

Availability heuristic and inflation perceptions in pre-euro Bulgaria: micro-evidence on price-change salience among Bulgarian households

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Abstract. Inflation perceptions shape household behavior and policy credibility, yet they often diverge from official statistics. This study examines whether price-change salience - how often people notice rising prices - is linked to perceived inflation among Bulgarian households in the pre-euro period. Using nationally representative, cross-sectional data from the June 2025 European Commission Consumer Survey for Bulgaria, collected in an omnibus by LOGO Market Research that included a brief author-designed behavioral module, we assess the association between noticing frequency and perceived inflation. The design relies on descriptive statistics, chi-square tests, and independent-samples t-tests. Limitations include the observational nature of the data, reliance on self-reports, item nonresponse for numeric perceptions, and a focus on a single cognitive factor, with other determinants left to future work. The analysis indicates that more frequent price observation is systematically associated with higher perceived inflation, consistent with an availability effect. We conclude that salience likely inflates subjective assessments even when official inflation is moderate. The paper's originality lies in providing first micro-level behavioral evidence for Bulgaria's pre-euro context, with practical implications for communication and expectation-management strategies aimed at sustaining public confidence during the currency transition.

Key words: Inflation perception, inflation expectations, behavioral economics, availability heuristic, price salience, households, Bulgaria, euro adoption.

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1. Introduction

Inflation is both an economic indicator and a perception-driven social phenomenon. Household beliefs about "how much prices have gone up" shape consumption, wage setting, saving, and trust in policy - sometimes independently of official indices (Binder 2020; Coibion & Gorodnichenko 2015). A growing body of work shows that these perceptions are strongly influenced by behavioral mechanisms that guide how people attend to and process price signals in everyday life (D'Acunto et al. 2019).

This issue is especially salient in Central and Eastern Europe, where historical inflation episodes, varying institutional trust, and upcoming monetary transitions heighten public sensitivity to prices. In the context of euro adoption, media attention and everyday conversations can intensify that sensitivity, making the formation of inflation perceptions an important policy concern.

Bulgaria provides a timely setting for examining these behavioral dynamics. Despite active public debate about prices during the pre-euro period, little is known about the micro-level mechanisms through which Bulgarian households form perceptions of past inflation and what role everyday price salience plays.

The present paper addresses this gap by studying the link between the frequency with which households notice price increases and their subjective assessment of past inflation. The analysis draws on nationally representative data from the European Commission's Consumer Survey for Bulgaria (June 2025), collected within an omnibus survey conducted by LOGO Market Research. In this format, the standard EC questionnaire was fielded together with a short behavioral module designed by the author, which introduced additional items to capture price-change salience and related constructs in a compact, policy-relevant way.

2. Theoretical background and literature review

Economic judgments are rarely the product of perfectly rational calculation. When confronted with complex or uncertain information - such as changes in overall price levels - people rely on simplified mental rules known as heuristics. These cognitive shortcuts, first conceptualised by Tversky and Kahneman (1974), make decision-making more efficient but often produce systematic biases.

Among these mechanisms, the availability heuristic plays a central role in shaping how individuals perceive inflation. People assess the magnitude of price change based on how easily examples of price increases come to mind. Frequent, vivid, or emotionally charged experiences - such as higher food or fuel prices - are recalled more readily and thus exert disproportionate influence on overall judgments. Because such items are purchased often and discussed publicly, they dominate memory and create a perception of sustained inflation, even when the general price index is stable (D'Acunto et al. 2019; Ranyard et al. 2008; Del Giovane & Sabbatini 2006).

Empirical evidence supports this behavioral mechanism. Shiller (1997) showed that individuals talk about inflation through specific price anecdotes rather than macroeconomic data. Brachinger (2008) and Bruine de Bruin et al. (2011) demonstrated that consumers overemphasise price movements in frequently purchased goods, while D'Acunto et al. (2021) found that extensive media coverage increases the availability of inflation-related information, raising perceived inflation even when official rates remain moderate. The European Central Bank's Consumer Expectations Survey reports similar tendencies across EU countries, where households that pay close attention to prices consistently overestimate inflation.

