

The European Central Bank and Implications of the Sovereign Debt Crisis

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Abstract Since the onset of financial turmoil in August 2007, the main central banks worldwide have implemented extraordinary standard and non-standard monetary measures. Accommodative fiscal measures were also implemented on a large scale. These measures have questioned the sustainability of public finances in various euro area countries, which led to the current sovereign debt crisis. The current sovereign debt crisis is even more challenging as it affects the value of banks' assets and their collateral, and therefore increases risks to the economic outlook. Against this background, this chapter describes the actions of the European Central Bank (and their rationale) while discussing the necessary separation between the responsibilities of central banks and government. Finally, some lessons about the possible adjustment of the roles of central banks and fiscal authorities in the euro area are also addressed.

Keywords Crisis • ECB • Eurosystem • Fiscal policy • Monetary policy

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1 Introduction

The financial crisis that began in August 2007 is exceptional in at least three respects: its effects on a wide range of segments of financial markets; the magnitude and speed of its negative spillover; and its mutating nature.

After the money markets dried up in August 2007, setting off financial turmoil, the resulting bankruptcy of Lehman Brothers Ltd. in September 2008 sparked a global financial crisis. This systemic event is unprecedented in terms of financial losses, economic disruption and in its geographical reach across mostly developed economies. From late 2009 to April 2010, a brief respite in the crisis was observed. However, the aftershocks were still to prove severe in Europe: from May 2010, a sovereign debt crisis began spreading across the euro area. This crisis poses severe challenges to the European Central Bank (ECB), which had to address the implications of the crisis to ensure the functioning of the transmission mechanism. The latter was significantly impaired by the malfunctioning of several bond markets. Thus, for over 4 years now the world has endured a mutating financial crisis. While recalling the main phases of the ongoing crisis, this chapter provides some reflection on the link between fiscal policy and monetary policy, and focuses on the response of the ECB, in particular during the period that was most affected by the sovereign debt crisis.

Overall, policy responses were equally exceptional throughout the financial crisis. The main central banks worldwide implemented standard and non-standard monetary measures (often in coordination). Accommodative fiscal policies were also adopted on a large scale to support economic activity and employment, and to recapitalize the financial system. Global regulatory and supervisory systems have been turned around; the G20 has acquired new vigor; and the International Monetary Fund (IMF) was revitalized and is now involved in three adjustment programs in the euro area. Moreover, many established convictions were shattered and perceptions regarding systemic risks changed; thus, many long-held views and various economic paradigms are being revisited, and several important lessons have been learned.

The economic, financial and institutional environment has changed in Europe and will continue to change. The ECB has been among the advocates for structural reforms where needed, tighter fiscal, macro surveillance and more uniform financial regulations. Moreover, it has contributed to the debate on the reform of micro and macro financial supervision as well as the creation of facilities for crisis management and resolution in the euro area. Thus the ECB and the national central banks (NCBs) of the euro area—together representing the Eurosystem—have actively contributed to a dialogue that is pushing forward European integration. Slowly, various pieces of a large puzzle are falling into place. However, the institutional framework is still evolving and several elements will require further work.

This chapter is organized as follows. In Sect. 2 we discuss the interaction between monetary and fiscal dominance against the background of financial stability concerns. In Sect. 3 we review the main phases of the financial crisis. In Sect. 4 we explain the

main motivations for the measures undertaken by the ECB. As the crisis remains ongoing, many elements of this chapter are still preliminary. Other caveats will be mentioned throughout the chapter. All in all, the current juncture is one that holds great potentials but still entails diverse risks.

2 The Interaction Between Monetary and Fiscal Dominance Against a Background of Financial Stability Concerns

2.1 Theoretical Background

The interaction between monetary and fiscal authorities has long been debated in academic literature. There are various aspects, from an optimal policy mix to the possible rigidities (and financial costs) that one may have on the other. The latter aspect of the question—which arguably may be seen as the fundamental question of the (monetary vs. fiscal) dominance on a central bank's balance sheet—usually receives growing attention during crisis times. A renewed interest has recently emerged in several economies in light of the magnitude of the exceptional measures undertaken by central banks.

By assuming greater responsibilities, a risk exists that a central bank may go beyond its strict mandate, possibly setting the roots for unstable inflation dynamics through various mechanisms. In practice, this may happen with quasi-fiscal activities undertaken by the central bank, which has historically been associated with macroeconomic instability. In this respect, Hamilton (2009) points out that: *every hyperinflation in history has two ingredients: ... a fiscal debt for which there was no politically feasible ability to pay with tax increases or spending cuts [and] a central bank that was drawn into the task of creating money as the only way to meet the obligations that the fiscal authority could not.*

The likelihood of such non-monetary activities by the central bank might be related to the specific and unique position that central banks usually have as a lender of last resort. As financial crises demand rapid policy responses from existing institutions and endanger financial stability, it is natural to expect the central bank to play an essential role, especially if the crisis at stake is caused by market distortions that ultimately create a liquidity shortage (see also the historical discussion in Goodhart (2011)). The related underlying reasoning, originally stated by Thornton (1802) and further defined by Bagehot (1873), assumes that a fractional/fragmented banking system is even more sensitive to large (liquidity) shocks that can generate panic phenomena, which eventually cause a significant decrease in the money stock, and inducing a collapse in economic activity. In this regard, given their ability to provide an elastic supply of liquidity, central banks are uniquely well placed to avoid such developments by issuing their own monetary liabilities. At the same time, the sentiment according to which central banks may be faster to respond than any other institution has probably been strengthened over time by the shift towards

central bank independence (even translated in some cases into legal texts) in the late twentieth century.¹

By funding these activities, central banks bear risk exposures (and financial costs) that would not necessarily be so in the strict context of monetary policies. Thus, a distinction should be made between liquidity support and solvency support. Pure monetary policies would definitively justify the former (which in turn aims at preserving price stability) while policies supporting the latter contain quasi-fiscal ingredients (which could often be (erroneously) presented as responding to financial stability concerns but would be hardly compatible with the primacy attached to the price stability objective).

In his analysis of the exceptional measures undertaken by the US Federal Reserve, Goodfriend (2011) distinguishes between monetary policy (aiming at controlling the stock of high-power money), interest-on-reserves policy (a novelty for the US central bank but with a long history for European central banks) and credit policy. By credit policy, he refers to portfolio choices on the central bank balance sheet that do not necessarily influence the stock of reserves, e.g., by affecting mostly the composition of the assets held by the central bank. Through this type of policy, Goodfriend (2011) argues that, by acting as an intermediary between private borrowers and lenders, the central bank is engaged in a distributional activity, which exposes itself (and ultimately tax payers and/or money holders) to financial losses. In the latter case, the ability of the central bank to absorb financial losses without altering the conduct of monetary policy then depends on its financial soundness or, to put it differently, the ability of the central bank to have sufficient financial resources over time to pursue its policy.

