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# THE INTERPLAY OF ECONOMIC REFORMS AND MONETARY POLICY THE CASE OF THE EURO AREA

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and Francesco Paolo Mongelli



In 2012 all ECB  
publications  
feature a motif  
taken from  
the €50 banknote.



NOTE: This Working Paper should not be reported as representing the views of the European Central Bank (ECB). The views expressed are those of the authors and do not necessarily reflect those of the ECB.

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## **Abstract**

The world has been struck by a mutating systemic financial crisis that is unprecedented in terms of financial losses and fiscal costs, geographic reach, and speed and synchronisation. The crisis from August 2007 to date can be divided into three main phases: the financial turmoil from August 2007 to the collapse of Lehman Brothers; the global financial crisis from September 2008 until spring 2010; and the euro area sovereign debt crisis from spring 2010 to the current period. While each phase has brought significant challenges, the current sovereign debt crisis has been the most critical stage for the euro area. It has brought unprecedented challenges for the monetary union and triggered extraordinary adjustments in both monetary policy and institutional arrangements at the euro area level. The purpose of this article is to outline the features of each crisis phase, to describe the actions taken by the European Central Bank (ECB) during each phase and to explain the rationale for such measures. It also discusses the need to strengthen further the economic union in order to guarantee the sustainability of the monetary union of the euro area. In this respect, it is argued that the recent institutional adjustments made at the EU level would have been necessary independently of the financial crisis.

**JEL classification:** D78, E52, E58, G01 and H12

**Keywords:** Monetary policy decision-making, Eurosystem, Financial crisis, Financial and Institutional reforms.

## Non-Technical Summary

The world has been struck by a mutating systemic financial crisis that is unprecedented in terms of financial losses and fiscal costs, geographic reach, and speed and synchronisation. The crisis can be divided into three main phases: the financial turmoil (9 August 2007 to 14 September 2008), the global financial crisis (15 September 2008 to 7 May 2010) and the euro area sovereign debt crisis (8 May 2010 to the present). During the first two phases of the crisis the challenges faced by the European Central Bank (ECB) were not that different from those faced by other major central banks. We devote more attention to the third phase of the financial crisis that started when the euro area environment deteriorated dramatically and the euro area became the epicentre of the global financial crisis. This article provides a systematic account of the financial crisis until mid 2012 from the monetary policy viewpoint.

This article outlines the features of each phase of the crisis, describes the responses of the ECB, and explains the rationale for the main measures. Emphasising the natural correlation between financial, fiscal and price stability, the article also illustrates the need to strengthen the economic union in order to guarantee the sustainability of the monetary union.

The rapid contagion across so many euro area countries – but also from the sovereigns to the banking system and vice-versa in a negative feedback loop marked by rising spreads and downward reassessment in credit ratings – has been a rude, sudden and largely unexpected awakening for policymakers, market participants, and the public at large.

Both the conduct and the implementation of monetary policy were drastically affected and the ECB complemented its standard measures (namely control over a set of key interest rates) with diverse non-standard measures to directly tackle the increasing loss of confidence, jumps in risk aversion, and resulting malfunctioning of various financial market segments. The aim was to preserve the transmission along the yield curve of monetary policy stance decided by the Governing Council of the ECB.

Yet it was clear that the actions of the ECB/Eurosystem would not suffice, and that the root causes of the crisis had to be tackled. In particular, it became clear that exiting will depend in particular on the success of the economic and institutional reforms that are currently under way: thus the transformation of the euro area. Such reforms were necessary in several countries irrespective of the crisis, but the crisis has been the catalyst for change. Thus, it is important to keep in mind that the measures of the ECB/Eurosystem have been effective and powerful to maintain price stability but are not a substitute for structural reforms.

While we do not yet know the full economic and financial legacy of the crisis, the sovereign debt crisis of the euro area has accelerated the process of strengthening EU-wide institutions as well as fiscal cooperation: these are the necessary ingredients to ensure the stability and success of EMU and ultimately sustained growth over time. The various reform processes must be given the time and confidence needed to display their effects.

## 1. Introduction

With the benefit of hindsight, the 2007-2012 financial crisis can be divided into three main phases: the *financial turmoil* (9 August 2007 to 14 September 2008), the *global financial crisis* (15 September 2008 to 7 May 2010) and the *euro area sovereign debt crisis* (8 May 2010 to the present). In the first two phases euro area sovereigns were not under threat and their spreads remained relatively narrow (but wider than before the crisis). Certain European banks faced financial difficulties, but overall the banking system held up. While the economic fallout from the crisis was significant, the banks were adequately buffered by automatic stabilisers, government support measures and accommodative economic policies. Therefore, in the first two phases of the crisis the challenges faced by the European Central Bank (ECB) were not that different from those faced by other major central banks. Internationally, the G20 played a useful role in coordinating global policy responses, and significant changes were made to the international financial architecture, including an enhanced role for the Financial Stability Board, a redrafting of Basel III regulations and the establishment of the European Systemic Risk Board (ESRB) at the EU level.

The euro area environment deteriorated dramatically in spring 2010 with the emergence of the *euro area sovereign debt crisis*. Various fault lines that had existed since the launch of the euro – namely weak public finances in a group of euro area countries, persistent imbalances in another overlapping group and slow productivity growth in various others – were exacerbated by the financial crisis, notably through a noisy feedback loop between bank solvency and concerns about public finance sustainability. This stage of the crisis brought new challenges, which required new measures from the ECB as well as all other policy makers. The crisis has emphasised the interplay between economic reforms, institutional framework and monetary policy.

The purpose of this article is twofold. First, we describe the evolution of the financial crisis, and review and explain the rationale behind the measures taken by the ECB in each phase of the crisis. Second, we discuss why stronger economic and institutional reforms have become increasingly necessary – as well as acceptable – during the third phase of the crisis. The ECB and the Eurosystem have been among the active advocates of such reforms.

The article is organised as follows. Section 2 discusses the motivation and rationale for the ECB's actions during the various phases. Section 3 draws some lessons regarding the roles of the central banks and fiscal authorities in the euro area. Section 4 outlines EU institutional adjustments, including the creation of the ESRB and the European Banking Authority (EBA), as well as other supervisory authorities. We argue for the necessity of reforms that are currently taking place at both the national and supranational level in order to remedy the various failings and complete the institutional setting of Economic and Monetary Union (EMU). Finally, Section 5 offers some concluding remarks. As the crisis is ongoing, our remarks are still preliminary.

## **2. The ECB's actions during the 2007-2012 financial crisis and their rationale**

Both the conduct and the implementation of monetary policies have been drastically affected by the financial crisis. The crisis has forced all major central banks to deploy their full range of policy tools and instruments, and to widen it during the various phases. Central banks also strengthened their communication to explain to the public the aim of sometimes unprecedented policy measures.

Like other major central banks, the ECB has complemented its standard measures (namely control over a set of key interest rates) with non-standard measures to directly tackle the increasing loss of confidence, jumps in risk aversion, and resulting malfunctioning of various financial market segments.

