



EUROPEAN CENTRAL BANK

EUROSYSTEM

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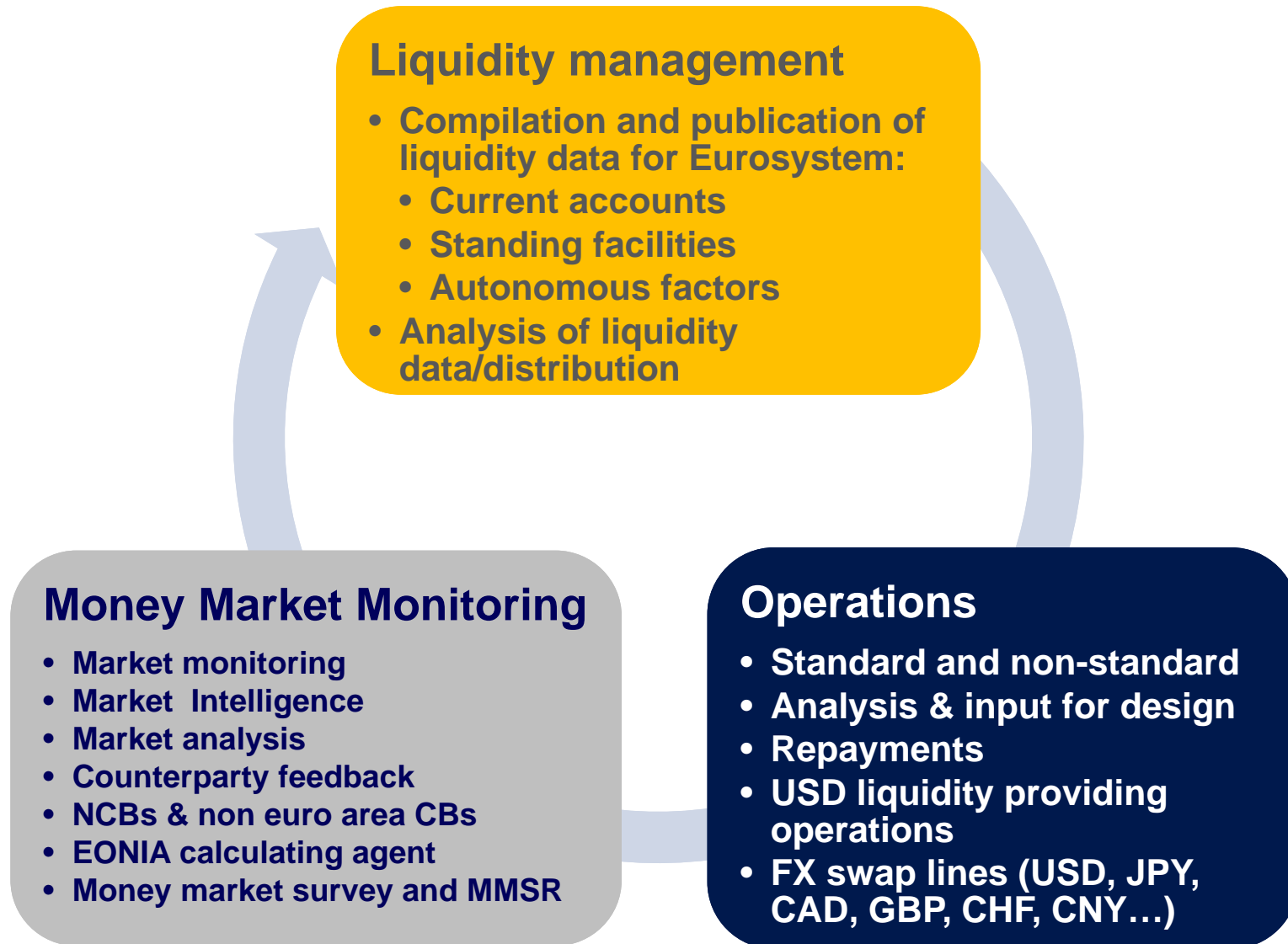
Forecasting liquidity and conducting credit operations

