EUROPEAN CENTRAL BANK
EUROSYSTEM

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The implementation of the ECB's monetary policy

ECB Central Banking Seminar

12 July 2018

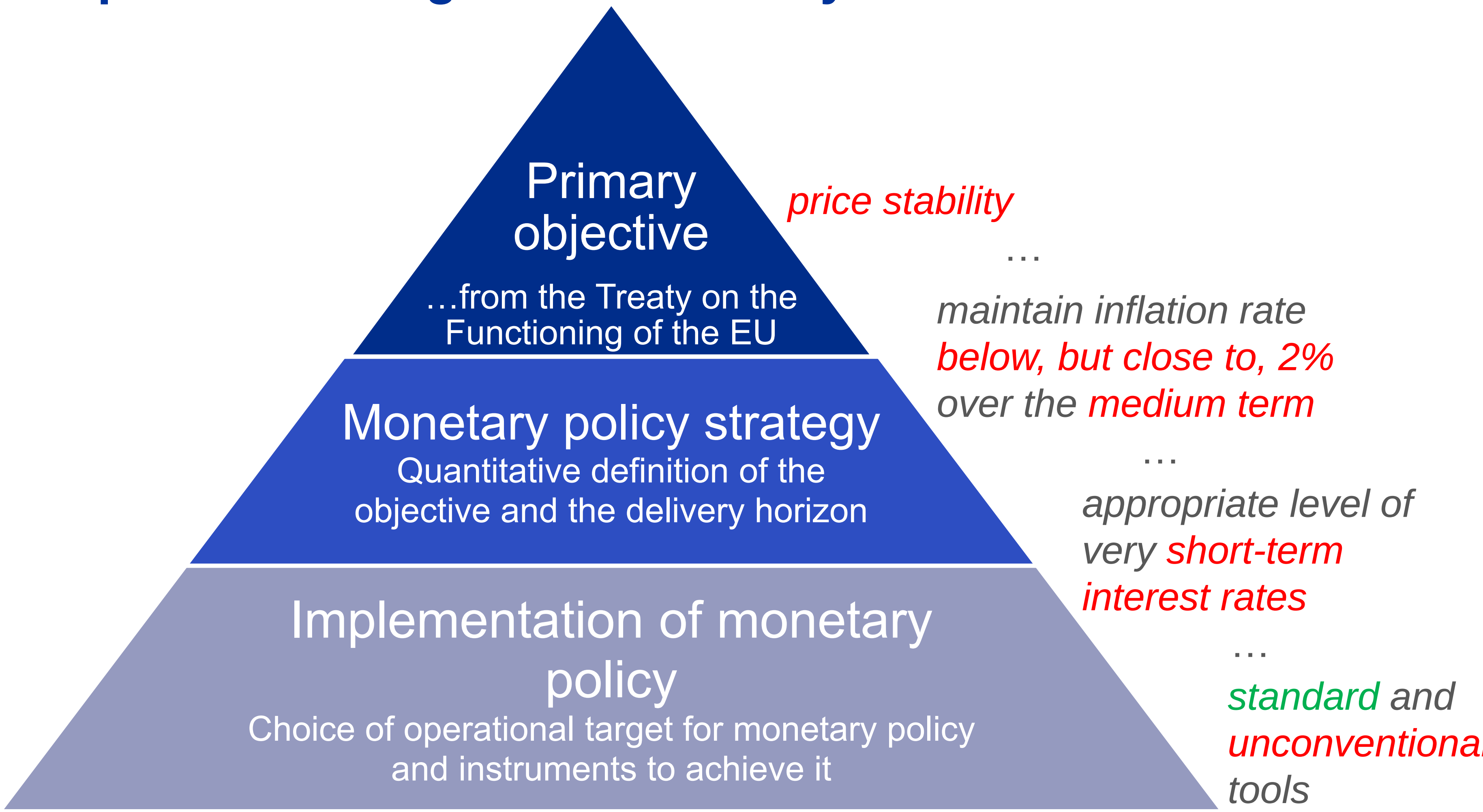
Overview

1. Eurosystem monetary policy implementation - overview
2. Eurosystem balance sheet
3. Standard monetary policy tools
4. Non-Standard monetary policy tools
5. Lessons drawn and looking ahead

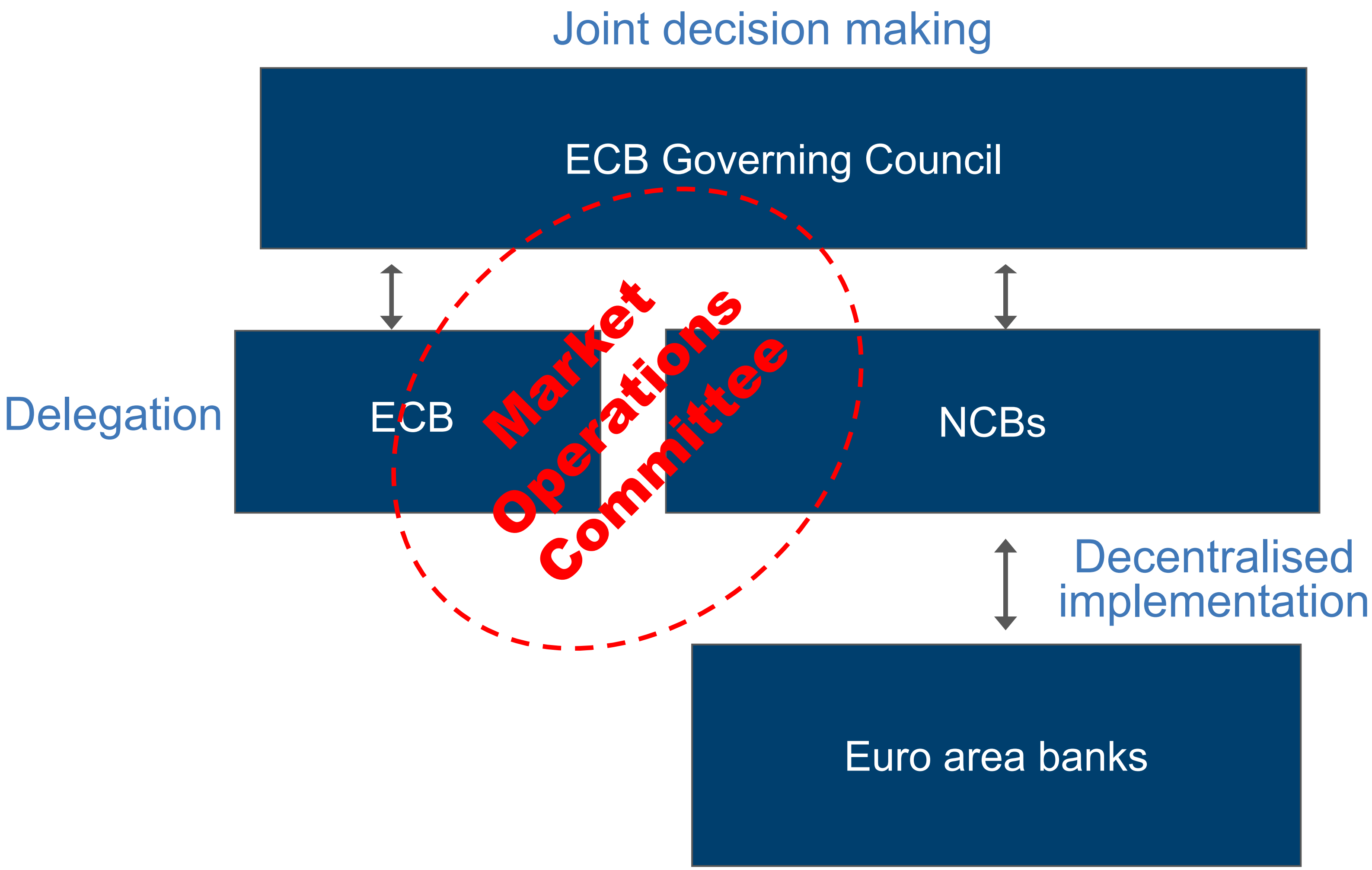
Overview

Eurosystem monetary policy implementation – overview (1/4)

Monetary policy implementation (MPI) concerns the operational target of the Eurosystem and how it is met



Eurosystem monetary policy implementation – overview (2/4)



Design of MPI toolbox reflects fundamental factors…

- **Factors affecting Eurosystem monetary policy**

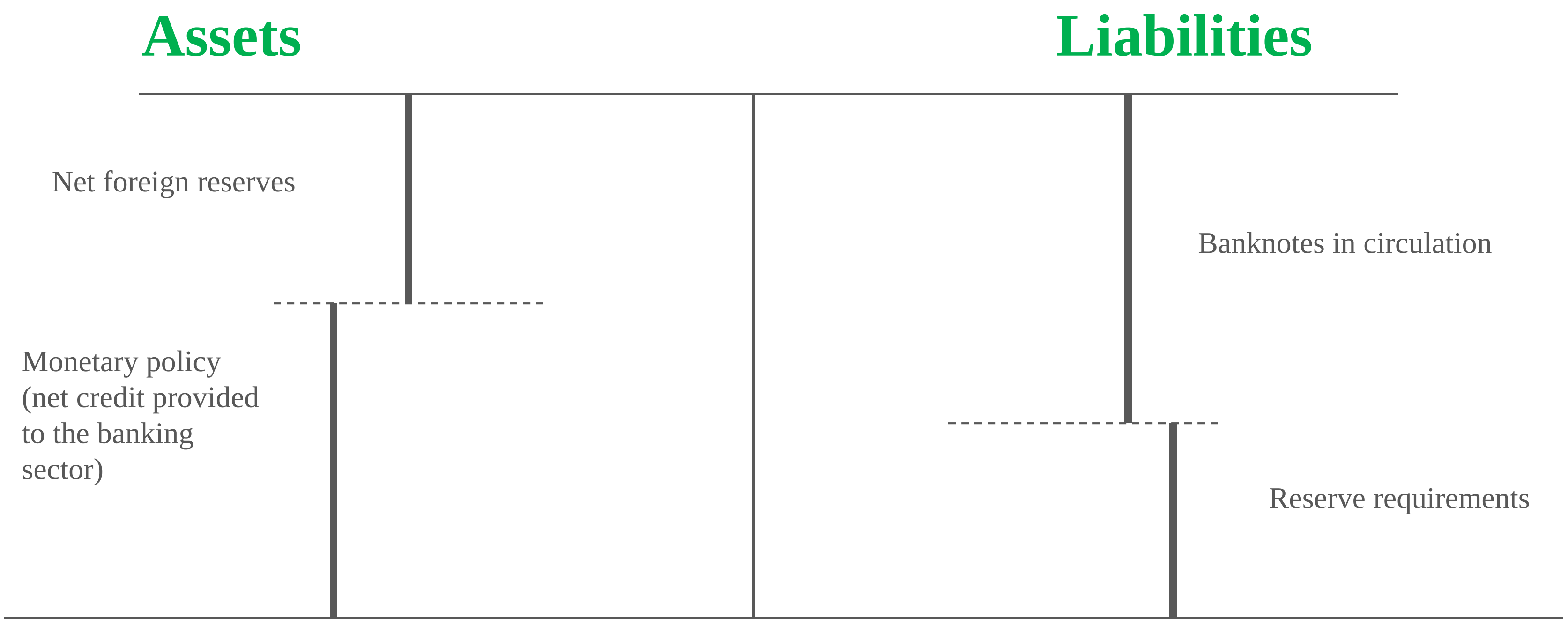
Defining characteristic:		Implication for policy:
Economy in euro area mainly financed through banks	→	Focuses on banks
Diverse national banking systems	→	Ensures equal treatment/level playing field
Open economy with free allocation of resources	→	Consistent with the principle; e.g. floating exchange rate, price discovery

