

Benoît Cœuré: Challenges to the single monetary policy and the European Central Bank's response

Speech by Mr Benoît Cœuré, Member of the Executive Board of the European Central Bank, at the Institut d'études politiques, Paris, 20 September 2012.

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Ladies and gentlemen,¹

It is a great pleasure for me to speak here today at Sciences Po Paris.

9 August this year was the fifth anniversary of the start of the financial crisis. The past few years have been times of hardship, financial turbulence and risks. At the same time, the crisis has exposed weaknesses in the framework of the economic and monetary union and provided an impetus to strengthen its foundations and to begin the process of bringing all euro area countries back to a more sustainable fiscal and macroeconomic path.

The crisis has also brought challenges and opportunities for monetary policy, which is going to be the focus of my remarks today. Let me elaborate on two of them.

The first challenge I will describe is that after Lehman's collapse central banks had to combat exceptional threats to price stability arising from financial instability and recessionary forces. At that time their standard tool of monetary policy – changes to the short-term interest rate – was losing traction due to the dislocation in the financial system. Central banks had to quickly learn that this situation required switching from normal operating mode, based simply on setting short-term interest rates, to crisis mode, aimed at sidestepping the obstacles to the standard channels of monetary policy transmission. This experience has given us an opportunity to deepen our understanding of monetary policy and, in particular, to reject the textbook dichotomy that either the central bank is able to rely on the “interest rate channel” for the transmission of its intentions, or else the economy is condemned to lasting instability. It is now clear that additional channels and conduits are available.

The second challenge I want to discuss is the sovereign debt crisis and the associated fragmentation of credit markets across national borders. Starting in 2010, the financial crisis began to unfold in the euro area by turning into a debt crisis for some sovereign issuers. This quickly spilled across markets and countries. And more recently, it was exacerbated by investors' fears of the reversibility of the euro. The challenge faced by monetary policy in this environment is enormous and is testing the ability of the ECB to act as the central bank of a single monetary area with 17 fiscal jurisdictions. It has been increasingly challenging to preserve the singleness of the monetary policy and to ensure the proper transmission of the policy stance to the real economy throughout the currency area. To address this situation, the ECB has taken a number of non-standard measures, and two weeks ago it announced the modalities for undertaking Outright Monetary Transactions in secondary markets for sovereign bonds in the euro area. I will describe the rationale for this decision and argue that it is a key element to ensure a lasting “monetary dominance” in the euro area, compliant with the Treaties.

Channels of monetary policy in normal times and crisis times

In normal times, monetary policy works primarily through inter-temporal financial arbitrage. In the Eurosystem, this arbitrage covers two different time dimensions. There is the weekly arbitrage cycle, through which the volume of central bank liquidity is reallocated across

¹ I would like to thank Roberto Motto, Stefano Nardelli, and Massimo Rostagno for their contributions to the speech. I remain solely responsible for the opinions expressed herein.

banks trading in the money market in the period between two consecutive weekly Eurosystem main refinancing operations (MROs). The reason for this reallocation is that – as a matter of routine, at least – the Eurosystem provides reserves at weekly intervals. While the banking sector’s need for reserves in the aggregate may not change significantly within a week, the cash needs of individual banks do fluctuate at higher frequencies, probably daily.² So banks with liquidity deficits in the infra-weekly period need to borrow from banks with liquidity surpluses. The price at which these trades of liquid reserves between banks occur, i.e. the overnight interest rate (of which a euro area average, the EONIA, is computed and published every day by the ECB), is influenced by expectations of the cost of Eurosystem credit – the so-called MRO rate – at the next weekly monetary policy operation. A short-term inter-temporal arbitrage calculus anchors the overnight interest rate applied on the credit transaction between banks that need liquidity and banks that have a liquidity surplus.³

The second dimension of the inter-temporal calculus has a longer horizon and a wider scope of application across asset classes. Banks can borrow short in the money market or from the Eurosystem and decide to engage in term lending to other banks or to their customers. Bank customers, in turn, can use bank liquidity to finance consumption or the acquisition of capital. It is important to note that all of these money transactions in the broader economy involve traders weighing the costs of their borrowing against the return opportunities on their asset acquisition at different points in time, where the horizon is typically longer than a week. But, again, as banks borrowing from the Eurosystem are the source of this liquidity propagation pattern, and banks’ financial calculus is based on their anticipations of the interest rate settings by the Eurosystem in the future, such anticipations anchor the pricing of credit in the broader economy.

We call this “the interest rate channel” of monetary policy decisions. In normal times, when risk factors are contained and can be diversified away, the interest rate channel, working through inter-temporal arbitrage, is the prime conduit of monetary policy (see slide 2). It sets the floor for term borrowing costs. Parsing longer-term yields into two components – the average level of the short-term policy interest rate expected over the term to maturity of the asset, and the risk premia – expectations of monetary policy pin down the first component. The mechanism through which this occurs is the inter-temporal financial arbitrage I just described. Term and liquidity premia are the additional returns that investors demand as a compensation for their reluctance to bear interest rate risk over long-duration assets, and for their decision to forgo liquidity services – I am abstracting here from credit risk, to which I will return later.

When markets are properly functioning, non-depository institutions – dealers, hedge funds, investment banks – provide immediacy by offering lenders and borrowers their capacity to take positions on both sides of the market. Their ready availability to take positions as lenders and borrowers supports market liquidity, namely the ease with which a lender can liquidate a position before maturity. When market liquidity is secure, lenders are willing to engage in finance, trades in long-duration assets are active and the liquidity premia are contained. And, most importantly, they are steady. With a steady premium, the expectations

² There are two reasons for idiosyncratic fluctuations of reserve demand by individual banks. The first reason is associated with cash withdrawals and cash deposits by customers and from bank transfer payments intermediated by the Eurosystem – in its function as the clearing institution of the most important interbank payments system in the euro area. The other reason is that not all banks participate in the Eurosystem liquidity-providing operations, but prefer to cover their needs for reserves primarily in the interbank market. For example, in normal times, of the 1,700 banks that were eligible for Eurosystem monetary policy operations, less than 500 used to participate in liquidity allotments.