ECB Central Banking Seminar
Frankfurt am Main, 12 July 2018

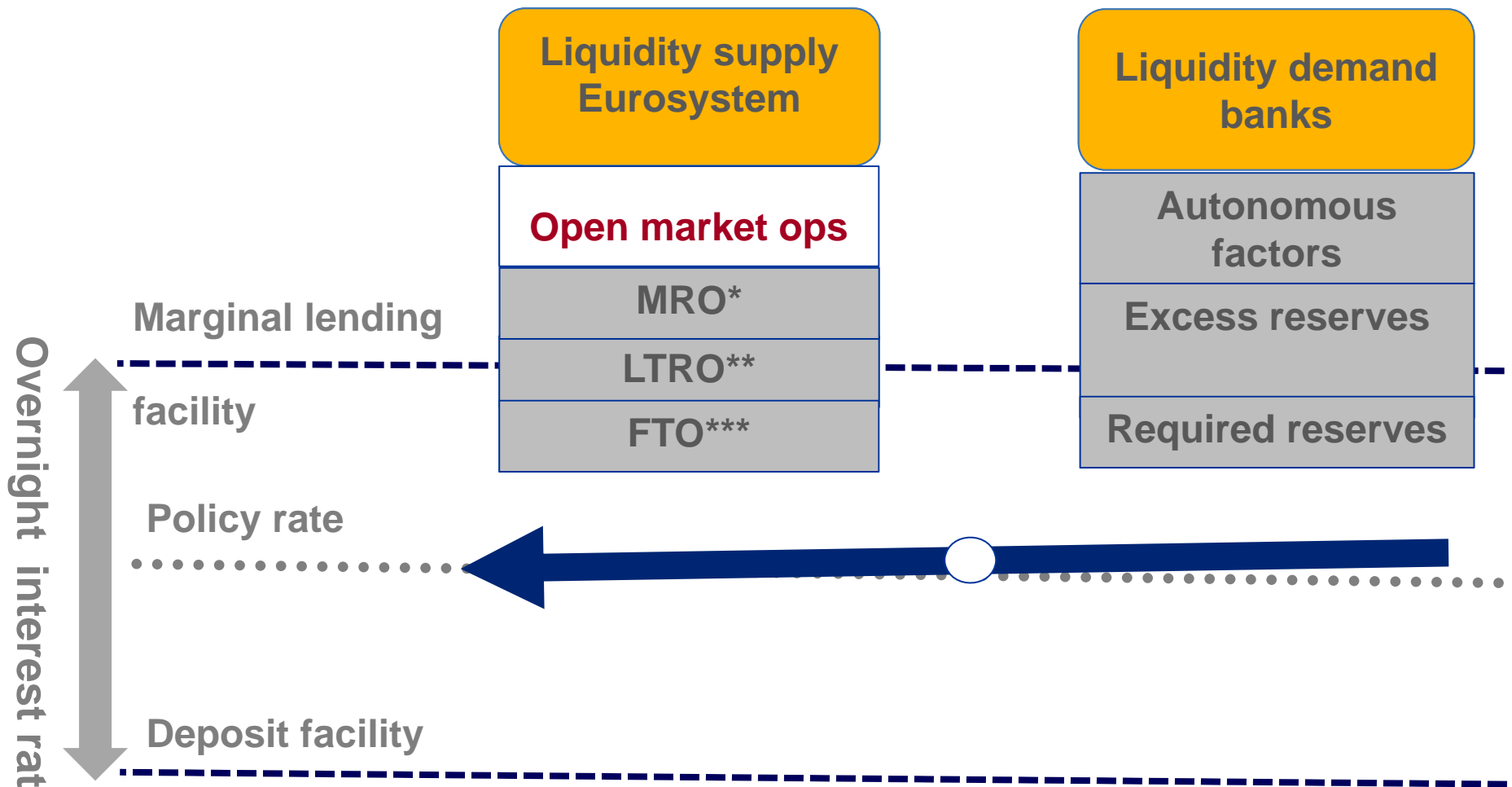
Overview

- 1 Evolution of liquidity management concept
- 2 Focus on forecasting liquidity and conducting credit operations
- 3 Recent and future liquidity developments

Focus on liquidity management and operations



Managing day-to-day liquidity to steer interest rates



*Main Refinancing Operation, **Longer-term Refinancing Operation, ***Fine-tuning Operation

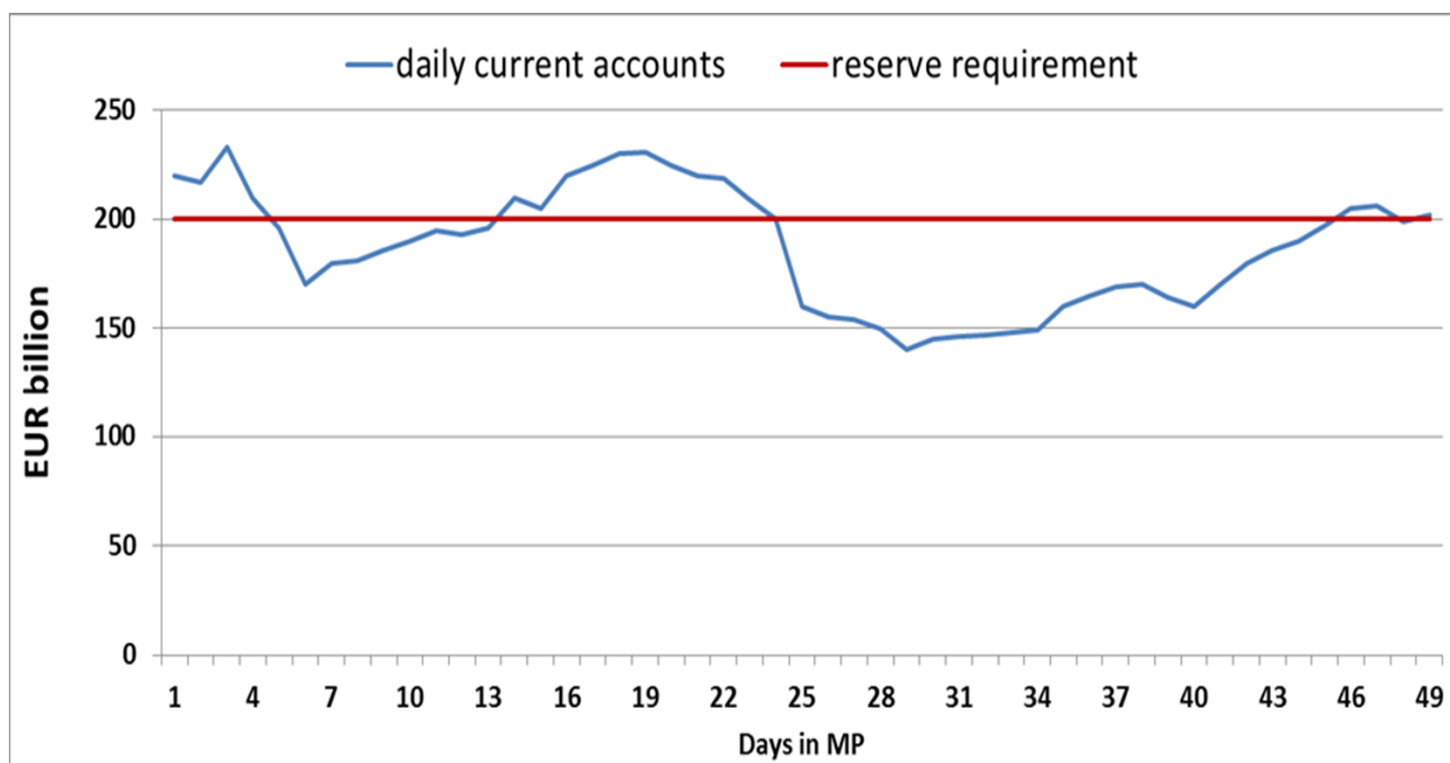
			Liquidity Providing	Liquidity Absorbing
OPEN MARKET OPERATIONS	Standard Tender	MRO <i>weekly</i> <i>1-week maturity</i>	<i>Reverse Transaction</i>	
		LTRO	<i>Reverse Transaction</i>	
	Quick Tender & Bilateral Operation • <i>non standardised maturity</i> • <i>no regular frequency</i>	Fine Tuning	<i>Reverse Transaction</i> <i>FX Swaps</i>	<i>Reverse Transaction</i> <i>FX Swaps</i> <i>Fixed Term Deposit</i>
		Structural Operation	<i>Reverse Transaction</i> <i>Outright purchases</i>	<i>Issuance of Debt Certificates;</i> <i>Outright Sales</i>
STANDING FACILITIES	• <i>Access at the discretion of counterparties</i> • <i>Overnight maturity</i>	Marginal Lending Facility	<i>Reverse Transaction</i>	
		Deposit Facility		<i>Deposit</i>