Since the start of the financial crisis (i.e. from 9 August 2007) these measures have been used in parallel with the steering of very short-term interest rates, which is the focus of monetary policy decisions in normal times<sup>5</sup> (i.e., the period before August 2007). They are by nature “non-standard” – but some call them “unconventional” or “exceptional” – in the sense that their existence is closely linked to the existence of a crisis: they would not be needed in presence of well-functioning financial markets. In practice, their purpose is to preserve the transmission along the yield curve of monetary policy stance decided by the Governing Council of the ECB, as signalled by the key ECB interest rates, which is aimed at delivering price stability in the medium term.<sup>6</sup>

On this basis, the overarching goal pursued by the ECB, through the various non-standard measures since August 2007, has been to adjust its responses to specific (evolving) financial market malfunctioning. Due to the importance of banks in the financial system of the euro area this malfunctioning was the primary target of these measures.

### **2.1 The financial turmoil: 9 August 2007 to 14 September 2008**

Although some warning signals were already perceivable in the stock market in July 2007, the current financial crisis became manifest when one of the most active money market makers in the euro area decided to freeze redemptions for three of its investment funds owing to its

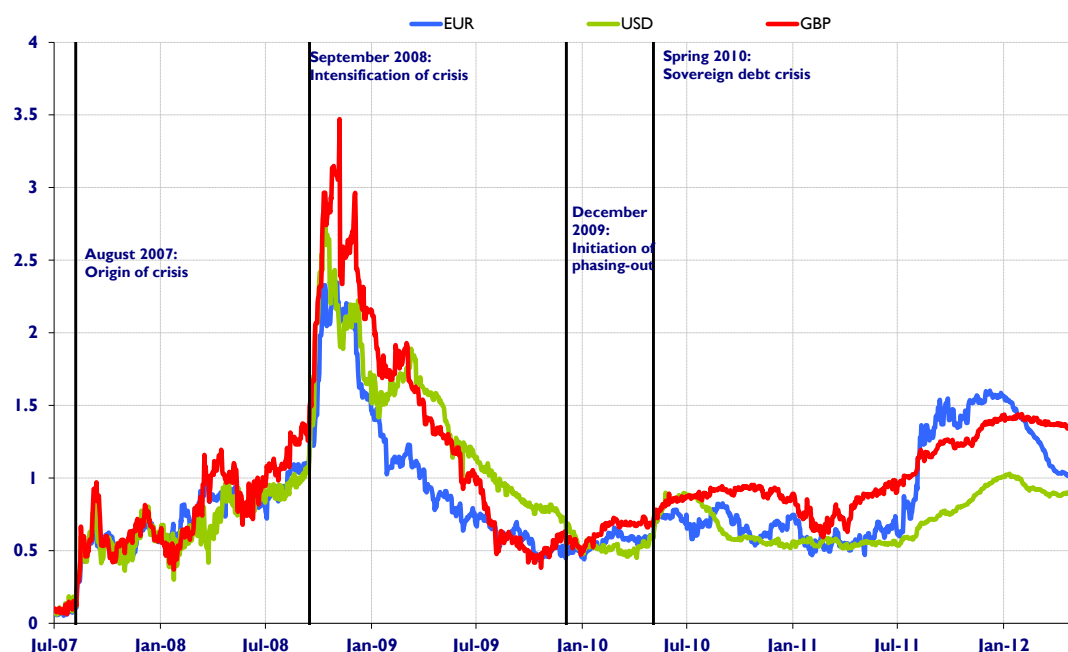
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<sup>5</sup> In practice, the injections of liquidity by the ECB before the crisis aimed to supply the money market with the short-term funds necessary for the banking system to operate smoothly and for very short-term money market interest rates (especially the euro overnight index average – EONIA) to remain appropriately aligned with the monetary policy stance signalled by the Governing Council. In this sense, these injections targeted neutral cash conditions in the money market over the whole reserve maintenance period. See ECB (2005) for more details.

<sup>6</sup> It is important to note that one of the legacies of the crisis is in fact a debate about the monetary policy paradigms of the future, as well as the shape and toolkits of central banks' operational frameworks. We do not address these subjects in this article. For reference see Borio (2011) and Buitier (2010).

inability to correctly price them.<sup>7</sup> The consequent widening of money market spreads<sup>8</sup> – between the (unsecured) interbank offered rates and the (secured) overnight interest swap rates – across major economies translated into stress for market participants worldwide (Figure I). With the benefit of hindsight, it could be argued that the underlying “confidence crisis” in this first phase reflected mostly uncertainty among market participants to meet liquidity needs in a timely manner through a continued access to interbank transactions (due to a lack of access to market liquidity and/or potential non-repayment by counterparties of pending loans).

**Figure I - Money market spreads in the euro area, United Kingdom and United States**



Note: Weekly averages in basis points. Spread between the offered interbank interest rate (EUR-/LIBOR) and the corresponding overnight interest swap rate for a 3-month maturity. Sources: Thomson Reuters, ECB.

During this first phase, it is worth recalling that the economic outlook in the euro area was still viewed as relatively robust (with risks to price stability seen more on the upside) while the main

<sup>7</sup> With the rapid increase in delinquency on subprime products, the real value of some off-balance sheet instruments funded by special purpose vehicles was questioned. Some market participants also reported a discrepancy in some contracts between VaR estimations and legal clauses on the various tranches of leveraging packages (e.g. asset-backed securities (ABSs), asset-backed commercial papers (ABCPs), collateralized debt obligations (CDOs), mortgage-backed securities (MBSs)). It also appears now that the impact of these problems on money market functioning was increased by two developments in the banking industry, namely the move to an ‘originate and distribute’ model (i.e. issuing loans and then repackaging them to transfer the risks to third parties) and the increasing importance of shorter-term funding of banks’ assets. See Brunnermeier (2009).

<sup>8</sup> Note that the term ‘money market’ in this paper refers exclusively to interbank transactions through which banks mutually lend and borrow money at various time horizons: i.e., from overnight to one-year maturity. In the ‘unsecured segment’ of the money market, transactions are not pledged against collateral. Hence, this is the segment most exposed to losses of confidence, and/or rises in risk aversion. By contrast, in the ‘secured segment’, interbank transactions are collateralised. In the former segment, the representative interest rates are the Euro Overnight Index Average (EONIA) rate for the overnight maturity and the Euro InterBank Offered Rate (EURIBOR) for maturity from 1- to 12-month horizons. In the latter segment, the representative interest rate is the euro repo rate from overnight to 12-month maturities. For a detailed description see Durré and Nardelli (2008).

concerns of market participants related to possible liquidity shortages. There was even talk of a potential “decoupling” from the economic slowdown unfolding in the United States (see Wyplosz (2009)). In this context, the monetary policy stance of the ECB was broadly maintained (with only a 25 basis point hike in July 2008 to contain upside risks to price stability) as price developments were expected to be in line with price stability over the medium term or at risk on the upside. The goal of the ECB’s policy during this phase was to reassure market participants about their continued access to liquidity through more refinancing operations, while maintaining balanced liquidity conditions over the reserve maintenance period<sup>9</sup> on average. Specifically, the distribution of liquidity by the ECB and its timing were adjusted to the lower elasticity of liquidity demand due to stress conditions.<sup>10</sup> In short, the ECB facilitated the front-loading of the fulfilment of reserve requirements while steering the overnight interest rate (EONIA) close to the relevant key policy rate, namely the minimum bid rate. The latter was achieved through more frequent bi-directional fine-tuning operations (i.e. both liquidity-providing and liquidity-absorbing operations) on top of the regular fine-tuning operation on the last day of the reserve maintenance period to absorb excess liquidity. In light of growing distortions in the term segments of the money markets, the ECB also gradually increased the weight of its longer-term refinancing operations, to eventually reach two-thirds of the total refinancing amounts to banks at the end of this first phase (against only one third on average before the crisis).

