Discussion of "Money and Monetary Policy: the ECB Experience 1999-2006 " by Fischer, Lenza, Pill and Reichlin

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Two Issues

- Monetary analysis at the ECB: the role of a stable money demand
- The perils of reduced form money-based inflation forecasts

The Evolution of Monetary Analysis at the ECB: The Role of Money Demand

- Description of use and performance of money demand equations

  $\Longrightarrow$ dramatic change in their status as part of the ECB strategy

Onset of EMU

- Stable money demand: key condition to justify the prominent role of money and the reference value for M3 growth
- Claims of strong evidence in its support

  "The available empirical evidence suggests that broad monetary aggregates exhibit the properties required for the announcement of a reference value. . . In the past the demand for euro area broad money has been stable over the long run. . . [that] empirical evidence has been judged strong and robust enough for a reference value to be announced. . ." (ECB MB January 1999)

- But skepticism from many academic economists

The Evolution of Monetary Analysis at the ECB: The Role of Money Demand

Since then...

- Initial ECB hopes not realized, despite large effort (4 models for M3 alone!)
- Focus shifts to construction of *corrected* M3 measures, alternative monetary indicators.

Now...

> *"... money demand is no longer seen as the framework for monetary policy analysis. Conducting a rich monetary analysis is thus not contingent on the stability or otherwise of any single specification of money demand for a particular monetary aggregate..."* *(Fischer et al. 2006)*

$\Longrightarrow$ (internal) downgrading of monetary indicators (reference value, money gaps)

$\Longrightarrow$ focus on reduced form money-based inflation forecasts

- *But the emphasis on money demand stability was misguided from the beginning*

The Evolution of Monetary Analysis at the ECB: The Role of Money Demand

An Illustrative Example with a Stable Money Demand

- Normalization:

$$\pi_t^* = \Delta y_t^* = 0$$

- Phillips curve

$$\pi_t = \lambda \ (y_t - y_t^n)$$

- Money demand

$$m_t - p_t = \beta \ y_t$$

- Implied reference value for money growth: zero
- Indicator #1: deviations of money growth from reference value

$$\Delta m_t = \pi_t + \beta \ \Delta y_t$$

- Indicator #2: "real money gap"

$$\begin{aligned} RMG_t &= (m_t - p_t) - \beta \ y^* \\ &= \beta \ (y_t - y^*) \end{aligned}$$

The Evolution of Monetary Analysis at the ECB: The Role of Money Demand

An Illustrative Example with a Stable Money Demand (cont.)

- Hypothetical scenario: productivity boom

$$\uparrow \Delta y_t^n$$

- Case #1: full accomodation ($y_t = y_t^n$ all $t \implies \pi_t = 0$)

$$\implies \uparrow \Delta m_t \ , \ \uparrow RMG_t$$

but no change in inflation !

- Case #2: gradual accomodation: ($y_t < y_t^n \implies \pi_t < 0$).

Assuming λ not too large,

$$\implies \uparrow \Delta m_t \ , \ \uparrow RMG_t$$

but followed by...deflation!

- Things will only get worse if the central bank responds to the monetary indicators!!

Monetary Indicators and Inflation Outlook

An Example with a Stable Money Demand

- *Message:*

  a stable money demand relationship does not imply that monetary indicators are useful in assessing the risks to price stability

- Money demand instability has only made things worse...but it has "facilitated" the downgrading of monetary indicators.

Reduced Form Money-Based Inflation Forecasts

- Fischer et al. : tool currently favored by the ECB
- Evaluation: Out-of-sample forecasts of 6-quarter ahead inflation, alternative reduced form bivariate models.

- Authors' main conclusion:

