European Commission

Directorate General Economic and Financial Affairs

Can quantification methods lead to wrong conclusions?

*Evidence from consumers' inflation perceptions and expectations**

**Preliminary and incomplete version*

Presentation by Roberta FRIZ
(roberta.friz@ec.europa.eu)

Conference on Consumer Inflation expectations
Federal Reserve Bank of New York
New York, 18 - 19 November 2010

Outline

1. Introduction, ways of reporting the results
2. Quantification methods
3. The benchmark: inflation perceptions and expectations
4. Results and comparisons
5. Conclusions

NB: Views expressed represent exclusively the positions of the author of the paper on which this presentation is based and do not necessarily correspond to those of the European Commission.

In general qualitative information from the surveys are reported as

- Balance statistics (as the EC business and consumer surveys)
- Indices (as PMI, Ifo…)

! But they remain “qualitative” !

➢ Need to have quantitative numbers directly comparable to the hard data

⇨ Quantification methods

Quantification methods

- Probabilistic approach
- Regression method

Probabilistic approach

- It considers that respondents' replies correspond to a value of the hard data that can be described by a certain statement.
- Assuming a certain aggregate probability distribution of opinions on a specific variable, it is possible to quantify the level of that opinion, as well as its standard error and the response thresholds.

Probabilistic approach

- Interpreting the share of respondents to each category as probabilities, the average value of inflation can be expressed as a function of the abovementioned range

Regression technique

- It is based on regression techniques aimed at estimating the value of inflation underlying each qualitative answer, assuming consumers implicitly attach a numeric value to inflation to each qualitative answer.

Inflation perceptions and expectations

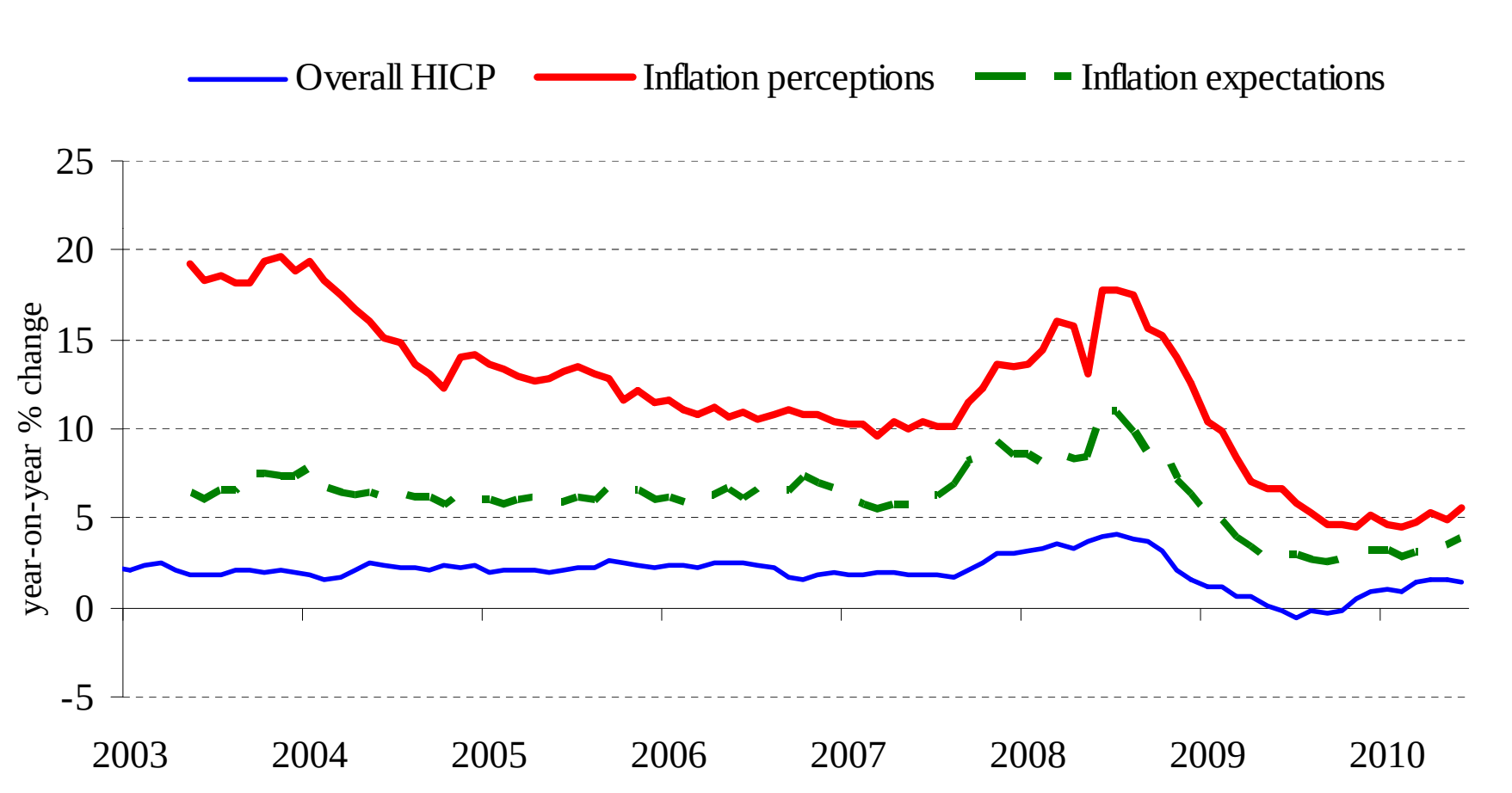
- How do you think that consumer prices have developed over the last 12 months? They have:
  - (1) risen a lot; - (2) risen moderately;
  - (3) risen slightly; - (4) stayed about the same;
  - (5) fallen; - (N) don't know

- By comparison with the past 12 months, how do you expect that consumer prices will develop in the next 12 months? They will:
  - (1) increase more rapidly; - (2) increase at the same rate;
  - (3) increase at a slower rate; - (4) stay about the same;
  - (5) fall; - (N) don't know