It is important to note that this phase also marked the start of unprecedented cooperation on liquidity provision in foreign currencies among the major central banks, in particular the ECB, the US Federal Reserve and, later on, the Swiss National Bank. The goal was to alleviate growing tensions in the foreign exchange swap markets.<sup>11</sup> While the composition of the asset side of the ECB’s balance sheet was affected by the introduction of non-standard measures (with a shift from short-term to longer-term loans), its size remained broadly unchanged, as shown in Figure II.<sup>12</sup>

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<sup>9</sup> The term ‘reserve maintenance period’ refers to the period during which financial institutions have to hold compulsory deposits on accounts with their respective national central bank of the Eurosystem, i.e. the so-called reserve requirements. This period lasts generally four weeks.

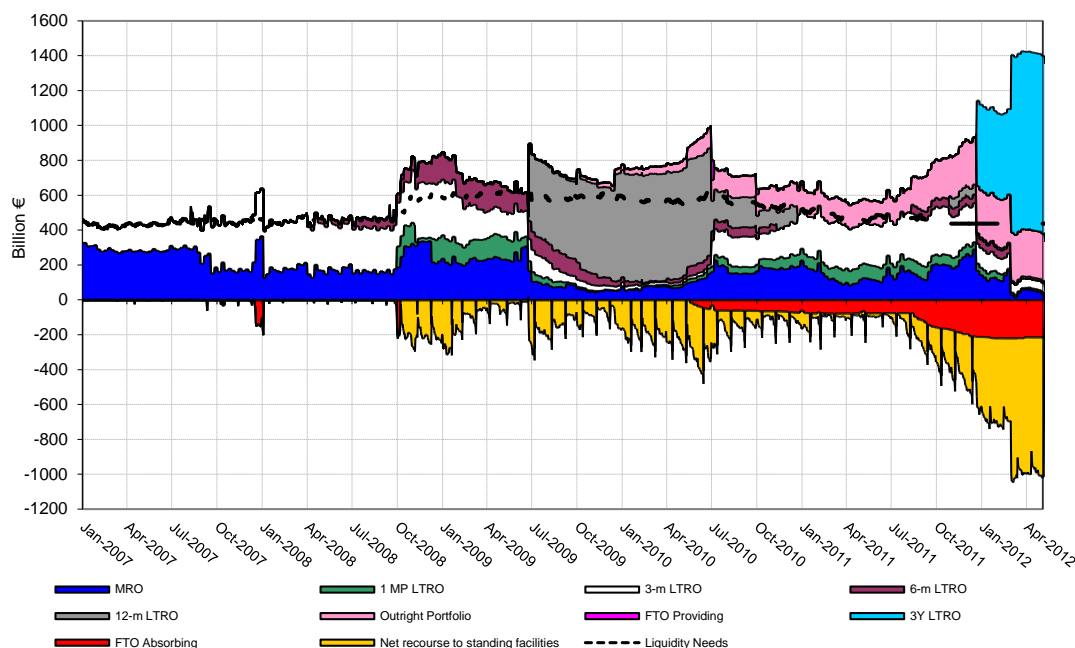
<sup>10</sup> In normal times, demand for central bank reserves is less elastic only towards the end of the reserve maintenance period, i.e. when reserve requirements have to be met. In the crisis, given the uncertainty of market participants about accessing market liquidity, this phenomenon has occurred over the entire reserve maintenance period on average (i.e. including at the very beginning) owing to the greater sensitivity of market participants to liquidity shocks.

<sup>11</sup> Towards the end of 2007 various euro area banks, with reduced or no access to the US money market, were tending to bid more aggressively at the ECB’s refinancing operations before entering into swap transactions to convert the euro into dollars and send them back to their US branches.

<sup>12</sup> During this phase there was almost no excess liquidity: the net recourse to the standing facilities (i.e. the difference between the amounts in the marginal lending and deposit facilities) was relatively small, i.e. a daily average of around EUR 0.25 billion for most of the maintenance period, with a peak of EUR 1.5 billion during the last week. See Drudi et al. (2011) for an earlier account.



**Figure II - Outstanding open market operations of the Eurosystem (in EUR billions)**



Note: MRO referred to in total ECB's refinancing amounts provided through the weekly Main Refinancing Operations. Similarly, 1-maintenance period (MP) Longer-Term Refinancing Operations (LTRO), 3-m LTRO, 6-m LTRO, 12-m LTRO and 3-y LTRO denote the amounts provided by the ECB to banks through refinancing operations with a maturity of respectively one month, three months, six months, twelve months and three years. Outright portfolio refers to in the amounts of asset purchases through the covered bond purchase programme (CBPP) and the securities market purchases (SMP). Fine-tuning Operations FTO Providing/Absorbing includes all (respectively providing and absorbing) fine-tuning operations (from overnight to 1 week maturity). Net recourse to standing facilities corresponds to the total amounts at the ECB deposit facility minus the amounts provided through the marginal lending facility. Liquidity needs correspond to the total needs of banks, namely the reserve requirements plus the autonomous factors and the net financial assets. Source: ECB (2011).

## 2.2 The Great Recession: 15 September 2008 to 7 May 2010

The financial crisis intensified and spread around the world after the bankruptcy of the company Lehman Brothers Ltd on 15 September 2008. This collapse had a huge impact on banks' trading behaviour for at least two reasons. First, given the role of Lehman's signature in credit derivatives contracts, the reliability of various market instruments (such as those providing insurance, e.g. credit default swaps) was again questioned, while solvency concerns in the market skyrocketed. Second, the widespread belief that certain organisations were 'too big to fail' vanished, making each institution feel vulnerable. The illiquidity situation (combined with insolvency concerns) of some big United States (US) institutions (such as the insurance group AIG) in the aftermath of the Lehman collapse simply exacerbated fears among market participants. The prevailing market sentiment was that, despite the interventions of central banks, available liquidity might not suffice to meet banks' liquidity needs and hence avoid a prolonged illiquidity situation leading to insolvency. The immediate result of these beliefs was liquidity hoarding by market participants, leading to a breakdown of all segments of the euro area money market on 30 September 2008. The collapse of Lehman Brothers also had a negative impact on the confidence of agents in the

real economy, who revised their plans for production, investment and consumption substantially downwards.<sup>13</sup>

On the account of both the money market breakdown and the gloomy economic outlook (marked by growing concerns of a credit crunch), major central banks around the world both cut policy interest rates (standard measures) and increased massively their intermediation role by expanding non-standard measures (in the form of large-scale short-term and longer-term refinancing operations) and conducted programmes to purchase private securities.