Eurosystem simplified balance sheet

Assets	Liabilities
<p>Monetary policy operations</p> <ul style="list-style-type: none"> Reverse open market operations Marginal lending facility Securities held for monetary policy purposes 	<p>Monetary policy operations</p> <ul style="list-style-type: none"> Deposit facility
<p>Autonomous factors</p> <ul style="list-style-type: none"> Net assets denominated in euro Net foreign assets 	<p>Autonomous factors</p> <ul style="list-style-type: none"> Banknotes in circulation Government deposits Other autonomous factors (net)
	<p>Current account holdings</p> <ul style="list-style-type: none"> Minimum reserves requirement Excess reserves
<p>Intra-Eurosystem claims</p>	<p>Intra-Eurosystem liabilities</p>

What are they?

- Create/enlarge structural liquidity deficit (of the banking sector) stabilise money market rates
- Need to be fulfilled on average over the maintenance period



What are they?

- Reserve holdings in excess of minimum reserve requirements.
- Remuneration rate = Minimum of 0% or the DF rate (currently - 0.40%)

Why are they needed?

- **Payment needs of counterparties not subject to minimum reserve requirements**
 - Banks with an effective reserve requirement of zero
 - Counterparties which are not credit institutions
 - Foreign credit institutions
- **Banks that have already fulfilled their reserve requirements**
 - Individual liquidity shocks after markets close

What are they?

Sum of all items on a central bank's balance sheet that are not monetary policy operations or current account holdings of counterparties held with the central bank

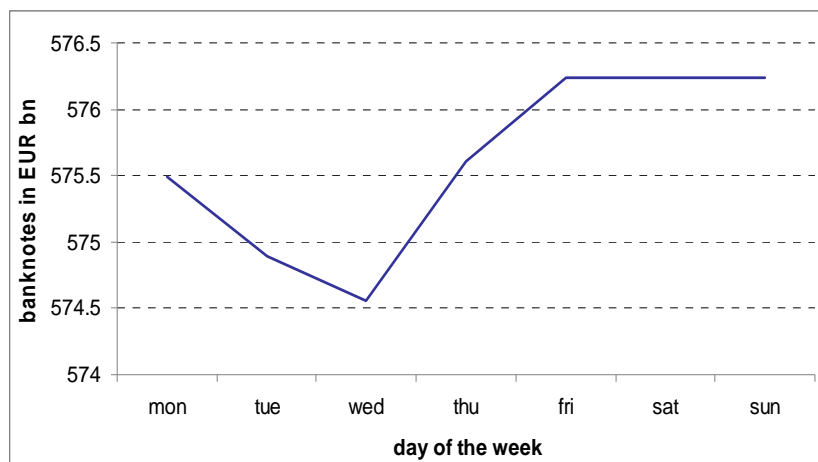
Which are they?

The main Autonomous Factors are:

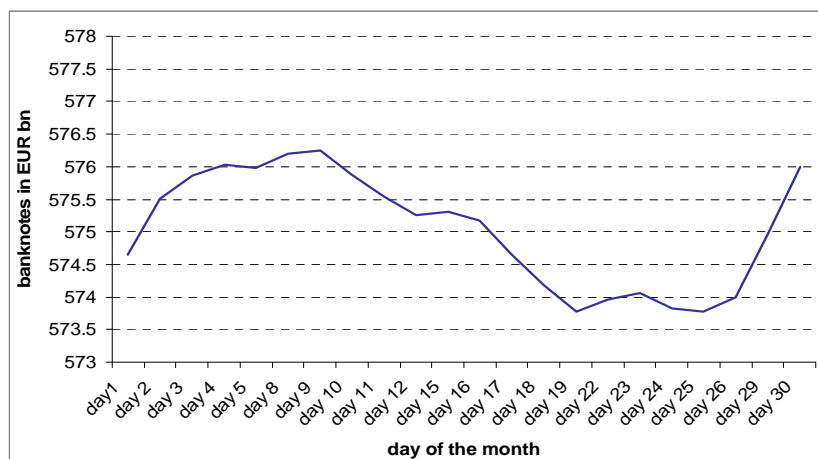
1. Banknotes in circulation
2. Government deposits
3. Net Foreign Assets
4. Net Assets Denominated In Euro
5. Items in course of settlement
6. Other Autonomous Factors