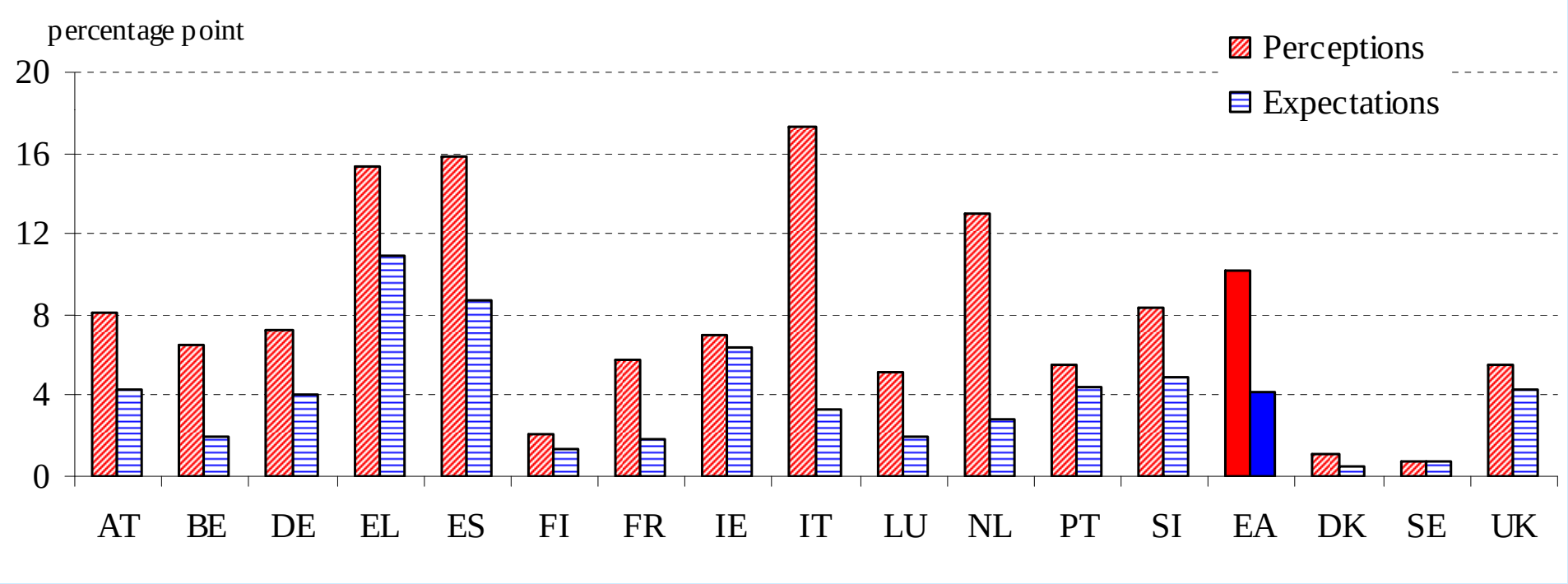
Inflation perceptions and expectations in quantitative terms

- Since May 2003, respondents are confronted with the following two quantitative questions:
- By how many percent do you think that consumer prices have gone up/down over the past 12 months?: consumer prices have increased by……,…% / decreased by……,…%.
- By how many percent do you expect consumer prices to go up/down in the next 12 months?: Consumer prices will increase by……,…% / decrease by……,…%.

Our benchmark



Our benchmark



Background information

- 2008 - Task force:
- Main tasks
  - Probing respondents understanding of the survey questions
  - Interpretation of “stay about the same”
  - Basket of goods considered by respondents
  - Knowledge of official figures
- Testing alternative formulations of questions
  - Survey laboratory
  - Live

Background information

Main conclusions of the task force:

– Some difficulties in interpreting questions
  - Consumers mainly think of frequently purchased items
  - Some misinterpret the answer category “stay about the same”

– Among consumers, there is an widespread lack of knowledge about inflation

– Rephrasing the questions did not alleviate the problem of inflation overestimation

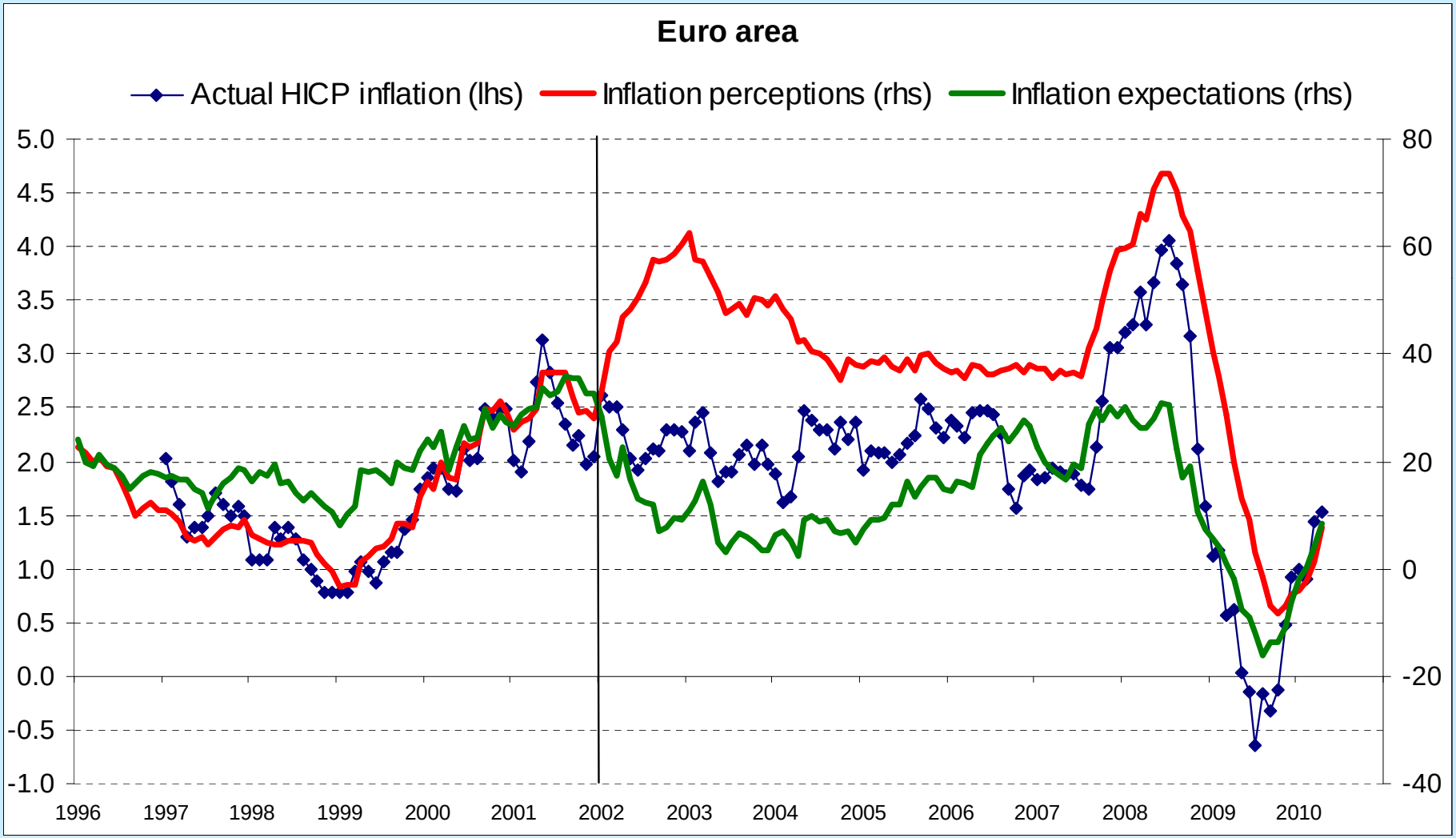
Background information

Main conclusions of the task force:

