

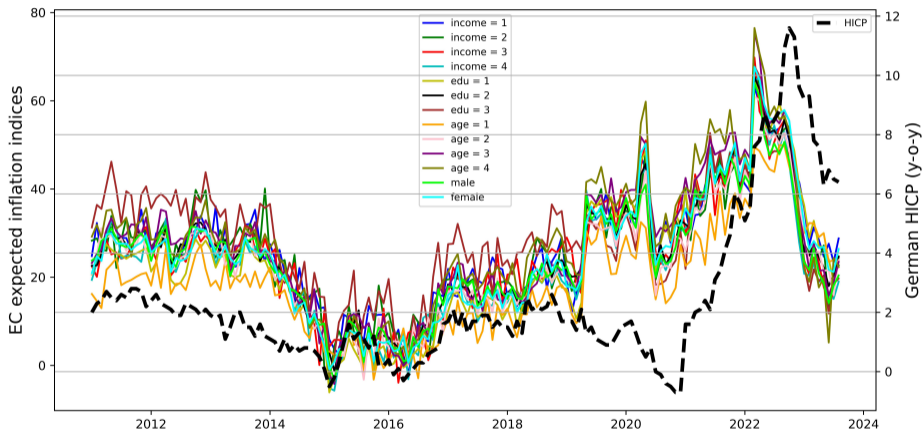
Different Newspapers – Different Expectations

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BcL Research Seminar - January 22, 2026

The views expressed here are my own and do not represent those of the ECB or the Eurosystem.

Do newspapers drive heterogeneous household expectations?

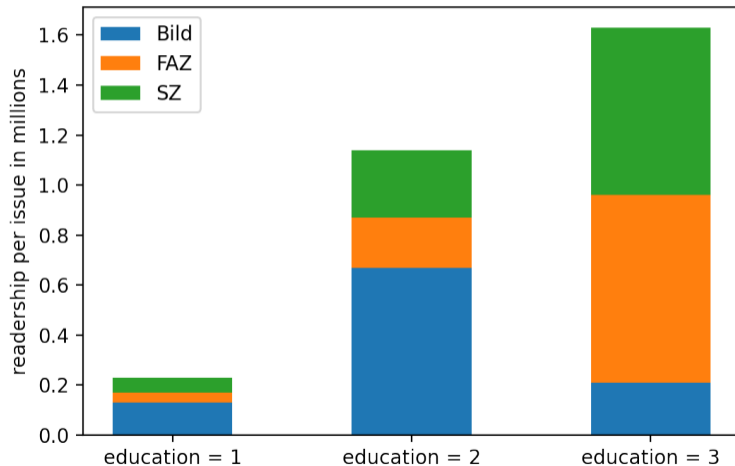


So far: focus on aggregated expectations & media sources

- **Inflation expectations measured by Twitter data:** Born et al. (2023), Angelico et al. (2022)
- **Sentiment measurement with news:** Shapiro et al. (2022), Picault et al.(2022), Ellingsen et al. (2022)
- **Survey expectations:** D'Acunto et al. (2023), Weber et al. (2023), Andre et al. (2023), Conrad et al. (2022)
- **Impact of news on aggregate fluctuation:** Chahrour et al. (2021), Nimark & Pitschner (2019)

