“Money Market Turbulences 2007 and the Liquidity Crisis Management of the European Central Bank”

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Abstract

The author emphasizes the soft factor "confidence" and its importance for the smooth functioning of financial markets referring to the liquidity crisis with turbulences on the money markets of main developed western economies in the second half of 2007 and to the crisis management of the European Central Bank. The central bank has to weigh up a lender of last resort commitment against moral hazard arguments. As a contribution to avoid similar problems in future a programme of eight points is suggested.

Keywords: monetary policy, open market operations, money market rates, subprime crisis, structured financial innovations.
JEL Classification: E43, E44, E58.

Introduction: On the relevance of soft factors in economics and the liquidity crisis 2007

There is a tradition in economics sometimes not taken seriously: well known scientists pointed out that soft factors contribute to a great extent to the functioning of market systems because economists have to deal with human behavior in a special subsystem of society. For John Kenneth Galbraith, e.g., and his view on American capitalism, power was the magical factor and his famous concept of "countervailing power" (1957) in the real sector of the economy was an important step from the not realistic atomistic competition model to the reality. And another influential economist – the German Günter Schmölders (1950) – pointed out, that the process of business cycles depends very much on pychological factors.

About half a century later and from intention not so far from Schmölders but more distinct to microeconomic behavior on financial markets the former Chairman of the US Federal Reserve Bank (Fed), Alan Greenspan (2007), has spoken of the soft factor "irrational exuberance" in context with stock price bubbles. Thus he paved the way to a Fed-concept of "wait, see, judge and mop up the mess" especially by a generous – some critics say "over"-generous (Thorsten Polleit, 2007) – liquidity supply, a policy concept not to prick bubbles, but instead a strategy of very easy money by considerable interest rate cuts after the bursting of the bubble. This was due to his persuasion that the central bank's tools are not designed to stop irrational behavior without causing severe negative second round effects for the economy.

This admittably fragmentary glance back on influential opinions already proves the relevance of soft factors in theoretical and applied economics – not only in history but also at present time. In this contribution the soft factor "confidence" is emphasized in its importance for the smooth functioning of financial markets referring to the liquidity crisis with turbulences on the money markets in the second half of 2007. The question, what a central bank should and can do to stabilize and improve confidence is a very crucial one.

The crisis on the money markets 2007, as will be shown, was without any doubt a confidence crisis – no systemic crisis, not at least due to the consequent liquidity management of the Fed, the European Central Bank (ECB) and – after some hesitation because of moral hazard fear – of the Bank of England (BOE). This may have prevented that the turbulences on the money markets became the trigger for a severe crisis of the global financial system, endangering even commercial banks with a broad range of activities. As far as selected institutes with special financing behavior were endangered solvency support was organized by the banking community, with assistance of central banks, banking supervisory and state authorities.

It must be noted however, that this can only be a *first* approach to analyze the crisis and to draw conclusions tentatively, because until December 2007 we cannot have a complete picture. Insiders from the banking community do not exclude follow up turmoils.

1. What happened first: Houseprice bubble and subprime mortgage defaults in the US

The crisis did not – as one may guess having in mind financial globalization – begin at Wall Street but in the American province. To have an own house or flat is part of the American dream. Therefore about 70% of the American households live in their own four walls. Promoted by very low interest rates millions of average people financed their properties by loans – more and more risky. 100% credits were not rare and for so called subprime customers with low income 2/28 mortgages became popular: 2

The opinions expressed in this article reflect the author's personal view and not necessarily the position of the institution.

year fixed interest rate, 28 year flexible rate, sometimes with no amortization rate in the first years. Even credits for unemployed people were sold, so called "Ninja – loans", no income, no job or assets – a practice heavily criticized by consumer protection organizations.

It seems appropriate to use Greenspan's soft factor "irrational exuberance" for this development – exuberance on both sides of the loan market. On the demand side, the household side, the process was enhanced by sometimes agressive advertising in the media and jumping on the train behavior due to increasing house prices. On the supply side, the mortgage banks side, the enhancement came from financial innovations, mainly since the middle of the 90s, making risks transferable and from a liquidity surplus due to a central bank policy of easy money (Sachverständigenrat, 2007).