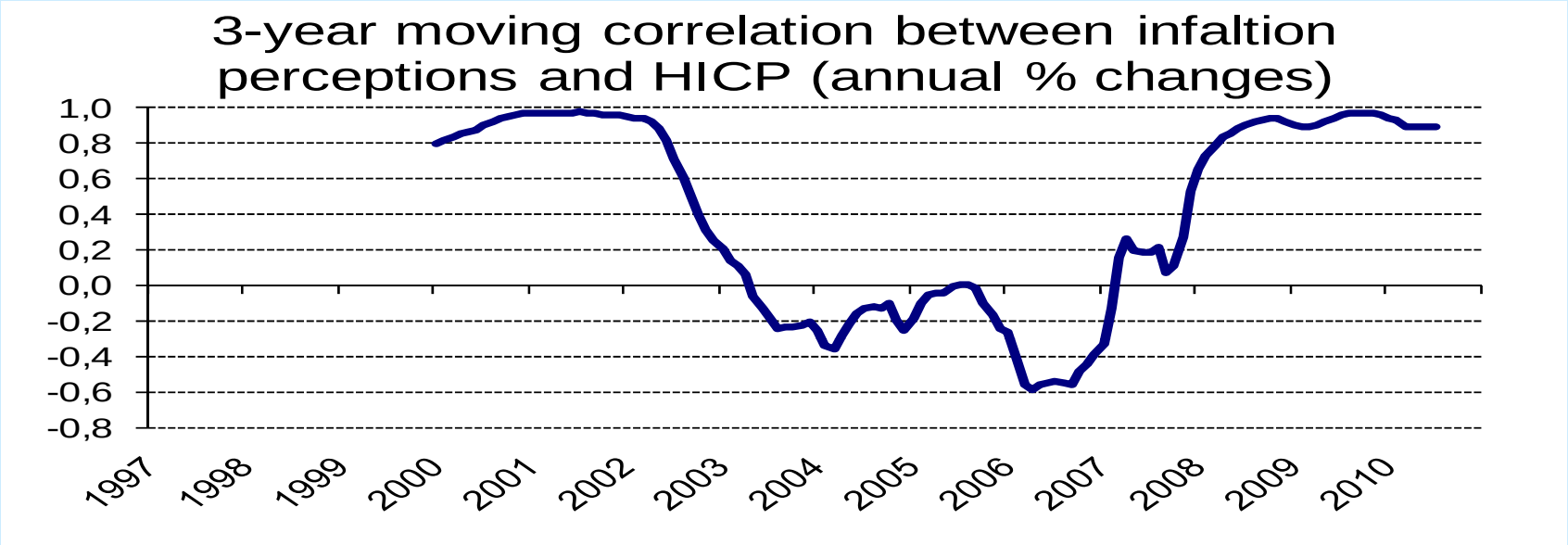
– Quality is high

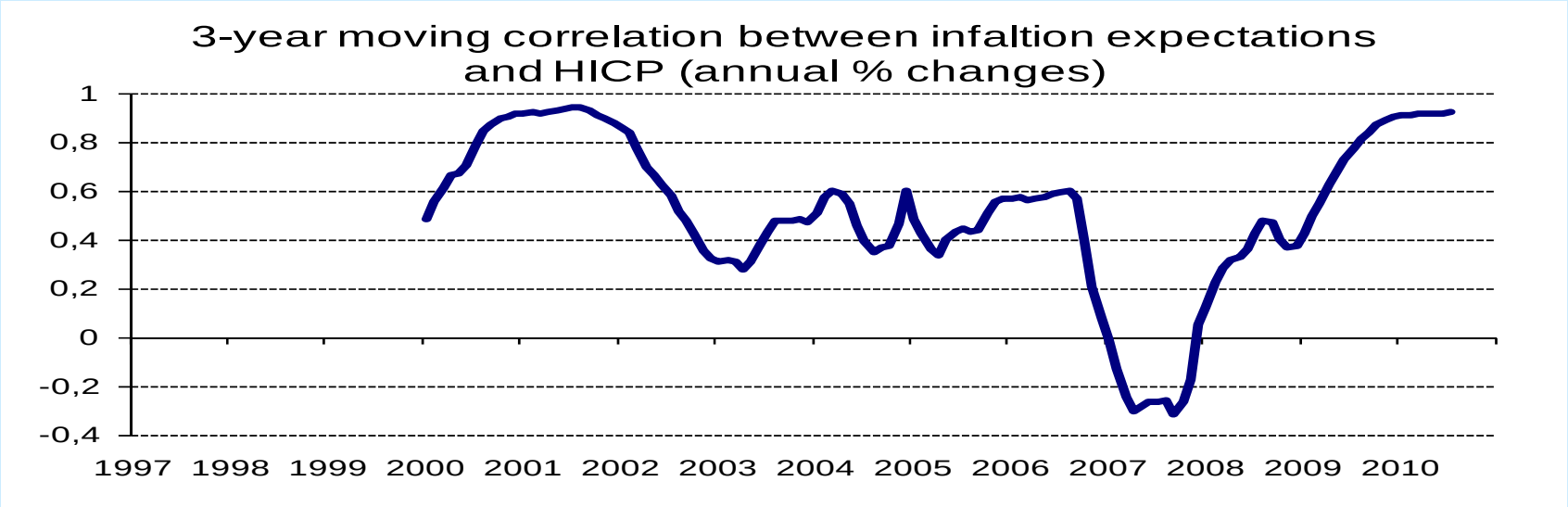
- The means are not affected by outliers
- Quantitative replies are consistent with qualitative
- Quantitative and qualitative data are highly correlated
- Provide a correct representation of consumers' opinions