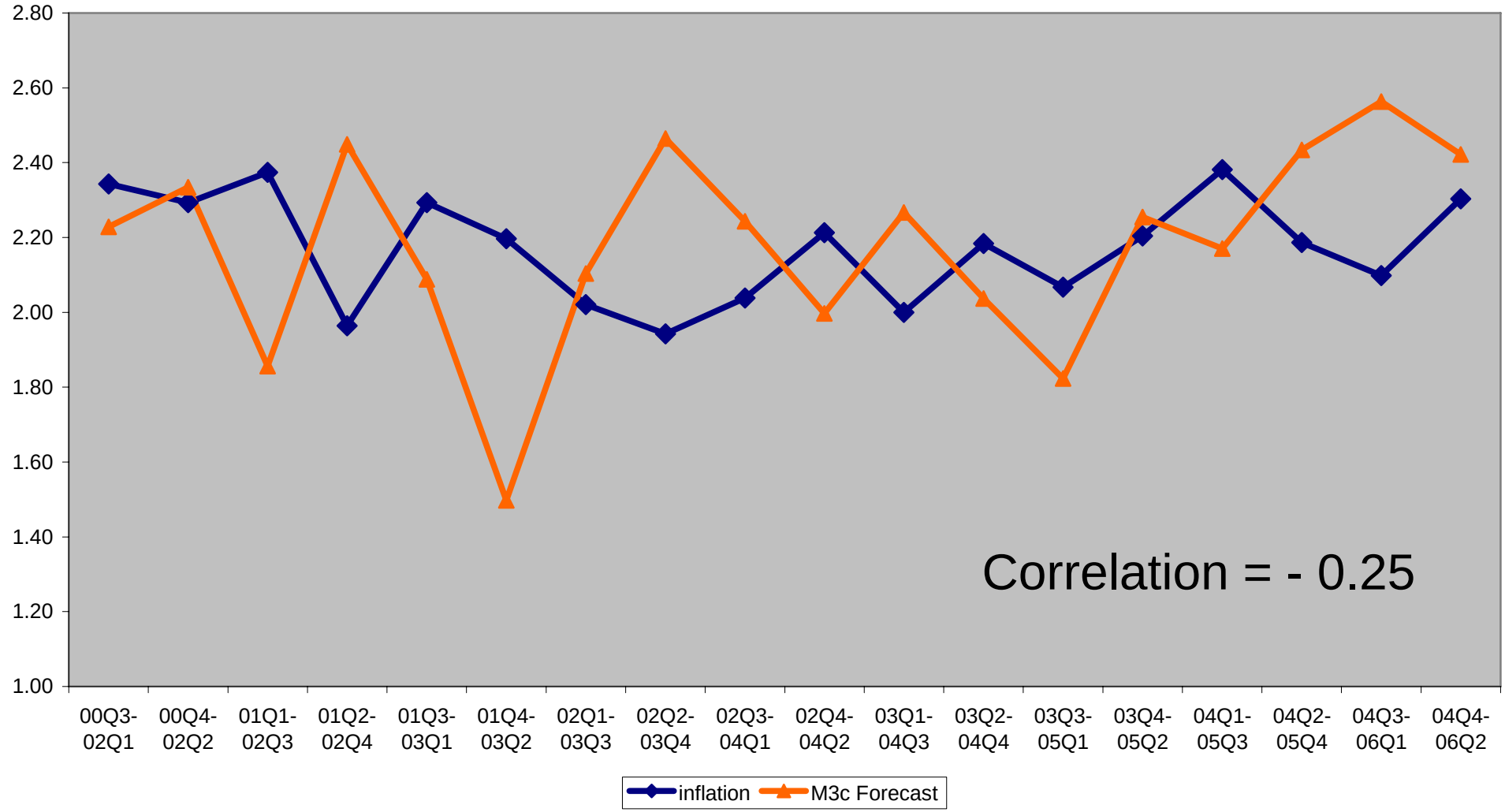
  monetary aggregates contain useful information to predict inflation, beyond that contained in the "economic analysis" forecasts (BMPE forecasts)

- But reduced form bivariate forecasting models based on non-monetary variables can also improve on the BMPE forecasts !

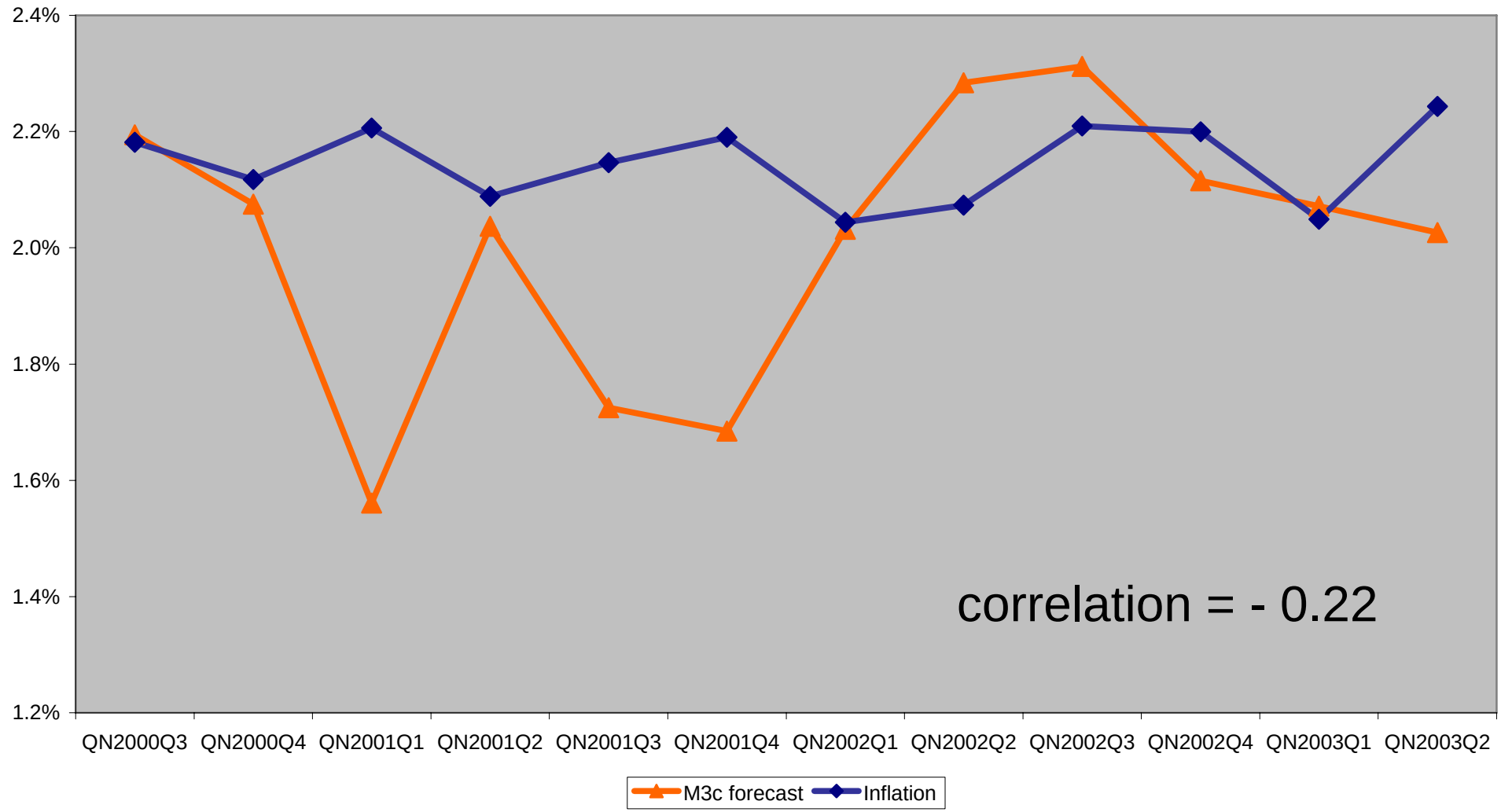
Reduced Form Money-Based Inflation Forecats