In Central and Eastern Europe, these cognitive effects are often amplified by structural and historical factors. Decades of high or volatile inflation in the 1990s left strong inflation memory and lower trust in institutions. Studies in Poland, Hungary, and Romania show that households in post-transition economies remain especially attentive to price changes and more prone to interpret temporary increases as long-term inflationary trends (Allinger & Rumler 2024; Jonas & Mishkin 2003). During previous euro-adoption episodes in Germany and Austria, researchers identified a related phenomenon termed "psychological inflation" - the expectation that prices would rise automatically because of the currency change, even when official data showed only modest increases (Traut-Mattausch et al. 2009). This pattern highlights how collective anticipation and media discussion can reinforce the availability of price signals, leading to higher perceived inflation before major monetary transitions.

Bulgaria, preparing for euro adoption, shares many of these contextual characteristics: strong public sensitivity to price movements, active media debate, and lingering memories of past inflationary episodes. These conditions make the country an ideal setting for examining how price salience and cognitive availability shape perceptions of inflation. The present study therefore builds on the behavioral literature to test whether the frequency with which households notice price changes is associated with their assessment of past inflation - a first empirical step toward understanding the cognitive foundations of inflation expectations in Bulgaria's pre-euro environment.

3. Data and methodology

3.1. Research and sampling design

The study is based on quantitative data from the European Commission's Consumer Survey for Bulgaria, conducted in June 2025 on a nationally representative sample of 1,008 respondents. Data collection was carried out by LOGO Market Research within an omnibus survey combining the standard EC questionnaire with several additional research items developed by the author.

The additional module introduced a small set of behavioral questions aimed at capturing psychological aspects of inflation perception. The present paper focuses on one of them - a measure of price change salience, operationalized through the question "*How frequently do you notice price changes in your everyday purchases?*" Responses to this item serve as an indicator of the availability heuristic, reflecting how easily price information comes to mind.

This indicator is analyzed in relation to respondents' estimates of perceived inflation over the past 12 months, included in the EC questionnaire. The design allows a direct test of whether greater attentiveness to price changes is associated with higher perceived inflation - interpreted as evidence of an availability bias.

The survey employed a stratified random sampling procedure ensuring representativeness by gender, age, education, region, and type of settlement, based on National Statistical Institute data. The final sample size of 1,008 households provides a 95% confidence level and a maximum margin of error of ± 3.1 percentage points.

Interviews were conducted face-to-face using a standardized questionnaire. In cases of refusal or incomplete interviews, replacements were drawn within the same stratum to preserve representativeness.

3.2. Limitations of the research

Several limitations should be acknowledged when interpreting the results.

- The study relies on cross-sectional survey data, which capture perceptions at a single moment and do not allow causal conclusions or analysis of change over time.
- The indicators of price-change salience and perceived inflation are based on self-reported answers and may be affected by recall bias or differences in numerical interpretation among respondents.
- Although the survey design ensures national representativeness, partial nonresponse - particularly for the numeric perception item - could introduce minor selection effects.
- Moreover, the analysis focuses specifically on the availability heuristic, leaving other behavioral mechanisms such as anchoring, affective framing, and institutional trust for future research.

These boundaries define the scope of the present study, which aims to provide an initial empirical perspective on the behavioral drivers of inflation perception in Bulgaria's pre-euro context.

4. Empirical findings and analysis

Guided by the availability heuristic, the analysis tests a strong claim: if frequently noticed price changes shape judgments of overall inflation, then:

- perceived price change and noticing frequency should co-vary (a necessary condition),
- higher salience should translate into higher numeric inflation assessments (a quantitative consequence), and
- these patterns should be visible in the distribution of responses (scope and prevalence).

This three-step design moves from categorical association (Step 1) to mean differences in reported inflation rates (Step 2) and, finally, to a descriptive consolidation of group sizes and averages (Step 3). The logic is cumulative: Step 1 establishes that salience and perceived change are linked in the direction predicted by theory; Step 2 demonstrates that the same linkage carries measurable magnitude in percentage terms; Step 3 shows that the pattern is not driven by small subgroups but characterizes the sample's response structure.

