

CNB Experience with Web Scrapped Data

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Outline

1. History of Web Scrapping at the CNB
2. The Use for Inflation Nowcasting
3. The Way Forward

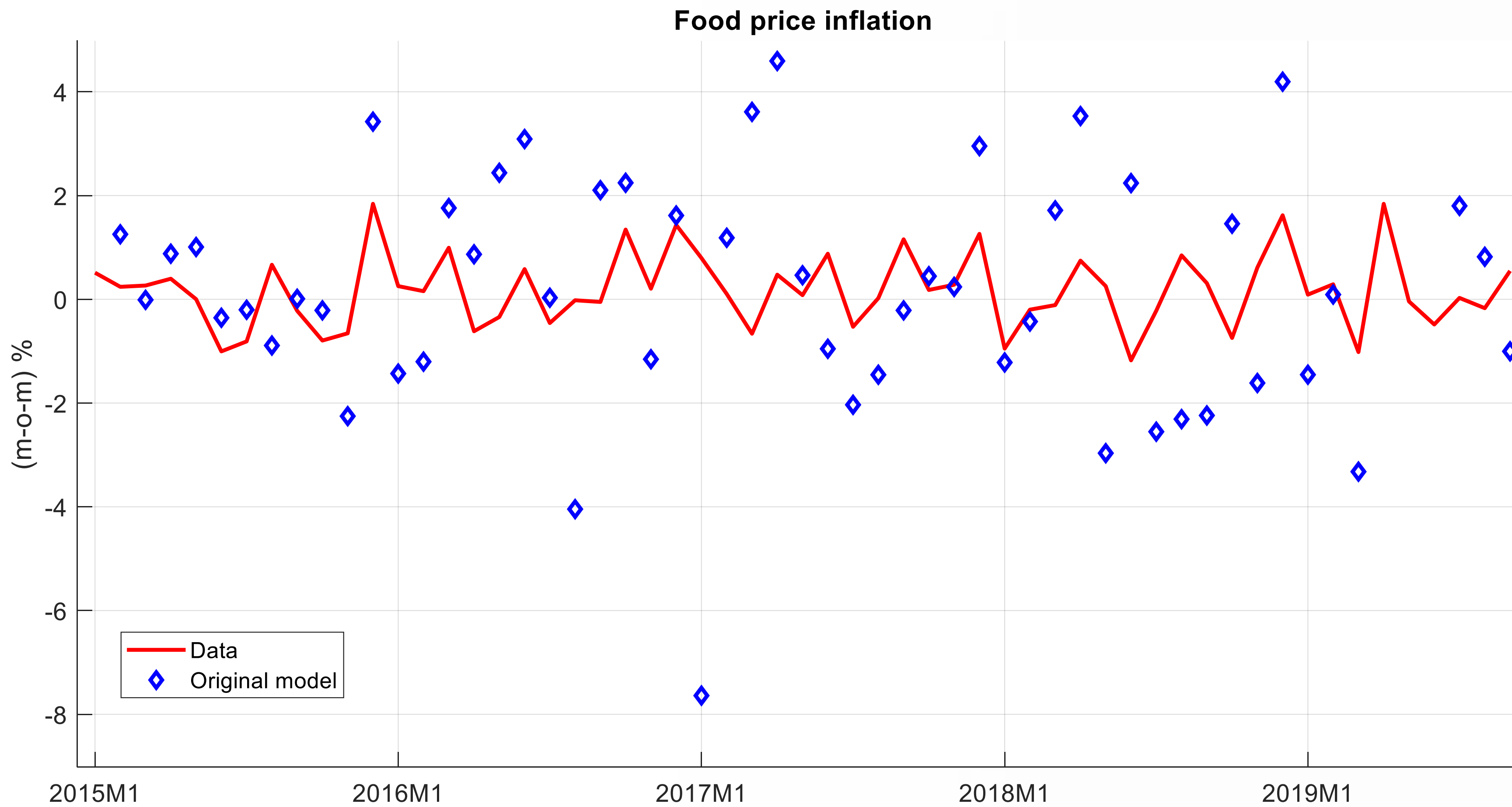


History of Web Scrapping at the CNB

- The first attempt to use web data for nowcasting inflation was in 2015
 - Food prices from one retailer were scrapped and a leading indicator for food price inflation has been constructed
 - This indicator was being commented in the Situation Report
 - The indicator featured a high volatility