Balance statistic



Balance statistic



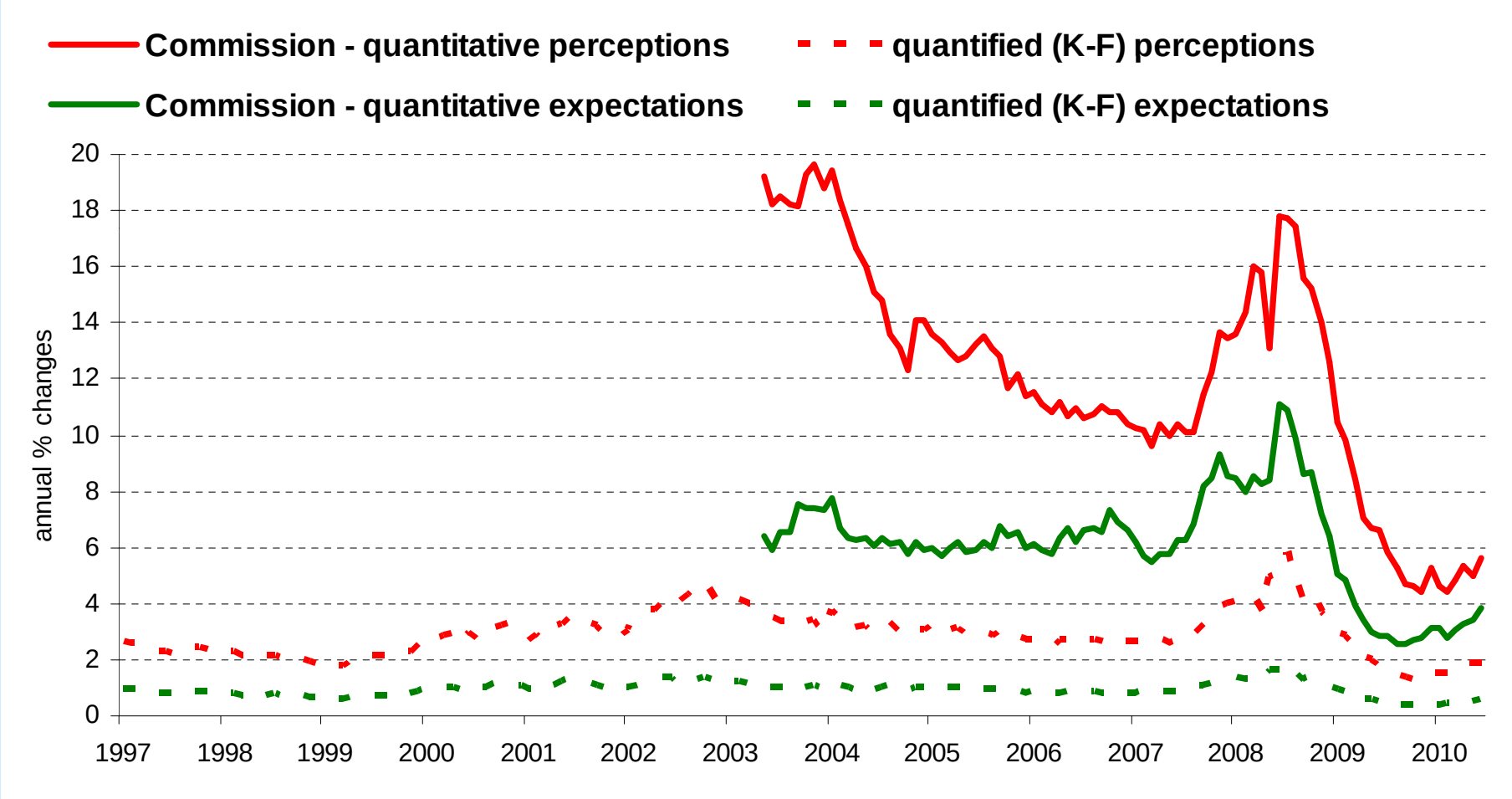


Criteria to “clear”

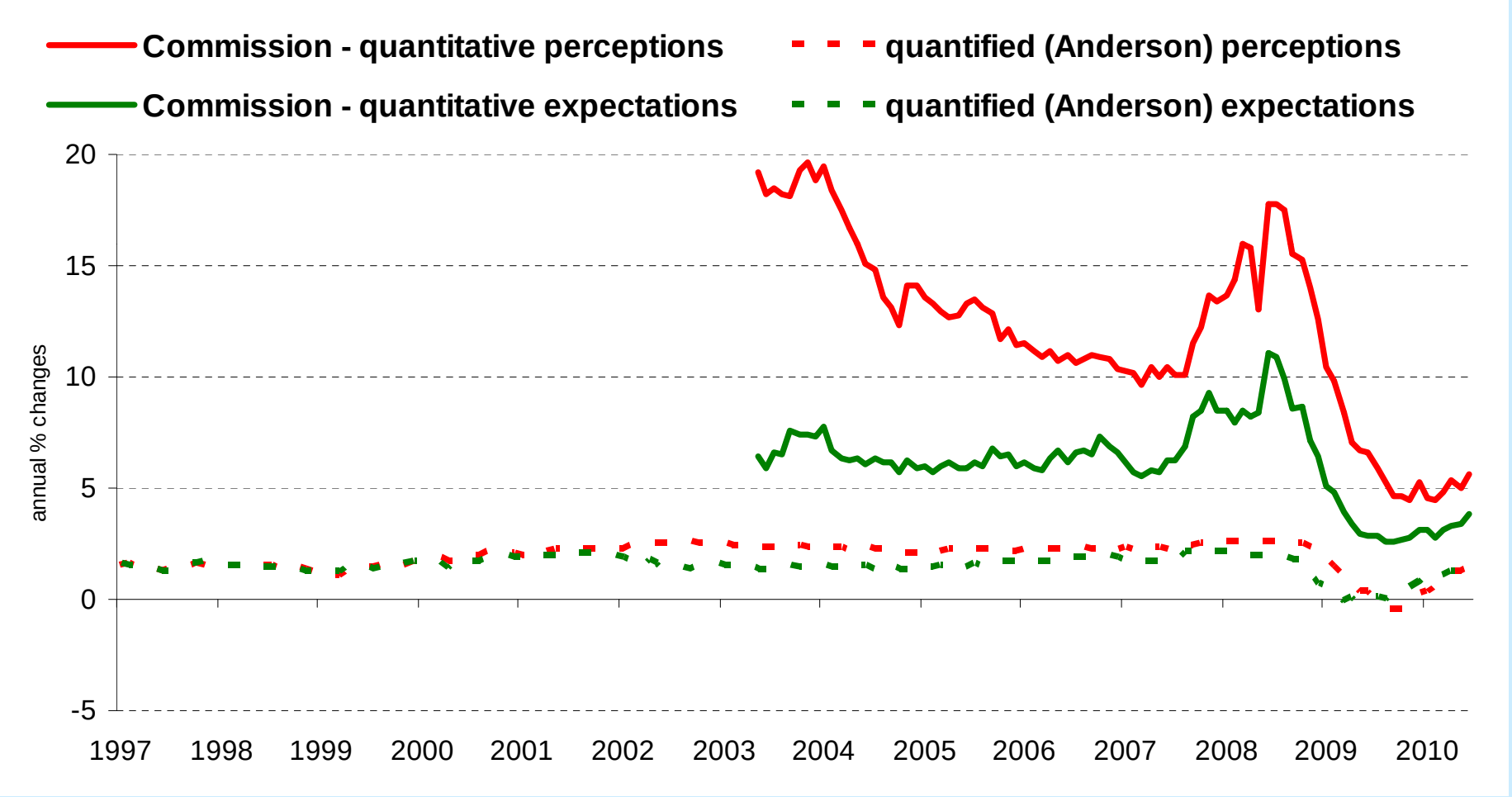
A good quantification technique should:

- Reflect the level of consumer inflation perceptions and expectations
- Be well correlated with the quantitative series
- Same range of standard deviation
- Replicate the structural break observed in 2002