Heterogeneous education of readers across different newspapers

Education

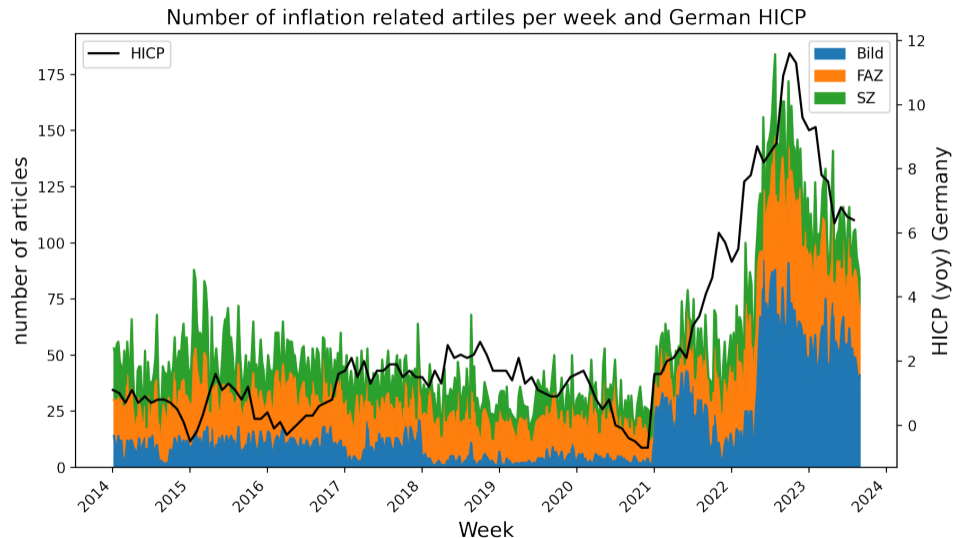


Matching EC survey bins with the media analysis survey

Matching by education level

Media-Analyse survey bins	EC survey bins
Students in general education	primary education
Lower secondary school diploma without apprenticeship	
Lower secondary school diploma with apprenticeship	secondary education
Secondary school without university entrance qualification	
College entrance qualification without university degree	further (tertiary) education
College entrance qualification with university degree	

Web-scraping about 45,000 newspaper articles



→ search queries

Measuring article-level sentiments with ChatGPT

System: You are an AI that rates inflation sentiment from 1 to 10. You can only respond with a number between 1 and 10.

User: Provide a sentiment score for inflation in this article on a scale of 1 to 10, where 1 means inflation is likely to decrease, and 10 means inflation is likely to increase. If the article does not address inflation in Germany or the EU, respond with the word 'no': “%title” + “%article”

ChatGPT is well suited for understanding Bild language

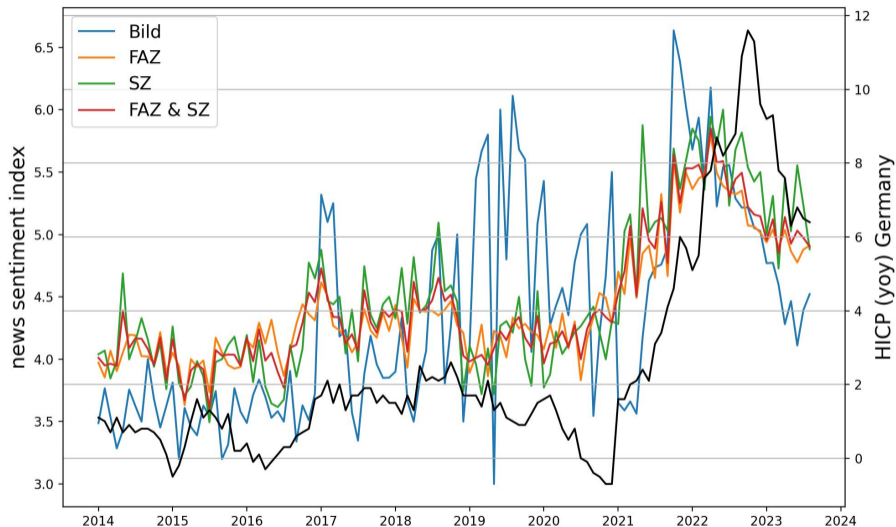
German Headline	Translation	Date	Score
Kommentar; Schluss mit der Inflations-Heuchelei	Commentary; End to the inflation-hypocrisy .	10/12/2021	8
Madame Inflation; Luxus-Lagarde macht Sparer und Rentner arm	Madame Inflation; Luxury Lagarde impoverishes savers and retirees	10/30/2021	9
Zins-Hammer! EZB erhöht auf 1,25 Prozent	Interest rate hammer! ECB increases to 1.25 percent	09/08/2022	9

In the context of the euro zone, "**Madame Inflation**" could potentially refer to Christine Lagarde, the current President of the European Central Bank (ECB).

The tone of "**Luxus-Lagarde**" in this context is likely critical, implying a disapproval of Lagarde's perceived lifestyle in connection with the economic challenges faced by savers.

The term "**Zins-Hammer**" is a metaphorical expression. It combines "Zins" (interest rate) with "Hammer", suggesting a forceful and impactful event related to interest rates.

Tabloid deviates from other newspapers' sentiment



Assessing newspaper's informativeness in a forecasting exercise

Benchmark: AR(p) based on survey expectations

Test against: augment benchmark with news indices

In-sample: December 2016

Newspapers best predict the expectations of their own readers

	Education			
h	Bild	FAZ	SZ	FAZ & SZ
1	1.02	1.01	1.02	1.01
2	1.01	0.93	0.94	0.93
3	1.03	0.92	0.93	0.93
4	1.04	0.91	0.93	0.92
5	1.05	0.91	0.93	0.92
6	1.06	0.92	0.94	0.93

$$\leftarrow \frac{RMSE_{FAZ\&SZ}}{RMSE_{Bild}}$$

Does monetary policy impact newspapers differently?

