

Box 2

Autonomous liquidity factors in the euro area and the use of the forecasts of liquidity needs provided by the ECB

Autonomous liquidity factors can be defined as the items in the consolidated balance sheet of the Eurosystem, apart from monetary policy operations, that provide or withdraw liquidity and thus affect the current accounts which credit institutions hold with the Eurosystem, mostly to fulfil their minimum reserve requirements. Section 1 of this box gives an update of the major developments in autonomous liquidity factors since end-June 2000. A box on this subject was published in an article entitled “The switch to variable rate tenders in the main refinancing operations” in the July 2000 issue of the ECB Monthly Bulletin. Section 2 explains how counterparties can use the ECB’s weekly estimates of autonomous factors and the daily data published on the ECB’s wire service pages to understand better the main parameters on the basis of which the size of tender allotments is decided.

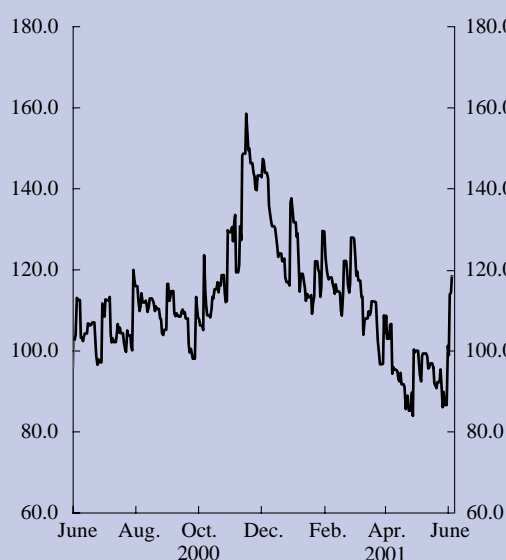
1. The evolution of the autonomous factors since end-June 2000

Autonomous factors represent the principal source of uncertainty in the assessment of the liquidity needs of the banking system. The most important autonomous factors are government deposits with the Eurosystem, banknotes, net foreign assets and a miscellaneous category that includes items in the course of settlement (net float). In the period from 26 June 2000 to 30 June 2001 the sum of autonomous factors ranged between €84 billion and €159 billion, with an average of €113 billion (see chart below). In the preceding 12 months, autonomous factors averaged €93 billion. The standard deviation of daily changes of the time series was €4.1 billion, compared with €4.7 billion in the preceding 12 months.

Some euro area governments keep their main deposit account at their national central bank, while others hold their deposits with commercial banks. Government deposits with national central banks remain the most volatile autonomous factor in the euro area. Currently, the treasuries contributing the most to the volatility of government deposits with the Eurosystem are those of Greece, France and Italy.

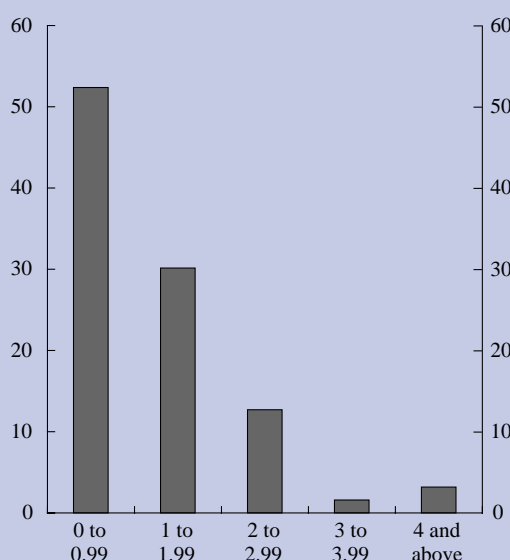
Total autonomous factors

(daily data; EUR billions)



Distribution of absolute forecast errors

(y axis: percentage of forecasts; x axis: range of errors in EUR billions; 26 June 2000 to 30 June 2001)



Source: ECB.

Since the end of June 2000, when the variable rate tender system was first applied to the Eurosystem's main refinancing operations (MROs), the ECB has been publishing on the wire services forecasts of autonomous factors for the week ahead, or up to the end of the maintenance period, in order to enhance market participants' ability to assess the tender allotment amount.¹ By the end of June 2001 the ECB had published 64 forecasts. The standard deviation of the associated forecast errors was €1.5 billion. So far, the largest average daily error over a one-week horizon has been €4.2 billion, which was related to the forecast for the period from 24 to 29 April. The histogram above provides the frequency of absolute values of the forecast errors in the period reviewed. 52% of the errors are less than €1 billion.