³ In a Eurosystem environment, the short-term inter-temporal calculus finds another anchor: the need for banks to fulfil their reserve requirements over a monthly maintenance period. In normal times, this is accomplished smoothly throughout the monthly period, again via an inter-temporal substitution of liquidity balances by each individual bank.

of the short-term rates become the driving factor in the pricing of long-dated securities, and monetary policy acquires a potent handle on the economy.

In August 2007, a sudden re-pricing in the US sub-prime mortgage market changed this world. The close and predictable relationship between the expected path of policy rates and market rates broke down because the liquidity premia widened and became volatile. The elevation of market premia was especially pronounced in the spread between the three-month EURIBOR and the expected three-month path of the overnight rate (see slide 3). Banks recognised a substantial counterparty risk in lending to each other, given that interbank lending was generally unsecured. But, even if collateral was taken, the ability to liquidate it at a reasonable price was severely impaired in an environment of widespread fear and uncertainty. Bank positions in the interbank market can be highly persistent. Large diversified banks tend to be borrowers and smaller, regional banks lenders. When the financial turmoil erupted, persistent borrowers endured a sharp and sustained jump in their funding costs and many of them had no access to markets at all.

When Lehman Brothers finally filed for bankruptcy in mid-September 2008, widespread financial panic broke out. The paralysis of transactions spread beyond the money markets, where it had been more or less confined for a year. Outside the money market, dealers play a critical role guaranteeing market liquidity. But in order to be able to take positions on both sides of the market, they need to finance their securities positions via collateralised funding. For that, they need their own capital, which they can use to pay for the margins required by those who lend them securities. When confidence evaporates, margins increase and dealers' capital is eroded, so that their ability to trade as buyers is restricted. Markets lose a critical actor, assets become less liquid, and the value of assets declines further. Having tasted the forbidden fruit of excess risk-taking, financial institutions were cast out of the paradise of seamless financial markets.

In a financial crisis of these proportions, “outside money” – an asset that is not a liability for anybody else than a central bank – becomes the sole trustworthy store of value.⁴ Only a central bank, the monopoly provider of outside money, can respond to the scrambles for liquidity.

The ECB injected its funding capacity into a market vacuum left wide open by bank retrenchment, dealer defaults and investor panic. In these conditions, inter-temporal financial arbitrage – of the type I described above – becomes impaired. The power of banks and dealers to engage in or finance inter-temporal trades of liquidity balances is degraded. So the main conduit of monetary policy – which depends on those trades – is lost.

The ECB had to open a new channel, the “liquidity channel”, to get round the roadblocks facing the interest rate channel (see slide 4). More precisely, the ECB acted in two dimensions. It sought to alleviate the difficulties experienced by banks in getting liquidity from the interbank market, which was putting pressure on the assets side of banks' balance sheets and increasing the risks of hindering credit supply. At the same time, it sought to restore the normal pass-through from short-term money market (lending) rates to other market and bank interest rates.

As far as impairments to banks' funding are concerned, the ECB addressed banks' funding uncertainty by fully accommodating liquidity needs at a fixed interest rate (the ECB main refinancing rate), while simultaneously lengthening the maturity of refinancing operations: from three to six months and twelve months, and more recently two operations with a three-year maturity. This has allowed an alleviation of the funding constraints of the banking system. In this way, a substantial change in the term structure of liquidity has taken place. While before the crisis about three-quarters of outstanding liquidity had a maturity of one

⁴ See Holmström, B. and Tirole, J., (2011), *Inside and Outside Liquidity*, MIT Press.

week and the rest three months (i.e. an average maturity of 15–20 days), the current average maturity is 28 months (see slide 5).

The expansion of the ECB collateralised monetary policy operations, together with the more widespread collateralisation of financial transactions, has raised the fear of encumbrance of bank assets. This risk has not materialised as the list of eligible collateral has been expanded to enable banks to take full advantage of the ECB full-allotment policy, while rigorously applying risk control measures to mitigate liquidity, market and credit risk. But as higher haircuts erode the refinancing power of encumbered assets, there must be an asymptotic limit to the ability of the central bank to provide outside money without endangering its creditworthiness, on which confidence in the currency rests. The notion that central banks have an unlimited capacity to create money is an illusion and thus cannot be used as an excuse not to reform the economy.

Overall, the policy measures taken on several fronts were able to stem the risk of a credit flow fallout with related adverse implications for price stability. In particular, the role of bank credit in financing the private sector has been preserved, supported by an increased recourse to debt markets especially by large firms (see slide 6).

The sovereign debt crisis and fragmentation of credit markets across national borders

My discussion so far has focused on term and liquidity premia, which have taken centre stage since the very beginning of the financial crisis. Starting in May 2010, the crisis was marked by a new phenomenon, until then little known in euro area: the emergence of large and variable credit risk premia in the pricing of supposedly risk-free securities issued by euro area governments. This has led to questions about the creditworthiness of some sovereign issuers and to a fully-fledged sovereign debt crisis.

This new phase of the crisis has taken on several dimensions. The first and most noticeable one has been the large sell-off of government debt issued by sovereigns in precarious fiscal positions (see slide 7). Markets have increased their scrutiny of the fiscal and structural conditions of Member States (the “fundamentals”) and assessed them with an increasing degree of risk aversion. At times, markets have also overreacted to national news and to the political debate at euro area level, with yields subsequently displaying little mean reversion.

Fragmentation of credit market across national borders

The second dimension of the debt crisis has been a fragmentation of credit markets across national borders, affecting both banks and the private non-financial sector – in addition to the fragmentation experienced in government debt markets. The tight link between sovereign and bank creditworthiness is clearly visible in the high degree of correlation between sovereign CDS premia and bank CDS premia within the same jurisdiction (see slide 8). Causality runs both ways: banks’ rising funding costs reflect the risk associated with banks’ holdings of bonds issued by their own sovereign; and sovereign risk is exacerbated by the contingent liabilities coming from the perception that the government will have to intervene to rescue the domestic financial system. This creates a self-reinforcing loop between bank and sovereign risks, with doubts about the solvency of the sovereigns feeding doubts about the solvency of the banks, and vice versa. Such dynamics are much weaker in euro area countries considered by markets as financially solid. In the US – an example of a well-integrated fiscal and financial union, with a shock-absorbing capacity at the federal level, credible discipline at state level and a centralised mechanism to supervise and resolve banks – there is no correlation between bank and sovereign CDS premia. With hindsight, the “original sins” of Economic and Monetary Union, an otherwise carefully thought-through and consistent project, were weak fiscal institutions, tolerance of economic imbalances and the lack of an integrated mechanism to supervise and resolve banks.