Banknotes forecasts can be impacted by seasonal volatility

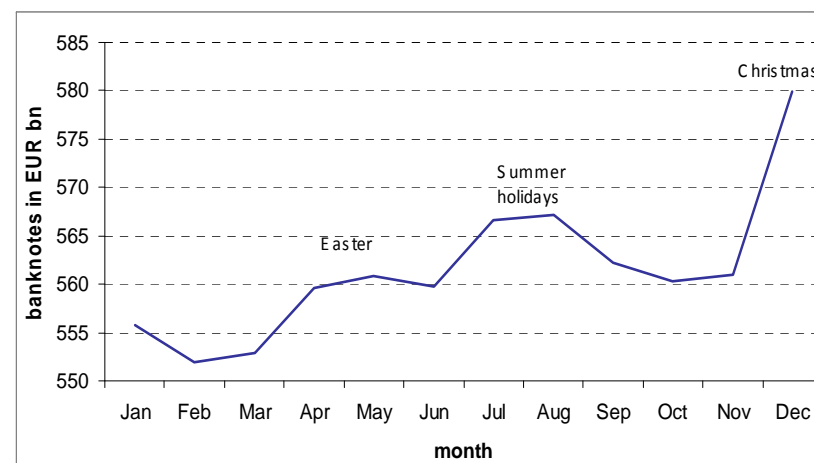
Intra-week



Intra-month



Intra-year



- Data series consist of hundreds of accounts:
 - Treasury accounts,
 - Social security funds
 - Local / Regional authorities
- Very large inflows and outflows during the day
- In some NCBs, end-of-day balances usually small, but can be significant in other NCBs
- Importance of information from the national Treasuries and daily bilateral contacts
- Negative rates have increased the volatility of government deposits, making them difficult to forecast

- Net Foreign Assets (NFA) transactions:
 - related to management of FX reserves / gold, FX trading
 - on behalf of international organisations
 - payment to purchase FX on behalf of governments
 - related to IMF
 - During the crisis: USD repos, special lending agreements
- Net Assets denominated in Euro (NADIE) transactions:
 - investment operations
 - reserve management services
 - time deposits accounts for foreign central banks
 - During crisis: USD repos, special lending agreements, foreign exchange swaps

- On a daily basis, the ECB publishes figures on liquidity conditions, autonomous factors and outstanding market operations
- Data is published to the ECB website via the ECB's Market Information Dissemination (MID) system

<https://www.ecb.europa.eu/mopo/liq/html/index.en.html>

- Wire services pick data up from MID

Daily liquidity conditions (EUR millions)	
Reserve maintenance period	2018-06-20 to 2018-07-31
Average reserve requirements	124,691
Figures as at	2018-06-20
Average current account holdings in the MP	1,361,779
Current account holdings	1,361,779
Use of the marginal lending facility	83
Use of the deposit facility	603,266
Net liquidity effect from Autonomous Factors and MonPol portfolios	-1,206,836
Forecasts of autonomous factors (EUR millions)	
Estimate on 2018-06-19 of average daily autonomous factors for the period 2018-06-20 to 2018-06-26:	1,346,300

Banks can calculate liquidity needs

- Expected liquidity conditions in the euro area during a given MRO week can be estimated using the weekly estimation of the average autonomous factors
- This allows counterparties to estimate their liquidity needs
- The higher the autonomous factors, the lower the expected liquidity

Date:	08-nov-16	Liquidity table		(Only figures in bold characters are definitive. All other figures are subject to uncertainty. Especially the displayed amounts of future monetary policy operations have only the purpose of a sensitivity analysis.)										
Time:	9:37	All figures in EUR billion												
I. Open market operations														
		1	2	3	4	5	6	7	8	9	10	11	12	13
		Main refin. oper.	Longer term oper.	APP	Sum 1+2+3	Marg. lend. facil	Dep. facil.	Prev. day auton. factors	Auton. factors (broad)	Daily curr. acc.4+5-6-8	Requ. reser.	Daily reser. surpl. 9-10	Aver. daily reser. surpl.	Accum. daily reser. surpl.
mi	26-oct-16	36,0	513,8		2.054,5	0,2	373,0		830,4	851,4	117,4	734,0	734,0	734,0
ju	27-oct-16	36,0	512,2		2.056,9	0,2	380,1		844,8	832,2	117,4	714,8	724,4	1.448,8
vi	28-oct-16	36,0	512,2		2.061,2	0,1	384,4		864,1	812,8	117,4	695,4	714,7	2.144,2
sá	29-oct-16	36,0	512,2		2.061,2	0,1	384,4		864,1	812,8	117,4	695,4	709,9	2.839,6
do	30-oct-16	36,0	512,2		2.061,2	0,1	384,4		864,1	812,8	117,4	695,4	707,0	3.535,1
lu	31-oct-16	36,0	512,2		2.062,5	0,8	398,9		844,0	820,3	117,4	702,9	706,3	4.238,0
ma	01-nov-16	32,7	512,2		2.063,6	0,3	400,6		839,8	823,5	117,4	706,1	706,3	4.944,1
mi	02-nov-16	32,7	512,2		2.068,7	0,3	417,8		828,7	822,4	117,4	705,0	706,1	5.649,1
ju	03-nov-16	32,7	512,2		2.072,1	0,2	430,7		824,8	816,7	117,4	699,3	705,4	6.348,4
vi	04-nov-16	32,7	512,2		2.076,4	0,2	455,6		819,9	801,1	117,4	683,7	703,2	7.032,1
sá	05-nov-16	32,7	512,2		2.076,4	0,2	455,6		819,9	801,1	117,4	683,7	701,4	7.715,8
do	06-nov-16	32,7	512,2		2.076,4	0,2	455,6		819,9	801,1	117,4	683,7	700,0	8.399,5
lu	07-nov-16	32,7	512,2	1.537,0	2.081,9	0,1	448,6	829,3	841,3	792,1	117,4	674,7	698,0	9.074,2
ma	08-nov-16	32,7	512,2	1.540,6	2.085,5			834,3	842,0	1.243,5	117,4	1.126,1	728,6	10.200,4
mi	09-nov-16	32,7	512,2	1.544,2	2.089,1			841,4	842,0	1.247,1	117,4	1.129,7	755,3	11.330,1
ju	10-nov-16	32,7	512,2	1.547,8	2.092,7			841,9	842,0	1.250,7	117,4	1.133,3	779,0	12.463,4
vi	11-nov-16	32,7	512,2	1.551,4	2.096,3			845,8	842,0	1.254,3	117,4	1.136,9	800,0	13.600,4
sá	12-nov-16	32,7	512,2	1.551,4	2.096,3			845,8	842,0	1.254,3	117,4	1.136,9	818,7	14.737,3
do	13-nov-16	32,7	512,2	1.551,4	2.096,3			845,8	842,0	1.254,3	117,4	1.136,9	835,5	15.874,3
lu	14-nov-16	32,7	512,2	1.555,0	2.099,9			828,2	842,0	1.257,9	117,4	1.140,5	850,7	17.014,8
ma	15-nov-16	32,7	512,2	1.558,6	2.103,5			819,1	842,0	1.261,5	117,4	1.144,1	864,7	18.158,9