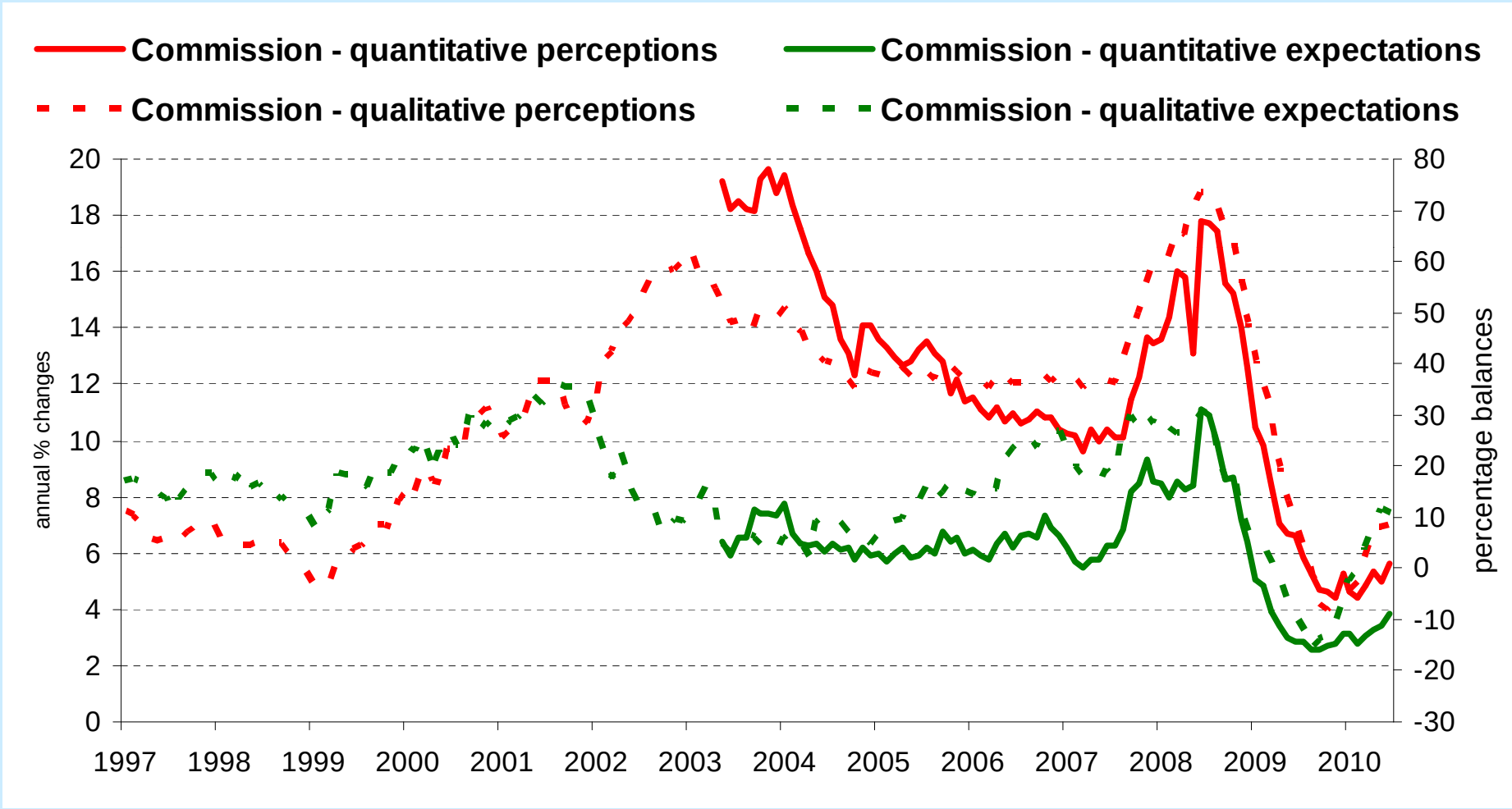
Quantified with the probability approach