In Bulgaria's pre-euro context - where recent energy and food price visibility and euro-adoption discourse heighten attention to prices - this sequence provides a stringent test of whether greater price-change salience systematically elevates inflation perceptions, as availability-based mechanisms predict.

4.1. Relationship between perceived price change and salience

The first step tests whether perceived price change co-varies with the frequency of noticing price increases - establishing the basic salience-perception link before turning to numeric intensity. Conceptually, this operationalizes the availability heuristic: more frequent noticing should make price increases more accessible in memory and, in turn, raise perceived inflation (Tversky & Kahneman 1974). Demonstrating this categorical association verifies that cognitive salience is implicated in the perception process.

The association between question *C5. Comparing current consumer prices with those twelve months ago, how do you think they have changed?* and question *S1. How often do you notice price increases in recent months?* is tested using a chi-square test of independence. To ensure interpretability and adequate expected cell counts, both items are recoded into 2×2 categories: *C5* as *increased significantly* versus *increased slightly or decreased*, and *S1* as *often* versus *rarely*. The test indicates a statistically significant association between the two variables ($\chi^2 = 142.551$, $p < 0.001$, $\phi = 0.383$; Table 1). The direction of the relationship is positive: respondents who report that prices have increased significantly are more likely to report often noticing price increases than those perceiving only slight increases or declines. The ϕ coefficient is reported only as an indicator of direction, without claims about substantive effect magnitude. Computations are performed in SPSS; full tables are provided in Appendix 1.

Table 1.

Chi-square test of independence between perceived price change and frequency of noticing price increases

	Variables	Pearson Chi-Square	P-value	Significance ($\alpha = 0.05$)	Phi (ϕ)	Direction
1	Perception of price change over 12 m (<i>increased significantly /increased slightly or decreased</i>)	142,551	0,000	Significant	0,383	Consistent with the hypothesis
2	Reported frequency of noticing price increases (<i>rarely/often</i>)					

Source: Own calculations, using SPSS

This finding aligns with behavioral theory and with Bulgaria's macro-social context. Bulgaria's consumers have experienced frequent and visible price adjustments, particularly for food, energy, and utilities, categories that are highly salient in everyday budgets and widely discussed in the media (European Commission, 2023; IMF, 2023). Following the energy-price shocks of 2022 - 2023 and ongoing public discourse around euro adoption (European Commission, 2025), many households became more attentive to price movements, even when official inflation slowed. In such an environment, frequent noticing of salient items - reinforced by conversation and news coverage - can create a sense of persistent price pressure, consistent with an availability-driven inflation perception. Establishing this link empirically at Step 1 therefore provides the foundation for subsequent analyses of how salience intensity relates to numeric inflation estimates and to the broader formation of inflation expectations in Bulgaria's pre-euro context.

4.2. Relationship between perceived inflation rate and salience

Building on the categorical association established in Step 1, the second step tests whether numeric estimates of perceived inflation differ systematically by the frequency of noticing price increases. This step extends the analysis from a qualitative link (direction of perceived change) to a quantitative assessment of inflation perception, thereby examining whether greater price-change salience is reflected in higher reported inflation rates.

An independent-samples t-test is used to compare mean perceived inflation rates - reported as percentages for the past twelve months - between respondents who *often* notice price increases and those who *rarely* do. The analysis is based on the valid subsample ($N = 917$) from the total sample ($N = 1,008$), excluding cases with missing numeric responses.

The results (Table 2) show a statistically significant difference of 7.8% ($p = 0.000$), indicating that individuals who *often* notice price increases also report higher perceived inflation for the past year. This finding is directionally consistent with the cell proportions underlying the Step 1 chi-square result. Together, both steps of the analysis indicate that greater price-change salience is not only categorically associated with stronger perceptions of price increases but is also reflected in materially higher numeric inflation assessments. Full test statistics are reported in Appendix 2.

Table 2.