In the academic literature, two main options are usually discussed in this respect. A first option is that the central bank, benefiting from its monopoly of money issuance, may cover losses by issuing new monetary liabilities, which would dilute the real value of money over time. The second option directly refers to the guarantee (explicit or implicit) that a central bank may receive from its main shareholder, i.e., the government. In this case the central bank would be able to support financial losses from the implementation of risky activities assuming that the government will always recapitalize the central bank in the future when needed. As pointed out by Buiter (2008), both options suffer from limits in practice. On the one hand, it could be reasonably assumed that there is in reality an upper limit to the extraction of resources from an inflation tax. As from a certain point, if monetary liabilities become too large with respect to private agents' needs, the price level will increase and, through expectations of higher inflation in the future, money demand will diminish further, possibly leading to unstable and

¹ This evolution in the thinking on central banking came from growing criticisms by academics in the 1970s and 1980s about political control over central banks (and exploited at large the associated central bank quasi-fiscal powers), which usually led to high inflation and an inefficient allocation of credit to favoured economic sectors. In particular, works initiated by Kydland and Prescott (1977) and Barro and Gordon (1983), and empirically supported by Alesina and Summers (1993), point to possible benefits in terms of macroeconomic performance (notably as regards the level and variability of inflation rate) in case of more independent central banks.

erratic inflation paths.² On the other hand, it could also be argued that the taxation power of governments may also face an upper limit, which would erode the credibility of the recapitalization prospects over time. In this context, once economic agents realize that the fiscal limit is reached (i.e., no further possibility of expenditure cuts or tax increases), this may feed into expectations of passive monetary policy, which will imply unstable and volatile inflation rates.³

Despite the necessary simplification that such models may contain, their strength lies in the ability to emphasize the significant impact that the interaction between government and the central bank may have on macroeconomic developments. In particular, when the central bank embarks in a variety of activities that may imply the assumption of larger risk, it is likely that its controllability of inflation will be eroded over time; hence, similarly affecting the credibility of its price stability objective. Even within a framework where quasi-fiscal activities might be financed by capitalization of present and future monetary income, there are good reasons to think that the upper non-inflationary limit of these types of activities will be breached at some point.⁴

2.2 *Where Do We Stand in the Euro Area?*

2.2.1 Treaty Provisions

To avoid any interference with the primary objective of price stability assigned to the ECB, a prohibition of monetary financing and privileged access (of public sector to financial sectors) has been introduced in the Treaty establishing the Functioning of the European Union (TFEU).⁵

By its nature, the prohibition of monetary financing places limits on the scope for central bank action to support governments facing financing problems. It is precisely these limits that protect the integrity of the Eurosystem's balance sheet and thus

² This first strand of literature refers to models of seigniorage as initially discussed by Cagan (1956).

³ This second strand of literature refers to works within the fiscal theory of price level framework. See, for instance, Leeper (1991), Sims (1994), Woodford (1995), and more recently Leeper (2010).

⁴ On the basis of a New Keynesian DSGE type of model, Durré and Pill (2010) find that a third equilibrium regime (besides a regime of pure monetary dominance and a regime of fiscal dominance) may exist under strict conditions. However, (implicit or explicit) pressures from fiscal authorities may be such that these conditions appear difficult to respect in practice. For a discussion on the risks of financial dominance see BIS (2011) and Borio (2011).

⁵ Under Article 123(1) of the TFEU (which prohibits monetary financing), the ECB and the national central banks (NCBs) are prohibited from purchasing debt instruments directly from public sector's institutions or bodies, i.e., debt instruments issued in the primary market. The acquisition by NCBs or the ECB of debt instruments issued by all public sector institutions or bodies in the secondary market is, in principle, allowed. However, in accordance with Recital 7 of Council Regulation (EC) 3603/93, 13 December 1993, specifying definitions for the application of the prohibitions referred to in Articles 104 and 104b (1) of the Treaty (now labeled Articles 123 and 124 of the TFEU), such purchases must not be used to circumvent the objective of Article 123. This qualification also applies to marketable debt instruments issued by all community institutions or bodies.

preserve the independence and credibility of the single monetary policy. In the absence of such institutional safeguards, a danger exists that so-called “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. In this sense, the prohibition of monetary financing supports the credibility of the Eurosystem and the monetary policy of the ECB. Moreover, the prohibition of monetary financing helps to strengthen fiscal discipline and thereby promote the functioning of the Monetary Union. See also Issing (2010), Hodson (2010), and Hodson and Quaglia (2009).

2.2.2 The Policy of the ECB

In the implementation of its policy the ECB followed two basic principles to avoid the risk that its policy could be seen as dictated by “fiscal motivation”, which could undermine its credibility.

First, regarding the conduct of monetary policy, it remains crucial for the central bank to have a transparent and well-defined policy objective that is perfectly understood and readily accepted by economic agents. The uniqueness of focusing on price stability is from the ECB viewpoint the best way to credibly contribute to growth and economic and financial stability. In this regard, recent experience shows that flexibility and pragmatism remain essential in the assessment of the monetary policy stance to make the right interest rate decisions at the appropriate time. In the case of the ECB, such an assessment is mainly based on two elements: (1) the formation of a view on the medium-term inflation outlook and, in particular, the risks to price stability, based on the interaction of supply and demand in various markets (economic analysis); and (2) the identification of the monetary impulses from current and past monetary policy decisions, taking into account that these impulses are always transmitted to the economy with a certain lag via a thorough assessment of money and credit developments (monetary analysis). While the first perspective (economic analysis) would support the assessment of risks to price stability over a short- to medium-term horizon, the second perspective (monetary analysis) would focus on medium- to long-term horizons.

It is clear that monetary policy decisions may only affect the developments of economic variables in the intended way if financial markets efficiently transmit the initial monetary impulses along the yield curve. This requires the proper functioning of not only the money markets but also certain segments of financial markets. If this condition is not met, timely pragmatism from the central bank will again be needed in the future to ensure that the monetary policy transmission channel continues to work effectively, while at the same time continuing to assess the appropriateness of the monetary policy stance given changes in the economic environment. It is through this prism that the (both standard and non-standard) crisis period measures taken by the ECB must be understood. In exceptional circumstances, when severe distortions in financial markets emerge (reflected, for instance, in volatile and rising money market spreads), a more proactive form of liquidity management by the

central bank is required in order not to jeopardize the central bank's main monetary policy objective and the understanding of the monetary policy by economic agents.

Therefore, the first key element required to understand the rationale for the non-standard measures taken by the ECB (as further illustrated in the two following sections) is that these measures were dictated by the need to guarantee that the monetary policy decisions of the ECB were appropriately reflected in the financing conditions of the economy. This is a key pre-requisite to ensure that monetary policy is able to operate and maintain price stability over the medium-term.

A second key feature is the risk management framework, which shapes the implementation of the monetary policy of the ECB. Since its inception, the ECB established a comprehensive risk management framework, which limits the risk taken on the balance sheet of the central bank, in a way that ensures it is equal to its risk-absorbing capacity. The main elements of this framework⁶ include the establishment of a list of eligible assets to be used as collateral in central bank refinancing operations, a policy of valuation of collateral that takes into account market and credit risk and, through additional haircuts, liquidity risk. This is complemented by a policy of eligible counterparts that need to satisfy criteria of financial soundness. In the same vein, with regard to outright operations, the ECB limits its purchase to issuers whose risk is contained, as reflected in their rating or on the basis of additional considerations which relate, for example, to the existence of macroeconomic adjustment programs. Finally, the Eurosystem—which designs the operational framework for implementing the monetary policy of the ECB and includes the ECB and the national central banks of the euro area—has substantial financial buffers, such as its capital and reserves. It should also not be forgotten that a large part of the liability of the Eurosystem is in the form of banknotes, which increases the income generating capacity of the Eurosystem.

Overall, the two previous principles (namely a clear policy objective and appropriate risk management), relying on efficient transmission mechanisms, are essential to guarantee the credibility of the ECB and to maintain the effectiveness of its monetary policy.

3 A Chronological Bird's Eye View of the 2007–2011 Financial Crisis

The onset of the financial turmoil in August 2007 shocked everybody because of the extreme stability of financial developments during the preceding 10–15 years; a period often labeled as the *great moderation*. Yet, with the benefit of hindsight, one could recognize that this period was in fact characterized by extensive global

⁶For a more detailed review of the collateral rules of the Eurosystem, see ECB (2011), Chapter 6, pp. 45–81.

imbalances, as well as the spread of poorly understood and misused financial innovations. It is likely to be a combination of these dynamics that led to the build-up of global systemic risks, which were particularly intense in the 2004–2007 period.⁷ This provided the conditions for an amplification effect after the trigger went off; i.e., the collapse of US sub-prime mortgages. In this regard, it could be argued that there is no single explanation for the financial crisis.

Once the tensions in the euro area money markets emerged, it was natural for the ECB to forcefully intervene as the distribution of liquidity between market participants was severely distorted, and therefore potentially endangered the stability of the whole banking system. One of the striking features of this crisis is its mutating character in the various phases; this affected the liquidity position of the banks in each step through various channels. Consequently, it was necessary for the ECB to adjust over time the nature of its standard and non-standard measures to tackle the roots of the prevailing tensions and their impact.