As a matter of fact, financial fragmentation has led to a “two-gear” monetary union, in which the marginal cost of borrowing for banks varies according to the jurisdiction.

1. Banks belonging to jurisdictions considered by markets as financially sound can generally access the interbank money market and get overnight financing at the EONIA rate, which is currently as low as 0.10%.
2. Banks in jurisdictions where risks and uncertainty are elevated generally have limited access to the interbank money market and rely to a large extent on central bank liquidity, charged at the MRO rate, currently 0.75%.

The distressed funding conditions faced by banks in some parts of the euro area, compounded by expectations of a worsening macroeconomic outlook, have in turn resulted in fragmented credit conditions for households and firms, again along national borders. For one thing, credit supply standards applied by banks in their lending to the real economy have diverged across euro area countries. A similar message comes from the cross-country comparison of bank lending rates. The 75 basis point cut in the ECB main policy rate implemented in late 2011 has been accompanied by little reaction or even an increase of lending rates in countries under stress, whereas there has been a complete pass-through in euro area countries considered by the markets as financially solid (see slide 9).

Self-fulfilling equilibria driven by break-up fears

The third, and most recent, dimension of the debt crisis has taken the form of investor fears of a break-up of the currency union. Whereas exchange rate risk across euro area countries should have disappeared permanently with the creation of the single currency in 1999, there have been signs, especially over the summer, that investors have started pricing in redenomination risk. Investors require a compensation for the risk that the euro might not remain the irreversible currency of the euro area – at least in its current composition.

Although it is difficult to disentangle redenomination premia from other sources of risks – and it requires econometric analysis – the inversion of the slope of the term structure of sovereign bond spreads⁵ observed in early summer 2012, for instance, for Spain and Italy was consistent with expectations of imminent break-up risks. Market fears of a high probability of not paying back in full, or of equivalently to repaying in a different, lower-valued currency, command high spreads. If the probability of this event concentrates over the short horizon, then the cumulative default probability for longer horizons (bounded overall by 100%) cannot rise much further, and inversion of the spread curve necessarily follows.

Redenomination premia share some similarities with exchange rate premia that were driven out of control in the early 1990s by speculative attacks against the legacy currencies. The early symptoms – inverted sovereign yield curves, at least for some countries – were the same. And the potential of such attacks is known to generate self-fulfilling prophecies.

In early summer 2012 this situation had two main implications. One was for fiscal policy: it needs to deliver sound fundamentals as the only way to lastingly overcome the crisis; but, at the same time, there can be no viable fiscal adjustment that can ensure sustainability if the interest rate faced by the fiscal authority keeps rising and there are severe distortions in government bond markets. The second implication was for monetary policy: the central bank cannot fulfil its mandate to maintain price stability if its policy intentions are not transmitted correctly to the real economy through the chain which forms the basis for monetary policy transmission; but, at the same time, the central bank cannot fulfil its mandate to maintain price stability if the fiscal authority does not fully honour its obligation to pay back its liabilities under all circumstances.

⁵ To remove the influence of market expectations about future policy rates, it is useful to focus on the term structure in terms of spreads between sovereign bond yields of a given euro area country and benchmark yields – which can be represented by the OIS curve or the term structure of German Bunds.

How to make these apparently conflicting instances compatible? And how to overcome the deadlock?

The ECB policy response: Outright Monetary Transactions

Guidance to answer these questions can be derived from the Maastricht Treaty and the conceptual apparatus developed in the context of the economic literature on monetary vs. fiscal dominance. These insights have made clear that, from an institutional design perspective, central bank independence and a clear focus on price stability⁶ are necessary but not sufficient to ensure that the central bank can provide a regime of low and stable inflation under all circumstances – in the economic jargon, ensuring “monetary dominance”. Maintaining price stability also requires appropriate fiscal policy. To borrow from Leeper’s terminology,⁷ this means that an “active” monetary policy – namely a monetary policy that actively engages in the setting of its policy interest rate instrument independently and in the exclusive pursuit of its objective of price stability – must be accompanied by “passive” fiscal policy. A passive fiscal policy means that the fiscal authority must be ready and willing to adjust its policy stance (revenues and primary spending) in such a way as to stabilise its debt at any level of the interest rate that the central bank may choose. Or, to put it another way, borrowing from Woodford’s terminology,⁸ fiscal policy needs to be “Ricardian”.⁹

Although the Treaty shows an awareness of the need for consistency between monetary and fiscal policy, in the sense described above, to ensure lasting stability, it did not foresee that fiscal policy could go off track to an extent that requires dedicated institutions and policies able to provide financial assistance, against conditionality, in order to restore sustainability and preserve financial stability in the euro area. The creation of the EFSF/ESM in charge of providing support to euro area Member States in difficulties and enforcing appropriate conditionality has filled this gap. It provides the euro area with a means to restore “Ricardianess”, thereby minimising the risk of “fiscal dominance”.

Against this background, it is easy to understand the ECB’s decision on 6 September to undertake Outright Monetary Transactions (OMTs) in secondary markets for sovereign bonds in the euro area, and to understand the specific framework within which they will be implemented. The aim of OMTs is to preserve the singleness of monetary policy and to ensure the proper transmission of the monetary policy stance to the real economy throughout the euro area. OMTs are intended to provide the ECB with a tool to address severe distortions in government bond markets which originate from, in particular, unfounded fears on the part of investors of the reversibility of the euro. Effectively, OMTs represent a means to rule out destructive self-fulfilling prophecies that would force the economy into a sub-optimal equilibrium (with elevated interest rates, adjustments made impossible, ultimately leading to default and currency redenomination).¹⁰ Meanwhile, OMTs preserve the incentives for governments to enforce the economic and fiscal adjustments which will prove

⁶ On the importance of central bank independence and credibility as a means to address possible inconsistencies between monetary and fiscal policy, see, T. Sargent and N. Wallace (1981), “Some Unpleasant Monetarist Arithmetic”, Quarterly Review, Federal Reserve Bank of Minneapolis, Fall.

⁷ See, E. Leeper (1991), “Equilibria under ‘active’ and ‘passive’ monetary and fiscal policies”, Journal of Monetary Economics 27, 129–147.