Independent samples t-test comparing frequency of price increase observation and corresponding low and high rates of perceived inflation

Independent samples t-test		Mean difference (%)	P-value	Significance ($\alpha = 0.05$)
The tested variable - frequency of price increase observation , in relation to the following groups:				
Perceived inflation over the past 12 months	Low rate	7,814	0,000	Significant
	High rate			

Source: Own calculations, using SPSS

4.3. Descriptive statistics

As a complement to the analyses in Steps 1 and 2, Step 3 provides descriptive evidence that illustrates how widespread and substantial the observed salience-perception relationship is. Table 3 reports group sizes (n, %) and average perceived inflation by frequency of noticing price increases. Of the 1,008 respondents, 917 provided valid numerical estimates of perceived inflation. Within this valid subsample, 86 % report *often* noticing recent price increases and 14 % *rarely*. Perceived inflation is high overall, averaging around 30 %, and it varies systematically with salience: those who *often* notice price increases report an average perceived inflation of 33 %, compared with 26 % among those who *rarely* notice them - a gap of roughly 7 percentage points (Table 3).

Table 3.

Descriptive statistics of perceived inflation levels by reported frequency of noticing price increases

Frequency of recent price change observation	Respondents count (n)	Average perceived inflation (%)
1. Often	786 (86%)	33%
2. Rarely	131 (14%)	26%
Total	917 (100%)	

Source: Own calculations, using SPSS

This difference is not only statistically significant but also substantively meaningful. It indicates that the majority of respondents - those who frequently observe or discuss price changes - perceive inflation levels considerably above both the minority group and official statistics for the same period, as the National Statistical Institute (NSI 2025) records an annual consumer-price increase of only 4.4 % (June 2025 vs. June 2024). In other words, heightened price salience appears to anchor inflation beliefs at a persistently elevated level, relative to measured inflation.

Substantively, this suggests that when price changes are frequent, visible, or socially amplified, such as through media coverage or conversations about the cost of living, households form inflation perceptions that remain high even as measured inflation moderates. In the Bulgarian context, where discussions around euro adoption and recent energy and food price volatility have made prices particularly salient, this pattern implies that communication and expectation-management strategies must go beyond reporting official inflation figures. Policymakers need to address the psychological availability of everyday price experiences - especially those that are vivid or emotionally charged - because these experiences appear to shape public inflation beliefs more strongly than aggregate statistics do.

5. Discussion and conclusions

The analysis reveals a consistent relationship between price-change salience and inflation perceptions among Bulgarian households. Respondents who pay greater attention to price movements - those who report noticing increases more frequently - also tend to report markedly higher inflation for the past year. This pattern aligns with the behavioral logic of the availability heuristic, suggesting that frequently encountered or vividly

remembered price changes serve as key reference points in forming overall inflation judgments. In Bulgaria's pre-euro environment, where price discussions are prominent and public sensitivity to cost-of-living changes remains high, such attentional dynamics are particularly consequential. They indicate that perceived inflation can stay elevated even when official measures stabilize, reflecting not just economic conditions but the cognitive and social processes through which people experience and interpret prices.

In this sample, perceived inflation remains markedly above the official rate - respondents report averages in the high-20s/low-30s while the NSI (2025) records 4.4% for June 2025 vs. June 2024. Given that higher perceptions are concentrated among those who *often* notice price increases, the divergence is plausibly driven by salience-weighted judgments rather than by broad-based price movements. Consequently, communication that only reiterates aggregate CPI risks leaving these perceptions unchanged: what matters for audiences are the high-visibility items they encounter and discuss (food, fuel, utilities). Aligning perceptions with measured inflation therefore requires contextualizing salient prices within the full basket, distinguishing temporary shocks from persistent trends, and translating indices into household-level examples that map onto everyday experience.

These findings carry practical implications for Bulgaria's pre-euro context, when heightened scrutiny of prices can amplify perception gaps. A behaviorally informed approach to expectation management could include:

- contextual framing that shows how visible price increases compare with the broader consumption basket;
- narrative, example-based communication that converts CPI into typical monthly-budget impacts;
- balanced salience management, highlighting both stability and reversals in less-noticed categories;
- transparent explanations of how inflation is measured and how temporary shocks are treated;
- and local partnerships with consumer organizations, municipalities, and trusted media to deliver messages in familiar channels.

