

# INITIAL EXPERIENCE WITH THE CHANGES TO THE EUROSYSTEM'S OPERATIONAL FRAMEWORK FOR MONETARY POLICY IMPLEMENTATION

## ARTICLES

Initial experience with the changes to the Eurosystem's operational framework for monetary policy implementation

*In March 2004 two changes to the Eurosystem's operational framework for monetary policy implementation came into effect. The timing of reserve maintenance periods was amended and the maturity of the main refinancing operations (MROs) was shortened from two weeks to one week. These changes were aimed at stabilising market participants' bidding behaviour in the MROs by eliminating expectations of changes in the key ECB interest rates within the prevailing reserve maintenance period. The main background to the decision to make these changes was the underbidding episodes that had occurred in periods when there were expectations of an interest rate reduction. At the same time, the ECB amended its weekly publication of estimates of average liquidity factors with a view to eliminating misperceptions in the market as to whether or not the allotment decisions in MROs targeted balanced liquidity conditions. This article describes the initial experience with these changes, focusing mainly on credit institutions' bidding behaviour in MROs and the interbank overnight rate.*

## I INTRODUCTION

In March 2004 two changes to the Eurosystem's operational framework for monetary policy implementation came into effect.

- The timing of reserve maintenance periods was adjusted so that the start and the end of these periods are aligned with the settlement day of the MRO following the Governing Council meeting at which the monthly decision on the monetary policy stance is pre-scheduled. They always start on this day and end on the day prior to the settlement of the MRO following the next such Governing Council meeting. Previously, reserve maintenance periods started on the 24th calendar day of one month and ended on the 23rd calendar day of the subsequent month, irrespective of the Governing Council's meeting schedule.

As a complement, changes in the standing facility rates are now implemented, as a rule, on the first day of the new reserve maintenance period. Previously, these changes took effect on the day after the Governing Council meeting.

- The maturity of the MROs was shortened from two weeks to one week. Together with the above-mentioned changes, this means that MROs no longer straddle reserve maintenance periods.

These changes were intended to stabilise the bidding behaviour of credit institutions, especially in periods of expectations of an imminent interest rate change.<sup>1</sup> Erratic bidding behaviour had been seen in the nine underbidding episodes observed in previous years. Underbidding is when the amount that the ECB intends to allot cannot be allotted due to a low level of bids. The erratic bidding observed before the changes to the framework was mainly attributable to the fact that credit institutions' cost of obtaining liquidity could change during a reserve maintenance period as a result of a decision by the Governing Council to change the key ECB interest rates.

Against this background, two changes to the framework were implemented to neutralise the impact of interest rate change speculation within a reserve maintenance period and therefore stabilise the bidding in MROs. First, the alignment of the start of the maintenance period and the implementation of interest rate decisions aimed to remove expectations of a change in key ECB interest rates during the relevant maintenance period. Second, the shortening of the MRO maturity to avoid the last MRO of the maintenance period maturing in the following period aimed to prevent the bidding behaviour of credit institutions being

<sup>1</sup> The article entitled "Changes to the Eurosystem's operational framework for monetary policy" in the August 2003 issue of the ECB's Monthly Bulletin reviewed in detail all aspects related to the implementation of the changes to the operational framework.

affected by expectations of an interest rate change occurring in the next reserve maintenance period.

In addition to the changes to the framework, the ECB decided to systematically provide its forecast of the average autonomous factors<sup>2</sup> and its calculation of the benchmark amount<sup>3</sup> in MROs on each day that it announces or allots such an operation. Normally the benchmark amount and the allotment amount actually decided by the ECB are identical or only deviate from one another by a few hundred million euro. Previously, the ECB had only made public its forecast of the average autonomous factors on MRO announcement days, on the basis of which the market could approximate the benchmark amount. The additional information makes explicitly clear to the market whether the ECB's allotment decisions in MROs aim to balance liquidity conditions or not. Prior to this change, when credit institutions observed a deviation of the allotment amount from the benchmark amount that they had calculated, there was uncertainty as to whether the deviation was actually due to the ECB deliberately pursuing a non-neutral liquidity target, or whether it was simply due to updates of the autonomous factor forecast, which were not published at that time. This had occasionally led to misinterpretations of the ECB's allotment decisions.

