

Relevance of survey data on inflation expectations for monetary policy

Dr. Christina Gerberding
Deutsche Bundesbank

Session V: Inflation expectations and monetary policy
NBP Conference: Measuring and testing expectations from a central bank perspective,
Warsaw, 29-30 November 2012

Inflation expectations and monetary policy

Topics relevant from a policymaking perspective

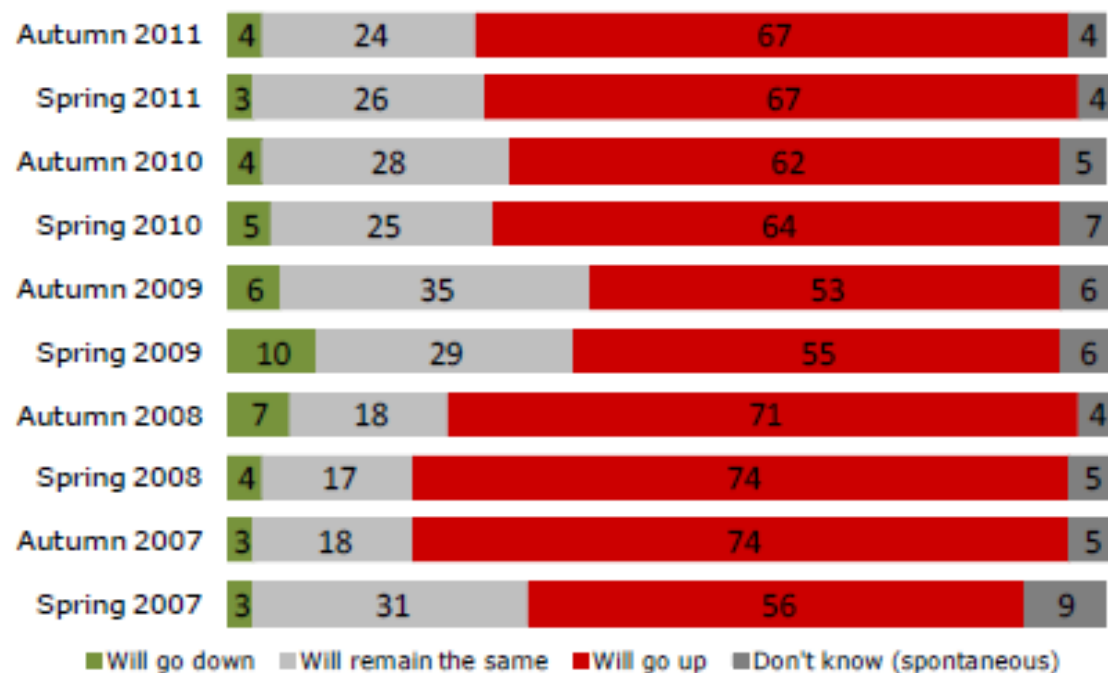
- **Should we look at financial market indicators or survey data on inflation expectations?**
 - Answer: look at both; both have individual drawbacks and strengths
- **Which time horizons are most relevant?**
 - Longer-term expectations as indicators of central bank credibility
 - Short-term expectations as indicators of agents' assessment of short-term inflation outlook
- **Should we focus on expert forecasts or household expectations?**
 - Would like to look at both, but data constraints
- **Eurosystem: Should we look at aggregate or country-specific expectations?**
 - Look at both, since too much heterogeneity would give cause for concern

Expert forecasts versus household expectations

- **Why do policymakers usually focus on expert forecasts?**
 - Well-known difficulties in measuring household expectations
 - Impression that household perceptions and expectations are complex and fuzzy
 - Some evidence that household inflation expectations are driven by experts' forecasts
- **However, household expectations are interesting as they are likely to**
 - be reflected in spending and saving decisions and
 - to impact on wage formation
- **For euro area, few sources for household inflation expectations:**
 - General public survey on knowledge and attitudes (ECB)
 - Harmonized consumer survey (European Commission)

Expert forecasts versus household expectations

Expectations of inflation over the next 12 months



Source: ECB, General Public Survey on Knowledge and Attitudes, January 2012, p. 26

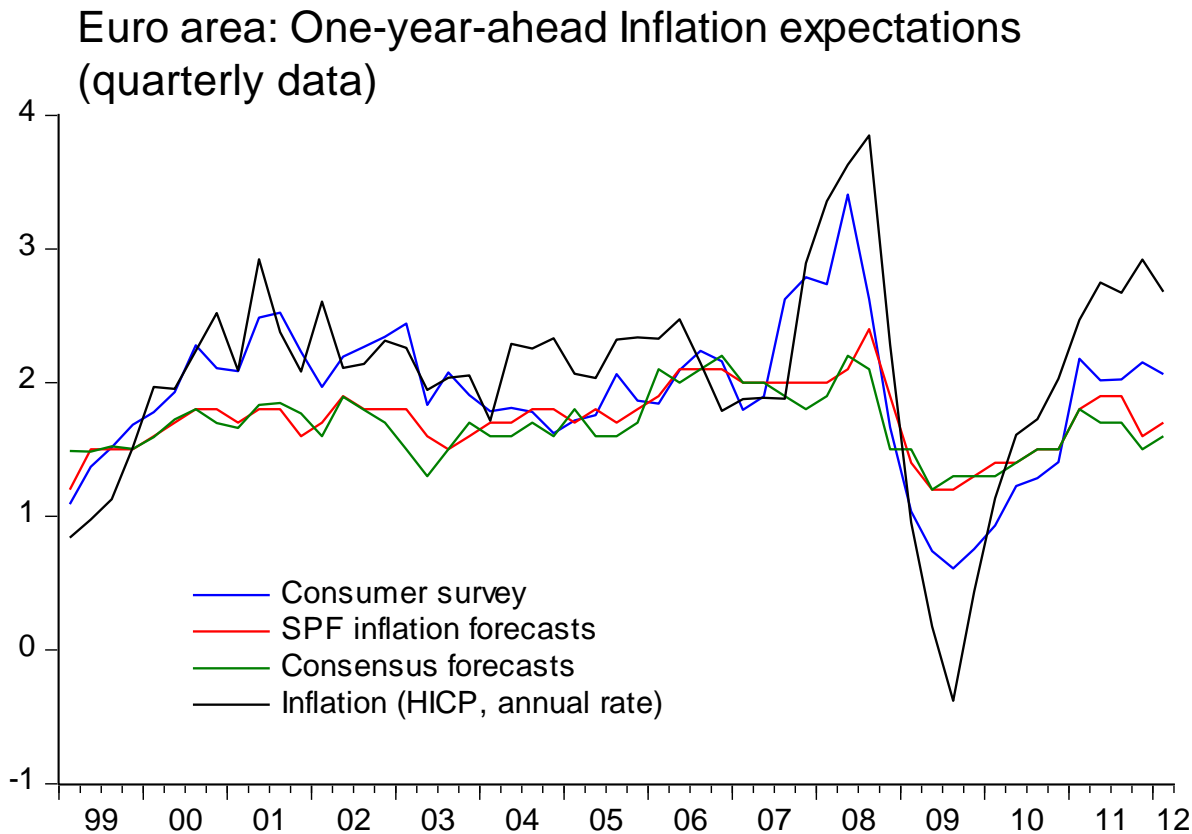
➤ Survey on Knowledge and Attitudes (ECB): twice a year, since spring 2005

➤ In autumn 2011, majority of survey respondents expected further increase in inflation, although measured HICP inflation was close to 3 % and ...

➤ ... Governing Council cut interest rates twice because it expected inflationary pressure to recede in 2012

➤ Survey result somewhat disconcerting, reason to cross-check with results from consumer survey

Expert forecasts versus household expectations, contd



➤ In autumn 2011, household expectations for autumn 2012 (now) were higher and closer to actual inflation than expert forecasts

➤ Since 1999, expert forecasts have systematically underestimated euro area inflation, whereas household expectations were on average unbiased

➤ Expert forecasts may be misleading insofar as they suggest a stability of inflation expectations which does not carry over to consumer expectations

Expert forecasts versus household expectations

Review of predictive content (1999:01 to 2012:08)

	Euro area	Germany	France	Italy	Spain	Netherlands
Mean forecast error						
Consumer survey	0.25	0.28	0.23	-0.06	0.06	0.68**
Consensus	0.37**	0.06	0.19	0.42**	0.42*	0.17
Mean absolute forecast error						
Consumer survey	0.78	0.82	0.70	0.83	1.33	0.92
Consensus	0.76	0.65	0.66	0.73	1.03	0.62
Root mean square forecast error						
Consumer survey	1.06	0.99	0.92	1.09	1.79	1.17
Consensus	0.93	0.83	0.83	0.94	1.33	0.78
Forecast error relative to naïve extrapolative forecast (no change in the inflation rate)						
Consumer survey	0.86	0.90	0.77	0.97	0.96	1.11
Consensus	0.76	0.76	0.69	0.85	0.71	0.74
Forecast error relative to AR(1) forecast of inflation						
Consumer survey	0.94	1.02	0.95	1.03	1.05	1.21
Consensus	0.83	0.86	0.86	0.89	0.78	0.81
Granger-causality test H_0: Past expectations do not Granger cause inflation (p-values)						
Consumer survey	0.15	0.37	0.25	0.32	0.24	0.43
Consensus	0.00	0.03	0.00	0.03	0.02	0.97
Granger-causality test H_0: Future inflation does not Granger cause inflation expectations (p-values)						
Consumer survey	0.00	0.00	0.00	0.02	0.00	0.03
Consensus	0.08	0.12	0.02	0.08	0.00	0.02
Quantification of data from the consumer survey based on the method proposed by Batchelor and Orr (1988), with the moderate rate proxied by the recursive mean of actual inflation. ** (*) denotes significance at the 1% (5%) level.						

Expert forecasts versus household expectations

Review of predictive content (1999:01 to 2012:08)

➤ **Mean forecast error:**

- Consensus forecasts for EA, IT and ES with significant downward bias; household expectations on average unbiased except in NL

➤ **Predictive power:**

- Still, expert forecasts more accurate in all cases
- Expert forecasts beat AR(1) in all cases, households exp. only in EA and FR

➤ **Household expectations do not Granger cause future inflation...**

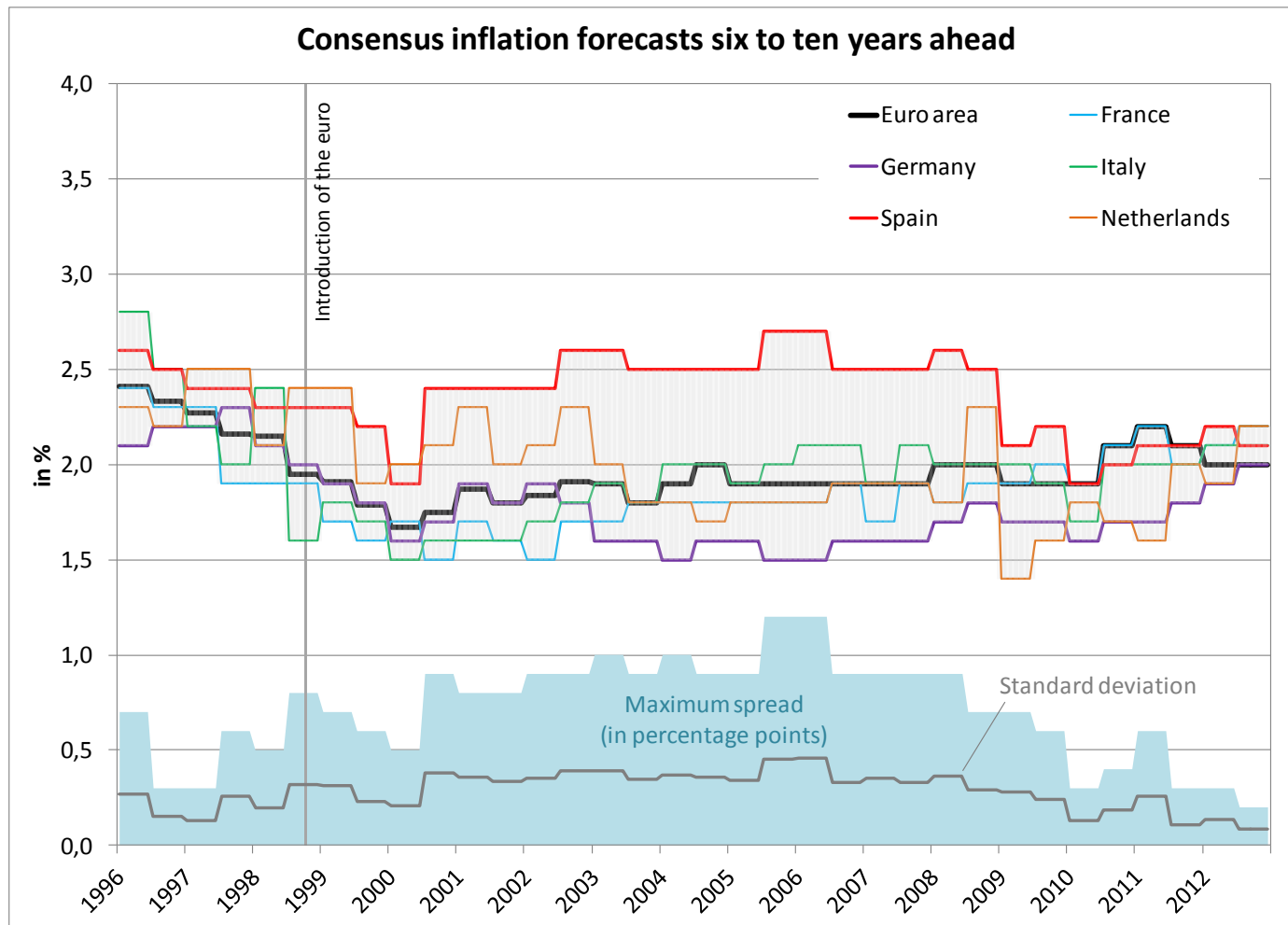
➤ **...but future inflation Granger causes household expectations**

- Hence, survey respondents are forward-looking in the sense that their expectations display some adjustment towards the fully „rational“ values

Euro area: Should we look at aggregate or country-specific expectations?

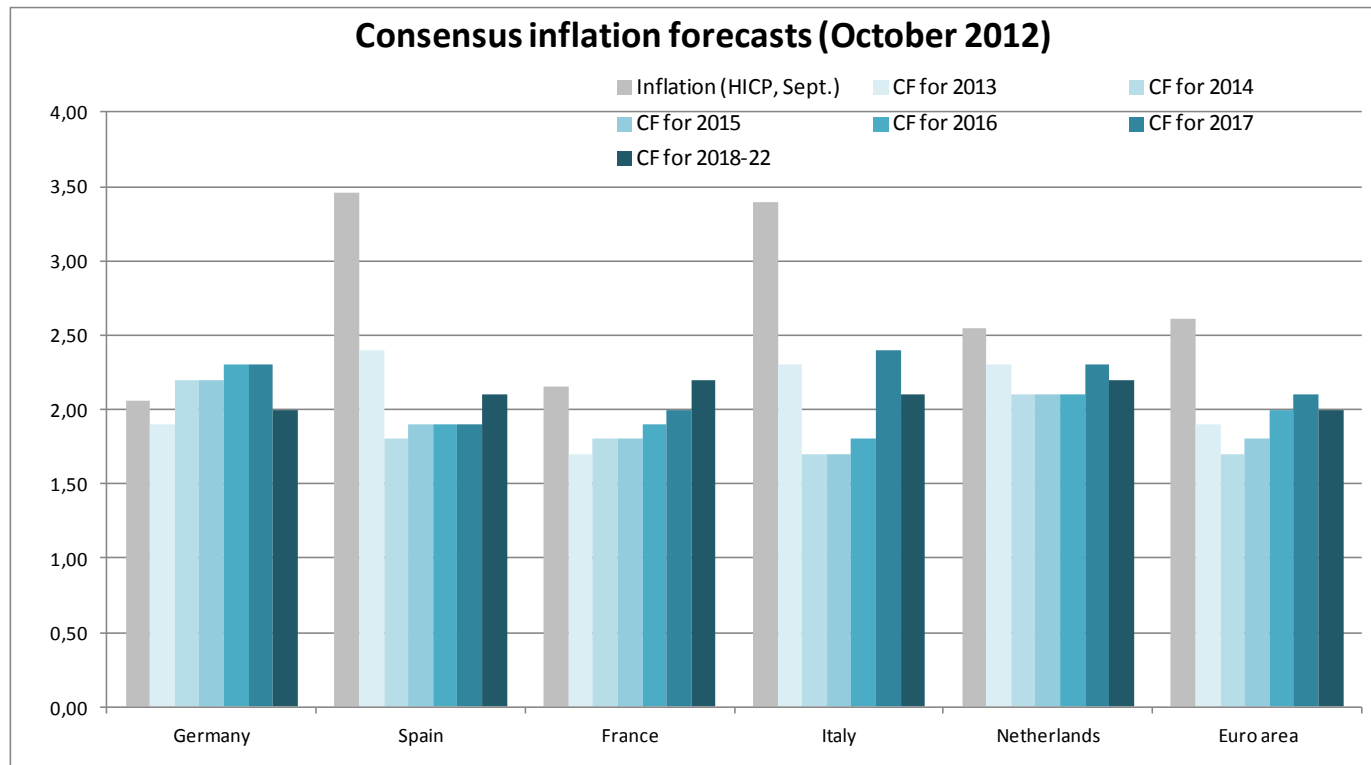
- **Monetary policy of the Eurosystem geared towards keeping average inflation in the euro area in line with objective**
 - Hence, natural to analyse inflation expectations at euro area level
- **However, lately, some worries that growth and inflation performance of euro area member countries may drift apart**
 - Worst-case scenario: high inflation in Germany, deflation in countries hit by sovereign debt crisis
- **Hence, besides firmly anchoring inflation expectations, important that country-specific expectations remained broadly anchored**

