3 The monetary policy strategy of the ECB
Monetary policy implementation

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The operational framework of monetary policy

- **Upside** (downside) risks to price stability should lead to a **rise** (a cut) in central bank interest rates
- Usually central banks target money market interest rates through **open market operations**
- The implementation of monetary policy is defined by the so-called **operational framework**, i.e. the set of instruments and procedures via which the central is able to influence money market interest rates.
- We should also keep in mind that an important channel is the one via **expectations**

Chart 3.1 A stylised illustration of the transmission mechanism from interest rates to prices
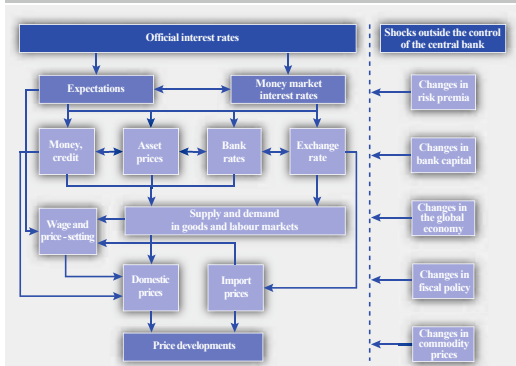
Source: The monetary policy of the ECB, 2011 (www.ecb.int)

The separation principle

- For effective signalling, the operational framework needs to allow the separation of the determination of the **monetary policy stance** from **liquidity management**.
- There must be a strict distinction between monetary policy decisions that are geared towards the maintenance of price stability (regular Governing Council announcements) and liquidity operations intended to keep market interest rates in line with the monetary policy stance.

- The ECB is able to affect interest rates because it is the **monopoly supplier** of base money (currency and reserves with the Eurosystem)

- The ECB steers interest rates by managing the **liquidity** in the money market so that the resulting money market interest rate is close to the policy rate

- Usually the operational target is understood to be the **EONIA** (Euro OverNight Index Average) rate which is then transmitted along the yield curve

- In practice the communication of the ECB (signalling) has also an important (crucial) impact on money market interest rates via **expectations**

Euro area banks need liquidity mainly for two reasons:

- To make payments at **short notice** (e.g.: provide banknotes in ATM machines or make transfers to other banks, non-banks or abroad)

- Banks are required to hold current account deposits with the ECB. These are called **minimum reserve requirements** which are a share of bank deposits and short-term debt securities (2% before December 2011; now 1%). A minimum balance must be kept on average during the so-called maintenance period (roughly one month)

- Individually, each bank may have more or less liquidity than it needs in each day or for longer periods.
- The banks trade liquidity in the money market: banks with excess liquidity lend to banks that need liquidity
- The banks may lend unsecured or against collateral:
    - The **EURIBOR** (Euro Interbank Offer Rate) is based on unsecured interbank loans in the money market
    - The **EUREPO** is based on short-term money market loans that are collateralised

EURIBOR versus EUREPO

EURO AREA - 3-MONTH MONEY MARKET INTEREST RATES
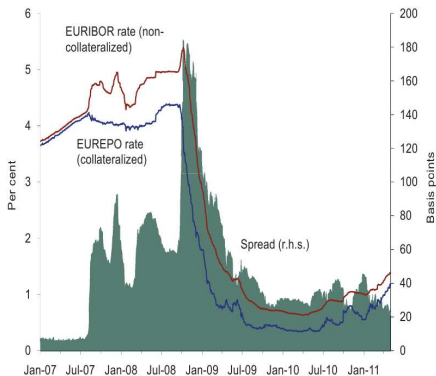
Source: Thomson Reuters.

Annual Report, Banco de Portugal, 2011.

The liquidity deficit

- To be able to control money market rates, the ECB maintains what is called a **liquidity deficit**, i.e. it makes sure that the overall liquidity available in the euro area banking system (excluding the ECB regular operations) is below the overall liquidity needs of the banking system
- The liquidity deficit implies that, in aggregate terms, the banks need to borrow liquidity from the Eurosystem to fulfill their liquidity needs
- The ECB can thus manage the liquidity situation in the money market to ensure that the resulting rates are close to the key interest rates
- The management of liquidity is done via **open market operations** and **standing facilities**

General principles and objectives of the ECB's operational framework

The implementation of monetary policy by the ECB is based on three main instruments:

- Minimum reserve requirements
- Open market operations
- Standing facilities

The minimum reserve requirements serve two purposes

- **Stabilization** of money market interest rates - Averaging provision
- Creation or enlargement of a **structural liquidity shortage**

The reserves are remunerated at the Main Refinancing Operations (MRO) interest rate

- The ECB supplies liquidity in regular open market operations against eligible **collateral**.
- The collateral is required to protect the central bank from losses.
- Monetary policy has to be isolated from problems of financial stability to maintain central bank independence and to prevent moral hazard problems.

