

BANK OF ISRAEL

Office of the Spokesperson and Economic Information

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**Analysis from the forthcoming Bank of Israel Annual Report:**

**Israeli households’ attention to inflation and its impact on their expectations[[1]](#footnote-1)**

* **One of the consequences of high and prolonged inflation is an increase in attention to price changes, which leads to greater weight being given to inflation when making decisions.**
* **We find some evidence that since annual inflation exceeded the upper bound of the target range, households’ have been paying increased attention to inflation, and a link between prices changes during the month and households’ inflation expectations has started to take root.**
1. **Introduction**

One of the consequences of high and prolonged inflation is an increase in attention—households’ and firms’ awareness and internalization of prices changes.[[2]](#footnote-2) The term “attention to inflation” in the economic sense relates to a situation in which individuals in the economy keep close track of information on inflation and expected inflation. We can assume that as the high-inflation period continues, the likelihood of an increase in households’ attention to inflation will be greater.[[3]](#footnote-3) We can also assume that when attention crosses a certain threshold, inflation will be taken into consideration when making decisions, and that as a result, price increases—even if they are of a temporary nature—will lead to the persistence of inflationary processes.

This box examines whether the Israeli public’s attention to inflation has increased in the past two years, during which annual inflation exceeded the upper bound of the inflation target.[[4]](#footnote-4) In particular, we examine whether there is a link between the publication of monthly price changes and households’ one-year expectations.

1. **Review of the literature and motivation**

The empirical economic literature finds that in countries with a long history of low and stable inflation, businesses and households generally show inattention to the inflation rate and to monetary policy (Candia et al., 2021). In particular, in many cases, they are not aware of what the annual inflation rate is, what the inflation target is, or what the central bank interest rate is. One of the main explanations for the inattention is monetary policy’s success in maintaining low and stable inflation, which makes it unnecessary to keep track of it. According to theoretical models of rational attention (Sims (2010), Mackowiak and Wiederhold (2009), and Sims (2010)), when inflation is low, it is optimal not to devote attention to price changes in the economy, due to the costs involved in tracking, gathering, and monitoring the information compared with the small benefit that would generate. In contrast, when inflation increases beyond a certain threshold, it pays to monitor it.

In a situation in which households show a high level of attention to inflation, the dynamic of price developments may change in a variety of ways. For instance, wage demands by employees and price demands by landlords may become more sensitive to price changes. Among other things, the use of indexation mechanisms—which revise prices in accordance with inflation during the previous period—may become more widespread to protect against inflation. Such developments may led to the entrenchment of inflation.[[5]](#footnote-5)

A number of studies have found evidence of a link between the inflation rate and the extent of public attention. Weber et al. (2023) found that in a survey of households (CES) by the European Central Bank (ECB) conducted in January 2023, about 60 percent of households reported that they monitor inflation more than in the past. Evidence was found that the increase in inflation in recent years led to an increase in attention.[[6]](#footnote-6) Korenok et al. (2023) take a different approach, and examine the correlation between the level of inflation and the Google Trends index, which measures relative popularity over time, of the term “inflation” and of tweets on the X social network (formerly Twitter). They find that in most countries, there is a threshold inflation rate above which there is a positive correlation between inflation and Internet searches, and below which there is either no correlation or it is weaker. In other words, they find support for the hypothesis that households do not show attention to inflation when it is low, but do show attention once inflation crosses a certain threshold. In most countries, that threshold ranges from 2 to 4 percent.