The objective is not to downplay lived experience, but to re-balance attention so that salient items do not crowd out the rest of the price information set.

Conceptually, the results underline that managing inflation expectations is partly a matter of managing attention. When everyday price signals are unevenly sampled - because some categories are purchased more often, discussed more, or evoke stronger emotion - households infer higher overall inflation than official statistics suggest. Recognizing this cognitive mechanism can help protect policy credibility: by speaking directly to salient categories while situating them within the full distribution of price changes, institutions can reduce the wedge between perceived and measured inflation.

This study's contribution is threefold. First, it provides micro-level behavioral evidence on inflation perceptions in a pre-euro transition economy, a context where public sensitivity to prices is high. Second, it links price-change salience to reported inflation rates using nationally representative data enriched with targeted behavioral items, offering a compact, policy-relevant measurement strategy. Third, it outlines actionable communication levers that follow directly from the behavioral mechanism identified, with immediate relevance to expectation management during the currency transition.

However, limitations remain: the data are observational and based on self-reports; numeric perceptions are missing for a subset of respondents; and the focus is on a single cognitive channel (salience). Future research should examine how salience interacts with anchoring, trust in information sources, and affective responses, and assess whether targeted communication around salient categories can causally narrow the perception - CPI gap ahead of euro adoption.

Literature

- Allinger, Katharina and Rumler, Fabio (2024), 'Inflation Expectations in Central, Eastern and Southeastern Europe: The Role of Sentiment and Experiences', *Comparative Economic Studies*, 66(2), pp. 1–25. doi: 10.1057/s41294-024-00247-9.
- Binder, C., 'Coronavirus fears and macroeconomic expectations', *Review of Economics and Statistics*, 102/4 (2020), 721–730.
- Brachinger, H. W., 'A new index of perceived inflation: Assumptions, method, and application to Germany', *Journal of Economic Psychology*, 29/4 (2008), 433–457. doi:10.1016/j.joep.2008.03.003.
- Bruine de Bruin, W., van der Klaauw, W. and Topa, G., 'Expectations of Inflation: The Biasing Effect of Thoughts about Specific Prices', *Journal of Economic Psychology*, 32/5 (2011), 834–845.
- Coibion, O. and Gorodnichenko, Y., 'Information rigidity and the expectations formation process: A simple framework and new facts', *American Economic Review*, 105/8 (2015), 2644–2678.
- D'Acunto, F., Malmendier, U., Ospina, J. and Weber, M., 'Exposure to daily price changes and inflation expectations', *American Economic Journal: Macroeconomics*, 11/2 (2019), 1–35.

- doi:10.1257/mac.20170373.
- D'Acunto, F., Malmendier, U., Ospina, J. and Weber, M., 'Exposure to inflation and inflation expectations', *Journal of Political Economy*, 129/5 (2021), 1615–1639. doi:10.1086/713192.
- Del Giovane, P. and Sabbatini, R., 'Perceived and Measured Inflation after the Launch of the Euro: Explaining the Gap in Italy', *Giornale degli Economisti e Annali di Economia*, 65/2 (2006), 155–192.
- European Commission, *European Economic Forecast: Spring 2023* (Brussels: Directorate-General for Economic and Financial Affairs, 2023).
- European Commission, *Introduction of the Euro in the Member States Not Yet Having Adopted the Common Currency: Flash Eurobarometer 560* (Fieldwork: 20–29 March 2025; Brussels: European Commission, 2025), available at: <https://europa.eu/eurobarometer/surveys/detail/3384>.
- Jonas, Jiri and Mishkin, Frederic S. (2003), 'Inflation Targeting in Transition Countries: Experience and Prospects', NBER Working Paper No. 9667. Cambridge, MA: National Bureau of Economic Research. doi: 10.3386/w9667.
- International Monetary Fund (IMF), *Republic of Bulgaria: 2023 Article IV Consultation—Staff Report* (Washington, DC: IMF, 2023).
- National Statistical Institute (NSI), *Inflation and consumer price indices – June 2025* (Sofia: NSI, 2025), available at: https://www.nsi.bg/index.php/en/file/30244/inflation_and_consumer_price_indices_june_2025.pdf (accessed 9 November 2025).
- Ranyard, R., Del Missier, F., Bonini, N., Duxbury, D. and Summers, B., 'Perceptions and expectations of price changes and inflation: A review and conceptual framework', *Journal of Economic Psychology*, 29/4 (2008), 378–400. doi:10.1016/j.joep.2008.03.011.
- Shiller, R. J., 'Why do people dislike inflation?', in C. Romer and D. Romer (eds), *Reducing Inflation: Motivation and Strategy* (Chicago, IL: University of Chicago Press, 1997), 13–65.
- Traut-Mattausch, E., Schulz-Hardt, S., Greitemeyer, T. and Freudenthaler, H. H., 'Expecting inflation: Different processes for the evaluation of currency changes', *Journal of Economic Psychology*, 30/3 (2009), 411–419. doi:10.1016/j.joep.2009.02.002.
- Tversky, A. and Kahneman, D., 'Judgment under uncertainty: Heuristics and biases', *Science*, 185/4157 (1974), 1124–1131. doi:10.1126/science.185.4157.1124.