2. How to use the forecasts of autonomous factors published by the ECB

Although the allotment decision depends on several factors and consequently cannot be forecast in a mechanical way, the publication of autonomous factors and minimum reserve requirements provides a reliable basis for the Eurosystem counterparties to assess the allotment decisions taken by the ECB.

In the table overleaf, which is derived from the simplified balance sheet of the Eurosystem and covers, by way of example, the reserve maintenance period from 24 September to 23 October 2000, the liquidity situation in the euro area on Monday, 9 October 2000 is analysed. Autonomous factors appear in column 1, various open market operations in columns 2 to 4, the standing facilities in columns 5 and 6, and current account holdings in column 7. Some of the elements provide liquidity to the market (columns 2, 3, 4 and 5), while others withdraw liquidity (columns 1 and 6). Column 7 represents the total liquidity available to the banking system and is simply calculated as the difference between liquidity-providing and liquidity-absorbing balance sheet items (columns 2+3+4+5-1-6). This liquidity available to Eurosystem counterparties takes the form of current account holdings, i.e. deposits that counterparties hold with their respective euro area NCB mainly for the fulfilment of minimum reserve requirements. These minimum reserve requirements are determined from banks' balance sheets at the end of the previous month. The preliminary estimate of minimum reserve requirements for the relevant maintenance period is published through wire services directly after the disclosure of the monetary aggregate M3 of the preceding month, which usually occurs by the end of the next calendar month.

Current account holdings can be, on a daily basis, lower or higher than minimum reserve requirements. However, at the end of the maintenance period counterparties have to fulfil their requirements, which means the average of current account holdings over a maintenance period must be at least equal to the minimum reserve requirements. In reality, counterparties normally hold some excess reserves (defined as the value of the average reserve surplus in excess of the amount to be held with the Eurosystem to fulfil minimum reserve requirements). These have amounted to approximately €0.7 billion per day, on average, although their level has recently fallen slightly.

From the figures available, one can compute the daily reserve surplus (column 9), which equals the difference between current account holdings and minimum reserves. Then, column 10 displays the average of the daily reserve surplus since the beginning of the maintenance period. All the figures displayed in the table in bold were made available to counterparties from the ECB's wire service pages. In the afternoon of that day, the ECB announced the tender and published its forecast of liquidity needs of the banking system until 17 October (column 1, rows 9 to 17 October).

Finally, based on the available information, and on the assumption of no recourse to the standing facilities, counterparties could derive a rough estimate of the allotment volume of the MRO conducted on 10 October

¹ Whenever the value date of the MRO extends into the next reserve maintenance period, two forecasts are published: one covering the remaining days of the prevailing reserve maintenance period, and another ranging from the beginning of the next reserve maintenance period to the day before the settlement of the subsequent MRO.

2000, namely €76 billion (column 4, rows 11 to 17 October), that would allow them to fulfil proportionally their minimum reserve requirements until 17 October and to hold an average of €0.7 billion in excess reserves on that day (column 10).

However, the ECB may deviate from this estimate in its allotment decisions. For example, changes in autonomous factors' forecasts may occur between the announcement of the tender and the final allotment decision. In addition, other considerations may play a role in the ECB's allotment decision in order to ensure the efficient performance of the monetary policy functions attributed to the ECB's main refinancing operations.