The result was a house price bubble. From 2000 to 2005 the prices for private houses in the US nearly doubled. The problems appeared with a cool-down after the over-heating and decreasing property prices since the middle of 2006 – plus increasing interest rates. More and more subprime clients were not able to pay interest and amortization. According to estimations of the Center for Responsible Lending in the US about 20% of the subprime credits granted between 1998 and 2006 will be defaults (Stefan Kofner, 2007).

Warning voices from professional side came rather late, but not too late to prepare for a crisis.

In a letter of the Association of Mortgage Insurance Companies of America (MICA) from July 2006 the Chairman of the Fed, Ben Bernanke, could read:

"...we are deeply concerned about the potential contagion effect from poorly underwritten or unsuitable mortgage and home equity loans."

This was nearly exactly one year before the troubles on the money markets and central banks assistance actions began.

2. Transmission of turbulences to the money markets by structured financial innovations and risky refinancing behavior

Exuberance and later the liquidity crisis could happen only because first it was possible to spread the risks around the world by securitization of credits and second because investments in capital market assets, so called "asset backed securities" (ABS) or "mortgage backed securities" (MBS), were not refinanced referring to the traditional textbook financing principle of matching maturities.

In literature on banking business it is accepted that the opportunity of securitization improves the risk management of banks and can be a contribution to the stability of the financial system (Jan Krahnen, 2007). But the problem is, that the possibility to sell risks, to get them out of the books, canujly x stimulate risky behavior. Exactly this happened – not only in America and not only on the mortgage institutes' side. Risk tranfer does not imply risk disappearance. It is a transparency problem to recognize or rate hidden risks when they are structured or mixed. Even the rating agencies had problems to do this adequately.

This transparency problem resulted from "collateralized debt obligations" (CDO's). The basic idea of such structured products is to transform a pool of loans into distinct asset mixtures, some slices of the pool with lower risk (senior notes), others with higher risk (junior notes). But always with risks and if the originator – the mortgage bank – is able to trade the risk he may not be so careful in risk estimation. Then the distinction between senior and junior notes is not always as valid as with the basic idea intended – even for the agencies who reduced their CDO rating somewhat later.

In a next step so called "Conduits" or "Structured Investment Vehicles (SIV's)", founded by banks and connected to them by credit lines – but to bypass solvency rules often with a maturity of less than one year and not appearing in their balance sheets – invested in such CDO's with a tendency to higher risk notes because of better profit. These special purpose vehicles refinanced their capital market investments exclusively (Conduits) or to about a third (SIV's) "short" by issuing commercial paper with a high rating because of the credit lines on the money market. This revolving refinancing is the step when the subprime crisis was transmitted to the money markets: the refinancing dried up because investors became reluctant to continue to fund fearing CDO-default problems of the Conduits and SIV's – inducing them to resort to the credit lines for funding.

3. Liquidity crisis as confidence crisis

Therefore the liquidity crisis in late summer 2007 was more than a refinancing problem for Conduits and SIV's. And it was certainly not a problem of not enough money market liquidity in the banking system. It was a confidence crisis because knowledge about involvement in asset defaults via credit lines was not transparent.

It was reported later that it was one of the first reactions of bank management to have a look at the credit lines for other banks and to reduce or cancel them as soon as possible. So even institutes with a liquidity surplus were not willing to provide liquidity on the inter bank markets. They did not trust the solvency of others any more – mistrust was distributed like a contagious virus and confidence disappeared: Inter-bank lending also pretty much dried up (Hermann Remsperger, 2007).

Not being a disadvantageous solution as a further consequence a more cautious valuation of risks took place. In the financial sector this happened especially for private equity engagements. In its bank lending survey for the Euro Area from October 2007 the ECB (2007, p. 2) concluded for real sector financing:

"In particular, credit standards for loans and credit lines to large enterprises were tightened somewhat, as reported by around one-third of the reporting banks."