This article reviews the ECB's initial experience with these changes, comparing the situation before and after the changes. For this purpose, it focuses on the period from June 2000, when the variable rate tender with a minimum bid rate was introduced for the MROs, to mid-January 2005. As a general remark, it should be noted that there have neither been any interest rate changes by the ECB, nor any significant expectations of such changes, since the new framework was implemented. Therefore, a definitive assessment of the success of the redesigned framework in preventing interest rate change expectations from destabilising bidding behaviour is not yet possible. Nevertheless, the

changes to the Eurosystem's operational framework and the ECB's communication policy appear to have already contributed to a stabilisation of counterparties' bidding behaviour, as discussed in Section 2. Section 3 describes how the amendments have so far affected liquidity conditions and the dynamics in the overnight rate.

## 2 CREDIT INSTITUTIONS' BIDDING BEHAVIOUR IN MROs

This section compares the bidding behaviour of counterparties in MROs before and after the changes to the framework were implemented. The focus is on recent developments in the euro area totals for the allotment amount, the bid amount and the number of bidders.

### ALLOTMENT AND BID AMOUNTS

The shortening of the MRO maturity from two weeks to one week and the elimination of the overlap between two operations led to a doubling of the average allotment amount in MROs. This is illustrated in Chart 1, in which the actual allotment amount is approximated by the benchmark amount. In addition, the very strong increase in the demand for banknotes over the past two years has gradually enlarged the liquidity deficit and has caused the benchmark amount to increase continuously. Thus, the allotment amount stood in December 2004 at an all-time high of €283.5 billion.

Counterparties quickly adapted their bidding behaviour to the strong increase in the average allotment amount. A slight underbidding only occurred once during the transition period: on 23 March 2004, in the third MRO with a one-

2 Autonomous liquidity factors comprise those items on the consolidated balance sheet of the Eurosystem that are normally not related to monetary policy operations, but affect the liquidity position of credit institutions.

3 The benchmark amount is the allotment amount normally required to establish balanced conditions in the short-term money market, given the ECB's complete liquidity forecast. The published benchmark allotment is rounded to the nearest €500 million.

week maturity, the amount of bids fell short of the benchmark amount by €5 billion. This underbidding did not appear to be related to a deliberate downscaling of counterparties' total bids to levels below the benchmark amount, but seemed to be of a technical nature. Since then, the bid amount has quickly increased to levels steadily above the allotment amount (see Chart 1) and stood at an all-time high of around €384 billion in November 2004.

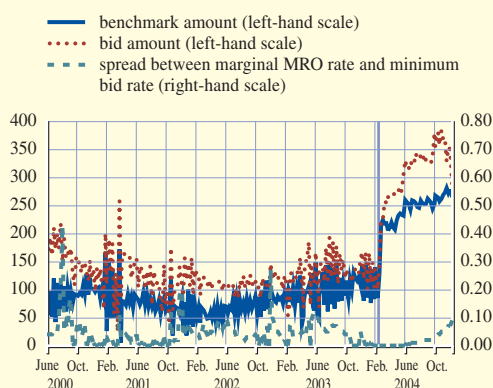
The fact that the bid amount has actually increased more strongly than the allotment amount since the introduction of the changes to the framework is consistent with the observed widening of the spread between the marginal MRO rate and the minimum bid rate (see Chart 1).

The smooth adaptation of market participants' bid volumes indicates that the higher turnover of collateral implied by the shortening of the MRO maturity has, to date, not made it more difficult to procure the necessary collateral, contrary to concerns expressed during the period of consultation with the banking community about the changes. In fact, the shortening of the MRO maturity may even have made it easier for counterparties to mobilise the required collateral, because it is now only tied up for a closed cycle of one week instead of two.

A reduction of the short-term fluctuations in the benchmark amount (and allotment amount) has been observed since the changes to the framework came into effect (see Chart 1). Before the changes to the framework the average weekly (positive or negative) change in the benchmark amount was €33 billion, while it has been €7 billion since the framework was changed. This reduction can be attributed to the fact that the MRO maturity is now always equivalent to the horizon of the liquidity target assumed by the benchmark amount. In the previous framework, the two-week maturity of the MROs was always longer than the horizon of the liquidity target. Therefore, a quite complex relationship existed

**Chart 1 Benchmark and bid amounts in MROs**

(left-hand scale: EUR billions; right-hand scale: percentage points; weekly data)



Source: ECB.

