking sector is going through a very difficult time and can be very difficult for them to control the expected Basel III to follow is analyzed in the report of the International Monetary Fund on global financial stability.
proportions, which in case of possible infection, respectively domino effect of default of Greece, could cause a very negative scenario for the European banking sector.

**Figures 2 and 3: Expositions of European banks to Greece, Portugal and Ireland (% and bln EUR)**

From the facts mentioned above, the European banking sector is certain that some European banks will have to be recapitalized, but in higher amount than is estimated by Europe politicians and IMF. What is the position of the European Central Bank?

1.2 The conventional monetary policy of ECB, has it been changed?

From the global perspective the economic growth has decelerated in recent months. The same development has taken place in Europe (in the eurozone respectively). According to the main composite index covering manufacturing and service industries it seems the eurozone was in a recession by 2011. This index also fell from 49.1 in September to 47.2 in October 2011 which was the lowest since July 2009. ‘The uncertainty provoked by the sovereign debt crisis has reached danger point’, warned Ch. Weil – economist at Commerzbank in Frankfurt (The Financial Times, 2011: 2). These facts and the information regarding the development of the European banking sector show that the eurozone has

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6 During last correction of the paper (July 2012), the recapitalization for the Spanish banks amounting 100 milliard EUR has been approved by the eurozone’s ministries of finances.
been facing financial instability. In the last quarter of the year 2011 the eurozone seems to be in the worst crisis since 1931. Senior European officials could not find any solutions, what has made the problems more problematic and financial markets have been full of tension.

Regarding the rate of inflation measured by harmonized consumer price index (HCPI), the situation seemed to be more skeptical for the ECB. In the last months the HCPI increased and it reached 3% in September 2011 (it can be seen in the Figure 4). Binding target for the European Central Bank is to maintain inflation within the range from zero to two percent (Kohout, 2011: 1). Should the ECB raise the key interest rate in such scenario?

The relatively stable development of the HCPI in the eurozone until the year 2006 can be observed in the Figure 4. In 2007 higher inflation came than the ECB expected and also the ECB’s reaction was clear. In Figure 5 is plotted that during the years 2006 and 2007 the ECB increased in the key interest rate eight times. It was the standard monetary policy which was made under ‘normal’ circumstances. The ECB raised the key interest rates, which would have caused the public and businesses to consume or invest in production less. People would have deposited more money into bank accounts or invested in government bonds – they would have saved more. Reducing demand would have slowed down economic activity and decreased the inflation at the same time. Price stability would have been maintained. This has been the theoretical monetary policy of an independent central bank.

**Figure 4: The inflation development in OECD countries, in the eurozone (annually; % 1999–2011)**

Source: OECD (2011); Eurostat (2011) and customization.
At the end of 2007 the key interest rate was at 4. Afterwards, the rate started to increase and in the half of 2008 this rate reached 4.25%. The situation turned around after the collapse of Lehman Brothers investment bank. On October 15, 2008 the ECB decided to decrease its key interest rate from 4.25% to 3.75% and the decreasing continued to 1.0% on May 1, 2009. This unprecedented reaction of the ECB to the financial crisis entailed a change in standard functioning of the independent central bank in Europe. Was it also standard monetary policy measure, when prices were falling dangerously and the ECB reduced rates, to encourage economic growth and to help to maintain the price stability again? Or was it something different? This question will be discussed in next chapter regarding independence of the ECB.