Eligible collateral

- There are several assets that are **eligible** for collateral (government securities, covered bank bonds, uncovered bank bonds, corporate bonds, ABS, even non-marketable assets such as loans)
- The ECB applies a **haircut**, i.e. a reduction of the value of the assets that counts as collateral, that depends on the risk profile (e.g. rating)
- Without collateral, banks **cannot borrow** from the ECB

Bank Liquidity (billions of euro)
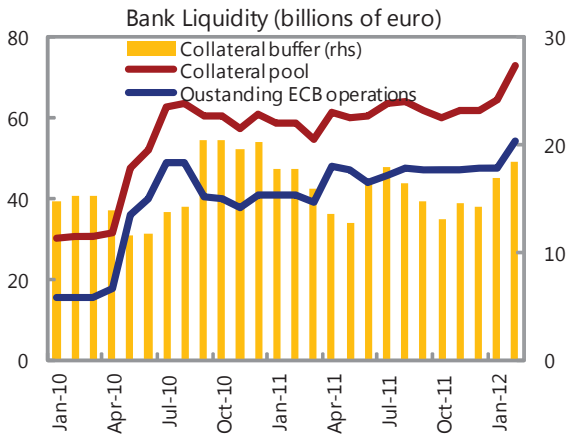
Source: ECB.

The ECB has four types of open market operations:

1. Main refinancing operations
2. Longer-term refinancing operations
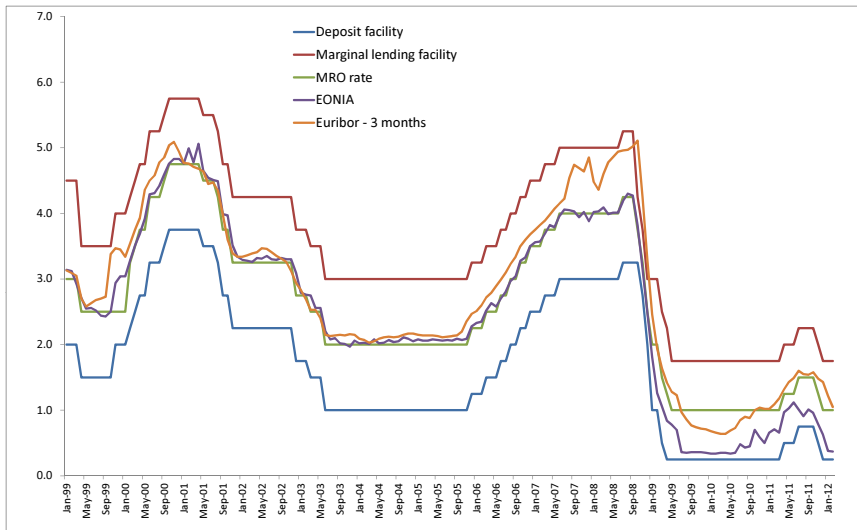3. Fine-tuning operations
4. Structural operations

ECB open market operations

ECB open market operations					
Monetary Policy operations	**Types of transactions**		**Maturity**	**Frequency**	**Purpose**
	Provision of liquidity	Absorption of liquidity			
Main refinancing operations	Reverse transactions	--	1 Week	Weekly	Main signalling rate; normally provide the bulk of refinancing to the financial sector
Longer-term refinancing operations	Reverse transactions		3 months (normally) 6, 12, 13 and 36 months (crisis)	Monthly (normal operations only)	Provide longer-term refinancing. Normally has no signalling role, ECB as rate taker. Only exceptionally taken as fixed rate.
Fine-tuning operations	Reverse transactions Foreign exchange swaps	Reverse transactions Collection of fixed-term deposits Foreign exchange swaps	Non-standardised	Non-regular	Ad hoc operations to smooth the effects on interest rates caused by unexpected liquidity fluctuations.
Structural operations	Reverse transactions Outright purchases (e.g. Securities Market Programme)	Issuance of ECB debt certificates Outright sales	Standardised/ non-standardised ---	Regular and non-regular Non-regular	To be executed whenever the ECB wishes to adjust the structural position of the Eurosystem vis-à-vis the financial sector (on a regular or non-regular basis).