- **Eurosystem thus decided to work with**
  - liquidity deficit, enlarged by reserve requirements with averaging
  - secured monetary policy credit operations, conducted as tenders
  - two standing facilities (lending and depositing)
  - a broad range of counterparties
  - a broad set of collateral assets

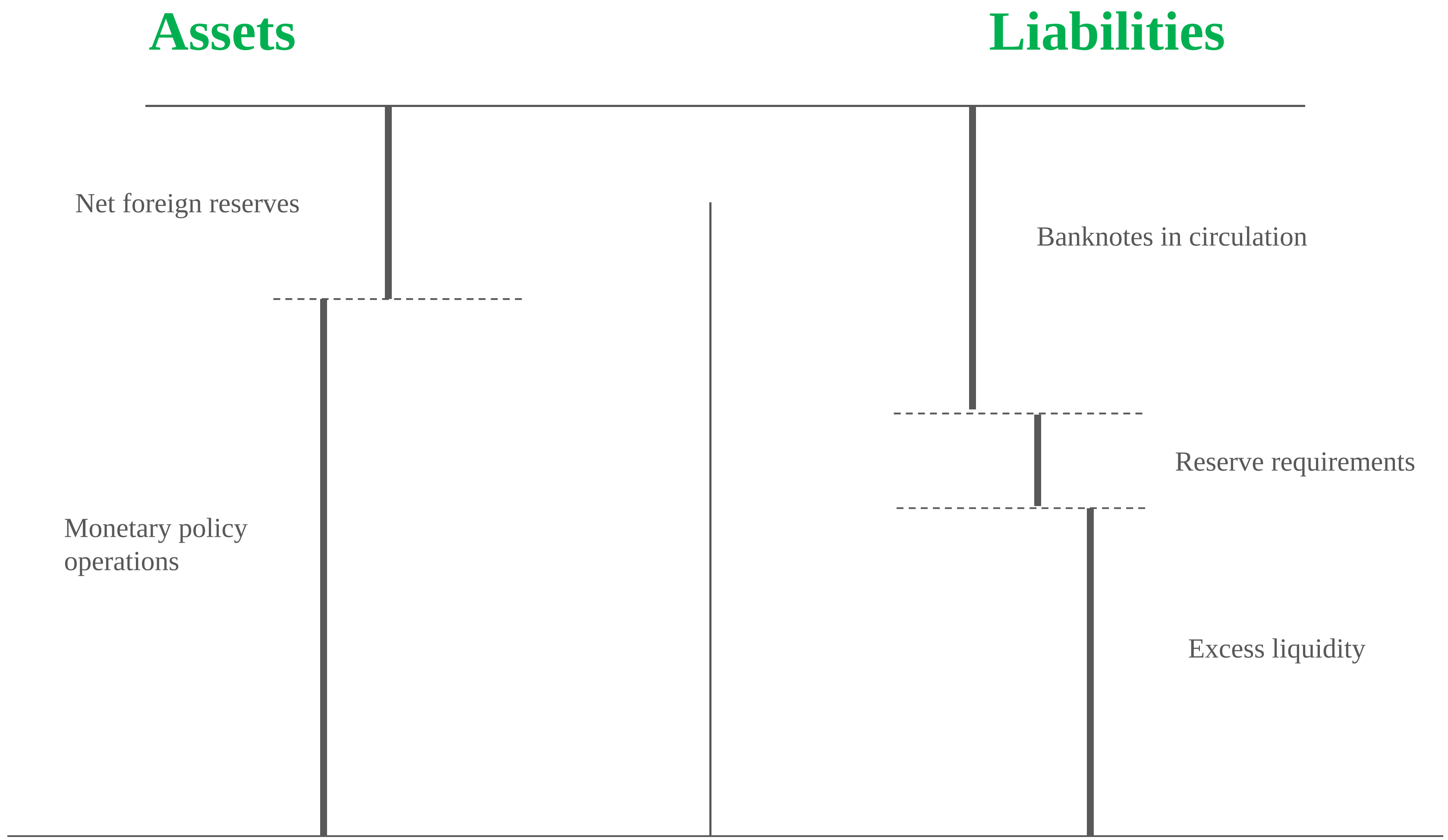
Standard instruments

Overview

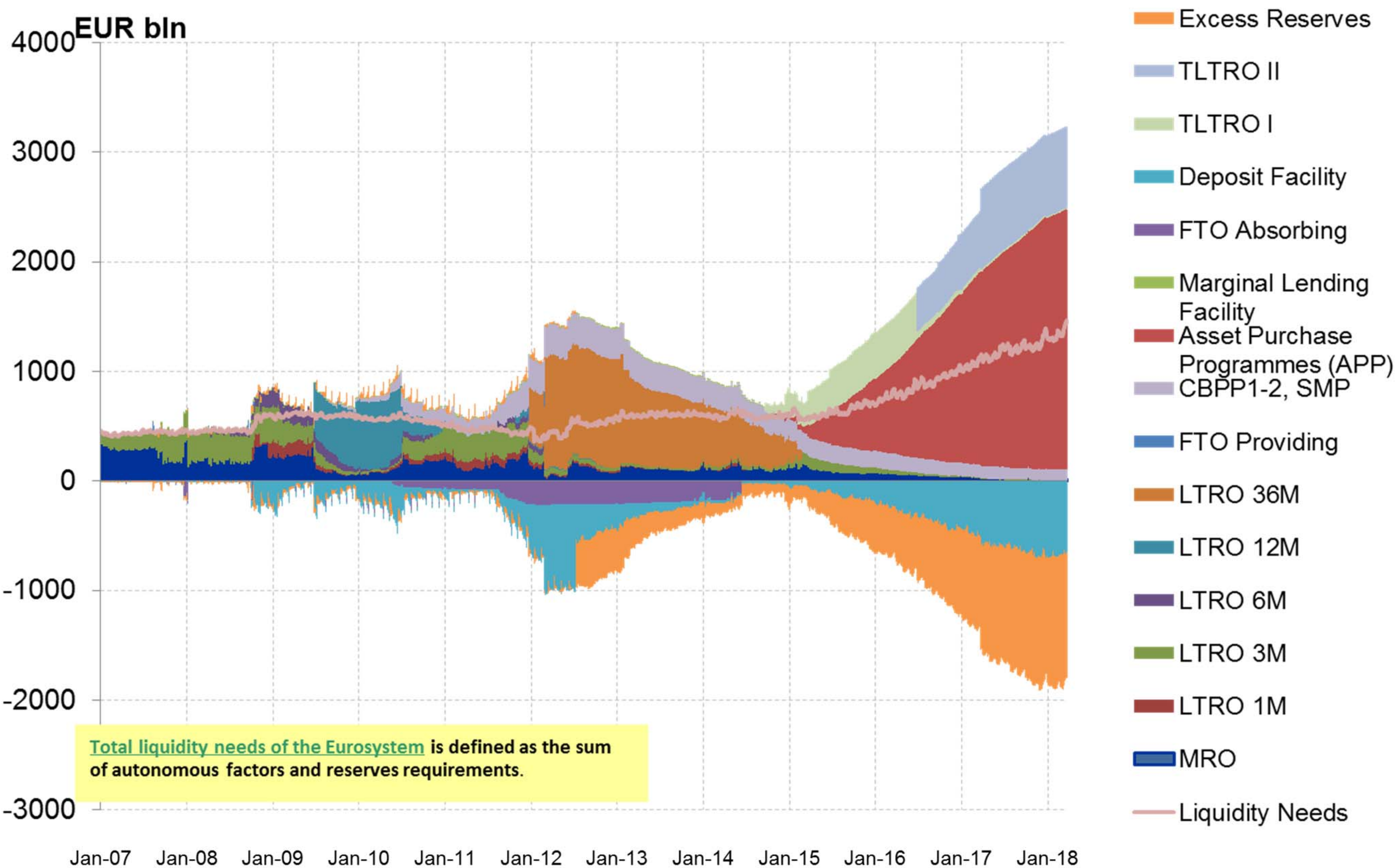
Central Bank Balance sheet – normal times



Central Bank Balance sheet – now



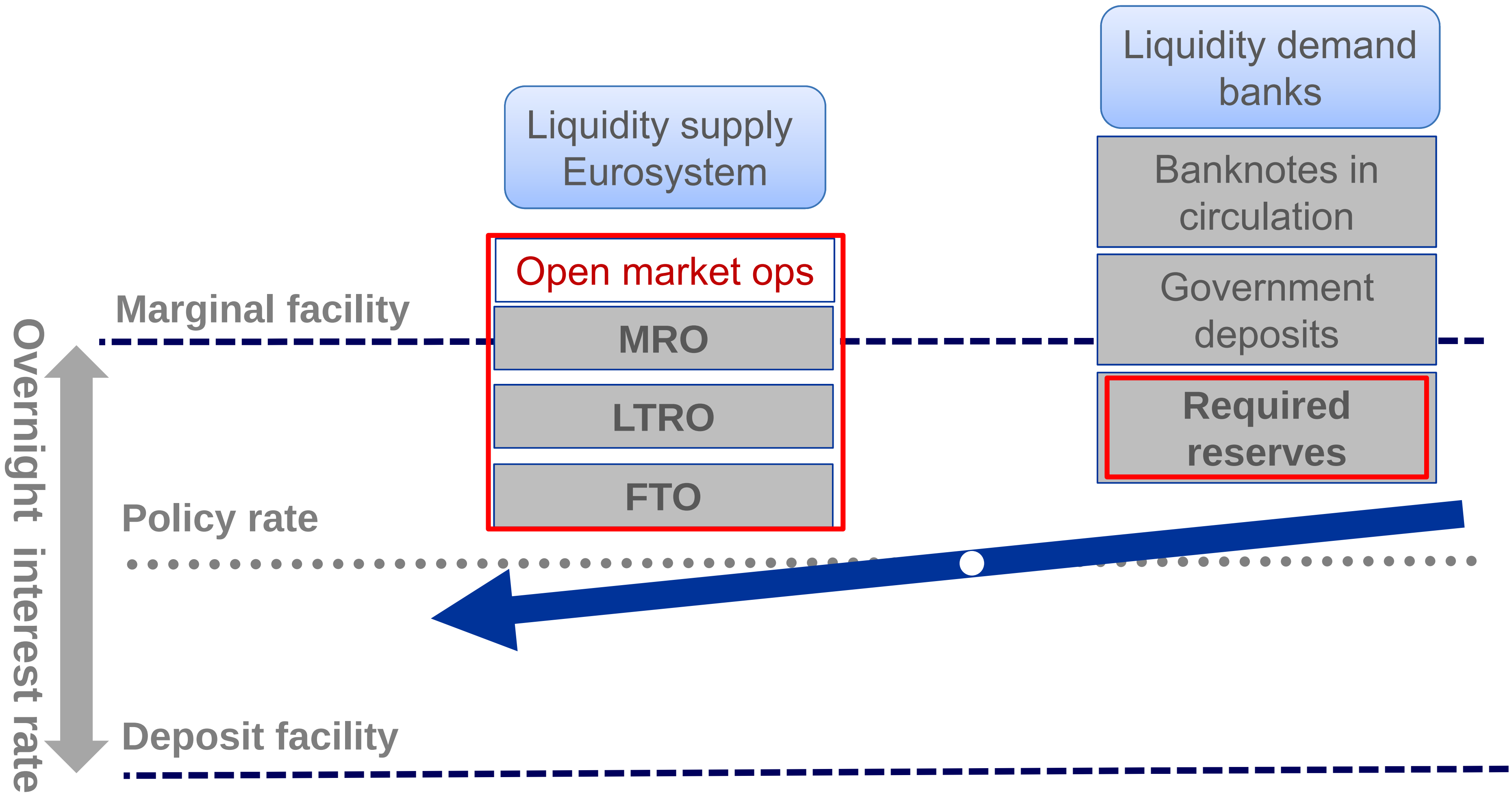
Eurosystem balance sheet – from 2007 to 2018



Total liquidity needs of the Eurosystem is defined as the sum of autonomous factors and reserves requirements.

