

USING NON-TRADITIONAL DATA SOURCES FOR NOWCASTING CPI IN CENTRAL BANK OF ARMENIA



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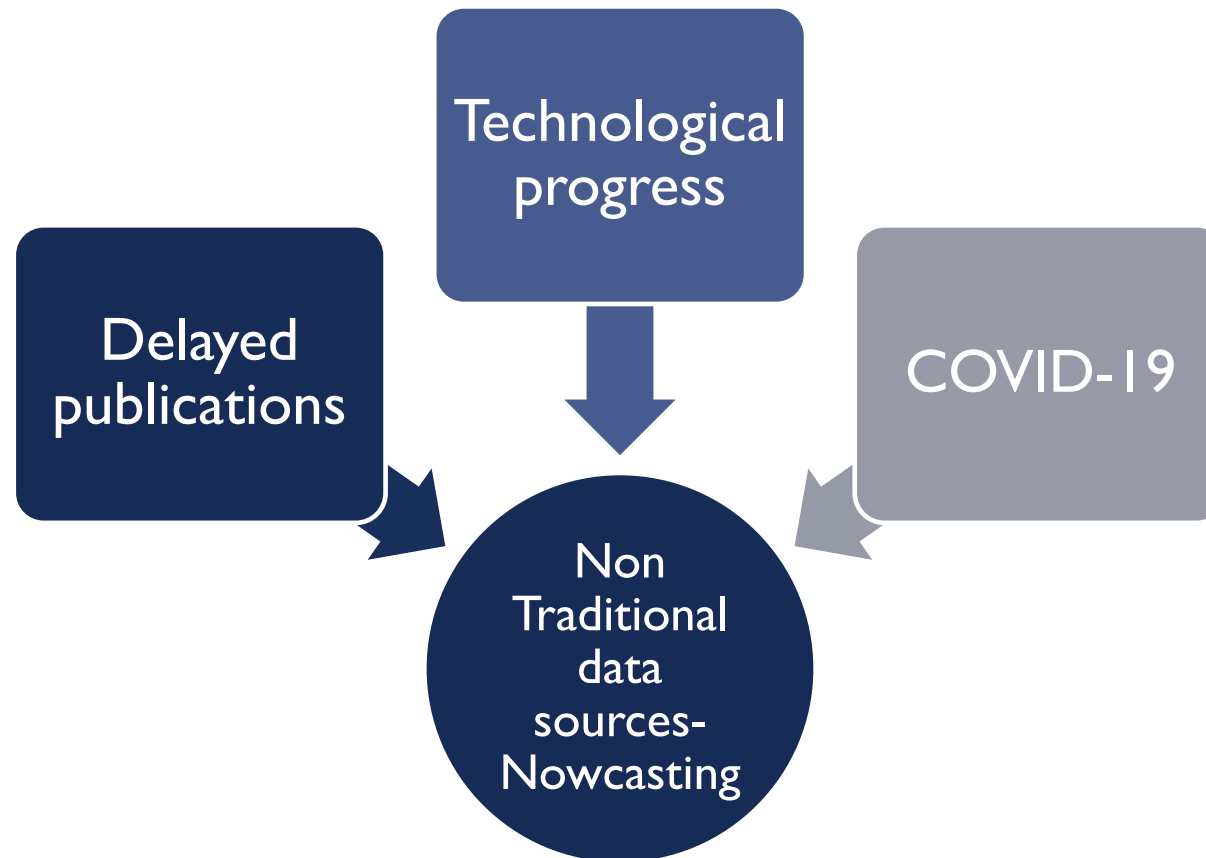


OUTLINE

- Motivation
- Goals
- Web scraping
- Data and methodology
- Results
- Further contributions



MOTIVATION





MOTIVATION (continuation)

Non-Traditional Data Sources - Nowcasting

Inflation

Real estate market

Economic Activity

Labor market



GOALS

Short-term	Long-term	
Flash estimates of CPI	Replacement of on-site monitoring	More accurate estimation of price dynamics