⁸ See, M. Woodford (2001), “Fiscal requirements for price stability”, NBER Working Paper No. 8072.

⁹ “Ricardian equivalence” implies that forward-looking agents internalise the fact that the government budget will always be adjusted to neutralise fiscal disturbances. However, only a “Ricardian” fiscal policy has this property.

¹⁰ O. Jeanne has shown that elevated yields could make inflation more, rather than less likely, due to lack of fiscal adjustment. See O. Jeanne, (2012), “Fiscal challenges to monetary dominance in the euro area: A theoretical perspective”, Banque de France Financial Stability Review, No. 16, pp. 143–150.

necessary to steer the economy towards the “good” equilibrium. As a consequence, OMTs can succeed only if action is taken by governments, at national and at euro area level, to restore long-term growth and bridge fiscal and economic imbalances.

The framework for OMTs is based on six main elements (see slide 10).

First, strict and effective conditionality. A necessary condition for initiating OMTs is that a Member State activates an appropriate EFSF/ESM programme, which envisages strict and effective conditionality spanning the fiscal, macroeconomic, structural and financial spheres. And the design of conditionality and the monitoring of such a programme can largely benefit from the involvement of the IMF. This is however not sufficient. The country also needs to maintain (at least some) market access. And this is signalled by the reference the ECB has made to the need for the EFSF/ESM programme to include the possibility of primary market purchases. In addition, and most importantly, the Governing Council maintains full discretion to initiate OMTs, focusing its assessment exclusively on monetary policy considerations.

The **second** main element on which the framework for OMTs is based is a built-in exit strategy. OMTs will be terminated when one of the following conditions materialises. OMTs are no longer warranted due to threats to price stability; the aim of OMTs has been achieved; there is non-compliance with the conditionality established in the EFSF/ESM programme. This announced rules-based approach represents a way to address time inconsistency.

Third, OMTs will focus on the shorter part of the yield curve, and in particular on sovereign bonds with a maturity of between one and three years. This underscores the monetary policy nature of such outright transactions, the principle of which was foreseen in the ECB Statute. And it buttresses the OMTs’ aim to address reversibility premia which, as I argued above, have tended to manifest themselves at the short end of the term structure, while addressing the fact that credit risk embedded in longer-term yields should reflect the credibility of countries’ economic and financial adjustment programmes.

Fourth, there are no *ex ante* quantitative limits on the size of OMTs. This makes clear that the ECB is committed to do whatever it takes, within its mandate, to preserve the solidity and irreversibility of the currency.

Fifth, the ECB accepts the same (*pari passu*) treatment as private or other creditors with respect to bonds purchased in the context of OMTs.

Finally, the liquidity created through OMTs will be fully sterilised. This reflects the role of OMTs in counteracting destructive self-fulfilling equilibria rather than altering the aggregate liquidity stance.

The main features of the framework for OMTs outlined here address by design also three concerns or questions sometimes voiced in relation to outright purchases of government bonds by a central bank.

The first concern can be summed up in two questions: are OMTs a form of monetary financing of governments and will inflation be unleashed? The answer to both questions is: No. In fact, quite the opposite. OMTs will be conducive to the monetary authority restoring its power to control credit conditions in the euro area and, through that channel, inflation in the medium term. It thus creates the conditions for a transition from a regime of undisciplined fiscal policies – from a “non-Ricardian” or “active” fiscal policy, using the terminology of the economic literature referred to above – to a regime where fiscal policy respects its inter-temporal obligations – it becomes “Ricardian”, or “passive”. This means that monetary policy has regained its pre-eminence in determining credit conditions and inflation. This renewed assignment of tasks pushes back fiscal dominance and affirms monetary dominance.

The second concern can be formulated in terms of the question: will OMTs bring large risks to the central bank’s balance sheet? The answer again is: no. OMTs establish a second type of interaction: between the central bank, real money investors and households and firms,

which save and borrow to finance real economic activity. To the extent that break-up and reversibility premia are squeezed out of bond pricing, real money investors will return to the euro area securities market, and the prices of securities will again better reflect the fundamentals. Households and firms will benefit from restored credit conditions. And the associated widespread reassessment of risks will make market portfolios and the central bank portfolios grow in value. Ultimately, strict and effective conditionality could be seen as acting as a credit enhancement of all euro area portfolios.

The third question is whether OMTs are a form of quantitative easing (QE). The answer is: no. First of all, QE is meant to ease the general credit conditions which are considered by the central bank to have become tight in a situation in which the short-term interest rate cannot be reduced further. OMTs are meant instead to restore homogeneous credit conditions throughout the euro area, but not necessarily to ease credit conditions in the aggregate. In the euro area as a region, there are currently no clear signs of deflation fears (see slide 11) that would justify QE. In addition, the channels of transmission are different. QE is expected to act on risk premia (primarily term premia) by subtracting long-duration securities from the market and replacing them with base money, which has a very short duration. This would reduce term premia and bid up the price of long-dated securities. The aim of OMTs however is not to create an excess demand for duration in the market, but to counteract redenomination risk and squeeze redenomination premia out of bond prices. In fact, OMTs focus on relatively short maturities, where premia associated with break-up risk are most evident. Finally, QE would need to be tailored to the specificities of the euro area, where two-thirds of the external financing of non-financial corporations is extended by banks and which does not have access to actively traded credit markets.