In the specific case of the ECB, first, the policy rate – namely the minimum bid rate/fixed rate on the main refinancing operations – was cut in a sequence of steps from 4.25% to a record low of 1% on 13 May 2009. Second, unlimited liquidity was guaranteed through the introduction of the fixed rate with full allotment procedure applied to all refinancing operations.<sup>14</sup> Third, between October 2008 and January 2009 the interest rate corridor defined by the ‘standing facilities’<sup>15</sup> was narrowed to 100 basis points<sup>16</sup> (see Figure III). Fourth, the eligibility criteria for collateral were temporarily extended and, in addition, the credit threshold for eligibility was lowered from A- to BBB- for marketable assets (except for asset-backed securities) and non-marketable assets (with an additional haircut). Fifth, international coordination with other central banks was strengthened. Sixth, the ECB continued to provide liquidity in foreign currencies, most notably US dollars from its own reserves. Despite some (albeit modest) improvements in some money market segments, the ECB also decided to establish a monetary policy ‘outright portfolio’ – i.e. portfolio of assets through outright purchases for the purpose of monetary policy – with a covered bond purchase programme (CBPP) in the amount of EUR 60 billion starting in July 2009.<sup>17</sup>

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<sup>13</sup> The downward adjustment of production in some industries (e.g. car production) was exceptional by historical standards in both speed and magnitude. See for instance the economic reports of the European Automobile Manufacturers’ Association (ACEA) for the full year 2008 and subsequent years available at [http://www.acea.be/collection/industry\\_and\\_economy\\_economic\\_report/](http://www.acea.be/collection/industry_and_economy_economic_report/).

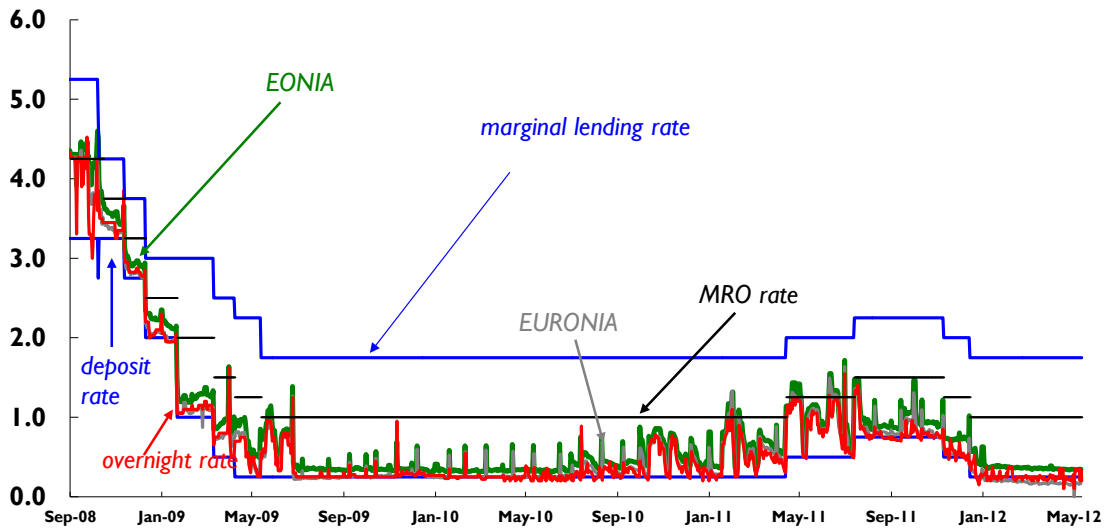
<sup>14</sup> Fine-tuning operations were also discontinued, except for that on the last day of the reserve maintenance period.

<sup>15</sup> The term “standing facilities” refers to the two facilities available within the Eurosystem’s operational framework aimed at either providing (through the so-called ‘marginal lending facility’ at a rate higher than the main policy rate) and/or absorbing (through the so-called ‘deposit facility’ a rate lower than the policy rate) overnight liquidity. See ECB (2011) for further details on the design of the Eurosystem’s operational framework.

<sup>16</sup> After a transitory restoration to 200 basis points, the corridor was narrowed again to 150 basis points when the interest rate on the main refinancing operations was decreased to 1%, in order to ensure a positive interest rate on the deposit facility.

<sup>17</sup> Growing tensions (reflected in covered bond spreads against the swap rate that peaked in April/May 2009) were due to the financial difficulties of some big players in the market for euro area banks' debt instruments.

**Figure III - ECB interest rates and money market rates**



Note: Daily observations, percentages per annum. Sources: ECB, Thomson Reuters.

Through the combined effects of the standard and non-standard measures, interest rate spreads between the unsecured and secured segments of the money market decreased significantly. In September 2009 they reached their low since the start of the crisis in August 2007. Similarly, trading volume in the repo (secured) market returned to normal (albeit more volatile) levels, while activity in the short-term unsecured segments gradually improved.

These positive signs led the ECB to consider gradually removing some non-standard measures if they proved to be no longer necessitated by market conditions. During this second phase, both the composition of the ECB's assets (with the increased weight of longer-term operations and the establishment of an outright portfolio) and the size of its balance sheet changed (see Figure II).<sup>18</sup>

### **2.3 The sovereign debt crisis and the adverse feedback loop: 8 May 2010 to the present**

In the aftermath of the collapse of Lehman Brothers in September 2008, governments in euro area countries launched various initiatives to support their banking sectors (via state guarantees, capital injections and/or loans) and to counter the slowdown in economic growth (via stimulus packages). However, as a result of these measures, the sustainability of public finances in a growing number of countries started being questioned by the market. Greece became a focal/flashing point soon after the new government - that had emerged from the autumn 2009

<sup>18</sup> Through the full allotment procedure, the ECB allows banks to determine the money supply. In the presence of heightened uncertainty (which favours liquidity hoarding), there is a tendency to accumulate excess central bank reserves, which naturally leads to an expansion of the ECB's balance sheet. High levels of excess reserves mechanically pushed the EONIA downwards and closer to the interest rate on the ECB's deposit facility, rather than towards the rate on the main refinancing operations as during the first phase of the crisis (as shown in Figure III).

elections – ordered an audit of public finances. The findings were shocking, and this rapidly led to tensions in the sovereign debt market.<sup>19</sup> Over the following months, financial market concerns about the sustainability of Greek public finances surged at each revision of public finance data going back to the adoption of the euro in 2002. On 10 May 2010 the 10-year yield spread between Greek and German government bonds reached the at the time historical high of about 1000 basis points. From this period onward, similar concerns arose in Ireland, Portugal and, later, Spain and Italy (see Figure IV), impacting negatively on market liquidity in the markets for new and existing sovereign debt. As shown recently a major source of systemic risk for several euro area economies was the risk of contagion of rising spreads on sovereign bonds. For example, Ang and Longstaff (2011) compare credit default swap rates in the euro area with those across states in the United States and find evidence of a larger common factor. De Santis (2012) also finds that a one-notch downgrade of sovereign bonds in Greece, Ireland and Portugal is associated with a rise in the sovereign spreads of other countries with weak fiscal fundamentals; thus the term ‘financial contagion’ applies.<sup>20</sup>

There was therefore a significant risk that these developments in the sovereign bond markets of a growing number of euro area countries would be able to trigger market dynamics that could degenerate into a vicious illiquidity spiral for the sovereign debt markets of the whole euro area. At the same time, the liquidity position of banks was also affected by a feedback loop. A sequence of sovereign debt rating downgrades was accompanied almost in tandem by downgrades of most marketable securities issued by financial institutions headquartered in the countries that were affected by the sovereign debt crisis.<sup>21</sup> This in turn also led to further downgrades across a broad range of assets in the private securities markets. The decreasing prices of these assets weakened the balance sheets of financial institutions, while their recapitalisation appeared less and less likely given the fiscal consolidation needed in most countries to restore confidence in sovereign debt markets.