- Out-of-Sample Performance of Reduced Form Forecasts based on adjusted M3: *a visual inspection (*)*
- Possible response: fluctuations vs. changes in mean
- Given the existing evidence, *how much weight should the ECB attach to an eventual change in the mean of a money-based forecast?*

Real-Time Money-based Inflation Forecasts: 6 Quarter Horizon



Real Time Money-based Inflation Forecasts: 12 Quarter Horizon



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The Perils of Money-Based Inflation Forecasts in Practice

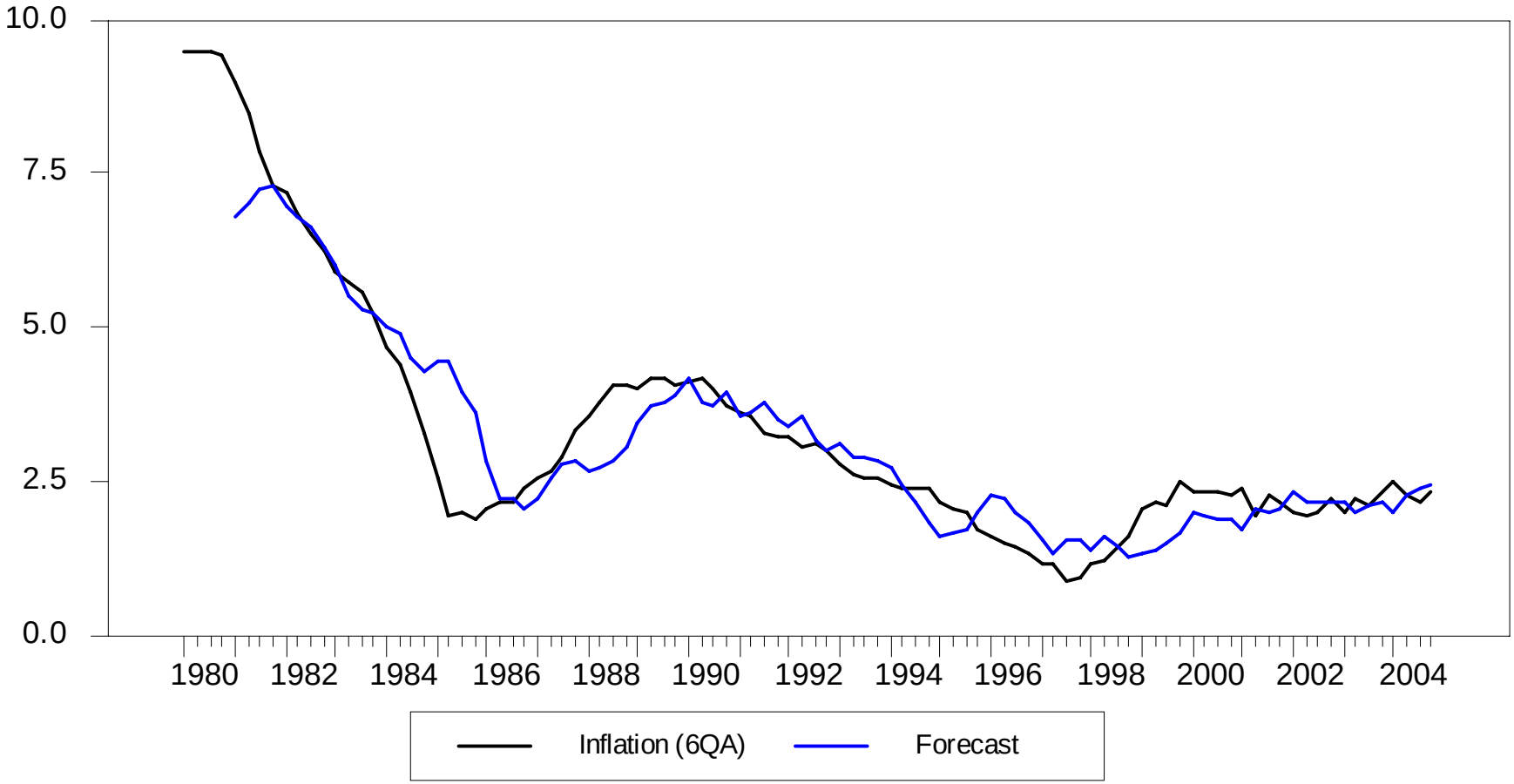
- A simple inflation forecasting model for the euro area (1980:I-2004:IV)