WEB-SCRAPING

The process of collecting data from web through a computer software

Advantages

Enhanced representativeness in time

Faster identification of new and disappearing products

Requires less resources

Reduced respondent burden

Supplemental to official statistics

Check the accuracy of official statistics

Drawbacks

Programming skills

Regular IT maintenance

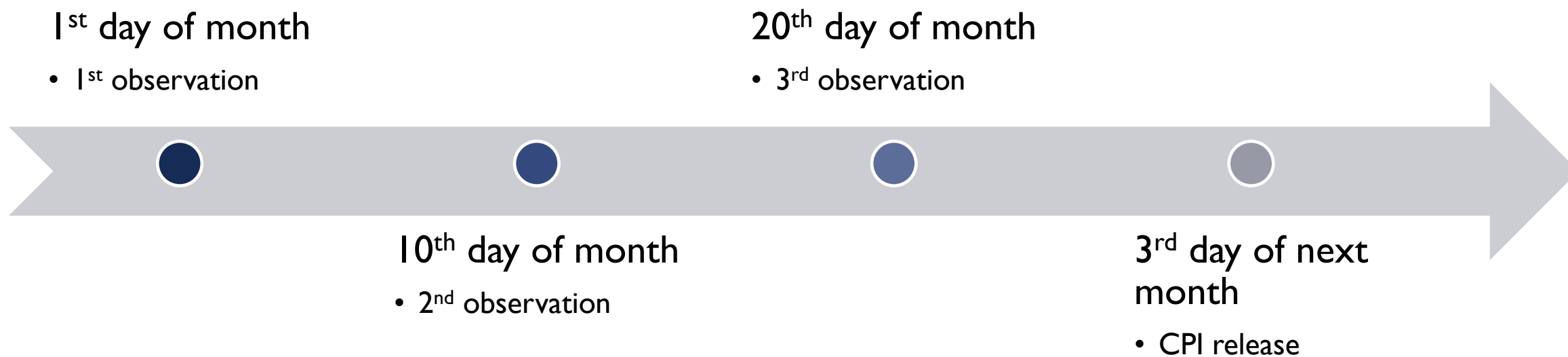
Technical issues on websites

Limited retail stores

Lack of appropriate description

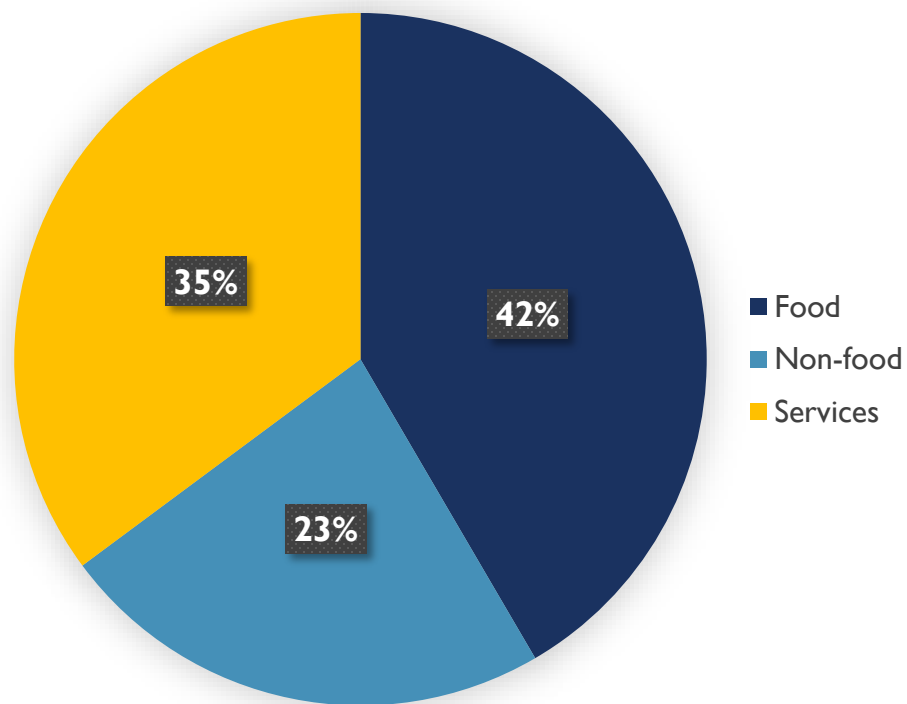
DATA AND METHODOLOGY

The timeline of price monitoring of the Statistical Committee of RA



DATA AND METHODOLOGY (continuation)