3.1 Financial Turmoil: 9 August 2007–14 September 2008

Concerns over the money markets began to emerge in early 2007, notably with the increase in subprime mortgage defaults in the US in February 2007. Then a severe liquidity crisis in the money markets erupted on 9 August 2007 following the decision of a big euro area money market player, BNP Paribas, to freeze redemptions for three of its investment funds. Towards the end of 2007–early 2008, tensions grew in the financial markets due to write-downs by financial institutions in both the US and Europe, along with concerns about the soundness of monoline insurers and the rescue of Bear Stearns by the US Federal Reserve and JPMorgan Chase (see Brunnermeier 2009 for more details). These events led to widening money market spreads across major economies between unsecured (i.e., InterBank Offered Rates, (BOR))⁸ and secured (i.e., Overnight Index Swap, (OIS)) interest rates, reflecting the heightened uncertainty of market participants (Fig. 1). Such a “confidence crisis” among market participants reflected uncertainty about the financial soundness of financial institutions and also uncertainty about the possible impact of tensions on aggregated liquidity availability. Thus, the conditions of a normal liquid market were no longer fulfilled (see McCauley 2009).

Given the possible implications of disrupted trading activity in the money market for the transmission of monetary policy, the ECB promptly intervened by increasing the size and number of its refinancing operations. Even though it took some time

⁷ Between 2003 and 2007, the volume of US sub-primes mortgages increased by almost 300%, from \$332 billion to \$1.3 trillion. Most financial institutions continued believing that US house prices would continue to rise, interests would remain low, and households would continue servicing their mortgages.

⁸ Note that this reference interest rate for the unsecured segment of the euro area money market is called the EURO InterBank Offered Rate (EURIBOR) and that of the US and UK money market is called the London InterBank Offered Rate (LIBOR).

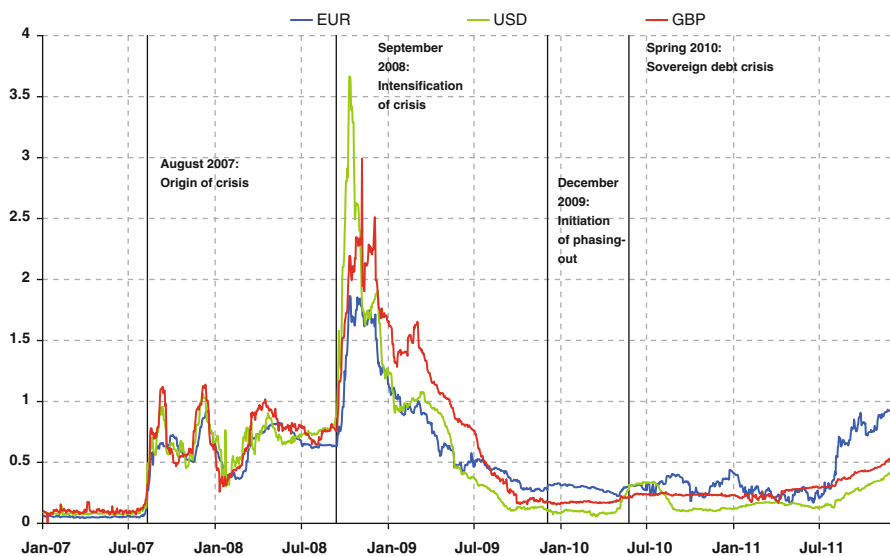


Fig. 1 Money market spreads in the euro area, UK and US (weekly averages, basis points). Source: Reuters and ECB calculations. Note: Spreads are the difference between the 3-month EURIBOR/LIBOR and the Overnight Index Swap rates

before the ECB formally committed to fully accommodate the liquidity demands of the counterparties, a full allotment procedure was implemented in practice.

The goal of the ECB during this phase was to reassure market participants of their access to liquidity while aiming to steer the Euro OverNight Index Average (EONIA) close to the minimum bid rate in spite of the augmented volatility of money market interest rates. In this regard, the implementation of the ECB monetary policy was mainly based on the so-called front-loading of the fulfillment of the minimum reserve requirements without significant excess liquidity.⁹ In practice, this procedure implied a rapid accumulation in reserves at the beginning of the reserve maintenance period on banks' current accounts held at the ECB, with a gradual decrease towards the end of the reserve maintenance period.¹⁰

⁹ The net recourse to the standing facilities (i.e., the difference between the amounts on the marginal lending and on the deposit facility) during this first phase was rather low, i.e., a daily average of approximately EUR 0.25 billion during most of the reserve maintenance period with a peak of EUR 1.5 billion during the final week.

¹⁰ As recalled in Cassola et al. (2008), by reducing the probability of banks' recourse to borrowing at elevated interest rates in the unsecured money market and by increasing the probability of being "locked-in", this procedure contained the upward pressures on the short-term interest rates in the money market. At the same time, liquidity draining fine-tuning operations (FTOs) were conducted during and at the end of the reserve maintenance period to mop up the remaining liquidity surplus and to support the expectations of the overnight interest rate being close to the minimum bid rate, i.e., the main ECB policy rate. Thus, the majority of the FTOs conducted during that period were liquidity-absorbing operations as reported in Cassola et al. (2011).

This first phase of the crisis is also characterized by intense cooperation among major central banks to alleviate tensions in cross-border money markets, in the US and the euro area in particular. Indeed, towards the end of 2007, significant tensions also occurred in the US money markets, partly reflecting a reduced access of EU banks to short-term liquidity in USD. Consequently, euro area banks had a tendency to bid more aggressively for the refinancing operations of the ECB and/or in the euro area money market, when possible, before embarking in FOREX swap transactions to convert the EUR into USD. This also created further tensions in the euro area money market. The ECB and the US Federal Reserve thus decided to take joint action by offering USD funding to Eurosystem counterparties as of 12 December 2007, leading to the establishment of the USD Term Auction Facility against ECB-eligible collateral. Similar actions were also taken at a later date with other central banks, notably the Swiss National Bank.

Last but not least, while the non-standard measures only tackled the distortions in the distribution of liquidity in the money market, the ECB had no compelling reason to change its monetary policy stance during the first phase of the crisis in light of the resilient economic environment.

3.2 The Global Financial Crisis: 15 September 2008–7 May 2010

Tensions in financial markets escalated again with the nationalization of GSE Freddie Mac and Fanny Mae on 7 September 2008, and they exploded with the bankruptcy of the US company Lehman Brothers Ltd. on 15 September 2008. All financial institutions without exception suddenly became vulnerable as the Lehman's collapse destroyed the market's faith in the implicit "too big to fail" warranty. Consequently, market participants in the money markets, especially in Europe and in the US, hoarded massive liquidity to protect their balance sheets and avoid the situation of a liquidity shortage. Major central banks, including the ECB, then significantly increased their intermediation role with the introduction of non-standard measures (in the form of unlimited provision via short- to long-term collateralized refinancing operations) and/or conducted programs of (public and private) securities purchases.¹¹

Between September 2008 and November 2009, the ECB took several bold non-standard measures to increase the provision of liquidity and thus restore confidence among market participants. First, a rollover of the supplementary term refinancing operations (conducted on an ad-hoc basis in the previous phase) on top of regular (1-week and 3-month) operations and the introduction of three additional liquidity-providing longer-term refinancing operations (LTROs) with a maturity of 1 year. Second, all refinancing operations were conducted on the basis of a fixed rate with full allotment procedures, and FTOs were discontinued (with the exception of one-day

¹¹ See among others Reinhart and Reinhart (2010) and Gagnon et al. (2010).