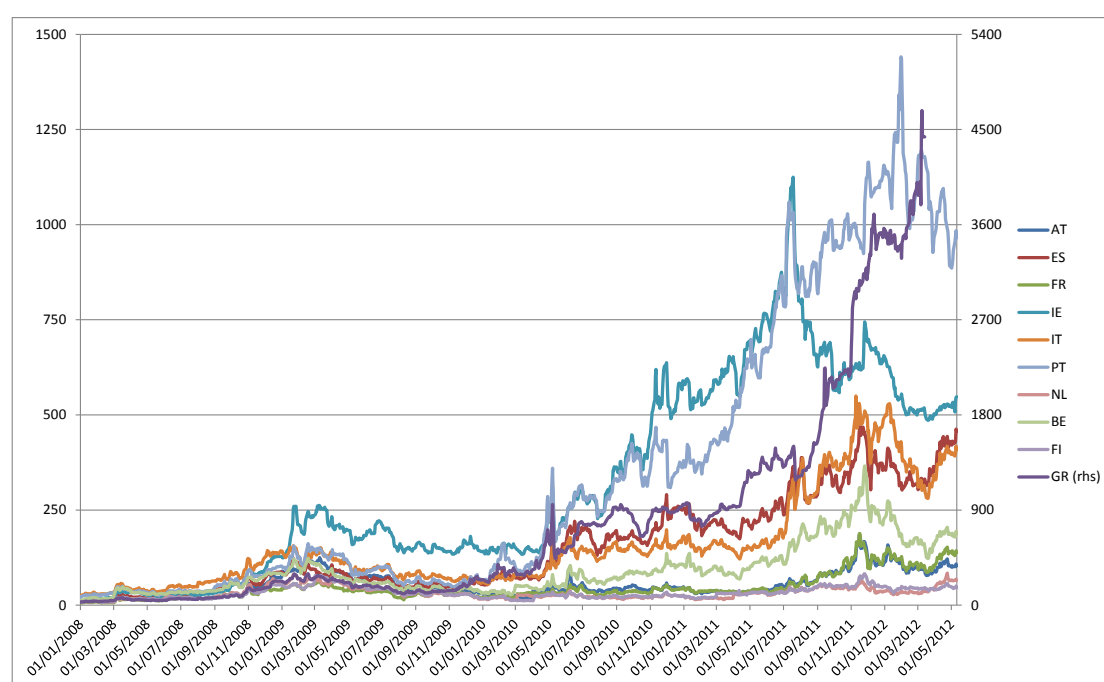
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<sup>19</sup> The market concerns regarding the sustainability of the Greek public debt were increased by the revision of the public deficit from 8.2% to 12.5% of Gross Domestic Product (GDP) released by the new government on 1 November 2009. By bringing to light off-balance sheet mechanisms which had allowed part of public spending to be hidden, the audit of Greece’s public accounts also cast doubt on the reliability of Greek figures as a whole.

<sup>20</sup> Similar empirical evidence is reported in Arezki et al. (2011) and Arghyrou and Tsoukalas (2011). On the mispricing of sovereign risk in the euro area and the soaring disconnection of sovereign spreads from underlying fundamentals see also the discussion in De Grauwe and Ji (2012), this issue..

<sup>21</sup> On the role of rating agencies in exacerbating and propagating the crisis see also the discussion in Eijffinger (2012), this issue..

**Figure IV - 10-year government bond spreads against German Bunds**



Note: Daily observations, basis points. Sources: Thomson Reuters, authors' calculations.

Not surprisingly, these developments harmed the activity in euro area money market (especially in the cash and term unsecured segments) through renewed concerns on the part of market participants about access to liquidity (see Cassola et al. (2011)). In light of the deterioration of market functioning in both the money market and the euro sovereign debt market, the ECB decided to expand its monetary policy outright portfolio by means of secondary market purchases from credit institutions in euro area public and private debt securities markets under the Securities Markets Programme (SMP), starting in May 2010. Temporary liquidity swap arrangements with other central banks were also reactivated, with the result that US dollar liquidity-providing operations with a fixed rate full allotment procedure against eligible collateral were resumed.

From mid-July 2011 financial market tensions intensified again, mainly driven by increasing concerns about the worsening of public finances in several euro area countries and by the prospects of a restructuring of Greek sovereign debt. Financial conditions tightened and economic confidence declined. This in turn dampened euro area economic activity in the second half of 2011 with implication for the outlook for price stability. High financial market uncertainty together with banks' balance sheet deleveraging contributed to reduced money growth further towards the end of 2011. In this environment the ECB decided to 'actively' implement the SMP (7 August), to conduct a new Covered Bond Purchase Program (6 October, CBPP2) and to cut

interest rates on two occasions (3 November 2011 and 8 December 2011) by a total of 50 basis points.<sup>22</sup>

Several banking systems of major euro area countries were severely affected. If not properly addressed, the escalation of financial tensions had the potential to cut-off market funding a significant portion of the banking sector in the euro area. For this reason, the ECB decided in December 2011 to conduct refinancing operations that significantly extended the horizon at which credit institutions could obtain liquidity from the Eurosystem. In particular, two three-year refinancing operations have been conducted in December 2011 and February 2012. The difficult balance sheet situation of many euro area banks was reflected in the high volumes of liquidity allotted at these two operations, which, overall, amounted to around EUR 1 trillion.

The positive impact of the two operations on the situation of banks could be detected through a variety of indicators. First, a stabilisation in the balance sheet size of euro area monetary financial institutions (MFIs) was observed in hard data released in the course of the first quarter of 2012. This suggested that risk of a major credit crunch occurring in the euro area receded significantly. Second, survey-based results on the conditions applied by banks on their lending to the economy also pointed to a stabilisation in the provision of credit. Third, several indicators of financial market volatility and of risk premia also pointed to a more benign financial market sentiment in the first quarter of 2012. The effects of the operations conducted by the Eurosystem compounded with the emergence of signs of progress in the process of fiscal consolidation and structural reforms in several euro area countries. The support to the idea of a ‘fiscal compact’ which would guarantee prudent fiscal behaviour throughout the euro area in a lasting way supported also the financial market mood.

Still, the situation remained fragile. News on fiscal slippage has perturbed financial markets. Signs of weak growth also led to a widening in the cost of funding of several euro area countries. Political uncertainty in Greece has also contributed to increase volatility.

Overall, developments in the second half of 2011 and in early 2012 pointed to the need of a comprehensive strategy at the European level which would restore confidence in the long run. The actions of the Eurosystem proved to be essential in restoring the functionality of monetary

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<sup>22</sup> In parallel, six non-standard measures were also introduced, while the fixed rate tender procedure with full allotment was maintained for all refinancing operations. First, on 6 October 2011 two longer-term refinancing operations of, respectively, 12 months and 13 months were announced, as was a second covered bond purchase programme (CBPP2) for an intended amount of EUR 40 billion. Second, on 8 December 2011 the following were announced: two 36-month longer-term refinancing operations with the option of early repayment after one year; the enlargement of the collateral list (via a reduction of the rating threshold for certain asset-backed securities and the acceptance of bank loans); the reduction of the reserve ratio from 2% to 1%; and the discontinuation of the fine-tuning operations carried out on the last day of each maintenance period.

policy but it was evident that monetary policy was only one, albeit important, element of a more general set of policy actions.