Large enterprises – and not only financial institutions – may have been engaged in CDO's. But there was no credit crunch as for a certain period on the inter-bank money market.

This was due to the flexible and instant liquidity management accompanied by a careful real time communication of the ECB, which restored confidence – not completely, but enough to reestablish the functioning of the inter-bank money market and to prevent severe consequences on the credit markets for enterprises and households. In accordance with this until November 2007 there was no any visible effect on broad monetary aggregates (ECB, 2007, 5).

4. The ECB's concept of crisis management and the open market operations from August to September 2007

4.1. Acceptance of lender of last resort commitment. The ECB's concept of crisis management was based on the insights:

- first, that there is an immediate risk of a systemic crisis if loss of confidence results in a lasting credit crunch on the inter-bank money market;
- second, that banks usually have shorter-term payment obligations in excess of the reserves of generally accepted means of payment.

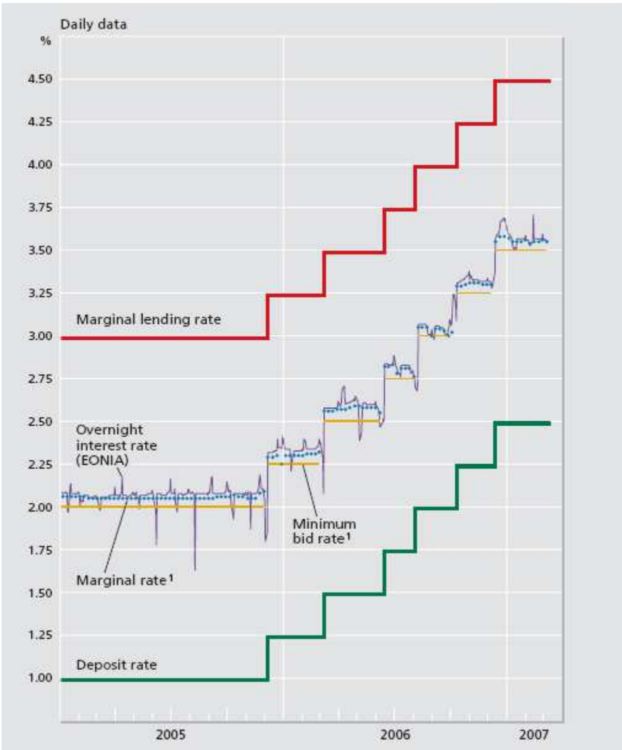
To optimize their liquidity management they hold – as so called near money assets – against these obligations interest bearing near money securities which normally could be liquidated at short notice and at little cost. But due to the turbulences these "near money" assets turned out not to be liquid in this sense any more. In this process "... some losses are incurred but the more important risk is that a need to liquidate can force otherwise solid enterprises into failure" (Robert E. Lucas, 2007). And then the door to a systemic crisis – even with bank runs – may be open.

In this situation and due to the available insider information from bank supervision the Governing Council of the ECB has apparently estimated the systemic risk as very high and accepted – in addition to the priority target to guarantee price stability – just as the Fed without undue hesitation the commitment "... to stand ready to provide the liquidity if needed to serve as lender of last resort" (Robert E. Lucas, 2007).

This was a deliberate decision, under these special circumstances of a confidence crisis even affecting otherwise solid banks, against a "hands off concept" based on moral hazard apprehension and bail out arguments, for which the BOE at first had some sympathy.

4.2 The ECB's flexible liquidity management. In order to reduce the tensions observed on the money market in the minimum reserve period from August 8 to September 5 the ECB (2007, p. 1) carried out four additional liquidity providing open market operations with overnight maturity and one supplementary longer-term refinancing operation over and above the four prescheduled refinancing operations.

It is the operational target of the ECB to influence the short-term interest rate on the inter-bank money market. In this context the minimum bid rate (operational rate) and the marginal rate of allotment of the main refinancing operations have a signal function for the money market rates. Figure 1 proves that the short-term money market interest rate EONIA (Euro Overnight Index Average) follows the operational rate with only marginal fluctuations. This changed very much when the crisis began.