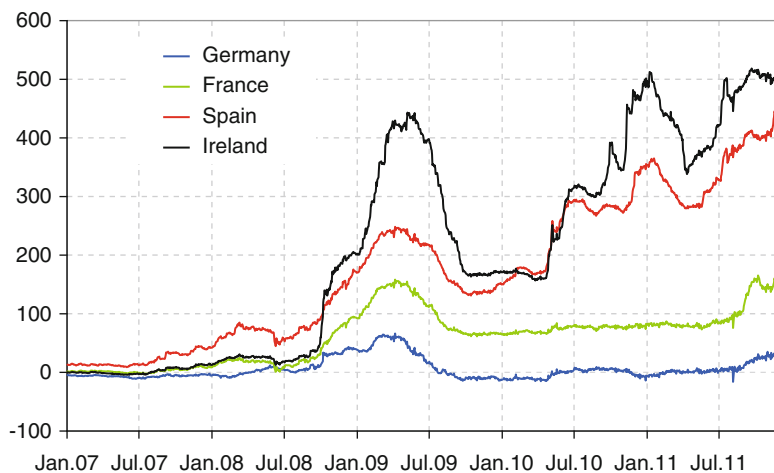


Fig. 2 Covered bond spreads against 5-year swap rate (daily, basis points). Source: Reuters

liquidity-absorbing FTOs on the last day of the reserve maintenance period). Third, the interest rate corridor of standing facilities was temporarily narrowed (between October 2008 and January 2009). 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 ABS) and non-marketable assets (with an additional haircut). In the same vein, the list of counterparties was also extended for some operations. Fifth, international coordination with other central banks was reinforced, notably through an increase of swap arrangements and agreements on repurchase transactions. Last but not least, the ECB decided, in light of growing tensions in the covered bank bond market in the euro area (Fig. 2), to establish a monetary policy outright portfolio with the covered bonds purchase program (CBPP) of EUR 60 billion.¹²

At the same time, a sharp fall in trade credits and global trade, the prospect of disorderly deleveraging, bankruptcies and eventually rising financing costs due to market tensions negatively impacted on growth and price expectations, leading to massive revisions of economic projections and inflation expectations (see Fig. 3).

As a result, the ECB decided to change its monetary policy stance using standard measures by reducing the minimum bid rate in a sequence of steps from 4.25% to a record low of 1% between 8 October 2008 and 13 May 2009. Other key ECB interest rates were similarly adjusted while keeping the interest rate on the deposit facility in positive territory (at 0.25%) to allow some interbank activity (Fig. 4).

¹² These tensions were due to the difficulties experienced by some credit institutions, and played an important role in the banks' debt instruments market in the euro area. They materialized through increasing covered bond spreads against the swap rate, reaching a peak in April/May 2009 (see Fig. 2).

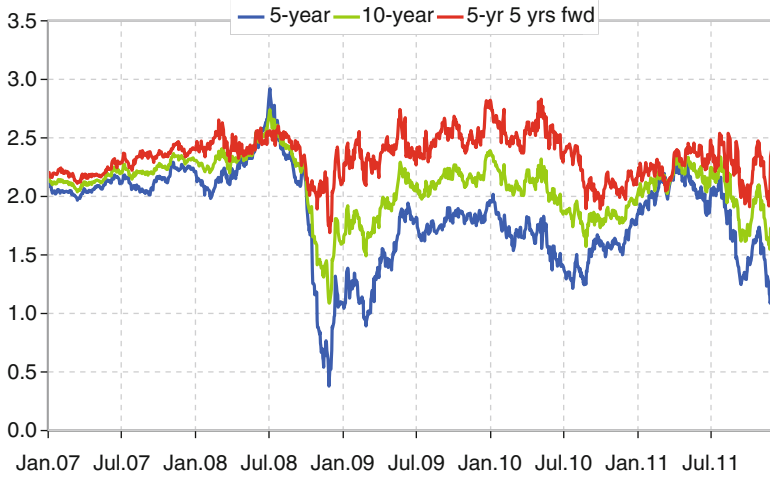


Fig. 3 Break-even inflation rate (daily, % p.a.). Source: Reuters

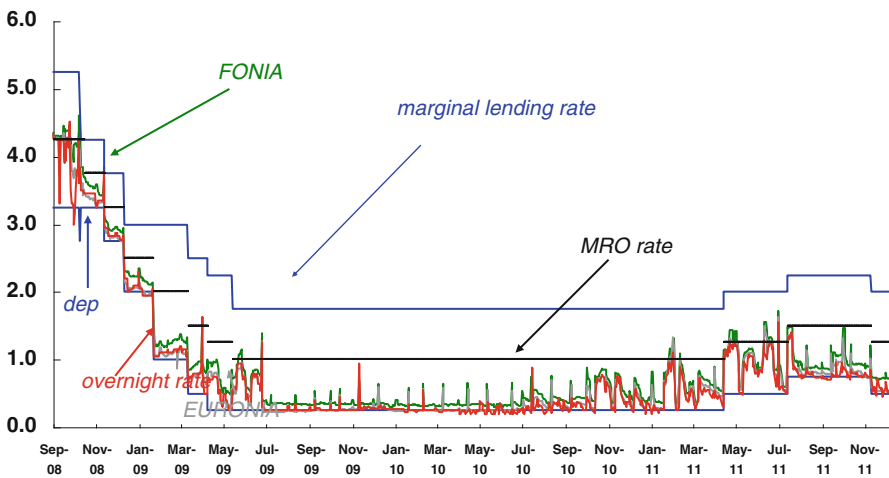


Fig. 4 ECB interest rates and money market rates (percentages per annum; daily data). Source: ECB, Reuters

During this period, the ECB aimed to reassure market participants regarding their access to liquidity via a further increase of its intermediation role in the money market, and by adjusting its policy stance with the downward revision of growth and price prospects. By making the supply of liquidity endogenous through the full

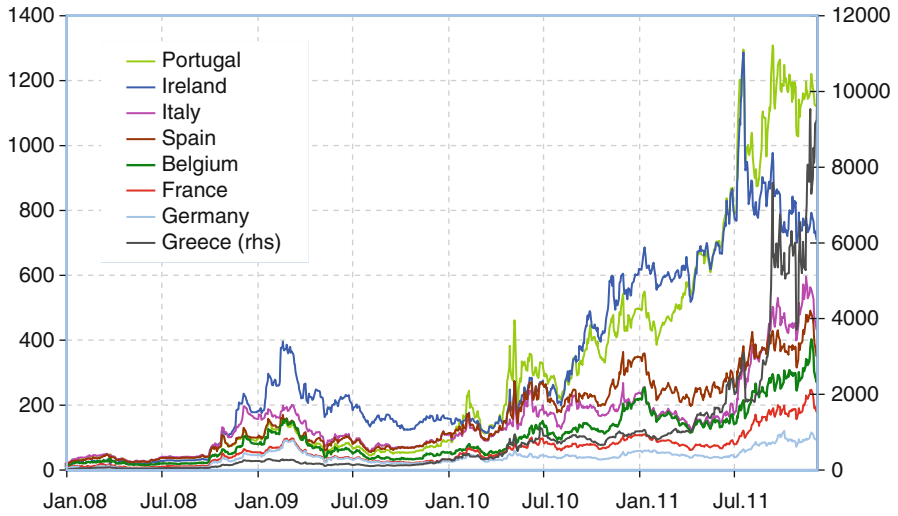


Fig. 5 Sovereign CDS premium (daily, basis points). Source: Reuters

allotment procedure, the ECB allowed the occurrence of excess liquidity while signaling its monetary policy stance with the level of the key ECB interest rates. As illustrated by Fig. 4, money market interest rates remained at very low levels with the EONIA reaching its lower bound, i.e., very close to the deposit rate.

3.3 Sovereign Debt Crisis: Today

Yet a new phase of the global financial crisis was brewing. While money market distortions started to recede, tensions regarding the public finances of some euro area countries emerged in November 2009. Eventually such tensions exacerbated in April/May 2010. The roots of these tensions started with Greece where the newly elected government began a huge revision of the public deficit left by the former coalition in early November 2009.¹³ Consequently, the Credit Default Swap (CDS) premium for Greece began to pick up in late 2009, together with the spreads between its 10-year government bonds relative to German bonds (Fig. 5). These tensions mainly reflected growing market concerns about the sustainability

¹³ The previously underestimated Greek public deficit was made possible by off-balance sheet operations and a lack of transparency in budget data. The desire for clarity by the newly elected government led to a revision of the public deficit from 8.2% to 12.5% of Greece's gross domestic product released on 1 November 2009.