The structure of consumer basket of the Statistical Committee of RA



425 goods and services

volatility of CPI is mainly due to food products (in particular fruits and vegetables)



DATA AND METHODOLOGY (continuation)

Data from online stores





DATA AND METHODOLOGY (continuation)

Data from online stores

Product name filters and product selection

Missing values

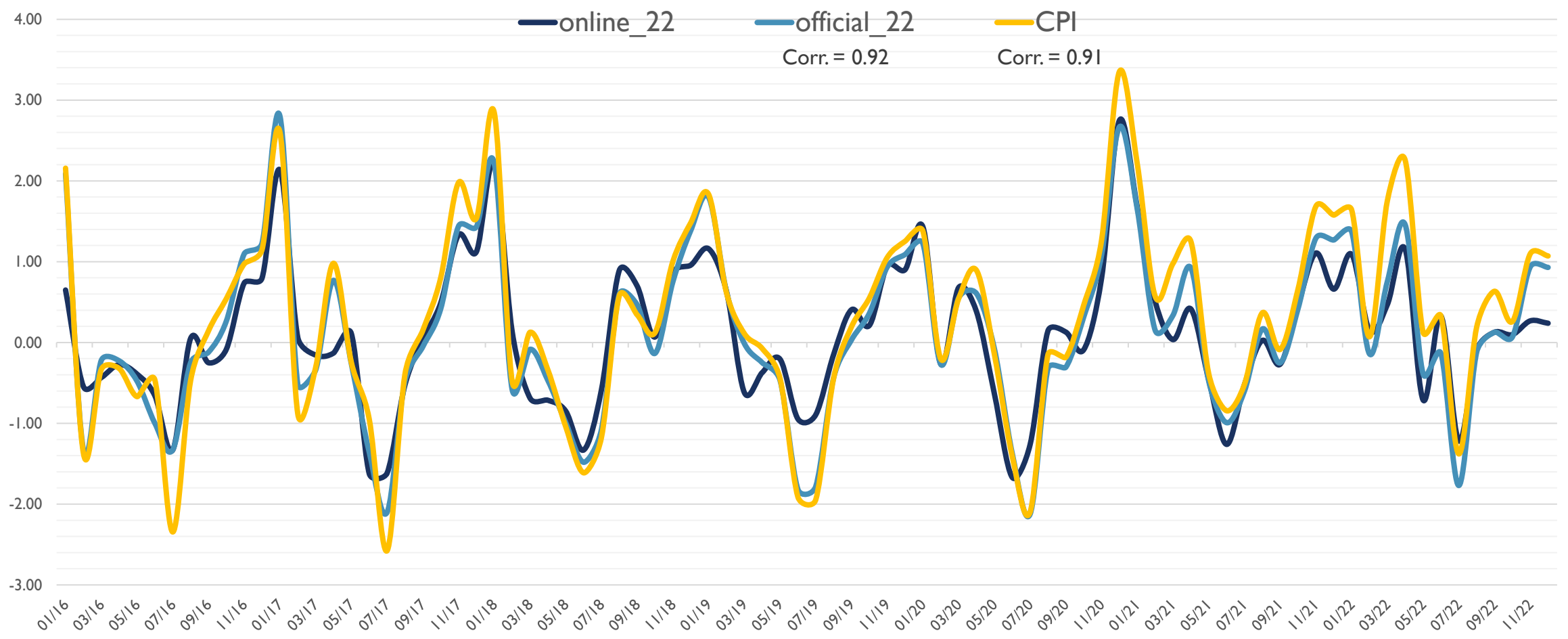
Outlier detection