Concept

- Benchmark amount = MRO allotment amount that would create neutral liquidity conditions (demand=supply) for the next MRO period (7-days)
- Benchmark amount would allow for a smooth fulfilment of the reserve requirements

MRO benchmark calculation

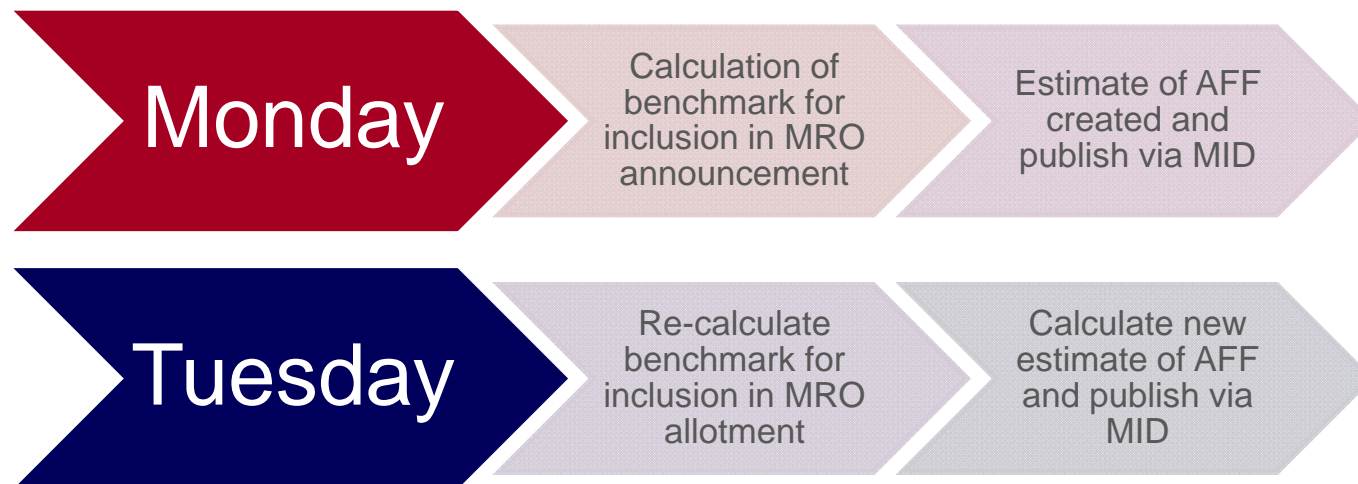
Future liquidity needs during upcoming MRO period

- Liquidity already provided through other operations during MRO week (e.g. LTRO)
- Accumulated liquidity imbalance so far in the maintenance period

For further information see

http://www.ecb.int/mopo/implement/omo/pdf/How_to_calculate_the_benchmark.pdf

The ECB also calculates and publishes the MRO benchmark on a weekly basis



Discussion and proposal by the Liquidity Committee (LiCo)

- Two Executive Board members in charge of Directorate General Market Operations (DG-M), Directorate General Economics (DG-E)
- Management and Experts from DG-E and DG-M

Basis for discussion

- Financial market review and market view on liquidity (DG-M)
- Economic review (DG-E)
- Integrated reporting on money market and liquidity developments. Liquidity situation evaluation (DG-M)
- Allotment result: special interest in bidding behaviour (DG-M)