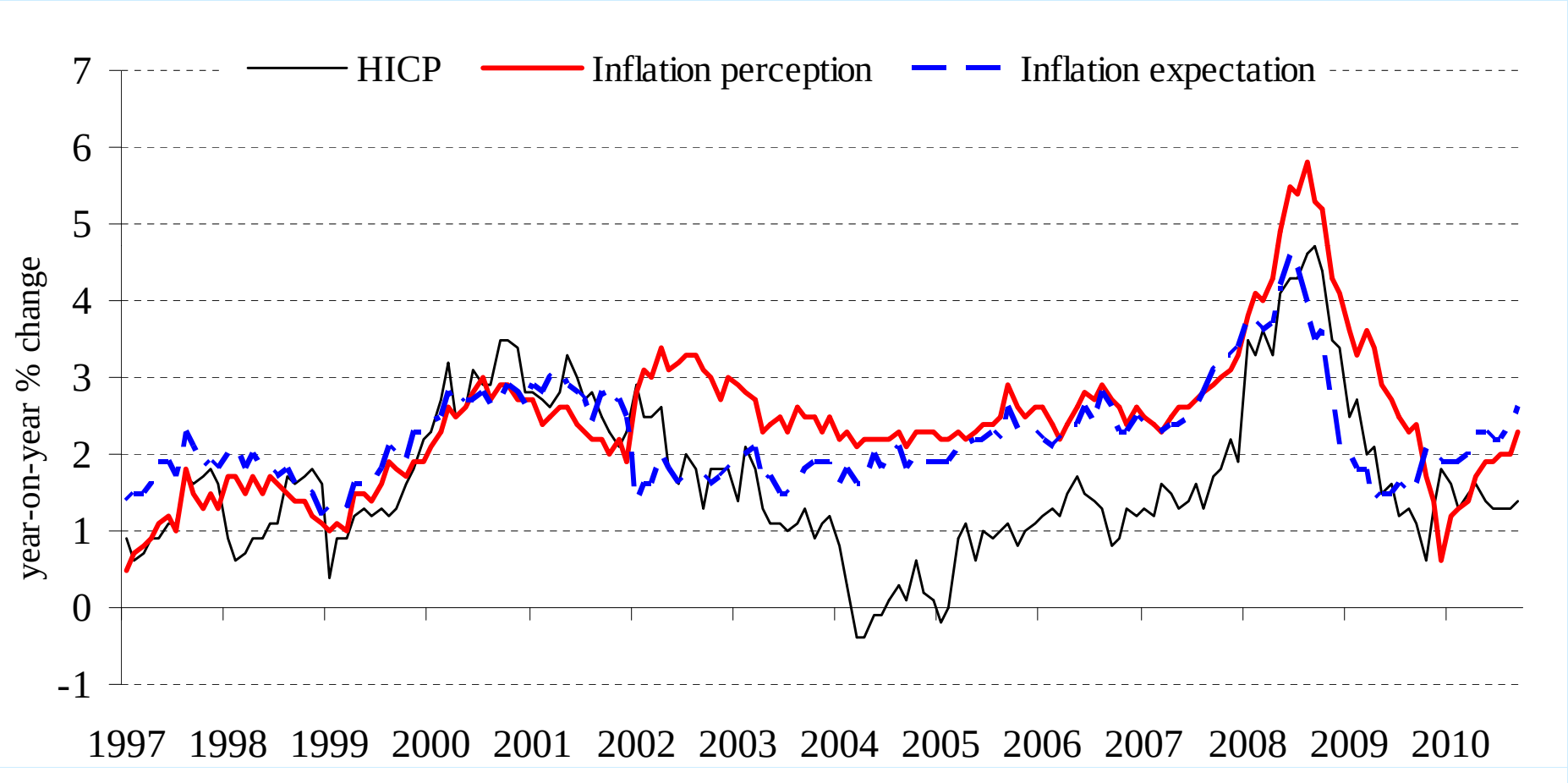
Quantified with the recession technique



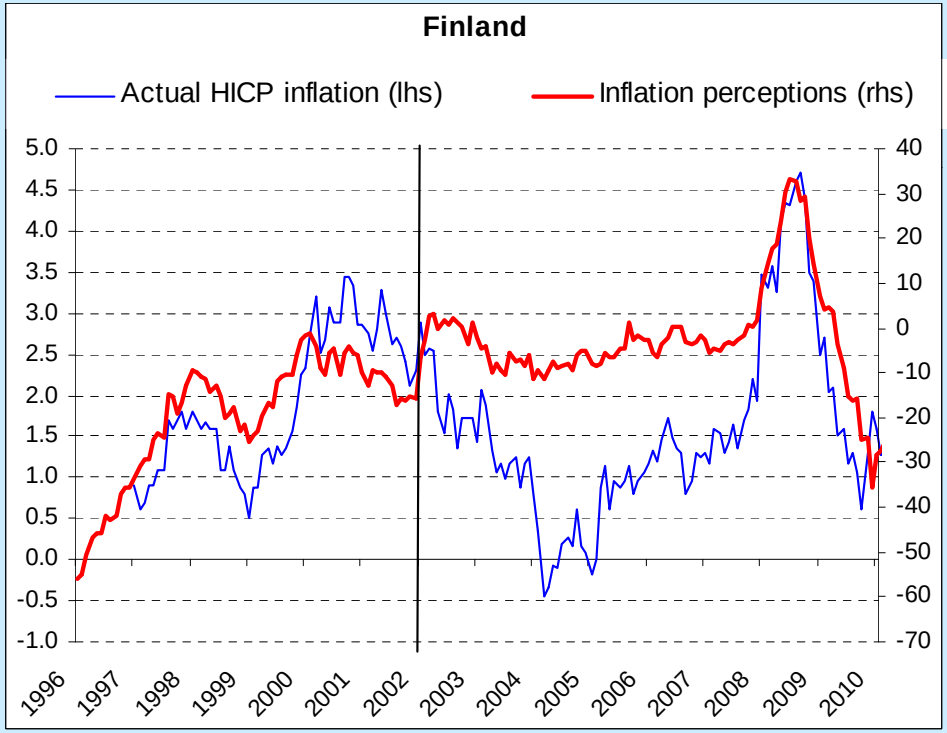
Balance statistic

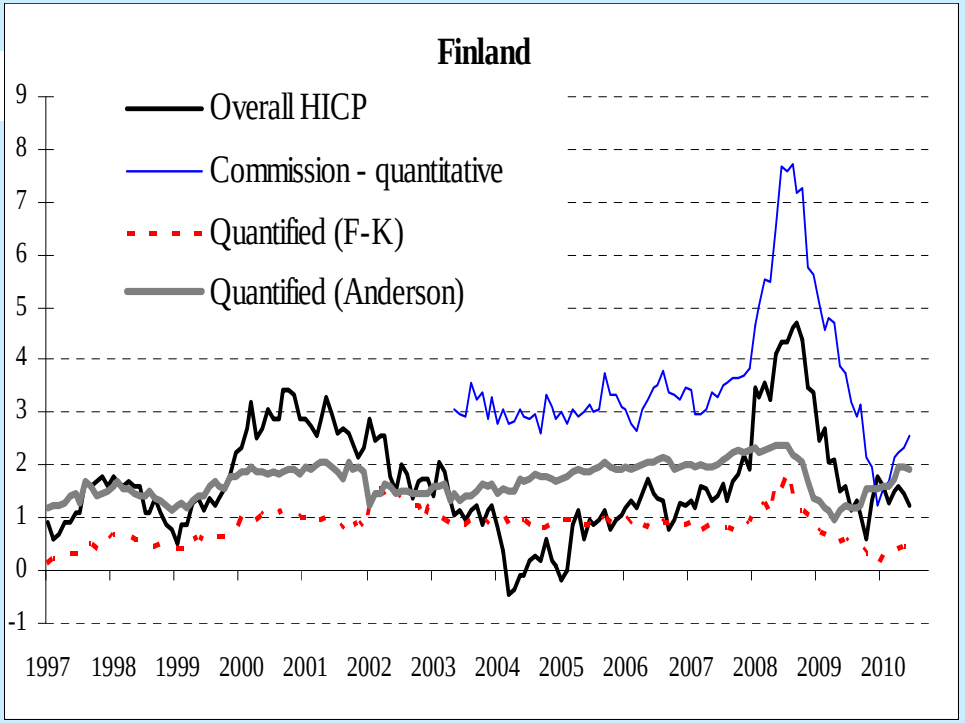


The case of Finland

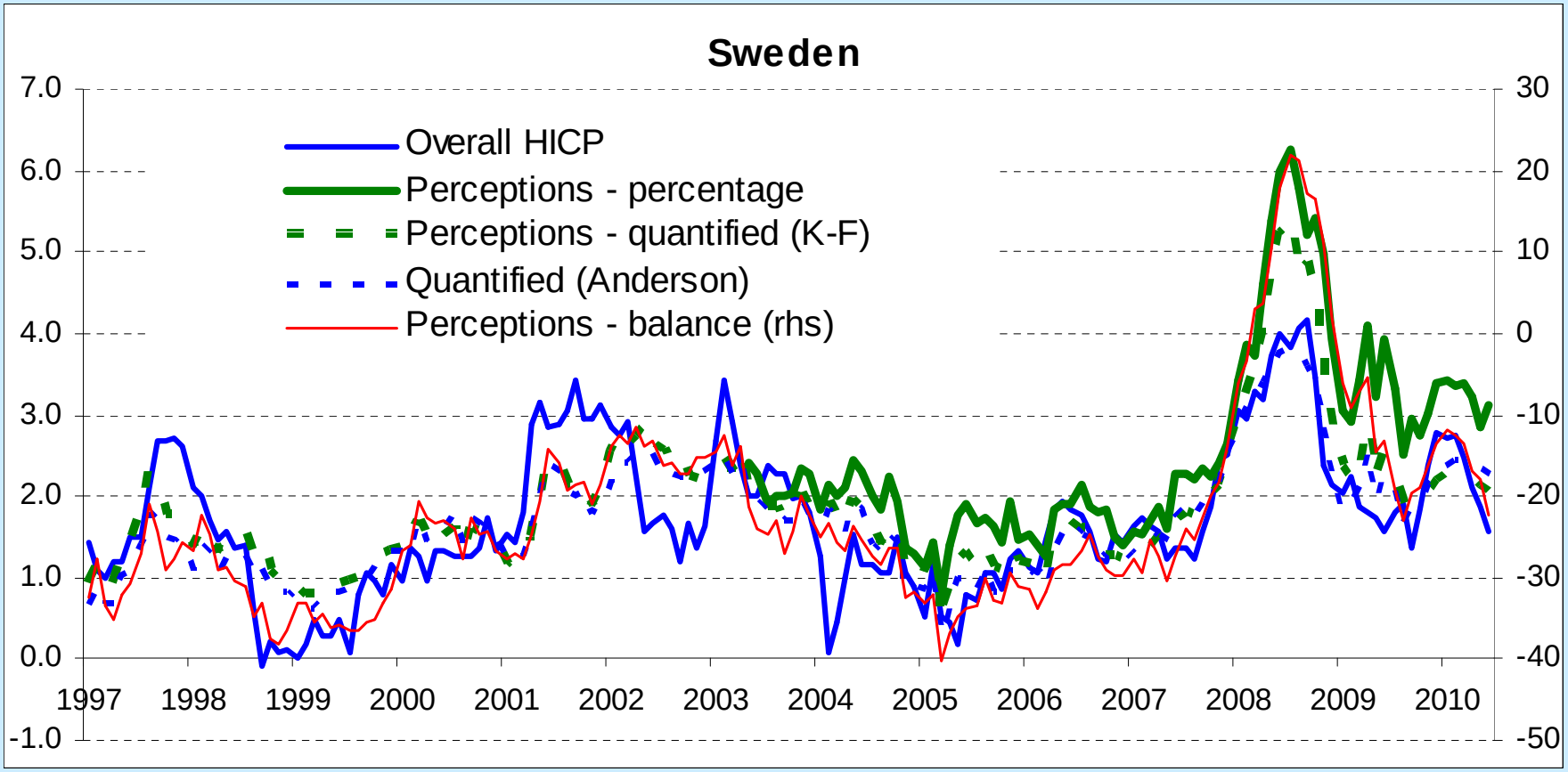


The case of Finland

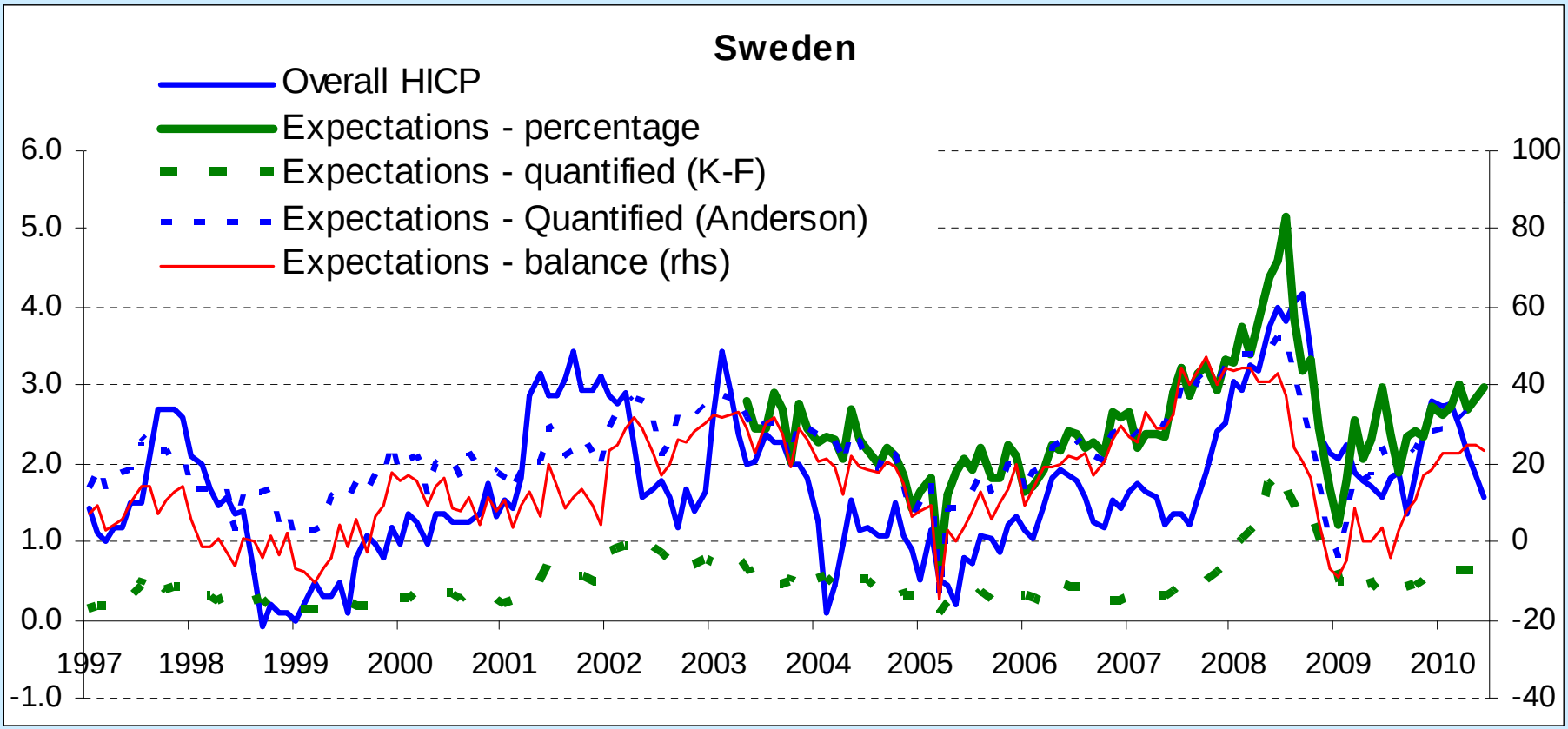




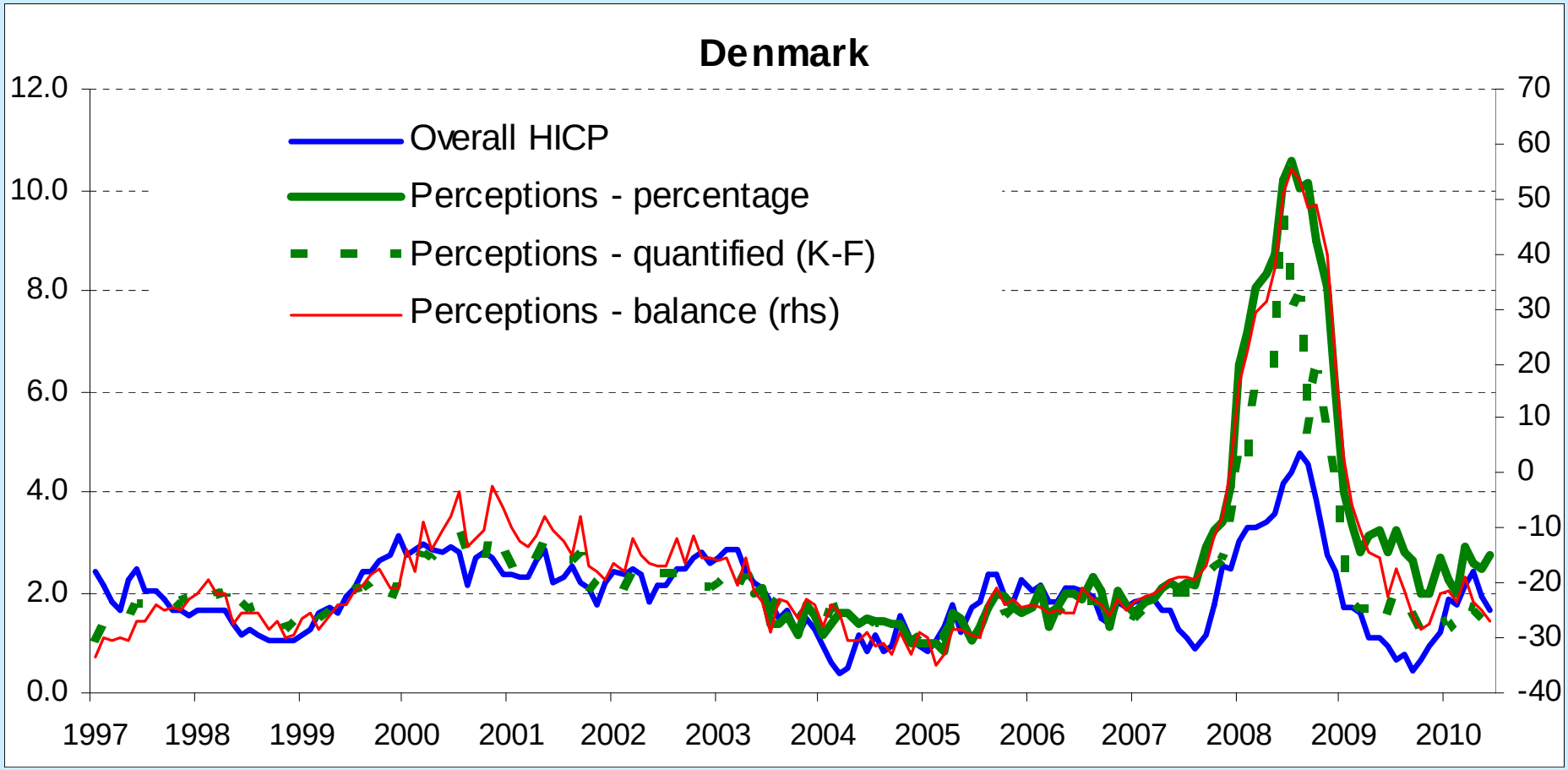
The case of Sweden