Calculation of indices

Aggregation

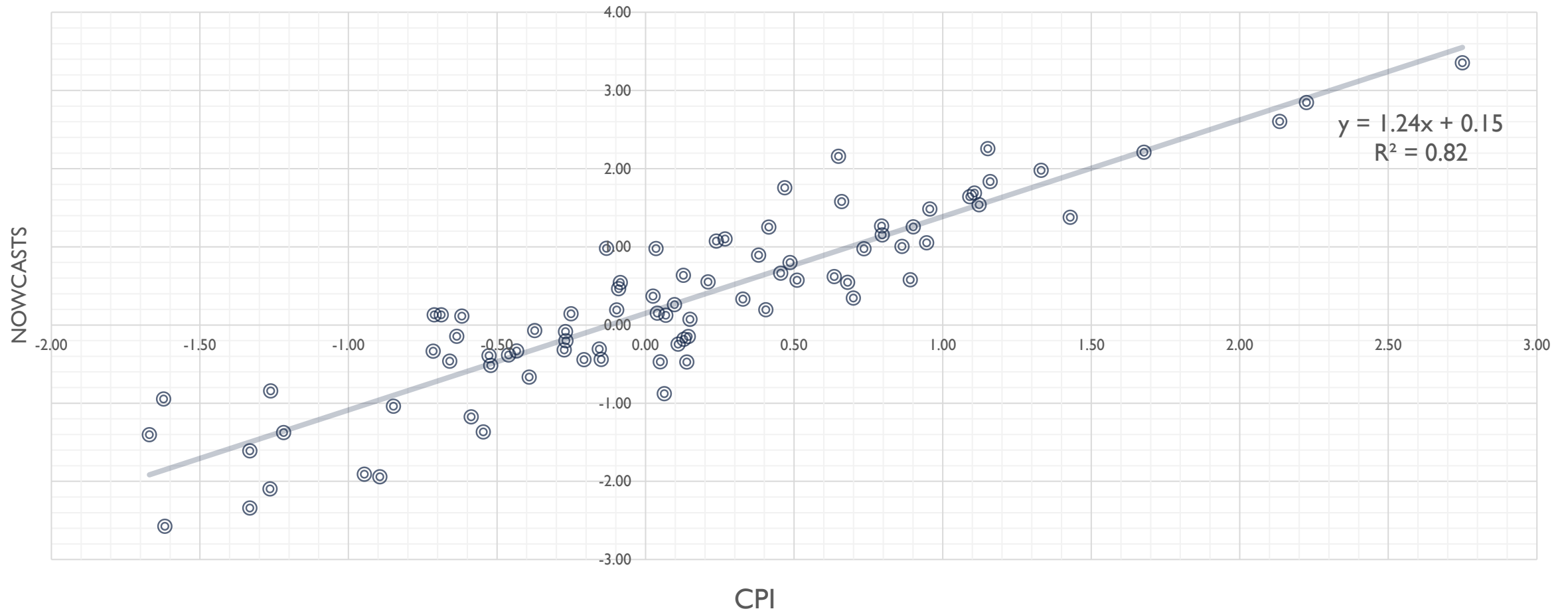


RESULTS





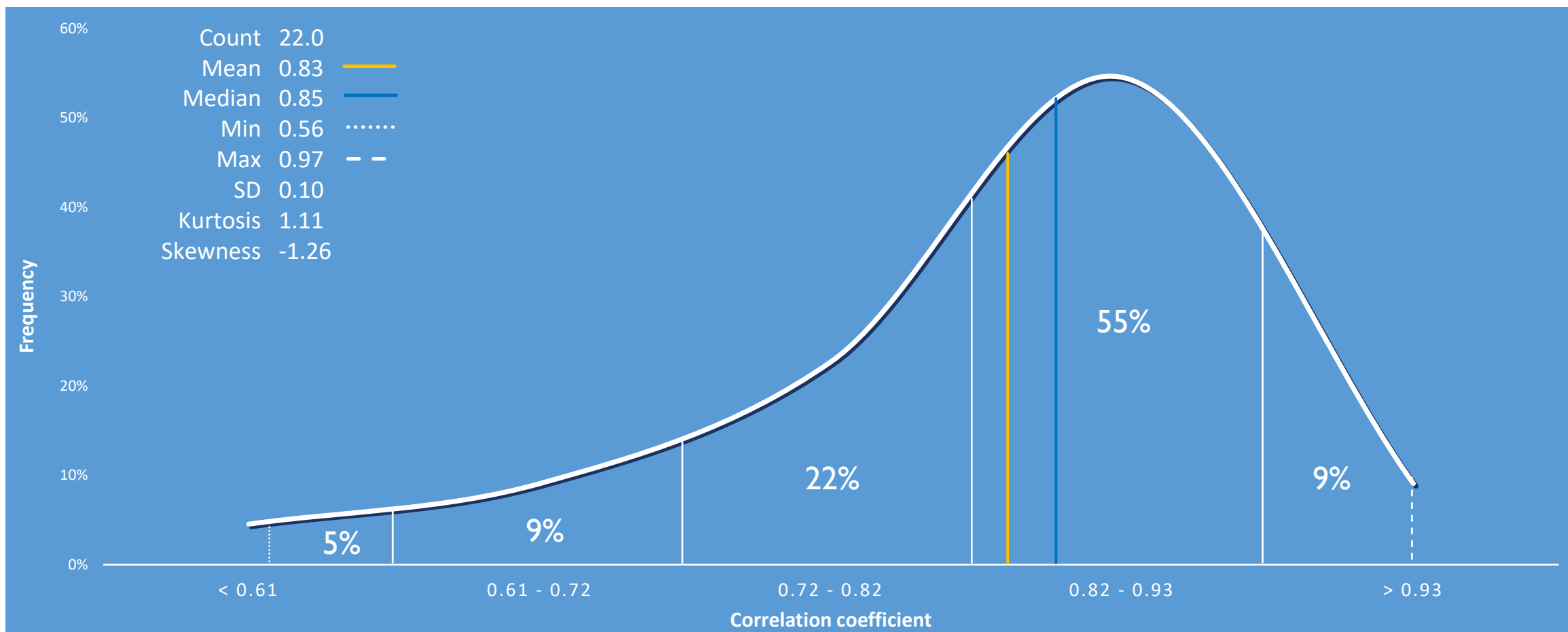
RESULTS (continuation)





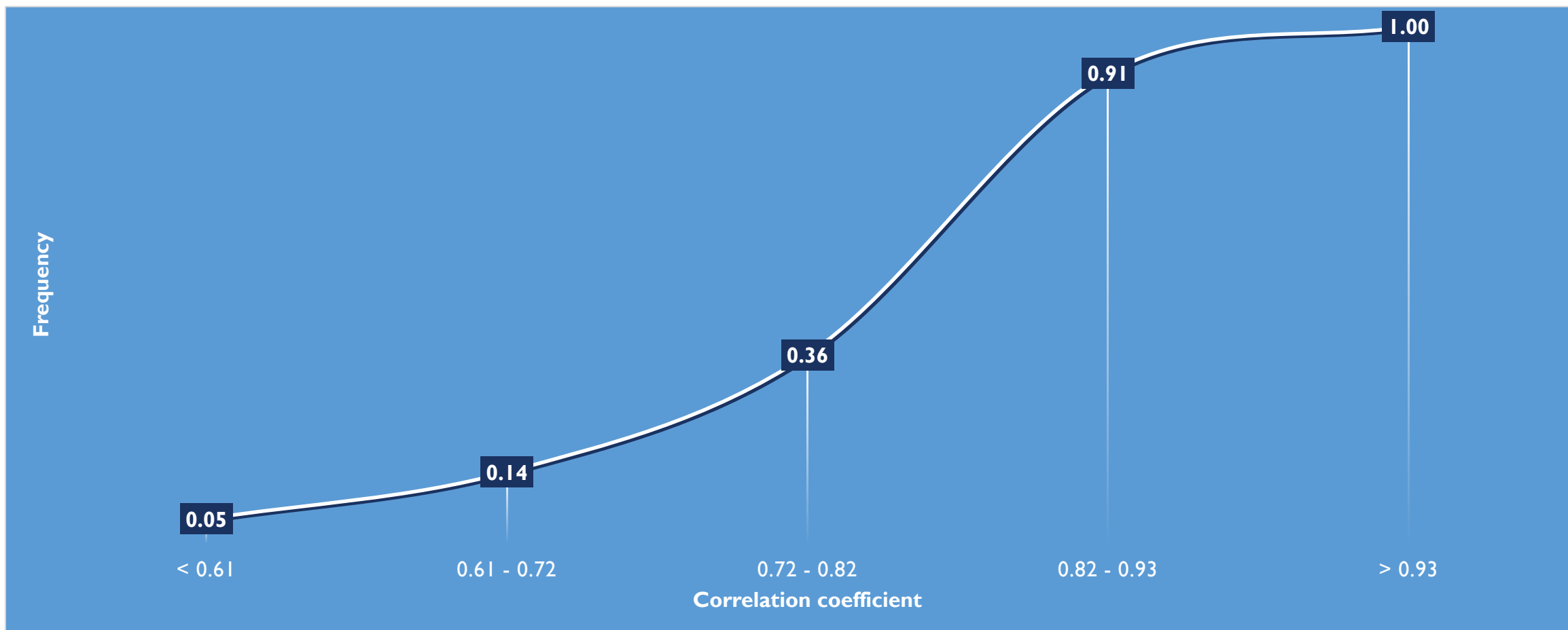
RESULTS (continuation)