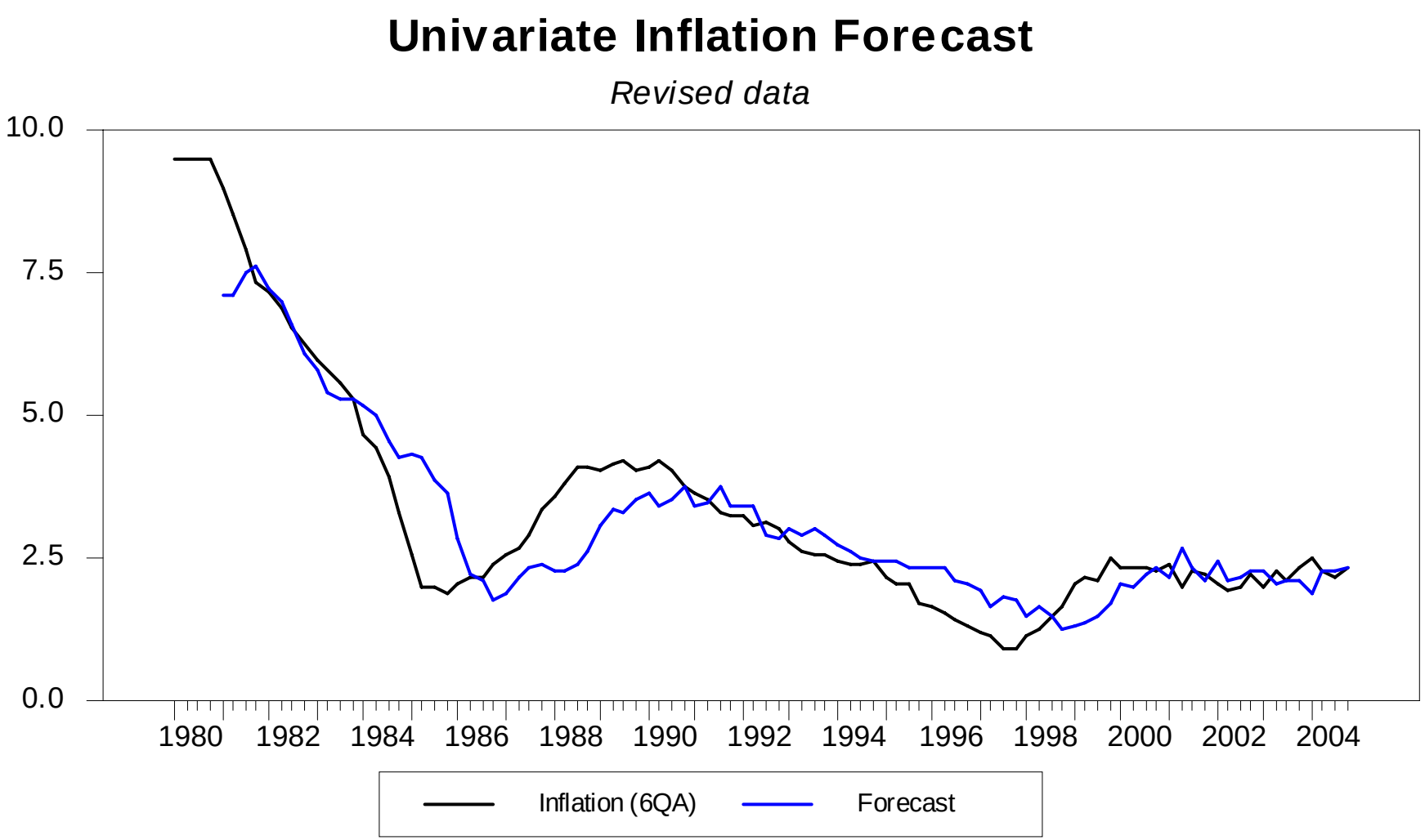
$$\pi_{t,t+6} = \underset{(0.26)}{-0.25} + \underset{(0.05)}{0.52^{**}}\pi_t + \underset{(0.05)}{0.22^{**}}\,\Delta m_t + \varepsilon_t$$

- Forecast vs. Realized Inflation (*)
- Univariate forecast (*)
- Shortcoming: not a structural relationship $\longrightarrow$ risk of instability
- Illustration: low frequency comovements in the 80s (*)

Money-Based Inflation Forecast

Revised data, Corrected M3




Univariate Inflation Forecast
Revised data
10.0
7.5
5.0
2.5
0.0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
Inflation (6QA)
Forecast

