Monetary policy in the euro area in normal times and in the crises

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November 2019

Outline

1. Some history
   - ✓ from the Treaty of Rome to Maastricht and the euro

2. Institutional aspects of the ECB and the Eurosystem

3. Monetary policy in normal times:
   - ✓ ***conventional*** monetary policy

4. Monetary policy in the crises:
   - ✓ ***unconventional*** monetary policy

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The European Union is a political project

- The euro is the result of a long-term development started after World War II

- The European Union and the euro area are eminently political constructs (Padoa Schioppa, 2004).

- *"Never again a war among"*: this was the motto of politicians and intellectuals like Jean Monnet, Altiero Spinelli, Luigi Einaudi, Robert Schuman, Konrad Adenauer, and Alcide De Gasperi.

The first steps in the 1950s

- **1951**: The Treaty of Paris establishes the European Coal and Steel Community: **three wars** had been fought between 1870 and 1945 for the control of these resources

- **1957**: The **Treaty of Rome** establishes the European Economic Community (EEC): the chief goal was to create a common market where goods, services, capital, and persons freely circulate

- Six founding countries: Belgium, France, Germany, Italy, Luxembourg and the Netherlands

The European method

- The creation of a unified market – the common European market – was the main goal of the Treaty of Rome

- The method for implementing the common market was to adopt, economic sector by sector, legally binding European legislation, whose force was superior to national legislation

- Obstacles to the freedom of trade were removed and key national economic norms harmonized, first for manufactured goods

Further progress in enlarging the EEC

- 1973: the UK, Denmark and Ireland became new members of the EEC
- 1979: European citizens voted for the European Parliament for the first time
- **1979**: the **European Monetary System** (EMS) was created, as a fixed, but adjustable, exchange rate system
- 1981: Greece becomes a member of the EEC
- 1986: Portugal and Spain become members of the EEC

The Single European Act and the Delors Committee

- 1986: a new Treaty – the **Single European Act** – amended the Treaty of Rome to achieve a single market without internal frontiers. End 1992 was the deadline to start the single market
- 1988: a committee chaired by Jacques Delors starts to draw a blueprint for **Economic and Monetary Union**

  This was probably the most important step in the history of European integration: the decision was **to replace national currencies with a single European one. Commerce is eased if there is just one currency; moreover the possibility of competitive devaluations is cancelled**
- 1990: free circulation of capital in European countries

The economic road to Monetary Union: resolving the inconsistent quartet

(i) Free trade
(ii) mobility of capital
(iii) fixed exchange rates
(iv) independence of national monetary policies
are **mutually incompatible**

- With the establishment of the single market, fixed exchange rates, and mobility of capital, independent monetary policies are no longer possible

- The answer to the inconsistent quartet is **the introduction of a single currency**

The Maastricht Treaty and the European Monetary Institute

- **1992**: the **Maastricht Treaty** is signed, on the basis of the Delors Report
  The so-called Maastricht criteria included convergence towards price stability, sound public finances, exchange rate stability and low long-term interest rates

- **1994-1998** (May): the **European Monetary Institute** (EMI), set up in Frankfurt, worked on the technical preparation for the move to the single currency
- The work concentrated on issues like the definition of the monetary framework, the design of the new notes and coins, and the harmonization of monetary and banking statistics

The start of the common monetary policy and the introduction of the euro

- 1998, June: establishment of the European Central Bank.

- **1999**, January: the **common monetary policy starts**

The euro is introduced as the official currency in 11 Member States: Belgium, Germany, Spain, France, Ireland, Italy, Luxembourg, the Netherlands, Austria, Portugal, and Finland

- 2001, January: adoption of the euro by Greece.

- 2002, January: introduction of the euro bank notes and coins.

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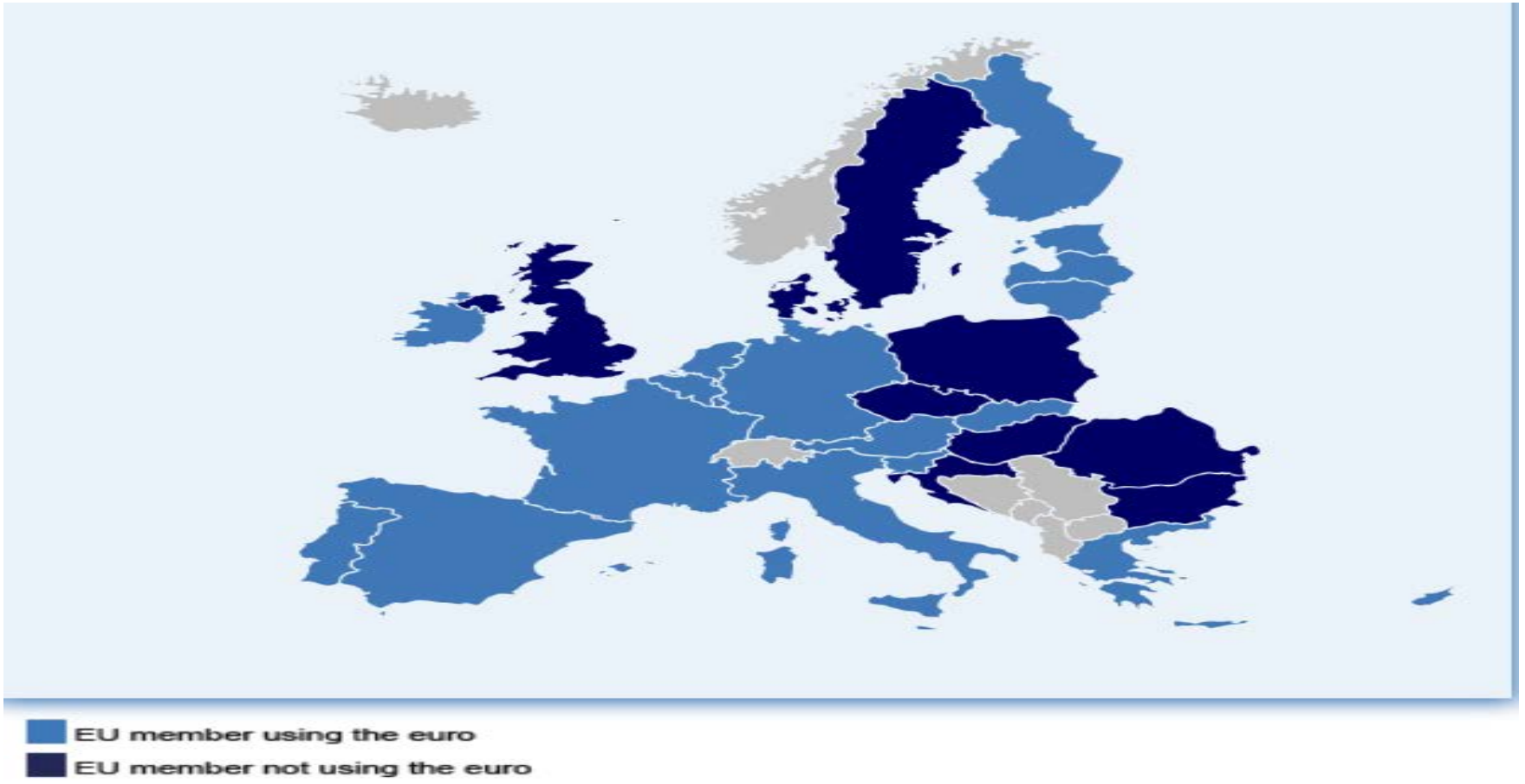
The euro-area today

The euro-area consists of 19 countries: Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia and Spain



There are currently 9 EU Member States whose currency is not the euro: Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Poland, Romania, Sweden and United Kingdom

Euro-area institutional aspects

- "Euro-area" refers to the area formed by the EU Member States whose currency is the euro
- European Union (EU) substituted the expression EEC
- **Eurosystem**: the ECB and the 19 NCBs of the EU Member States whose currency is the euro
- ESCB (European System of Central Banks): comprises the ECB and the 28 NCBs of all EU Member States
- The decision-making bodies of ECB are:
  - Executive Board (1 + 1 + 4)
  - Governing Council (1 + 1 + 4 + 19)

The ECB is independent

- The ECB is independent from political influence
- A large body of theoretical analysis, supported by empirical evidence, indicates that central bank independence is conducive to price stability
- Neither the ECB nor the NCBs, nor any member of their decision-making bodies, are allowed to seek or take instructions from Community institutions or bodies, from any government of a Member State or from any other body

The ECB is accountable

- To retain legitimacy, in democratic societies, an independent central bank must be accountable to democratic institutions and the general public for its actions in the pursuit of its mandate

- The ECB has to publish quarterly reports on the activities of the Eurosystem as well as a weekly consolidated financial statement

- The ECB publishes an annual report

The ECB is transparent

- Transparency can be defined as an environment in which the central bank provides the general public and the markets with all relevant information on its strategy, assessments, and policy decisions as well as well as its procedures and does so in an open, clear and timely manner (see ECB 2004)

- Transparency makes monetary policy more effective, fosters **credibility**, imposes self-discipline on policy-makers, and provides guidance to the markets

Price stability

Price stability is the ECB's goal

- Why?

✓ Because the CB can
  - In the long run inflation is a monetary phenomenon
  - In the long run monetary policy does not influence economic growth
    - In the short run inflation depends on supply and demand factors
    - In the short run monetary policy is able to have real effects on the economy

✓ Because price stability brings benefits

Benefits of price stability

- ✓ Contributes to achieve high levels of economic activity and employment ➔ in the long period inflation can have negative effects on growth and employment
- ✓ No distortion of relative prices ➔ more efficient choices of consumption and investment
- ✓ No risk premium in interest rates ➔ lower real rates
- ✓ No distortions on taxes and pensions ➔ less real costs to the economy
- ✓ No redistribution of income/wealth ➔ social cohesion
- ✓ Lower uncertainty about future prices ➔ financial stability

The ECB's quantitative definition of price stability

- Price-stability is defined as a year-on-year increase in the Harmonized Index of Consumer Prices (HICP) **below but close to 2 per cent**

- This definition anchors inflation expectations and adds to the transparency and accountability of the ECB

- The focus is on the euro area as a whole
- and on the medium term

ECB - Monetary policy strategy (1)

✓Monetary policy has a **medium-term *orientation*** to avoid excessive activism and the introduction of unnecessary volatility in the real economy

✓Monetary policy must be **forward-looking and pre-emptive:**

- because of **lags** and stochastic **uncertainty** in the transmission process and its effects: changes in monetary policy will affect the price level **only after a number of quarters or years**
- given the uncertainty surrounding **unanticipated shocks** to the price level, some short-term volatility in inflation rates is unavoidable

ECB - Monetary policy strategy (2)

- ✓ Monetary policy is effective if firmly anchors inflation **expectations**
  - Central banks **specify their goal**, elaborate and keep to a consistent and systematic method for conducting monetary policy
- ✓ Monetary policy has to be broadly based on **all relevant information** to understand the factors driving economic developments, and cannot rely on a single model of the economy
  - The ECB' strategy has "two pillars": (i) economic analysis and (ii) monetary analysis
  - Like all central banks, the ECB faces uncertainty about the reliability of economic indicators, the structure of the economy and the monetary policy transmission mechanisms

Monetary policy: summary and preview

- Monetary policy authorities – central banks – use monetary instruments (monetary base and interest rates) to achieve economic goals

Central Bank → Monopoly in issuing monetary base: Reserves (Required Reserves + Excess Reserves) and Currency in circulation

Instruments →
- Monetary aggregates
- Official interest rates (prices of monetary base)

Goals → Price stability
- Inflation and deflation are both burdensome for the economy

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Monetary policy in normal times

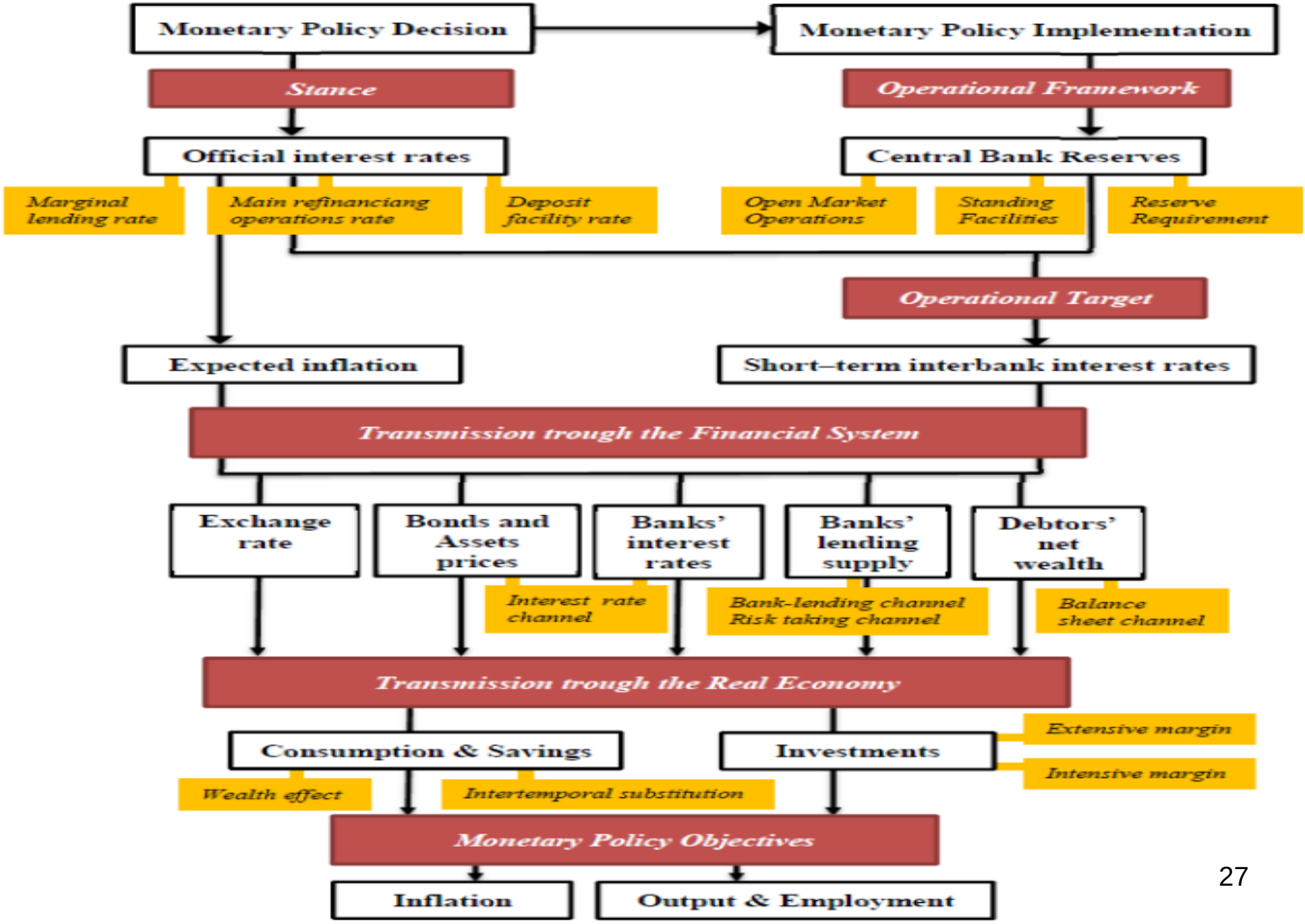
- Monetary policy steers short-term nominal interest rates and through various **channels** influences the spending decisions of firms and households, as well as monetary and financial developments, and ultimately inflation

- Short-term money market rates play a pivotal role in the **transmission** of monetary policy

Monetary strategy and operational framework

- The monetary strategy determines the level of official interest rates consistent with the goals
- The operational framework aims at aligning the short-market rates with the official rates through the use of monetary instruments
- In the Euro-Area and US, the main operational instrument are short-term open market operations
- There are differences between the two CBs that mainly reflect historical grounds and importance of banks and capital markets in the two areas (primary dealers)

Monetary policy transmission in the euro-area



The ECB and the banking system

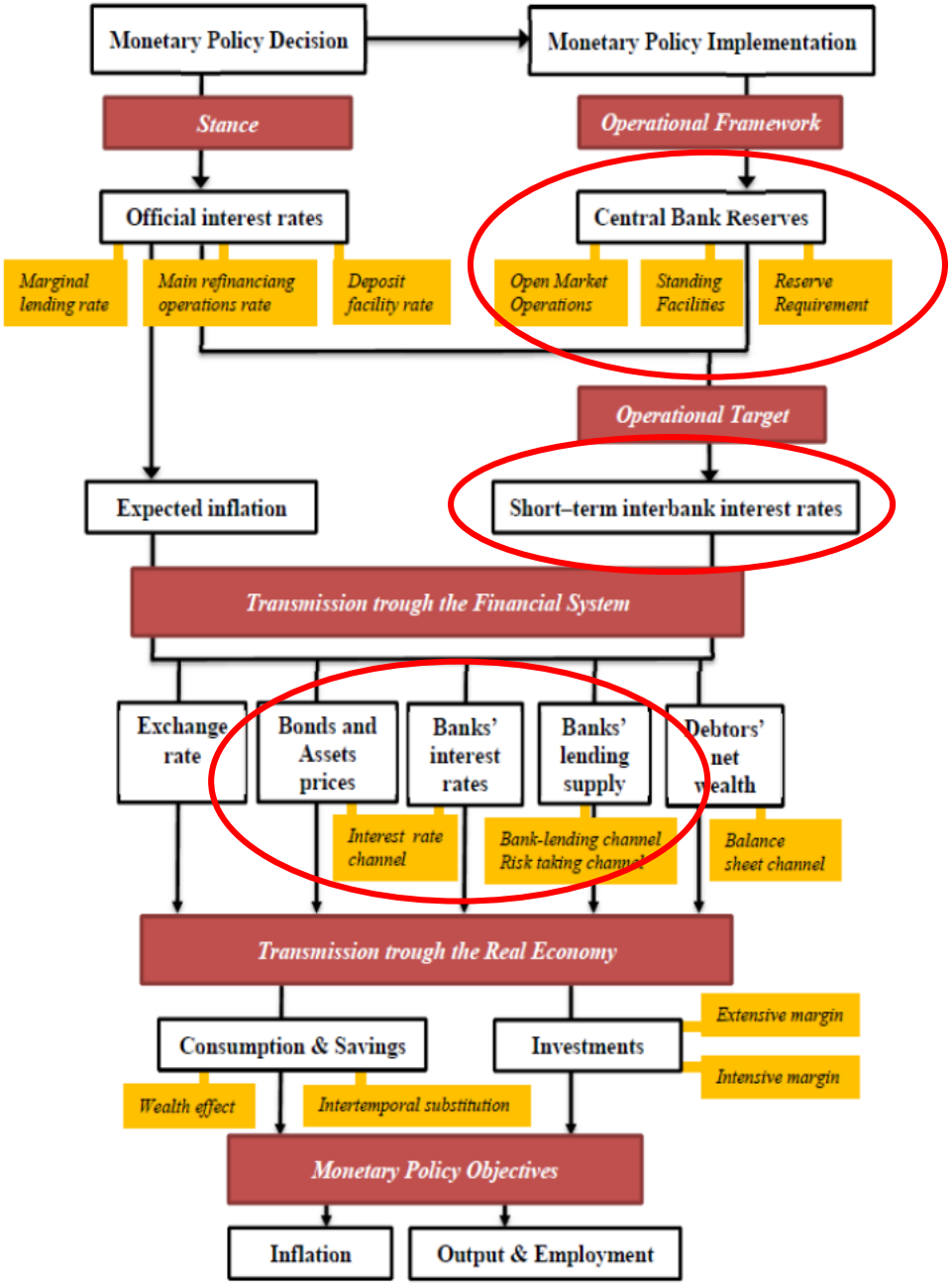
✓Banks are the main counterparties of the ECB

✓Banks and ECB interact in the wholesale liquidity markets

- *Primary liquidity market*
  - ECB operations (refinancing) are the driver of liquidity
  - ECB provides liquidity
  - ECB sets the official interest rates
  - ECB generates the liquidity needs

- *Secondary liquidity market*
  - where the liquidity obtained in the primary market is reallocated;
  - interbank market is the main market for liquidity exchange

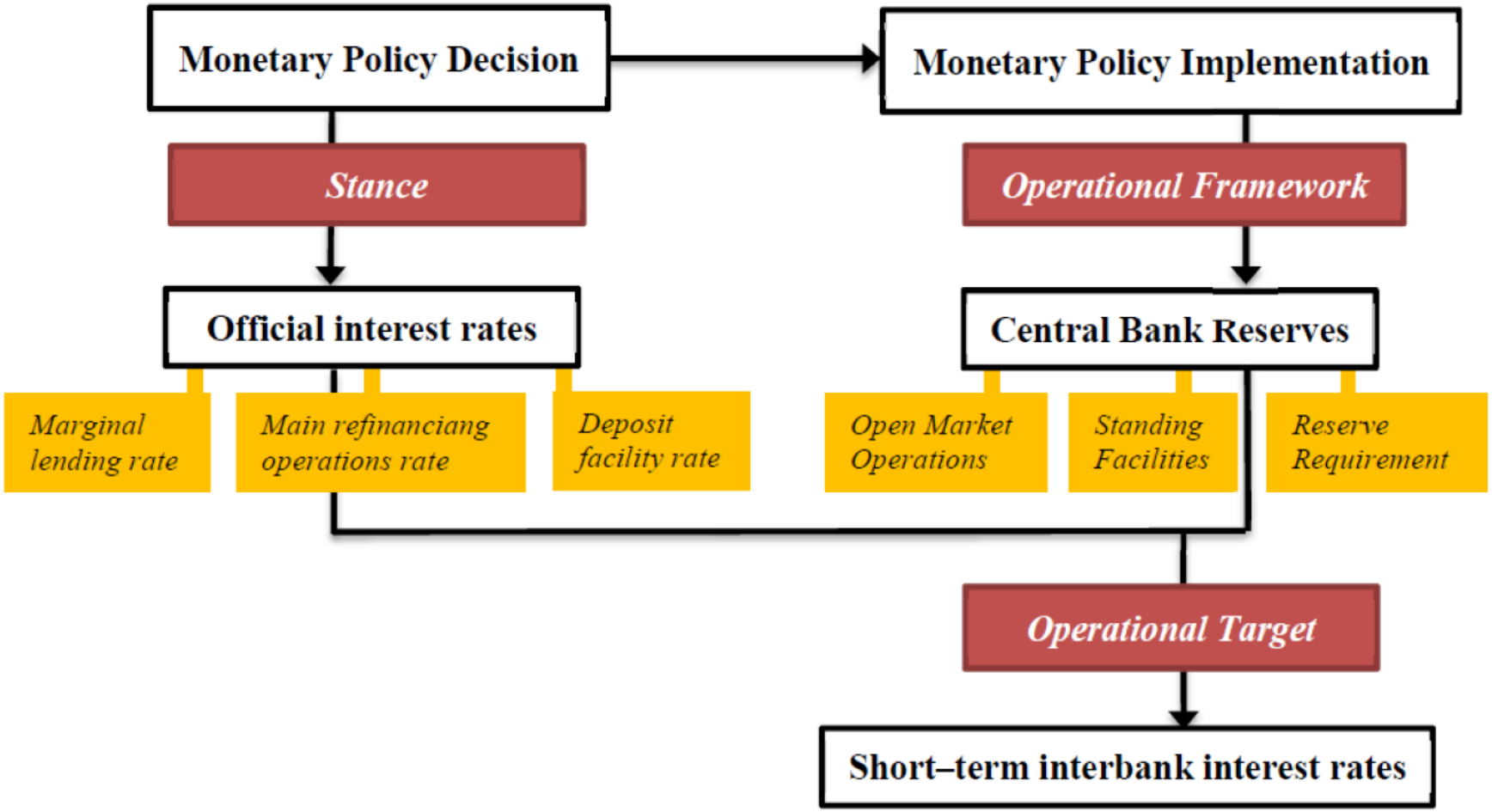
Monetary policy transmission in the euro-area



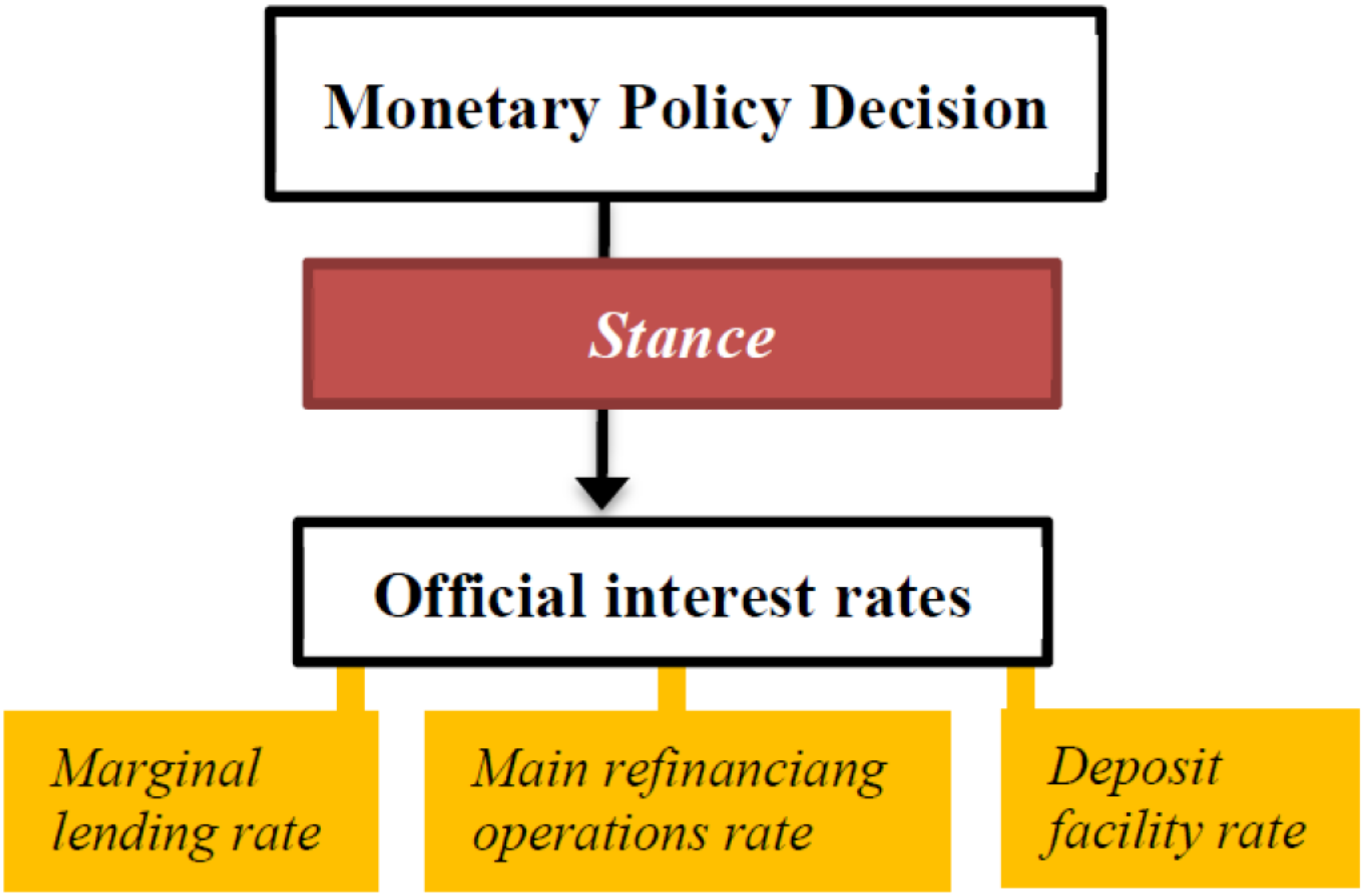
Monetary strategy and operational framework (3)

- In normal times, the monetary policy implementation consists in "aligning" its operational target with its stance
- In the Eurosystem, this consists in steering the short-term market interest rates through:
  - signaling its stance to the financial markets by announcing its decisions on policy interest rates
  - assessing the liquidity needs of the banking system
  - supplying or absorbing the appropriate amount of reserves through open market operations in order to maintain the system neither in a liquidity deficit nor in an excess liquidity condition

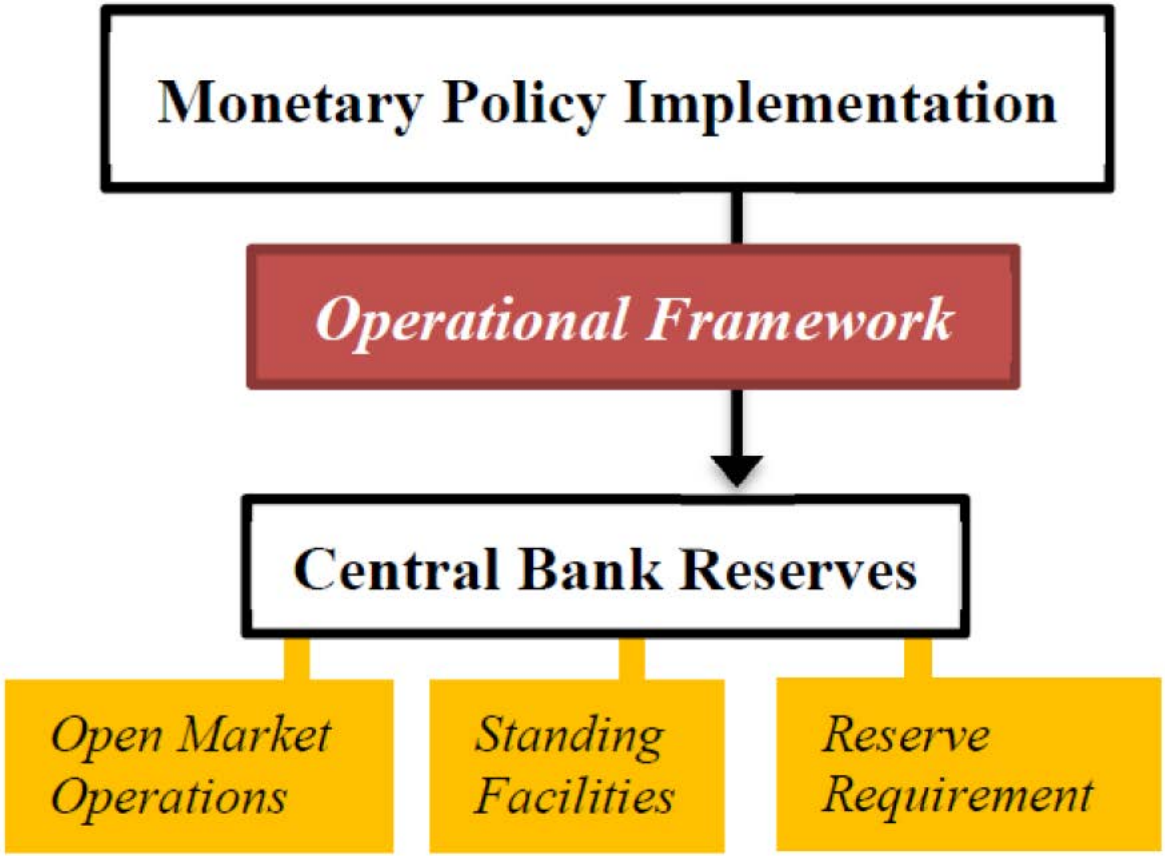
Monetary strategy and operational framework (2)



Eurosystem monetary policy instruments



Eurosystem monetary policy instruments (2)



Eurosystem monetary policy instruments (3)

1. Open market operations

- Main refinancing. (MROs)
- Longer-term refinancing (LTROs)
- Fine-tuning (FTOs)
- Structural

2. Standing Facilities

- Marginal lending facility
- Deposit facility

3. Minimum reserves

Open market operations

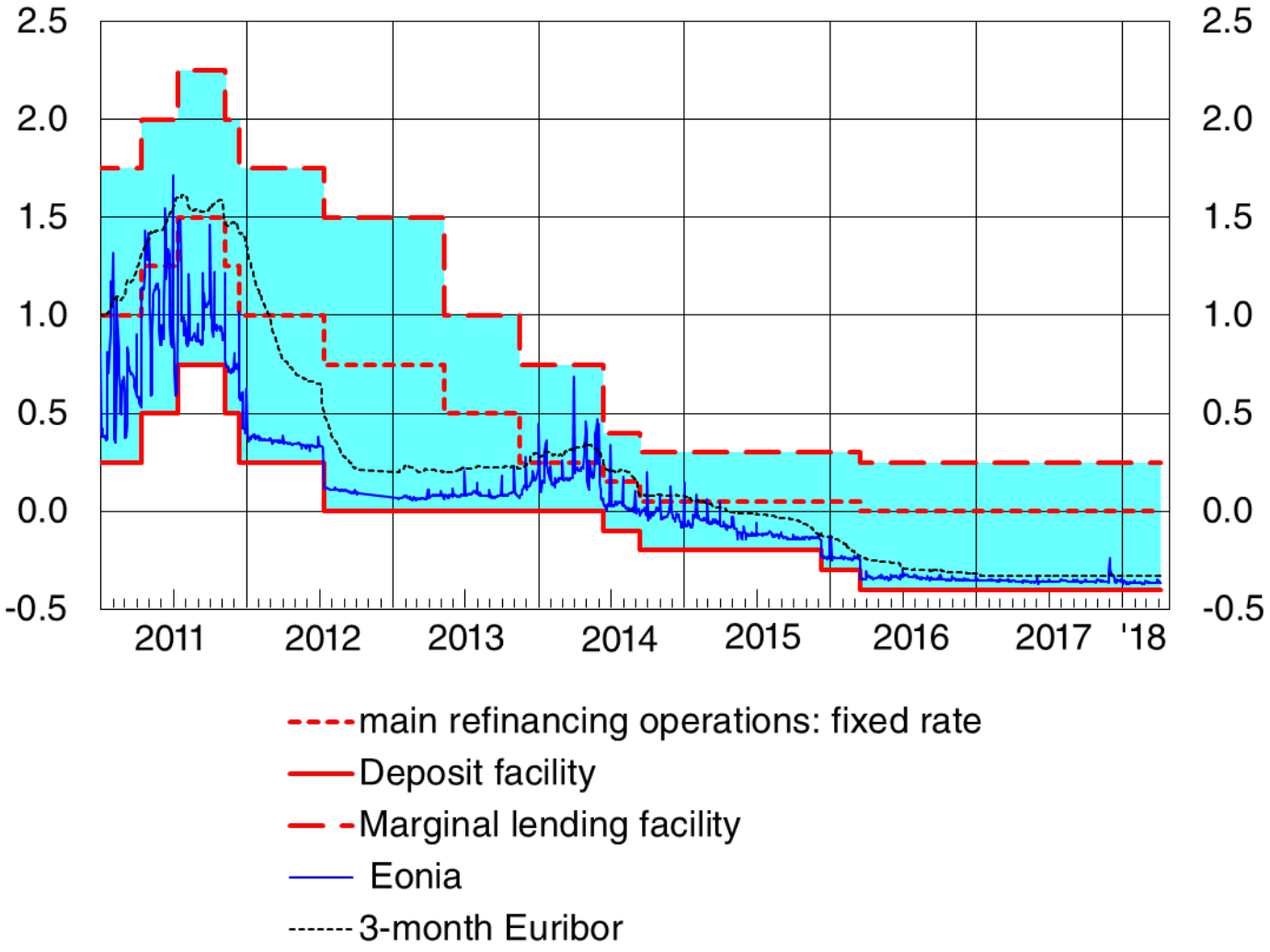
- ✓ The most important operations
  - provide the liquidity to the banking system
  - steer interest rates
  - manage the liquidity situation in the market
  - signal the stance of monetary policy through the rates
- ✓ Conducted on the initiative of the ECB
- ✓ The Eurosystem lends funds to its counterparties
  - Main refinancing. (MROs)
    - ➢ regularly conducted on a weekly basis; generally maturity of one week
  - Longer-term refinancing (LTROs)
    - ➢ provide longer-term liquidity to the banking system
  - Fine-tuning (FTOs)
    - ➢ smooth the effects on interest rates of unexpected liquidity fluctuations; frequency and maturity not standardised; can be liquidity absorbing or liquidity-providing
  - Structural
    - ➢ adjust the structural liquidity position

Standing facilities

- ✓ **Two standing facilities**
  - marginal lending facility
  - deposit facility
  - Both facilities have an overnight maturity and **are available to counterparties on their own initiative**
- ✓ **Determine the corridor**
  - the interest rates on the standing facilities provide a ceiling and a floor for the overnight market interest rate …
  - … within which the overnight money market rate can fluctuate:
    - ➢ the interest rate on the marginal lending facility is normally substantially higher than the corresponding money market rate, and the interest rate on the deposit facility is normally substantially lower than the money market rate
  - Banks normally only use the standing facilities in the absence of other alternatives

Official interest rates and money market rates in the euro area

(daily data; per cent)



Sources: ECB and Thomson Reuters Datastream.

ECB protection

- ✓ In order to protect the Eurosystem against financial risks, lending is always against adequate **collateral**
- ✓ Lending through open market operations normally takes place in the form of **reverse transactions**
  - In the reverse transactions, the ECB buys assets under a repurchase agreement or grants a loan against assets pledged as collateral
  - Reverse transactions are therefore temporary open market operations which provide funds for a limited, pre-specified period only
- ✓ There are no limits on access to the facilities except for the collateral requirements of the marginal lending facility

Minimum (or Required) Reserves

- Banks are required to hold compulsory deposits on accounts with the NCBs. These funds are a share of banks' liabilities and are called "minimum" or "required" reserves
- Averaging provisions: compliance with reserve requirements is determined on the basis of the average of the daily balances on the institutions' reserve accounts over the **maintenance period**
- Minimum reserves have two functions

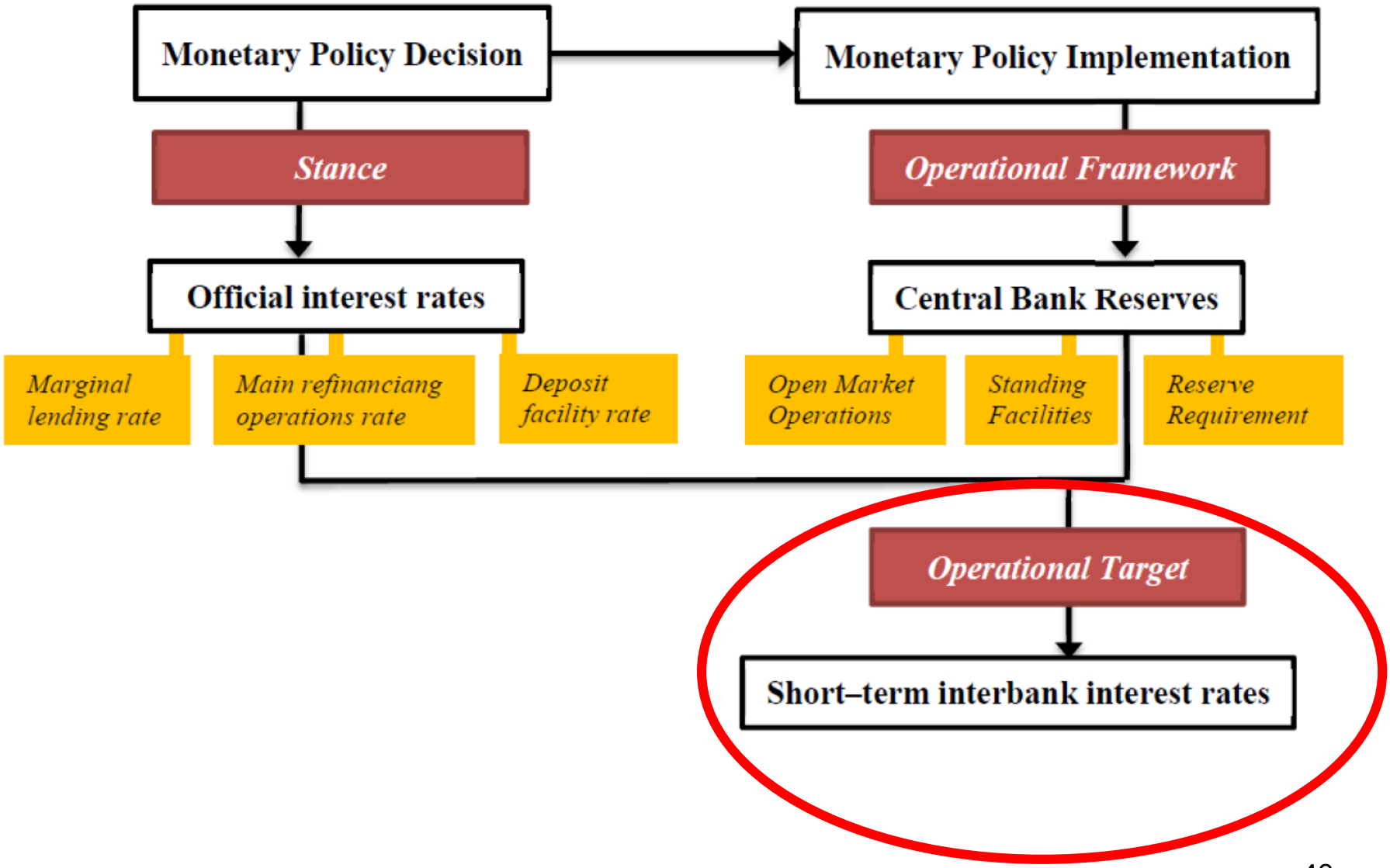
- To enlarge the structural liquidity shortage of the banking system

  The need for banks to hold reserves with the ECB increases the demand for ECB credit which, in turn, makes it easier for the ECB to steer money market rates through liquidity providing operations

- To stabilise money market interest rates

  This function is performed by the averaging provision: transitory reserve imbalances can be offset by opposite reserve imbalances generated within the same maintenance period

Interbank market (1)



Interbank market in normal times (2)

- In normal times the operational target of the ECB is the short-term interbank interest rate, i.e. the interest rate at which banks lend to each other reserves for a very short period of time

- During **normal times** the ECB only cares about injecting the banking system with the appropriate amount of reserves, while their distribution among depository institutions takes place endogenously through the interbank market

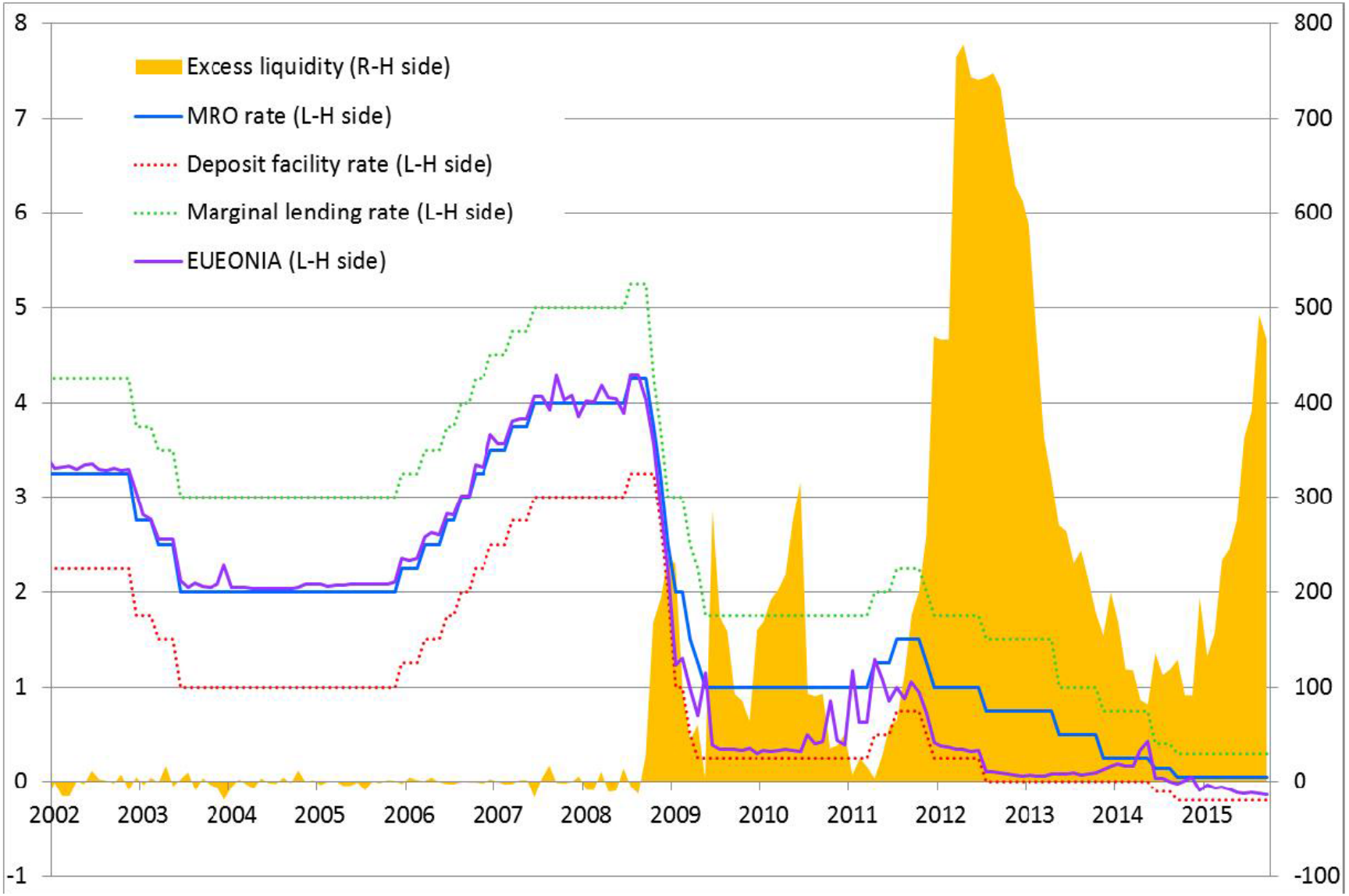
- When market conditions are quiet, central banks' monopolistic power in the provision of reserves allows them to steer interest rates in the interbank market very accurately

A crucial market

- CBs aim at influencing conditions in the MM (money market)
- The MM plays a crucial part in the transmission of monetary policy (changes in monetary policy instruments affect the MM first)
- The transmission of CBs' monetary policy intentions to MM rates depends critically on the **behaviour of banks** and on their willingness to entertain smooth exchanges of liquidity in the interbank market
- A deep and integrated MM is a precondition for monetary policy, since it ensures an even distribution of CB liquidity and a homogeneous level of short-term interest rates across the single currency area
- In the Euro-Area, this precondition was met right from the start of Stage Three of EMU, when the national money markets were successfully integrated into an efficient Euro-Area money market thanks to **TARGET**

- Dysfunctional MMs can weaken the capacity of monetary policy to influence the interest rate adjustments and thus the price stability
- The financial crisis severely challenged the functioning of the money market through an increase in liquidity risk and counterparty credit risk

Euro-Area money market

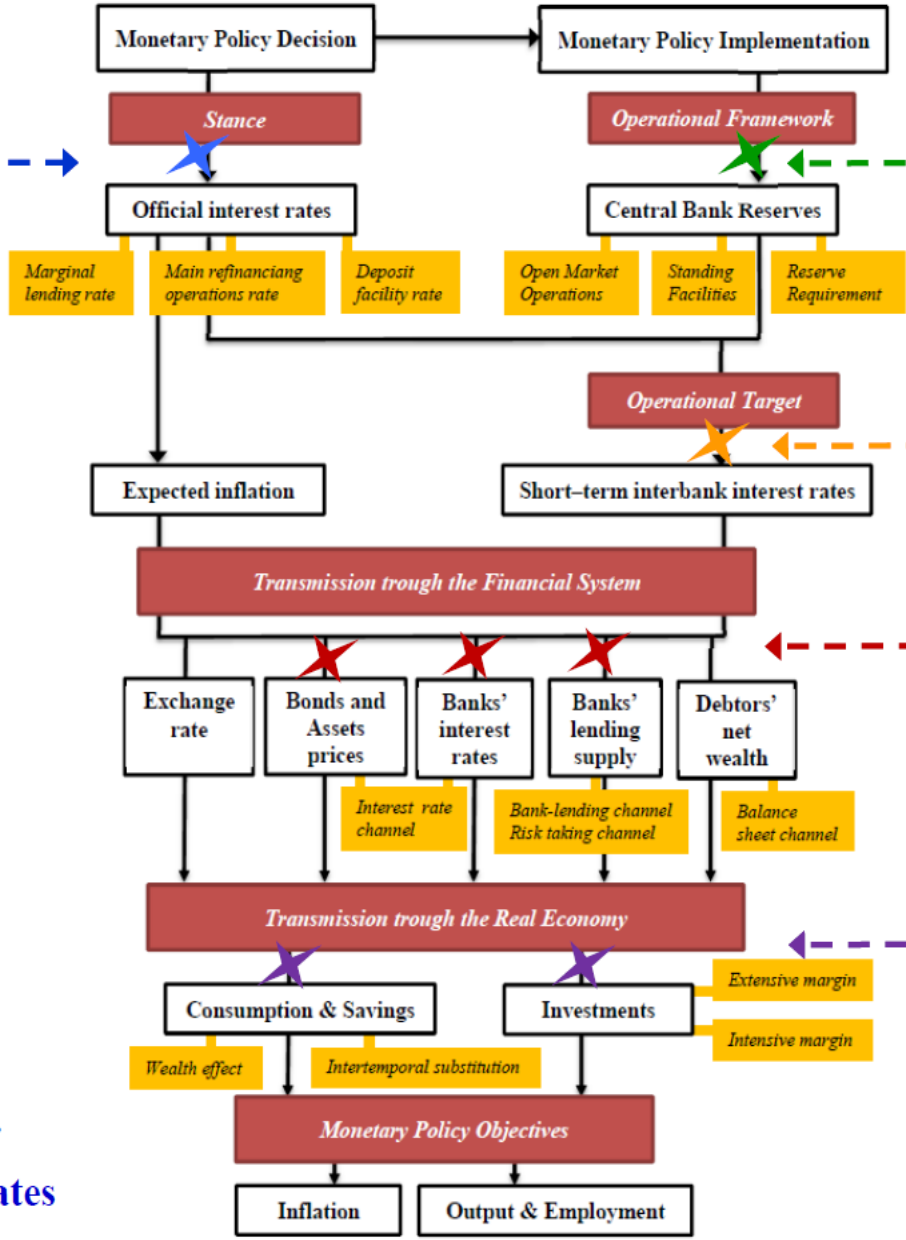


From normal times to the crisis

- In normal times changes in short-term interest rates are transmitted to long interest rates, and to the other segments of financial markets
- Long term rates drive economic decisions of households and companies, thereby short-term GDP developments and prices
- The proper functioning of the interbank market is crucial to the transmission of monetary policy from the very short money market to the real economy and prices

- **The financial crisis has destroyed this mechanism and has placed serious constraints on the capacity of the ECB and other central banks to pursue their goals**

What happened during the crisis?



(i) **volatility of demand for reserves**

(ii) **limited redistribution of reserves among depository institutions**

(iii) **disruptions in other segments of the financial market.**

(iv) **uncertainty and deleveraging hamper the transmission to the real economy.**

(v) **lower bound of nominal interest rates**

What happened during the crisis? (2)

- IM: the crisis increases both risks relates to
  - the financial soundness of the counterparty (**counterparty risk**)
  - its ability to have available liquid funds to make payments (**liquidity risk**)
- These risks trigger two behaviors:
  - CIs do not lend to counterparties because they do not know if they will be able to return them
  - CIs hold (and thus do not pay) cash at their disposal
- The **demand for liquidity** of the system rises, MM interest rates record significant increases
- The **lack of liquidity** and rising MM rates influence the ability of CIs to provide credit to the economy and the rates at which funds are granted
- The shortage of liquidity affects the financial markets: CIs and financial operators who are in urgent need of cash (**roll-over risk**) are forced to sell quickly their financial assets (**fire-sales**); the buyers are willing to pay very low prices
- Lower prices influence the value of the assets used as collateral in transactions: counterparties require to restore margins (and **haircuts**) with additional collateral: the collateral becomes scarce and because it loses value and because it is required in greater quantity (exchanges unsecured decrease)

And the monetary transmission?

- During a financial crisis implementing monetary policy is more complex
- The increase in the volatility of the demand for reserves makes it very difficult for the CB to estimate the liquidity needs of the banking system and volatile short-term interest rates in the interbank market
- The limited redistribution of liquidity among depository institutions, increases the short-term interest rate in the money market, toward the top of the corridor
- Disruption in other segments of the financial market hampers the transmission of the monetary impulse across the full spectrum of financial assets

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Monetary transmission during the crises

- During the crises, central banks decided to take non-conventional monetary measures
- **The distinction between conventional and non-conventional measures is in many cases light (conventional!). Any taxonomy is arbitrary**
- The unconventional measures affect not only interest rates – and the prices of financial assets – but also the **quantity of loans**
- A possible classification
  - Credit easing: contrasts the lack of liquidity and malfunctions in the money market in order to restore the functioning of the transmission mechanism
  - Quantitative easing: aims at reducing the risk premia on long-term returns in order to provide stimulus to the economy
  - Communication - forward guidance: measures to influence expectations about future trends in official rates; aims at providing stimulus to the economy and stabilize expectations on official rates

The goals of unconventional measures

- Three objectives of the ECB monetary policy during the crises:

1. To improve the functioning of the monetary policy transmission mechanism

2. To anchor medium-term inflation expectations

3. To support credit to the economy

Two (or three?) crises

1. **The global financial crisis (GFC)**: 2007-2009

   The peak crisis erupted in September 2008 after the Lehman Brothers collapse

   - ✓ After large actions by governments and central banks, there were signs of stabilization from March 2009

2. **The sovereign debt crisis**: 2010-2012

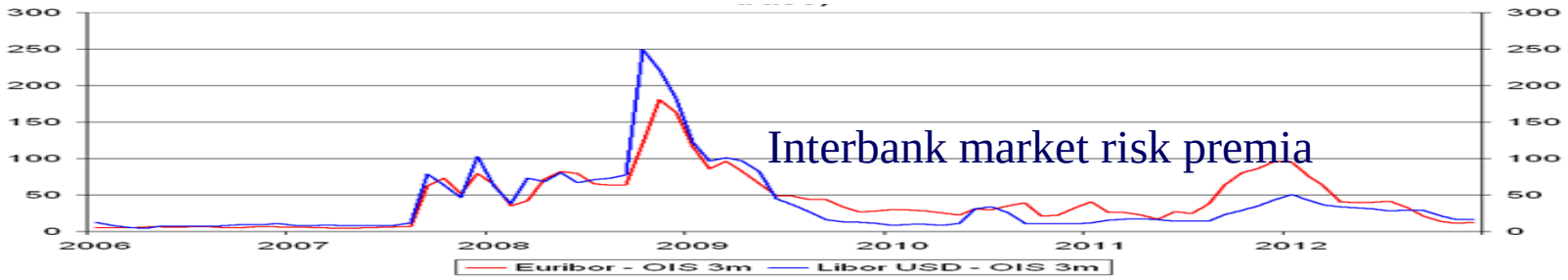
   - ❖ The first phase of the Euro-Area sovereign debt crisis (May 2010 - July 2011)
   - ❖ The second phase of the Euro-Area sovereign debt crisis (July 2011-2012) that hit Italy and Spain

3. **Deflation risk**: 2013 – onwards

The GFC (2007 – 2009)

➢ The GFC is characterized by:

- high volatility in demand for liquidity by banks
- increased preference for long-term funds
- problems with the redistribution of funds in the interbank market



➢ The central banks, governments, international organizations put in place unprecedented measures

➢ The ECB and the Fed try to solve problems in the interbank market to favor the proper transmission of monetary impulses

➢ Central banks reduce policy rates to levels close to zero

➢ In the first phase the ECB was able to act without any substantial change to its operational framework, after the collapse of Lehman it adopts extraordinary measures:

- Offer of **unlimited funds and fixed rate** refinancing operations
- Extension of the group of eligible collateral
- Increased frequency, volume and length of long-term operations and extension up to 12 months of their length (operations in June, September, December 2009)

ECB interventions in the GFC

- In order to limit runs and fire sales, the CBs provided liquidity against good enough collateral. If financial institutions have access to such funds, they do not need to sell assets at fire sale prices and the amplification mechanism does not operate

- Increases the frequency of liquidity interventions
- Accommodates the banks' preference of satisfying early reserve requirements (front-loading) providing greater liquidity in the first part of the maintenance period
- Accommodates the preference of banks for long-term liquidity by increasing frequency and volume and length of the LTROs

- In agreement with the Fed provides banks with dollar loans

- A successful factor of the operational framework of **the ECB has been the fact of working with all Euro-Area CIs** (while the Fed in contrast works with primary dealers)

The sovereign debt crisis (2010 - 2012)

- Sovereign debt market tensions – Euro area fragmentation

  - make dysfunctional the monetary transmission mechanism
  - funding markets segment along national borders
  - heterogeneity of monetary conditions across countries gets worse
  - financial market situation worsens
  - capital outflows from countries most affected by the crisis increase
  - the risk of a systemic bank funding crisis increases

State aid

Fiscal impact of financial sector support over the period 2008-14

(percentages of 2014 GDP)

	Net fiscal costs				EDP debt impact	Memo item: Change in government debt
			Cumulated impact on budget balance (deficit (+), surplus (-))			
	Total (A)+(B)	Net acquisitions of financial assets (A)	total (B)	due to capital transfers (C)	(end of 2014) (D)	(2008-14)
BE	3.7	3.3	0.4	1.1	4.6	19.7
DE	8.0	6.7	1.3	1.8	8.2	11.0
IE	31.1	7.0	24.1	25.7	22.6	85.7
GR	22.1	9.6	12.5	14.9	22.2	73.7
ES	5.0	0.6	4.4	4.8	5.0	62.2
FR	0.0	0.1	-0.1	0.1	0.1	31.1
IT	-0.1	0.0	-0.1	0.0	0.1	32.4
CY	18.8	10.3	8.5	9.1	19.4	53.4
LV	5.2	1.9	3.3	3.3	5.5	31.6
LT	1.3	0.2	1.1	0.9	0.9	25.0
LU	5.5	5.6	-0.1	0.1	5.3	16.0
NL	4.8	4.1	0.7	0.7	5.5	26.1
AT	3.5	0.4	3.1	3.6	8.4	19.7
PT	11.3	8.4	2.9	2.6	11.0	61.7
SI	18.1	6.1	12.0	11.5	18.2	58.2
EA	4.7	2.9	1.8	2.1	4.8	27.0

Sources: ESCB and Eurostat.
Notes: Estonia, Malta, Slovakia and Finland are not included in the table as no financial support was provided to the financial sector. The difference between the cumulated budget balance (B) and capital transfers (C) includes net miscellaneous financing costs or revenues, such as fees on guarantees, dividends, and interest payable or receivable linked to acquired financial instruments. As regards column (D), in comparison to the net fiscal costs, the excessive deficit procedure (EDP) debt impact also includes the impact of reclassifications of financial entities (e.g. a bad bank) inside the government (without transactions), other flows and financial transactions not recorded in EDP debt.

State aid

- State aid to banks in some European countries from 2007 to 2017

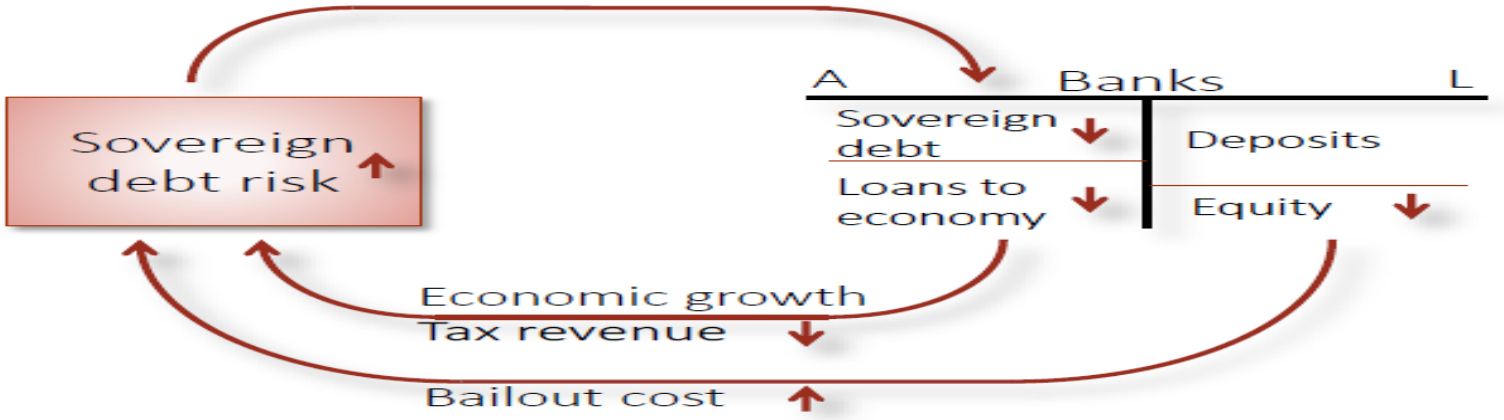
	billion euros	percentage of GDP
Germany	227	7.2
Spain	52	4.6
Ireland	58	22
Netherlands	23	3.2
Greece	40	24
Belgium	19	3.8
Austria	33	9.5
Portugal	18	11.3
Italy	13	0.8
EA	500	4.5
UK	101	4.3

A vicious circle between sovereign debts and banks

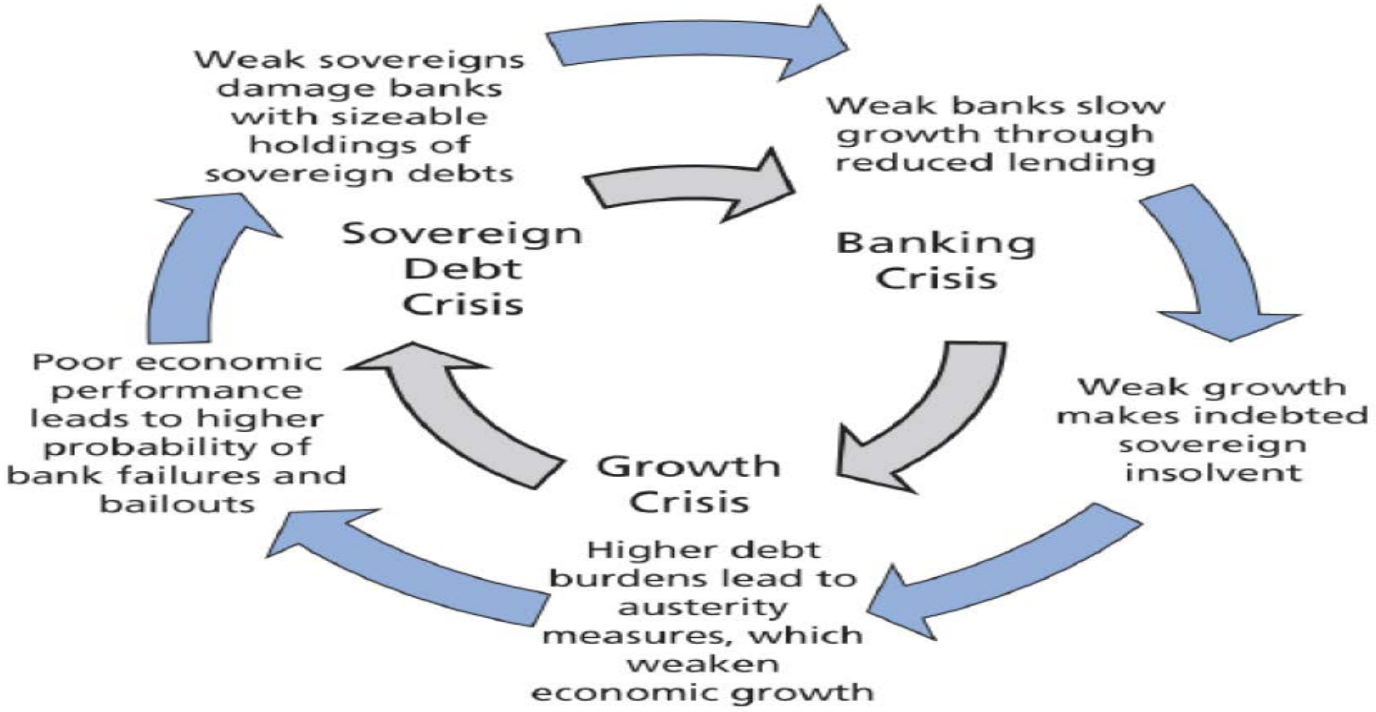
- ✓ Government aids to banks ↑ → sovereign debts ↑
- ✓ Banks hold large portfolio of Government bonds

- o The deterioration of sovereign creditworthiness reduces the market value of banks' holdings of domestic sovereign debt
- o This reduces the perceived solvency of banks and curtailed their lending activity
- o Moreover bank funding is influenced by Gov financing conditions (risk premiums)

- ▪ The resulting bank distress increases the chances that banks would have to be bailed out by the government, which increases sovereign distress even further
- ▪ Moreover, the recessionary impact of the credit crunch leads to a reduction in tax revenue, which also contributed to weakening government solvency



A vicious circle between sovereign debts and banks (2)



Source: Carletti (2017)

The global financial crisis added a considerable and persistent effect on public deficits and debts

- as the direct effect of the fall in output
- due to countercyclical fiscal measures to support output and employment
- due to measures to support the financial system

Four channels through which higher yields of public bonds may hit banks

(i) Funding channel, in terms of higher costs and lower flows, with a negative impact on loans

(ii) Collateral channel: banks provide Gov't bonds to get liquidity from ECB

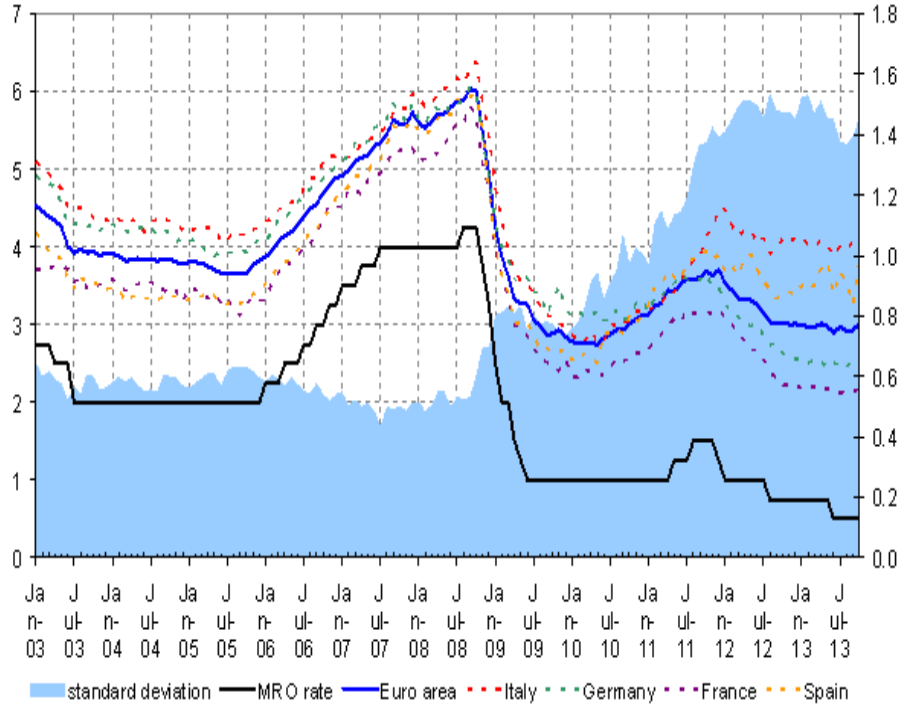
(iii) Profitability and capitalization channel: capital losses on bonds reduce profitability and may cause a pressure to increase capitalization

(iv) Public finance channel

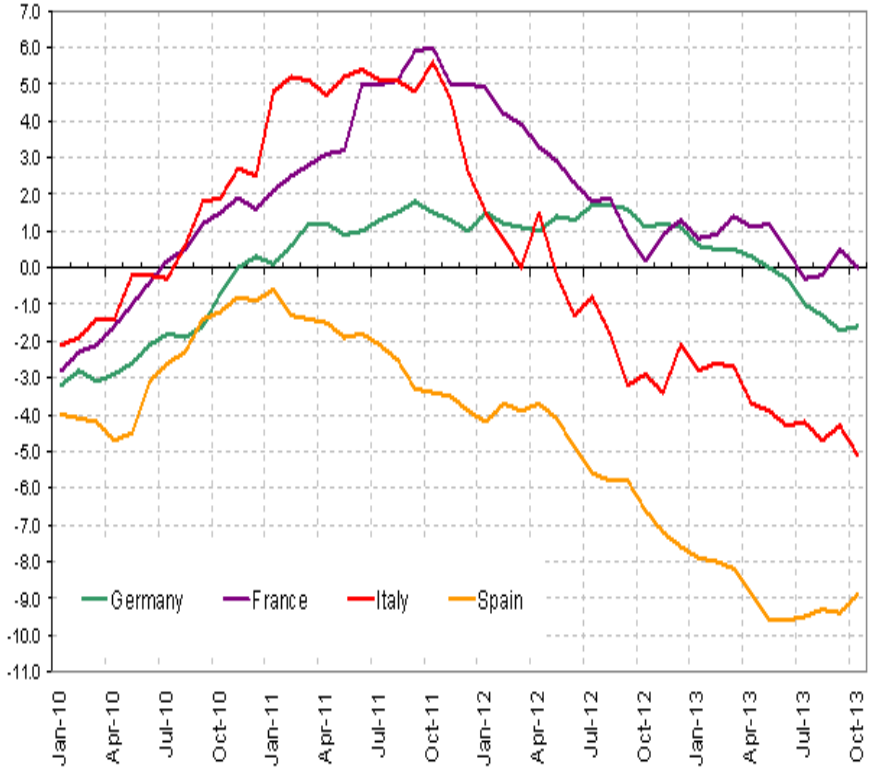
- After the Lehman Brothers collapse, the causality link was the opposite: banking crises determined State aid

Credit conditions became uneven across countries

Bank interest rates on loans to firms



Annual growth rates of bank loans to firms



cross-country heterogeneity of credit conditions was substantial...

The ECB actions

- Security Market Program (SMP): 2010-2012
- Forward Guidance
- 3-years Long Term Refinancing Operations (LTROs): 2011
- "*whatever it takes*"**:** 2012 and Outright Monetary Transactions (OMTs)
- Targeted Long Term Refinancing Operations (T-LTRO)
  - TLTRO I: 2014
  - TLTRO II: 2016
  - TLTRO III: 2019
- Negative lower bound on deposit facility
- **Asset-purchase programs (APP) ➔ Quantitative easing (QE)**
  - covered bonds: 2014
  - asset backed securities (ABS): 2014
  - expanded asset purchase programme (APP) - Public sector purchase programme (PSPP): started in 2015

ECB SMP - Security Market Program

✓ Transactions of debt securities in the secondary Euro-Area market

✓ The purpose is to restore the transmission mechanism

✓ ECB's program starts in May 2010 - on GR, IE, PT securities - and is formally terminated in September 2012. For Italy and Spain the program is active from August 8, 2011, to February 2012

✓ Under article 123 of the Treaty on the Functioning of the EU – the Maastricht Treaty – NCBs are prohibited from purchasing general governments' debt instruments issued on the primary market

✓ The purchase by NCBs or the ECB of public debt bonds in the secondary market is in principle allowed

- The adoption of the SMP takes into account the commitment of governments to fiscal consolidation
- The SMP impact on liquidity is sterilized

ECB SMP - Security Market Program (2)

How SMP supports an appropriate functioning of the monetary transmission mechanism?

- By announcing and implementing a large program of purchases of illiquid assets with highly volatile prices, the ECB objective was to **restore confidence** in the sovereign bond markets of several euro area countries
- therefore, to reduce volatility and increase liquidity of those markets
- and support an homogeneous transmission of monetary policy decisions

ECB intervention by the end of 2011

- In November and December 2011, the ECB reduces the official interest rates for a total of 50 bp
- Also in December announces a series of new measures to counter the risks of credit crunch and its effects on GDP and prices
  - Two **3 years LTROs**, implemented at the end of December and February 2012, which provides banks with approximately € 1 tr.
  - Broadens the range of assets eligible as collateral for refinancing operations
  - Reduces from 2 to 1% reserve requirements

- All these decisions quickly contrast tensions on banks' liquidity conditions
  - The lower risk of a crisis of funding was reflected in bank CDS (-150 bp); Euribor-OIS spreads declined (-60 bp)
  - In the first part of 2012 the Italian and Spanish banks regain access to international markets; signs of improvement of the availability of credit
  - Other segments of the financial market improve (e.g. bonds)

LTRO - *long term refinancing operations*

✓The most important measures taken by the end of 2011 are the massive injections of liquidity through two LTROs (December 2011 and February 2012), with maturity of 3 years

✓ Total gross borrowing by euro area banks: 1,020 bn

✓ Collateral eligibility is broadened, including also bank loans; operations are conducted as fixed rate tender procedures

✓The rate is fixed at the average rate of the main refinancing operations over the life of the operations

✓ The two LTROs reduce the tail risk of a systemic crisis. Without the ECB measures, credit contraction would have been much stronger than that observed (empirical analysis)

"Whatever it takes"

✓Notwithstanding the progress in the governance of the euro-area and in public finance, at the beginning of summer 2012 conditions of financial markets worsened

✓The spread between the 10 years Italian bond and the correspondent German bond became greater than 500 basis points

✓In July 2012 the high market yields of euro-area weaker countries signalled **fears of a break up** of the Monetary Union (Visco 2013)

✓*"Within our mandate, the ECB is ready to do* ***whatever it takes*** *to preserve the euro" (Draghi 2012)*

✓On September 2012 ECB announced OMTs' details

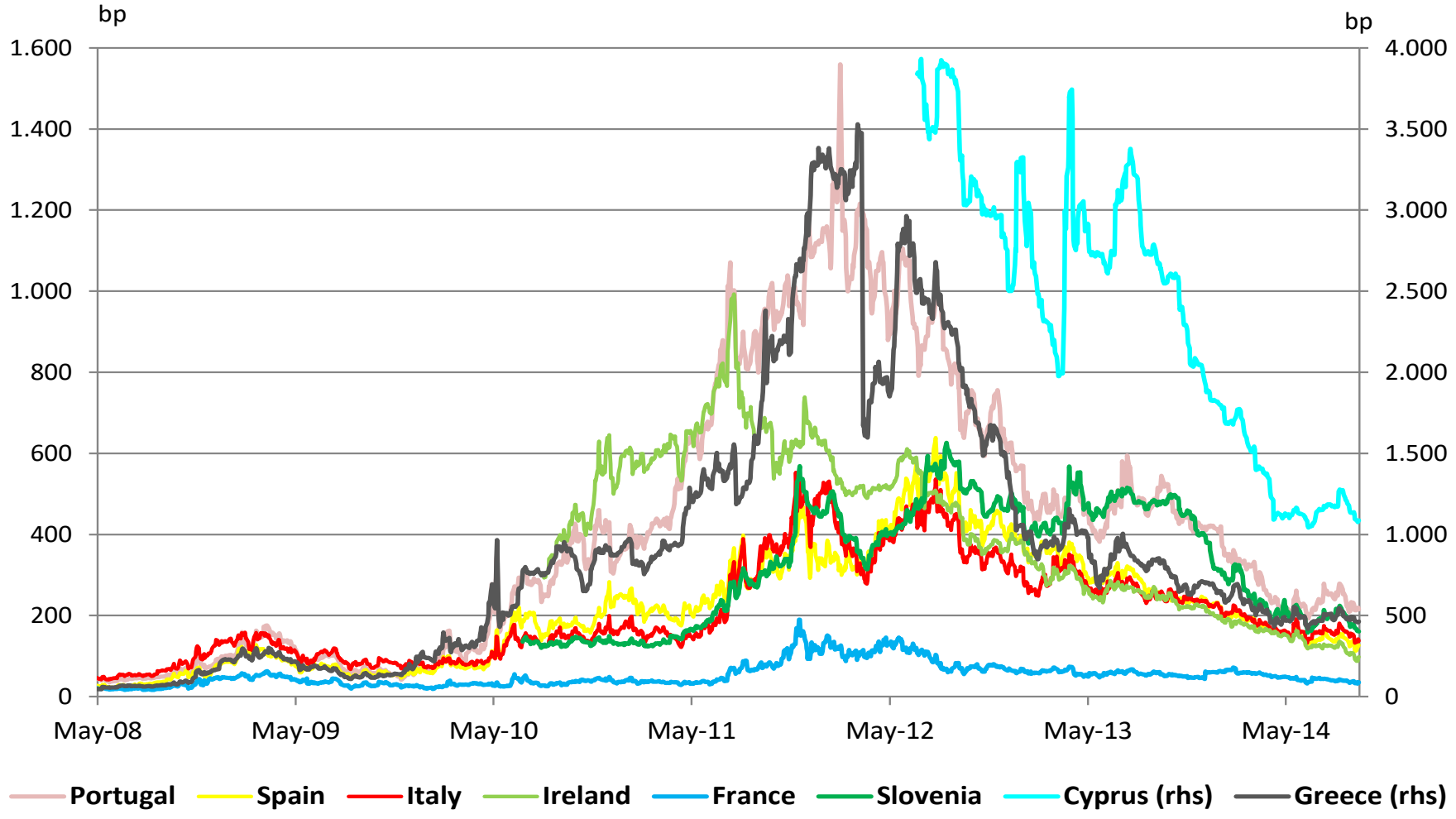
ECB OMT - Outright Monetary Transactions

- Purposes:
  - to restore the proper functioning of the transmission mechanism of monetary policy
  - to dispel the fears about an euro-area break-up and a return to national currencies

- The OMTs consist of purchases of government bonds on the secondary market
  - Their activation is subject to the conditionality associated with a program EFSF-ESM; the ultimate decision is up to the ECB
  - Cover securities with residual maturity of up to 3 years
  - The ECB will be treated as private creditors (*pari passu*)
  - The effects on the liquidity of the purchases will be sterilized

The effectiveness of the measures taken by the ECB

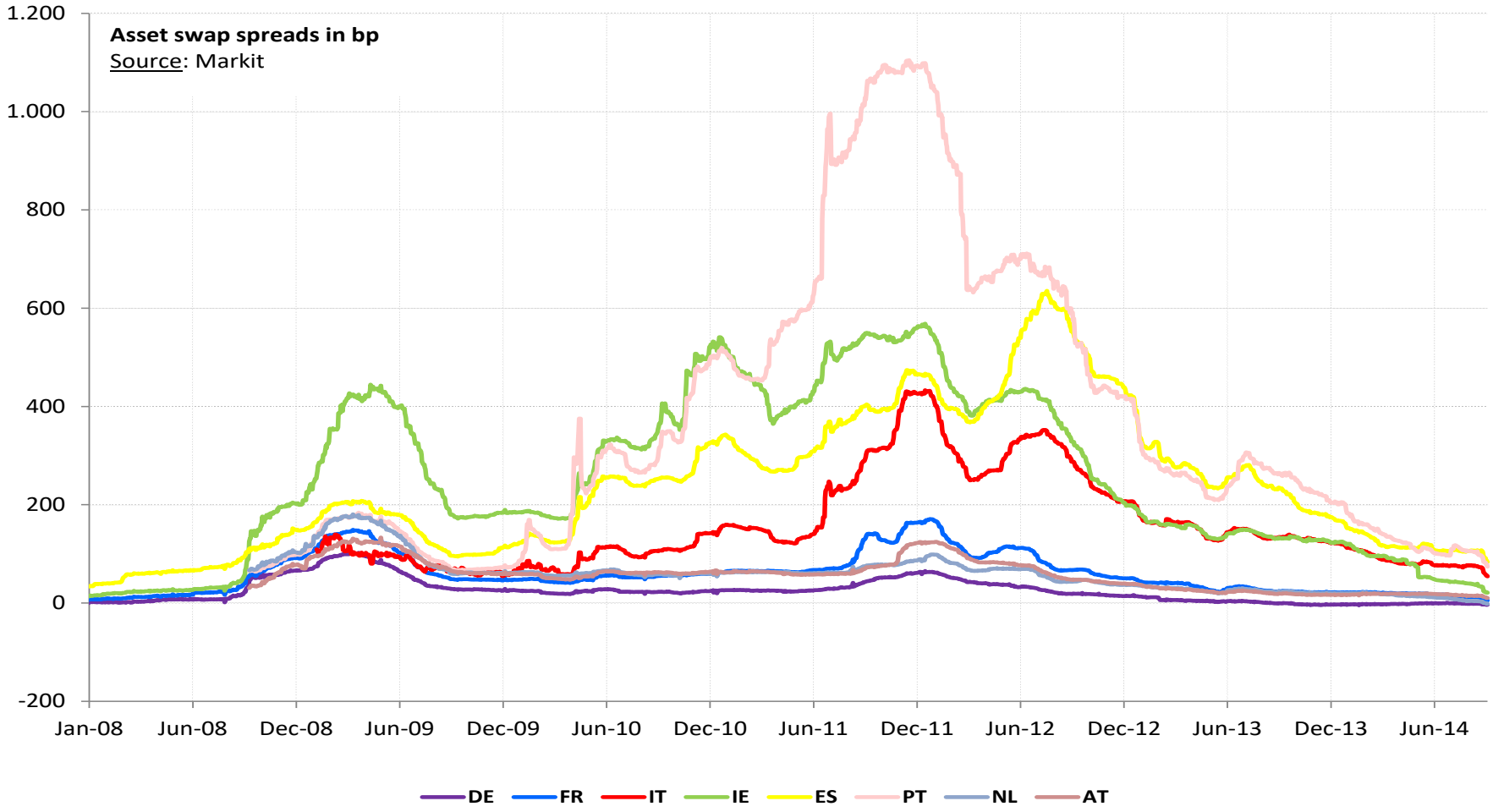
Yields on government bonds in the Euro-Area



Spreads on sovereign bonds have fallen

The effectiveness of the measures taken by the ECB (2)

Cost differentials of bank financing through bonds



have fallen ....

The ECB Forward Guidance

- What: **providing more explicit information on the future path of policy interest rates, conditional on the state of the economy**

- Why: the ECB aimed at:
  - preventing market volatility from influencing the monetary policy stance in undesired directions and hampering the transmission of the monetary accommodation
  - introducing greater monetary policy accommodation and therefore favouring a solid anchoring of inflation expectations

- *Characteristics*: qualitative guidance on its future use of the instrument, conditional on a narrative that refers to its objective and strategy
- *Qualitative*: the ECB communicates the likely policy orientation through a statement without explicit relation to an end date or numerical thresholds
- *Conditionality*: when the ECB describes the macroeconomic conditions under which the monetary policy orientation is expected to prevail, it explicitly refers to its inflation projections and its two-pillar strategy

Forward guidance (2)

July 2013: the ECB "*expects the **key interest rates** to remain at present or lower levels for an extended period of time. This expectation is based on the overall subdued outlook for **inflation** extending into the medium term, given the broad-based **weakness of the economy and subdued monetary dynamics***"

A. Key interest rates → monetary policy instrument

B. Inflation → monetary policy objective

C. Economic and monetary dynamics → monetary policy framework

In June 2014 the ECB introduced five measures

Facing a very slow recovery and risks of deflation the ECB decided:

- A new cut of the official rates and the decision to make negative the rate on the deposit facility
- Announcement of a T-LTRO I with a maturity in September 2018
- Prolongation of fixed rate, full allotment tender procedures
- Suspension of the operations sterilizing the liquidity injected under the SMP
- Purchases of covered bonds and asset-backed securities

Negative lower bound

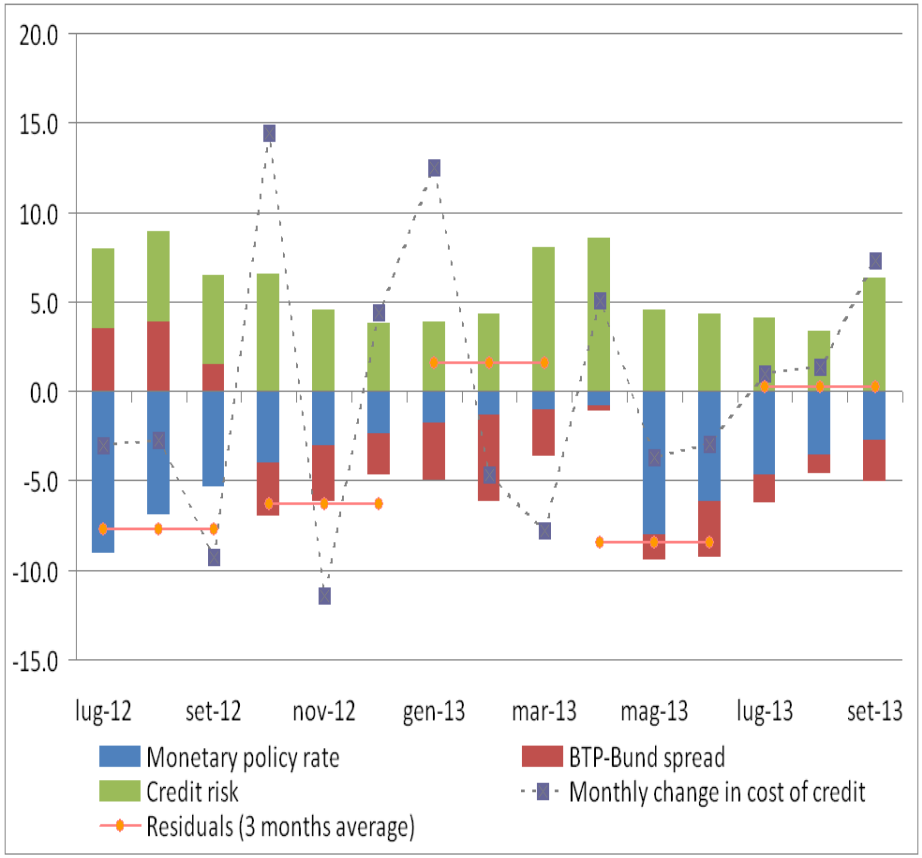
- The negative interest rate on overnight deposits held by banks with the Eurosystem also applies to the portion in excess of required reserves

- In addition to contributing to the reduction in market interest rates and the depreciation of the euro, the penalty rate promotes the circulation of liquidity and reduces fragmentation between national financial systems

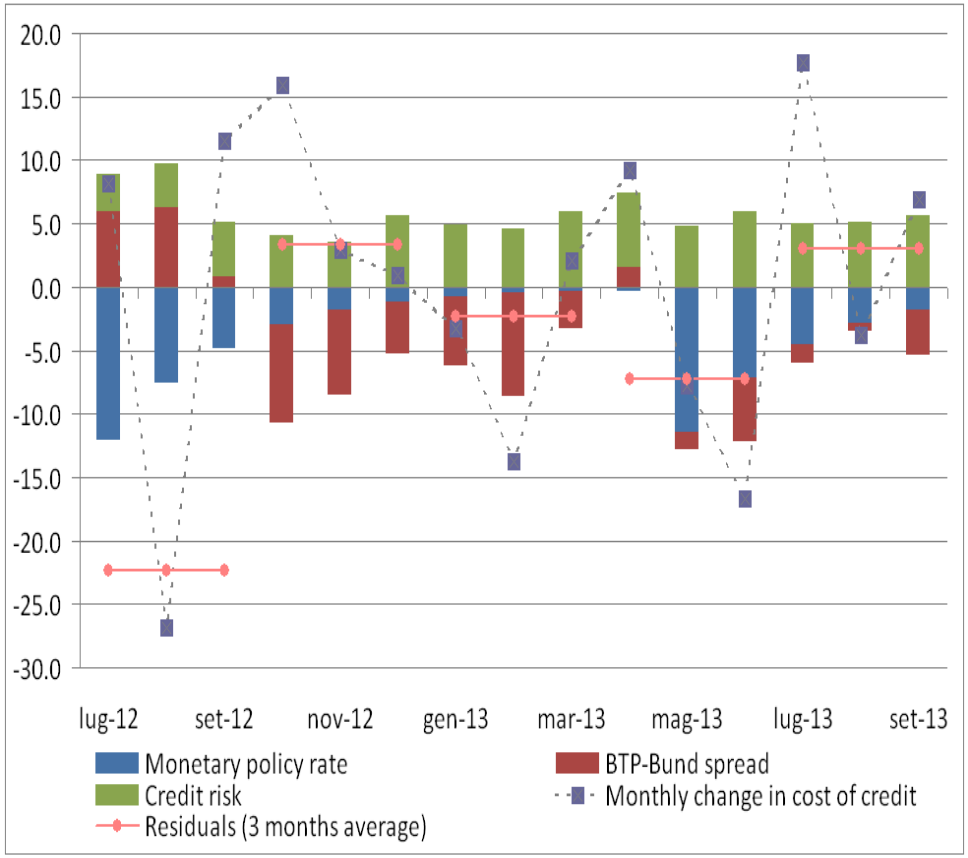
Negative lower bound (2)

Determinants of credit cost to firms in Italy

Bank interest rates on overdrawn



Bank interest rates on new businesses



T-LTRO I

- In order to support the provision of credit to the economy (announced in June 2014; maturity in September of 2018)
- The banks will have access to T-LTRO on very favorable terms (fixed rate equal to that of MRO + 10 bp)
- **ECB lending is subject to the expansion of credit to firms and households above a specific benchmark for each bank**
  - Initial allocation (in September and December of 2014) allowed banks to obtain funds up to 7 percent of the outstanding amount of loans to firms and households at the end of April 2014 (about 400 billion for euro area banks, 70 for the Italian ones)
  - Subsequently, from March of 2015 to June of 2016, it is possible a further appeal, equal to three times for each bank loans made in excess of the benchmark
  - The banks that, in the period between May 2014 and April 2016, will record a growth of loans not exceeding the benchmark will prepay the loans (in September 2016)

T-LTRO I (2)

- Objective: support lending through reduction of the cost of funding and lending, and increase in credit supply
  - Direct effect on banks funding's costs: by guaranteeing funds at an extremely advantageous cost and for an extended period of time, these operations enable banks to replace their most costly liabilities
  - Indirect effect on banks funding costs: the contraction in the supply of bank bonds may determine a fall in their yields (scarcity effect)
  - Indirect effect on funding costs of firms and households: The reduction in banks' funding costs favours a reduction of banks' lending rates

- The lower demand than the total funds assignable probably reflected the weakness of the euro-area, which had a negative impact on the **demand for credit**

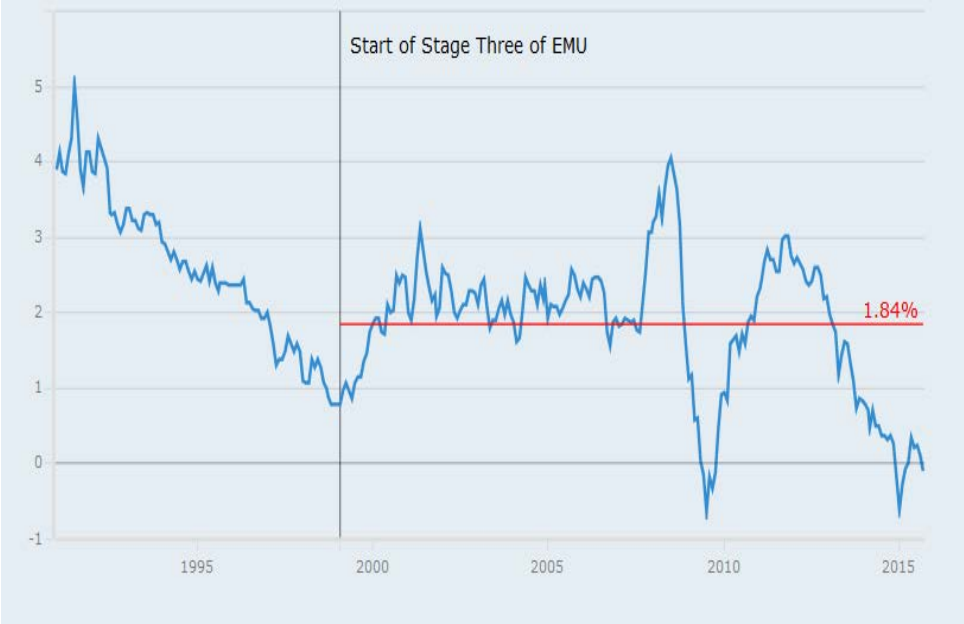
The programs for the purchase of covered bonds and ABS

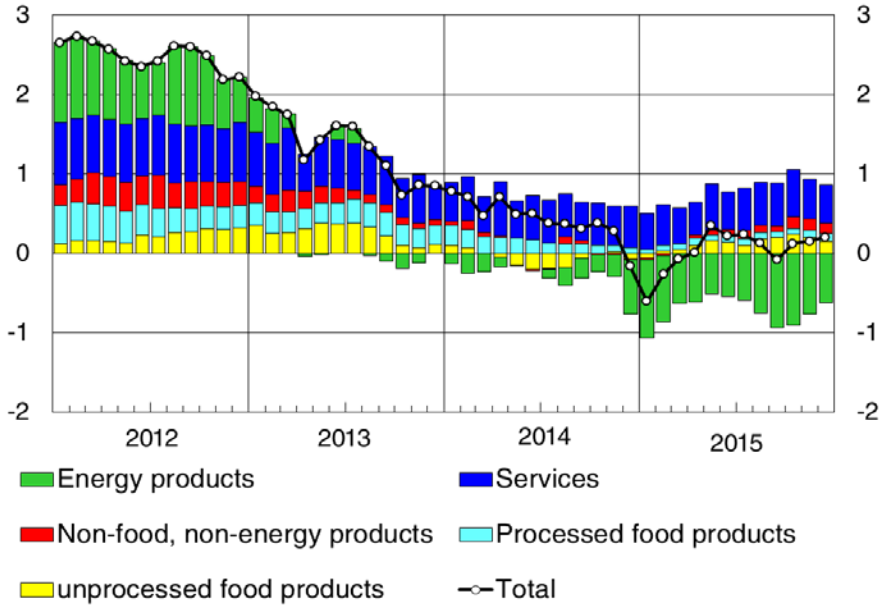
- In September 2014, the ECB decided to start buying securities issued as a result of the securitization of bank loans to firms and households (Asset-Backed Securities Purchase Program, ABSPP) as well as bonds (Covered Bond Purchase Program, CBPP3).

- These measures together with T-LTRO aim at fostering a source of financing for banks, promoting the provision of credit to the economy and broadening the balance sheet of the Eurosystem
- Covered bonds must:
  - be issued by euro-area banks and denominated in euro
  - be eligible for monetary policy operations
  - have a minimum rating equivalent to BBB-
  - have underlying assets that include exposure to private and/or public entities

Deflation risk (2013 – 2016)

- Inflation decreased sharply between 2013 and 2014

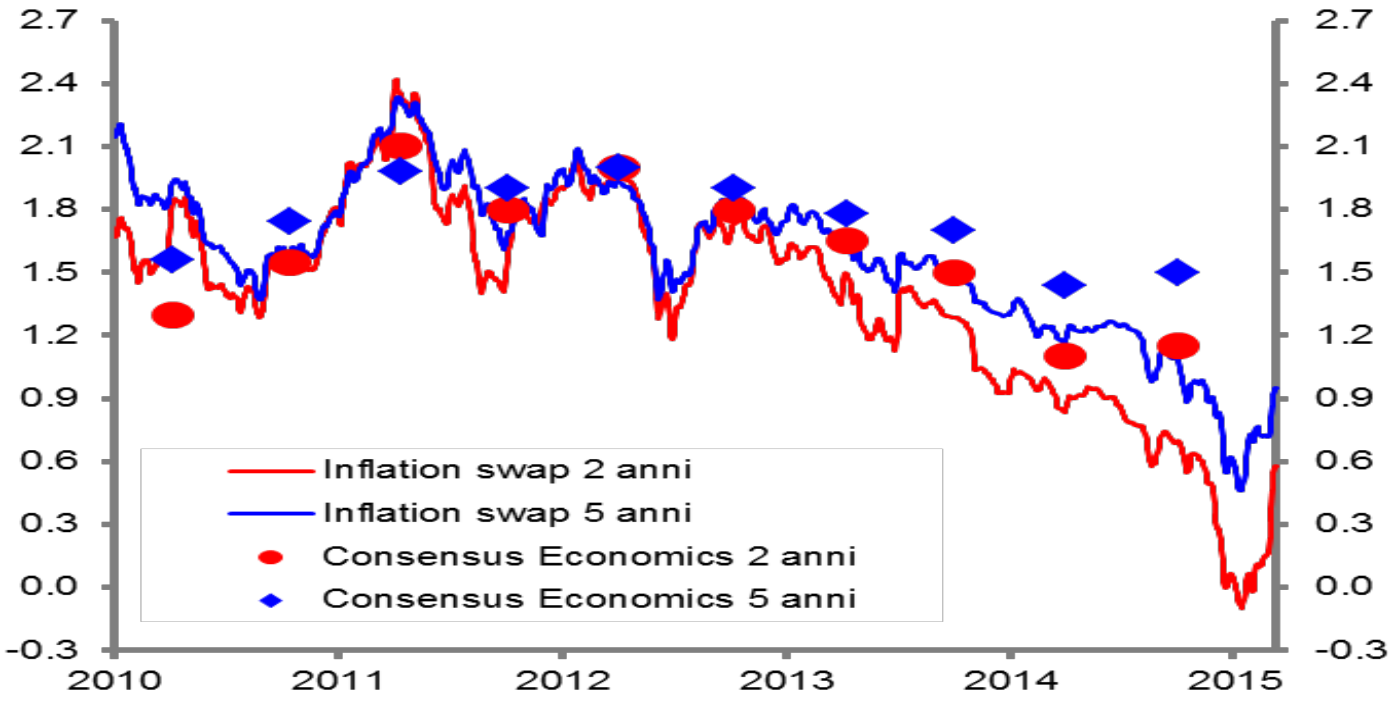




- Low inflation was a global phenomenon, widespread not only in Europe but also in the USA and other countries
- In the euro area the fall of inflation was determined not only by the decrease of oil prices but also by the demand contraction
- During the "Great Recession" that followed the global financial crisis inflation did not decrease so much and so long
- The Eurosystem goal is to achieve inflation rates below, but close to, 2% over the medium term

Inflation expectations worsened

- The Eurosystem goal is to achieve inflation rates below, but close to, 2% over the medium term

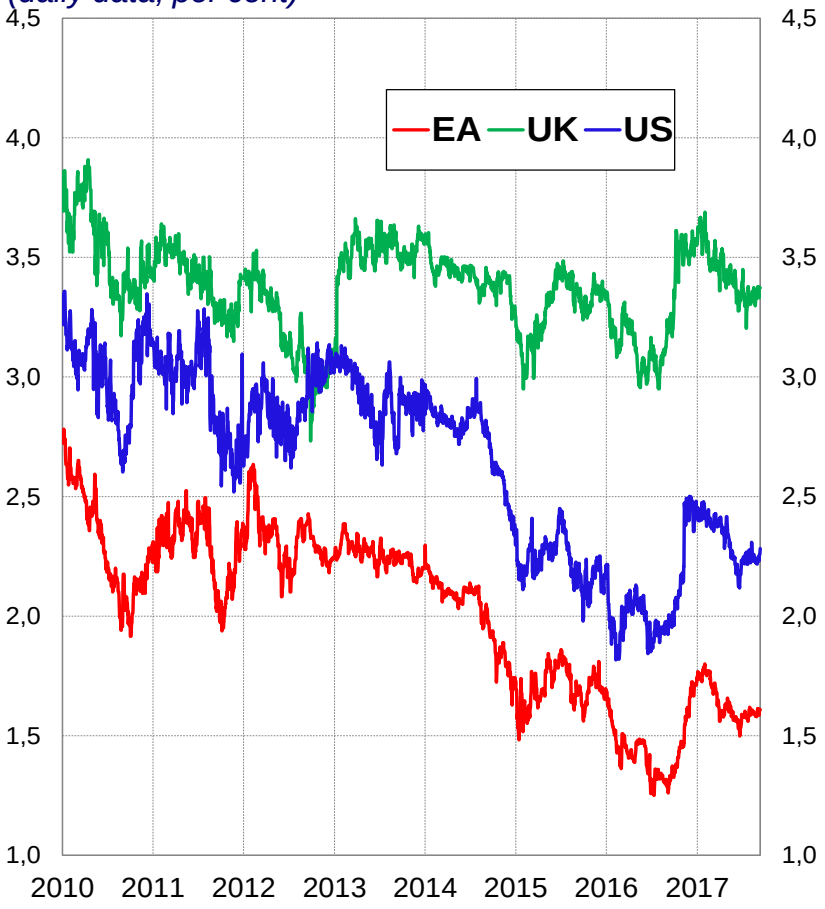


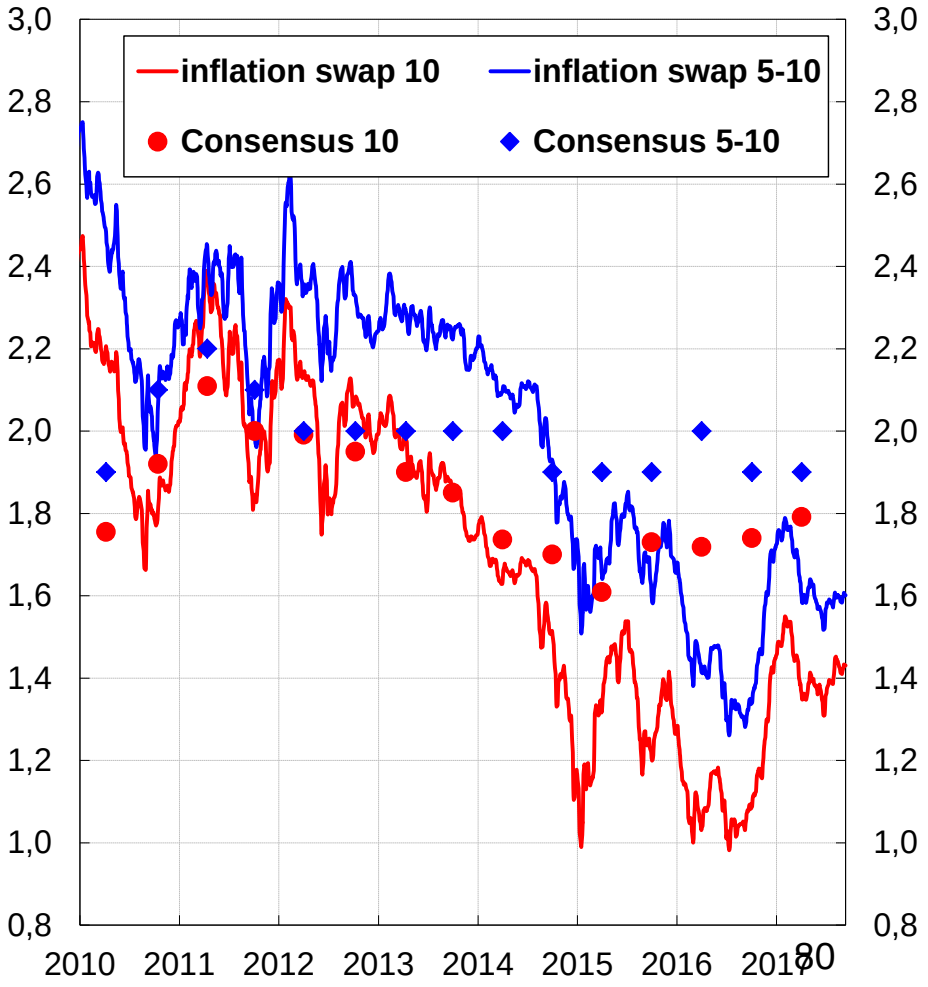
Since 2013 inflation expectations decreased both for short term and long term horizons. The fall accelerated in the last quarter of 2014

There were risks of a deanchoring of inflation expectations

If inflation expectations go far from ECB's goal, a risk of a loss of credibility of monetary policy materializes. Expectations of deflation may be self-fulfilling

Market-based long-term inflation expectations 5-10 year
(daily data; per cent)





Source: Bloomberg, Thompson Financial Datastream, Consensus Economics, and Bank of Italy's computations

80

Why is deflation dangerous?

✓ **debt deflation**

When inflation is low or when deflation occurs, the burden of debt service increases. This implies a reduction of firms' investments and of households' consumption

This thesis has been proposed for the first time by Irving Fisher, in "The Debt Deflation Theory of Great Depressions", Econometrica, 1933

✓ **zero lower bound (ZLB) and real interest rate**

Real interest rate = nominal interest rate – inflation

$$\Rightarrow r = i - \pi$$

If the nominal interest rate cannot be further reduced – because of the ZLB – a fall in the inflation rate causes an increase of the real interest rate

Why is deflation dangerous? (2)

- ✓ **the statistical measurement of inflation**

  The statistical measurement of inflation tends to overstate it, because part of price increases are linked to improvements in good quality

  In 1996 the Boskin Report concluded that the US Consumer Price Index overstated inflation by 1 per cent

Why is deflation dangerous? (3)

- **Growth**
  - ✓ $\pi \downarrow$ r ↑
  - ✓ I ↓ Credit demand ↓ aggregated demand↓ g ↓
  - ✓ C ↓
  - ✓ K ↓ (increases user cost of capital and discourages accumulation)
- **Sustainability**
  - ✓ Real debt ↑
  - ✓ r ↑
  - ✓ Debt burden ↑
- **Stability**
  - ✓ Low growth
  - ✓ Sustainability of debt (public and private)
  - ✓ MP ineffective (zero lower bound)
  - ✓ The banking system stability (worsens prospects of credit quality as a result of debt burden; induce banks to adopt more restrictive lending standards)
  - ✓ Difficult the adjustment of relative prices (easier with a bit of inflation because of nominal rigidities)
  - ✓ Macroeconomic adjustments (real wages; the adjustment process of macroeconomic intra – area imbalances)

The asset purchase programme (APP)

- Motivation: to achieve an inflation rate **below, but close to, 2 per cent**
- Launch of the programme: 22 **January 2015**
- Bonds: euro-denominated investment-grade securities issued by euro area governments, agencies and European institutions
- Amount: monthly purchases of euro 60 billion including Public Sector Purchase Programme (PSPP) and asset backed securities and covered bonds
- Start of the purchases: March 2015
- Modalities: purchases on the secondary market
- Maturities of the bonds: between 2 and 30 years
- End of the programme: purchases were initially planned until September 2016 and, in any case, **until the ECB sees an adjustment in the path of inflation consistent with the definition of price stability**

The asset purchase programme (2)

- ✓ In December 2015 the ECB expanded its monetary stimulus, introducing other measures

  - A new reduction of the rate on the deposit facility to -0,30
  - Extension of the programme until March 2017 or beyond if necessary
  - Expansion of the range of eligible assets to include bonds issued by regional and local governments located in the euro area
  - Reinvestment of the principal payments of the securities as they mature

A comprehensive package – March 2016

1) **"Conventional"** measures: as regards the key ECB interest rates
   - to lower the interest rate on the main refinancing operations by 5 bp to 0.00%
   - the rate on the marginal lending facility by 5 bp to 0.25%
   - the rate on the deposit facility by 10 basis points to -0.40%

2) **Asset purchase program**
   - Expand the monthly purchases under APP from **€60 billion to €80 billion**. They were intended to run until the end of March 2017, or beyond, if necessary
   - Increase the issuer and issue share limits for the purchases of securities issued by eligible international organizations and multilateral development banks from 33% to 50%.
   - Include investment-grade euro-denominated bonds issued by non-bank corporations established in the euro area in the list of assets that are eligible for regular purchases

A comprehensive package – March 2016 (2)

3) T-LTRO II

- new 4 targeted longer-term refinancing operations, starting in June 2016
- each with a maturity of four years
- counterparties entitled to borrow up to 30% of the stock of eligible loans as at 31 January 2016
- the interest rate is fixed over the life of each operation, at the rate on the refinancing operations prevailing at the time of take-up (= 0.00%)
- for banks whose net lending exceeds a benchmark, the rate applied to the TLTRO II will be lower, and can be as low as the interest rate on the deposit facility (< 0.00%)
- no requirement for mandatory early repayments under TLTRO II, and switches from TLTRO I will be allowed

4) Forward Guidance

- "looking ahead, taking into account the current outlook for price stability, the Governing Council **expects the key ECB interest rates to remain at present or lower levels for an *extended period of time*, and well past the horizon of our net asset purchases"**

Further refinements of APP in 2016 and 2017

- In December 2016, to keep expansionary monetary conditions adequate to ensure a rise in inflation, the Governing Council again extended the duration of the APP until at least the end of 2017; starting in April 2017, the monthly purchases were scaled back to €60 billion, as in the initial phase of the programme

- In October 2017 the Governing Council announced a recalibration of the APP: the duration of the programme was extended at least until the end of September 2018 and the pace of monthly purchases was readjusted to €30 billion as from January 2018

- These decisions reflected the assessment that an ample degree of monetary stimulus remained necessary for underlying inflation pressures to continue to build up amid growing confidence in the gradual convergence of inflation rates towards the ECB inflation aim

The Asset Purchase Program channels

- There are many channels through which asset purchases can influence monetary conditions as well as economic activity and inflation

- **Money multiplier**: the asset-purchase-induced increase in the monetary base will increase monetary aggregates, through more credit to non-financial corporations and households, thus boosting demand
- **Altering yields**: purchase by the ECB of assets will reduce their net supply to the private sector and increase their prices, and thereby reduce returns that assets yield
- **Portfolio rebalancing**: unless the purchased asset is a very close substitute for cash (such as short-term Treasury bills), investors who sold the asset will search for other investment opportunities, pushing up prices and reducing yields in other markets too

The Asset Purchase Program channels (2)

- **Exchange rate**: via portfolio rebalancing, previous asset holders could invest in assets denominated in other currencies and thereby depreciate the euro. This in turn might increase import prices and thereby inflation, but could also boost export production and thereby economic activity

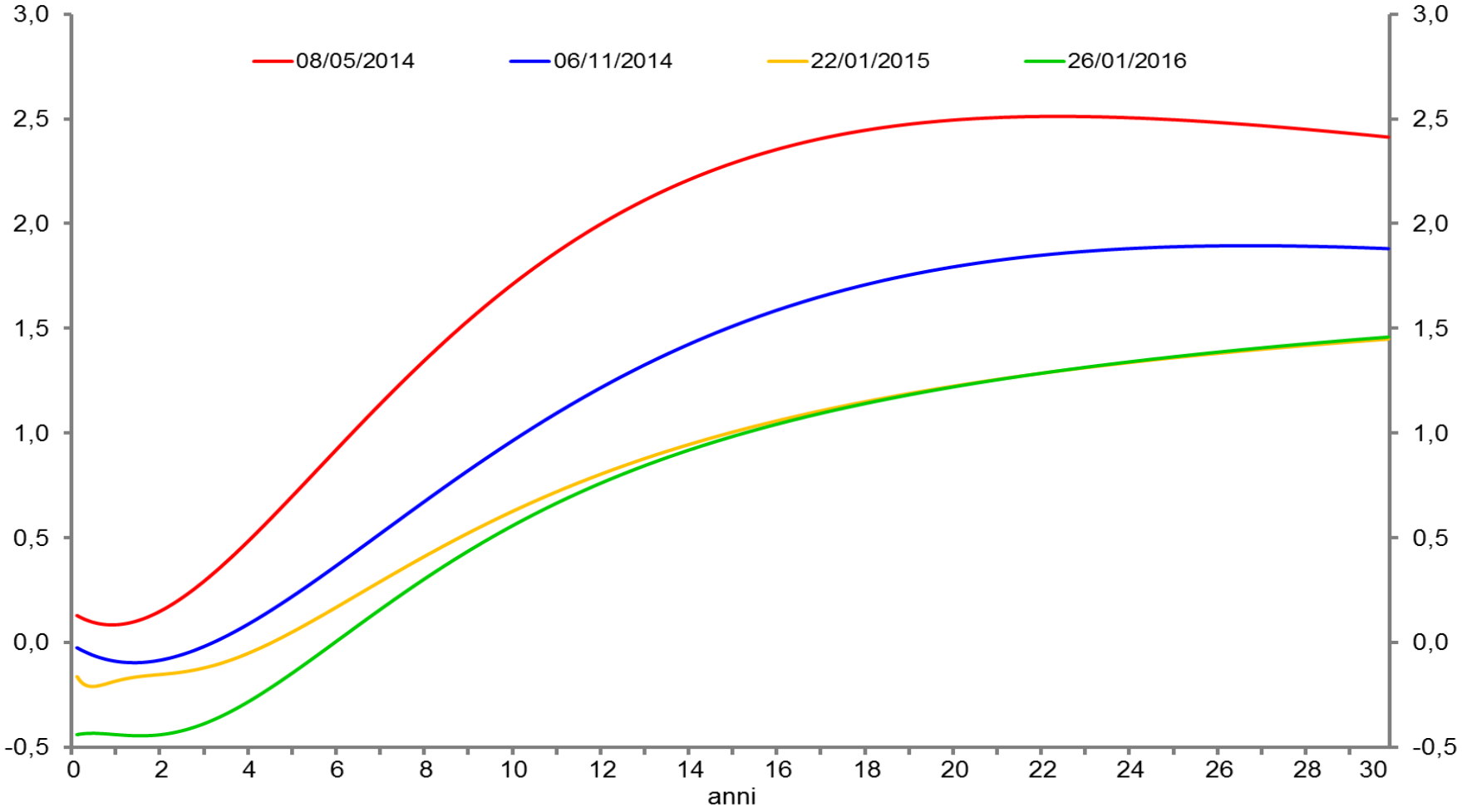
- **Wealth effect**: the increase in asset prices can lead to a wealth effect for asset holders, which might increase aggregate demand

- **Signalling**: asset purchases by the ECB could signal to market participants the goal of further easing monetary conditions. This can have an impact on inflation expectations and the expected future path of policy rates, which would lead to a reduction in real interest rates today

The effects of APP on the markets

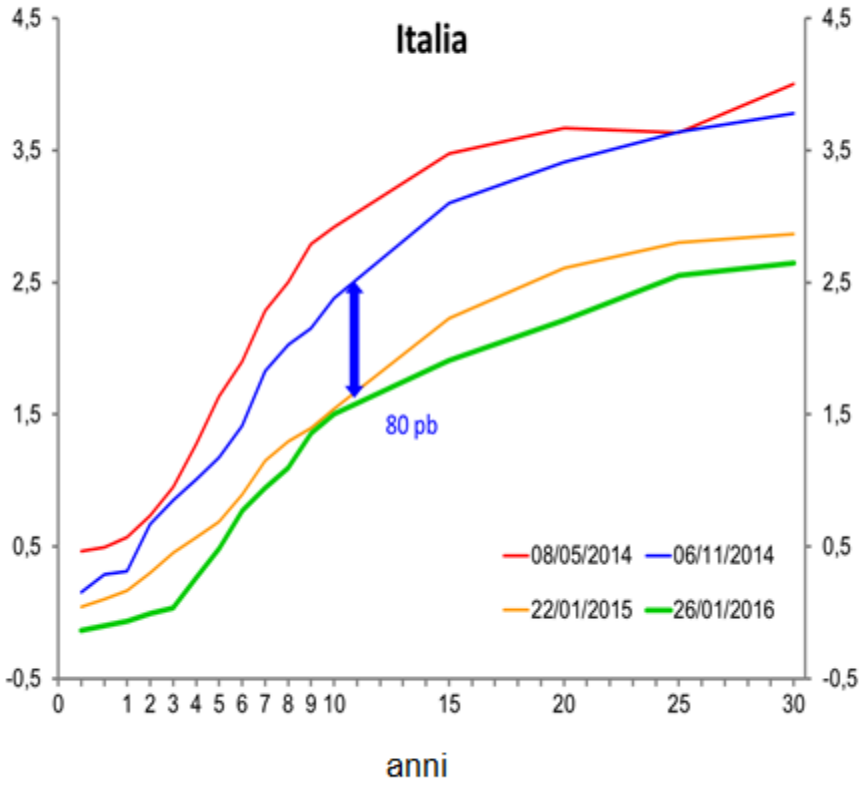
Term structure of the yields on government bonds (AAA)

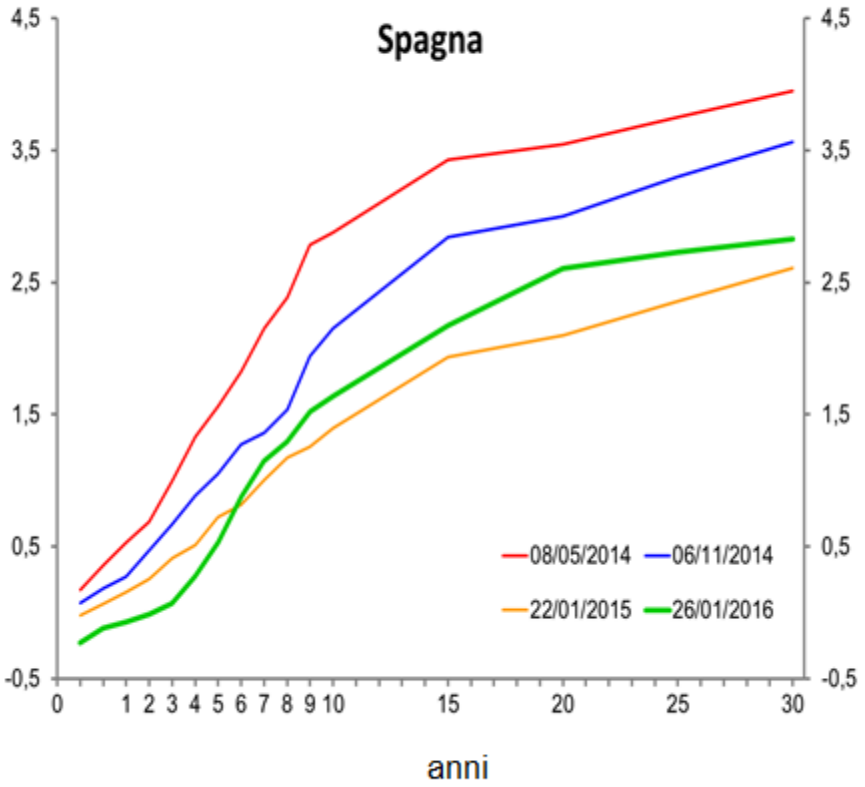
(*percentage points*)



The effects of APP on the markets (2)

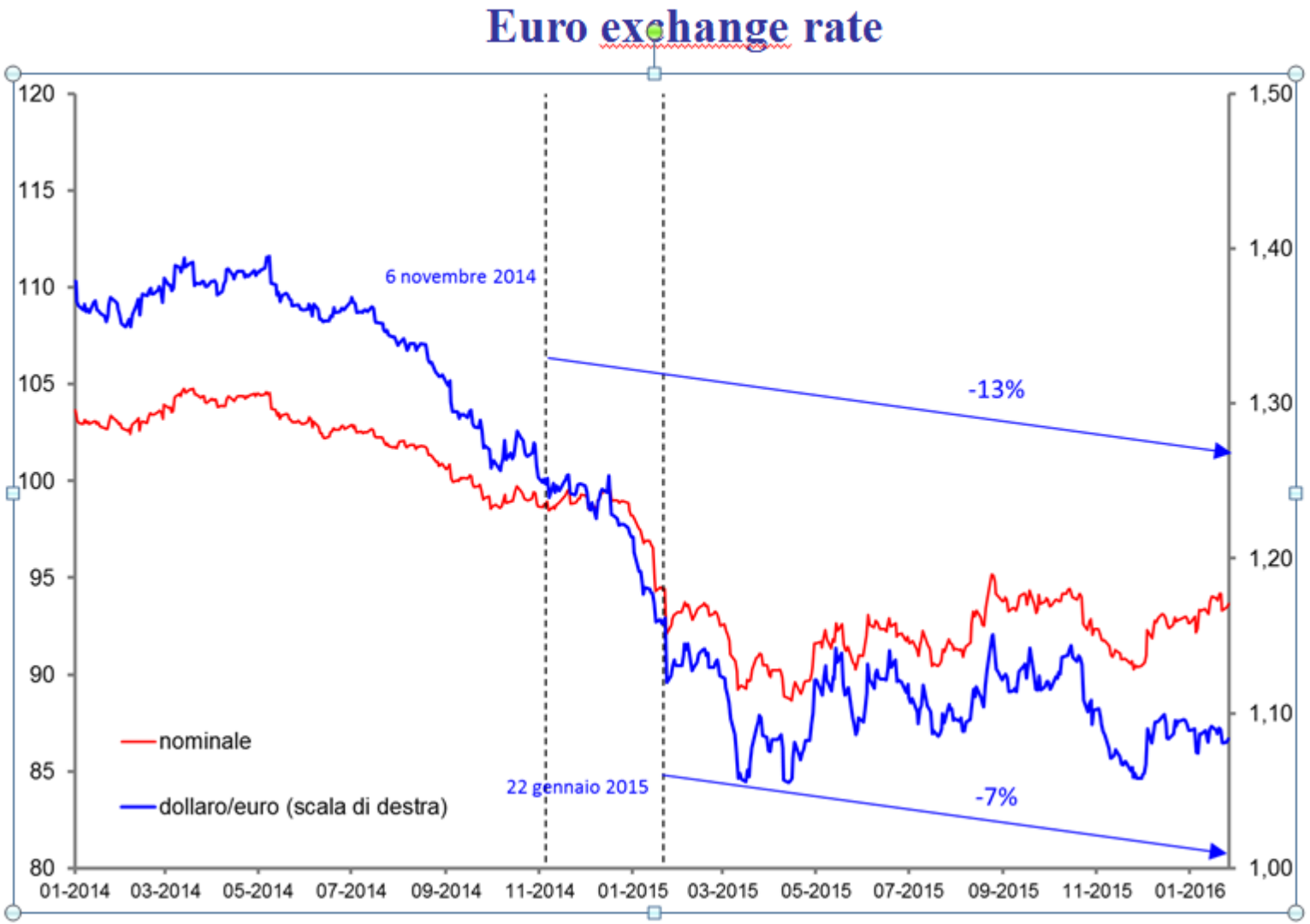
Term structure of Italian and Spanish bonds (*percentage points*)



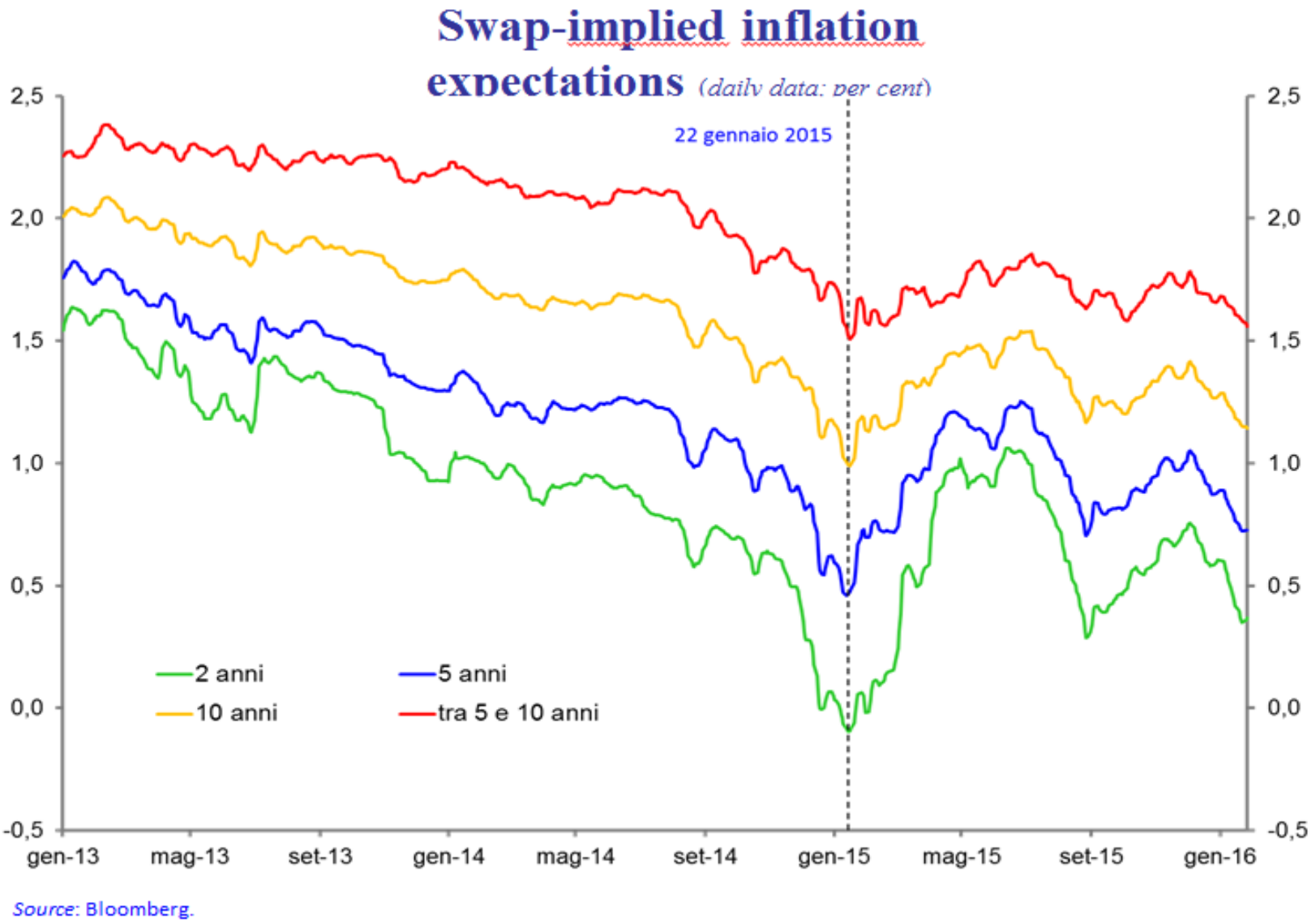


Source: Bloomberg.

The effects of APP on the markets (3)



The effects of APP on the markets (4)



Source: Bloomberg.

Channels through which asset purchases can influence banks

- **Bank lending rates**

✓ were higher in the periphery

- For the periphery, nominal lending rates to non-financial corporations were higher than in the core, and because of even lower inflation expectations than in the core, real interest rates were significantly higher
- The yield differential between the lending rates in core and periphery countries reflected financial fragmentation and greater credit risk in the periphery

✓ The QE helped, both

- reducing fragmentation, facilitating capital flows and the portfolio recomposition between countries and the adjustment of relative prices
- reducing the risk of credit via improved economic conditions

Channels through which asset purchases can influence banks (2)

- **Bank lending volumes**

✓ **Wealth effect (firms and households)**: the increase in asset prices can lead to a wealth effect for the asset holders, and then increase the bank clients' collateral value

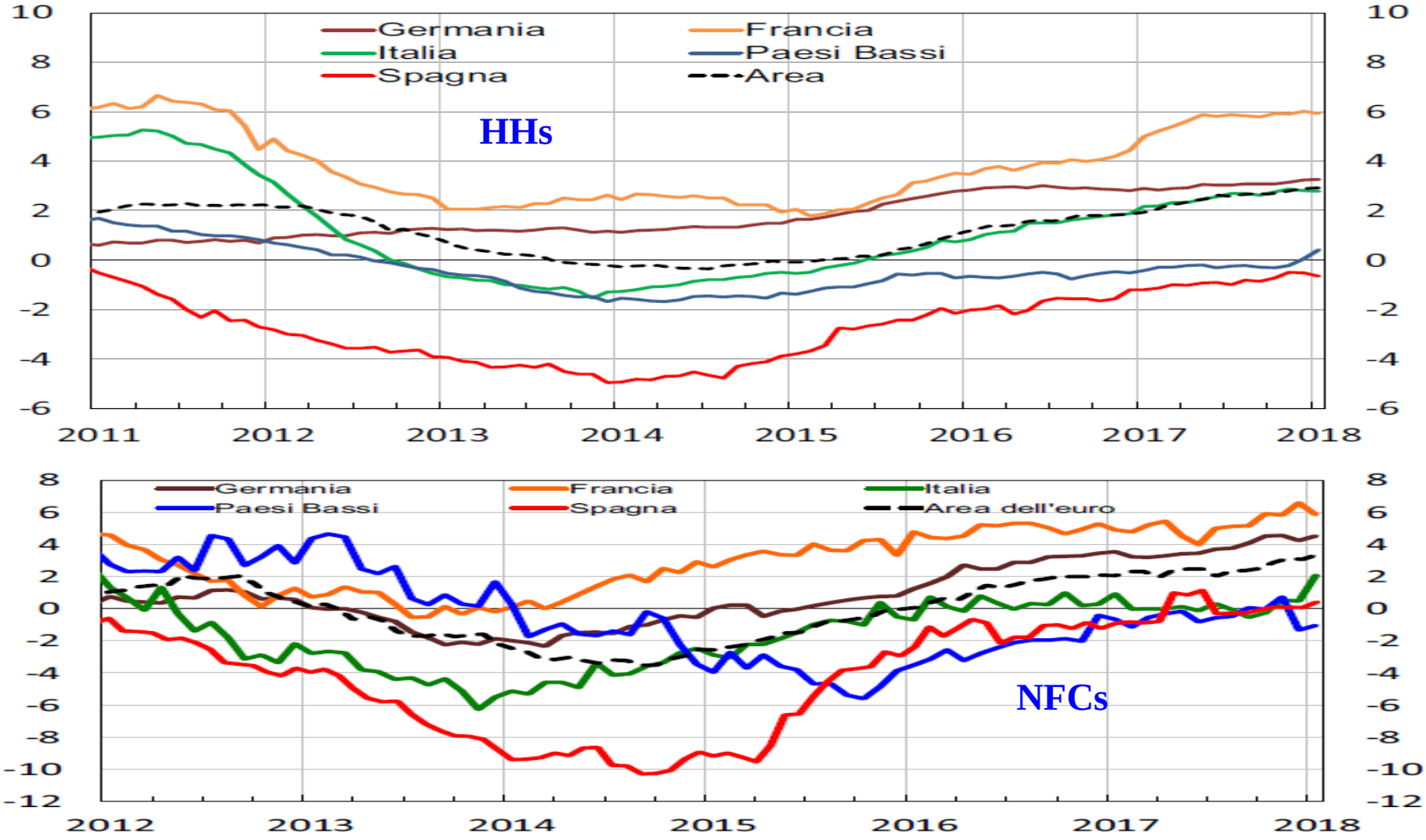
✓ **Wealth effect and service of debt (firms and households)**: the increase in asset prices

price ↑ → r ↓ → rDebt ↓ → newDebt ↑ → bank loans (demand) ↑

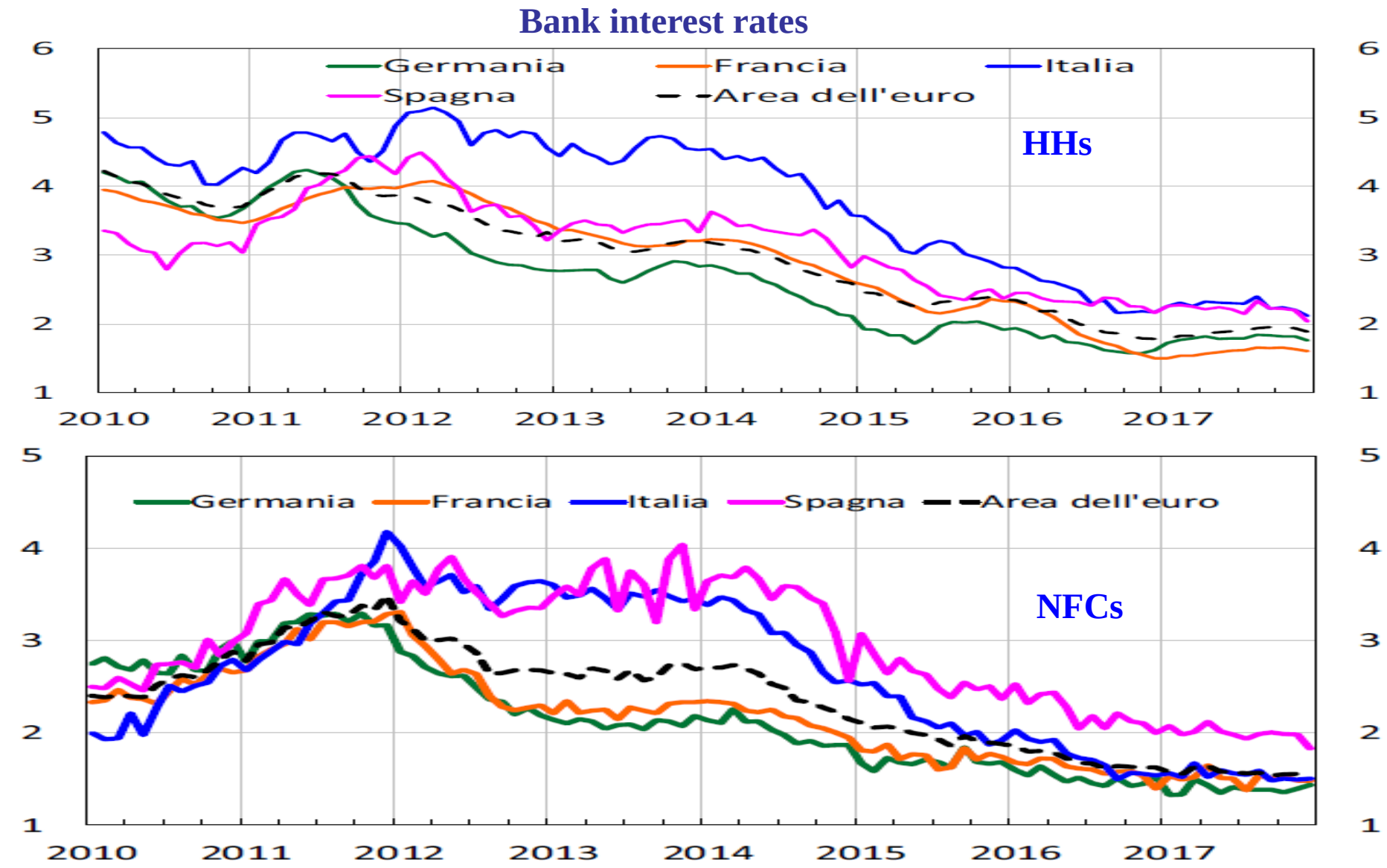
✓ **Wealth effect (banks)**: the increase in asset prices can lead to a wealth effect for the asset holders, who are banks as well as other investors, NW ↑ → K ↑ → bank loans (supply) ↑

QE contributed to higher growth rates of loans (3)

Growth rates of bank loans to households and non-financial corporations



QE contributed to lower bank interest rates



More recent developments - 2018

In June and December 2018 the ECB Governing Council concluded that progress towards a sustained adjustment in inflation seemed substantial

The GC announced 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 euro 15 billion until the end of December 2018

The Council reiterated that significant monetary stimulus is still needed to support inflation developments over the medium term

TLTRO III - March and June 2019

At its 7 March and 6 June 2019 meetings the ECB GC introduced a new series of targeted longer-term refinancing operations (TLTRO-III)

- to preserve favourable conditions on the credit market and ensure the orderly transmission of monetary policy
- there will be 7 operations, conducted every quarter, over the period from September 2019 to March 2021. Each operation will have a maturity of two years. The interest rate in each operation will be set at 10 basis points above the average rate applied in the Eurosystem's main refinancing operations over the life of the respective TLTRO
- the cost for banks can decrease according to the lending they disburse, down to a value corresponding to the average interest rate on the deposit facility plus 10 basis points.