Before answering the question, it is important to see the development of the key interest rate set by the ECB. As can be seen in the Figure 5, the ECB raised the key interest rate on April 13, 2011. It seemed to be an action corresponding standard monetary policy according to monetary theory. But, after the collapse of Lehman Brothers, the ECB discovered that there could be more to central banking than price stability (De Grauwe, 2011). The reason was clear, the inter-bank markets dried out after the collapse of Lehman Brothers. In these times the ECB decided to increase liquidity by force to help the European banking system. The ECB did not hesitate to operate as a lender of last resort to the European banking system. The monetary theory of independent central bank was changed and the ECB forgot the fears of moral hazard, inflation, and the fiscal implications of its...
lending. Workers of the Czech national bank, who say that the theoretical studies do not confirm issues about the focusing by central banks on the financial stability and advocating only the price stability, have confirmed the changing development of the European monetary policy. But, they have also said that some empirical studies contradict these issues. The central banks changed the direction of monetary policy as its reaction to the financial distress (Baxa, Horváth, Vašíček, 2011). This empirical fact has been confirmed on Thursday December 8, 2011, when the ECB decided to decrease the key interest rate to its historical minimum 1.00%. It can be seen in the figure 5 again. The standard monetary theory maintained by ECB and shielded by ‘German’ national bank seemed to come to its end. Whereas the HCPI has moved to the 3% level, the ECB decreased the interest rates two times in one month (November 2011 and December 2011).

Besides decreasing the main interest rate the ECB announced other unconventional measures of its monetary policy: 1) the ECB also loosened collateral rules so that banks could get more liquidity from the ECB, 2) the ECB also announced two unlimited three-year loans for banks. ‘The measures should ensure enhanced access of the banking sector to liquidity’, the head of the ECB M. Draghi said (Thesing, Meier, 2011). From that point of view it is possible to answer the question regarding the reaction of ECB’s monetary policy: the ECB has been changing the strict conventional monetary position to the new unconventional monetary position of being the real lender of last resort. From that point of view professors P. De Grauwe (2011, 2011a) and Ch. Wyplosz (2011), who advocated more intensive monetary policy from the ECB, would be satisfied.

2. Loss of independence of the ECB – unconventional monetary policy of the ECB

In May 2010 the 27 member countries of euro area allowed and agreed to create the European Financial Stability Facility (EFSF). The EFSF was established as a legal instrument for maintaining financial stability in Europe. The mandate of EFSF has been to safeguard financial stability in Europe by providing financial assistance to euro area countries. EFSF has been backed by guarantee commitments from the euro area countries for a total of 780 billion EUR and has had a lending capacity of 440 billion EUR (EFSF, 2011). In connection with the monetary policy, the EFSF has been an agreement interpreted to allow the ECB to start purchasing the European government debts in the secondary market (Krakow, 2011: 456–479). The reason has been obvious, to decrease the government bond yields and to help European countries to maintain financing capacity. The ECB could not buy the government bonds of member countries, the purchase could now be processed through the EFSF. Namely, the ECB was
established in connection with the principles of the ‘new consensus macroeconomics’. According to these principles a monetary policy should be controlled by an independent central bank and essentially focused on control of an inflation (it has been enshrined in the Maastricht Treaty) (Perraton, 2011: 87).

Unfortunately, the European debt crisis has been deeper than expected and therefore could not be saved by the EFSF. Consequently, the ECB has started to act by using more unconventional monetary policy. After the collapse of the Lehman Brothers and especially after the Greek problems in May 2010 the things concerning the monetary policy providing by ECB has been changed. In May 2010 the sovereign debt crisis erupted. At that time the ECB hesitated whether it was the right time for buying sovereign debts. Should the ECB do so, it would have been the unconventional discretionary monetary policy based on providing the liquidity in the government bond markets. The ECB decided to do unconventional monetary policy. A new question appeared by the end of 2011: How and for how long would be the role of the ECB as a lender of last resort in the government bond market?

The figure 6 shows the CDS premia, Interest rates and Government debt to GDP ratio in selected countries from the eurozone. The following three issues should be pointed out:

1. The CDS premia on Government 5-Y bonds of France and Germany (the core of the eurozone) showed rapid increase. Germany’s CDS increased by 261% (from 75 in August 2011 to 271 in September 2011). And the France’s CDS increased by 86% (from 153 in August 2011 to 284 in September 2011).

2. The CDS premia on Government 5-Y bonds of Spain and Italy (the problematic countries for the stability of the eurozone) showed increase. Italy’s CDS increased by 31% (from 361 in August 2011 to 472 in September 2011). And the Spain’s CDS increased by 130% (from 357 in August 2011 to 823 in September 2011).