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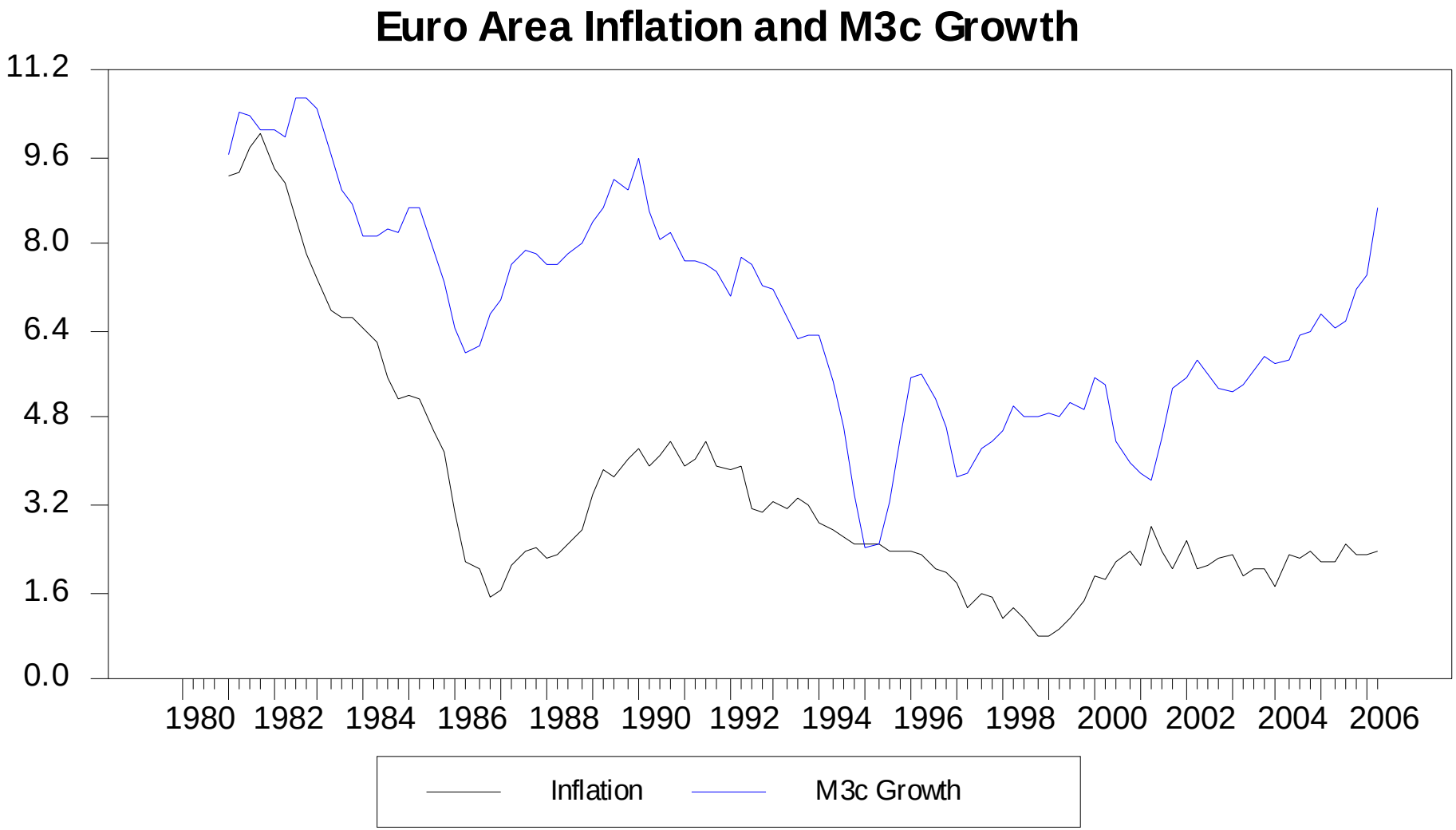

Euro Area Inflation and M3c Growth
11.2
9.6
8.0
6.4
4.8
3.2
1.6
0.0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
Inflation
M3c Growth