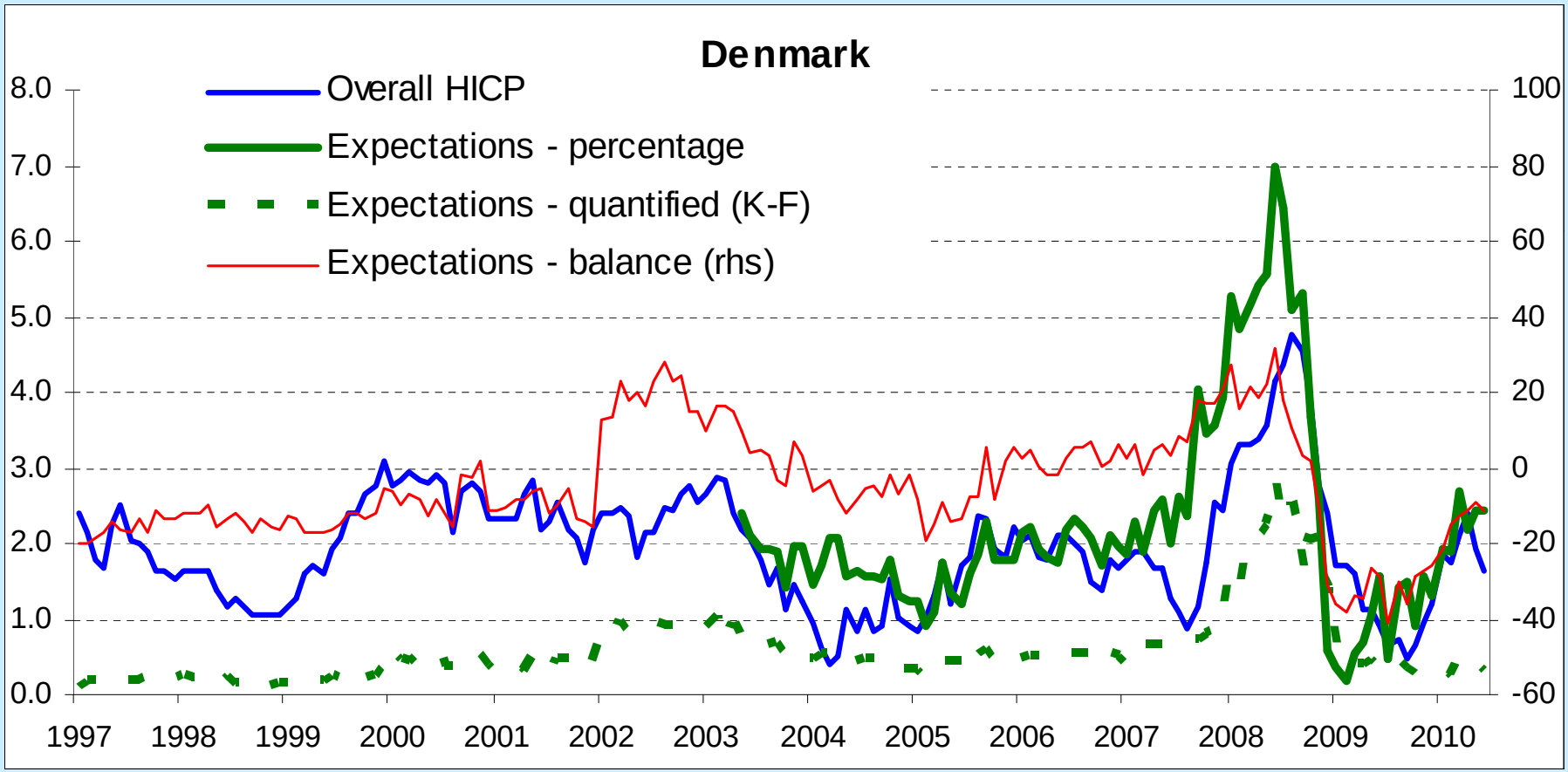
The case of Sweden



The case of Denmark



The case of Denmark



Conclusions

- Both quantification methods underestimate the level of inflation perceptions and expectations
- The correlation of the series with our benchmark is rather low, notably concerning perceptions
- The standard deviation is lower than our benchmark
- The regression method does not show any shift link to the euro cash changeover

Conclusions

- The probability method signal the shift link to the euro cash changeover but it suggest that the divergence between HICP and inflation perceptions was over already in 2004

Conclusions

- Quantification methods are not reliable when a extraordinary event occurs
- In these case one should use the balance statistic