3. The CDS premia on Government 5-Y bonds of Portugal and Greece (the small problematic countries of the eurozone) showed low increase. But Ireland’s CDS premia during the same period recorded rapid decrease.

From the point of view of the three main issues mentioned above it can be said that at the end of 2011 the European sovereign debt crisis connected with European banking crisis deteriorated considerably and influenced the main core of the eurozone. In reaction to this deterioration, the most important meeting (the European summit) was held on December 9, 2011. One day after the event the main interest rate decreased to a historical minimum of 1.00%. The whole world was focused on the results coming from this summit. The specific expectations were connected with the European banks, because they have been facing three
main issues: 1) the liquidity issue, 2) the asset quality problems and 3) capital adequacy issues (El-Erian, 2011). The liquidity issues have been connected with shutting down the private sector financing and practically an immediate reaction into the real European economy. The asset quality problems were related to the sovereign debt difficulties (Greece, Ireland, Portugal, Spain, Italy and potentially France). And the capital adequacy problems which have been concerned the new banking regulation Basel III (more in Pavlík, 2011).

Figure 6: CDS premia, Interest rates and Govern. debt to GDP ratio (selected countries; 2009–2011)

<table>
<thead>
<tr>
<th>Country</th>
<th>CDS premia, Sep 09</th>
<th>CDS premia, Aug 11</th>
<th>CDS premia, Sep 11</th>
<th>Interest rates, Sep 09</th>
<th>Interest rates Sep 11</th>
<th>Government debt to GDP (2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>91</td>
<td>75</td>
<td>271</td>
<td>2.43</td>
<td>3.13</td>
<td>83.2</td>
</tr>
<tr>
<td>France</td>
<td>81</td>
<td>153</td>
<td>284</td>
<td>1.84</td>
<td>2.94</td>
<td>82.3</td>
</tr>
<tr>
<td>Italy</td>
<td>58</td>
<td>361</td>
<td>472</td>
<td>2.28</td>
<td>3.32</td>
<td>118.4</td>
</tr>
<tr>
<td>Spain</td>
<td>152</td>
<td>357</td>
<td>823</td>
<td>2.66</td>
<td>3.68</td>
<td>61.0</td>
</tr>
<tr>
<td>Portugal</td>
<td>87</td>
<td>914</td>
<td>1,066</td>
<td>4.36</td>
<td>6.14</td>
<td>93.3</td>
</tr>
<tr>
<td>Ireland</td>
<td>631</td>
<td>768</td>
<td>514</td>
<td>2.82</td>
<td>3.81</td>
<td>94.9</td>
</tr>
<tr>
<td>Greece</td>
<td>144</td>
<td>2,233</td>
<td>2,246</td>
<td>3.62</td>
<td>5.91</td>
<td>144.9</td>
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<tr>
<td>Difference (max – min)</td>
<td>573</td>
<td>1,975</td>
<td>1,975</td>
<td>2.51</td>
<td>3.19</td>
<td>83.9</td>
</tr>
</tbody>
</table>

Source: ECB (2011b); Eurostat (2011) and customization.
Note: Interest rates in percentages per annum; new business; CDS premia in basis points.

The alone assessment of the ECB coming from its member I. Visco has pointed out that the most important step has been done, namely that the European leaders have allowed the ECB to control the EFSF (and the ESM in the future). The influence from the ECB could lead to decrease in the yields of sovereign bonds, because it has been the biggest problem connected with the European debt crisis. Visco also stated that the EFSF and future ESM would be the instrument with obvious competences and would have possibilities to intervene. Visco also answered the question regarding whether is the ECB ready to be a real European lender of last resort. He answered by saying that it was important to understand Germans who are afraid of debt monetization, because of their historical experiences (Idnes.cz, 2011). The conclusion from that summit has seemed to be clear: ‘the ECB would not be the formal European lender of last resort, but practically it would be, because it could be allowed to purchase more sovereign debts throughout the EFSF or the ESM’. To sum it up, it would not be a ‘clear’
monetization of sovereign debt for Germany while it would be helping and France and other ‘southern wing’ countries at the same time.