Note: Interest rate for main refinancing operations.
Source: Deutsche Bundesbank.

Fig. 1. Money market liquidity management

The ECB (2007, p. 1) accompanied each step of its additional operations by a very careful real time communication (see also Appendix). On August 9, at 10.15 a.m. the following statement was published on news wire services:

"The ECB notes that there are tensions in the euro money market, notwithstanding the normal supply of aggregate euro liquidity. The ECB is closely monitoring the situation and stands ready to act to assure orderly conditions in the euro money market."

This was an early signal to found confidence again, but not enough. The situation, the rate fluctuations, demanded concrete and courageous action. Figure 2 shows that remarkable deviations of the EONIA from the minimum bid rate began in the first half of August and even increased at the beginning of September 2007.

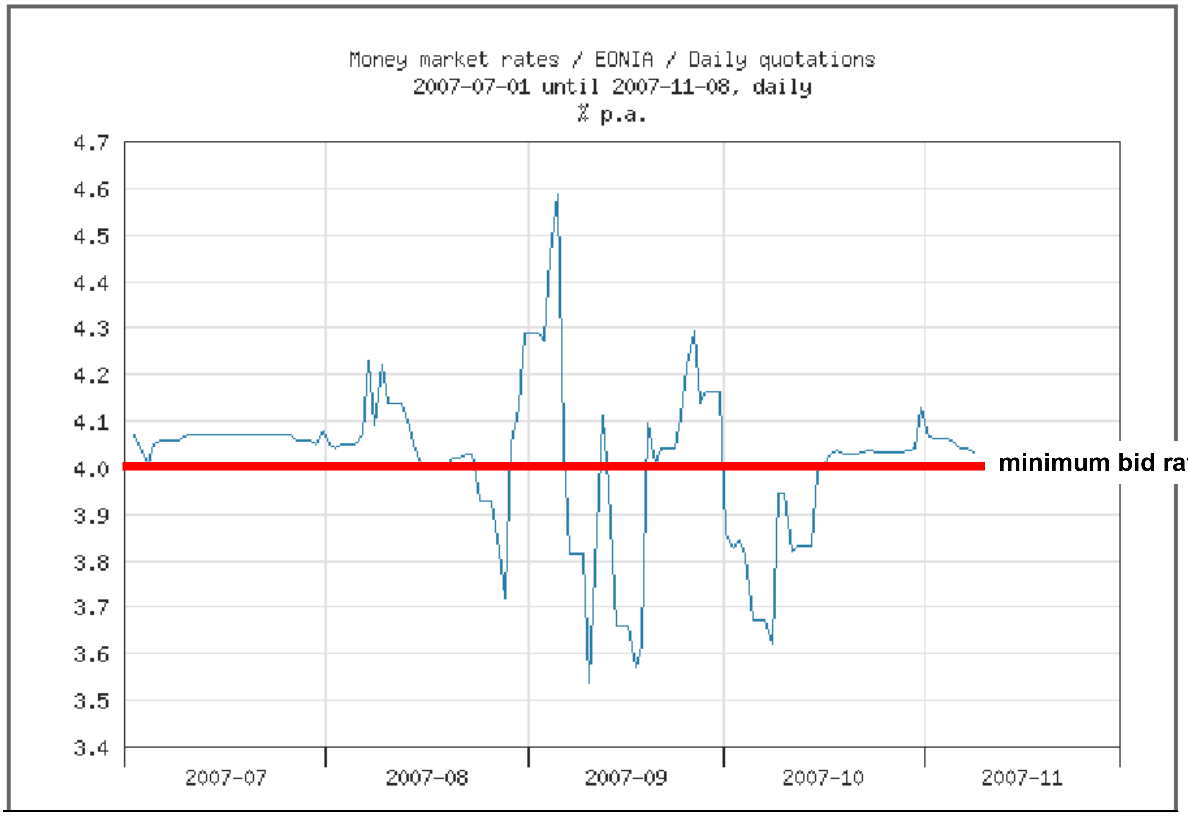


Fig. 2. Turbulences

The announcement of the first additional tender operation with same day settlement and overnight maturity followed only about two hours after the first wire services statement of concern and proved the ECB's readiness. As additional signal of readiness exceptionally every bidder could get as much money as he wanted – within the scope of deposited securities – at a fixed rate (ECB, 2007, p. 1):