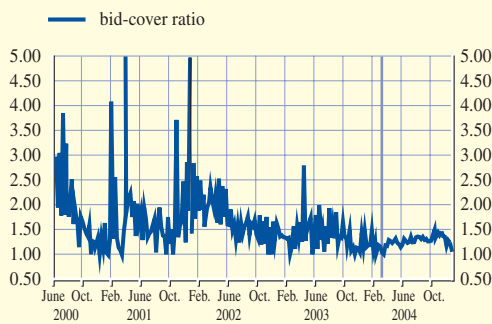
Note: The vertical blue line marks the implementation of the changes to the operational framework.

between the volumes of the two outstanding MROs, occasionally leading to sharp weekly fluctuations in the benchmark amount.

The reduced short-term fluctuations in the benchmark amount have contributed to a stabilisation of credit institutions' bidding in MROs. While in the long run counterparties seem to fully scale their total bid amount according to the structural level of the benchmark amount, this scaling seems to be less efficient in the short run, as some market participants appear to have a tendency to submit a fairly constant bid amount. Therefore, the quite strong weekly fluctuations in the benchmark amount (and allotment amount) observed before the changes to the framework also led to fluctuations in the bid-cover ratio, which expresses the number of times the bid amount exceeds the allotment amount (see Chart 2). The average weekly change in the bid-cover ratio was 0.65 before the changes were implemented, while it has been only 0.07 in the period since. The risk of technical underbidding related to the difficulty in scaling bids has therefore significantly diminished with the changes to the framework. In general, the increased stability of the benchmark amount, coupled with the changes to the ECB's

Chart 2 Bid-cover ratio

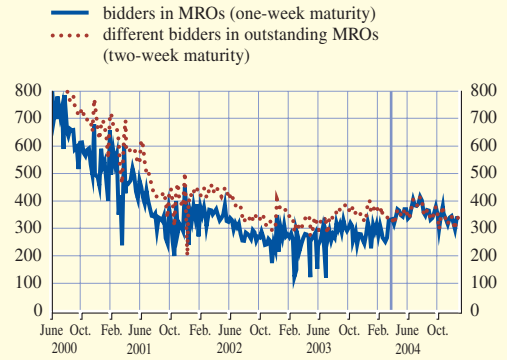
(weekly data)



Source: ECB.  
Note: The vertical light blue line marks the implementation of the changes to the operational framework.

Chart 3 Number of bidders in MROs

(weekly data)



Source: ECB.  
Note: The vertical light blue line marks the implementation of the changes to the operational framework.

communication policy, may have made it easier for counterparties to anticipate the ECB's allotment amount, and hence to prepare their bids accordingly.

### NUMBER OF BIDDERS

Approximately 2,100 credit institutions in the euro area are eligible to participate in the MROs. In 2004, prior to the change in the framework, the average number of bidders in an MRO was 282. This number had been steadily declining since the start of Stage Three of EMU, when over 700 banks participated in the MROs. This declining trend seems to have been reversed, because the average number of bidders has risen to 350 since the changes to the framework were implemented (see Chart 3). However, it should be noted that this apparent increase is probably primarily due to the reduction in the maturity of the MROs from two weeks to one week, which means that banks now need to submit a bid each week instead of every second week in order to satisfy their liquidity needs. The relevance of this aspect is clear when looking at the total number of different bidders in the two outstanding MROs before the changes to the framework (see Chart 3). With an MRO maturity of only one week, these bidders would need to participate

in each of the weekly tenders in order to raise the same amount of liquidity. However, it is possible that the increased transparency and simplicity of the new framework have made it easier for counterparties to prepare their bids and have therefore also facilitated some increased participation in tenders.