3. Primary and secondary bond government market and the unconventional ECB’s monetary policy

Economic theory used to define the investments into the sovereign bonds as a risk-free. Following the events of European debt crisis that statement will not be true. Most of economic books will have to be changed and economic models will have to be innovated. In the future, this fact will have an impact on the real investment activity of pension funds, mutual funds, insurance companies, bank portfolios and also on individual investment behaviour. In the connection with the European debt crisis it is important to remind the difference between the primary debt market and secondary debt market. On the primary bond market only the government is allowed sell the bonds for the first time. The supply of government bonds is created on the primary market, but it is not inelastic, because the crisis has shown that the government cannot finance their deficit definitely (most of economists and worse politicians had believed in low dependence of needs of the bond selling on the interest rate from the debt).

The last European problem on primary market was recorded on November 23, 2011. On this day the German government failed to get bids for 35% of their 10-year bonds offered for sale. Total bids at the auction of securities due in January 2022 amounted to 3,889 billion EUR. It was out of a maximum target for the sale of 6 billion EUR (according to Bundesbank data). This event has helped to propel borrowing costs in Europe (Dobson, 2011). If the strongest Eurozone country has had this kind of difficulty with their issuance of bonds, most of investors would be afraid of an upcoming issuance auction in other European countries, including the ECB. This fact confirms the information about deterioration mentioned above, especially in connection with countries of southern wing.

Also, a future issuance of the European bonds would be very difficult. In the year 2012 only member countries of European Union would need to repay over 1,470 billion EUR ($1,100 billion) of debt and the most of it due in the first six months of the year. It is important to point out that European banks would be heavily dependent on the government help. They would have around 890 billion EUR ($665 billion) of debt coming due by June 2012 (Halligan, 2011). But the governments themselves will need to finance the following debts – in the figure 7 it can be seen bond issuance estimates of selected eurozone countries.

The figure 7 shows us that the gross debt issuance from the eurozone governments in 2012 would be continuing to remain at elevated level. In the year 2012 it should be up to 837 billion EUR, whilst in the year 2011 it has been around
836 billion EUR. From the perspective of the net issuance (gross issuance – redemptions) the fiscal policy seems to be restrictive and in connection with the crisis supportive, because the estimated drop in net issuance 51 billion EUR is driven by European government efforts to rein in their budget deficits (but the effect in gross terms is limited given an increase in redemption payments of about 53 billion EUR; excluding Ireland, Portugal and Greece). Regarding the ‘problematic’ countries supply conditions remain challenging with Italy facing refinancing pressure 193 billion EUR in 2012 (in 2011 it was 163 billion EUR) (HSBC, 2011: 1). It is clear from the figure 7 that Spain will be facing refinancing pressure 46 billion EUR in 2012 (in 2011 it was 45 billion EUR); Portugal, Greece and Ireland 46 billion EUR in 2012 (in 2011 it was 36 billion EUR). The core countries of the eurozone: Germany will be facing 157 billion EUR in 2012 (in 2011 it was 147 billion EUR) and France will be facing 100 billion EUR (in 2011 it was 94 billion EUR).7