Distribution of correlation coefficients



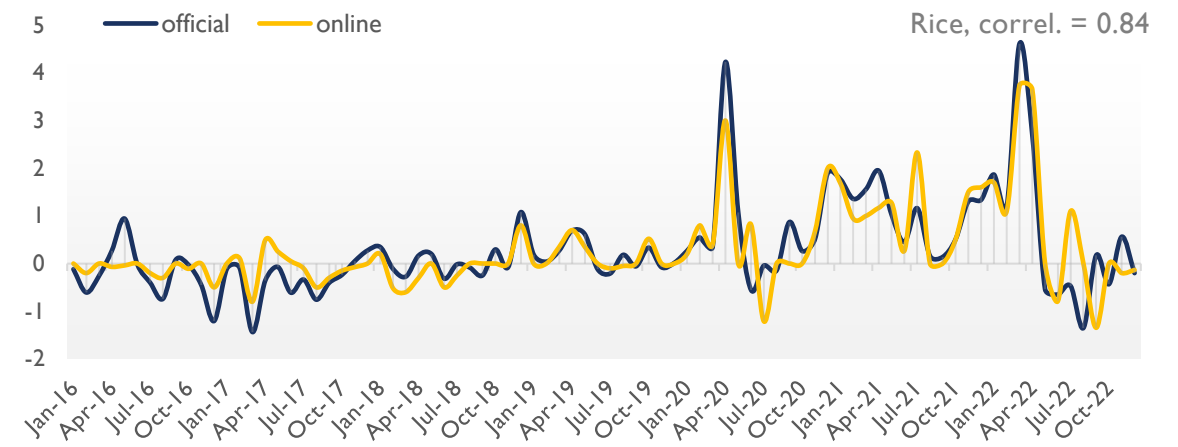