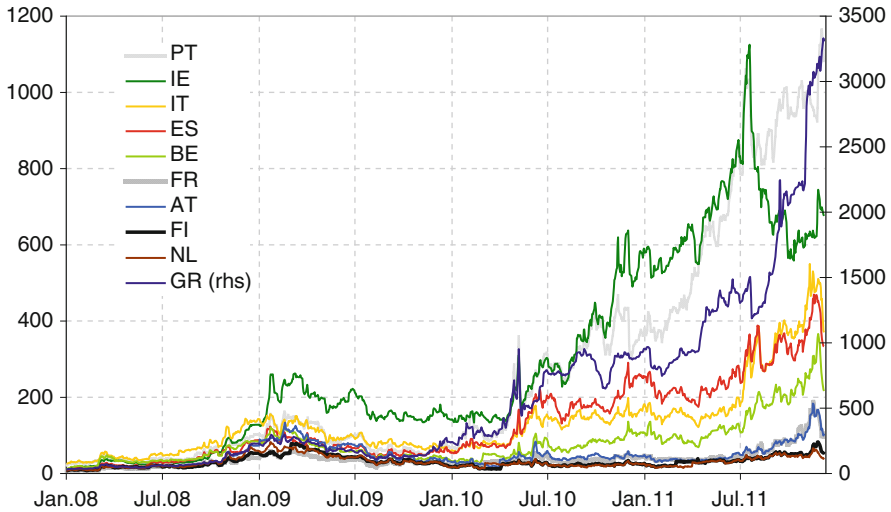


Fig. 6 Ten-year Government bond spreads against 10-year German bonds (basis points; daily data). Source: Reuters, authors' calculations. Note: The abbreviations denote the following countries: Portugal (PT), Ireland (IE), Italy (IT), Spain (ES), Belgium (BE), France (FR), Austria (AT), Finland (FI), The Netherlands (NL) and Greece (GR). This convention is also applicable to all figures

of public finances in view of rising government deficits and debt. In early 2010 similar concerns affected the bond pricing of other euro area countries leading to similar developments (i.e., increasing sovereign CDS premiums and widening spreads against the corresponding German bond, see Figs. 5 and 6).

As a result, the first financial package (EUR 110 billion) by the EU /IMF to Greece was announced on 2 May 2010.¹⁴ In light of these developments, the ECB decided to temporarily freeze the rating of marketable debt instruments issued or guaranteed by the Greek government and used as eligible collateral in the refinancing operations of the ECB.¹⁵

On 7 May 2010, spreads against German government bond yields recorded a first high (Fig. 6), whilst CDS premia on euro area government debt peaked (see Fig. 5). Secondary markets for several sovereign bonds dried up, which in turn affected the

¹⁴ At that time, the agreement was that the IMF would provide under a 3-year program EUR 30 billion through the stand-by arrangement while the EU would provide EUR 80 billion over the same period. This program was subject to strong conditions to restore fiscal sustainability and improve the country's competitiveness.

See further details at <http://www.imf.org/external/pubs/ft/survey/so/2010/car050210a.htm>.

¹⁵ See the decision of the ECB of 6 May 2010 on temporary measures relating to the eligibility of marketable debt instruments issued or guaranteed by the Greek Government (ECB/2010/3), available at <http://www.ecb.europa.eu/ecb/legal/date/2010/html/index.en.html>.

activity in both the money market and the covered bond market (Figs. 1 and 2). As shown in Figs. 12, 13, 14 and 15 in the Appendix trading volumes in the EONIA and the overnight repo market decreased while the EURIBOR-OIS spreads widened at various maturities, and both short- and long-term volatilities started to pick up again (both for the EURIBOR and OIS segments). Beyond the likely impairment that tensions in the bond markets could cause to the transmission of monetary policy, these particular tensions in the euro area sovereign debt market had the potential to create huge distortions in the liquidity distribution within the banking system in all euro area jurisdictions, notably through the impact of tensions among collateral values used for secured interbank operations. Indeed, the falling prices of several public debt instruments could worsen the financial distress seen in the banks' balance sheets by reducing the value of their asset portfolio, and hence further weakening their financial and liquidity position. This in turn reinforced the uncertainty of market participants regarding the financial soundness of their potential counterparties, and supported an increased recourse to central bank refinancing and liquidity hoarding.

To address the renewed tensions in the money market and to ensure a continued smooth transmission of monetary policy decisions along the yield curve, the ECB decided on 10 May 2010 to conduct interventions in the euro area public and private debt securities markets through secondary market purchases from credit institutions under the Securities Markets Programme (SMP). In addition, some adjustments in the design of the liquidity operations were also adopted.¹⁶ In coordination with other central banks, the temporary liquidity swap arrangements were also reactivated, thus resuming USD liquidity-providing operations on the basis of fixed rate with full allotment procedures against ECB-eligible collateral at terms of seven and eighty-four days. Figure 7 illustrates the evolution of the cumulative SMP purchases since the onset of this measure.

On 9 May 2010, EU finance ministers established the European Financial Stability Facility (EFSF), with a volume of up to EUR 500 billion (EUR 440 billion from the lending capacity of the facility combined with loans up to EUR 60 billion from the European Financial Stabilisation Mechanism), although, to preserve the very high credit standing of the EFSF, the lending capacity was significantly less. The IMF committed an additional EUR 250 billion, bringing the total to EUR 750 billion.¹⁷

In the remainder of 2010 and in early 2011, tensions escalated further. Bond yields on Irish and Portuguese government bonds reached levels that gradually led to a loss of market access. This, and the difficult public finance situation, led to an agreement

¹⁶ In particular, it was decided to conduct fixed-term (i.e., with a maturity of 7 days) liquidity-absorbing FTOs to create incentives among credit institutions to have more active liquidity management. Moreover, it was decided to apply the fixed rate with full allotment procedure to the regular 3-month LTROs to be allotted on 26 May and 30 June (which will be further prolonged until at least the end of January 2011) and to conduct one single 6-month LTRO with full allotment and a fixed rate indexed to the average of the minimum bid rate at the main refinancing operations over the life of the LTRO.

¹⁷ On 10 May the EU announced that the IMF was ready to provide up to EUR 250 billion to supplement its own EUR 500 billion stabilisation fund to support the euro area's weaker Member States.

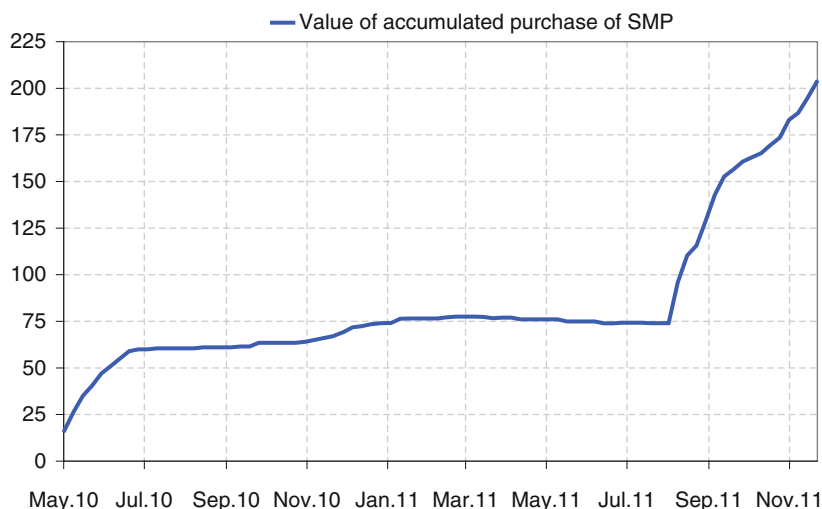


Fig. 7 Size of securities market programme (SMP). Source: ECB

for two further EU/IMF programs in November 2010 for Ireland and February 2011 for Portugal.