**Figure 7: Bond issuance estimates in 2012 (selected countries eurozone; billion EUR)**

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<thead>
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<td>46</td>
<td>1</td>
<td>41</td>
<td>0</td>
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<tr>
<td>Italy</td>
<td>245</td>
<td>22</td>
<td>193</td>
<td>30</td>
<td>52</td>
<td>-8</td>
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<tr>
<td>Germany</td>
<td>182</td>
<td>-7</td>
<td>157</td>
<td>10</td>
<td>25</td>
<td>-17</td>
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<tr>
<td>France</td>
<td>195</td>
<td>-10</td>
<td>100</td>
<td>6</td>
<td>95</td>
<td>-16</td>
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<tr>
<td>Portugal</td>
<td>0</td>
<td>-7</td>
<td>10</td>
<td>1</td>
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<td>-8</td>
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<tr>
<td>Greece</td>
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<td>30</td>
<td>8</td>
<td>-30</td>
<td>-8</td>
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<tr>
<td>Ireland</td>
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<td>0</td>
<td>6</td>
<td>1</td>
<td>-6</td>
<td>-1</td>
</tr>
<tr>
<td>Eurozone</td>
<td>837</td>
<td>-6</td>
<td>618</td>
<td>63</td>
<td>219</td>
<td>-69</td>
</tr>
<tr>
<td>EZ-(PT,GR,IR)</td>
<td>837</td>
<td>1</td>
<td>572</td>
<td>53</td>
<td>265</td>
<td>-51</td>
</tr>
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<td>AAA-rated issuers</td>
<td>456</td>
<td>-21</td>
<td>303</td>
<td>20</td>
<td>153</td>
<td>-41</td>
</tr>
</tbody>
</table>

Source: HSBC and customization.

The ECB has been intervening in the secondary market (continuing buying and selling the government bonds according to demand and supply of market

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7 From commercial point of view it is important to add that the sovereign debt crisis is a key macro concern when companies are planning a refinancing of their debt. According to borrowers survey on the question: ‘What macro trends are affecting your plans to refinance?’, the 46% of respondents answered that it is sovereign debt crisis (for an comparison – the 33% respondents said that it is prolonged period of below normal growth; the 31% answered currency issues; just 15% answered concern of double-dip; and other answered 4%) (Debtwire/Remark, 2011).
participants. On December 8, 2011 the ECB used the emergency lending facility, which rose close to 9.4 billion EUR. This amount was the highest daily total since early March 2011. This information confirms the pointing the deepseaed banking sector distress included in the figure 1. Above all, such distress relates to a lack of trust. Banks in eurozone cannot raise cash and are afraid of lending to each other (Halligan, 2011). In consequence to the difficulties, the ECB decided to cut its key interest rate by 25 basis points to 1.00%, as was mentioned above (figure 5). What is more, the ECB has introduced three-year euro liquidity loans, decreased the reserve requirement by 50% (from 2.00% to 1.00%) and widened the collateral base in effort to ease funding strains for banks (Donovan, 2011). These measures setting by the ECB have been following up the non-standard coordinative action of the group world central banks from November 30, 2011 (the ECB, FED, BOE, BOC, SNB and BOJ), when the central bankers tried to promote the liquidity in the inter-bank financial markets (ECB, 2011d). It has been the unconventional reaction of pressures in global money markets connected with the European debt crisis with the aim to ease tensions in financial markets and to diminish the effects of such tensions on the credit supply to firms and households, in other words to promote economic activity in Europe (ECB, 2011d).

Figure 8 presents the total outstanding of the sovereign debt of selected countries in Europe and the amount bought by the ECB. The biggest concern for the eurozone is Italy, because Italy is the third biggest debtor in the world and first biggest in Europe. If it is compared to the amount of sovereign debt purchased by the ECB with total outstanding of sovereign debt of southern wing, the purchased amount by the ECB is negligible. Until November 7, 2011 the ECB has bought 188 billion EUR of sovereign bonds of southern wing, whilst the sum of these debts has been around 3,285 billion EUR. The question arises how would be the situation in a future, because the European debt and banking crisis will be continuing? With the highest likelihood the ECB would be losing its ‘traditional independence’.