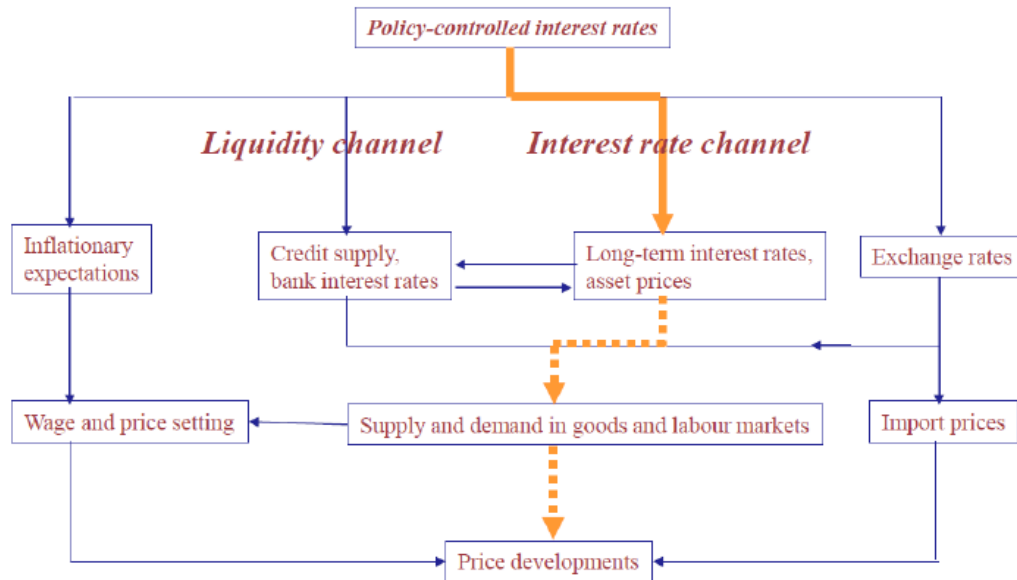
Conclusions

Let me conclude. The effectiveness of monetary policy relies on the control of monetary and credit conditions. This ability has been severely tested by the crisis. Some of the challenges faced by the ECB have been common to other central banks. The threat to the viability of the interest rate channel, and the consequent need to devise alternative (“non-standard”) measures exploiting other channels of transmission, is a prominent example. The crisis has taught us that the liquidity channel exploited by monetary policy in the euro area can be very powerful. It has allowed the ECB to maintain the flow of credit to the real economy and ensure price stability even in face of the soaring liquidity and funding risks experienced by banks during the crisis.

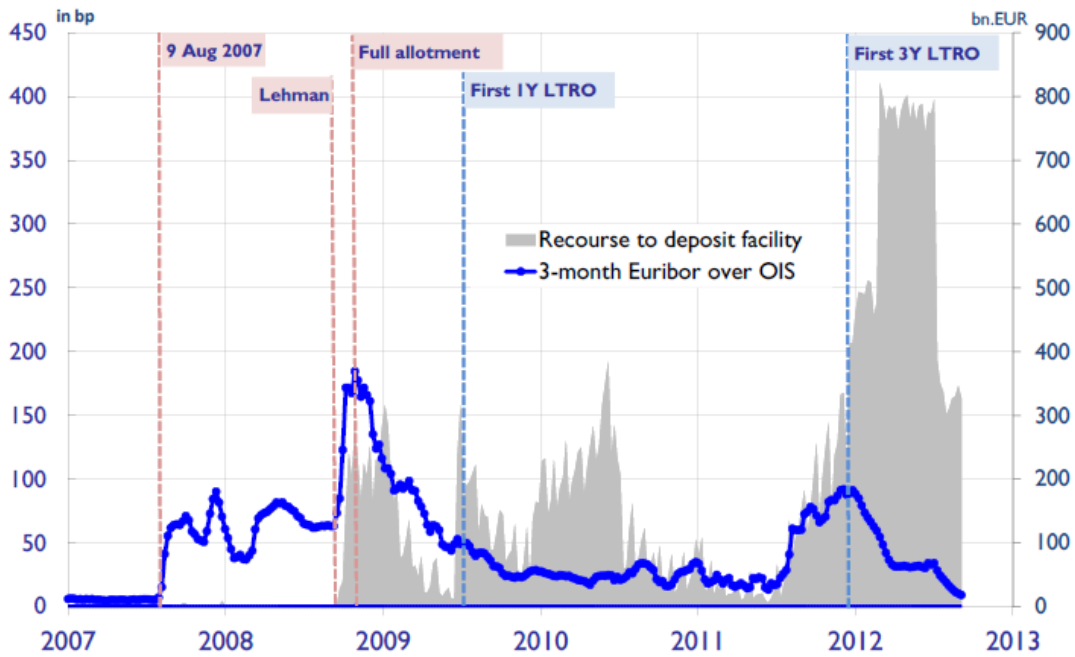
Other challenges faced by the ECB have taken a specific form in the euro area and thus been somewhat different from those experienced by central banks elsewhere. The most obvious one is the sovereign debt crisis, with the associated fragmentation of credit markets across national borders and more recently the break-up fears. The destructive potential of these developments is enormous. This has led the ECB to recently announce its Outright Monetary Transactions in secondary markets for sovereign bonds as a means to safeguard the monetary policy transmission mechanism in all countries of the euro area and to counteract self-fulfilling prophecies. The design of OMTs has been inspired by the desire to affirm in a lasting manner “monetary dominance”, in compliance with the principles enshrined in the Maastricht Treaty.

Going forward, the ECB remains committed to do whatever it takes to comply with its mandate of maintaining price stability in the euro area.

Prime conduit of monetary policy in normal times: the interest rate channel



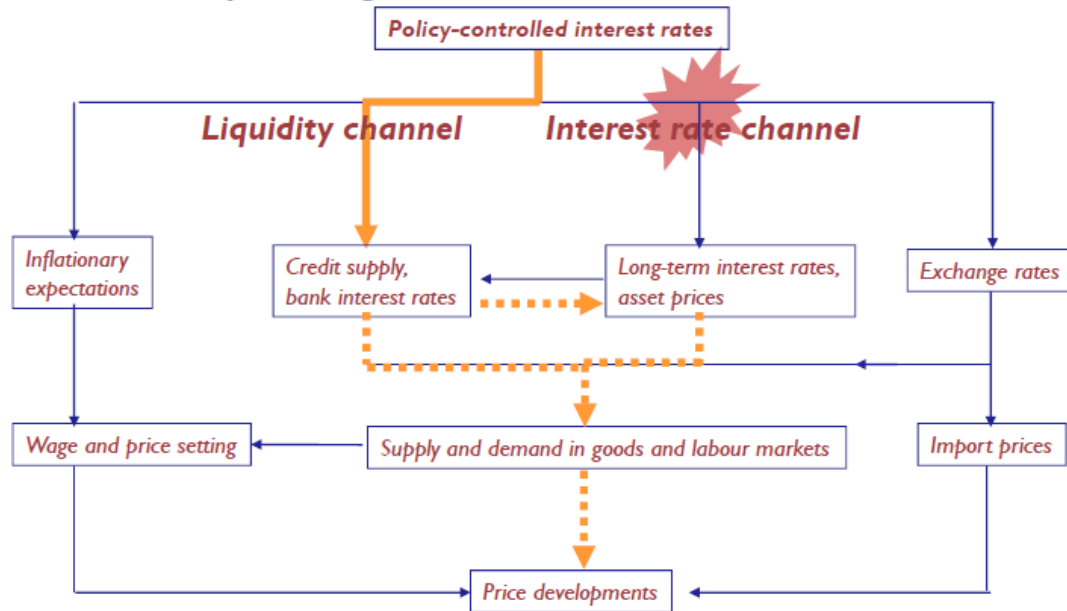
Crisis has led to elevated premia and liquidity hoarding by banks