## **2.4 What has changed with the crisis? The rationale for the ECB actions**

In normal times, when financial markets, especially the money market, function well short-term interest rate decisions by central banks are smoothly transmitted along the yield curve. The intermediation role of the central bank can thus be modest, since the central bank's initial liquidity injections into the money market suffice to ensure a smooth distribution of financial resources among market participants. The contribution of the central bank to financial stability is made mostly through a clear policy objective (price stability in the case of the ECB) and through the appropriate implementation of policy decisions to favour active and responsible liquidity management by market participants. This is precisely the case of the ECB, which has continuously underlined that its primary mandate is to deliver price stability in the medium term through an appropriate adjustment of the monetary policy stance to economic developments on the basis of an independent decision-making process. When, however, market malfunctioning substantially endangers the transmission mechanisms of monetary policy – as in crisis times – the situation is more complex for the central bank: it must stand ready to back up the market while increasing its communication to explain that its primary objective has not changed in crisis mode.

Since Thornton (1802), and later Bagehot (1873), it has been widely recognised in the literature that a fractional/fragmented banking system increases the sensitivity of market participants to liquidity shocks, which can eventually generate a panic. This may lead to a significant decrease in the money stock, inducing in turn a collapse in economic activity. In this situation, central banks appear uniquely well-placed to prevent such developments by issuing their own monetary liabilities, given their ability to provide an elastic supply of liquidity (see among others Humphrey 1975 and Humphrey and Keleher 1984). Therefore, in order to restore conditions for a well-functioning banking system, it is widely agreed that central banks should lend in crisis times to illiquid banks, or act as a coordinator by improving communication between banks (see in particular Freixas et al. 2000). History shows indeed that financial instability as a result of liquidity gaps require increased intermediation by central banks (Mishkin and White, 2002). Moreover, the idea that central banks can respond faster than any other institution has probably been strengthened over time by the shift towards central bank independence (even specified in some cases into legal texts) in the late twentieth century.

In the context of the recent crisis, intervention by central banks appears natural given the negative spillovers of tensions to banks' liquidity positions, with negative implications for macroeconomic developments. In the specific case of the euro area, the need for additional ECB action has arisen throughout the different crisis phases. Financial frictions indeed surfaced in credit markets, and assets held in private sector portfolios were no longer perfect substitutes for one another. By

managing its portfolio in terms of size and composition of assets, as well as the structure of its liabilities, the ECB was able to influence the structure of yields and returns in financial markets. In this portfolio-balance channel view, financial asset price adjustments do eventually influence macroeconomic developments (see, for example, Dominguez and Frankel, 1993). Although this channel is obviously important, Durré and Pill (2012) argue that providing direct support for market functioning in crisis times is equally, if not more, important to maintain a strict connection between the monetary policy stance decided by the central bank (in order to meet its policy objective) and macroeconomic developments.

The unprecedented crisis developments since August 2007 have highlighted the extent to which banks have relied on short-term funding in the money market and how a weakening of their liquidity position by market malfunctioning may ultimately affect the entire yield curve. Similarly and in contrast with past beliefs, it suddenly became clear that the money market could be affected by significant distortions leading to a breakdown of trading like any other market (e.g. bond, stock or foreign exchange markets). Since the money market is the ‘transmission belt’ conveying the monetary policy stance to retail interest rates in the economy, its malfunctioning could severely impair the control of inflation by the central bank.

In light of these elements, also supported by the empirical evidence in the literature, it appeared crucial for the ECB to intervene. Various factors support this view.

First, the EONIA serves as an anchor/benchmark to term money market rates. Through hedging activities (via swap and forward rate agreement contracts), a close link exists between cash and term deposit interest rates. Second, the EURIBOR fixing in the term deposit money market plays an important benchmarking role, via EURIBOR futures contracts, for the interest rates applied by retail banks to loans to the real economy. Any disconnection of money market rates from the key monetary policy rates may lead to volatile and erratic money market (and thereby retail) interest rates. Furthermore, a liquidity shortage among banks together with the risk of a disorderly deleveraging of their balance sheets may also lead to a credit crunch (possibly strengthened by adverse selection problems). All these elements have the potential to increase both the level and the variance of retail interest rates in the economy. In the absence of reaction by the central bank, there is therefore a significant risk that market interest rates will no longer reflect the monetary policy stance, which appears necessary to maintain price stability in the medium term. In this context, it cannot be totally ruled out that the inflation rate would in the long run become volatile and unstable (partly as a result of unstable inflation expectations) as the central bank would gradually lose control of the domestic price level. By increasing significantly its intermediation role in financial markets, the central bank may restore confidence among market participants and thereby help restore trading activity to ensure a continuation of the pricing transmission from the money market to retail lending.



These considerations have clearly motivated the ECB's increased intervention in the money market and beyond. The implementation of securities purchase programmes (like the covered bond purchase programme (CBPP) and the securities market programme (SMP)) should also be seen as actions to guarantee that monetary policy is transmitted to the real economy, as the malfunctioning in segments of the financial markets reverberate to funding conditions of the financial and non-financial sector.<sup>23</sup>

Put differently, the ECB's increased intermediation role and through all its non-standard measures aims to ensure the continuation of lending flows in the economy between the initial lender and the final borrower. This latter consideration has to a large extent motivated the use of the full allotment tender procedure since October 2008, accompanied by asset purchases on specific markets.<sup>24</sup> By increasing the weight of longer-term refinancing operations in total amounts provided, the ECB has aimed to reassure market participants about their access to liquidity in the long term despite prevailing market uncertainties.<sup>25</sup>

In short, the effectiveness of monetary policy implementation cannot be taken for granted and can face major challenges. Recent experience has shown that banks' uncertainty about their liquidity positions can rapidly lead to a breakdown of various financial markets, and hence seriously threaten the transmission of monetary policy to macroeconomic developments. In the event of a de facto disconnect between central bank decisions on its traditional instrument (i.e. control over key short-term interest rates in order to meet the ultimate monetary policy objective) and money and capital market developments – which influence consumption and investment decisions in the real economy – a central bank faces the risk of being unable to fulfil its primary mandate (i.e. price stability in the case of the ECB).<sup>26</sup> If this risk should materialise in practice, the credibility of the central bank would be severely eroded, leading to a disanchoring of inflation expectations and rising risk premia in retail and wholesale credit markets.

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<sup>23</sup> Beirne et al. (2010) provide evidence that securities programmes such as the CBPP contribute positively to restarting market activity in both primary and secondary segments.

<sup>24</sup> Recent empirical results tend to suggest that the ECB measures during the financial crisis helped avoid a credit crunch (with its deflationary effects) through the stabilisation of inflation expectations and the provision of support to economic activity. See e.g. Lenza et al. (2010), Fahr et al. (2011) and Giannone et al. (2012).

<sup>25</sup> It is noticed that when tensions in the money market recede, banks' appetite for excess liquidity decreases. In addition, the interest rates applied to the longer-term refinancing operations are anchored to the rate applied to the weekly refinancing operations. The design of the non-standard measures is thus sufficiently flexible to allow an adjustment of the monetary policy stance if needed. This is also particularly true for the three-year longer-term refinancing operations, since banks may reimburse the amount borrowed after one year. Cassola et al. (2011) provide preliminary evidence that ECB actions have helped reduce the liquidity premium but not the credit risk component of spreads.

<sup>26</sup> This risk has been highlighted to an even greater extent by the tensions in the euro area sovereign bond markets. Given the benchmarking role of public bond yields for the pricing of retail bank lending, the potential impairment of monetary policy transmission was considerable.