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8  These central banks have agreed to lower the pricing on the existing temporary US dollar liquidity swap arrangements by 50 basis points so that the new rate will be the US dollar Overnight Index Swap (OIS) rate plus 50 basis points. This pricing will be applied to all operations conducted from 5 December 2011. The authorization of these swap arrangements has been extended to 1 February 2013. In addition, the Bank of England, the Bank of Japan, the European Central Bank, and the Swiss National Bank will continue to offer three-month tenders until further notice. As a contingency measure, these central banks have also agreed to establish temporary bilateral liquidity swap arrangements so that liquidity can be provided in each jurisdiction in any of their currencies should market conditions so warrant. At present, there is no need to offer liquidity in non-domestic currencies other than the US dollar, but the central banks judge it prudent to make the necessary arrangements so that liquidity support operations could be put into place quickly should the need arise. These swap lines are authorized through 1 February 2013.’ (ECB, 2011d).
To summarize, the ECB’s reaction to the European debt crisis contained the most important non-standard monetary-policy measures:

1. Cooperation with other central banks from December 30, 2011
   a) the ECB decided to establish a temporary network of reciprocal swap lines (it will enable to provide euro to central banks when needed and also to enable to provide liquidity operations in Japanese yen, Sterling, Swiss francs and Canadian dollars – in addition to the existing operations in US dollars),
   b) the ECB will regularly conduct an American dollar liquidity (the repurchase operations against collateral and as fixed-rate tender procedures with full allotment with a maturity of around one week or three months (3M) at the new pricing – the operation schedule were published on the website of the ECB),
   c) connected with previous point the initial margin for 3M american dollar operations is reduced from 20% to current 12% and weekly updates of the EUR/USD exchange rate is introduced in order to carry out margin calls (these changes were effective from December 7, 2011) (ECB 2011d).

2. Decrease of its key interest rates in November 2011 and December 2011 (see figure 5) accompanied by the nonstandard measures following up the first point above (three-year euro liquidity loans, decreased the reserve requirement in 50% and widened the collateral base in effort to ease funding strains for banks – see the note 8).
At this place is important to mention the issues connected with government debt (fiscal policy respectively) and its impact on longterm economic growth and longterm interest rates. According to Checherita and Rother (2010): 'government budget deficits are found to be linearly and negatively associated with the growth rate of both real and potential output'. The fact that the change in the debt ratio and the budget deficits are linearly and negatively associated with growth (and with the long-term interest rates) may point to a more detrimental impact of the public debt stock even below the threshold. Hence, targeting a higher debt level to support growth is not a policy option. Any policy with such a target would reduce the leeway of governments before the debt burden has an unmistakably adverse growth impact. In the current economic environment, the results represent an additional argument in favour of swiftly implementing ambitious strategies for debt reduction. If policy makers let high debt ratios linger for fear that fiscal consolidation measures will be unpopular with voters, this will undermine growth prospects and thus will put an additional burden on fiscal sustainability.’ (Checherita, Rother, 2010).

From that point of view ‘the fiscal and monetary policy mix’ which would be focused on promoting of the economic growth could be very questionable. Moreover this is issue is not main objective of this paper.

4. The monetary-political sterilization of bond purchases and the unconventional ECB´s monetary policy

In theory, the ECB was not designed to act as a lender of last resort by limiting its monetary policy to one goal of preventing ‘inflation’. As the ECB was established, it was expected to guard the euro but it was not given the means to do so effectively. However, recent crisis showed that there could be a certain probability that the euro would collapse in current situation (InTrade has provided the probability of the collapse of the eurozone at the beginning of December 2011: 3.5% till the end of 2011, 37.0% till the end of 2012, 50.5 % till the end of 2013 a 62.5 % till the end of 2014) (InTrade, 2011). Most economists have pointed out that the main problem connected with resolving the crisis is it that ‘the ECB cannot or will not go all in like the Fed did’ (McTeer, 2011). The same economists have said that the trend, which the latest economic data coming from the eurozone countries have shown, would lead to a significant recession. It’s not difficult to conclude that the recession makes unsterilized purchases of government bonds much less likely to be inflationary. They also advocate the ECB to intervene to save the euro. The ECB should not be excessively concerned that bond purchases would lead to inflation without sterilization. According to McTeer and other economists, central bank asset purchases during a crisis are much
less likely to create inflation. The factors making that so are the same factors that make the absence of asset purchases so destructive. They also advocate expanding of the ECB’s balance sheet (McTeer, 2011).