$$y_{t+h} - y_{t-1} = \mu_h + \beta_h shock_t + \Delta_h \sum_{l=0}^n W_{t-l} + u_{t+h}$$

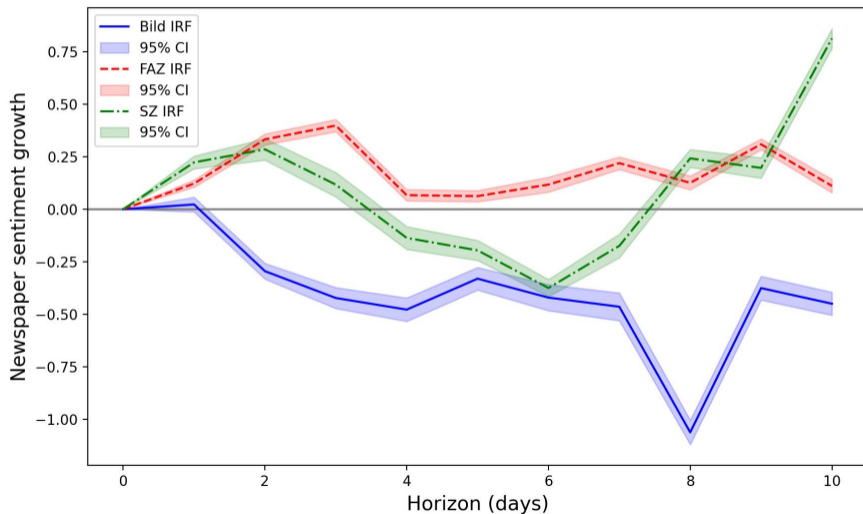
Data: daily, Jan 2014 to Aug 2023

y_t : 3-day MA of mean sentiment indices, logs

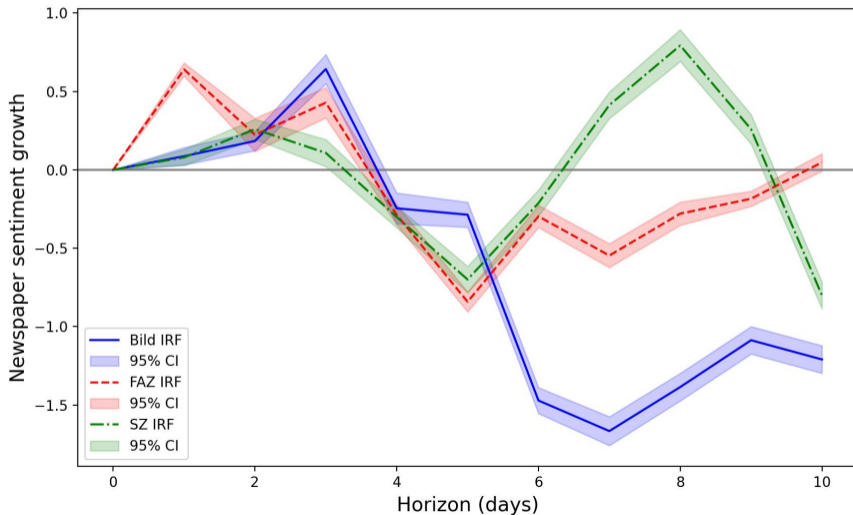
$shock_t$: euro area MP shocks (Jarocinski & Karadi)

W_t : contemp. value and 5 lags of HICP & sentiment

Lagged and smaller responses of FAZ & SZ sentiment



Negative response when restricting on monetary policy news



How do expectations react to a shock in the news sentiment?

$$y_{t+h}^i = \alpha_h^i + \beta_h^i NSI_t^j + \Gamma_h^i \sum_{l=0}^n W_{t-l} + \sum_{l=1}^n \delta_{h,l}^i NSI_{t-l}^j + u_{t+h}^i$$

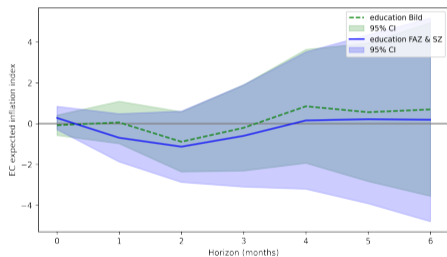
Data: monthly, 2014 M01 to 2023 M08, Shapiro et al. (2022)

y_{t+h} : EC survey expectations

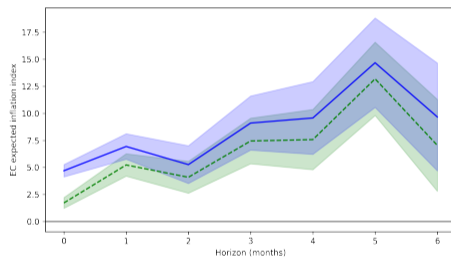
W_{t-l} : $n = 0, \dots, 6$ lags of German IP, HICP,
MP shocks, NSI_t^{-j} & consumer sentiment