"The operation was conducted as a fixed rate tender at 4% (the prevailing level of minimum bid rate) and with preannounced full allotment. This tender specification allowed the ECB to inject an amount of liquidity matching counterparties' demand, which the ECB could not easily quantify by means of its regular analysis."

49 banks submitted bids in this fine tuning operation for a total amount of 94.8 billion Euro, which is – to give an estimation of the liquidity need – about 15% of the average number of participants, a third of the average allotment amount by main refinancing operations and about 50% of the required minimum reserves in July 2007. It seems that especially larger banks were in need – or were able to submit their requests quicker than others.

The strategy of the following short-term liquidity management was:

- not to reduce the minimum bid rate as operational indicator of the ECB because it analyzed the situation as confidence problem and not as a structural liquidity gap of the system;
- to conduct the three overnight fine tuning operations – now having a better estimation of the situation – with the tender procedure normally used for main refinancing operations (variable rate tender with minimum bid rate) to get additional information on the banking system's demand-intensity from the rates the banks were willing to bid;

- to reduce the allotment amount of fine tuning operations in accordance with reduced tensions from a bid-cover-ratio of 1 for the first fine tuning operation covering all bids to a ratio of about 6 for the fourth operation, which means that less than 20% of the bid amount was covered;
- to allot in the four "normal" main refinancing operations in this period above the regular benchmark amount (designed normally to guarantee orderly money market conditions), because such a "mechanical" allotment would have led instantly to an absorption of the reserve surplus resulting from the fine tuning operations;
- to monitor the liquidity situation by varying the amount by which the main refinancing allotments exceeded the benchmark and by collecting surplus money by short-term fixed rate tenders to the amount of the minimum bid rate.

Again flaring up tensions – mainly due to the piecemeal strategy of the banks to communicate expected losses – in this very challenging learning process caused one finer tuning tender on September 6 (42.3 billion Euros). This did not prevent, as after an earthquake, follow up trembles fading away until October.

In addition the ECB influenced the longer term segment of the money market. It decided on August 22 to conduct a supplementary longer term refinancing operation – as usual – in the form of a pure variable rate tender with three-month maturity and with an allottment volume of 40 billion Euros. Aiming at further consolidation of the Euro money market the Governing Council decided to renew this supplementary longer term operation three times, with the last operation announced for December 12 2007 to prevent special end of the year troubles.

To draw a conclusion it is important to note that the Governing Council of the ECB distinguished consequently between the confidence crisis tensions on the money market and the still existing – but for a certain time not completely accessible – liquidity surplus in the Euro Area, and therefore did not – as the Fed and the BOE – reduce its operational rate. The only concession in this complicated situation was not to increase the rate – as many ECB-watchers had expected because of upside risks for price stability and some code words of the President, Jean Claude Trichet, in the previous weeks, which were still repeated in October 2007 (ECB, 2007, p. 3):

"Against this background, and with money and credit growth vigorous in the Euro Area, the ECB's monetary policy stands ready to counter upside risks to price stability, as required by its primary objective."

Lender of last resort commitment, this is the clear message of the ECB, does not include a weakening of the medium term price stability orientation as final target. On the contrary: To manage and anchore expectations in line with price stability "...is the more important at times of financial market volatility and increased uncertainty" (ECB, 2007, p. 4).

Lessons and some proposals – a tentative approach

Considering the very short period of experience the approach to draw conclusions and make proposals can be a tentative one only – contributing to further discussion. With respect to monetary policy tools it became clear that the ECB is well equipped for a flexible liquidity management even in extraordinary situations and that it seems not to be necessary to revive a minimum reserve policy with intervening variations of the reserve ratio.