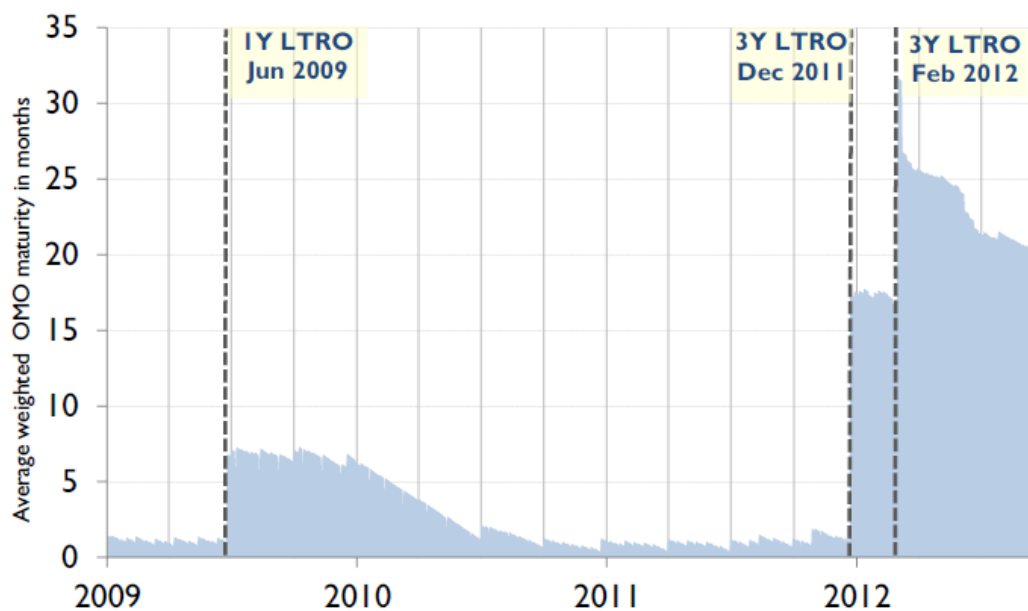
Sources: Bloomberg and ECB.
 Note: Weekly observations. Last observation: 7 September 2012.

Monetary policy transmission channels

Transmission plumbing



Average maturity of OMO



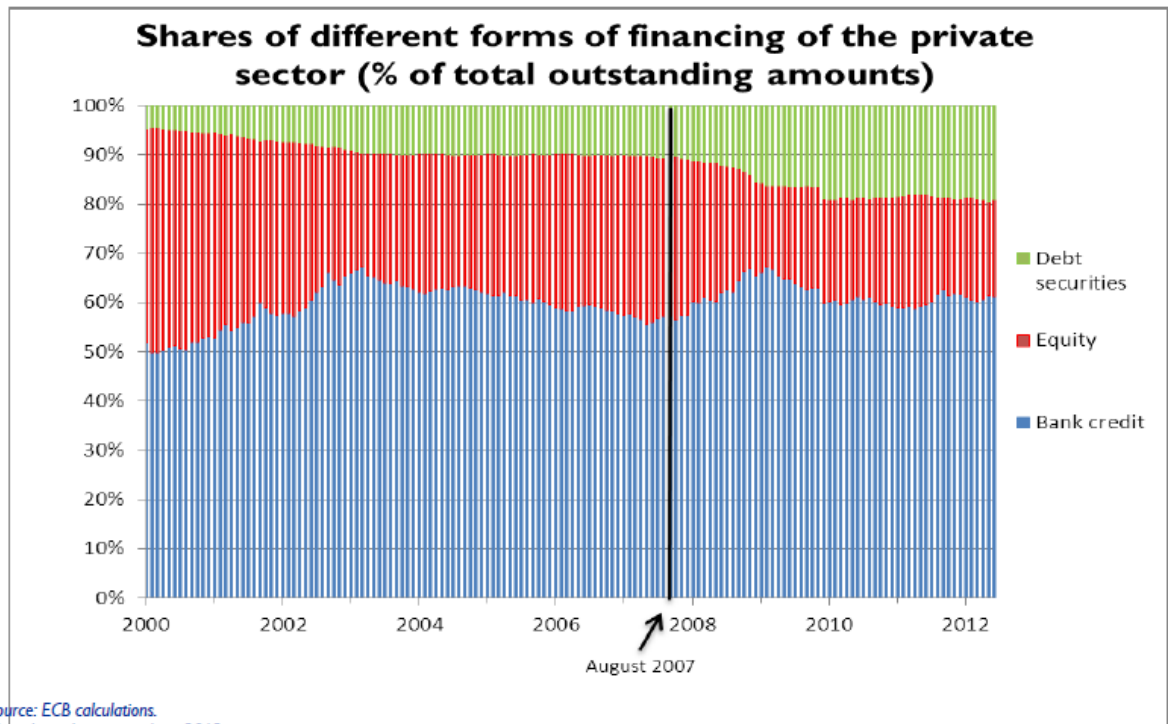
Source: ECB calculations.

Note: OMO stands for Outstanding Monetary Operations. Last observation: 18 September 2012.