Overview

Managing day-to-day liquidity to steer interest rates



Monetary Policy Implementation – overview of monetary policy operations

			Liquidity Providing	Liquidity Absorbing
OPEN MARKET OPERATIONS	Standard Tenders	MRO	*Reverse transactions*	
		LTRO	*Reverse transactions*	
	Quick / standard Tenders & Bilateral Operations • *non-standardised maturity* • *no regular frequency*	FTO	*Reverse transactions* *FX swaps*	*Reverse transactions* *FX swaps* *Fixed term deposits*
		Structural operations	*Reverse transactions* *Outright purchases*	*Issuance of debt certificates;* *Outright sales*
STANDING FACILITIES	• *Initiative of counter-parties* • *overnight maturity*	Marginal lending facility	*Reverse transactions*	
		Deposit facility		*Deposits*

Monetary Policy Implementation: operations/instruments in normal times (1/3)

Open Market Operations:

-Main Refinancing Operations (MRO): *weekly, one-week maturity*
-Longer-term Refinancing Operations (LTROs): *monthly, three-month maturity*
-Fine-Tuning Operations (FTOs): *ad-hoc, liquidity-providing or -absorbing*

Eurosystem standing facilities (defining an interest rate "corridor"):

-Deposit Facility (DF): overnight maturity
-Marginal Lending Facility (MLF): overnight maturity

Minimum reserve requirements:

Remunerated reserves **to be held on current account** with the central bank.

Any Eurosystem credit must be based on adequate collateral.

[Intraday credit]

Monetary Policy Implementation: operations/instruments in normal times (2/3)

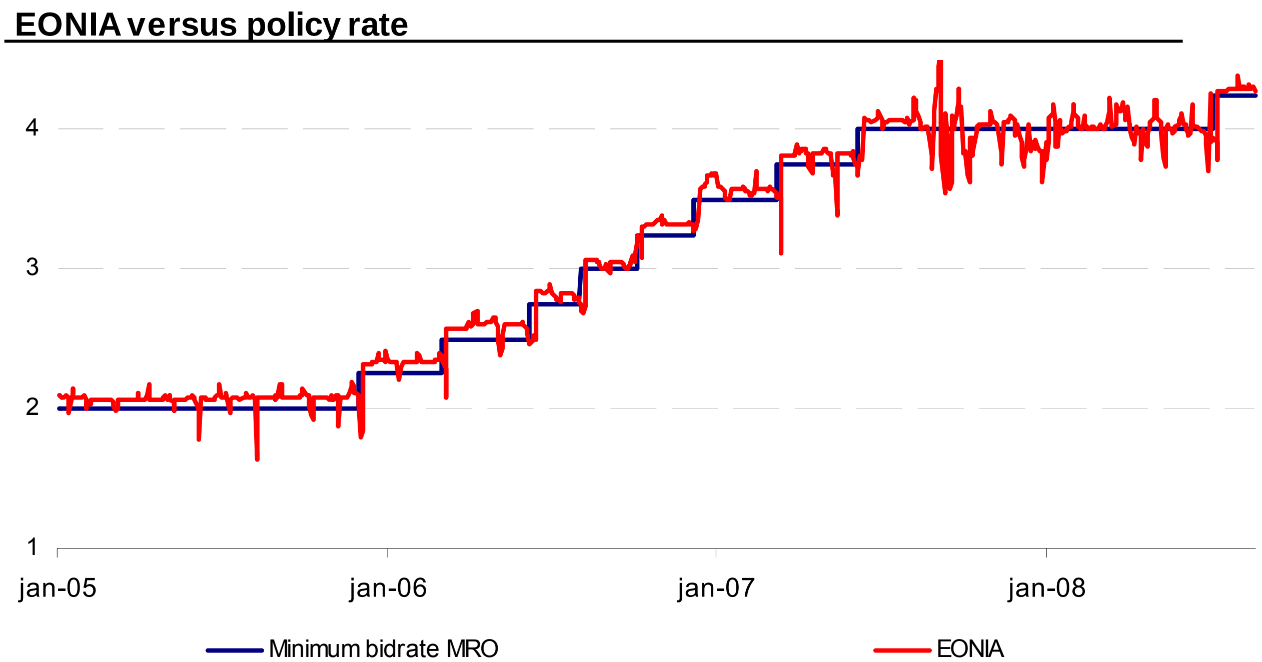
Tender procedures for Eurosystem credit operations (“normal times”):

- variable rate tenders.
- banks submit bids with a rate and a quantity.
- highest bids are satisfied first.
- for weekly MROs:
    - minimum bid rate (the ECB policy rate, MRO rate)
    - forecast of aggregate liquidity needs of banking sector (“benchmark”) and allotment close to benchmark

Outcome:

- need for banks to use standing facilities minimised
- overnight interbank rate close to policy rate

Monetary Policy Implementation: operations/instruments in normal times (3/3)



- Stable and small spread between the operational target (EONIA) and the policy rate

Minimum reserve requirements

- Banks have to hold a certain amount of **funds on their current accounts** at the Eurosystem
  - Calculated as x% of a bank's **short-term liabilities** (mainly deposits), where
    - x is the reserve ratio,
    - x = 2% from 1 January 1999 to 17 January 2012, 1% since 18 January 2012.
  - Lump-sum allowance of EUR 100,000 deducted from the resulting amount of minimum required reserves

- Holdings are **averaged** over a period of around six weeks
  - reserve requirements to be complied over a "maintenance period" aligned with policy rate-setting meetings of the Governing Council
  - helps mitigate the effect of unexpected liquidity shocks within the period

- **Remuneration**
  - **Required reserves** are remunerated at the MRO rate (currently 0.00%)
  - **Excess reserves** are remunerated at Min {0%; deposit facility rate} (currently -0.40%)

Changes in the context of the Eurosystem's minimum reserve requirements

- **Reduction in the reserve ratio from 2% to 1%** (Dec 2011):
  - aimed at freeing up collateral and supporting money market activity
  - to be seen in the context of fixed rate / full allotment and excess liquidity

- **Significant shift from deposit facility to current accounts** when the deposit facility rate was cut to 0% (July 2012), due to equivalence between deposit facility and excess reserves' (non-) remuneration.

- **Negative remuneration of excess reserves** as of the moment when the deposit facility rate was cut to -0.10% (June 2014), currently -0.40%, to ensure effectiveness of DF rate.

- **Extension of the maintenance period from around 4 weeks to around 6 weeks** since January 2015, to align it with the new frequency of the Governing Council policy rate-setting meetings.

Standing facilities

- **Marginal lending facility (MLF)**
  - banks can *borrow* funds from the Eurosystem overnight, at a ‘penalty’ rate:
    - Pre-crisis: MRO rate +100 basis points
    - Current: MRO rate +25 basis points (i.e. 0.25%)

- **Deposit facility (DF)**
  - banks can *deposit* funds with the Eurosystem overnight, at a ‘penalty’ rate:
    - Pre-crisis: MRO rate -100 basis points
    - Current: MRO rate -40 basis points (i.e. -0.40%)

- accessible to eligible counterparties at any time *at their discretion* → **the rates on the two facilities form an interest rate corridor for short-term money market rates**
- The **size** (currently 65 bps, compared with 200 bps pre-crisis) and the **symmetry** of the corridor matter:
  - A *smaller corridor* reflects more intermediation by the central bank, while a *larger corridor* fosters money market activity
  - With standard monetary policy operations, the corridor was *symmetric* most of the time (but not always). At present it is not symmetric. The relevance of the deposit facility rate as attractor for very short-term interest rates grows with excess liquidity.

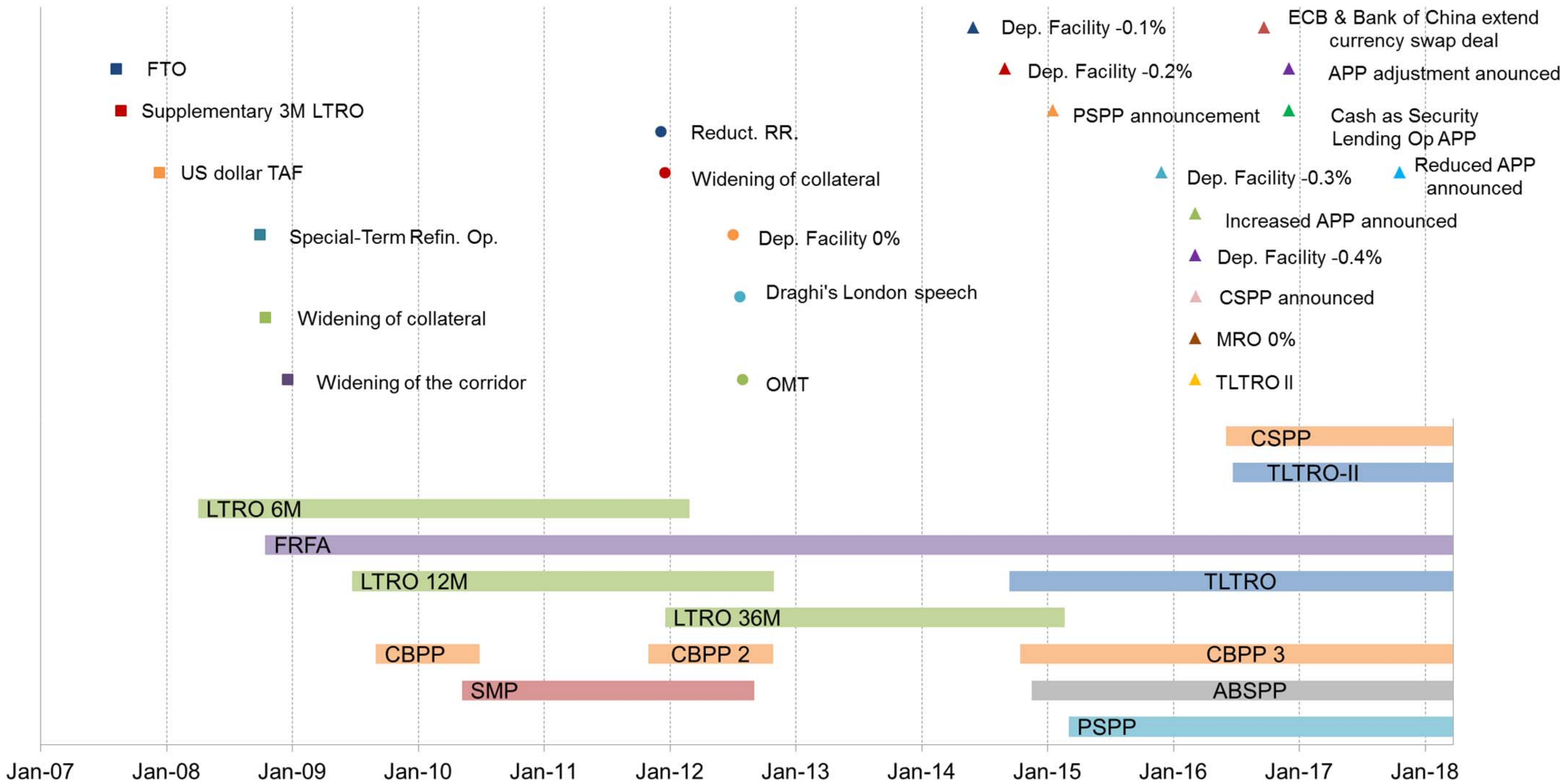
A broad range of banks can participate in operations