First reactions – even from acknowledged voices in academia – ranged from the very liberal point of view that the financial system itself will draw proper conclusions and that further administrative regulations will cause more damage than benefit (Edmund Phelps, 2007) to the instant demand for additional bureaucratic prescriptions, especially for mortgage institutes in the US (Robert Shiller, 2007). Having a look at the Basel II volumes and the host of experts commenting them, it is appropriate to be extremely careful to create new fields of work for politicians and regulators too hastily and before careful debates.

For such debates the following program of eight points can be a guideline:

1. No bail out practice: Central bank's actions of rescue as lender of last resort in addition to the final target commitment to avoid inflation must be decidedly the exception and should be justified only when otherwise solid institutes are endangered (fear of systemic crisis).

2. As far as possible the principle of subsidiarity, of help yourself at first, should be obeyed. On a conference Charles A.E. Goodhart proposed a liquidity pool founded by the banks to make them less dependent on central bank actions (Marietta Kurm-Engels, 2007) and to contribute to systemic confidence. To avoid moral hazard this should be a private liquidity lender of last resort on the money market and not for absorbing risky capital market investments.

3. Careful communication, openness and final target orientation of central banks, as practised more and more all over the world, contributes to the understanding and efficiency of measures. Modern central banking restores, respectively saves, confidence not at least by management of expectations. The real time communication of the ECB in context with the additional tender operations is a model for this (see

also Appendix). Private banks should definitely join this trend. Their piecemeal strategy to communicate losses endangered restored confidence and was very much responsible for again flaring up tensions on the financial markets.

4. The strategy should concentrate more on prophylactic measures instead of "mopping up the mess". The control of monetary expansion by in this sense tight monetary policy is an important contribution to act prophylactic and steer against asset price bubbles. Empirical studies confirm a significant relation between growth of liquidity, respectively loans, and later asset valuations (ECB, 2005). Therefore it is important to stick to the relevance of money stock developments and monetary analysis and not to follow Neo Keynesian proposals to abandon this monetary column of central bank strategy.

5. To contribute to the stability of financial markets it may be appropriate not only to analyze asset prices, but to include their valuation into the monetary policy strategy. This is relevant in context with a "policy of leaning against the wind" of an incoming bubble. Such a preemptive policy implies a tightening of monetary policy stance more than it is required to keep traditional consumer price inflation on target. Thinking of the US house price bubble the argument that a bubble can never be recognized early enough is not very convincing (Paul de Grauwe, 2007). But the real question is: Should a central bank which starts to consider property prices in its monetary policy stance react on other asset prices, too – as for example stocks and bonds?

6. Because the liquiditiy crisis was very much a problem of confidence resulting also from too less transparency it is important that the already existing "Financial Stability Forum", founded by central banks and international near government institutions, or other initiatives, as for example the "Institute of International Finance (IIF)" founded by banks with global activities, have decided to work out proposals for the rating of complex structured financial innovations and for the transparency of distribution of risks – this should include a particular consideration of the off balance sheet Conduit and SIV practice, maybe implementing restrictions for credit lines from "mother" enterprises.

7. The risk transfer by securitization and especially CDO's stimulated risky behavior of the counterparties. Jan Krahnen (2007) called attention to a proposal in literature on asset backed securities, worth further discussion: "... that the most junior note, the so called loss piece ... should be permanently held by the originator. The reason is moral hazard, or the risk of irresponsible lending. This can be reduced if the bank that issued the security monitors its performance and provides other support activities." Thus the originator remains personally involved, remains at risk.

8. The very beginning of the crisis was irresponsible property related lending. To hamper this Charles A.E. Goodhart (2006) made the proposal to vary loan to value (LTV) ratios: "Thus the LTV could be raised when mortgage growth (and house price inflation) was low or declining, and lowered during booms. A recent example was the cut in LTV's imposed in Estonia in the face of a housing boom in December 2005. Similar measures have been applied in Honkong and South Korea. More generally capital-liquidity requirements could be varied counter-cyclically."