Long-term Consensus forecasts at country level



- From 1999 to 2008, (very) long-term inflation expectations were moderately heterogenous:
 - Spain mostly above 2%, Germany mostly below 2%.
 - Maximum spread rarely above 1 PP.
- Since 2009, long-term inflation expectations have converged visibly and are currently in a narrow range:
 - Standard deviation down to $\frac{1}{4}$ %.
 - Expectations for Spain still slightly higher than for DE.

Evolution of Consensus forecasts over different horizons



- Shorter-term inflation forecasts reflect expected impact of adjustment processes:
 - For horizons from two to five years ahead, inflation forecasts for Germany are above 2 %.
 - Elevated level of actual inflation and one-year ahead forecasts for Spain and Italy partly due to fiscal measures.
 - Two- to five-year ahead inflation forecasts for Spain below 2 %.
 - For France and Italy, two- to four-year ahead forecasts also below 2 %.

Conclusions

- **At present, no evidence of rising heterogeneity in long-term inflation expectations**
- **However, in current environment of high uncertainty and nonstandard monetary policy, expectations may become de-anchored quickly**
- **High degree of uncertainty surrounding mean values of inflation forecasts gives some cause for concern**
- **Hence, important to monitor available indicators regularly and carefully.**



Background information



Data from the consumer survey

Review of quantification methods

- Many studies of consumer expectations use method proposed by Berk (1999)
- However, quantification of inflation perceptions based on original Carlson-Parkin approach is problematic since
 - thresholds are likely to be time-varying
 - assumption of unbiasedness implies that estimates of perceived inflation are based on full-sample information, giving rise to potentially large revisions as time goes on