- Decentralised implementation
- Right to participate in monetary policy operations
- Counterparty must fulfill the following criteria
  1. Subject to minimum reserve requirement i.e. a credit institution (based in euro-area; subsidiary or branch)
  2. under harmonized EU/EEA-supervision or comparable third country regime
  3. financially sound and
  4. fulfilling operational criteria.
- Possibility for Eurosystem to take measures on a counterparty
- Equal treatment of counterparties
- Broader set for purchase programmes

Overview

Overview non-standard measures

Measures and announcements since 2007



The Eurosystem measures during the financial crisis

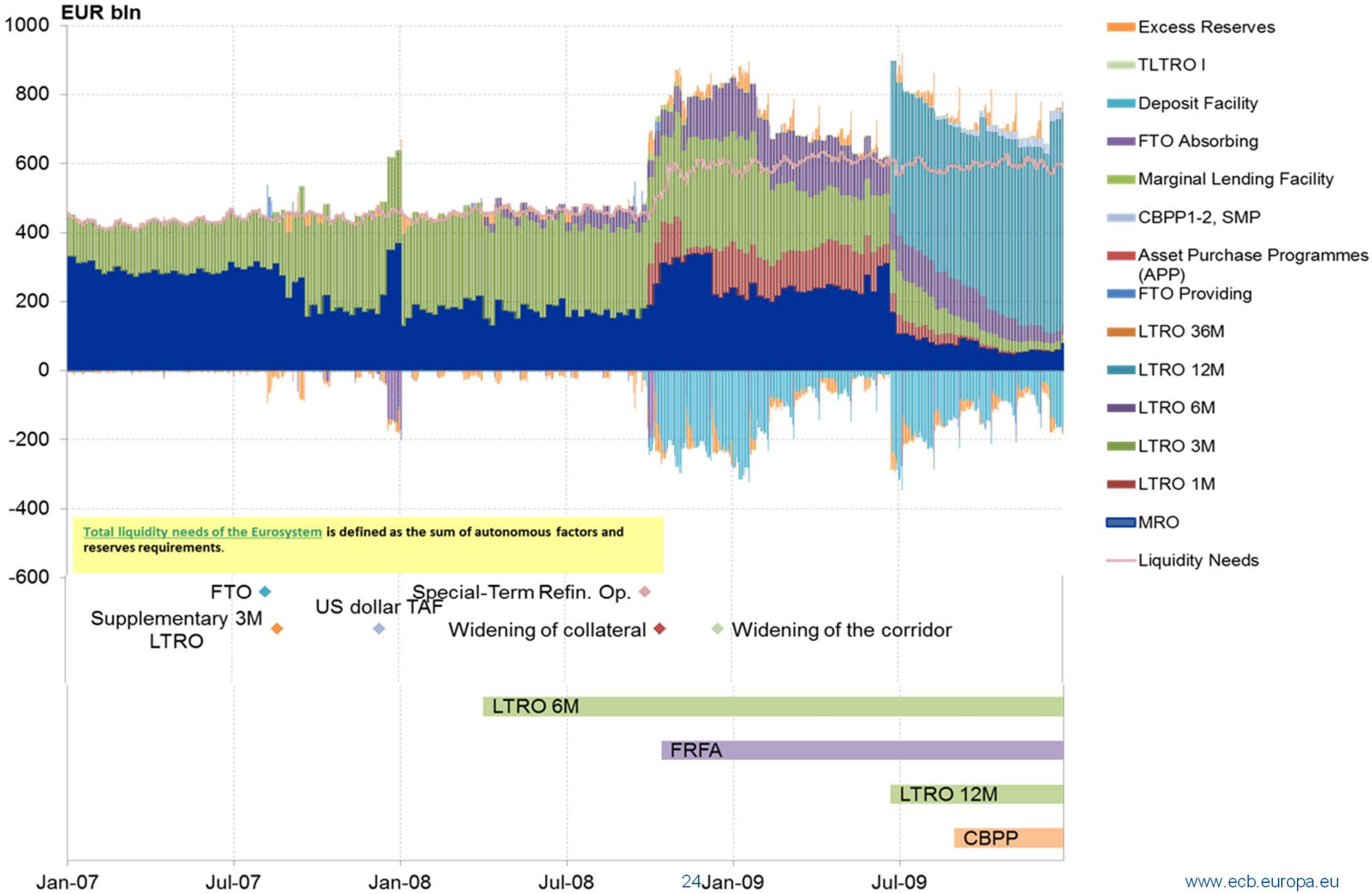
2007 - temporary liquidity injections (fine-tuning)
- **lengthening maturity profile** of liquidity provision

2008 - **fixed-rate full allotment** in all refinancing operations
- Extension of the list of **eligible collateral**
- Provision of liquidity in **foreign currencies** (USD, CHF)

2009 - **1 year LTRO**
- (First) Covered Bond Purchase Programme (**CBPP1**)

Aim: bank-based measures to enhance the credit flow of banks when transmission mechanism is impaired (***"enhanced credit support"***)

The Eurosystem measures during the financial crisis



The Eurosystem measures during the financial crisis

2010

- Two purchase programmes (**CBPP** and Securities Markets Programme - **SMP**)

2011

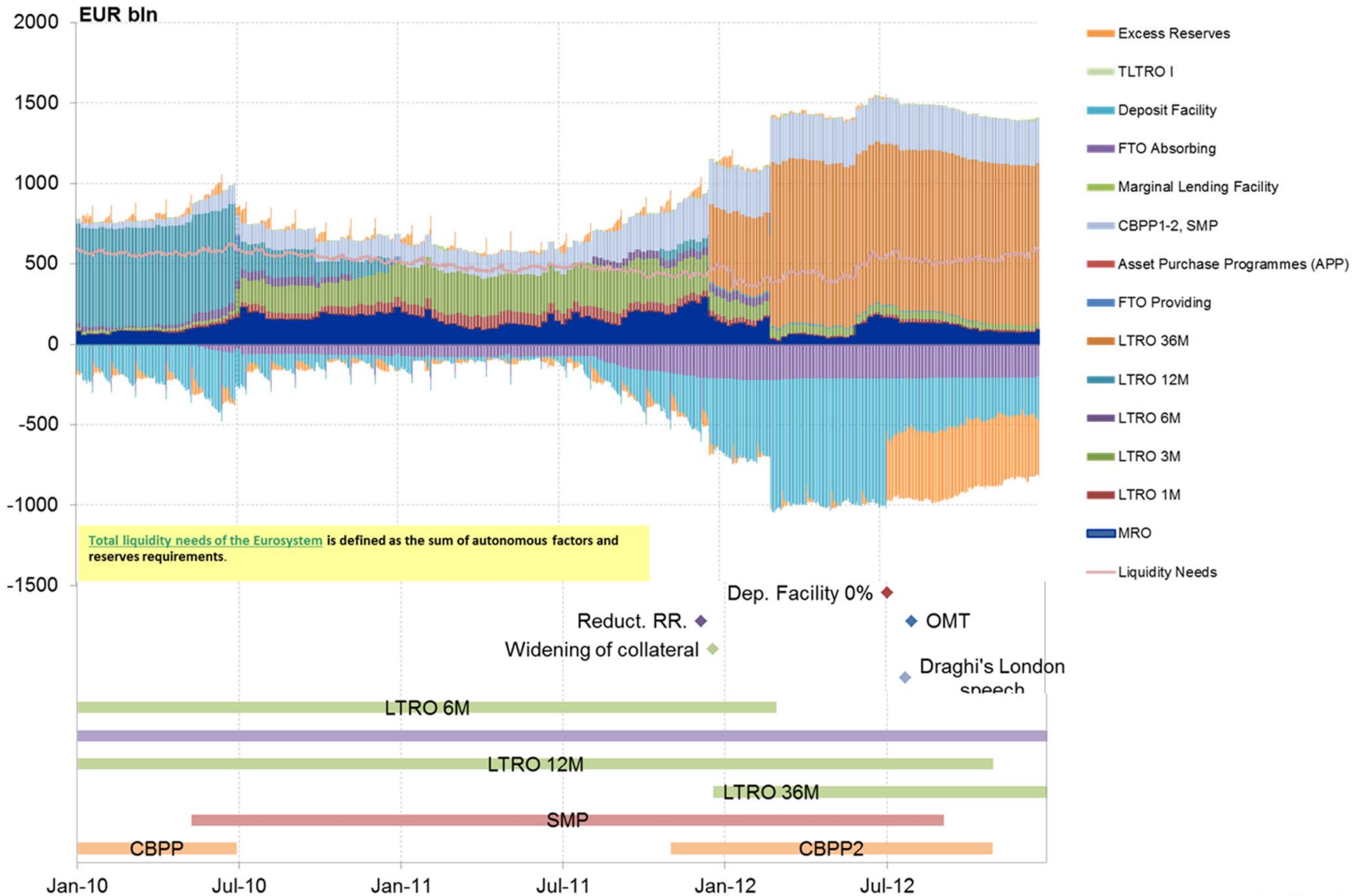
- **3-year LTROs** (EUR 1,019 billion)
- **Further widening of collateral** set (Additional Credit Claims, ABS)
- (Second) Covered Bonds Purchase Programme **(CBPP2)**
- Reduction of **minimum reserve requirements** (from 2% to 1%)