Appendices

Appendix 1.

Chi-square test of independence between perceived price change and frequency of noticing price increases

Perceived increase in prices over past 12 months * Frequency of price increase observation Crosstabulation

			Frequency of price increase observation		Total
			Often	Rarely	
Perceived increase in prices over past 12 months	Increased significantly	Count	725	91	816
		Expected Count	672,7	143,3	816
	Increased less or decreased	Count	78	80	158
		Expected Count	130,3	27,7	158
Total		Count	803	171	974
		Expected Count	803	171	974

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	142,551 ^a	1	,000		
Continuity Correction ^b	139,836	1	,000		
Likelihood Ratio	115,355	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	142,404	1	,000		
N of Valid Cases	974				

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 27,74.

b. Computed only for a 2x2 table

Chi-Square test of independence

Hypotheses:

Ho: two variables are independent

H1: two variables are dependent

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	142,551 ^a	1	,000		
Continuity Correction ^b	139,836	1	,000		
Likelihood Ratio	115,355	1	,000		
Fisher's Exact Test				,000	,000
Linear-by-Linear Association	142,404	1	,000		
N of Valid Cases	974				

a. 0 cells (,0%) have expected count less than 5. The minimum expected count is 27,74.

Significance level: $\alpha = 0.05$

Decision:

p-value = 0.000 \Rightarrow p-value $< \alpha \Rightarrow$ reject H_0 , accept H_1 at $\alpha = 0.05 \Rightarrow$ the two variables are dependent

Appendix 2.

Independent samples t-test comparing frequency of price increase observation and corresponding low and high rates of perceived inflation

Group Statistics

Frequency of price increase observation		N	Mean	Std. Deviation	Std. Error Mean
Perceived inflation rate (%)	Often	786	33,42	22,200	,792
	Rarely	131	25,61	29,175	2,549

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference		
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Perc ei- ved infla tion rate (%)	Equal variances assumed	1,287	,257	3,551	915	,000	7,814	2,201	3,495	12,133
	Equal variances not assumed			2,928	156,060	,004	7,814	2,669	2,542	13,087

Test for equality of variance

Hypotheses:

Ho: $\sigma_1^2 = \sigma_2^2$

H1: $\sigma_1^2 \neq \sigma_2^2$

Significance level: $\alpha = 0.05$

Decision:

p-value = 0.257 \Rightarrow p-value $>$ $\alpha \Rightarrow$ fail to reject Ho at $\alpha = 0.05 \Rightarrow$ Assume equal variances

Independent samples t-test (one-tailed)

Hypotheses:

Ho: $\mu_1 = \mu_2$

H1: $\mu_1 > \mu_2$

Significance level: $\alpha=0.05$

Decision:

p-value (one-tailed) = 0.000/2 \Rightarrow reject Ho, accept H1 at $\alpha = 0.05 \Rightarrow$ the mean of sample 1 (μ_1) is **significantly greater** than the mean of sample 2 (μ_2) at the 5% significance level