So far some proposals for further discussion. Especially experts in bank supervision point out that the implementation of Basel II rules and in this context precautions to give better account on the securitization of credits and on credit lines for Conduits and SIV's by capital requirements for periods less than one year will improve transparency and support solid financial behavior.

At the beginning of this contribution Galbraith and his competition theory of countervailing power were mentioned. Competition is also very relevant in context with financial stability. This is competition between central bankers and regulators on one side and private bankers on the other, or as an anonymous member of the banking community pointed out somewhat ironically:

"There will be always intelligent people who find some back door to outwit the regulator."

Yes, this form of competition is a characteristic of freedom. The task of central banking and supervision is not to abolish freedom by layers of regulations, but to prevent systemic crises by countervailing intelligence. For money market stability central banks can deliver two "special goods": confidence and liquidity (Franz-Christoph Zeitler, 2007).

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Appendix A

Table. Summary of the ECB's actions in the period from 8 August to 5 September 2007

Date	Time	Action	Communication	Operational Details	
9 Aug.	10.15 a.m.	Communication on news wire services	"The ECB notes that there are tensions in the euro money market, not with standing the normal supply of aggregate euro liquidity. The ECB is closely monitoring the situation and stands ready to act to assure orderly conditions in the euro money market."		
9 Aug.	12.30 p.m.	Announcement of fine-tuning operation at 4.00% with full allotment	"Following the communication given earlier this morning on the ECB page "Announcements on operational aspects", this liquidity-providing fine-tuning operation aims to assure orderly conditions in the euro money market. The EBC intends to allot 100% of the bids it receives."	Maturity:	overnight
				Amount allotted:	€94.8 billion
				Fixed rate:	4.00%
				Number of bidders:	49
				Number of bids:	49
				Bid-cover ratio:	1.00
10 Aug.	9.20 a.m.	Communication on news wire services	"The ECB continues to closely monitor the conditions in the euro money market."		
10 Aug.	10.15 a.m.	Announcement of fine-tuning operation, conducted as a variable rate tender with a minimum bid rate and without a pre-announced allotment amount	"This liquidity-providing fine-tuning operation follows up on yesterday's operation and aims to assure orderly conditions in the euro money markets."	Maturity:	overnight
				Amount allotted:	€61.1 billion
				Marginal rate:	4.05%
				Weighted average rate:	4.08%
				Number of bidders:	62
				Number of bids:	124
				Bid-cover ratio:	1.80

Table (continued). Summary of the ECB's actions in the period from 8 August to 5 September 2007

Date	Time	Action	Communication	Operational Details	
13 Aug.	9.15 a.m.	Communication on news wire services	"The ECB continues to closely monitor the conditions in the euro money market."		
13 Aug.	9.30 a.m.	Announcement of fine-tuning operation, conducted as a variable rate tender with a minimum bid rate and without a pre-announced allotment amount	"The ECB notes that money market conditions are normalizing and that the supply of aggregate liquidity is ample. With this fine-tuning operation, the ECBis further supporting the normalization of conditions in the money market."	Maturity:	overnight
				Amount allotted:	€47.7 billion
				Marginal rate:	4.06%
				Weighted average rate:	4.07%
				Number of bidders:	59
				Number of bids:	103
				Bid-cover ratio:	1.77
13 Aug.	3.30 p.m.	Announcement of main refinancing operation[1)]	"In this refinancing operation, the ECB aims to assure the continued normalization of money market conditions. The allotment amount will be consistent with this aim and will not be bound by the published benchmark allotment amount."	Maturity:	1 week
				Amount allotted: (above benchmark)	€310 billion (€73.5 billion)
				Marginal rate:	4.08%
				Weighted average rate:	4.10%
				Number of bidders:	344
				Number of bids:	628
				Bid-cover ratio:	1.38
14 Aug.	9.15 a.m.	Communication on news wire services	"The ECB continues to closely monitor the conditions in the euro money market."		
14 Aug.	9.30 a.m.	Announcement of fine-tuning operation, conducted as a variable rate tender with a minimum bid rate and without a pre-announced allotment amount	"The ECB notes that money market conditions are now close to normal. However, with this fine-tuning operation the ECB is still offering the opportunity to cover any remaining liquidity needs ahead of the settlement of this week's MRO tomorrow."	Maturity:	overnight
				Amount allotted:	€7.7 billion
				Marginal rate:	4.07%
				Weighted average rate:	4.07%
				Number of bidders:	41
				Number of bids:	67
				Bid-cover ratio:	5.97
20 Aug.	3.30 p.m.	Announcement of main refinancing operation[1)]	"Consistently with the normalization of conditions on the shortest term of the money market, the ECB intends to gradually reduce the large reserve surplus which has accumulated in the first weeks of this reserve maintenance period. The allotment amount in this main refinancing operation will exceed the published benchmark of €227 billion by an amount which is consistent which is consistent with this aim."	Maturity:	1 week
				Amount allotted: (above benchmark)	€275 billion (€46 billion)
				Marginal rate:	4.08%
				Weighted average rate:	4.09%
				Number of bidders:	355
				Number of bids:	635
				Bid-cover ratio:	1.06