## 3 LIQUIDITY CONDITIONS AND THE OVERNIGHT RATE

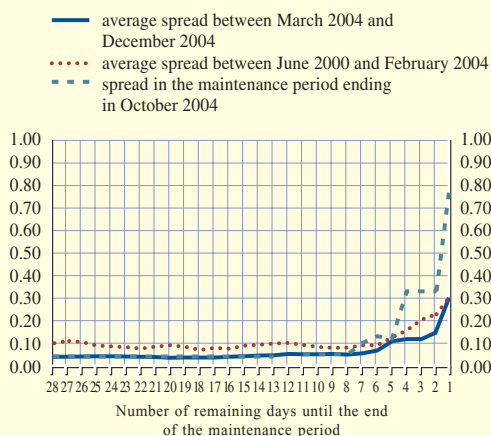
This section reviews how the changes to the operational framework have affected the overnight rate and the ECB's liquidity policy.

### THE OVERNIGHT RATE

The average absolute value of the spread between the interbank overnight rate (EONIA) and the minimum bid rate (the "overnight spread") has been significantly lower since the implementation of the changes to the operational framework, except on the last day of each reserve maintenance period (see Chart 4). Comparisons between the two regimes in terms of the end of the reserve maintenance periods are hampered by the fact that the new framework (for which there are fewer observations) includes four periods

**Chart 4 Average spread between the EONIA and the minimum bid rate within a reserve maintenance period**

(percentage points; daily data)

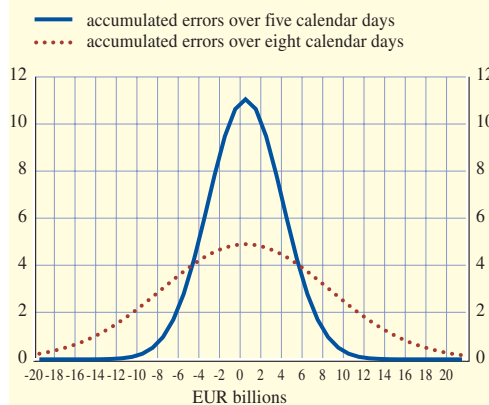


Source: ECB.

Note: End-of-month peaks have been removed from the series to facilitate comparison.

**Chart 5 Probability distribution of accumulated autonomous factor forecast errors**

(percentages)



Source: ECB.

Note: Based on daily data for the period 8 January to 8 December 2004.

when fine-tuning was conducted at the end of the period. Without the fine-tuning operations, it is likely that the average overnight spreads observed at the end of the reserve maintenance periods would have been higher than before the changes to the framework were introduced.

Indeed, one effect of the changes to the framework is the increased likelihood that large liquidity imbalances will accumulate after the allotment of the last MRO of a reserve maintenance period. This is a result of the fact that the allotment of the last MRO now always takes place on the eighth day before the end of the reserve maintenance period, while in the previous framework the timing of the last allotment varied from month to month, taking place between two and eight days before the end of the reserve maintenance period (four days on average). More precisely, this implies that the ECB, when calibrating the last MRO allotment, now has to forecast liquidity needs over an eight-day horizon, while in the previous framework it only had to rely on a forecast covering five days on average. During the consultation with banks, concerns were expressed that this could prove problematic. The standard deviation of the accumulated

autonomous factor forecast error over eight calendar days is normally around €7 billion, compared with €3 billion over five calendar days (see Chart 5).

At the same time, the new communication policy of the ECB regarding the forecasts of autonomous factors and the benchmark amount has made it somewhat easier for market participants to detect a liquidity imbalance. All other things being equal, these two factors imply an increased scope for the overnight rate to deviate from the minimum bid rate earlier and more substantially after the last MRO allotment of the reserve maintenance period. This can, for instance, be illustrated by the reserve maintenance period ending on 11 October 2004, when a large liquidity imbalance occurred (see Chart 4). At the end of this period, when no fine-tuning took place, the overnight spread not only showed a very large spike on the last day, but also started to increase soon after the allotment of the last MRO.

## THE ECB'S LIQUIDITY POLICY

In response to these developments, the ECB has, on four occasions since the changes to the operational framework came into effect, carried out a fine-tuning operation on the last day of the reserve maintenance period, with a view to offsetting large expected liquidity imbalances. These imbalances mainly resulted from changes in the Eurosystem's forecast of autonomous factors. On several occasions, it has been necessary to revise the autonomous factor forecasts due to unforeseen developments in banknotes in circulation and sometimes substantial forecast errors concerning government deposits, about which the ECB was informed at a very late stage. In addition, the forecast of banks' excess reserves (current account holdings in excess of reserve requirements) may be revised substantially on the last day of the reserve maintenance period. Aware of the problems arising from late revisions of autonomous factor forecasts, the Eurosystem – in cooperation with the respective euro area countries – has already taken remedial action and is confident that part of these distortions can be reduced in the near future.