EUROPEAN CENTRAL BANK

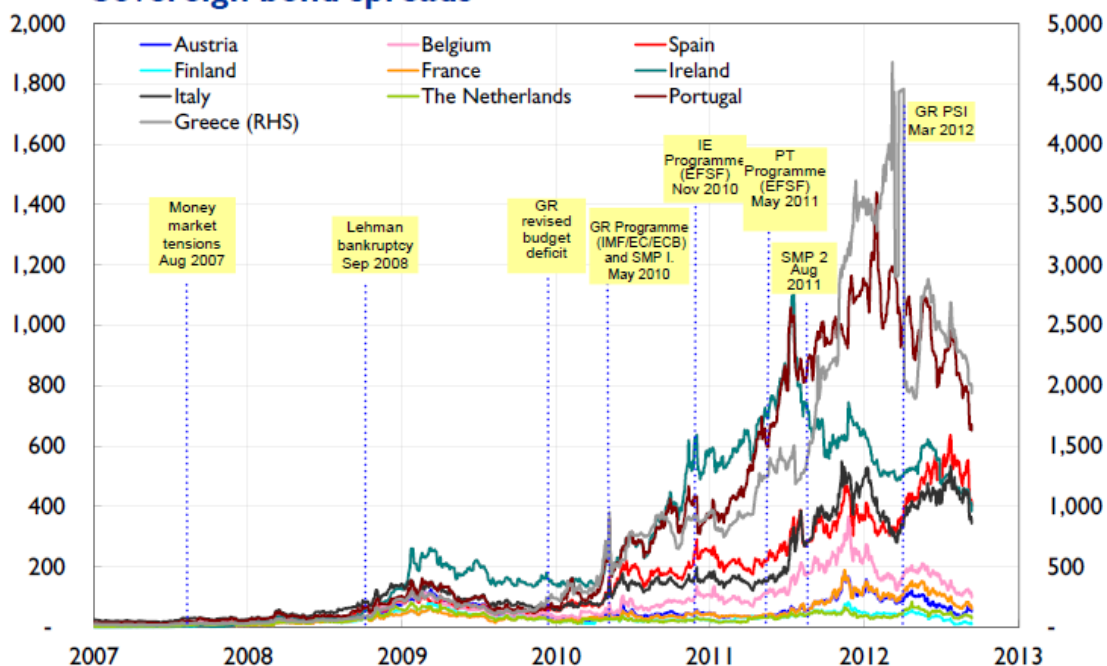
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Evolution of euro area financial structure



New phase of the crisis started in May 2010: concerns about creditworthiness of sovereigns

Sovereign bond spreads



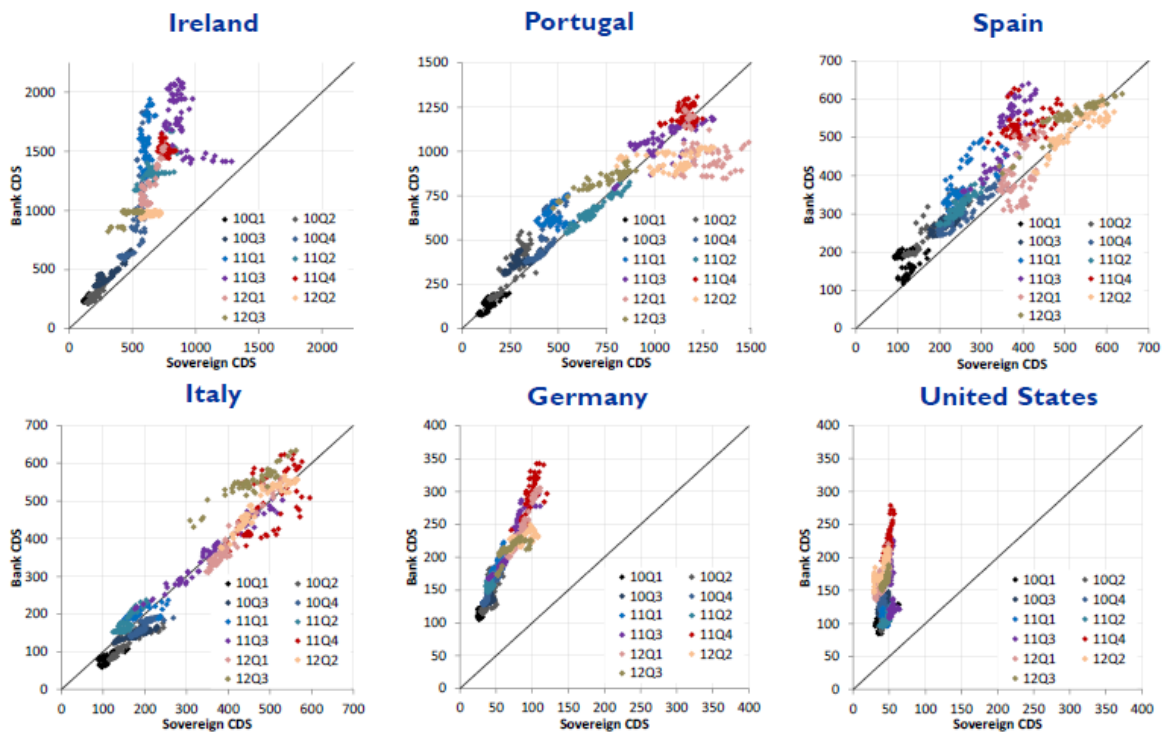
Sources: Thomson-Reuters and ECB calculations.

Note: Bond yield spreads are calculated vis-à-vis the German 10-year government bond, end-of-day data. Last observation: 18 September 2012, 17:00 CET.

EUROPEAN CENTRAL BANK

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Fragmentation across national borders: self-reinforcing loop between bank and sovereign risks

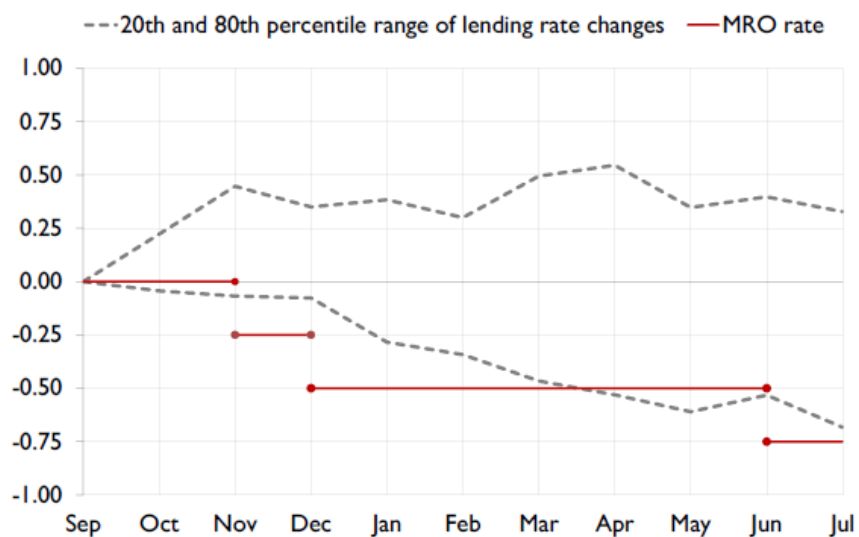


Source: ECB calculations.