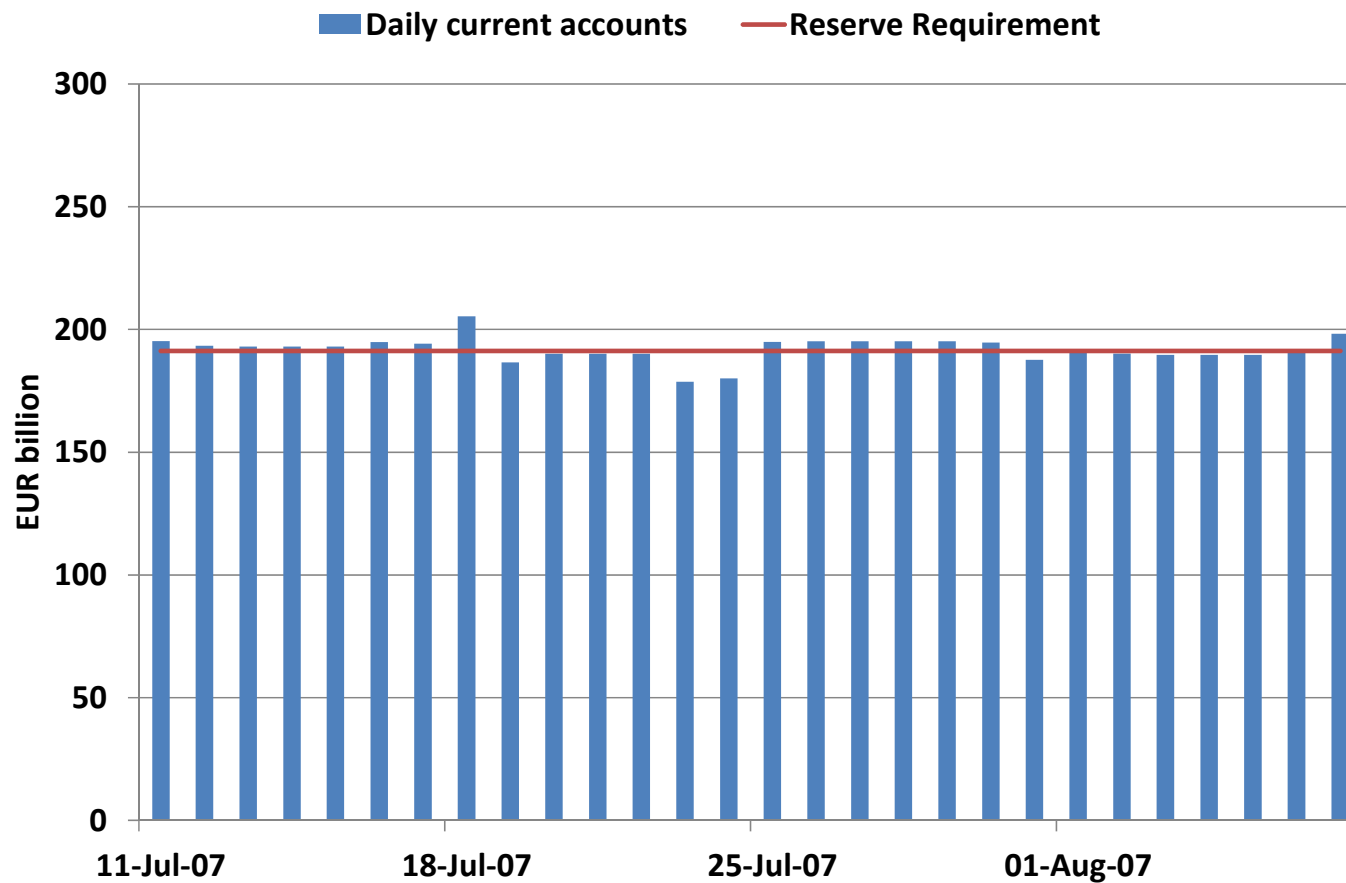
(Broad based) recommendation from LiCo to the Executive Board