The agreement on the new programs and the general macroeconomic situation in the euro area and elsewhere contributed greatly to the stabilization in financial markets. Interventions under the SMP also were suspended for several months (see Fig. 7). As the assessment of the outlook for price stability gradually pointed to the emergence of upside risks to price stability, the ECB decided to increase its key rate twice, in April and July 2011, each time by 25 basis points.

The tensions regarding the Greek situation, however, did not abate, and slippages in the implementation of the Greek program soon gave rise to concerns as to the sustainability of public finance in Greece. On a political level, the orientation gradually emerged in favor of supporting private sector involvement (PSI) actions with the aim to lengthen the maturity structure of Greek government debt and reduce its cost over time. In this environment, government bond yields increased markedly in several euro area countries and tensions spread to various segments of the financial markets. Figure 8 illustrates the severe fluctuations in equity markets, both in terms of severe gyrations in stock markets indices as well as implied volatilities. In the same vein, volatility in the money market significantly increased again (see Fig. 15 in the Appendix).

On 21 July 2011, to address the difficult situation, the EU Heads of State or Government of the euro area agreed to a more flexible use of the EFSF resources to include secondary market purchases as well the recapitalization of banks.¹⁸ The effective lending capacity of the EFSF was also expanded and broad elements for PSI in Greece were outlined.

¹⁸On 29 September 2011 the German Parliament approved the strengthened EFSF and a few weeks later the Slovakian Parliament ratified it as well.

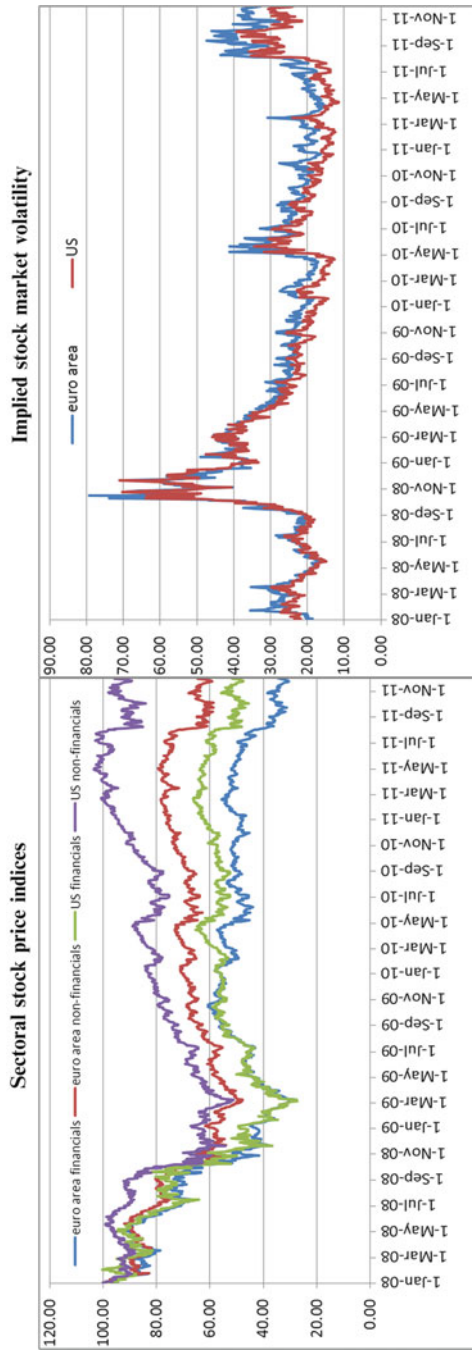


Fig. 8 Developments in stock markets in the United States and euro area. Source: Datastream, Bloomberg. Note: Stock price indices are rebased on 1 January 2010

These actions were not followed by the stabilization of the financial markets. The ECB, at its regular Governing Council meeting on 4 August 2011, announced a further 6-month refinancing operation and to prolong the allotment of liquidity with a fixed rate full allotment procedure until the end of the fourth quarter of 2011. Three days later, on 7 August 2011 following an extraordinary Governing Council meeting, the ECB announced that it would actively implement the SMP. The pace of purchases significantly increased in the subsequent period; between early August and early December, the size of the weekly fine-tuning operations (which are regularly conducted by the ECB to sterilize the interventions conducted in the context of the SMP and are a good proxy for the amount of overall purchases) increased to over EUR 20 billion.

The further deterioration of the liquidity position of banks during 2011 due to the intensification of tensions in the euro area sovereign debt markets led the ECB to take three further non-standard measures on 6 October 2011. More specifically, the ECB decided to conduct two longer-term refinancing operations (of approximately 12 months and 13 months, respectively) and to implement a second covered bond purchase program (CBPP2) for an intended amount of EUR 40 billion, and the fixed rate tender procedure with full allotment for all refinancing operations was extended to mid-2012.

Finally, amid the deterioration of soft economic indicators and growth expectations during the first half of 2011, the ECB further decided at its meeting on 3 November 2011 to decrease its key interest rates by 25 basis points. A key factor in the reassessment of the outlook for inflation was that the financial market tensions were associated with a tightening in financing conditions in the euro area; this was related in part to the consequences of the sovereign debt crisis.

4 What Is the Reasoning Behind the ECB Policy Decisions?

In the face of the challenges posed by the mutating 2007–2011 global financial crisis, major central banks worldwide were innovative in terms of the instruments they used, going beyond traditional and standard monetary policy instruments (i.e., changes to central banks' interest rates). In each country, the nature of the operations reflected the key features of the corresponding banking system.¹⁹

In the case of the ECB, its actions during the crisis were implemented on the basis of the so-called “separation principle”, which allows for a clear distinction of the motivations behind the standard measures and those driving the non-standard ones. In practice, a clear distinction is maintained between standard measures on key policy interest rates (i.e., the determination of the monetary policy

¹⁹In this regard, it is worth recalling the importance of banks in the external funding of non-financial corporations in the euro area (80% of total funding) in comparison with the US (40%). Consequently, most of the instruments used by the ECB took the form of direct financing to banks whereas the US Federal Reserve implemented several asset purchase programmes in larger amounts.

stance that aims in turn to deliver price stability) and non-standard measures on liquidity refinancing operations (which may also support the functioning of the money market on top of the implementation of the monetary policy stance). Within this framework, the actions of the ECB since August 2007 can be rationalized as outlined below.

Concerning the conduct of monetary policy (standard measures), ECB decisions are resolutely focused on the maintenance of price stability. In this regard, it is essential to conduct a comprehensive assessment of all the factors that impinge upon the prospects for price stability and to act in a manner that best serves its primary objective. Although the decision in July 2008 reflected concerns regarding the reinforcement of upside risks to price stability, decisions since October 2008 were governed by the likelihood that the intensification of tensions in financial markets were likely to have significant implications for the outlook for price developments and thus for the course of the monetary policy.

At the same time, it is essential that monetary policy decisions are transmitted effectively and smoothly to the economy in general, and to private sector price-setting decisions in particular (Goodhart 2011). Given the crucial role of the ECB at the start of the transmission mechanism, the transmission of monetary policy decisions requires well-functioning financial markets, the money market in particular. This latter concern is the main motivation for the introduction of non-standard measures.

Standard and non-standard measures naturally operate together. In the case of wide disruptions in the transmission mechanism, interest rate decisions would not be transmitted to the economy and would hamper the capacity of the ECB to maintain price stability. In this sense, non-standard measures aim to implement the appropriate monetary policy stance, as signaled by key ECB interest rates. This would allow the ECB to keep alive non-standard measures, if needed, while adapting interest rates according to the outlook for price stability over the medium-term.

In regard to the transmission of monetary policy decisions as reported in Fig. 9, the financial crisis that began in August 2007 had the potential to severely impair it through various channels.

First, when the supply of interbank credit becomes scarce as a result of mistrust among market participants, the cost of interbank credit, i.e., the first step in the transmission process, rises above the level that would be consistent with the desired monetary policy stance of the ECB (Fig. 1). In particular, given the crucial benchmarking role of the EURIBOR futures contracts in the determination of retail interest rates, rising costs clearly endangered the effective transmission of the monetary policy stance to banks and, subsequently, the real economy.