Heterogeneous responses by education level of readers

Bild



FAZ & SZ



Robustness checks

- ✓ sample splits
- ✓ GPT-4o-mini
- ✓ alternative index aggregation methods

We can leverage newspapers to learn about expectations

- Newspapers contain information on inflation that helps predicting their average reader's inflation expectations
- Data generated by agnostic zero-shot classification provides valuable real-time information for forecasting
- Monetary policy impacts news reporting in distinct ways

Appendix

References I

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SZ search query

→ Back

Inflation* OR "niedrige Preise" OR "hohe Preise" OR Disinflation OR Deflation OR Geldpolitik OR Lohn-Preis-Spirale OR Zentralb* OR Stagflation OR Energiepreis* OR Geldsteuerung OR EZB OR Kaufkraftverlust OR Notenb* OR Leitzins OR Kostenan-stieg OR Preissenkung* OR Zinswende OR Preisexplosion OR Preisanstieg OR Lebenshaltungskosten OR Teuerung OR Preisindex AND Deutschland NOT Verlag* NOT Preis-träger* NOT Preissieger* NOT *Film* NOT Oscar NOT Preisverleihung* NOT Preisgeld* NOT Billigung NOT Trainer* NOT Autor* NOT Fußball* NOT preisg* NOT Trump

Bild search query (mediacloud)

→ Back

(Zins-Hammer OR steigende Preise OR fallende Preise OR Preischaos OR Bezinpreis* OR Teuerschock OR Inflation* OR niedrige Preise OR hohe Preise OR Disinflation OR Deflation OR Geldpolitik OR Lohn-Preis-Spirale OR Zentralbank OR Stagflation OR Energiepreis* OR Geldsteuerung OR EZB OR Kaufkraftverlust OR Notenban* OR Leitzins OR Kostenanstieg OR Preissenkung* OR Zinswende OR Preisexplosion OR Preisanstieg OR Lebenshaltungskosten OR Teuerung OR Preisindex) AND NOT (Verlag OR Preisträger* OR Preissieger* OR Film OR Oscar OR Preisverleihung* OR Preisgeld* OR Billigung OR Trainer* OR Autor* OR Fußball* OR preisge* OR Trump OR Tor*)

Sample split: 2017-2020, expected inflation

	Education			
h	Bild	FAZ	SZ	FAZ & SZ
1	1.06	1.03	1.04	1.03
2	1.06	0.79	0.82	0.81
3	1.12	0.84	0.87	0.86
4	1.15	0.86	0.89	0.87
5	1.23	0.98	1.01	0.99
6	1.29	1.1	1.13	1.12

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Sample split: 2020-2023, expected inflation

	Education			
h	Bild	FAZ	SZ	FAZ & SZ
1	1.01	1.01	1.01	1.01
2	0.99	0.95	0.96	0.96
3	0.99	0.92	0.93	0.93
4	0.99	0.9	0.92	0.91
5	0.99	0.88	0.9	0.89
6	0.98	0.87	0.89	0.88

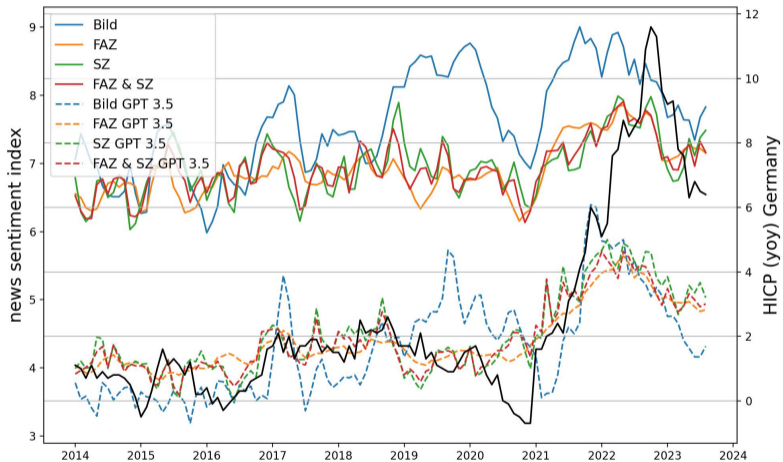
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GPT-4o-mini