Final allotment decision by Executive Board

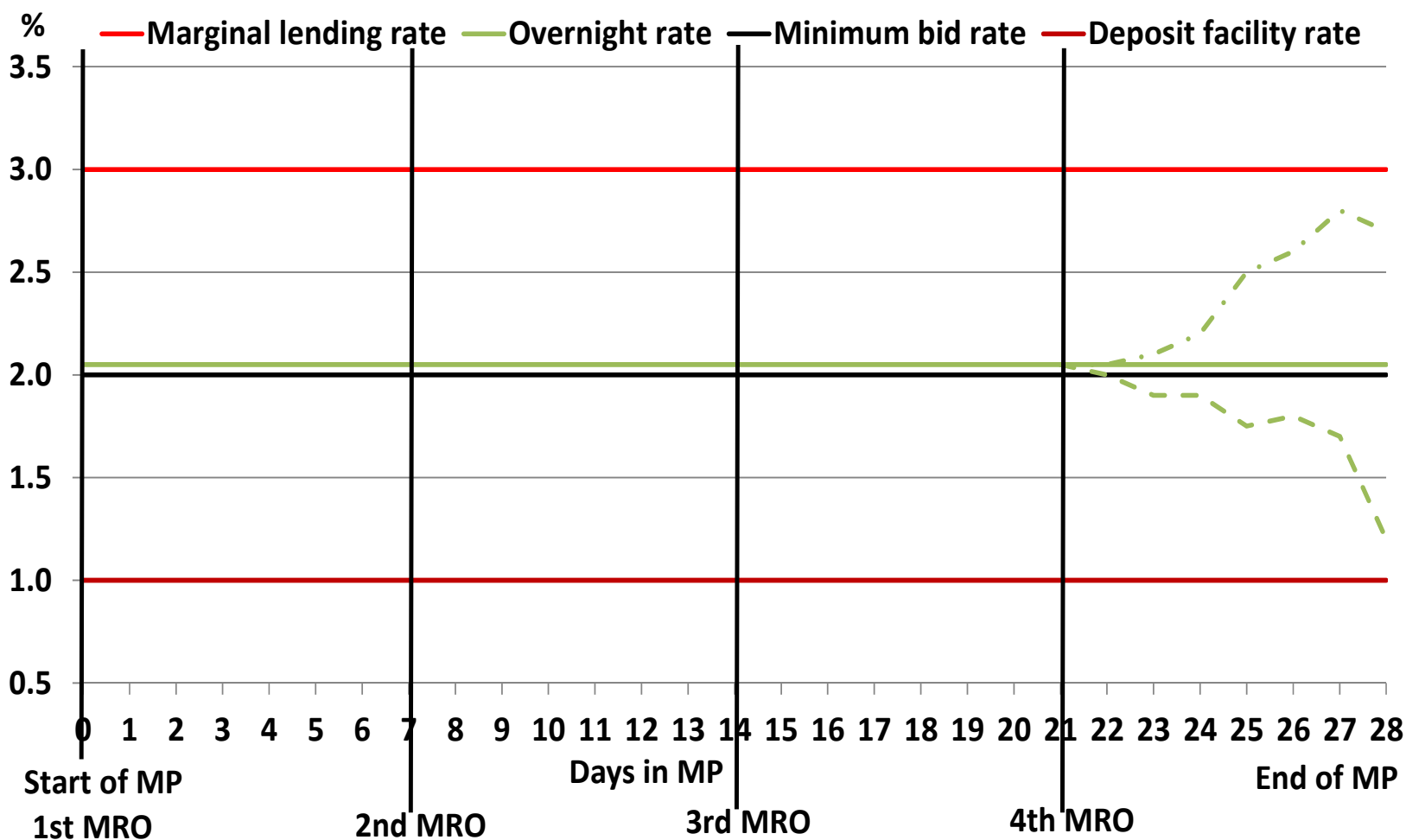
MRO allotments aim to establish

- Neutral conditions at the end of the maintenance period
- Smooth fulfilment of reserve requirements during the period



Fine-tuning operation on last day of MP steers rates

- Such that EONIA = mid point of corridor = MRO/policy rate



Monetary policy tools

3. Open market credit operations

Main refinancing operation, MRO (1w)

Long-term refinancing operations, LTRO (3m)

Fine tuning operations (o/n -1w)

1. Minimum reserve requirement

2. Standing facilities

Marginal lending

Deposit

Front-loading of liquidity provision
Fixed-Rate Full Allotment

Negative rates
Forward Guidance

Extra lending operations
(O/N, VLTRO, TLTRO, EUR, USD, CHF)

4. Outright asset purchases

OMT

CBPP1-3

SMP

CSPP

ABSPP

PSPP

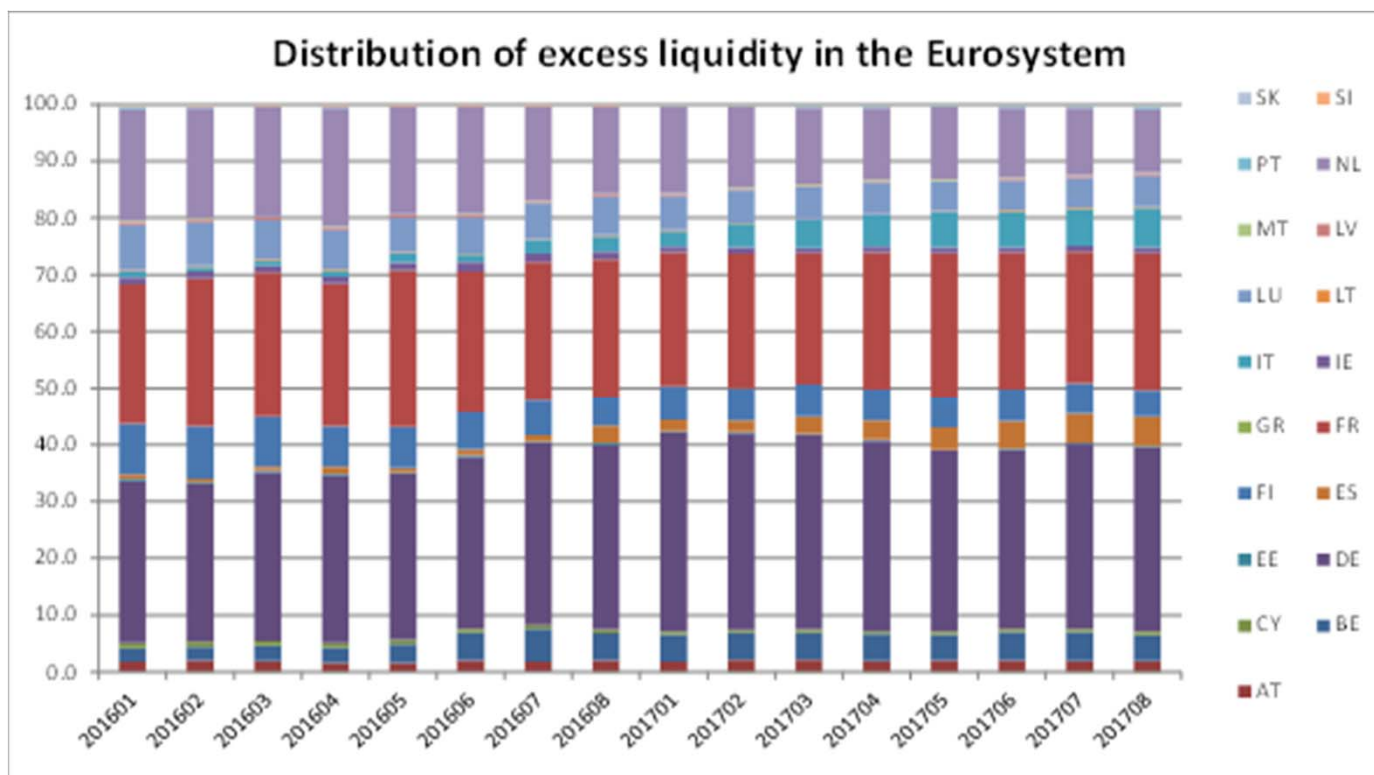
- Significant preferences for frontloading reserves → Demand for liquidity at MRO rate normally exceeded liquidity needs
- Fixed rate full allotment and liquidity surplus brought short-term interest rates to level of DF
- In this environment, liquidity demand function is driven by factors not mechanically related to liquidity needs → benchmark allotment less relevant
- MRO benchmark is negative (i.e. excess liquidity)
- Focus is given on excess liquidity analysis, e.g. on distribution of excess liquidity

The liquidity management processes and forecasting techniques did not change

Focus on distribution of excess liquidity across the Eurosystem

ECB-PUBLIC

- 80-90% of excess liquidity is held in Germany, France and the Netherlands
- Concentrated within a small number of institutions → Top 50 liquidity holders hold 65-83% of total
- Pre crisis, risk aversion played a role. Now, internal risk limits play a larger role
- Location of where APP purchases took place also a factor



What will influence the level of excess liquidity going forward?