Table (continued). Summary of the ECB’s actions in the period from 8 August to 5 September 2007

Date	Time	Action	Communication	Operational Details	
22 Aug.	3.30 p.m.	Announcement of supplementary longer-term refinancing operation[2)]	“Today the European Central Bank’s Governing Council has decided to conduct a supplementary liquidity-providing longer-term refinancing operation with a maturity of three months for an amount of €40 billion. This operation is a technical measure aimed at supporting the normalization of the functioning of the euro money market. It is conducted in addition to the regular monthly longer-term refinancing operations, which remain unaffected. The allotment amounts in the main refinancing operations will offset this provision of liquidity, taking into consideration the overall liquidity conditions. Today’s decision was taken by written procedure. The position of the Governing Council of the ECB on its monetary policy stance was expressed by its President on 2 August 2007.”	Maturity:	3 months
				Amount allotted:	€40 billion
				Marginal rate:	4.49%
				Weighted average rate:	4.61%
				Number of bidders:	146
				Number of bids:	411
				Bid-cover ratio:	3.14
27 Aug.	3.30 p.m.	Announcement of main refinancing operation[1)]	“Consistently with the ongoing normalization of conditions on the short term of the money market, the ECB continues to aim at gradually reducing the large reserve surplus which has accumulated in the last weeks. Accordingly, the allotment amount in this main refinancing operation will slightly exceed the published benchmark of €194 billion by an amount which is consistent with this aim.”	Maturity:	1 week
				Amount allotted: (above benchmark)	€210 billion (€14.5 billion)
				Marginal rate:	4.08%
				Weighted average rate:	4.09%
				Number of bidders:	320
				Number of bids	578
				Bid-cover ratio:	1.68
3 Sep.	3.30 p.m.	Announcement of main refinancing operation[1)]	“The ECB continues to aim at gradually reabsorbing the large reserve surplus which has accumulated in the last weeks. Accordingly, the allotment amount in this main refinancing operation will slightly exceed the published benchmark of €251 billion by an amount which is consistent with this aim.”	Maturity:	1 week
				Amount allotted: (above benchmark)	€256 billion (€5 billion)
				Marginal rate:	4.15%
				Weighted average rate:	4.19%
				Number of bidders:	356
				Number of bids	748
				Bid-cover ratio:	1.67
5 Sep.	3.10 p.m.	Communication on news wire services	“Volatility in the euro money market has increased and the ECB is closely monitoring the situation. Should this persist tomorrow, the ECB stands ready to contribute to orderly conditions in the euro money market.”		

1. Main refinancing operations are conducted as variable rate tenders with a minimum bid rate. 2. Longer-term refinancing operations are conducted as pure variable rate tenders with a pre-announced allotment amount. ECB, Monthly Bulletin, September 2007.