2012

- Outright Monetary Transactions (**OMT**) announcement

Aim: repairing the **monetary policy transmission mechanism**, which was affected by undue disruptions (e.g. redenomination risk) in sovereign debt markets

The Eurosystem measures during the financial crisis



The Eurosystem measures during the financial crisis

2013

- Start of **3-year LTROs repayment**
- **Forward guidance** (*"ECB interest rates will remain at present or lower levels for an extended period of time"*)
- New treatment of **ABS in collateral framework**

2014

- **Further rate cuts, narrower standing facility corridor**, with negative deposit facility rate (-0.10%)
- Extension of **fixed rate full allotment** until end 2016
- Targeted Longer-term Refinancing Operations (**TLTROs**)
- Suspension of SMP weekly sterilisation operations
- **Further rate cuts** (deposit facility at -0.20%)
- Third covered bond purchase programme (**CBPP3**)
- First ABS purchase programme (**ABSPP**)

The Eurosystem measures during the financial crisis

2015

- Announcement and start of public sector purchase programme (PSPP)
- PSPP, CBPP3, ABSPP → **"APP"**
- Further rate cuts (deposit facility at -0.30%)

2016

- Increased APP (80 billion)
- Further rate cuts (deposit facility at -0.40%, MRO 0%)
- Corporate sector purchase programme (CSPP) added to APP
- TLTRO II
- Adjusted APP (60 billion)
- Cash securities lending operations

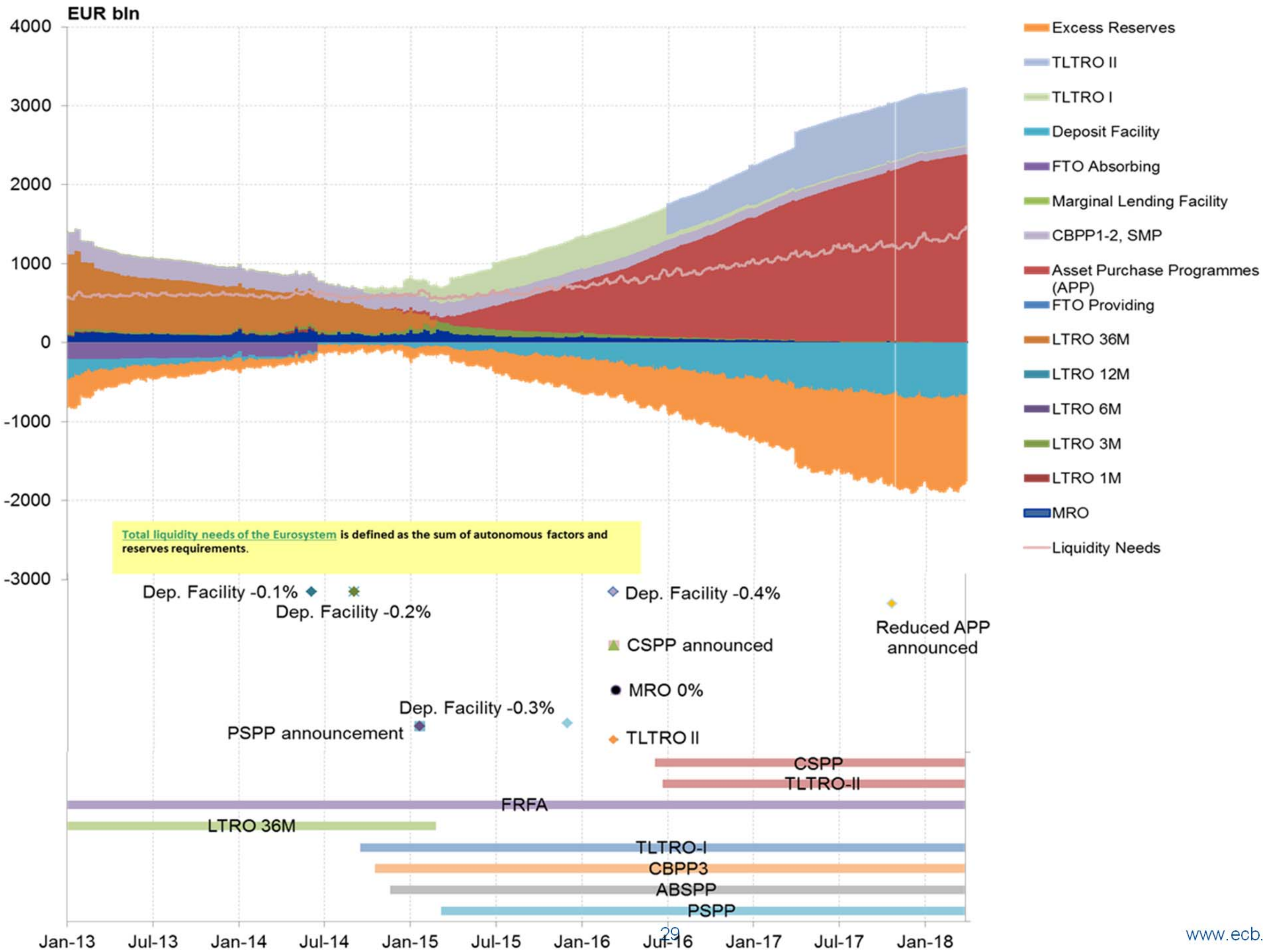
2017

- Reduced APP (30 billion) as of Jan 2018 announced in Oct 2017

2018

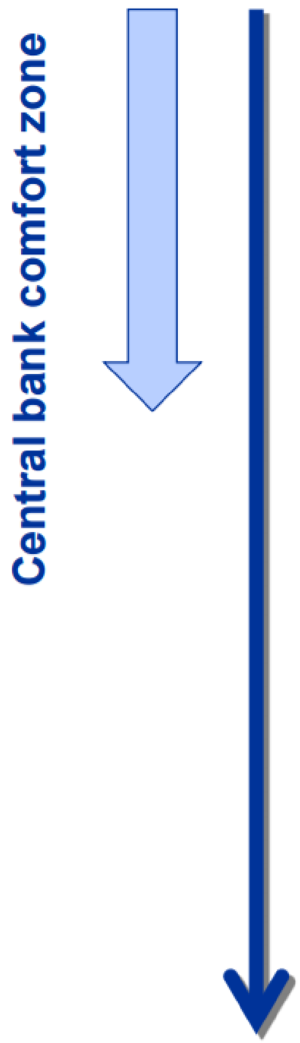
- Further APP reduction (15 billion for 3 months, then end of APP) as of Oct 2018 envisaged in Jun 2018.

The Eurosystem measures during the financial crisis



Negative rates

"We continue to expect rates to remain at present or lower levels for an extended period of time, and well past the horizon of our net asset purchases."



Zero nominal rate

- Negative rates empower other monetary policy instruments

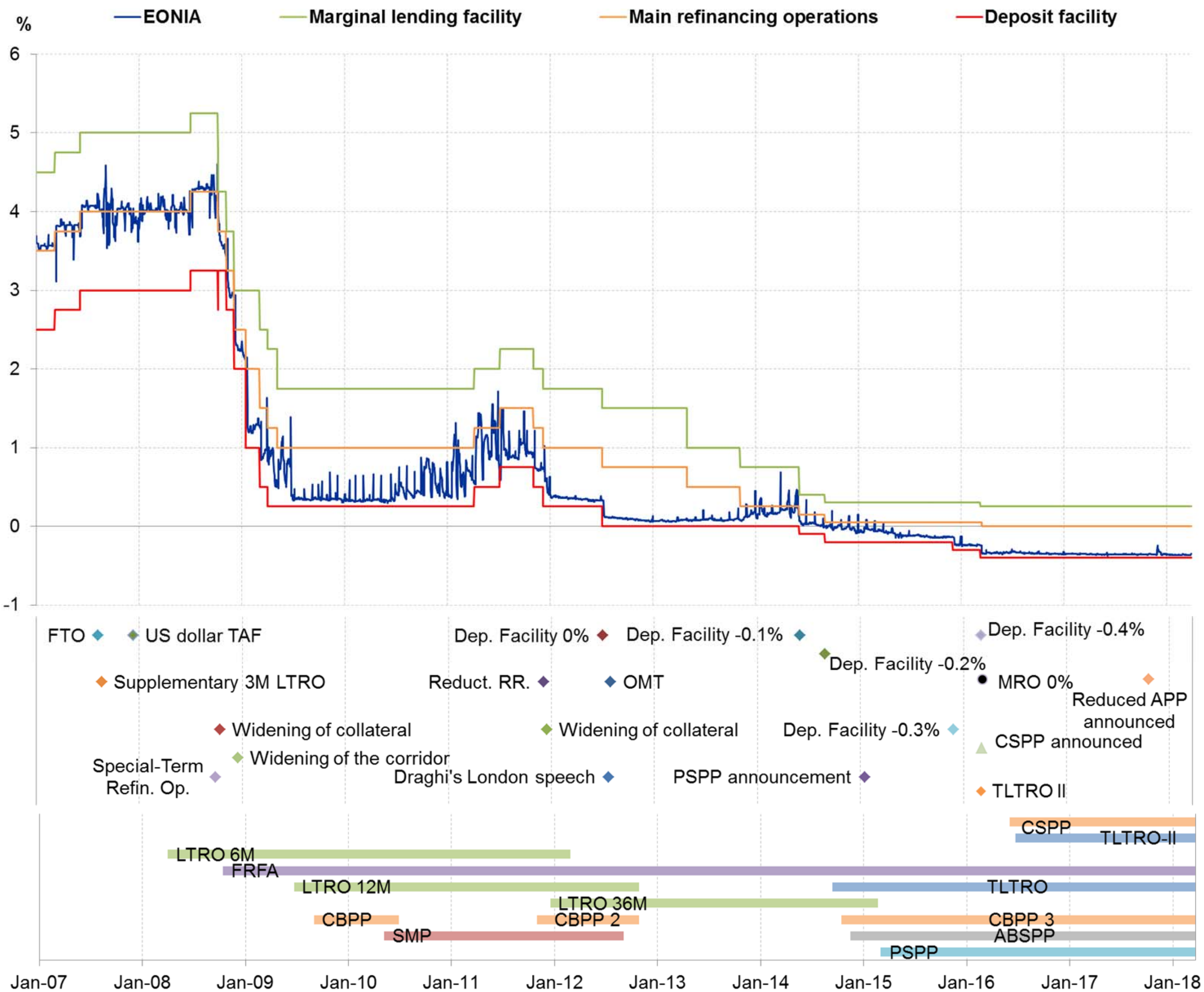
"Economic lower bound"

- Detrimental effects on the banking sector dominate
- Negative rates have both a one-off and a persistent impact
- Rate cuts cease to provide stimulus to the economy
- Depends on banking structures and competition

"Physical lower bound"