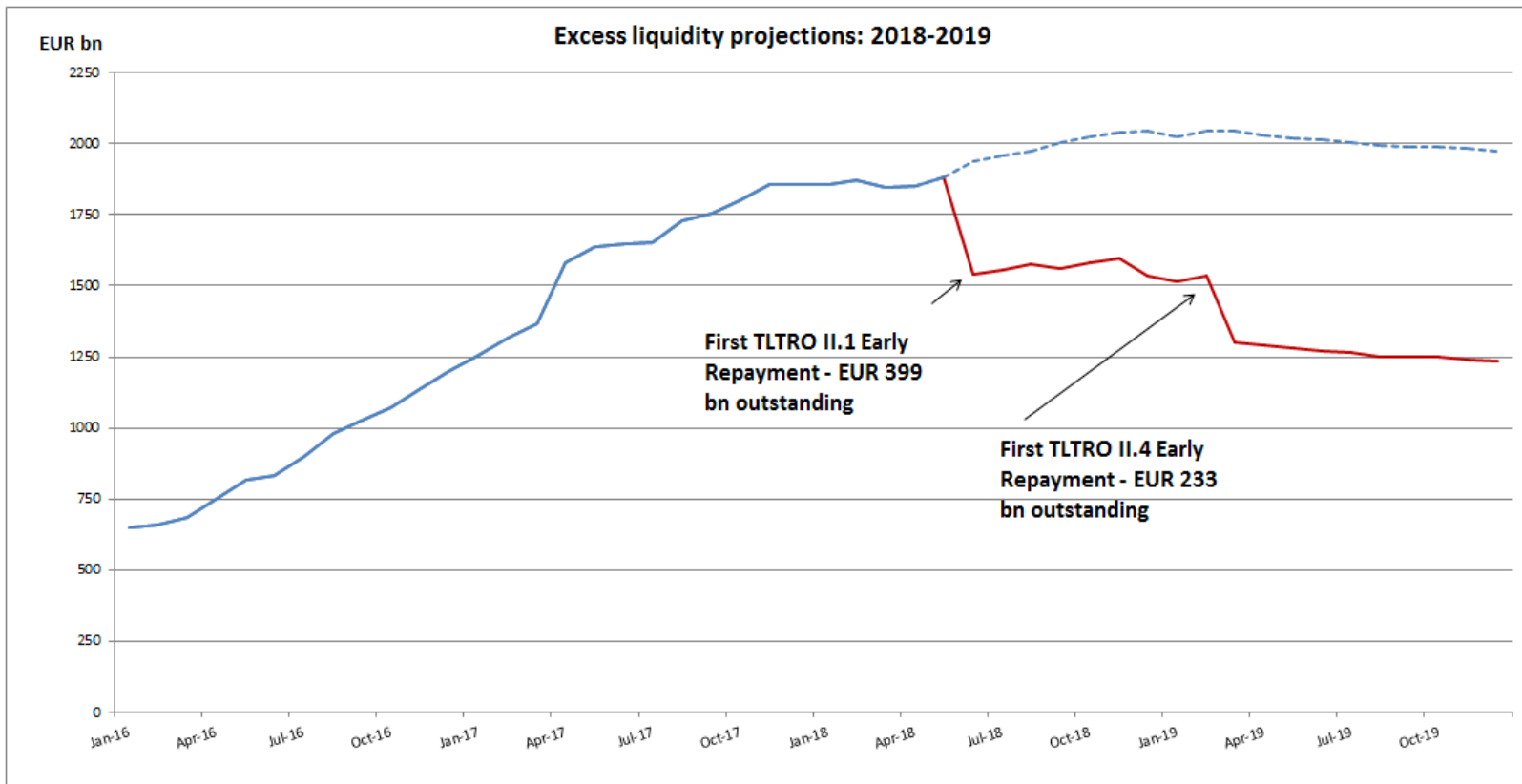
APP to continue until December 2018

- Net purchases to continue at a monthly pace of EUR 30 bn until end-September 2018
- The Governing Council anticipates that, after September 2018, subject to incoming data confirming the medium-term inflation outlook, the monthly pace of the net asset purchases will be reduced to EUR 15 bn until the end of December 2018 and that net purchases will then end
- Principal reinvestments will continue for an extended period of time after the end of net asset purchases, or for as long as necessary to maintain favourable liquidity conditions

TLTRO-II Voluntary Early Repayments may exert downward pressure

- First TLTRO-II early repayment settles on 27 June 2018
- Size and probability of repayments are difficult to forecast as largely bank specific
- Maturity date for each TLTRO-II is staggered on a quarterly basis which should minimise any potential liquidity cliff
- Counterparties may switch TLTRO-II funds into other Eurosystem operations once each operation matures
- Voluntary early repayments of TLTRO-I funds will have a low impact on excess liquidity levels – EUR 12 bn outstanding in the operation

Excess liquidity expected to exceed EUR 2 trillion by the end of 2018, before gradually falling below this level – dependent on magnitude of TLTRO-II early repayments



What will influence the level of excess liquidity going forward?

Fixed Rate Full Allotment

- Standard tenders will be conducted as FRFA 'for as long as necessary, and at least until the end of the last reserve maintenance period of 2019'

Autonomous Factors developments may continue to offset excess liquidity growth

- Government deposits likely to remain elevated in current market conditions
- Banknotes likely to be impacted by financial developments

Questions ?

Thank you for your attention