	Education			
h	Bild	FAZ	SZ	FAZ & SZ
1	1.0	1.0	1.0	1.0
2	1.01	0.98	0.99	0.98
3	1.02	0.98	0.99	0.98
4	1.03	0.95	0.96	0.96
5	1.02	0.94	0.95	0.95
6	1.03	0.94	0.95	0.94

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MA 30 days



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Alternative aggregation methods I

	Education			
h	Bild	FAZ	SZ	FAZ & SZ
	a) EWM, $a = 0.1$			
1	1.02	1.0	1.0	1.0
2	1.03	0.96	0.97	0.96
3	1.04	0.94	0.95	0.95
4	1.05	0.95	0.96	0.96
5	1.07	0.97	0.98	0.97
6	1.08	0.98	1.0	0.99
	b) EWM, $a = 0.3$			
1	1.04	1.03	1.03	1.03
2	1.03	0.95	0.97	0.96
3	1.04	0.94	0.95	0.94
4	1.06	0.94	0.96	0.95
5	1.08	0.95	0.97	0.96
6	1.08	0.96	0.97	0.96

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Alternative aggregation methods II

	Education			
h	Bild	FAZ	SZ	FAZ & SZ
	c) EWM, optimal a			
1	1.05	1.04	1.04	1.04
2	1.03	0.95	0.96	0.96
3	1.04	0.93	0.95	0.94
4	1.06	0.94	0.95	0.94
5	1.07	0.94	0.96	0.95
6	1.08	0.94	0.96	0.95
	d) MA-10			
1	1.03	1.02	1.02	1.02
2	1.02	0.96	0.97	0.96
3	1.03	0.94	0.95	0.94
4	1.05	0.94	0.96	0.95
5	1.06	0.95	0.96	0.96
6	1.06	0.95	0.97	0.96

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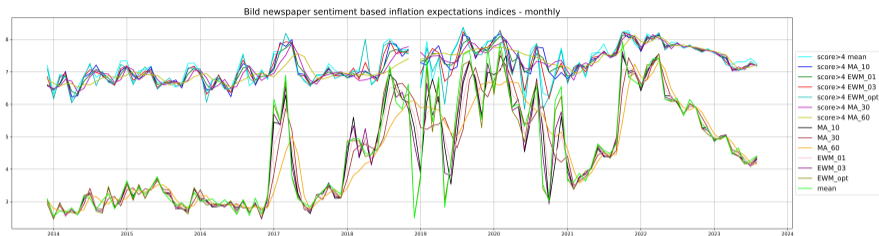
Alternative aggregation methods III

	Education			
h	Bild	FAZ	SZ	FAZ & SZ
	e) MA-30			
1	1.01	0.98	0.99	0.99
2	1.02	0.96	0.97	0.96
3	1.03	0.94	0.96	0.95
4	1.04	0.96	0.98	0.97
5	1.06	0.99	1.0	1.0
6	1.08	1.02	1.03	1.03
	f) MA-60			
1	1.02	0.99	0.99	0.99
2	1.04	0.96	0.97	0.97
3	1.03	0.92	0.94	0.93
4	1.04	0.91	0.92	0.92
5	1.06	0.93	0.95	0.94
6	1.09	0.97	0.98	0.98

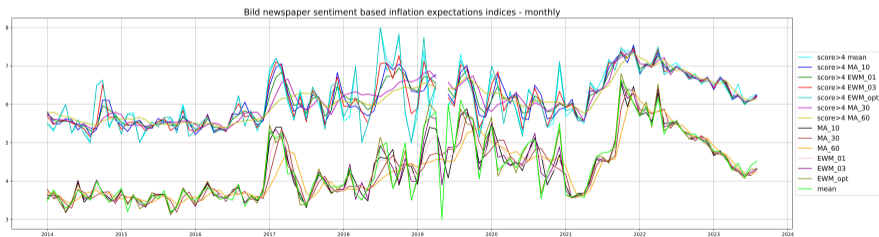
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Even a different prompt leads to similar results

Prompt 2
+weights



Prompt 1



How consistent is ChatGPT?

System: You are an AI that rates inflation sentiment from 1 to 10.

User: Here is a newspaper article: “%title” + “%article”

Provide a sentiment score for inflation in this article on a scale of 1 to 10, where 1 means inflation is likely to decrease, and 10 means inflation is likely to increase. If the article does not address inflation in Germany or the EU, respond with the word 'no'. Provide a probability between 0 and 1 how confident you are about your assessment. Write your answer as:

sentiment score:

confidence: