EUROPEAN CENTRAL BANK
EUROSYSTEM

Macroprudential policy and monetary policy

Some lessons from experience in the euro area

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(based on material prepared in collaboration with Bjoern Fischer, Domenico Giannone, Michele Lenza and Lucrezia Reichlin)

FRB Chicago / IMF 13th International Banking Conference
23-24 September 2010

Disclaimer

The views expressed in this presentation are those of the author and not necessarily those of the ECB or the Eurosystem.

What are the relationships?

- In the 'long-run,'
  - *using monetary policy to maintain price stability is fully consistent with providing support to financial stability …*
  - *stability-oriented monetary policy is necessary, not sufficient ⇒ role for regulatory policy;*
  - *monetary and macroprudential policies are natural complements.*

'Truism' – we don't have much to say on this …

What are the relationships?

- In the 'short-run,'
  - *recent experience suggests that the complementarities are perhaps greater than pre-crisis 'conventional wisdom' would have foreseen …*
  - *e.g. non-standard measures to "maintain effectiveness of monetary policy transmission" ⇒ "support market functioning" (which serves financial stability) …*
  - *… at the same time as stabilising macroeconomy and price developments*

We explore this issue using the euro area experience after the collapse of Lehman as a case study -- 'exercise 1'

What are the relationships?

- In the 'medium-run' / transition …
  - ➢ *This is perhaps where challenges may emerge …*
    - *Possibility that monetary policy 'support' to financial markets / institutions in the form of non-standard measures morphs into 'dependence' …*
    - *Possibility that macroprudential measures have (substantial) macroeconomic impact and/or change the (effectiveness of the) transmission mechanism of monetary policy*
  - ➢ *These are the issues currently being faced by policy authorities …*

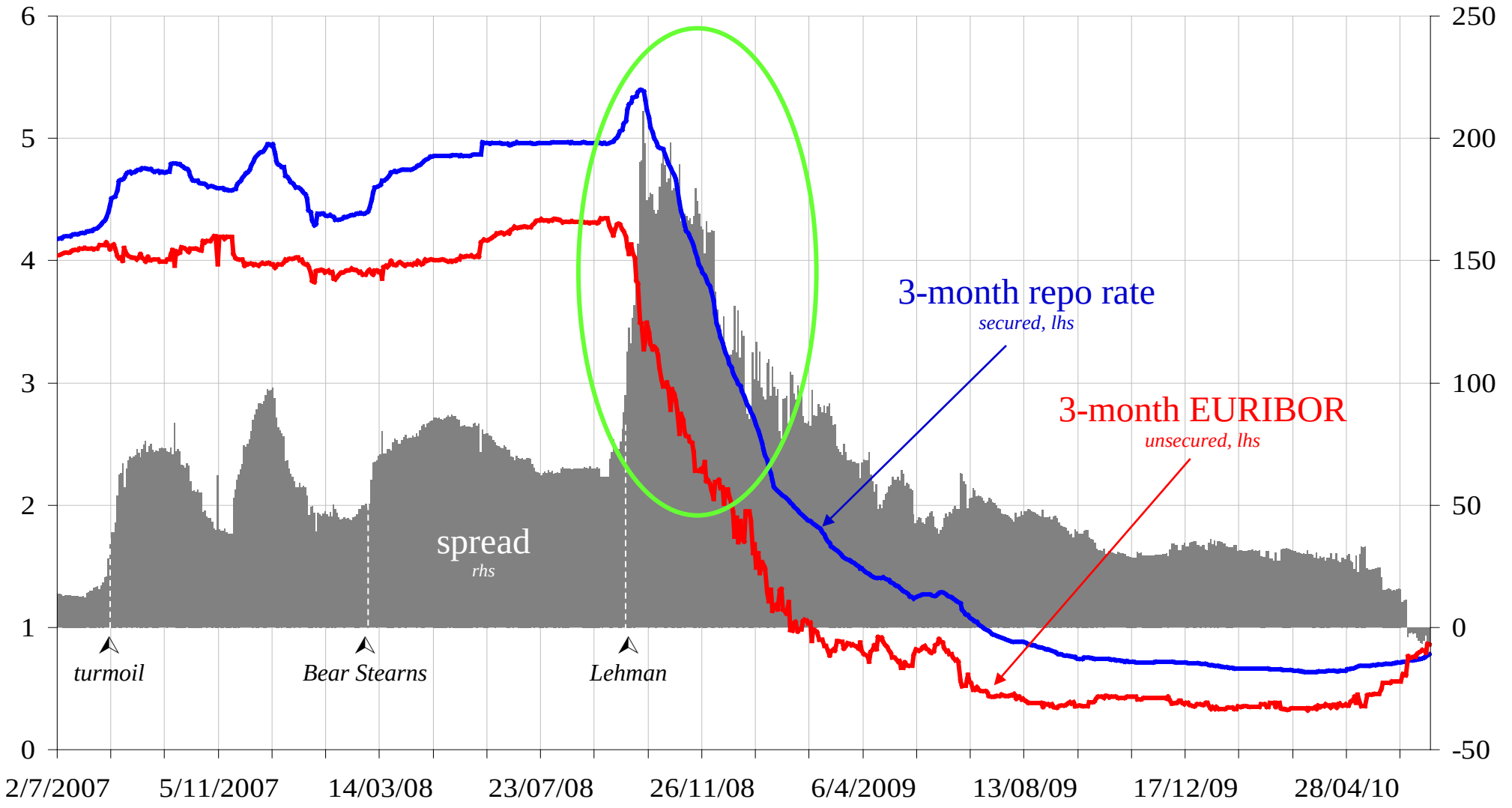
What are the relationships?

- To address these issues, we need a better understanding of macro-financial interactions …
  - ➢ *Draw on experience with ECB's monetary analysis and the analytical progress made in pursuing it …*
    - *Attempt to 'get the facts straight' (role of bank balance sheets* ≡ money and credit aggregates) …
    - *Both in pre-crisis period ("normal times")*
      And during the crisis itself.

We attempt to: (a) establish some 'stylised facts' about euro area monetary variables; and (b) explore their evolution against this benchmark after the collapse of Lehman -- 'exercise 2'

Euro money market rates and spreads

lhs: percent per annum; rhs: basis points



Source: Bloomberg

Preliminaries

Diagnosis:

- Failure of Lehman increased perceived counterparty risk.
- Adverse selection led to a freezing of the interbank money market *(cf. Haider et al., 2009): heterogeneity, 'red-lining' of some banks in interbank market*
- Banks are unable to refinance positions and maintain flow of loans to the private sector.
- Governments take various actions:
  - Fiscal stimulus
  - Support for financial sector *(re-capitalisation, guarantees for bank bonds, etc.)*
- Conventional monetary policy response – lower interest rates

Monetary policy response: Non-standard measures

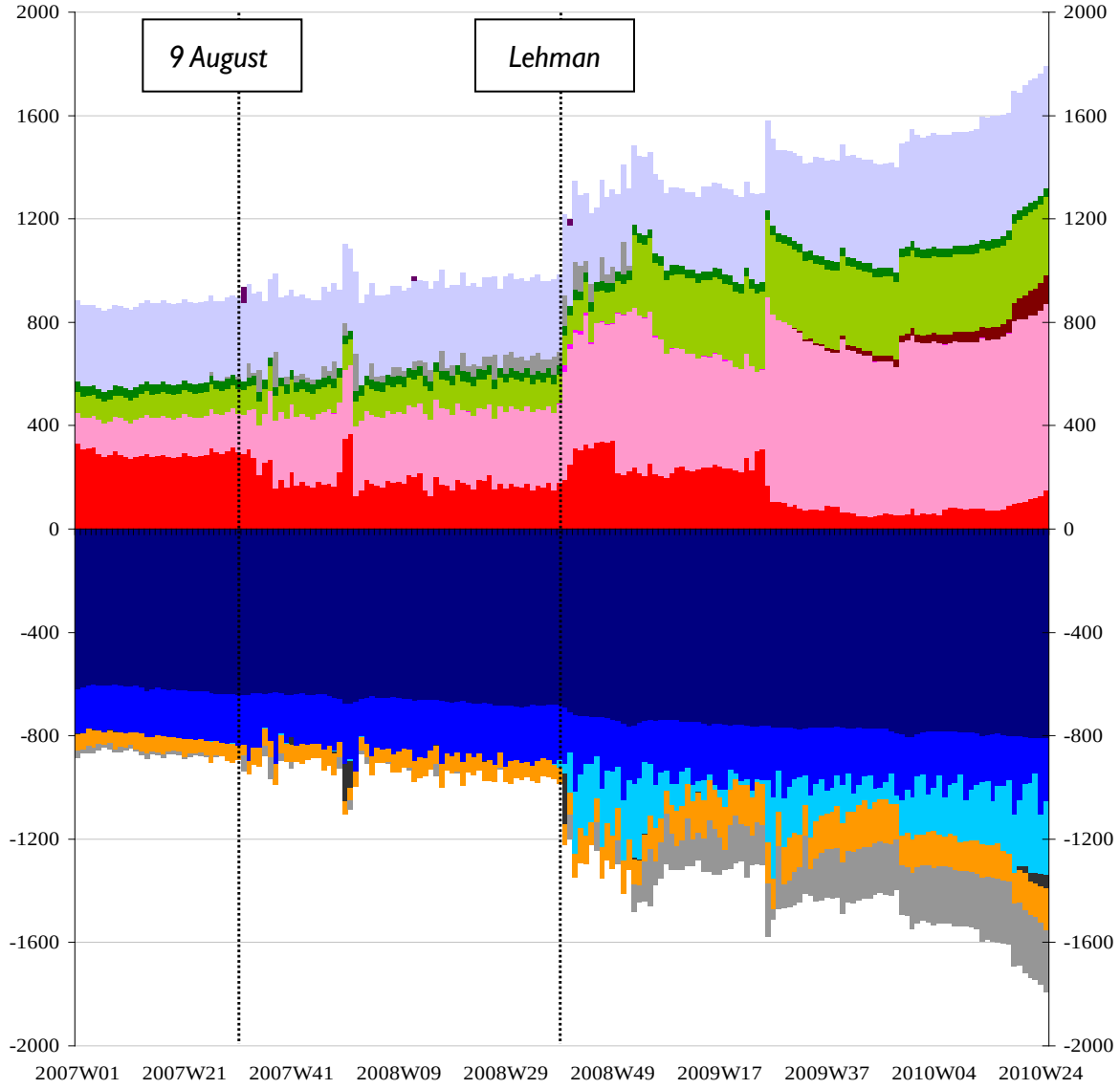
- Aim at restoring market functioning …
- In the money market, replace interbank transactions with transactions across the central bank balance sheet (i.e. act as an 'intermediary-of-last-resort');
- Improve the availability of bank funding, facilitating securitization and improve functioning of covered bond market …

Response

- **Expand central bank intermediation** …
  - Liquidity transformation – accept broad range of collateral in fixed rate / full allotment operations;
  - Maturity transformation – lengthen maturity of operations out to 1 year *(absorbing at the (overnight) deposit facility);*
  - Facilitate payments – conduct operations with a large set of counterparties;
  - Manage information issues – Eurosystem operations are anonymous, no stigma attached.
- Key elements:
  - fixed rate tenders with full allotment (FRFA) in Eurosystem monetary policy operations

Eurosystem balance sheet

EUR billions



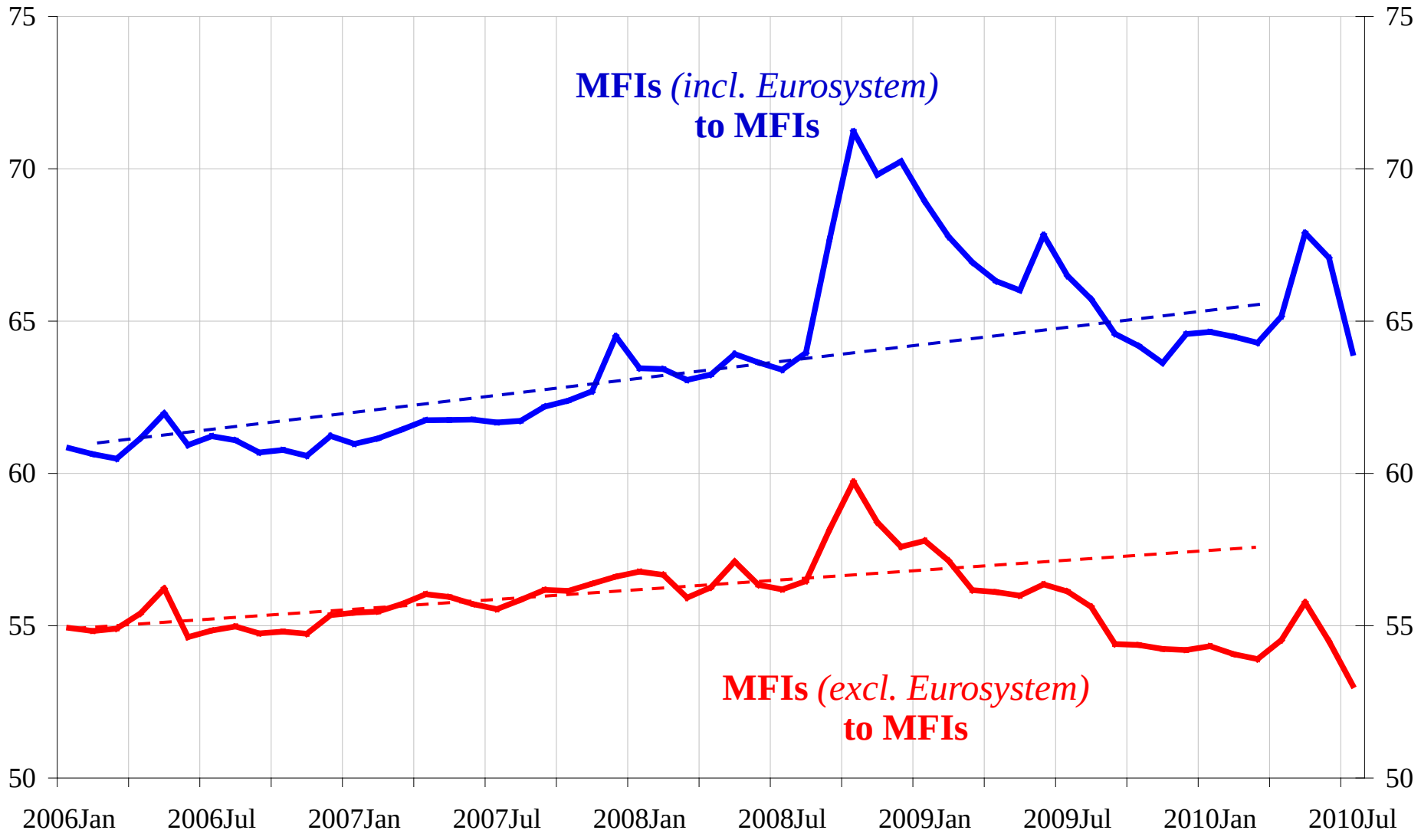
- Main refinaning operations (MROs)
- Longer-term refinancing operations (LTROs)
- Marginal lending facility (MLF)
- Euro securities held for monetary policy purposes
- Other euro securities issued by euro area residents
- General government debt denominated in euro
- Net foreign assets
- Liquidity providing fine tuning operations (FTOs)

- Banknotes in circulation
- Current accounts (including minimum reserves)
- Deposit facility (DF)
- Liquidity absorbing fine tuning operations (FTOs)
- Liabilities to other euro area residents denominated in
- Other autonomous factors (net)

Source: ECB

Intra-MFI (bank) sector credit

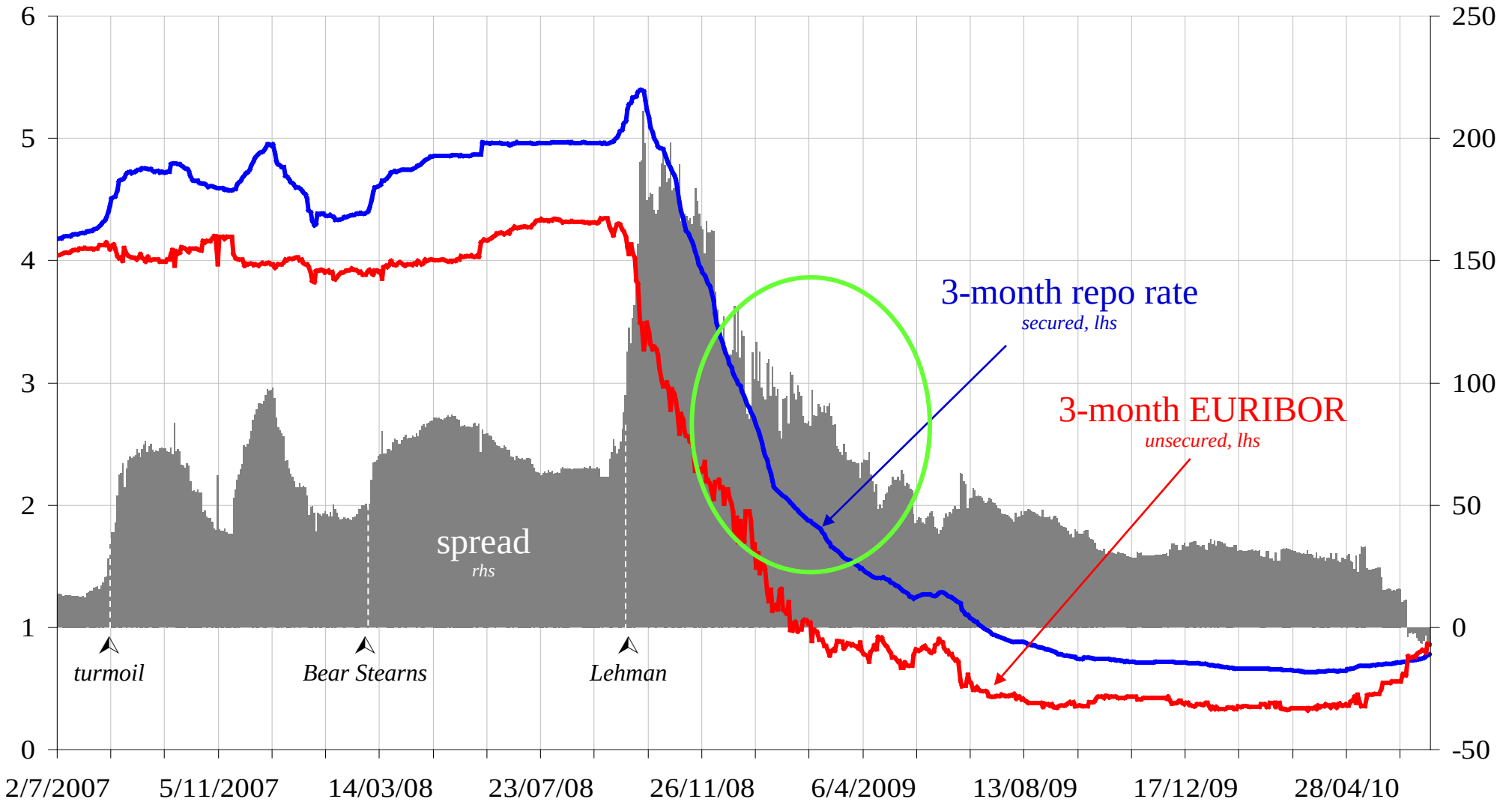
as a percentage of credit to the non-financial sector



Source: ECB

Euro money market rates and spreads

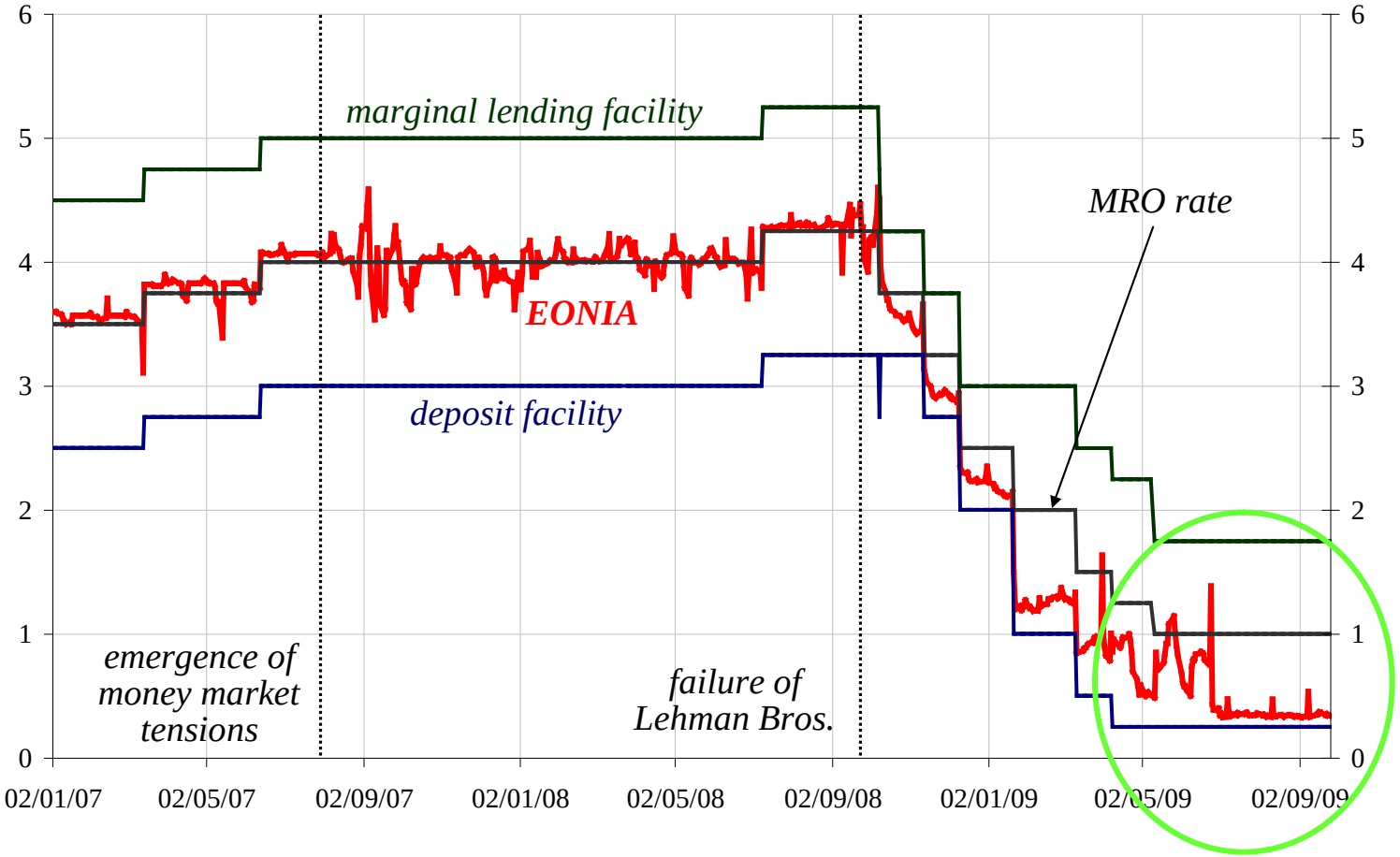
lhs: percent per annum; rhs: basis points



Source: Bloomberg

Impact on overnight interest rate

percent per annum



With FRFA, excess liquidity conditions emerged in the overnight money market, and the EONIA dropped systematically to the deposit facility rate

Source: ECB

Exercise 1

Lenza et al., 2010

- Characterize the effect of the introduction of non-standard measures in terms of its impact on a variety of money market spreads:
  - *Narrowing of the spread between secured and unsecured term rates;*
  - *Reduction of market overnight rate relative to the "policy" MRO rate;*
  - *Flattening of the money market yield curve through 1-year LTRO.*
- Characterize the (partial) macroeconomic impact of non-standard measures as the difference between two counter-factual exercises (conditional forecasts) constructed using a model of the euro area economy, based on different interest rate assumptions

The model

- Developed and evaluated by Giannone et al (2010): establishes and documents 'stylised facts' about monetary dynamics in the euro area.
- The model is a Bayesian vector autoregressive model (B-VAR), estimated over the sample period January 1991 to August 2008 using monthly data.
- The model consists of 32 macroeconomic variables:
  - Macro variables – *economic activity (IP); prices (HICP); unemployment; etc.*
  - Monetary and credit variables – *monetary aggregates; sectoral credit by use / maturity;* and
  - Money market rates and bond yields …
- We avoid the "curse of dimensionality" by using Bayesian shrinkage techniques *(particularly convenient for euro area, where time series are short)*

Exercise 1

Policy scenario (**P**) *with non-standard measures*

- Euribor 3 and 12 month rates as observed between November 2008 and August 2009
- Simulation → $E_{A(L)}(X_{t\ldots T} \mid X_{0\ldots t-1}; P)$

No Policy scenario (**NP**) *without non-standard measures*

- Euribor 3m = MRO + [Spread Euribor 3m/MRO(10/08)] + [Spread MRO/EONIA from 11/08 to 08/09]
- Euribor 12m = MRO + [Spread Euribor 12m/MRO(10/08)] + Flattening of the yield curve due to non-standard policy
- Simulation → $E_{A(L)}(X_{t\ldots T} \mid X_{0\ldots t-1}; NP)$

➢ Effect of non-standard measures

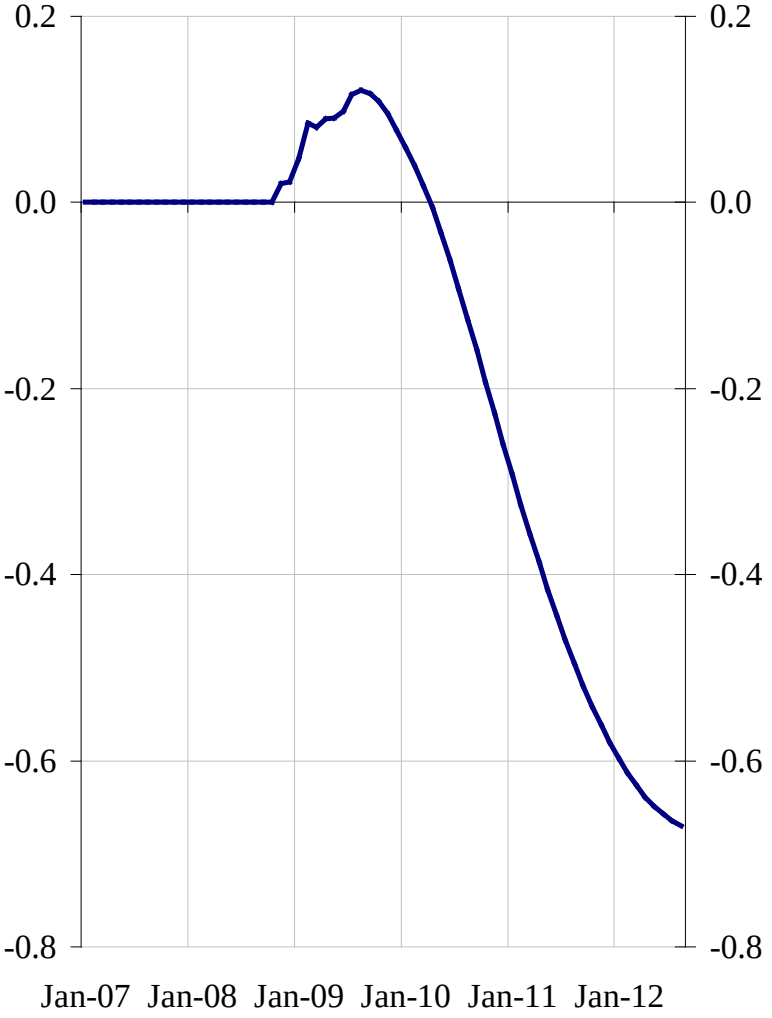
$$Impact_{ns} = E_{A(L)}(X_{t\ldots T} \mid X_{0\ldots t-1}; P) - E_{A(L)}(X_{t\ldots T} \mid X_{0\ldots t-1}; NP)$$

Of course, this all assumes model is stable (we come back to that) …

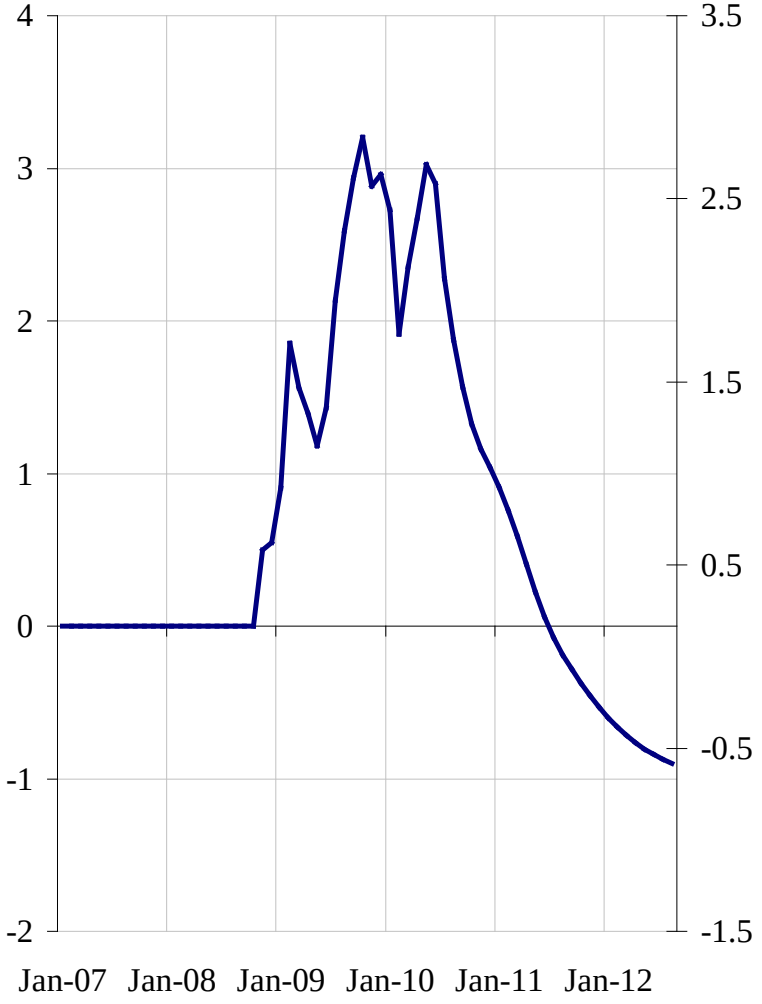
Exercise 1 - *Results*

impact of non-standard measures (EA(L)(Xt…T| $X_{0…t-1}$; P) - EA(L)(Xt…T| $X_{0…t-1}$; NP), percentage points on annual growth rates (excl. unemployment)

Unemployment rate



M1

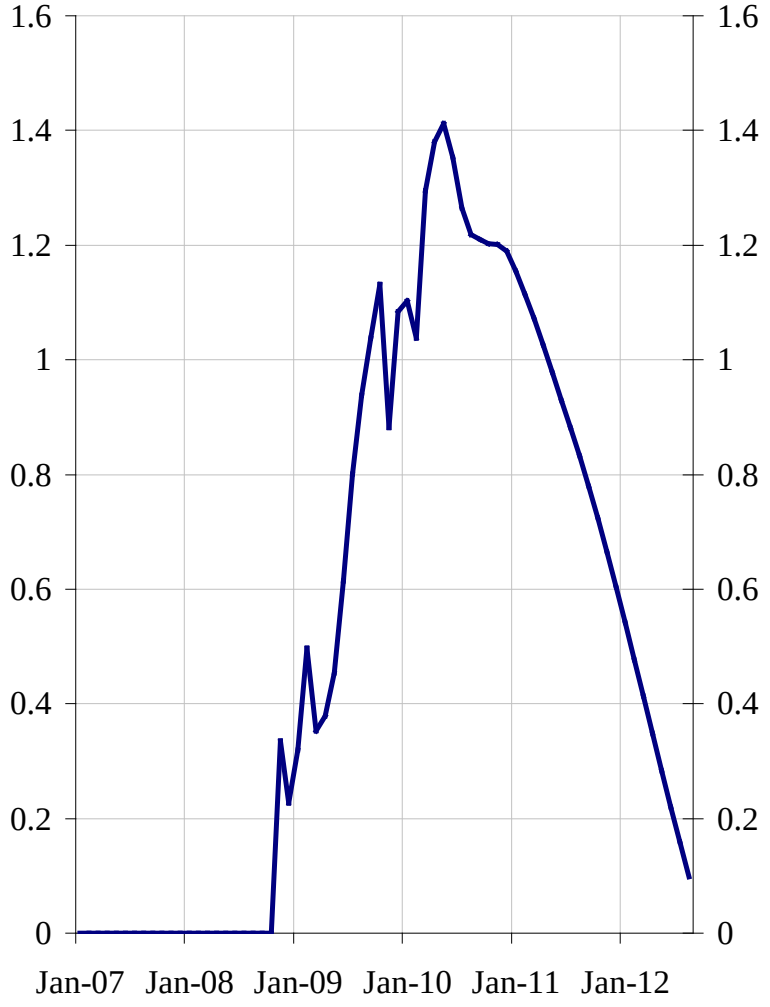


Source: Lenza et al, 2010

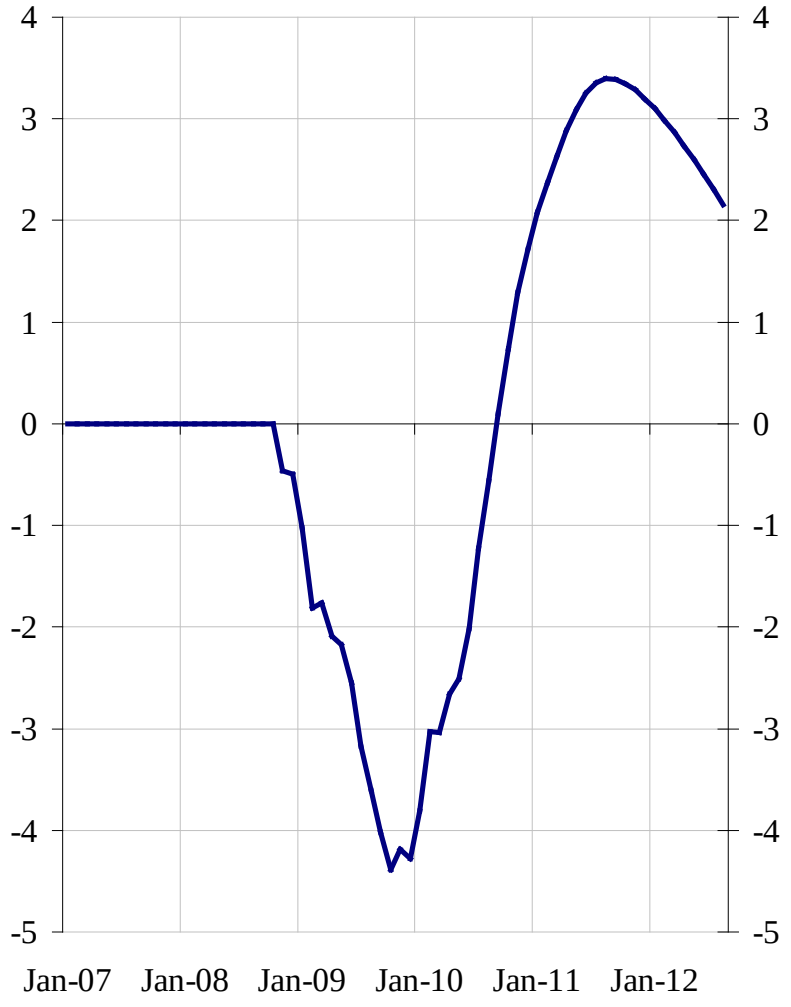
Exercise 1 - *Results*

impact of non-standard measures (EA(L)(Xt…T| $X_{0…t-1}$;P) - EA(L)(Xt…T| $X_{0…t-1}$;NP), percentage points on annual growth rates

Loans for house purchase



Loans to non-financial corporations



Source: Lenza et al, 2010

Exercise 2

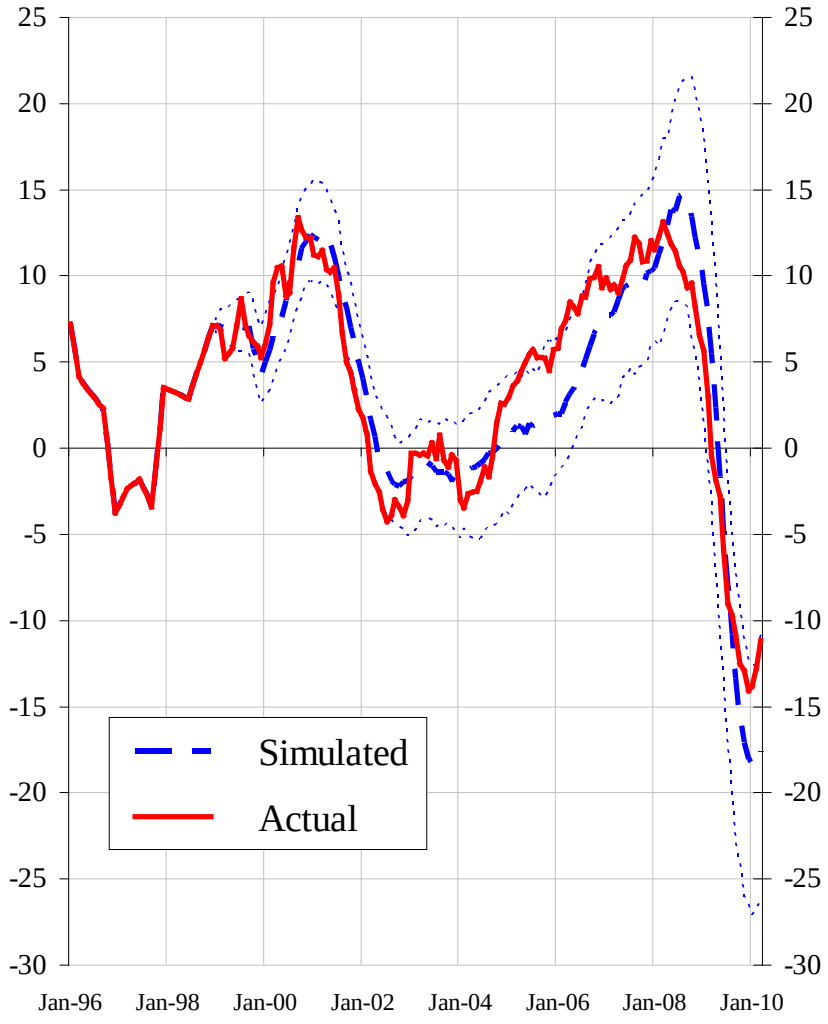
Giannone et al., 2010

- Compare actual path of macroeconomic variables with those of model forecasts conditional on the observed path of economic activity *(as captured in the evolution of the IP series);*
- Addresses question: *Have the non-standard measures prevented a "breakdown" / disruption to the pre-crisis regularities seen in the data (and, by implication, the behaviour of the economy)?*
- Conditional forecasts start in Jan. 1999 (but the model is estimated using sample to August 2008) …

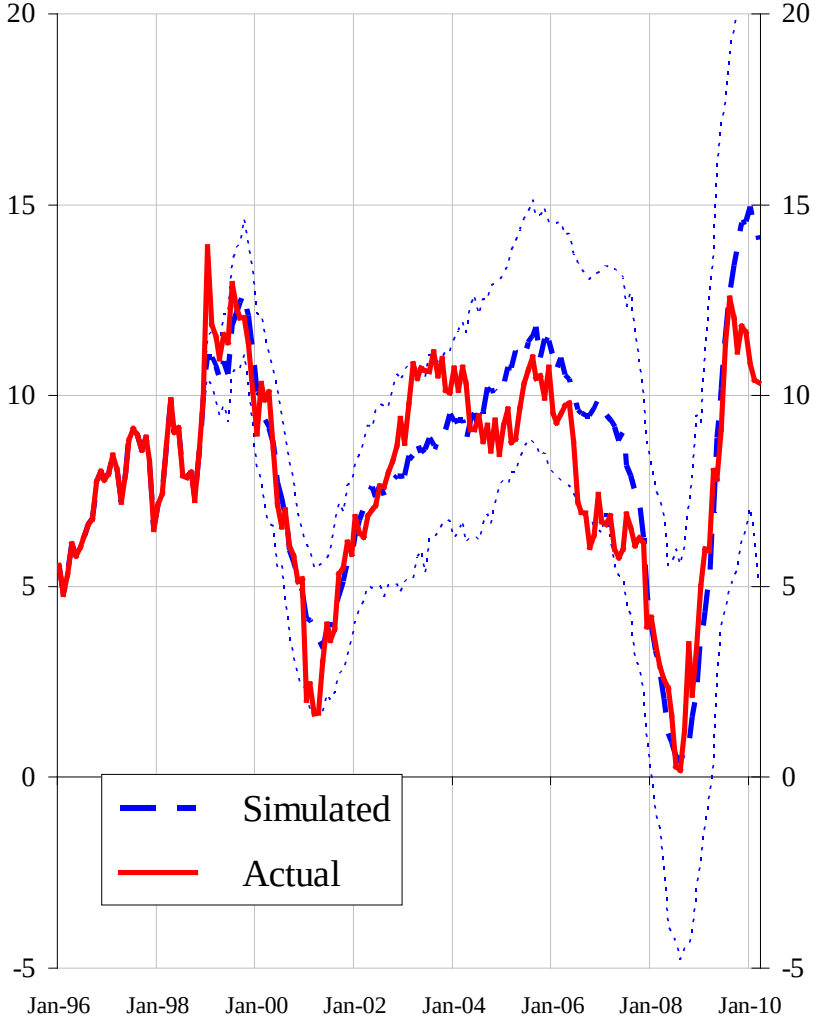
Exercise 2 – *Results*

annual growth rates, sa; 68% confidence interval

Short-term loans to NFCs



M1

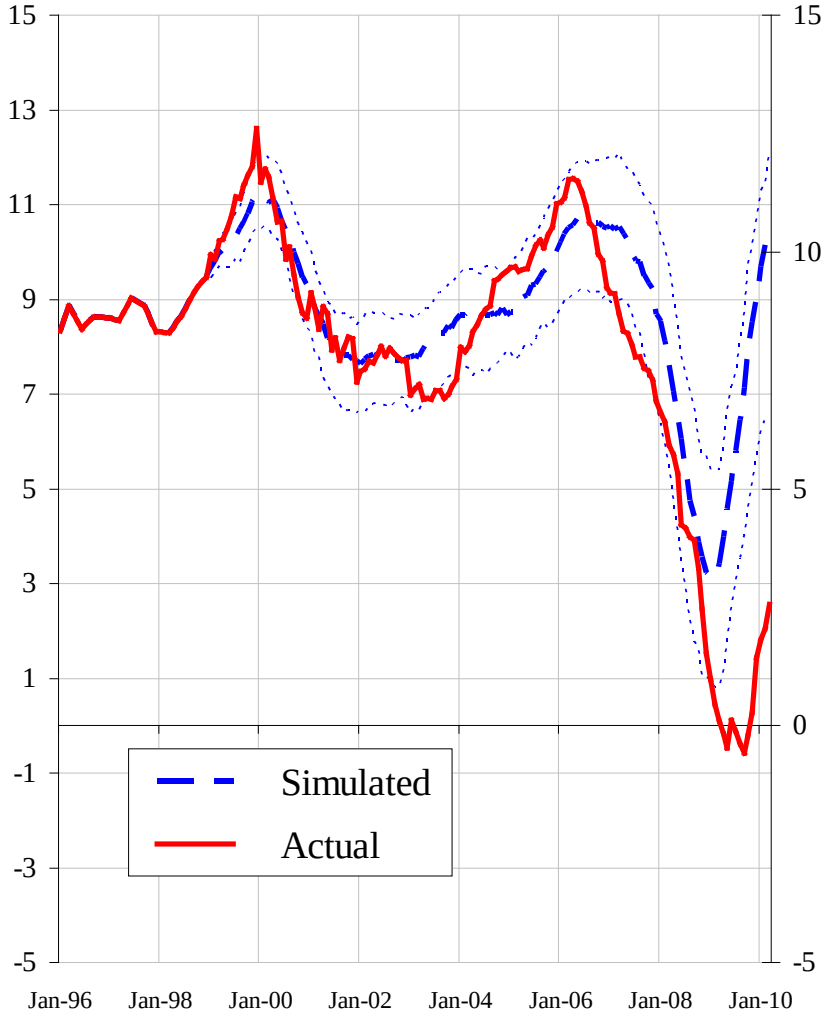


Source: Lenza et al, 2010; Giannone et al, 2010

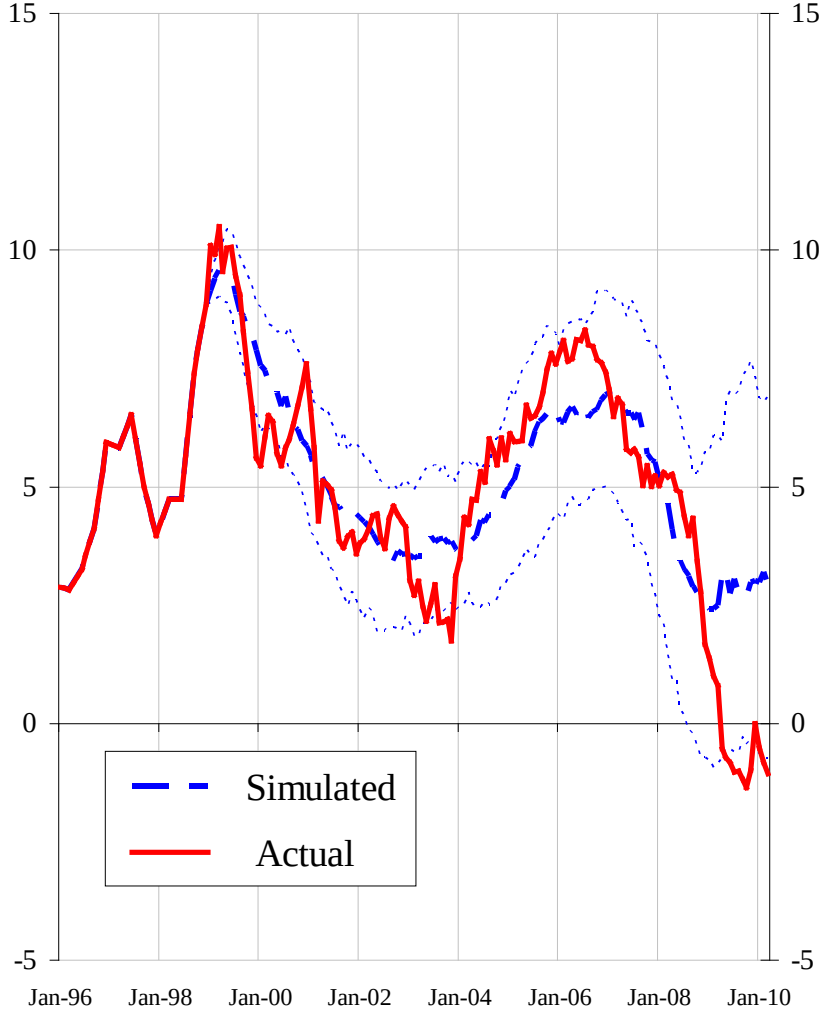
Exercise 2 – *Results*

annual growth rates, sa; 68% confidence interval

for house purchase



for consumption

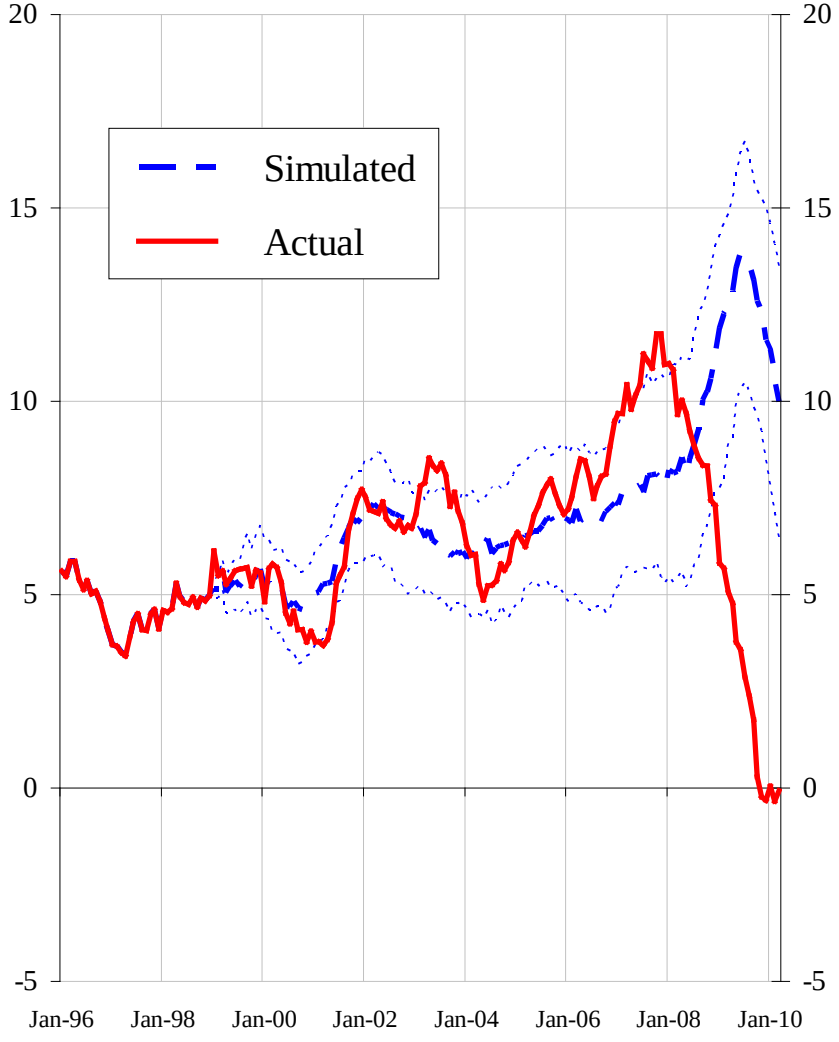


Source: Lenza et al, 2010; Giannone et al, 2010

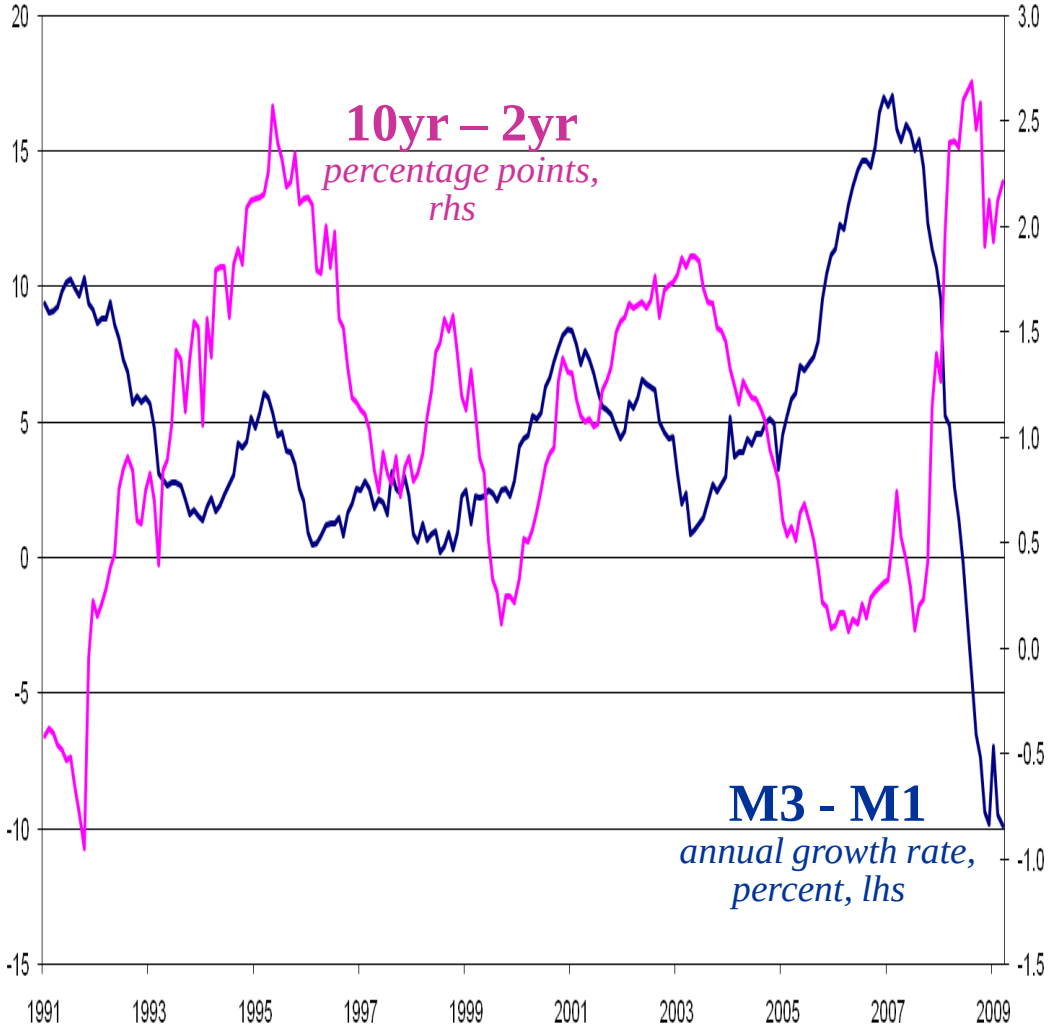
Exercise 2 – *Results*

annual growth rates, sa; 68% confidence interval

M3



(M3-M1) versus slope of yield curve

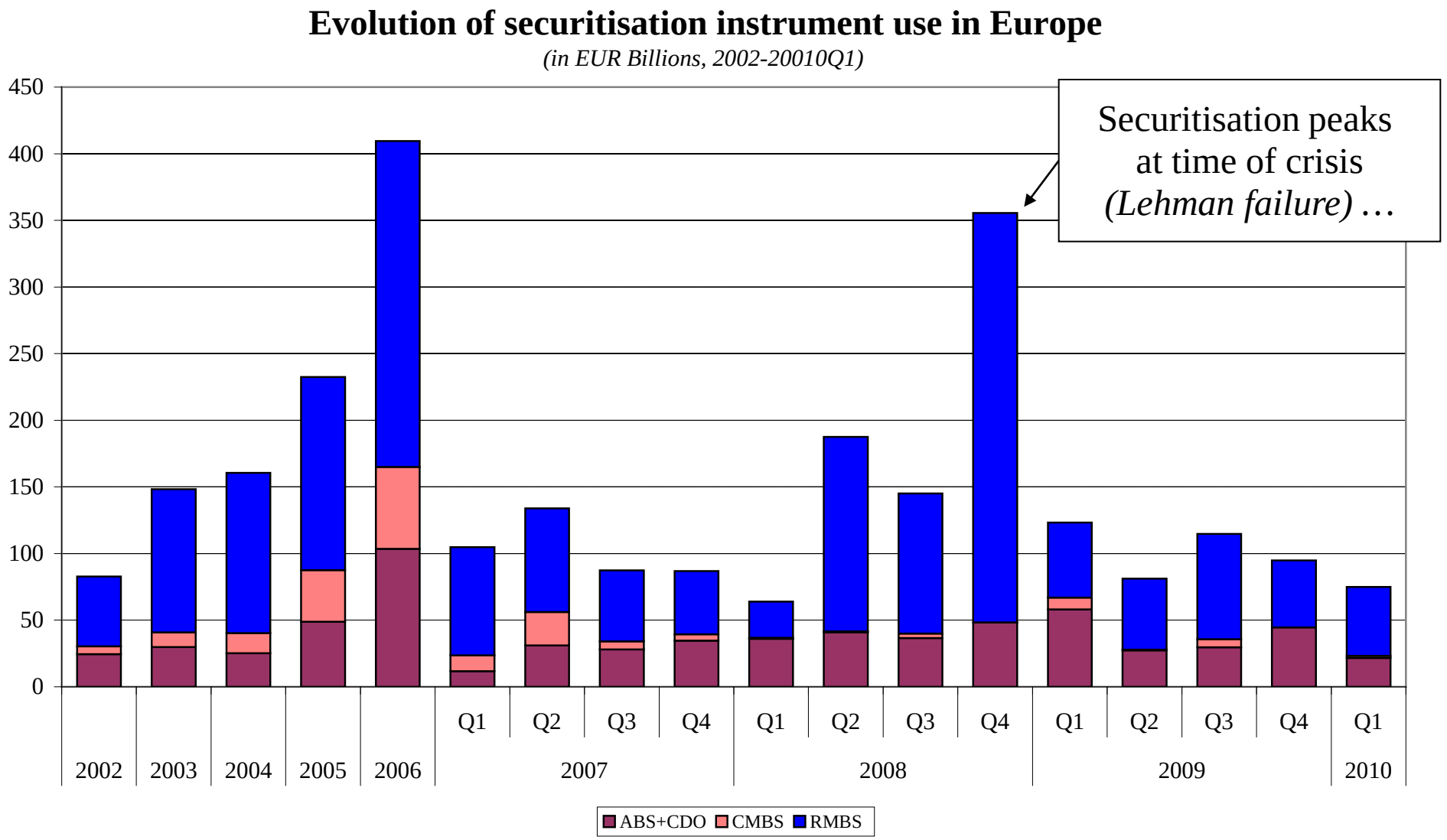


Source: Lenza et al, 2010; Giannone et al, 2010

Discussion

- So in the aftermath of Lehman's failure, non-standard monetary policy measures (among other policy initiatives) supported:
  - macroeconomic stability;
  - financial market functioning.
- But this is not a 'free lunch' *(e.g. communication / institutional issues)*
- Evidence that a number of key macro and financial variables have been "insulated" from financial market freeze, once conditioning on economic activity …
- … but not all …
- "aberrant" behaviour of M3 (and term spread) relative to historical benchmark requires further investigation …

Securitisation

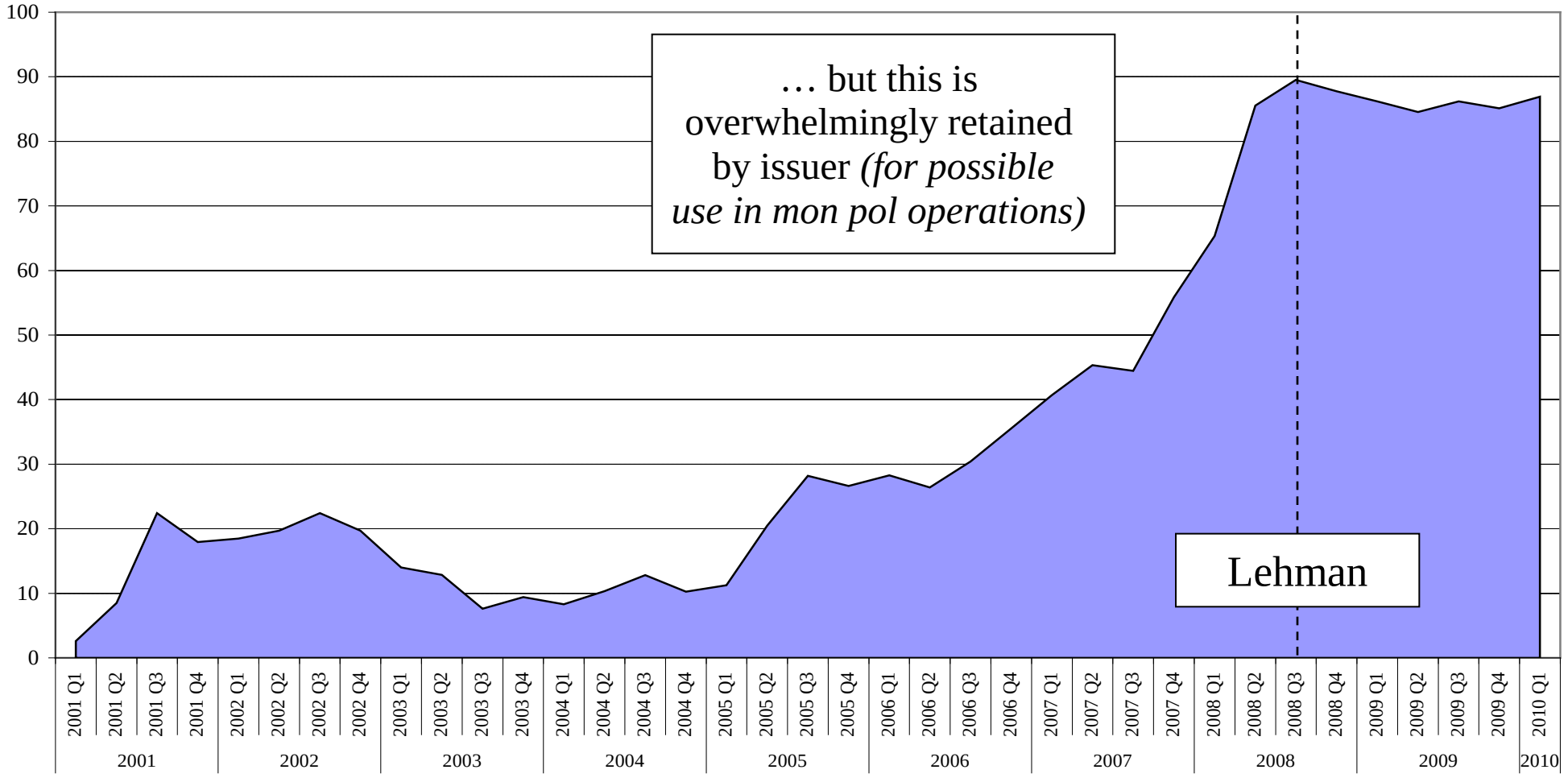


Source: European Securitisation Forum

Retained securitisation

ABS/MBS securitisation in the euro area retained by the issuer

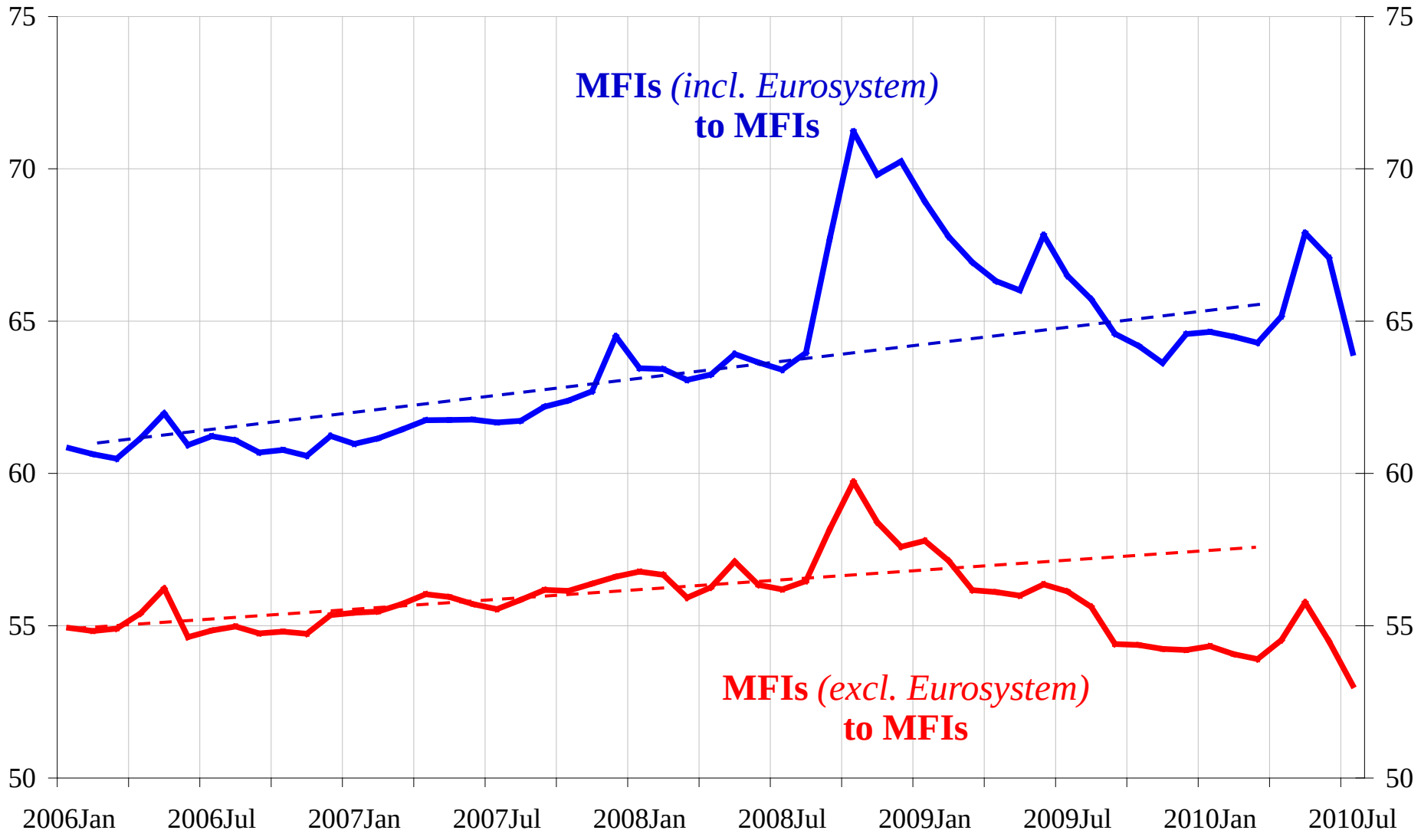
(in percentages of total securitisation)



Source: Dealogic and ECB calculations

Intra-MFI (bank) sector credit

as a percentage of credit to the non-financial sector



Source: ECB

Concluding remarks

- *Looking back*, recent experience points to complementarities between monetary policy and macroprudential / financial stability policy during crisis period …
- *Looking forward*, challenges are likely to emerge:
  - Banks and other agents respond to incentives created by exceptional measures;
  - interrelationship among: (1) managing remaining tensions; (2) exiting from exceptional crisis measures; and (3) building a new, more robust regime needs to be managed carefully.
- In trying to address these challenges, we need to get the facts and the data straight …
- Our results point to need: (1) to take bank heterogeneity seriously; and (2) to come to better explanations of (M3 – M1) and term spread – bank funding conditions …