Another question regarding the ECB’s monetary policy in the secondary market are the purchases of European government bonds and their sterilization. At the beginning of the interventions regarding buying of sovereign bonds in the secondary market, the ECB has decided to sterilize these interventions. Sterilisation means to compensate the purchases of the sovereign bonds through sales other bonds or sales other money market instruments to keep the overall money supply unaffected.

From this point of view the purchases of the sovereign bonds have been defended that these have not been quantitative easing. But the credibility of the overall announced measures for sterilizing the unconventional monetary policy is questionable. If the ECB issued its own debt, the sovereign bonds would become less attractive, which would help to increase yields for the sovereign bonds. Furthermore, these processes would contribute to a huge transfer of sovereign risk into the ECB’s balance sheet. For example, offering time deposits to European banks would contribute to this source of transfer.

At the same time, it is vital to analyze how the sovereign purchases have emerged. The ECB has been functioning as a fiscal agent in the eurozone, because the ECB has levied the indirect taxes on the European creditors throughout higher bond yields, should it help to support European governments in the emergency situation. The ECB has been producing the credit financing in a more expensive process than, when it has been setting the higher interest rates by chasing the reserves back.

Also, the sterilization of the purchases of sovereign bonds has started to be problematic, because the ECB has been unable to fully sterilize the supply of liquidity. The ECB has tried to sterilize the reserves of total 207.5 billion EUR within the 7-day tender, which has corresponded with the accumulated volume of repurchased bonds, and thus supplied liquidity since May 2010 when the ECB purchases of government bonds started. But only 85 European banks responded in this tender. They have offered a total amount of 194.2 billion EUR. For the first time since the launch of Italian and Spanish debt buyout the reserve demand failed to satisfy the bid by the ECB. As mentioned above regarding sterilization, the ECB is trying to absorb the same amount of liquidity that the market get

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9 In previous auctions since the beginning of November in the first 7-day operations of the 8th November bid-to-cover ratio reached 1.17 at 214.8 billion offer and use 183 billion to marg. Rate 0.69%. On 15th November the bid in amounted to 260.5 billion in the use of 187 billion EUR and marg. rate 0.65%. On 22th November the ECB 194.5 billion won in offering 233.1 billion and marg. Rate 0.63%. In today’s tender, but the demand has fully covered the range of 194.199 billion EUR at marg. rate 1.25%, which means satisfying 95% of the planned liquidity withdrawal.
through selling of sovereign bonds each week. The gap in full sterilization creates space for future pressure on the price stability. Full effect of sterilization of liquidity in the past was unsuccessful several times in a past, but this has been the first time since the program has been extended for the purchases of Italian and Spanish government bonds (it began in August 2011). M. Schubert, economist at Commerzbank in Frankfurt in connection with this sterilization pointed out: ‘It’s just another proof of how precarious situation exists in the market. Surely at this point, banks hold more cash than they need. It is therefore necessary to tender for the failure to pay extraordinary attention’ (Patria, 2011). The author of this paper agrees with the Schubert’s words, but from a slightly different perspective. The author agrees with the words of O. Issing, the former central banker at the German Bundesbank and currently the president of the Center Financial Studies in Frankfurt, who has criticized the adoption of the political role of the ECB through the interventions in the bond market. Issing has pointed out that the independent of the ECB must remain out of political decisions. Once the ECB starts to work politically, then it would never get rid of political decision-making process. It means questions like: as extended, under which interest rates or for each country.

Interventions in the bond markets by the ECB could temporarily help, but in the essence they are wrong. Already they have raised the moral hazard. Part of markets started believing that the ECB that could eventually save the peripheral economies of the eurozone, especially the significant economies like Italy and Spain. Issing has added: ‘But what made the decision by the ECB with the market?’ When particular long-term interest rates on Italian debt went up, Berlusconi’s government in both houses of parliament founded consensus on the reform package in just three days. But, what has happened after the intervention of the ECB? The reforms have slowed down (CNB, 2011c). The data from the markets regarding the auction of five-year Italian bonds (interest rates have been at historic highs – 6.47%) on December 14, 2011 confirms a moral hazard, because source from the market have indicated that the ECB has again intervened this week (Saraiva, Mnyanda, 2011).