Our original model



The Next Steps

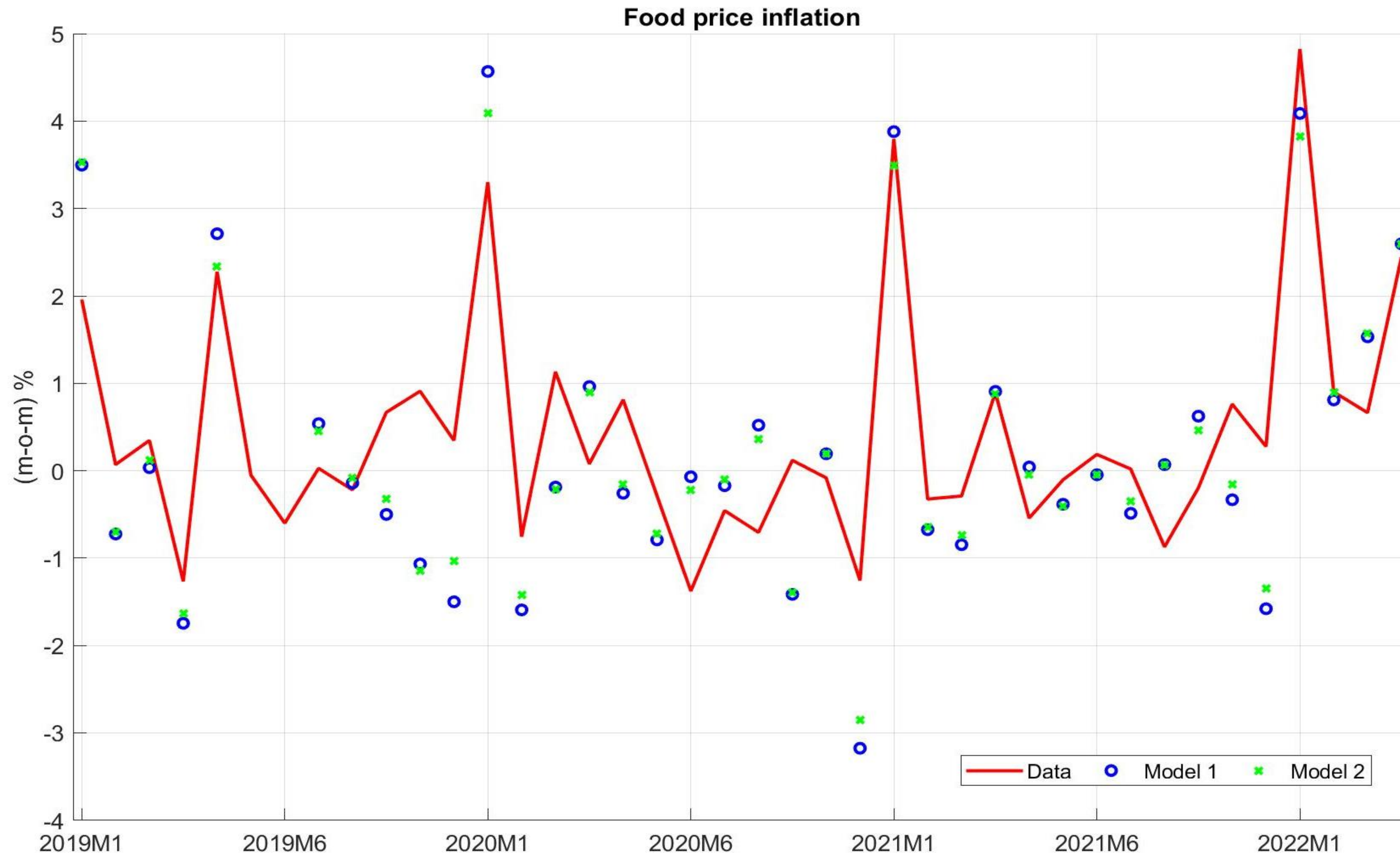
- It is clear that simple (geometric) average would not work
 - The reason for the volatility is the presence of sales
- We started to seek for a more „tailored“ methods
 - Robust averages
 - Sparsity and machine learning techniques
 - Functional time series
 - Each model is evaluated for sub-items separately