The Perils of Money-Based Inflation Forecasts in Practice

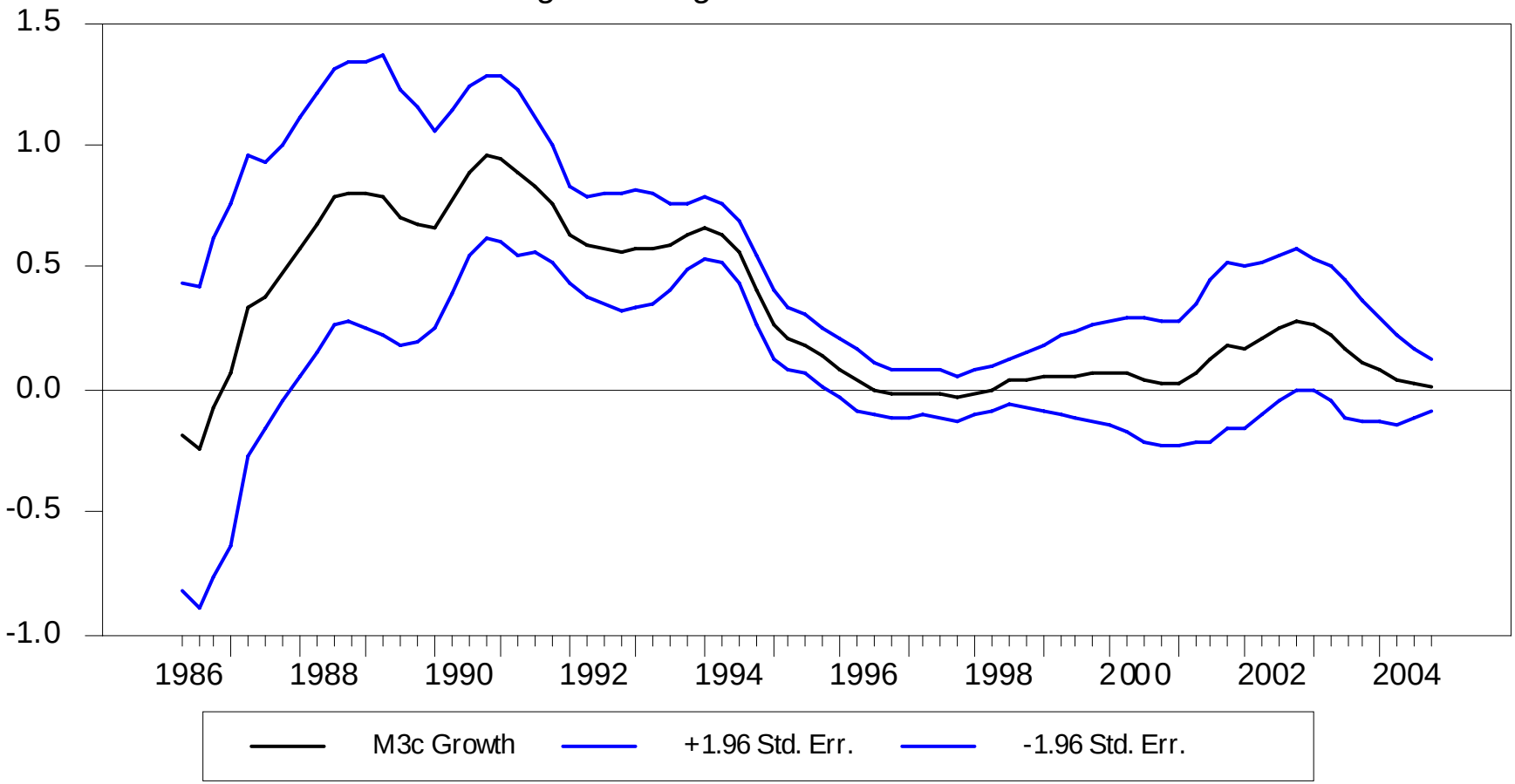
- Recent sample period (1998:I-2004:IV)

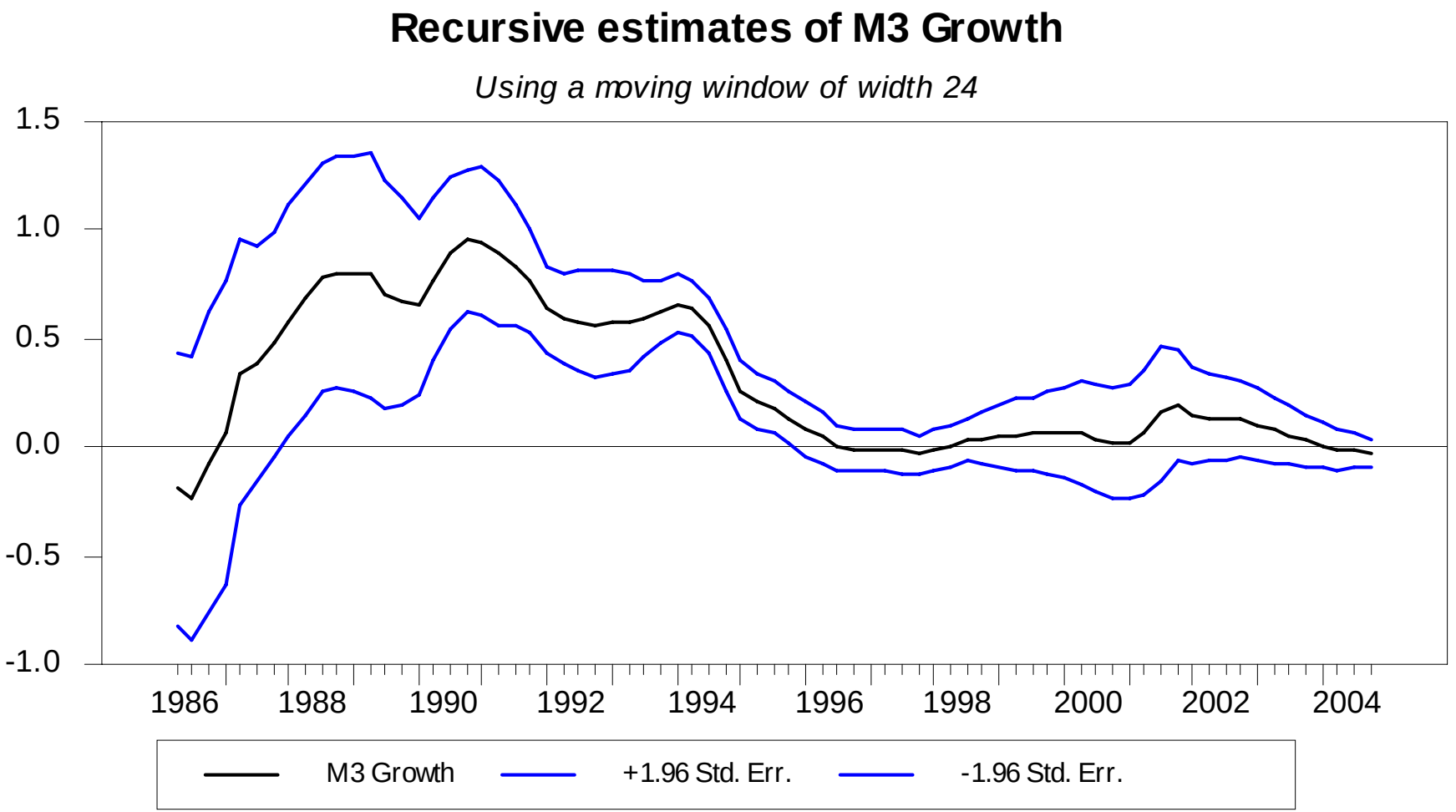
$$\pi_{t,t+6} = \underset{(0.47)}{1.22^{**}} + \underset{(0.11)}{0.26^{**}}\pi_t + \underset{(0.08)}{0.07}\,\Delta m_t + \varepsilon_t$$