Information on liquidity factors available to the markets on 9 October 2000¹⁾

In EUR billions		Autonomous factors	Longer-term refinancing operation	Main refinancing operation 1 ²⁾	Main refinancing operation 2 ³⁾	Marginal lending facility	Deposit facility	Current accounts of CIs with NCBS	Minimum reserves	Daily reserve surplus	Average reserve surplus
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Ex post figures on ECB42, forecast on ECB40 ⁴⁾	Ex post figures on ECB39 ³⁾	Ex post figures on ECB39 ⁴⁾	Ex post figures on ECB39 ⁴⁾	Ex post figures on ECB40 ⁴⁾	Ex post figures on ECB40 ⁴⁾	Equals (2) + (3) + (4) + (5) - (1) - (6)	Estimate published on ECB40 ⁴⁾	Equals (7) - (8)	Average of (9) from 24 September to current date
24/09/2000	Sun.	105.2	50.0	104.0	63.0	2.4	1.4	112.8	113.6	-0.8	-0.8
25/09/2000	Mon.	116.5	50.0	104.0	63.0	0.1	0.1	100.6	113.6	-13.0	-6.9
26/09/2000	Tue.	116.6	50.0	104.0	63.0	0.0	0.8	99.6	113.6	-14.0	-9.3
27/09/2000	Wed.	112.4	50.0	104.0	81.0	0.3	0.1	122.9	113.6	9.3	-4.6
28/09/2000	Thu.	113.3	45.0	104.0	81.0	0.6	0.1	117.2	113.6	3.6	-3.0
29/09/2000	Fri.	114.8	45.0	104.0	81.0	0.0	0.4	114.8	113.6	1.2	-2.3
30/09/2000	Sat.	114.8	45.0	104.0	81.0	0.0	0.4	114.8	113.6	1.2	-1.8
01/10/2000	Sun.	114.8	45.0	104.0	81.0	0.0	0.4	114.8	113.6	1.2	-1.4
02/10/2000	Mon.	109.3	45.0	104.0	81.0	0.1	0.1	120.7	113.6	7.1	-0.5
03/10/2000	Tue.	108.5	45.0	104.0	81.0	0.2	0.0	121.7	113.6	8.1	0.4
04/10/2000	Wed.	109.3	45.0	99.0	81.0	0.4	0.0	116.1	113.6	2.5	0.6
05/10/2000	Thu.	109.0	45.0	99.0	81.0	0.2	0.1	116.2	113.6	2.6	0.7
06/10/2000	Fri.	108.5	45.0	99.0	81.0	0.2	0.1	116.7	113.6	3.0	0.9
07/10/2000	Sat.	108.5	45.0	99.0	81.0	0.2	0.1	116.7	113.6	3.0	1.1
08/10/2000	Sun.	108.5	45.0	99.0	81.0	0.2	0.1	116.7	113.6	3.0	1.2
09/10/2000	Mon.	107.7	45.0	99.0	81.0	0.0	0.0	117.3	113.6	3.7	1.4
10/10/2000	Tue.	107.7	45.0	99.0	81.0	0.0	0.0	117.3	113.6	3.7	1.5
11/10/2000	Wed.	107.7	45.0	99.0	76.0	0.0	0.0	112.3	113.6	-1.3	1.3
12/10/2000	Thu.	107.7	45.0	99.0	76.0	0.0	0.0	112.3	113.6	-1.3	1.2
13/10/2000	Fri.	107.7	45.0	99.0	76.0	0.0	0.0	112.3	113.6	-1.3	1.1
14/10/2000	Sat.	107.7	45.0	99.0	76.0	0.0	0.0	112.3	113.6	-1.3	1.0
15/10/2000	Sun.	107.7	45.0	99.0	76.0	0.0	0.0	112.3	113.6	-1.3	0.9
16/10/2000	Mon.	107.7	45.0	99.0	76.0	0.0	0.0	112.3	113.6	-1.3	0.8
17/10/2000	Tue.	107.7	45.0	99.0	76.0	0.0	0.0	112.3	113.6	-1.3	0.7
18/10/2000	Wed.		45.0		76.0	0.0	0.0		113.6		
19/10/2000	Thu.		45.0		76.0	0.0	0.0		113.6		
20/10/2000	Fri.		45.0		76.0	0.0	0.0		113.6		
21/10/2000	Sat.		45.0		76.0	0.0	0.0		113.6		
22/10/2000	Sun.		45.0		76.0	0.0	0.0		113.6		
23/10/2000	Mon.		45.0		76.0	0.0	0.0		113.6		

1) After the publication by the ECB of the forecast of autonomous factors at 3.30 p.m. Figures in bold were made available to counterparties through the ECB's wire service pages.

2) Amount of the outstanding main refinancing operation with the shortest remaining maturity.

3) Amount of the outstanding main refinancing operation with the longest remaining maturity.

4) Refer to Reuters pages.