Second, as stated in Brousseau et al. (2009), the advent of repo operations and the entry of new players like financial institutions (pension funds, insurance companies) significantly altered the distribution of liquidity in the interbank market and its functioning, shifting from bank-centric financial systems to bank-peripheral financial systems in the wake of the disintermediation of the traditional money market. More specifically, customer deposits have shifted towards the fund management industry whereas banks increasingly borrow from money market funds using

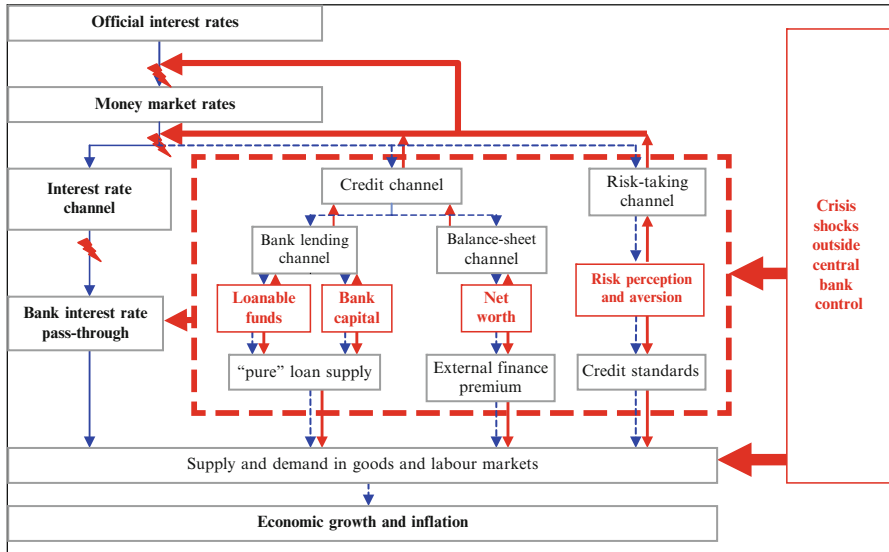


Fig. 9 The main potential impairments in the monetary transmission mechanism

different vehicles (e.g., certificate of deposits, asset-backed securities, collateralized debt obligation, commercial papers and repo operations, among others). As this type of funding has gradually overtaken the traditional funding model of deposit from rich banks using long cash positions to place funds with interbank counterparts, banks’ funding costs, and, hence, retail interest rates, have become more sensitive to developments in the market for structured finance products, the covered bond market and the market for secured interbank lending. In the same vein, with the key role of government bonds in the secured lending market (then considered as a prime source of collateral), abrupt and volatile changes in their value could also imply a sharp deterioration in banks’ funding and liquidity conditions, with adverse effects on both the supply of bank loans to the real economy and their prices.

Last but not least, the prospect of a decline in banks’ deposits, if not compensated by other sources of funding, may also act as an additional constraint on the asset side of the banks’ balance sheets. All these elements (i.e., decreasing (or lack of) value of structured products and other financial assets) increase the likelihood of disorderly deleveraging by banks through, for example, fire sales, which may negatively impact the value of loans to the economy.

With a view to preserve the effectiveness of the interest rate, bank lending and financial asset channels, the ECB has thus increased its intermediation role through a temporary substitution of distorted market segments to ensure a continuation of bank loan provision to the real economy with conditions in line with the monetary policy stance decided by the Governing Council.

This aim has been supported by a number of tools that have been touched upon in Sect. 3, including, prominently, a definition of the collateral list, the adoption of

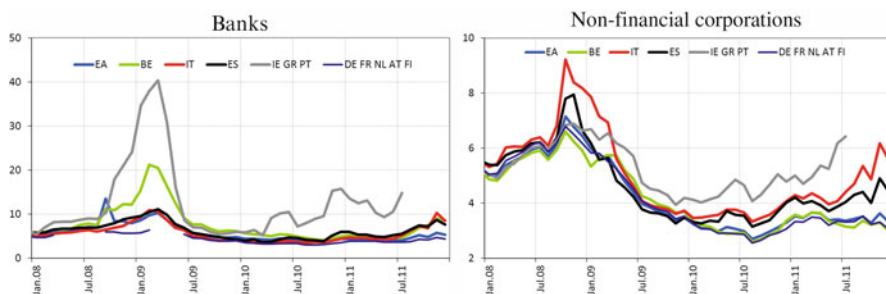


Fig. 10 Nominal cost of market debt for the corporate sector: investment grade bonds. Source: Merrill Lynch global Index and ECB calculations. Note: Percentage per annum, average yields (January 2008 to November 2011). Country aggregates are calculated using common gross domestic product weights. Investment grade bonds issued by banks are no longer available for GR and IE since July 2010 and for PT since August 2011. Investment grade bonds issued by NFCs are no longer available for GR and IE since July 2010 and for PT since August 2011. The abbreviations denote the following countries or area: euro area (EA), Germany (DE). See also the note attached to Fig. 6

fixed-rated tenders in the allotment of liquidity, the utilization of operations with long maturities and programs for the purchases of private and public sector securities (CBPP, CBPP2 and SMP).

In this respect, it is crucial to fully understand the rationale underlying the SMP regarding what affects the support of the transmission of monetary policy. Government bond markets play a key role in affecting the financing conditions of the economy through a variety of channels. First, government bond prices are often used as a reference to price other private sector securities. Second, movements in government bond prices affect the value of security holdings in the balance sheets of banks and other private sector agents. This could affect the perceived creditworthiness of these agents and their cost of funding. A decline in the value of government bonds would also reduce the collateral available and therefore the access to funding of private sector agents.

Therefore, in the case of malfunctioning in government bond markets, the transmission of monetary policy could be severely impaired. This can be observed with the development in some financial market prices in the period of the sovereign debt crisis, as illustrated by Figs. 8, 10 and 11.

As can be seen notably in Figs. 10 and 11, in the countries most affected by the sovereign debt crisis, the financing conditions of the economy tended to tighten more.

A key question is therefore to what extent are the prices of government bonds indeed affected by malfunctioning in financial markets. This requires sound judgment on the part of the ECB, which regularly conducts a broad based assessment for this purpose. Elements of this assessment include analyses of volumes of transactions, bid-ask spreads, as well as an assessment of current fiscal positions and future ones. As indicated many times in its external communications, the ECB takes note of the commitments of governments to proceed with fiscal consolidation.

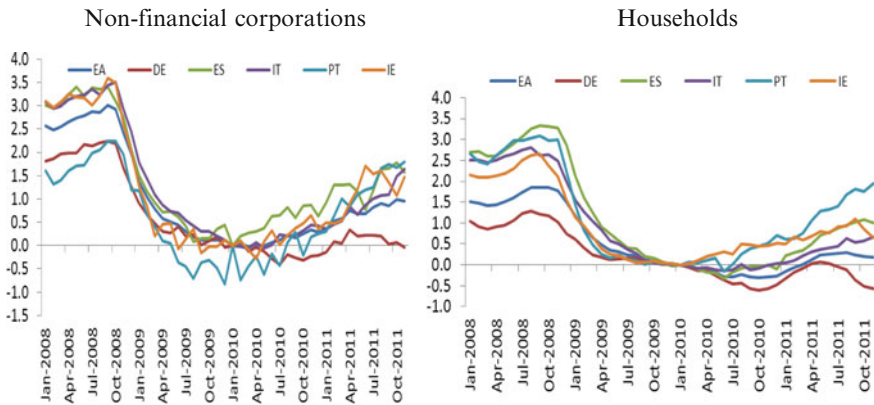


Fig. 11 Composite bank lending rate. Source: ECB calculations. Note: Percentage per annum, realized values. The composite lending rate is a weighted average based on outstanding volumes of loans and on the assumption of floating rate share in long-term loans

5 Some Concluding Remarks

The role of a central bank under any circumstances, and in crisis times in particular, is to inflexibly pursue its main objective, which in the case of the ECB is price-stability. By acting decisively to deliver its main objective while communicating properly about the purpose of the non-standard measures (aimed to restore normal trading conditions without jeopardizing its main policy objective), the central bank should play the key role of an anchor of stability, which appears essential in times of stress. This approach by the central bank (to act appropriately and timely) implies the very careful analysis of any sudden unexpected shocks before it considers a change to its monetary policy stance. In the same vein, it also requires the assessment, in real-time, of the effectiveness and relevance of its actions. In this context, the absence of pre-commitment may allow more flexibility in the conduct of monetary policy by avoiding having to persist with measures that are no longer relevant or necessary. At the same time, it is the duty of the central bank not to assume the responsibilities of third parties, which suggests the removal of non-standard measures when evidence shows that they are no longer needed.