### 3. The necessary delimitation of responsibilities among agents

While it appeared natural for the ECB to tackle the roots of the liquidity problems, it was crucial that its actions remained fully in line with the primary objective of price stability, as assigned by the Treaty on the Functioning of the European Union. In this regard, a clear distinction between monetary authorities' responsibilities and the responsibilities of governments appears a necessary condition. Experience proves, however, that a clear separation of responsibilities between the central bank and the government may not be a sufficient condition to ensure an autonomous and powerful conduct of monetary policy focused solely on the pursuit of the central bank's objective.<sup>27</sup> History shows that government pressures on central banks tend to increase in crisis times to alleviate the state's obligations.

In the design of the institutional framework for Economic and Monetary Union, the view was thus taken that the financing of public sector deficits by central banks must be avoided. It was indeed widely agreed that, to ensure 'monetary dominance' over the price level, it was necessary to adopt an institutional framework in which fiscal indiscipline would not lead to money creation and ultimately inflationary pressures. In this respect, a formal prohibition of monetary financing was seen as a cornerstone of the credibility of the central bank and its stability-orientation. Such a prohibition was also required to underpin the institutional and financial independence of the central bank.

Accordingly, such a legally-binding prohibition was clearly stated in the Treaty establishing the European Community. In particular, a prohibition of primary market purchases of public sector debt by central banks naturally serves the aforementioned objectives, by forcing governments to seek financing on a competitive basis at market-determined prices.<sup>28</sup> In the same vein, direct lending and/or any form of overdraft facility from the Eurosystem central banks to public sector institutions and bodies are strictly banned. By its nature, the prohibition of monetary financing places limits on the scope for central bank action to support governments facing financing problems. In practice, it prevents the ECB and Eurosystem central banks from becoming a kind of lender of last resort for governments and, more broadly, for any public sector bodies. It is

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<sup>27</sup> For this to be a sufficient condition, it would then be implicitly necessary that: (i) the government budget has little influence on inflation; and (ii) monetary policy has marginal effects on the fiscal budget. History has shown little evidence for either.

<sup>28</sup> Under Article 123(1) of the Treaty on the Functioning of the European Union (which prohibits monetary financing), national central banks are prohibited from purchasing debt instruments directly from European Union institutions or bodies, i.e. debt instruments issued in the primary market. The acquisition by national central banks or the ECB of debt instruments issued by public sector institutions or bodies in the secondary market is, in principle, allowed. However, in accordance with recital seven of Council Regulation (EC) 3603/93 of 13 December 1993 specifying definitions for the application of the prohibitions referred to in Articles 104 and 104b (1) of the Treaty [now Articles 123 and 124], such purchases must not be used to circumvent the objective of Article 123 of the Treaty. This qualification also applies to marketable debt instruments issued by all EU institutions or bodies.

precisely these limits, which protect the integrity of the Eurosystem's balance sheet and thus preserve the independence and credibility of monetary policy in the euro area.

In the absence of such institutional safeguards, the danger would exist that 'fiscal dominance' over the price level may emerge with monetary policy becoming subservient to the needs of the fiscal authorities and thus unable to focus on its primary objective of maintaining price stability in the euro area. Moreover, the prohibition of monetary financing helps to strengthen fiscal discipline and thereby promote the proper functioning of monetary union.

Against this background, it must be clear that an increased intermediation role for and outright purchases of the central bank are only justified on grounds of malfunctioning of financial markets – and hence the exceptional measures are temporary in nature – to ensure price stability in the medium term. It is in this respect essential that clear incentives remain in place to encourage (i) financial institutions to restructure their balance sheets for a more solid and responsible liquidity management, and (ii) public authorities to take decisive measures to clean up their banking systems and to ensure that their budgets are on a sustainable track. It also appears important that such reforms be organised at the global level (or at least at the level of the euro area) to ensure coordinated responses to structural weaknesses. With the benefit of hindsight, the institutional framework of the economic union appeared to have been insufficient to allow governments to face the challenges posed by the crisis, as discussed in the next section.

#### **4. The necessary adjustment of the EU institutional arrangements**

In parallel to increased monetary policy interventions by the ECB, Member States have also undertaken widespread reforms: i.e., the economic and institutional reforms at the national and European level.<sup>29</sup> The incompleteness of EMU's institutional framework and its vulnerabilities became apparent in the period ahead of the euro area's sovereign debt crisis<sup>30</sup> There were failures in governance, institutional gaps and other weaknesses that were exacerbated by the global financial crisis and worsened upon the start of the sovereign debt crisis, i.e. after the beginning of the crisis in Greece and the subsequent contagion (for an analysis see Mongelli (2010) and also Buti and Carnot (2012) this issue).

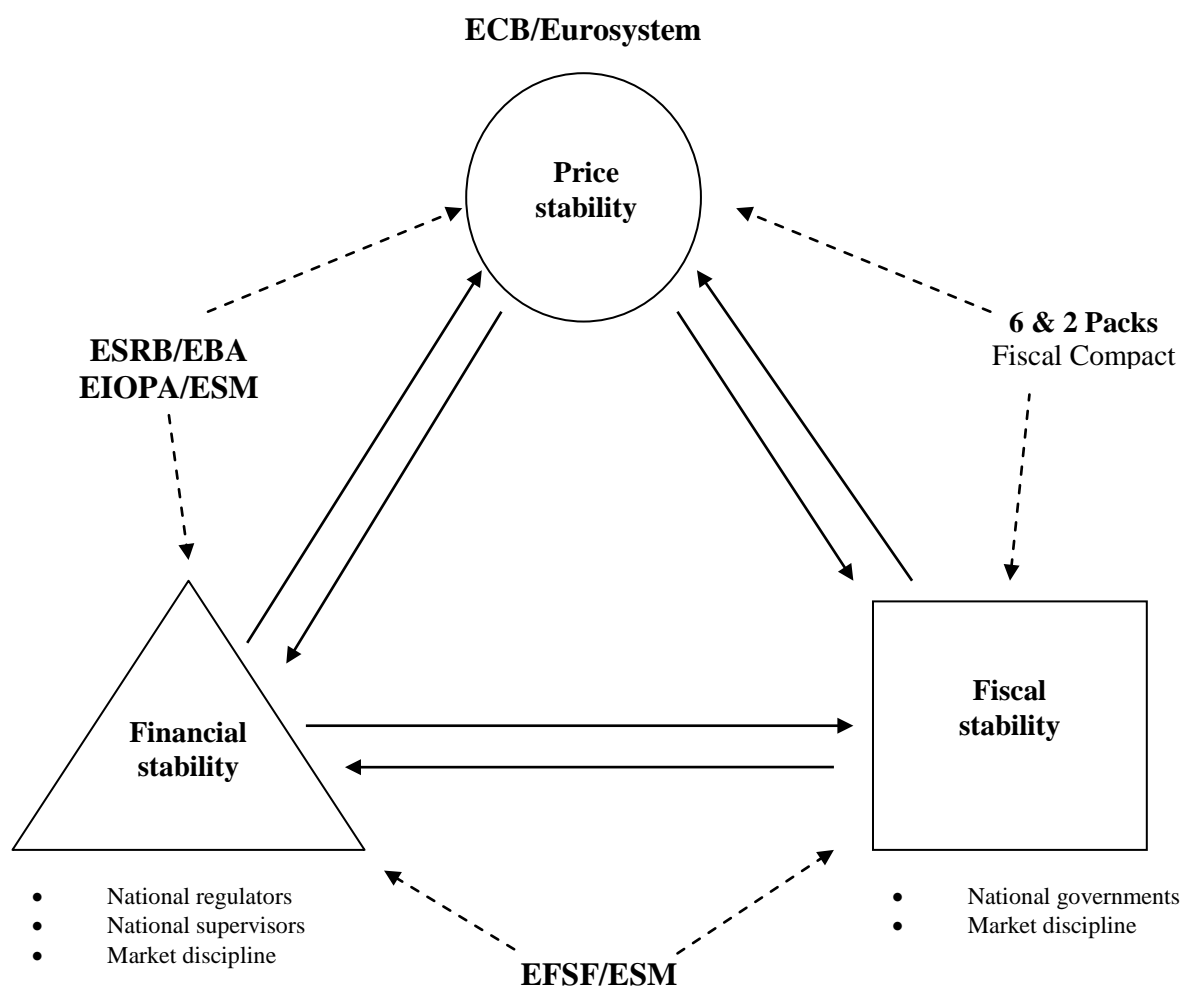
Recent crisis experience has shown that price stability, financial stability and fiscal responsibility are interdependent (see Figure V). Yet, in recent years, financial and fiscal stability failed in different degrees and for different reasons.