➢ The GC also assessed that, at this point in time, the contribution of negative interest rates to the accommodative monetary policy stance is not jeopardized by possible side effects on bank-based intermediation. However, the Council will continue to monitor the situation and assess whether mitigating measures are needed in the future

A new package of expansionary measures - 12 September 2019

At its 12 September 2019 meeting, as announced in the previous meetings, the ECB Governing Council adopted a new package of expansionary measures deemed appropriate to counter the downside risks to inflation stemming from the weakening of the economic outlook. The Council:

1. lowered the Eurosystem deposit facility rate by 10 basis points to -0.50 per cent and expects the key interest rates to remain at their present or lower levels until the inflation outlook robustly converges to a level sufficiently close to 2 per cent
2. decided to restart net purchases under the expanded asset purchase programme (APP) at a monthly pace of €20 billion beginning in November and continuing for as long as necessary
3. relaxed the terms of its new series of targeted longer-term refinancing operations (TLTRO III)
4. introduced a new remuneration system for the reserves held with the Eurosystem (a two-tier system whereby part of banks' holdings of excess liquidity will be exempt from the negative deposit facility rate and will be remunerated at 0.0 per cent)

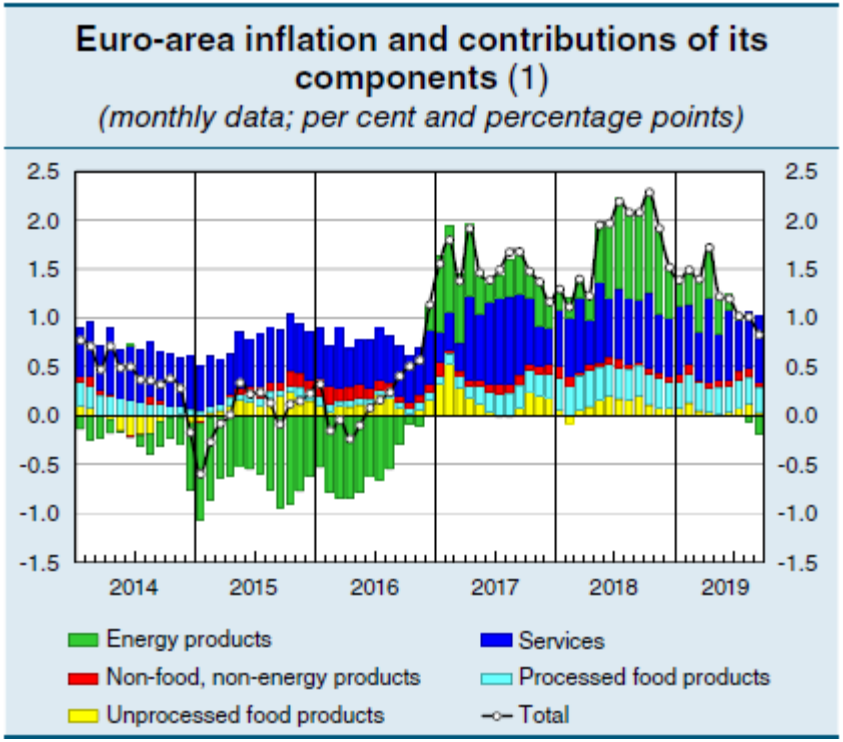
A new package of expansionary measures - 12 September 2019 (2)

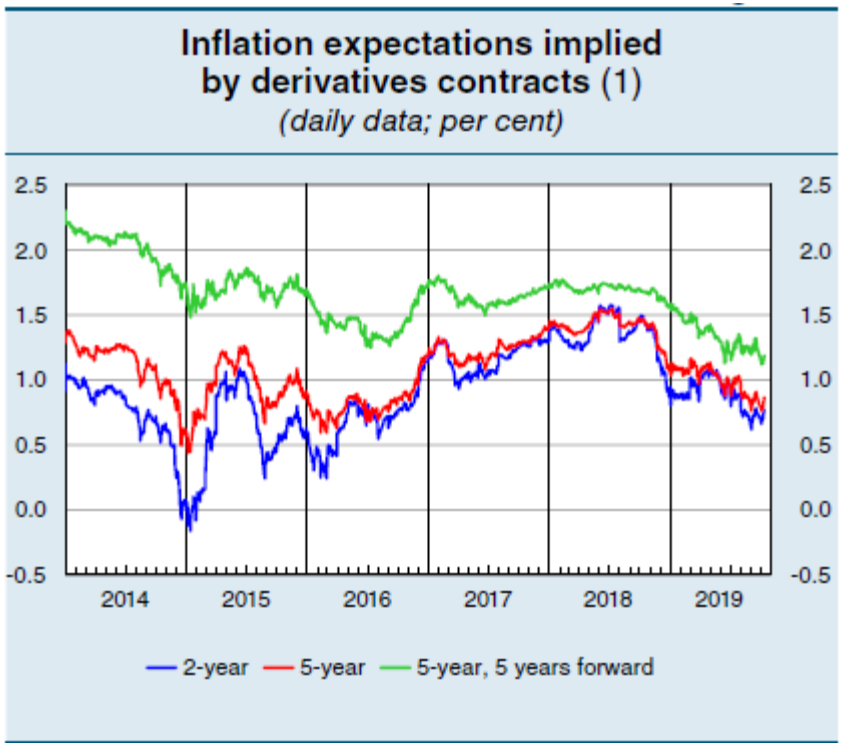
- ✓ The Council's decisions were taken in response to an inflation rate that continues to be markedly lower than the inflation aim, against the backdrop of a still weak euro-area economy and growing downside risks to inflation

- ✓ The Council had already announced in July that it was determined to act if the inflation outlook did not improve.

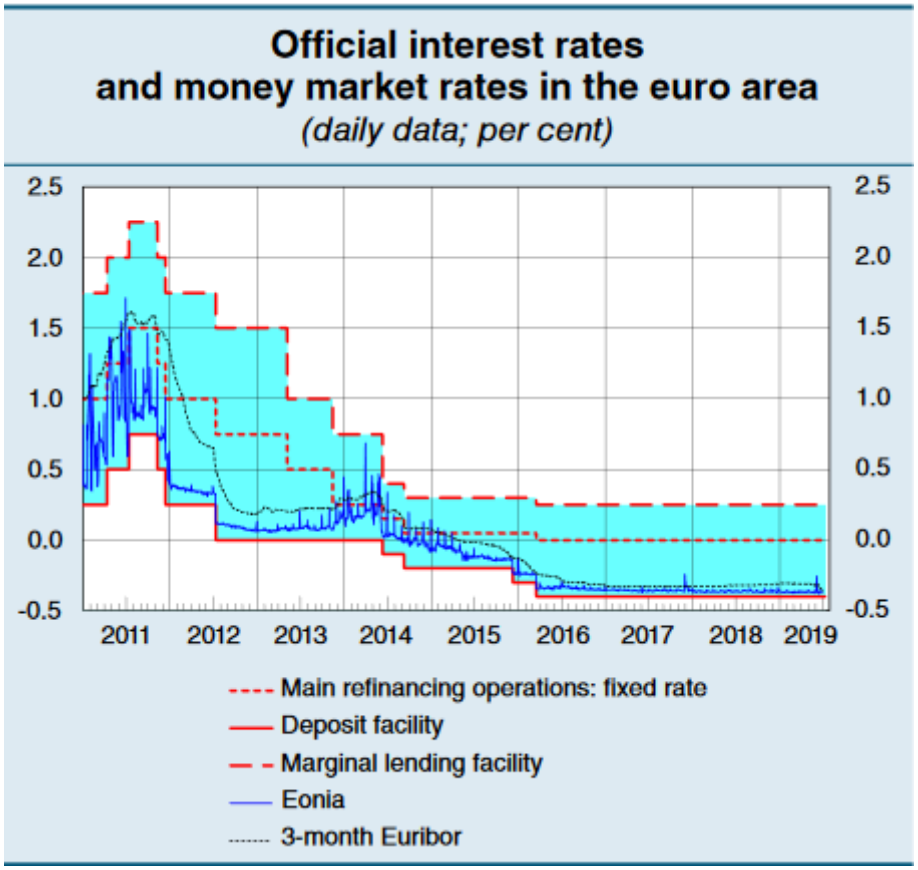
- ✓ The possibility of providing additional monetary stimulus had been anticipated by market operators since the beginning of the summer, and had gradually been reflected in the prices of financial assets. Between mid-June and end-of-day 12 September 2019:
  - long-term inflation expectations (those implied by five-year, five years forward inflation swaps) rose by about 20 basis points, to 1.3 per cent
  - yields on euro-area risk-free assets decreased: that on ten-year overnight indexed swaps (OIS) fell by more than 30 basis points
  - the euro depreciated by 1.7 per cent against the dollar

A graphic evaluation (1)

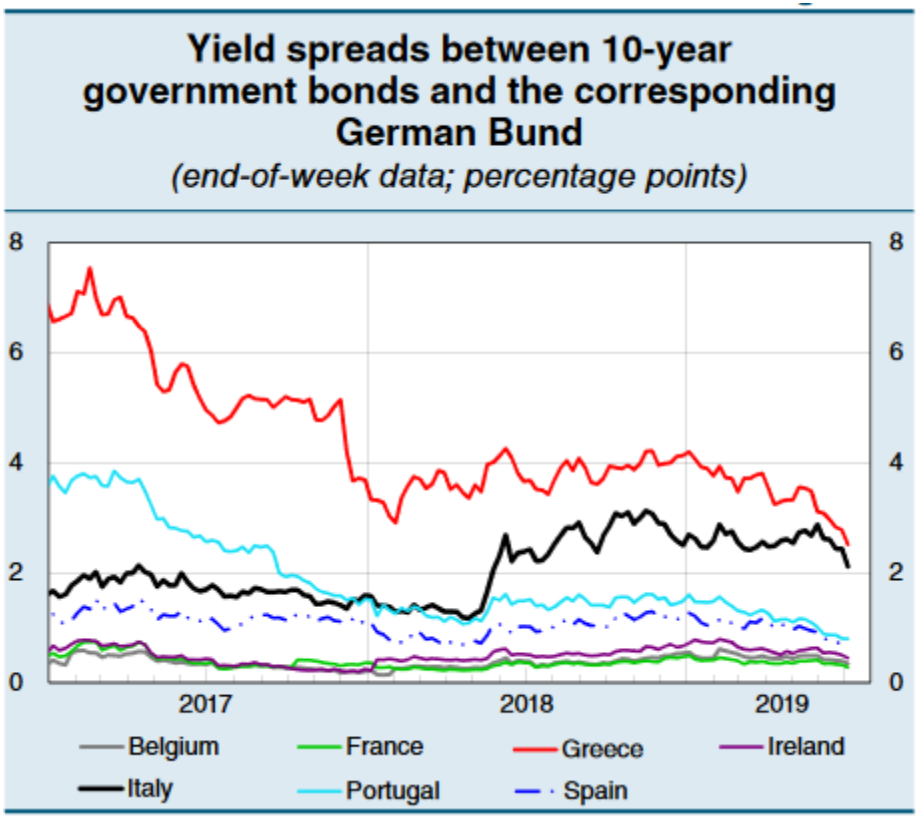




A graphic evaluation (2)

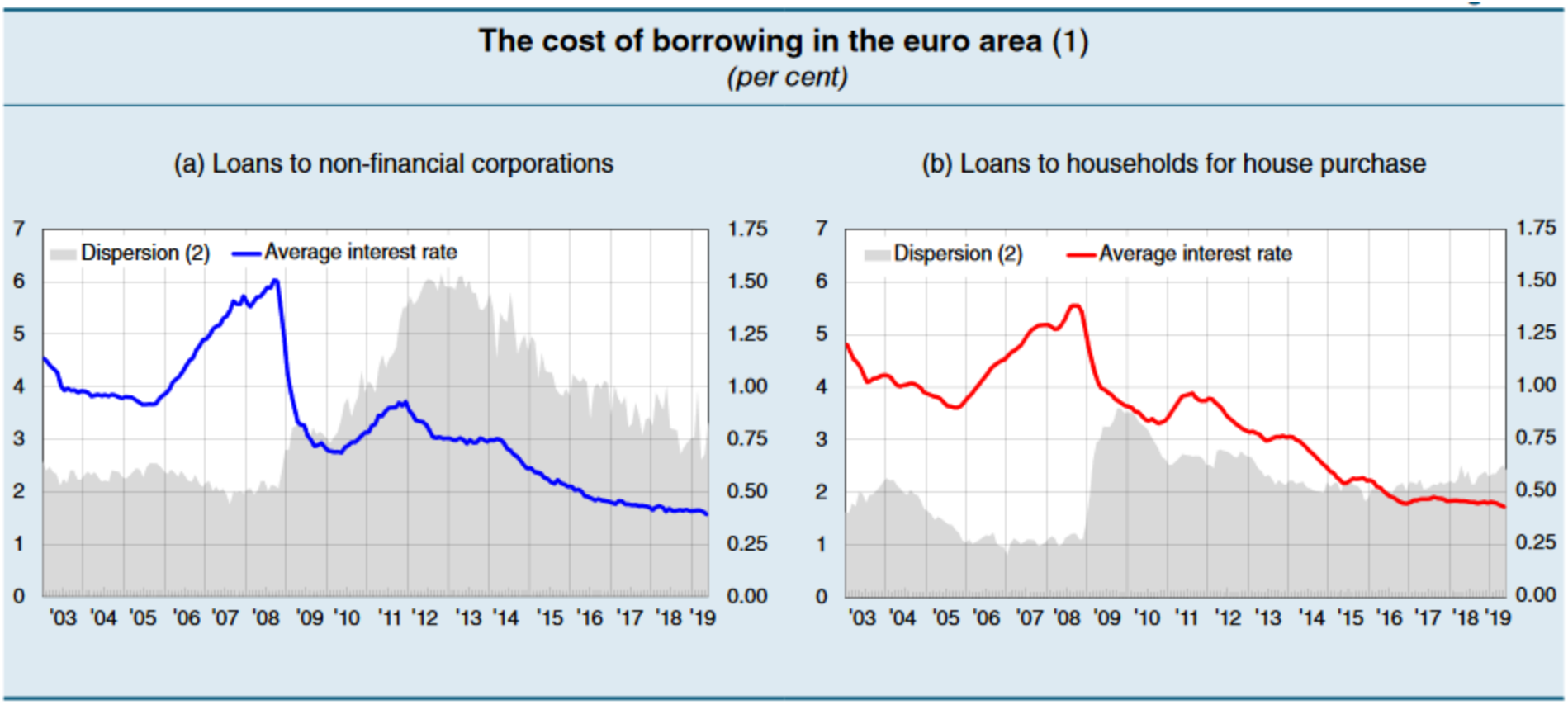


A graphic evaluation (3)



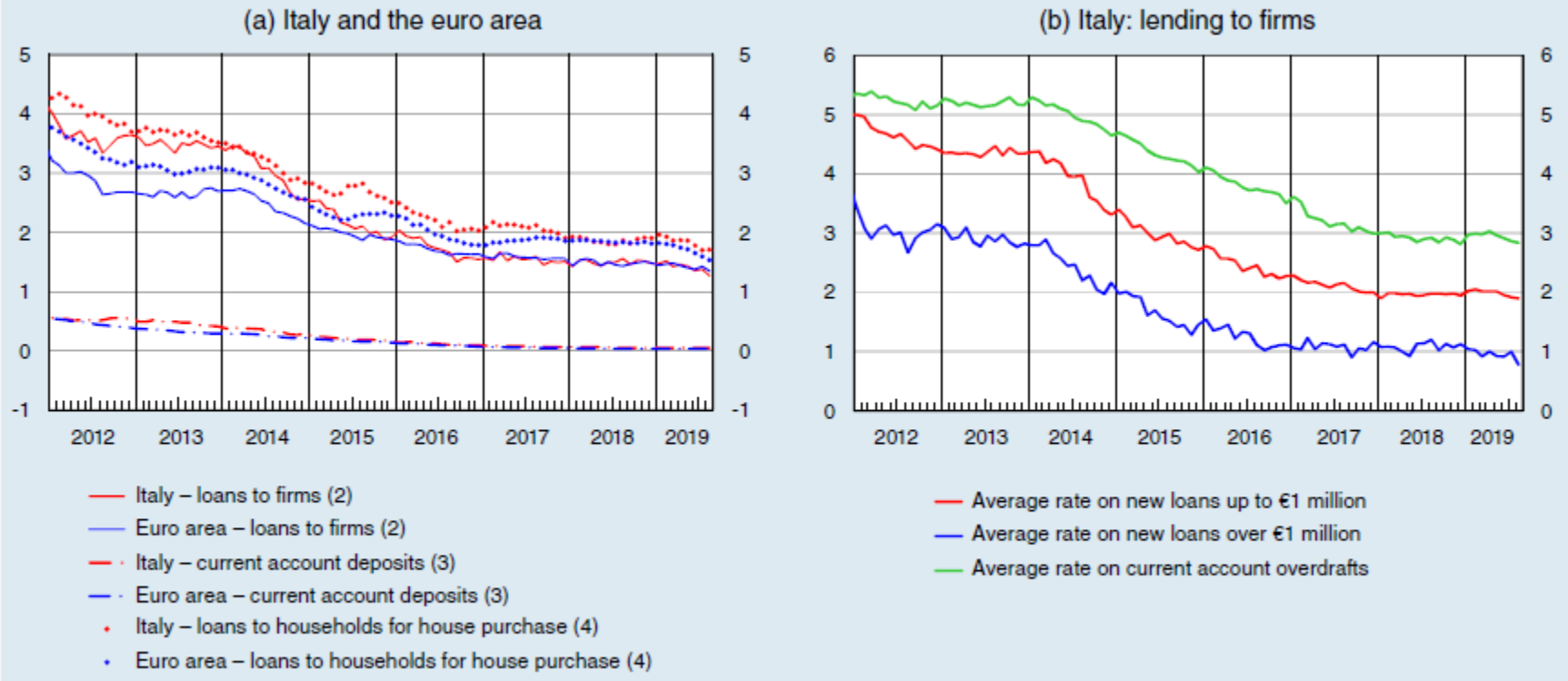
A graphic evaluation (4)

The cost of borrowing in the euro area (1)
(per cent)



A new package of expansionary measures - 12 September 2019 (2)

Bank interest rates (1)
(monthly data; per cent)



Sources: Bank of Italy and ECB.
(1) Averages. The data on lending and deposit rates refer to transactions in euros and are gathered and processed using the Eurosystem's harmonized method. – (2) Rate on new loans to firms. – (3) Rate on current account deposits of households and firms. – (4) Rate on new loans to households for house purchase.