- Large-scale hoarding of cash

Central bank rates and EONIA from Jan 2007 to Mar 2018

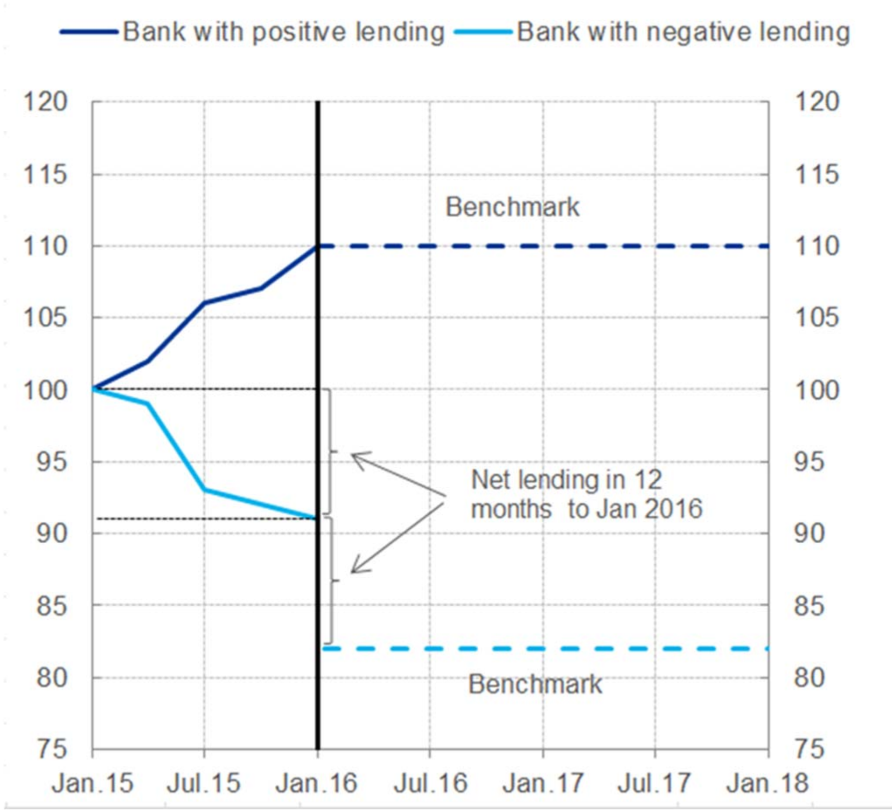


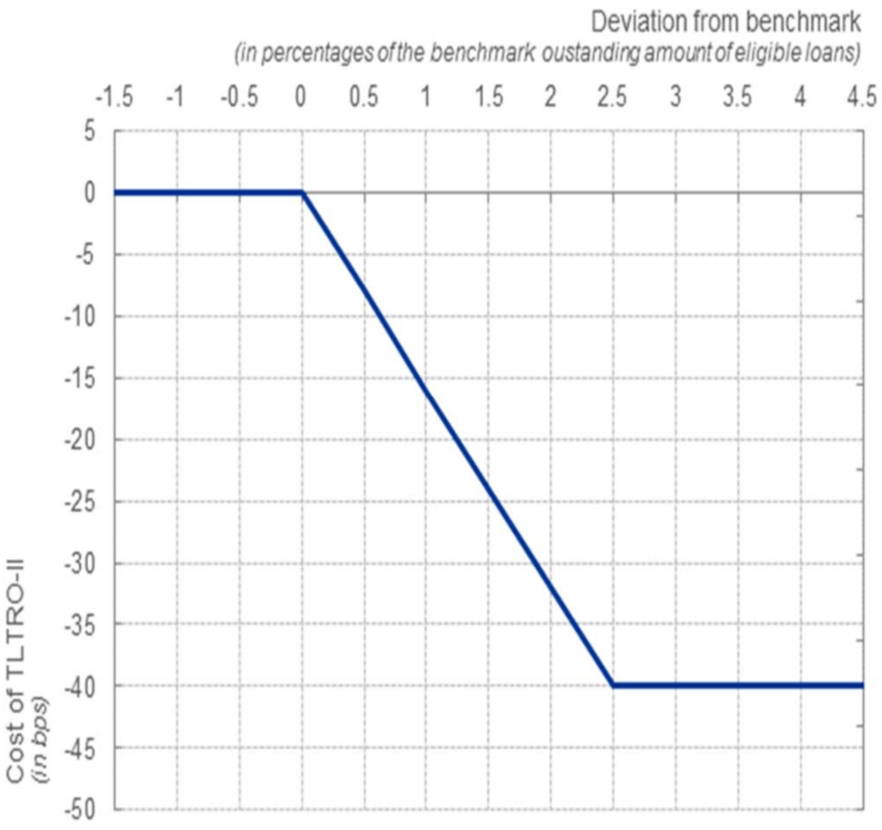
TLTROs (1/3)

Targeted to support lending to the real economy

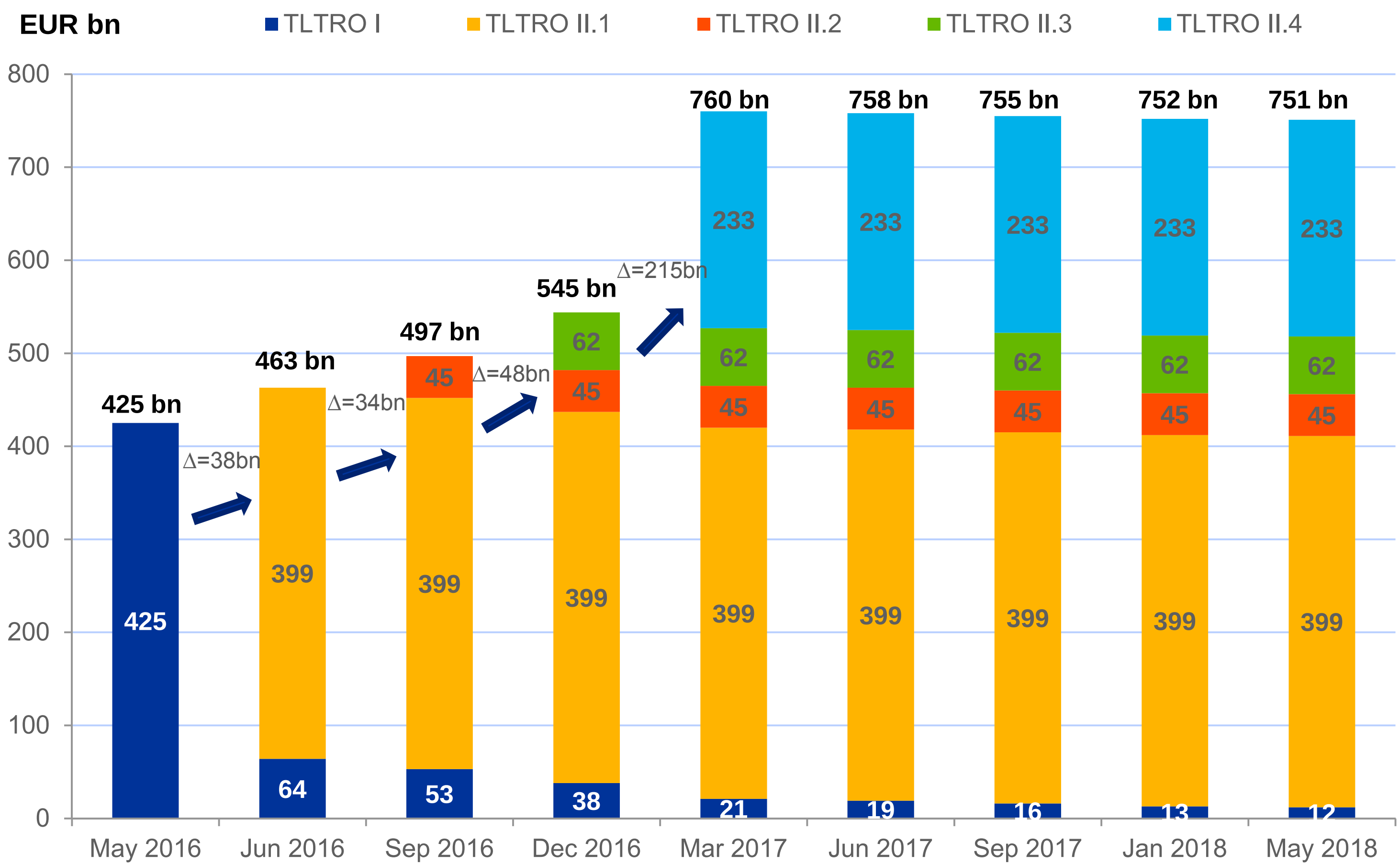
- Basic idea to link funding terms to the provision of lending to the non-financial private sector (excluding mortgages)
- TLTRO-I programme started in 2014. TLTRO-II with enhanced attractiveness started in June 2016. Last operation in March 2017, repayments as of June 2018.
- Possibility to switch from TLTRO-I to TLTRO-II
- Possible to form bidding groups
- Borrowing allowance equal to 30% of stock of eligible loans as of 31 January 2016 less any amount still outstanding out of the TLTRO I.1 and I.2
- Provides long-term funding (4 years staggered maturities) at a cost between -0.4% and 0% depending on eligible net lending from 1 February 2016 to 31 January 2018

Incentive structure – lend more, pay less





TLTRO-take up was substantial



Source: ECB website

Inside the Asset Purchase Programme

https://www.youtube.com/watch?v=xZkwu9NRfzs

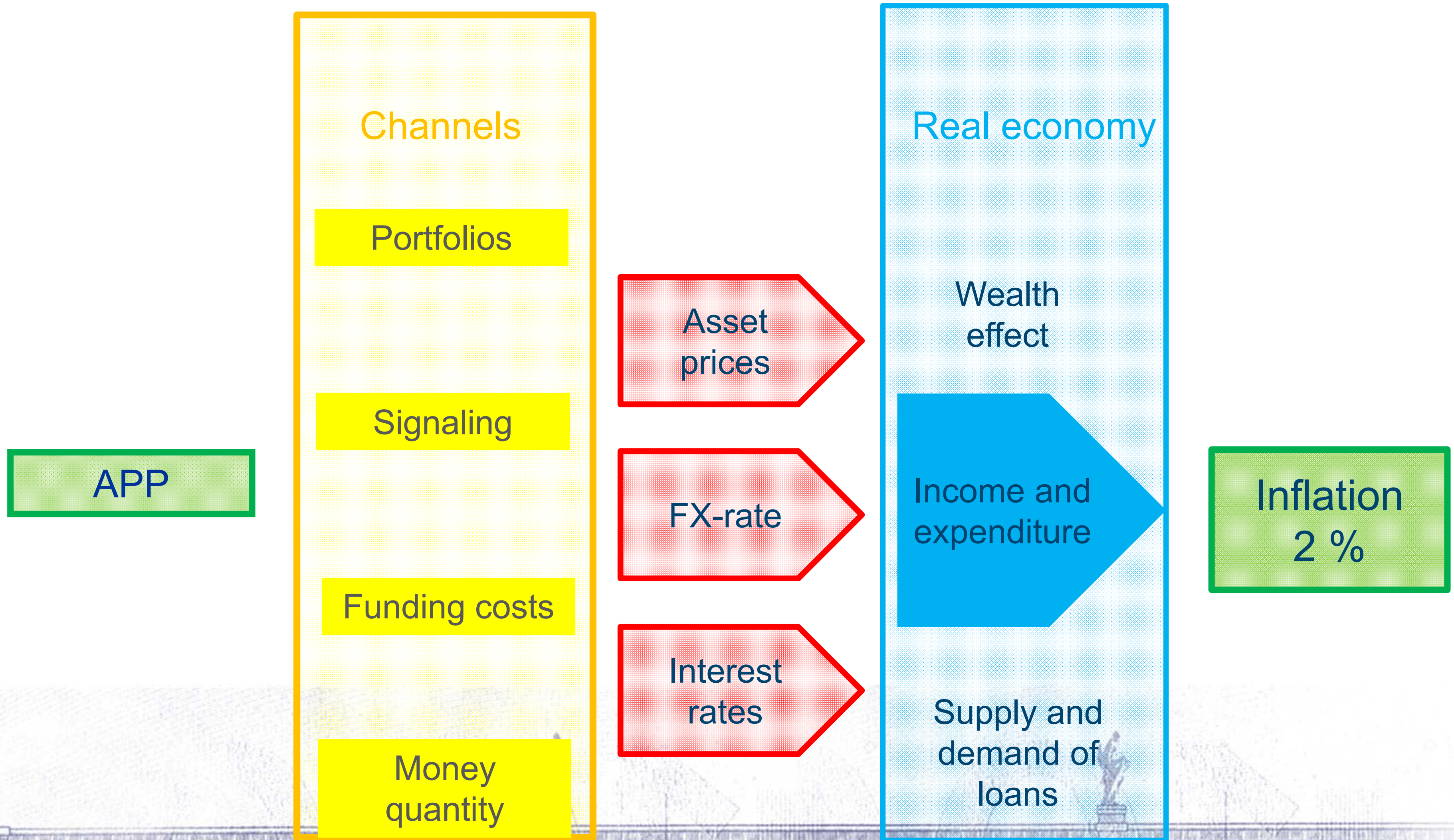
Asset purchase programmes overview (1/4)