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<sup>29</sup> A detailed discussion on these interventions in the early stage of the crisis can be found in Van Riet (2007).

<sup>30</sup> Although the related institutional changes (described below) might be seen as responses to the crisis, it is worth mentioning that they were required in any case to complete the framework of the economic union of the euro area. In this regard, one should not overlook the fact that the roots of the crisis—and in particular the sovereign debt crisis—go very far back in time.

Figure V – The “Mutual Trinity”



First, there is now wide recognition of the need to secure sustainable public finances. This holds particularly in the absence of a complete fiscal union: the euro area does not possess a federal budget with redistributive features (as in the United States). Thus, national fiscal discipline is essential. In this context, the new ‘fiscal compact’ – which is at the time of writing about to be ratified – is a step in the right direction. It addresses some of the weaknesses of the previous fiscal governance framework. The compact has two main elements:

- the mandatory introduction of a balanced budget rule and a correction mechanism for deviations from balanced budgets at the national level;
- a strengthening of the excessive deficit procedure within the Stability and Growth Pact.

If effectively implemented at the national level, the fiscal compact will help to anchor market expectations regarding the sustainability of public finances in Europe (and narrow the currently abnormally high government bond spreads). Yet national governments now need to prove their commitment to these new fiscal rules by ensuring a rapid ratification of the new Treaty on Stability, Coordination and Governance in the Economic and Monetary Union, (EMU) which includes the fiscal compact, as well as its transposition into national law, and by living up to the rules and the spirit of the fiscal compact. The European Court of Justice will supervise this process.

A second reason for euro area imbalances to grow [unchecked] is that, prior to the crisis, there were uneven supervision, regulation and resolution procedures across euro area countries; these were also hampered by poor exchange of information and modest cooperation. The global financial crisis has made clear that it is indispensable to remedy these weaknesses. In this regard, a new supervisory framework has been put in place – for the European Union as a whole – in order to share information and best practices, foster cooperation and identify sources of systemic financial risks at an early stage. It consists of two pillars. The first pillar covers micro-prudential supervision and comprises the European banking Authority (EBA) as well as the European Insurance and Occupational Pensions Authority (EIOPA) and the European Securities and Markets Authority (ESMA). Supervisory colleges for pan-European banks are also starting to operate. The second pillar is dedicated to macro-prudential supervision and is centred on the European Systemic Risk Board (ESRB). The ESRB can issue warnings and macro-prudential recommendations whenever necessary. In addition, the new Basel III directives are being implemented to ensure banks are adequately capitalised.

Third, the crisis also sheds light on the lack of provision for crisis resolution where euro area countries are subject to self-fulfilling adverse feedback loops. The offer of support to domestic banks (through state guarantees, loans and/or capital injections) led for some countries to the sustainability of public finances being questioned. A vicious circle then set in, by which weak sovereign debt dynamics hurts banks, and the need for bank recapitalisation in turn hurts sovereign debt prices. The architecture of EMU was designed without any provision for the resolution of a major sovereign debt crisis (see also Buti and Carnot 2012, this issue). The establishment of ‘firewalls’, i.e. the EFSF and the forthcoming ESM aims to fill this institutional gap.

While the measures taken at the EU level so far were needed to respond to structural weaknesses in EMU, further steps are required to complete the institutional framework. For example, there are only national arrangements for resolving possible crises of large pan-European banks: i.e., the systemically important financial institutions (SIFIs). Some such institutions account for a large share of the GDP of their home country. However, there is no European resolution framework in place yet, let alone any earmarked funds or designated procedure to follow in the case of the need for the recapitalisation of a large and systemic bank.<sup>31</sup> Finally, the issue of institutions that are “too big to fail” has not been addressed.

## **5. Concluding remarks**

As the crisis is still ongoing, and the euro area economy seems to have hit a soft patch, it appears premature to reach any firm conclusions concerning possible future developments. However, several observations can be made.

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<sup>31</sup> However, the ESM might soon acquire the tools to financially support in the recapitalisation of systemic financial institutions.

The crisis has hit the euro area hard. To some extent, the rapid contagion across so many euro area countries has been a rude, sudden and largely unexpected awakening for policymakers, market participants, and the public at large. While we do not yet know the full economic and financial legacy of the crisis, it is clear that exiting will depend on the success of the economic and institutional reforms that are currently under way. Such reforms were necessary in several countries irrespective of the crisis, but the crisis has been the catalyst for change. It is important to keep in mind that the measures of the Eurosystem have been effective and powerful to maintain price stability but are not a substitute for structural reforms.

The exit from the financial crisis rests on lastingly ensuring the financial soundness of various financial institutions and several euro area governments: their stakeholders must take the necessary measures to regain the confidence of investors. Undoubtedly, much has already been achieved in this vein. The urgency of the situation and the sharp deterioration of many indicators during the various phases of the financial crisis have spurred decisions and actions that had been deferred for too long. These reforms, although currently aimed at calming tensions in sovereign debt markets, are needed to complete EMU. They are indispensable irrespective of the crisis. It could be argued that the current crisis in the euro area has accelerated the process of strengthening EU-wide institutions as well as fiscal cooperation: these are the necessary ingredients to ensure the stability and success of EMU and ultimately sustained growth over time. The various reform processes must be given the time and confidence needed to display their effects.

More recent developments, not covered in this paper – such as the ongoing debate on euro area banking supervision, the new OMT (outright monetary transactions) with its clear link to EFSF/ESM conditionality – indicate that the considerations contained in this paper are essential to identify a lasting solution to the crisis. On the one hand, the ECB will continue to focus its efforts on maintaining price stability over the medium-term via all the tools at its disposal (standard and non-standard). On the other hand, we are witnessing some lasting progress in the EU/euro area's institutional framework: the governance is changing. Against this background euro area governments must continue their significant efforts in the area of fiscal discipline and structural reforms. This is essential to restore confidence and significantly improve the functioning of the economy of the euro area.

Similarly, we are also likely to see in the coming years a debate on economic frameworks, the risks emanating from global imbalances, and the need for further international coordination and cooperation: these are all subjects that we have not addressed in this article but that will also shape the future of the euro.

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