In line with the ECB's overall policy of aiming at neutral liquidity conditions, all four fine-tuning operations were carried out irrespective of whether the liquidity imbalance was positive or negative: on 11 May and 7 December 2004 liquidity-absorbing fine-tuning operations were conducted, while on 8 November 2004 and 18 January 2005 liquidity-providing fine-tuning operations were carried out. The operations aimed to restore balanced liquidity conditions at the end of the reserve maintenance periods. From the moment they were announced, the overnight rate stabilised at a level close to the minimum bid rate.

When it took the decision to conduct a fine-tuning operation on 8 November, the ECB expected a liquidity imbalance of €6.5 billion, which was less than what had been expected at the end of some previous reserve maintenance

periods when the ECB did not conduct fine-tuning operations. This reflects the fact that the ECB, taking into account its initial experience with the new framework and its preference for smooth money market conditions throughout the reserve maintenance period, considered it opportune to address more effectively liquidity imbalances at the end of the reserve maintenance periods.

The policy of addressing such liquidity imbalances has evolved gradually and has benefited from experience in successive reserve maintenance periods. Before the changes to the framework were implemented in March 2004, the end-of-period liquidity imbalances and the resulting volatility in the overnight rate were normally fairly moderate, and the ECB never carried out a fine-tuning operation after the last MRO allotment in response to them. This was consistent with the idea that some volatility in the overnight rate at the end of the reserve maintenance period can enhance credit institutions' incentives to bid in MROs, as they seek to reduce their interest rate risk. Owing to the initial concerns expressed by some credit institutions that the higher collateral turnover brought about by the shorter MRO maturity could increase the risk of underbidding, it was considered important not to reduce incentives to bid. Thus, the ECB decided to wait until experience had been gained of the bidding behaviour under the new framework before adapting the policy that it had followed regarding end-of-period liquidity imbalances.

As the analysis of bidding behaviour in the previous section suggests, it turned out that both bid amounts and bid rates showed that incentives to bid steadily increased after the changes to the framework. Therefore, there seems to be little, if any, need to enhance incentives to bid by allowing excessive volatility in the overnight rate at the end of the period. In addition, some tentative evidence has emerged that such volatility, which can reach elevated levels (as seen in October 2004), can be somewhat disruptive to interbank money



market liquidity and to the smooth operation of the associated derivatives markets. Hence, on several occasions since autumn 2004 the ECB considered it advantageous to address more effectively liquidity imbalances at the end of the reserve maintenance period via fine-tuning operations. When more experience has been gained, the ECB may further revise its policy towards such imbalances.

#### 4 CONCLUSION

Although the ECB has not changed its key interest rates since the implementation of the new operational framework, there is a feeling of confidence that the main goal of the changes – namely to “immunise” bidding behaviour during a reserve maintenance period against expectations of rate changes – is being achieved. This article shows that the implementation of the changes to the operational framework was smooth and that counterparties quickly adapted their bidding behaviour to the increased allotment amounts in the weekly MROs. Bidding levels and the resulting bid-cover ratios have been stable. Some of this stability may be attributable to the enhanced communication with regard to autonomous factor forecasts and the benchmark amount. However, the stabilisation of counterparties' bidding behaviour seems to stem mainly from the reduction of the weekly fluctuations in the benchmark amount.

The stable bidding behaviour has also been accompanied by an overall stabilisation of the spread between the interbank overnight rate and the minimum bid rate during the reserve maintenance period. However, the increased scope for end-of-period liquidity imbalances in the last week of each reserve maintenance period did on some occasions bring about an undesired level of rate volatility. As a consequence both of this volatility and of the more stable bidding behaviour, the ECB has decided to counter more effectively liquidity imbalances at the end of the reserve maintenance period. Since the introduction of

the changes to the framework, this decision has so far resulted in four fine-tuning operations on the last day of the reserve maintenance period. The new approach has helped to further contain the average volatility of the overnight rate in the last week of the reserve maintenance period.