The trimmed weighted average is the winner

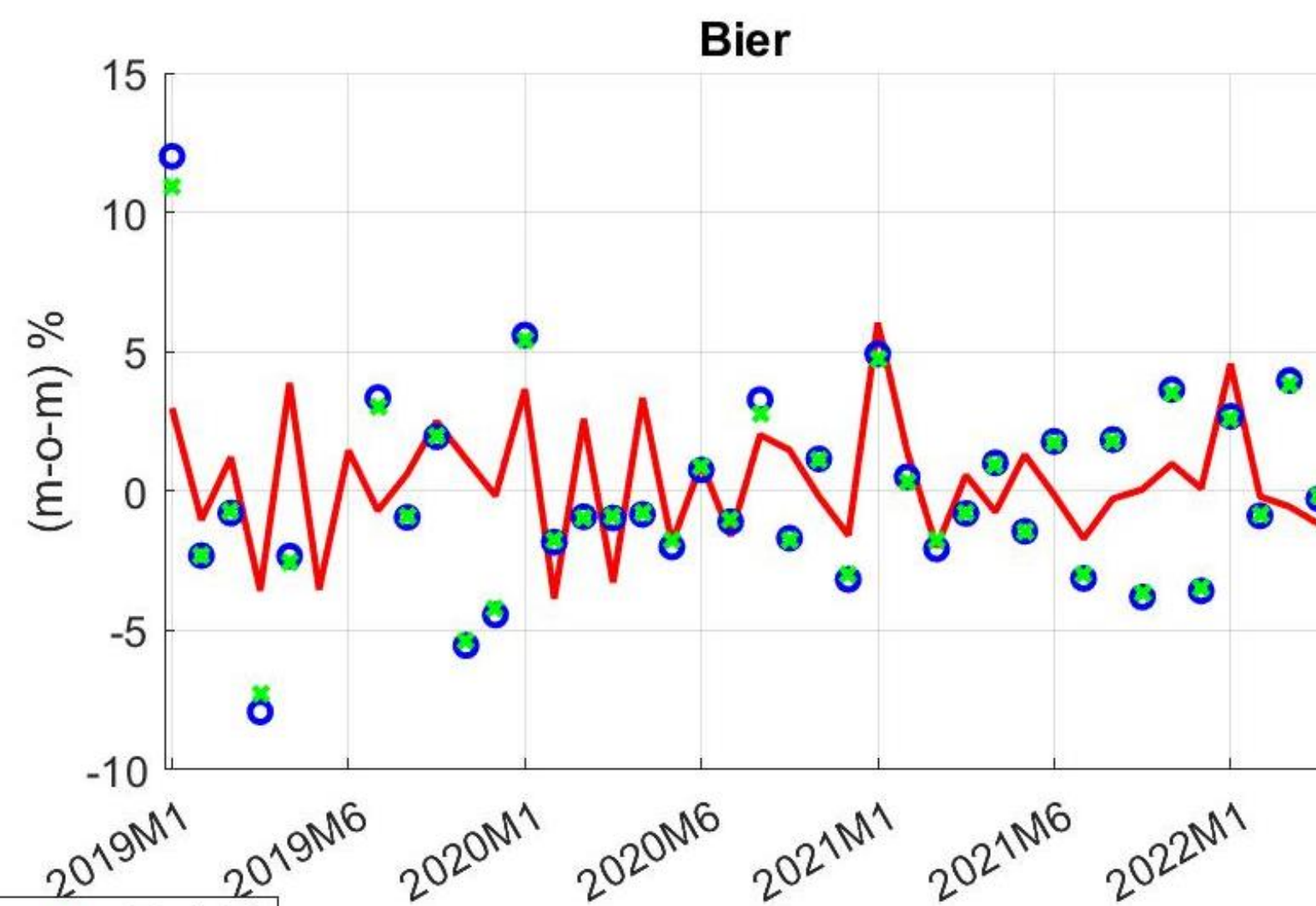
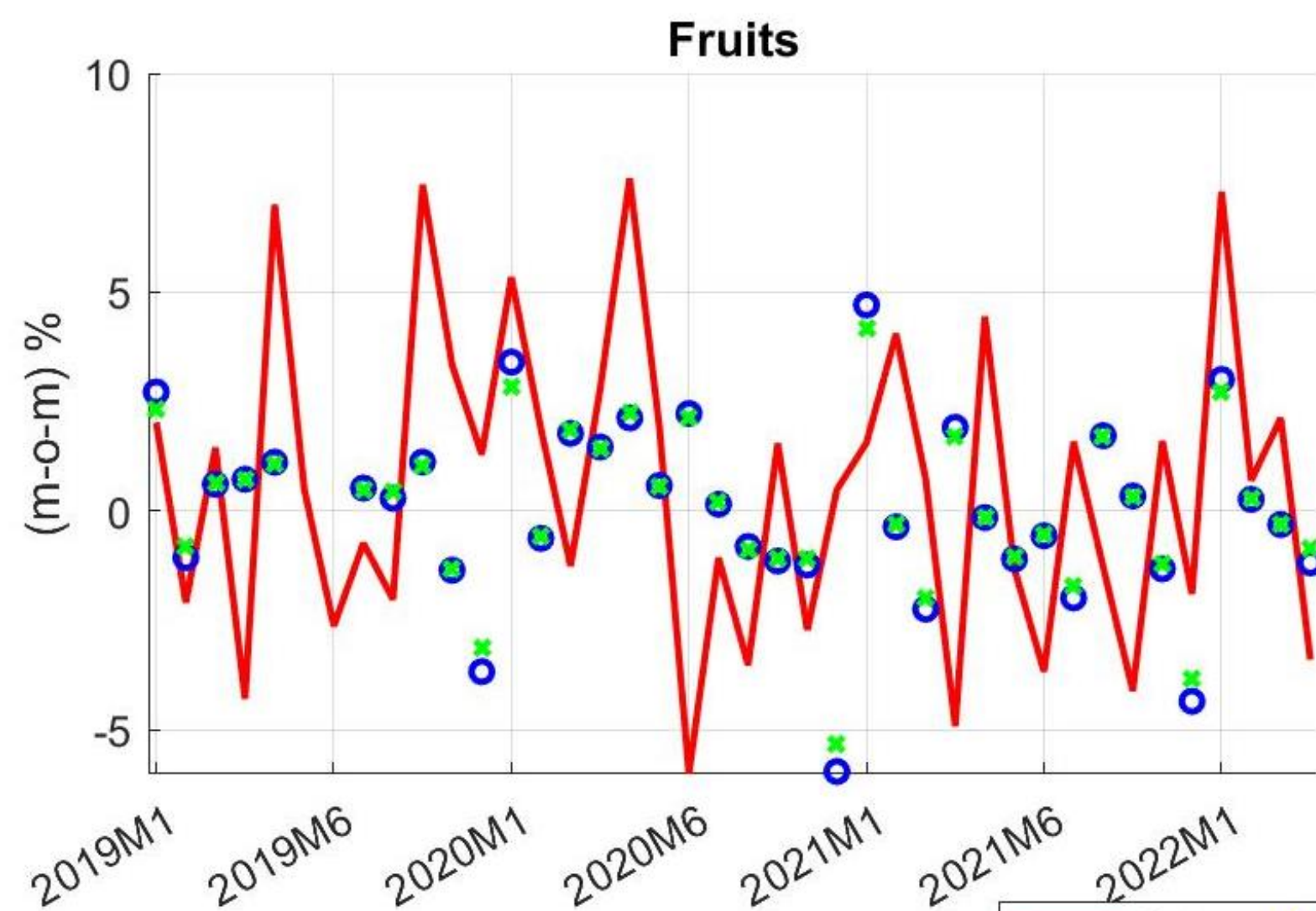
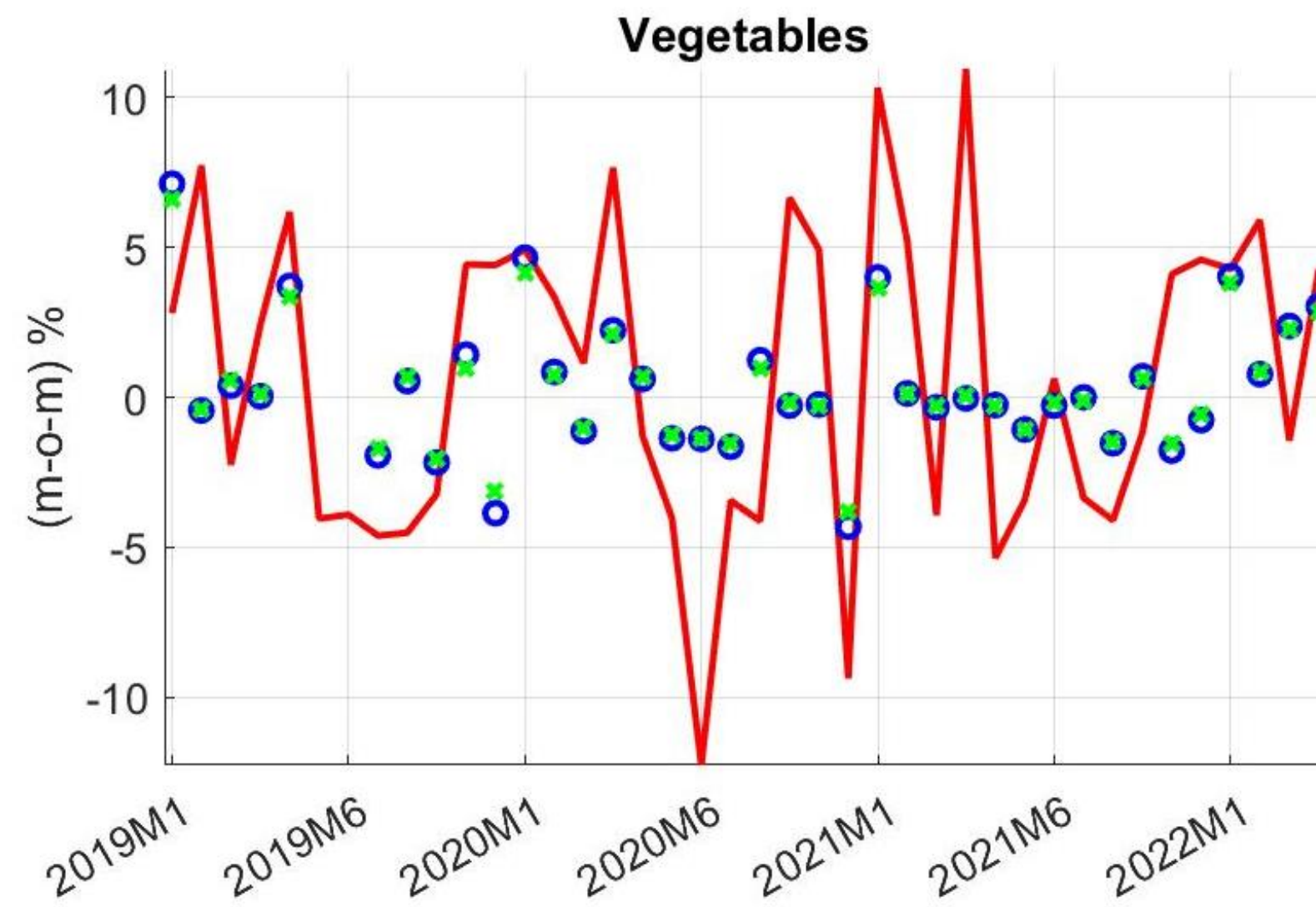
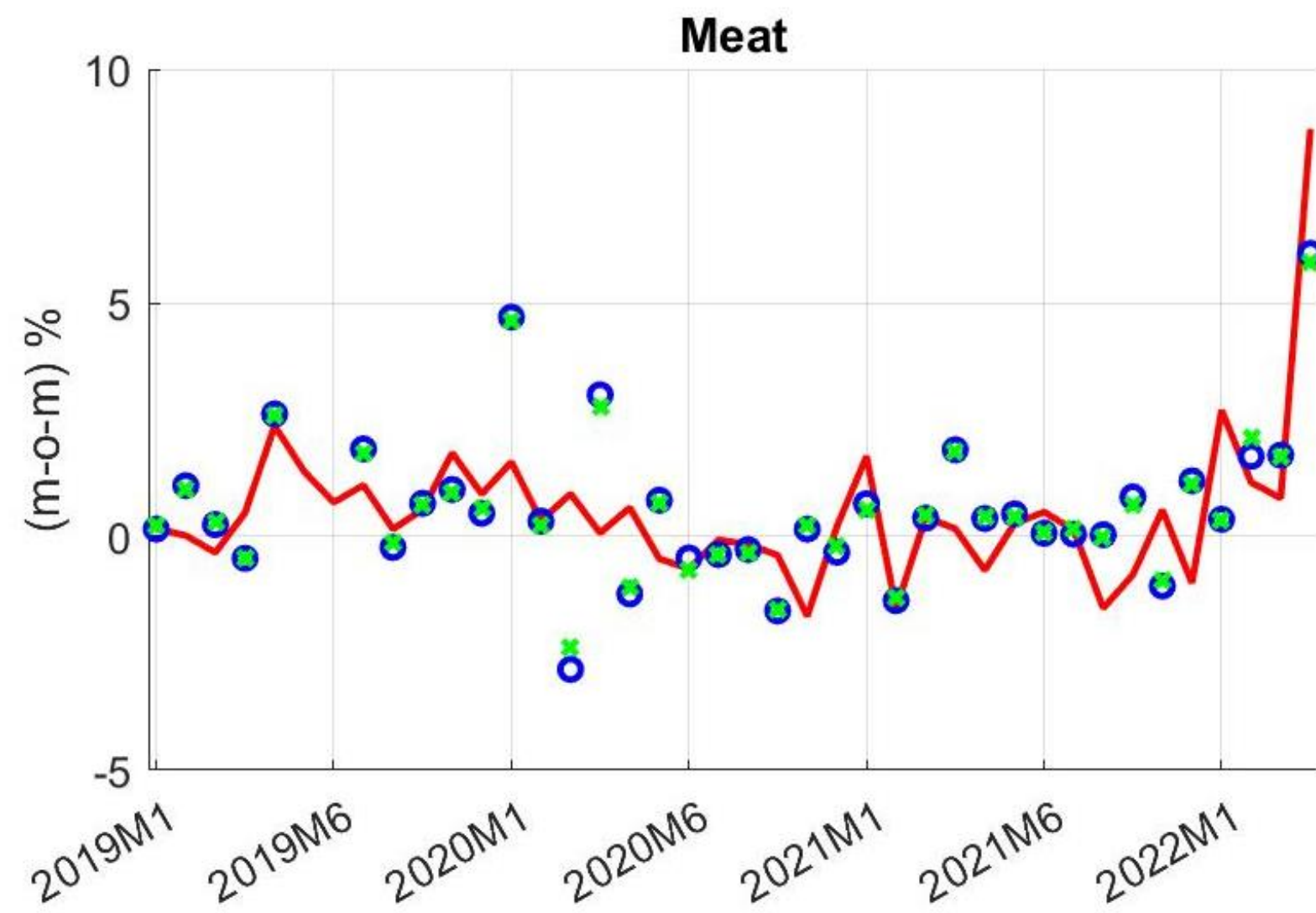
- Weights reflect the CPI weights as well as the indicator for sales



Food price inflation: data and nowcasts



Food price inflation: data and nowcasts (2)



— Data ● Model 1 * Model 2



The Way Forward

- We observe the efforts by the ESCB Price-setting Microdata Analysis Network (PRISMA) aimed at understanding the drivers of inflation and channels of monetary policy transmission.
 - Use of microdata underlying official CPI and PPI, scanner data, and on-line prices.
- We participate in a research project dedicated to the collection, analysis and use of high-frequency on-line prices for monetary policy purposes.
 - Data collection coordinated by the ECB. Coverage: selected Eurozone countries + multinational retailers operating also in the Czech Republic. Data are stored in the ECB cloud accessible by national central banks.
 - Next steps: data evaluation, assessment of usability.
 - Producing tools for real-time analysis of inflation trends in selected consumer basket groups (food, beverages, clothing,...)



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