- **Marginal lending facility** - liquidity providing
- **Deposit facility** - liquidity absorption
- Both have overnight (one day) maturity
- Can be used by banks in a discretionary way (but marginal lending requires collateral)
- Form the interest rates corridor for the EONIA

# Key ECB interest rates, the EONIA and the EURIBOR

Chart B Liquidity needs of the banking system and liquidity supply

(EUR billions; daily averages for the review period are shown next to each item)

- CBPP, CBPP2 and SMP portfolio: €271.7 billion
- main refinancing operations: €179.9 billion
- longer-term refinancing operations: €752.8 billion
- weekly liquidity-absorbing fine-tuning operations: €206.7 billion
- autonomous factors: €251.0 billion
- current accounts: €182.5 billion
- net recourse to deposit facility: €368.5 billion
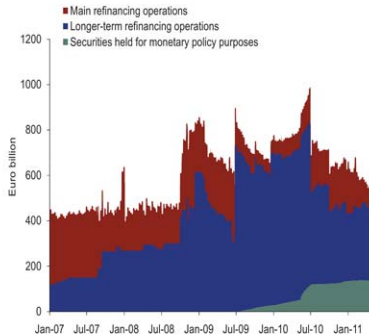- reserve requirements: €177.7 billion

Source: ECB.

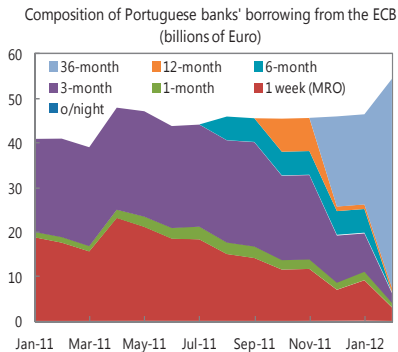João Sousa   Monetary Policy
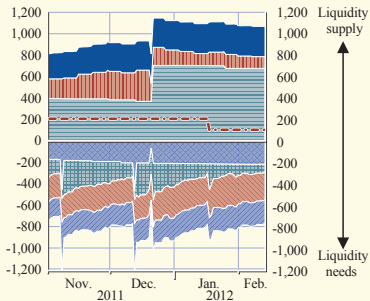
Euro area liquidity situation

Chart 2.1.3

EURO AREA - OUTSTANDING AMOUNTS OF THE EUROSYSTEM MONETARY POLICY OPERATIONS

Annual Report, Banco de Portugal, 2011.

Portuguese liquidity situation

Composition of Portuguese banks' borrowing from the ECB (billions of Euro)

Source: IMF Staff Report, Portugal, 3rd review, April 2012.

Liquidity supply, standing facilities and the overnight interest rate

The ECB does not strictly need the MRO rates to steer the overnight rate. Such steering can be done just with open market operations and the corridor (see Woodford, 2003). One simple way to see this is to realize that:

$$i_t = p i_t^m + (1 - p) i_t^d \qquad (1)$$

where:

- i_t is the overnight rate
- i_t^m - rate on the marginal lending facility
- i_t^d - rate on the deposit facility
- p - probability of having to borrow at the marginal lending facility

Relation between alloted amounts, standing facilities and the overnight interest rate

The previous equation can be written as:

$$i_t = i_t^d + \boxed{p}(i_t^m - i_t^d)$$

Woodford(2001) developed a model whereby the interest rate is determined by:

$$i_t = i_t^d + \boxed{F(\frac{-S_t}{\sigma_t})}(i_t^m - i_t^d)$$

- F - Cumulative probability distribution
- S_t - aggregate supply of central bank liquidity
- σ_t - parameter measuring the uncertainty of payment flows in a given day

For a symmetric corridor (or channel) and symmetric distribution of payment shocks, the mid-point is reached with the following supply of liquidity by the central bank:

$$S_t = F^{-1}(1/2)\sigma_t$$

As mentioned in Woodford (2003), it should be noted that:

- If σ_t is relatively stable, then the amount supplied of central bank liquidity should be stable as well.

- The level of liquidity supplied is independent of the level of interest rates, it only depends on "technical factors" - **separation principle**

- Finally, note that in a crisis σ_t rises and so S_t should also increase, i.e. the central bank should provide more liquidity irrespective of the interest rate.