It's a bit complicated… different programme specifications

	ABSPP	CBPP3	PSPP	CSPP
Eligible Universe	Mon. pol. eligible ABS (subject to DD assessment)	Mon. pol. eligible CBs for own use & multi-cedulas	Mon. pol. eligible central govt. bonds, regional bonds, agencies and EU supranationals	Non-financial and financial corporate securities (excluding unsecured bank bonds and bad banks)
Minimum rating	CQS3	CQS3	CQS3	CQS3
Maturity	All	All	1-30 years	6 months – 30 years
Issue Limit	70%*	70%*/**	33%/50%*/**/***	33%/70%*
Issuer limit	No	Yes**	33%/50%**	Yes*
Purchases	1^{ary} & 2^{ary} market	1^{ary} & 2^{ary} market	2^{ary} market (black-out periods for primary market and programme reviews)	1^{ary} & 2^{ary} Market (no 1^{ary} for public sector corporates)
Implementation	Decentralised (6 NCBs)	Decentralised	Decentralised	Decentralised (6 NCBs)
Securities lending	Yes	Yes	Yes	Yes

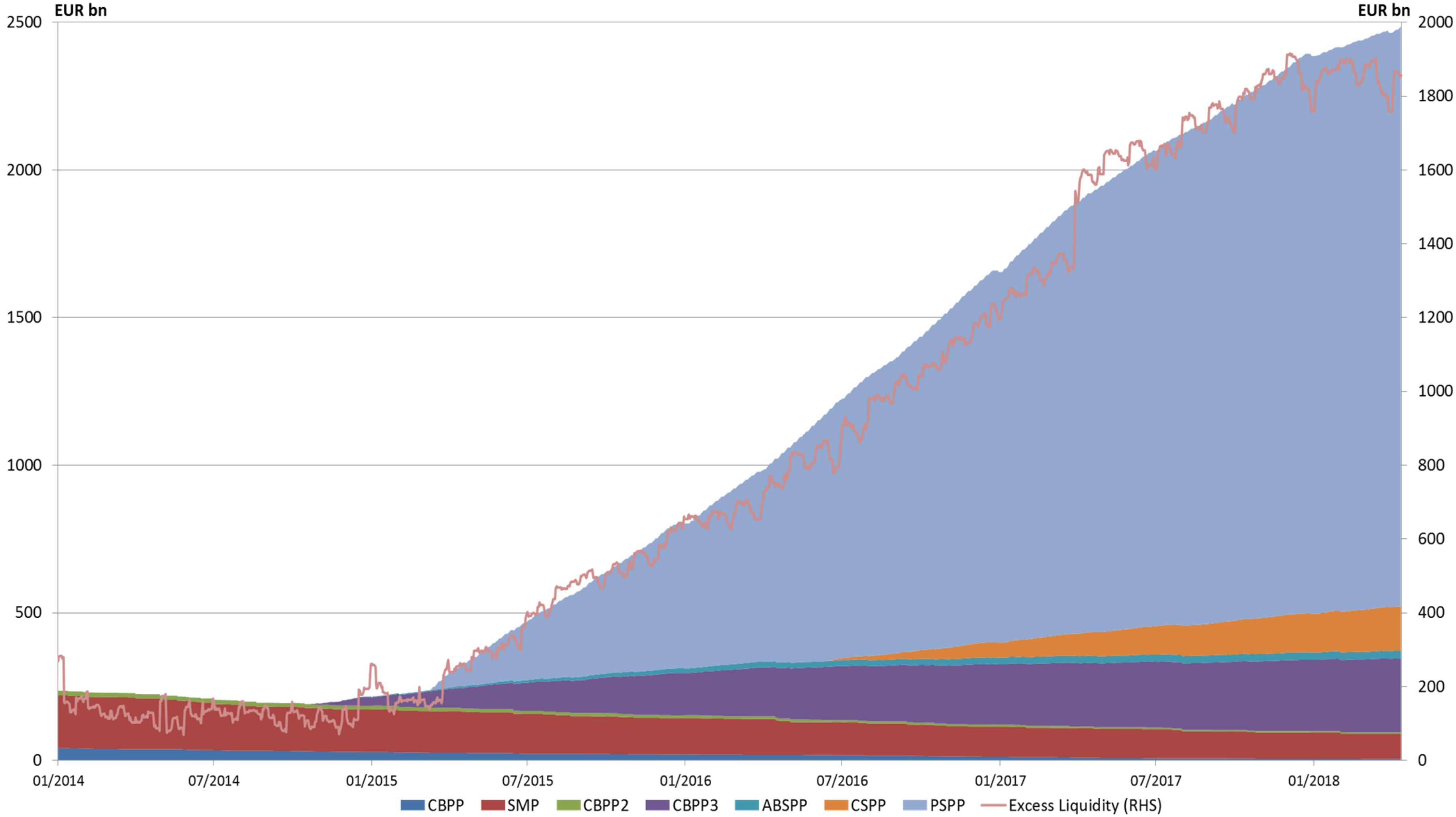
* Specific conditions for programme countries apply
** Combined Eurosystem holdings from monetary policy and investment portfolios
*** *"Subject to a case-by-case verification that this would not create a situation whereby the Eurosystem would have blocking minority power, in which case the issue share limit would remain at 25%."*

Transmission of APP



Asset purchase programmes overview (3/4)

APP purchases and excess liquidity



Sources: ECB data. Last observation: 12/01/2018.

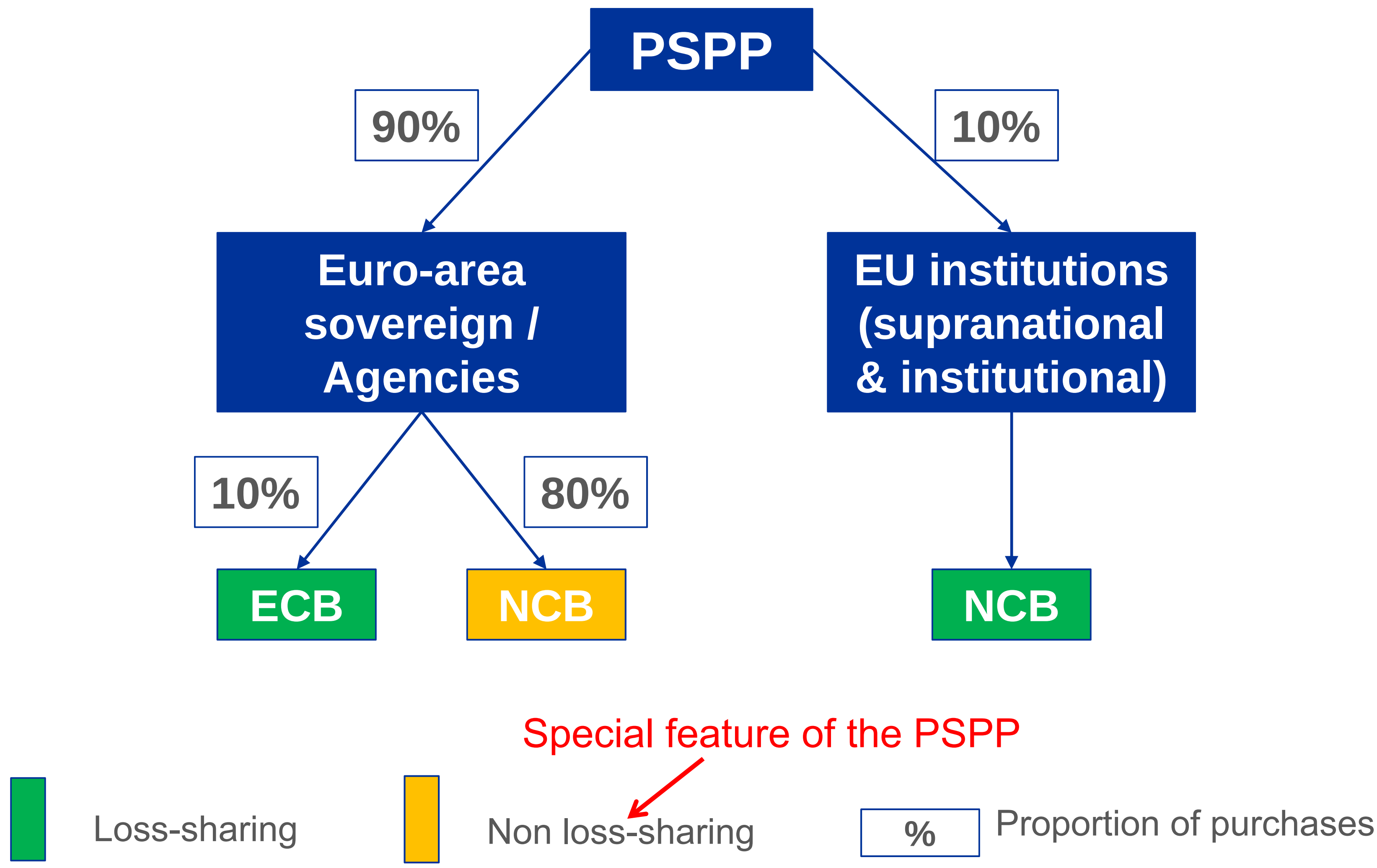
PSPP: key features

Direct pass-through	Portfolio rebalancing	Signalling
	PSPP	

- **Objectives:**
  - **Improving broader financing conditions by reducing sovereign yields**
  - **Rebalancing into private-sector assets**
  - **Eurosystem balance sheet expansion**
- Secondary market purchases of
  - central, regional, and local government bonds
  - recognised agencies, international organisations, multilateral development banks
- **Market neutrality** as an important principle: limit dislocations in euro area government bond curves and repo markets
- **Relevant changes implemented during programme:**
  - **Minimum remaining maturity** for eligible securities **reduced to one year**
  - **Purchases** of securities yielding **below the deposit facility rate permitted** to the extent necessary
  - **Securities Lending against cash** to reduce scarcity issues