This posits the challenge of appropriately timing the process of phasing out non-conventional policies. In this regard, it is crucial that the withdrawal of support measures does not lead to renewed market tensions, and therefore it may require a gradual approach.

The ongoing sovereign debt crisis of the euro area is particularly challenging. On the one hand, one may argue that the central bank is not alone and that other agents (banks and governments) must also contribute to crisis resolution by acknowledging their responsibilities. In particular, responsible management by both financial institutions and governments is required in the future. On the other hand, in light of the impact of the sovereign debt crisis on the banking system, a gradual and pragmatic approach in addressing the tensions in this segment of financial markets is of utmost importance and represents one of the most challenging situations that the ECB has faced so far.

Appendix

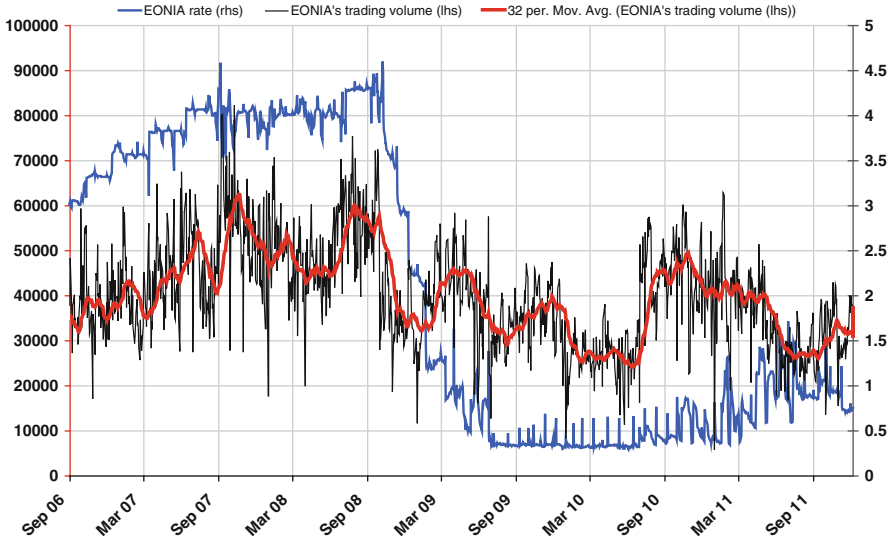


Fig. 12 Activity and pricing in the EONIA market (daily averages). Source: ECB, Reuters

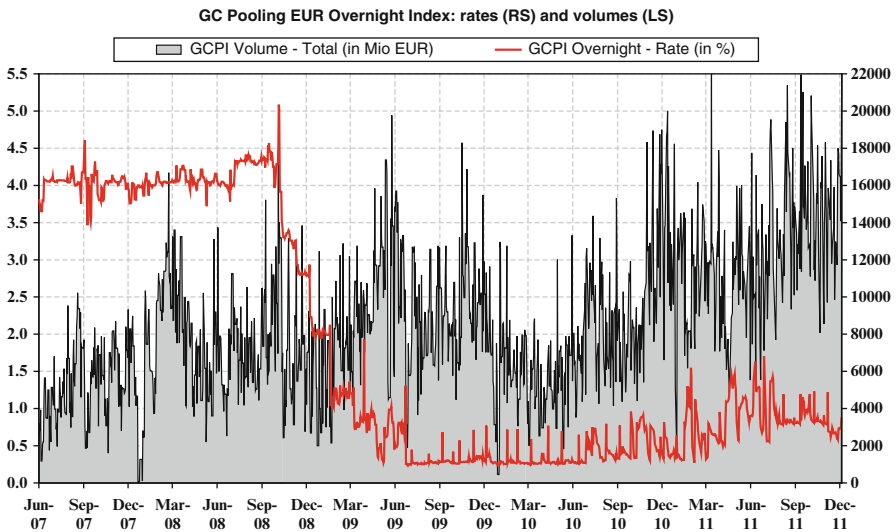


Fig. 13 Activity and pricing in the overnight Repo market (daily averages). Source: ECB, Reuters

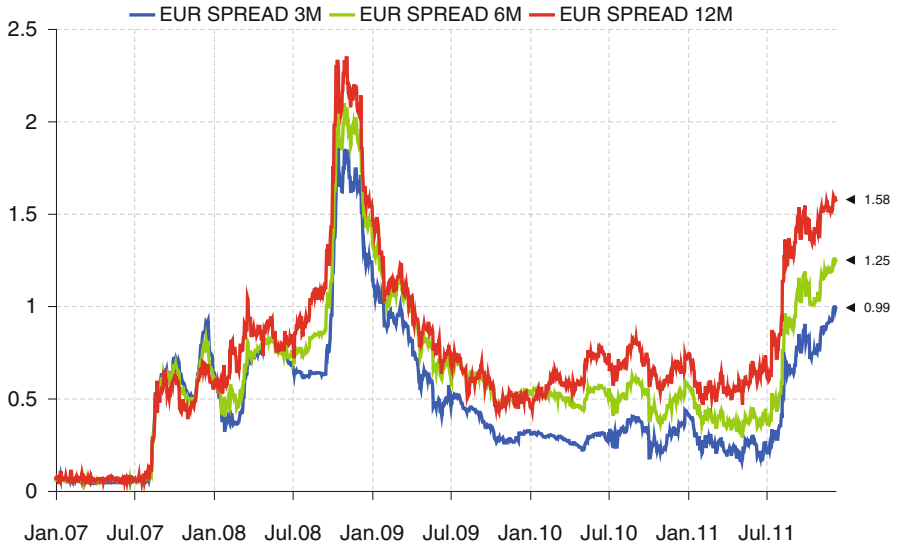


Fig. 14 Money market spreads between EURIBOR and OIS rates in the euro area. Source: ECB, Reuters

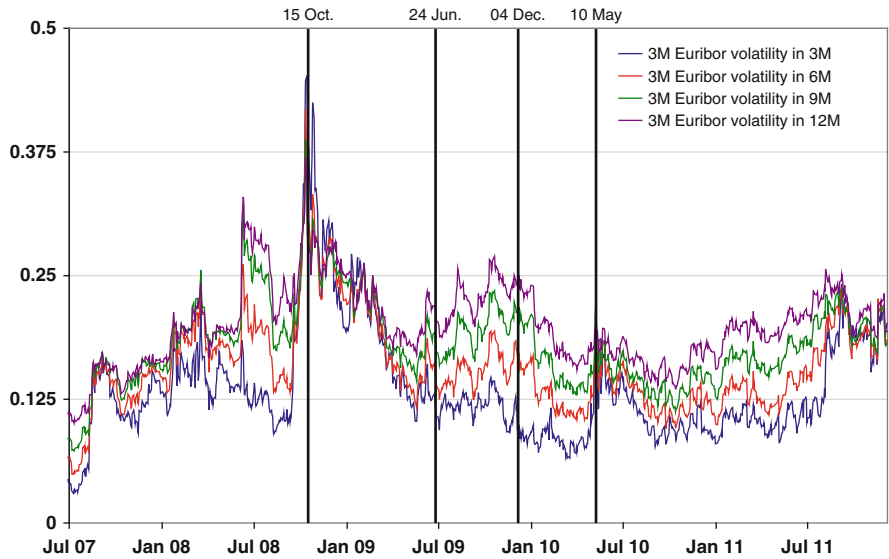


Fig. 15 Volatility in the term EURIBOR market (daily averages). Source: ECB, Reuters

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