Data from the consumer survey

Review of quantification methods, contd

Figure 1: Recursive estimates of the threshold parameter δ

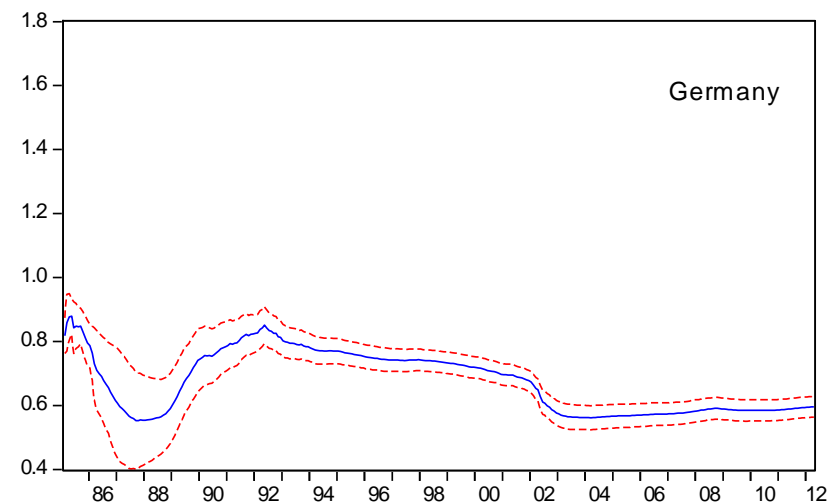
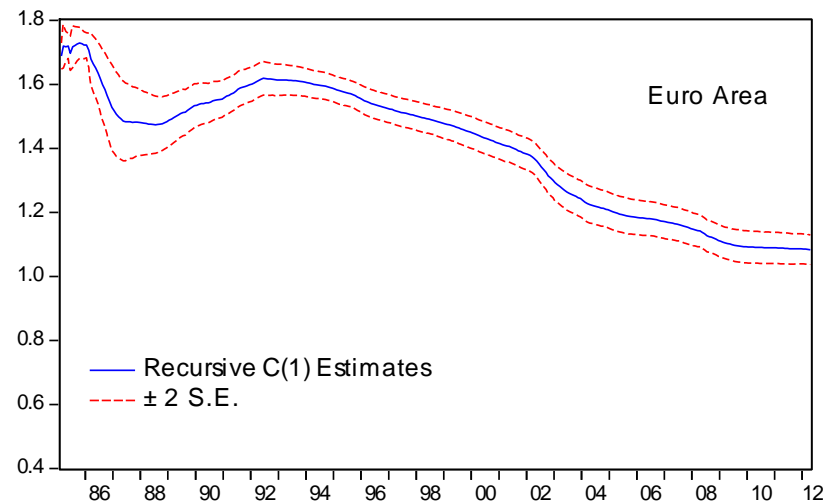
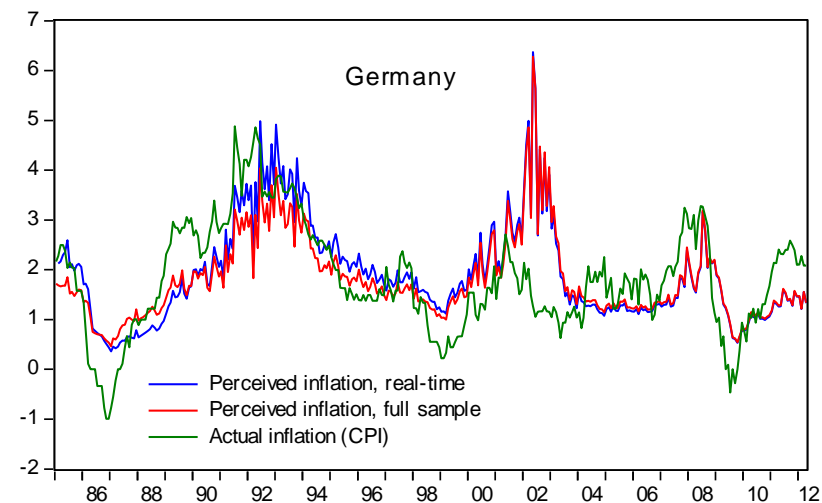
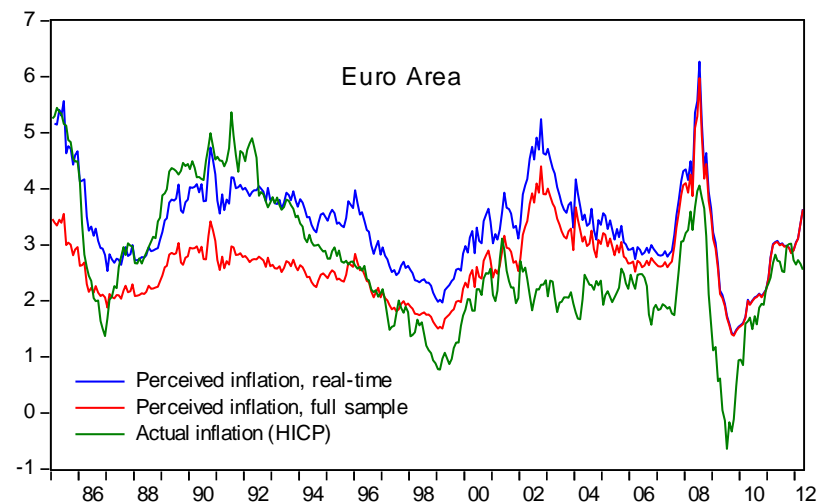


Figure 2: Real-time versus ex post estimates of perceived inflation



Data from the consumer survey

Review of quantification methods, contd

- **Method proposed by Batchelor and Orr (1988) avoids these problems since...**
 - ...it allows for time-varying thresholds and relies only on real-time information.
 - However, method requires us to pin down participants' perception of the „moderate“ rate of inflation.
- **How can the „moderate“ rate of inflation be measured?**
 - Dias et al. (2007) use the HP-filtered inflation series, but again, this relies on full-sample information.
 - Fritsche et al. (2009) use recursive HP filter, but well-known end-point problems.
 - Following Nielson (2003), we proxy the moderate rate by the recursive mean of actual inflation: method is simple and fares well in terms of RMSFE.

Estimates of household expectations based on Nielson (2003)

Shorter-term inflation expectations, quarterly data