Note: Last observation: 12 September 2012.

Cumulated changes in MRO rate and bank lending rates for short-term MFI loans to NFCs

Changes in the composite bank lending rates between September 2011 and July 2012
(percentage points)



Source: ECB calculations.

Note: Over the same period the rate on the main refinancing operations (MROs) was cut by 75 basis points. The last available data for bank lending rates is July 2012.

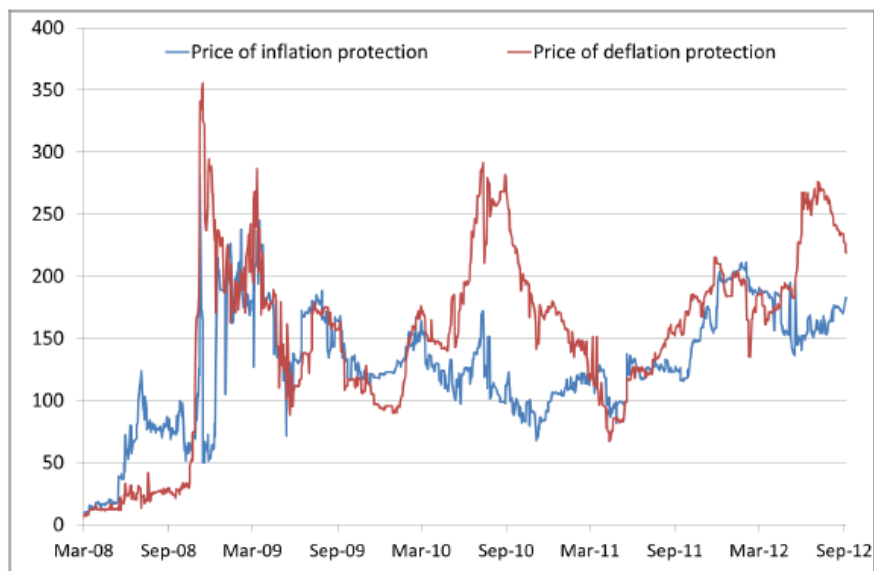
Outright Monetary Transactions (OMTs)

Aim: to preserve singleness of monetary policy by addressing distortions in sovereign bond markets originating in particular from reversibility fears

- Necessary condition: strict and effective conditionality attached to appropriate EFSF/ESM programme
- Built-in exit strategy
- Focus on shorter part of yield curve
- No *ex ante* quantitative limits on size
- *Pari passu* treatment
- Full sterilisation

No clear signs of deflation fears or inflation fears

Price of floor and caps (year-on-year) on euro area HICP inflation – 5Y maturity

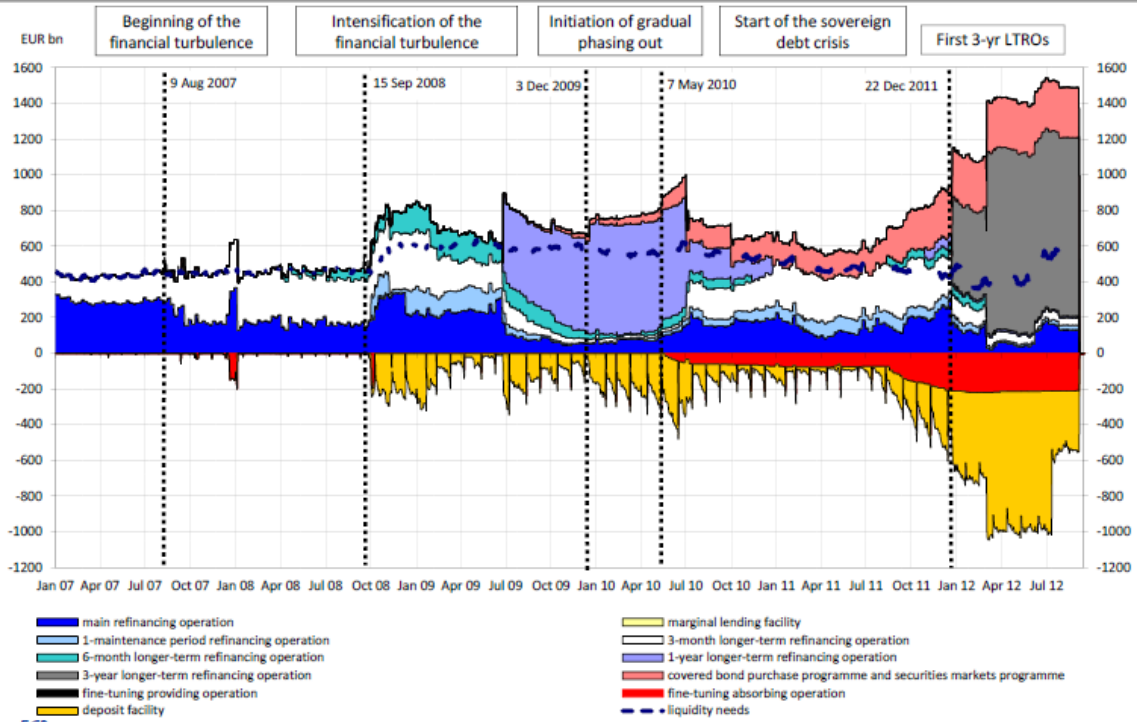


Source: Bloomberg.

Note: The market for inflation-linked options is relatively illiquid and often heavily influenced by specific demand and supply patterns. Developments should therefore be interpreted with caution. The underlying instruments are for inflation protection: year-on-year cap of 4% with 5-year maturity; for deflation protection: year-on-year floor of 0% with 5-year maturity.

Background slides

Evolution of liquidity term structure during the crisis



Source: ECB

Note: Last observation: 5 September 2012.

Evolution of money market spreads in euro area, US and UK (3-month maturity)

3-month Libor/Euribor to OIS spread