PSPP: implementation (1/3)

PSPP covers a broad range of government-linked entities



One huge virtual trading floor - PSPP execution modalities

- 20 Eurosystem members implement on a daily basis, coordinated by the ECB
- Eurosystem members execute purchases via bilateral trading (all) and auctions (currently 4)
- Trading is done via electronic trading platforms, IB Chat and telephone
- Counterparties are those eligible for:
  - i. Eurosystem's monetary policy instruments
  - ii. investment of Eurosystem's euro-denominated portfolios
- Eligible issuers:
  - 19 central governments
  - 7 EU supranational institutions (ESM, EIB etc.)
  - 38 agencies - KFW (Germany), SNCF (France), Autobahn Financing (Austria)
  - Wide range of regional/local governments
- Eligible securities:
  - Fixed coupon nominal securities
  - Inflation-linked securities
  - Floating rate securities
  - Zero coupon securities

Market liquidity is key consideration… but after volume

- The implementation of the PSPP aims ex ante at market neutrality, i.e. avoiding dislocations in euro area government bond curves within the agreed maturity range of 1 to 30 years

  => buy with the market
- Avoid, to the extent possible, purchasing current cheapest-to-deliver bonds, securities commanding "special" rates in the repo market, and other assets displaying significant liquidity shortages
- Purchases conducted in small ticket sizes, across the yield curve, across the day and across types of eligible bonds
- Substitute purchases for NCBs are possible to reach capital key
- Blackout period to avoid influence on primary market price formation
- Main constraints for the allocation are:
  - Country allocation according to ECB capital key (role of supras)
  - Issuer/issue share limit (role of non-MP portfolios, SMP, agencies/regionals)
  - DFR yield floor but now purchases below it are possible if necessary

CSPP: key features

- **Objective:**

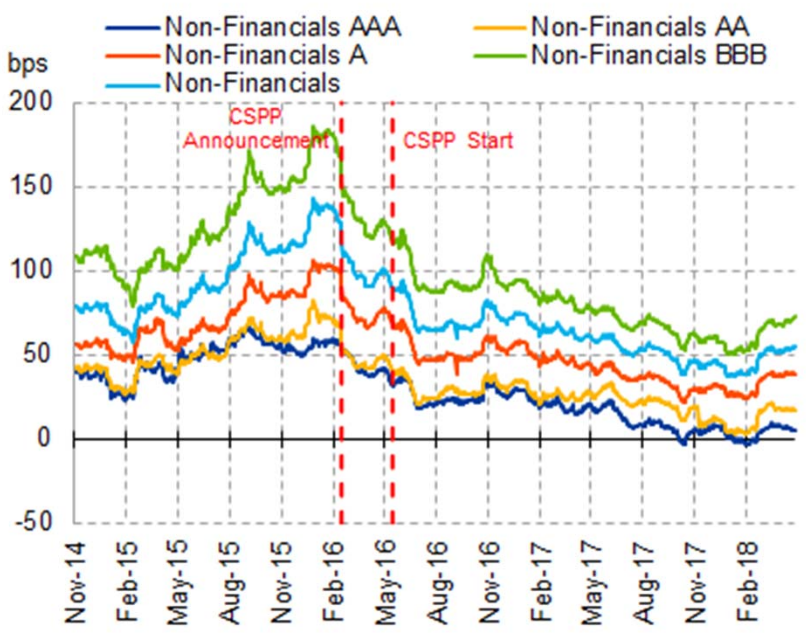
  additional stimulus and further strengthening of direct pass-through to the real economy

- Since June 2016, purchases
  - of investment-grade euro-denominated bonds issued by non-bank corporations established in the euro area
  - in both primary and secondary markets

CSPP: implementation and progress achieved

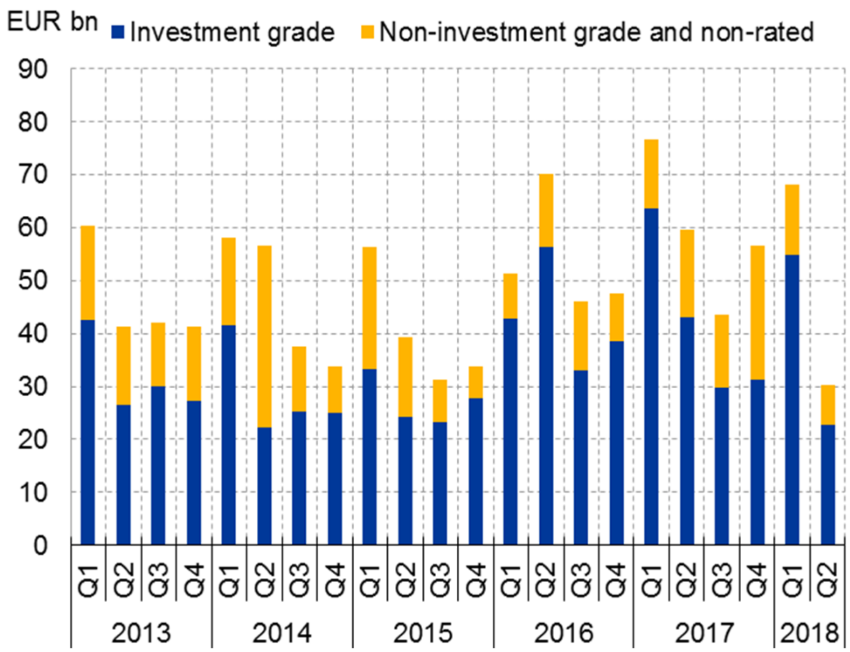
- **Implementation** has proved **smooth** so far
- **Progress achieved** on the objective of **further strengthening the direct pass-through to the real economy**

Corporate bond spreads



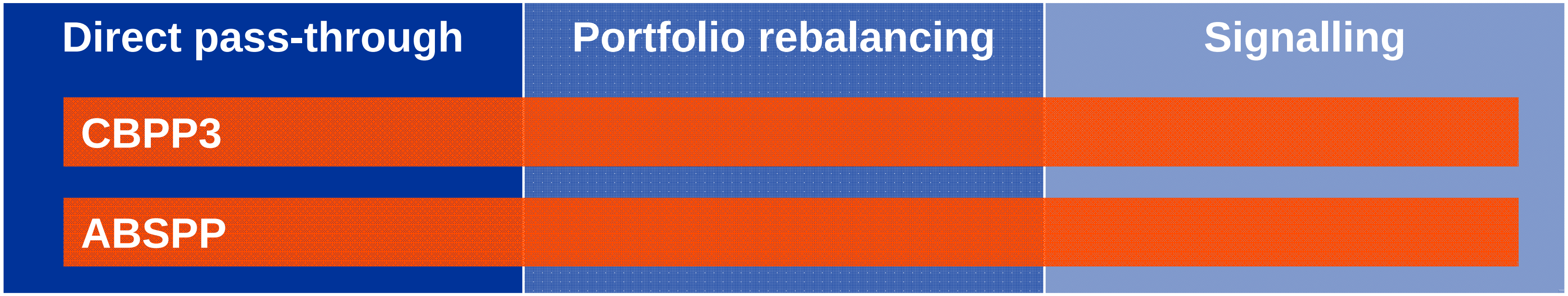
Source: iBoxx. Last observation: 21 May 2018.

Corporate bond issuance



Source: Dealogic. Last observation: 21 May 2018.

CBPP3 & ABSPP: the other private sector programmes



- **Objective:**

  support credit provision to the real economy

- Banks’ refinancing costs have been reduced

- Pick-up in issuance after the start of the programmes, but some slowdown more recently

- CBPP3 & ABSPP continue to provide accommodation to the real economy

Overview

Lessons drawn

- **The flexibility and adaptability of the Eurosystem monetary policy implementation framework** have been an asset during the crisis, helping to relieve to severe funding pressures on euro area banks;

- **Monetary policy operations** usefully complemented by a **collateral framework** allowing broad eligibility of diverse categories of assets;

- **Emergency Liquidity Assistance (ELA)** also contributed to avoid liquidity accidents;

- **Constant interactions with counterparties** and other market participants are even more crucial in times of crisis – e.g. feedback via the ECB's market contact groups (especially the MMCG, BMCG and FXCG): http://www.ecb.europa.eu/paym/groups/html/index.en.html;

- **Non-standard measures** are a **complement**, rather than a substitute, of conventional monetary policy – e.g. non-standard measures aim at repairing a dysfunctional transmission;

- **Difficult trade-offs**, e.g. central bank intermediation vs. money market reactivation;

- **International cooperation** (e.g. swap lines between central banks) essential to address foreign currency liquidity crises;

- Preserving the monetary policy transmission, i.e. ultimately the **monetary policy objective (price stability)** may require unprecedented non-standard actions and instruments.

Looking ahead

- **In the near and medium term:**
  – Impact of **APP reduction / envisaged end**:
    - yield curves and funding costs
    - market functioning across various asset classes
  – **TLTRO-II repayments and maturities**: impact on inter-bank funding markets, on banks' lending behaviour?

- **In the medium / longer term:**
  – The **"post-crisis" environment** may be very different from the pre-crisis environment:
    - changes in banks' behaviours, risk appetite and liquidity management
    - new regulatory environment (LCR, NSFR, leverage ratio…)
    - Banking Union (SSM, SRB, ESM…)
    - changes in technologies and market infrastructures (central counterparties, tri-party repo, digital currencies…)

The **Eurosystem monetary policy implementation framework** may thus be different from the pre-crisis situation:

- Structural component of excess liquidity?
- Relevance of outright portfolios?
- More weight given to LTROs?
- Secured money market rate as operational target?

Useful links

P. Mercier, F. Papadia: The Concrete Euro

U. Bindseil - Monetary Policy Operations and the Financial System

Legal Framework “Monetary Policy”

General Documentation:

Guideline (ECB/2014/60) of the ECB of 19 December 2014 on the implementation of the Eurosystem monetary policy framework as amended

U. Bindseil, M. Corsi, B. Sahel, A. Visser – The Eurosystem collateral framework explained

The financial risk management of the Eurosystem’s monetary policy operations

I. Alvarez et al. - The use of the Eurosystem’s monetary policy instruments and operational framework since 2012

Chapter 4 of The monetary policy of the ECB (Third edition, May 2011)

The transmission of the ECB’s monetary policy in standard and non-standard times - Speech by Benoît Cœuré (Sept 2017)

The future of central bank money- Speech by Benoît Cœuré (May 2018)

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Thank you for your attention!