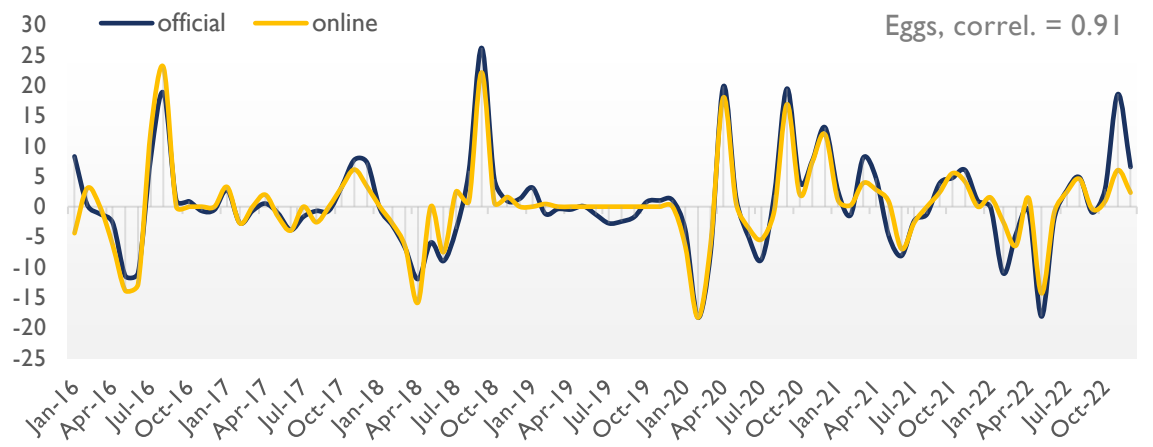
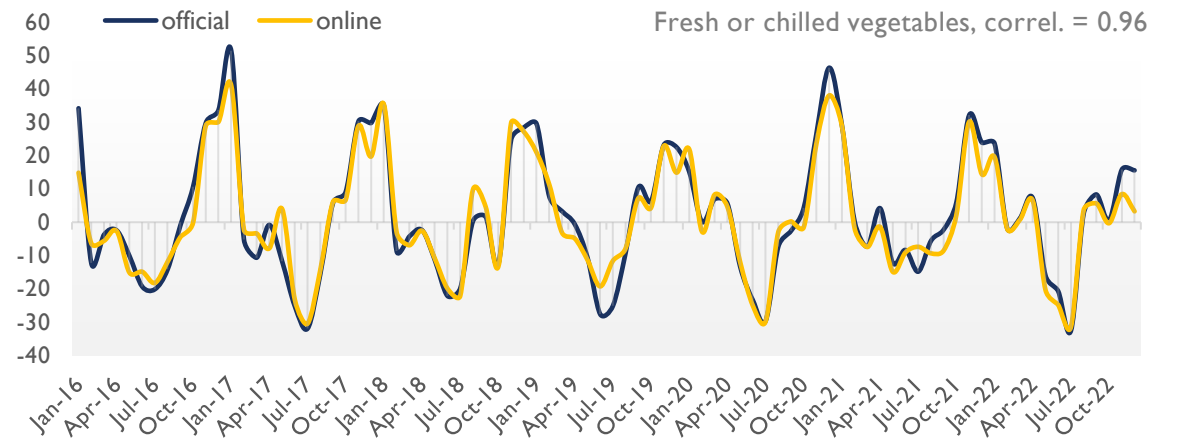
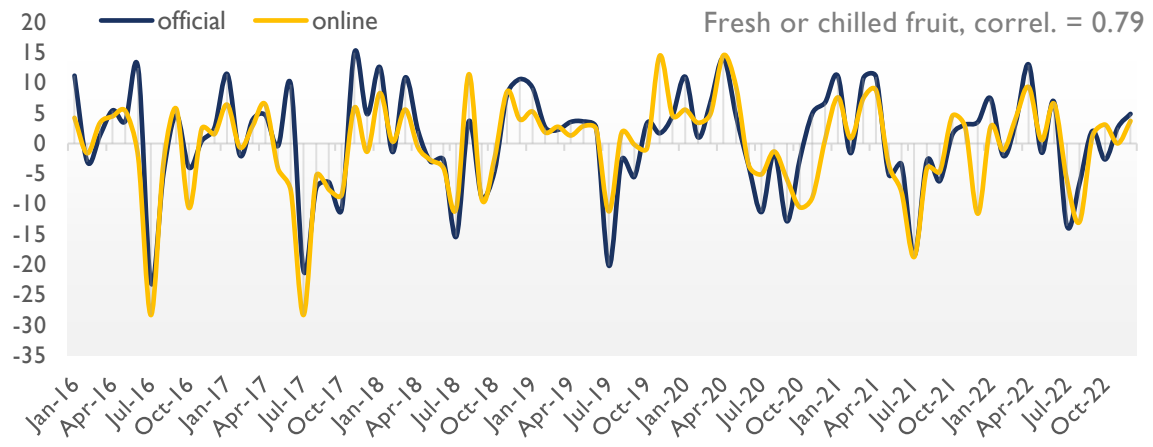