Conclusion

The entire global financial system, mainly Europe, has been currently influenced by the European debt and banking crisis. From the facts regarding the financial connectedness and the current situation in the European banking sector it should be clear that some European banks will have to be recapitalized. It is obvious that the European banking sector will face difficulties during the upcoming the year 2012. This reality has been confirmed by the nonstandard
measures from the side of the ECB in the European financial markets. The problems have mainly emerged from the connection of the European banking sector with sovereign bond markets. This has been the supreme cause of the European debt and banking crisis during the end of the year 2011.

During the European debt and banking crisis the ECB decided to ensure orderly transmission mechanism of the monetary policy. One of the solutions to the crisis has been the purchasing of European sovereign bonds. Since the interventions regarding purchasing sovereign debts have been limited to the secondary market, the ECB did not violate the treaty from the law point of view. Economically, however, the ECB has been buying the sovereign debt, which means that the ECB ‘offended against a spirit of a central bank based on prohibiting bail-out of government deficits or debts’. The ECB has actually become more politically dependent. The purchases have been working throughout the Securities market programme\(^ {10} \) whose basic aim would be to get spreads down and wipe out any shorting interest from a long-term perspective (Belke, 2011: 4–5). Also the ECB confirmed the hypothesis that it has changed its conventional monetary policy focusing on price stability using the inflation targeting mechanism towards the unconventional policy with long-term inflationary economic pressures. Belke concluded that the ECB would automatically transform into a fiscal agent of the eurozone countries during the crisis while damaging the reputation and the credibility of the ECB as an institution in the long run (Belke, 2011: 13).

With the highest likelihood, the ECB will be allowed to buy the debts of southern countries or other European countries in difficulties. What is the risk of this monetary policy? This monetary policy is the monetization of the government debt with the most important risk connected. It is higher inflation measured by HCPI (by another prices in the European economy respectively). Finally, all European people would pay this new unconventional monetary policy. It is important to say that people would pay for it differently. It would lead to further widening of the gap between rich and poor, since inflation is the worst of all taxes. From that point of view the inflation would affect mainly the poor and middle class people. This is inevitable, but at present invisible fact.

Finally, as a more psychological and philosophical issue, it is clear that the European central bankers, all European bankers and most of European politicians are afraid of losing their positions potentially emerging from crash of the eurozone, so they would like to see the massive interventions in the sovereign bond markets and further backing up of weak sovereign debt. They will advoca-

\(^ {10} \) ‘Under the terms of this Decision, Eurosystem central banks may purchase the following: (a) on the secondary market, eligible marketable debt instruments issued by the central governments or public entities of the Member States whose currency is the euro; and (b) on the primary and secondary markets, eligible marketable debt instruments issued by private entities incorporated in the euro area.’ More information in ECB (2011e).
te this process by saying that austerity measures are inevitable and necessary, because we cannot afford to see the collapse of the European monetary union in a panic, which would have tremendous consequences. There is a high probability that from this last mentioned point of view the future monetary policy of ECB would be carried out.
References:


Summary: The Monetary Policy of the European Central Bank in the Time of Crisis: The Current Empirical Analysis

This paper investigates the monetary policy of the European Central Bank in the time of the financial, economic and European debt and banking crisis. This paper focuses on the actual issues connected with the debt and banking crisis in Europe. The attention is devoted to the risk development in the European banking sector and the development of the monetary policy of the ECB. The empirical analysis of the ECB’s monetary policy points out the systematic change in its behavior, which means that the ECB has been more focused on the financial stability of the European banking sector instead of the standard aim regarding the price stability. The results of the paper show how the monetary policy of the ECB is more and more unconventional with a decreasing rate of independence. This fact would have a significant impact on a future development of the European banking sector and the European economic activity.

Keywords:
Monetary policy, Interest rates, European banking sector, ECB, Crisis, Independence, Eurozone