- Rolling Estimates (*)

Recursive estimates of M3c Growth

Using a moving window of width 24




Recursive estimates of M3 Growth
Using a moving window of width 24
1.5
1.0
0.5
0.0
-0.5
-1.0
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
M3 Growth
+1.96 Std. Err.
-1.96 Std. Err.

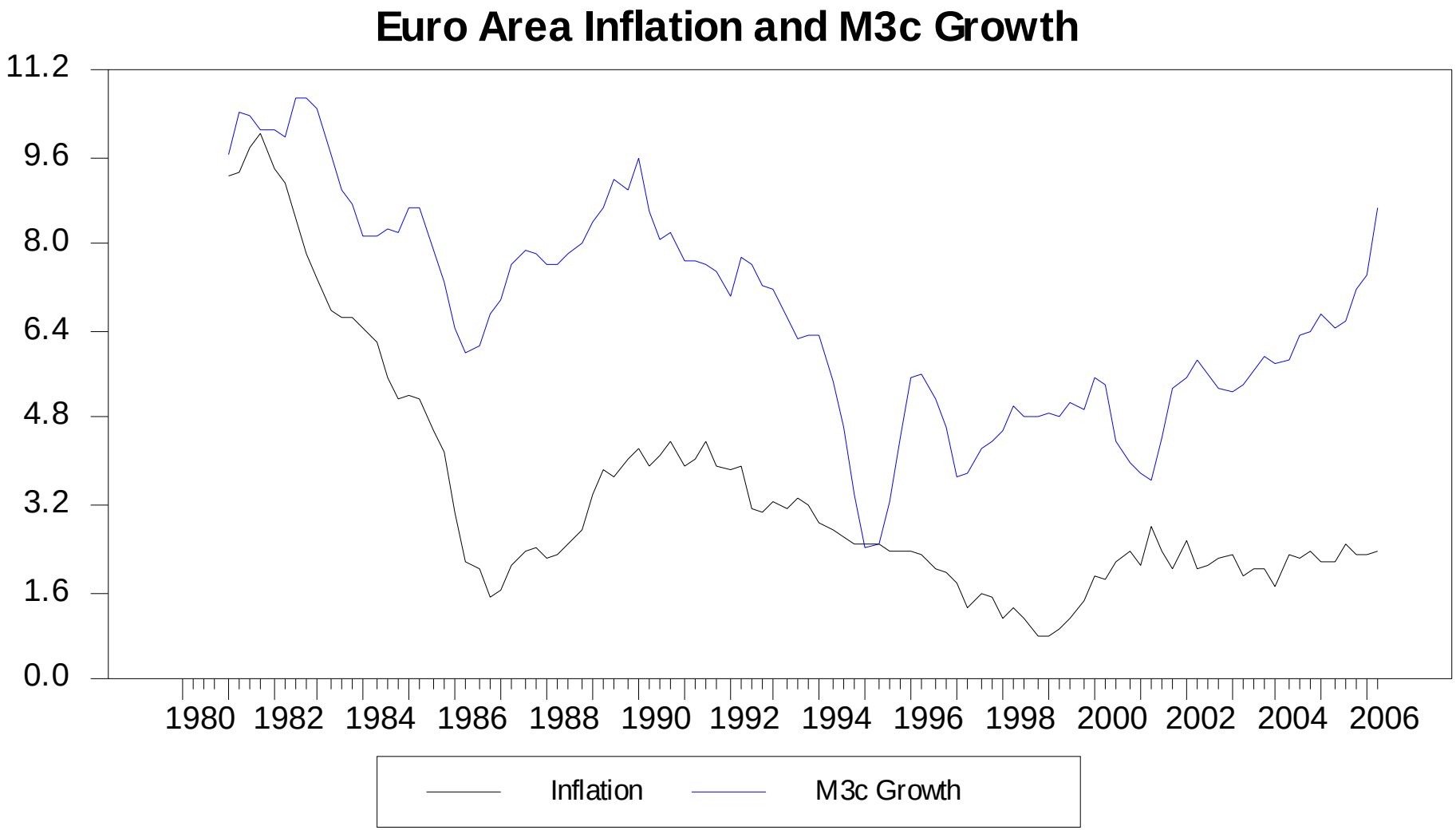
The Perils of Money-Based Inflation Forecasts in Practice