RESULTS (continuation)



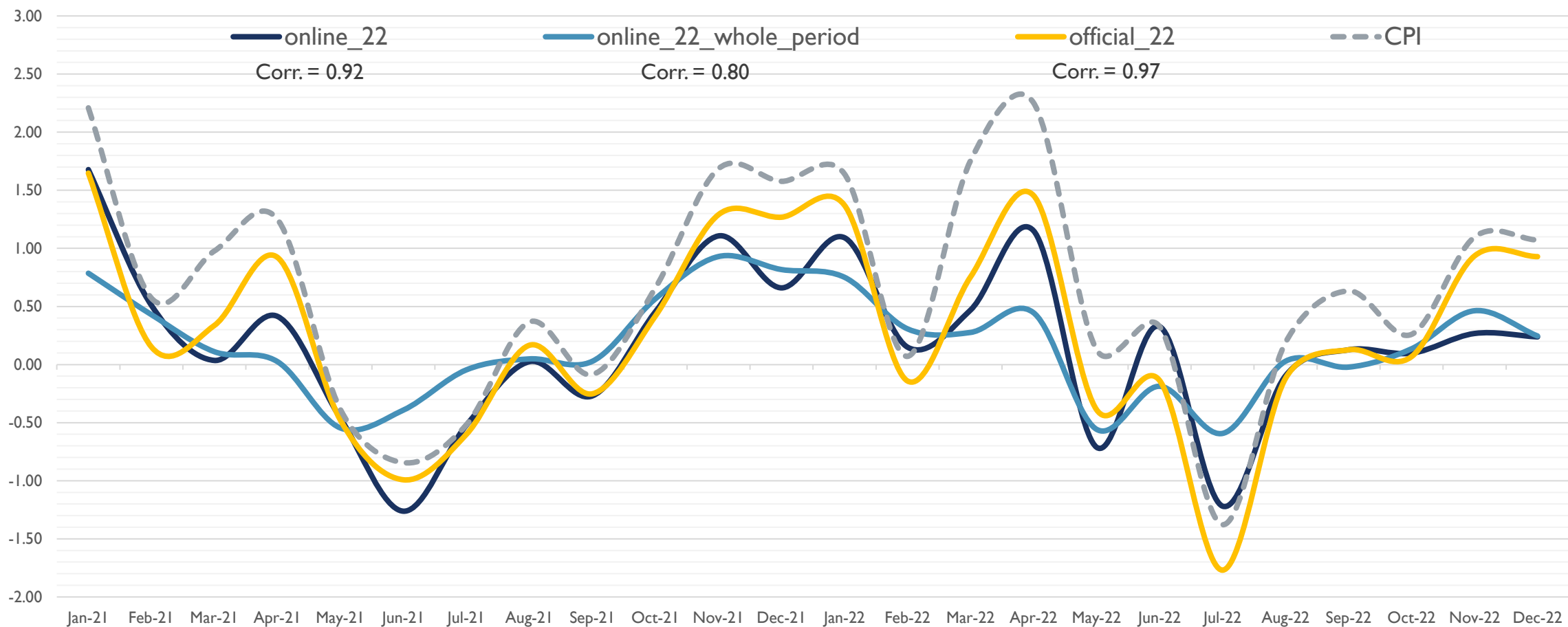


RESULTS (continuation)





RESULTS (continuation) – since 2021





FURTHER CONTRIBUTIONS

Further contributions

Implement a machine learning techniques and NLP to automate the product classification and selection process.

Using machine learning techniques for nowcasting CPI with web scraped prices

Expand the scope of product categories and include some significant services as well

Incorporate other nontraditional sources like scanner data into our nowcasting project.



THANK YOU!