- Is the predictive power of money an inherent feature of market economies?
- Evidence for th U.S. (1980:I-2004:IV)

$$\pi_{t,t+6} = \underset{(0.23)}{2.67^{**}} + \underset{(0.11)}{0.26^{**}}\pi_t - \underset{(0.03)}{0.03}\ \Delta m_t + \varepsilon_t$$

The Perils of Money-Based Inflation Forecasts in Practice

- Recent trends in adjusted M3 growth (*)
- Is there a large rise of inflation on the horizon?
- If so, should the ECB keep raising interest rates even beyond "natural level" ?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9.6
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1.6
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1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
Inflation
M3c Growth

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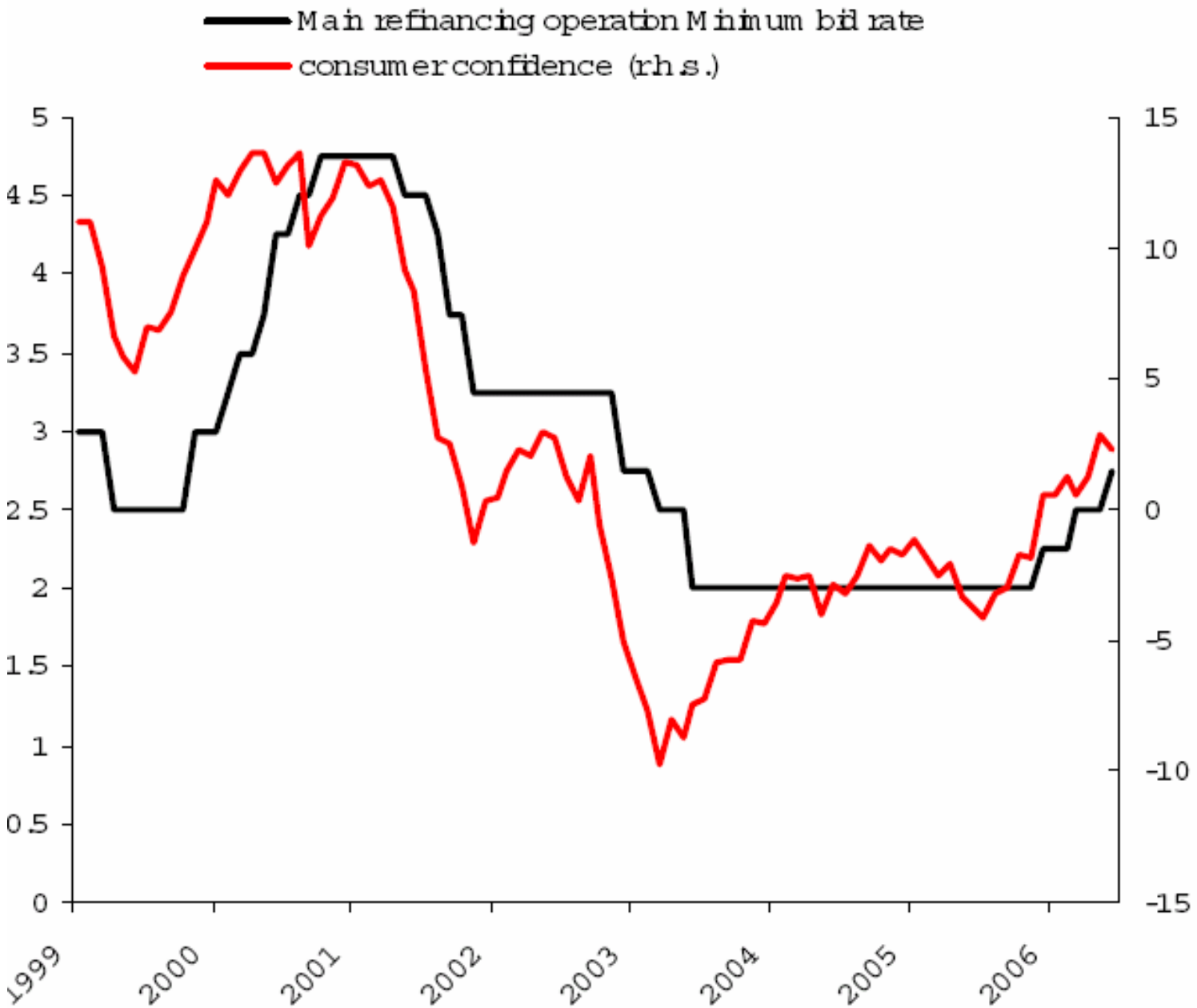
Narrative Evidence: the Influence of Monetary Analysis in ECB Policy Decisions

- Detailed analysis
- Confirms earlier evidence

  "...it appears that the economic pillar prevailed in influencing the decision when the monetary pillar gave a blurred signal." (Fischer et al.)

- Alternative: no evidence of a single episode in which interest rate decisions were made in accordance with the signals of monetary analysis, but against the evidence coming from the economic analysis (especially, consumer confidence)


Main refinancing operation Minimum bid rate
consumer confidence (rhs.)
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
15
10
5
0
-5
-10
-15
1999
2000
2001
2002
2003
2004
2005
2006