In accordance with the findings of Korenok et al. (2023), we examined the connection in Israel between annual inflation and the popularity of Internet searches (Google Trends), and obtained similar findings: When inflation is below 3 percent, the upper bound of the inflation target range, the link between the indices is weak or near-zero (Figure 1), and when inflation exceeds the upper bound of the target range, the link is positive and strong.[[7]](#footnote-7)

1. **The development of prices over the month, and households’ one-year expectations**

This section examines whether the increase in attention to inflation in Israel reached the level at which the link between the development of prices during the month (change in the monthly CPI) or the publication of the CPI and households’ one-year inflation expectations became entrenched. In order to answer this question, we use itemized data from the Central Bureau of Statistics Consumer Confidence Survey for the period from January 2012 to September 2023. The survey is conducted on a representative sample of Israeli residents over the age of 21.[[8]](#footnote-8) The survey was merged with data from the Population Registry and the Social Survey in order to obtain a broader picture of respondents. Our focus in the Consumer Confidence Survey is on the quantitative question of inflation expectations.[[9]](#footnote-9)

The Consumer Confidence Survey is a monthly survey, and responses to it are received throughout the month. The responses on various days throughout the month are therefore based on different information. Individuals who answered the survey later in the month had more access to information on the development of prices in that month—as they experience them—and on the CPI reading for the previous month than individuals who answered earlier in the month. If individuals’ attention to prices changes is low, significant differences between individuals who answered at the beginning of the month and those who answered near its end are not expected. In contrast, if attention is high, we expect to find differences between respondent groups in keeping with price developments during the period in which responses are given and with new information that was included in the CPI of the previous month. This is because respondent groups in the later part of the month had access to information that was not available to the earlier respondent groups.

For the purpose of the analysis, we break down the change in the actual CPI each month into two components. The component through which we describe the potential additional information available to respondents in the later part of the month is the difference between the official CPI for that month, as published on the 15th of the following month, and the forecasts of that reading that were known in the middle of the current month.[[10]](#footnote-10) This component is an estimate of the prices changes that took place in the second half of the month[[11]](#footnote-11) and were not known to the respondents at the beginning of the month.[[12]](#footnote-12) In addition, in order to identify the effect of the previous month’s CPI, we use the difference between the change in the published CPI for the previous month and the average of the forecasters’ projections before publication of the CPI. If individuals in the economy are attentive to price changes, the components describing the potential additional information are expected to influence the expectations of respondents in the later group, but not those of the earlier group. We estimate the following equation:

$$\left(1\right) π\_{i,t}^{e}=β\_{0}+β\_{1}T\_{i,t }^{15}+β\_{2}T\_{i,t }^{c}+β\_{3}^{15}T\_{i,t }∙LastCPI Unexp\_{t}$$

$$+β\_{4}T\_{i,t }^{c}∙PriceSecondHalf\_{t}+γ\_{t}+\vec{X}\_{i}+ε\_{i,t}$$

where $π\_{i,t}^{e}$ are one-year inflation expectations of individual $i$ in month $t$.[[13]](#footnote-13) $T\_{i,t }^{15}$ is a dummy variable of the availability of information on the preceding CPI reading, meaning whether the individual belongs to the group that answered in the second half of the month. $T\_{i,t }^{c}$ is a continuous variable between 0 and 1 that reflects the rate of information—prices changes in the second half—that is available to the individual. Those who respond in the first half of the month obtain the value 0, and the value increases linearly the later the individual answers in the second half of the month, to a value of 1 for an individual who answers at the end of the month. $LastCPI\_{t}$ and $PriceSecond\_{t}$ are estimates of the unexpected change in the CPI for the preceding month and price developments in the second half of the month, respectively. The regressions include control for fixed effects for month $γ\_{t}$. $\vec{X}\_{i}$ is a vector of controlled variables (gender, marital status, education, religion, and age). $ε\_{i,t}$ is the error term. In order to examine whether the links depend on the inflation rate, we estimate Equation 1 allowing for various effects during the periods in which annual inflation is above 3 percent $(high\_{t})$ or below 3 percent ($low\_{t}$).

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| **Table 1: Results** |
|  | (1) | (2) | (3) |
| $$T\_{ }^{c}∙PriceSecond∙high$$(effect of price changes – high inflation) | 5.729\*\*\* | 5.474\*\* |  |
| (2.209) | (2.208) |  |
| $$T\_{ }^{c}∙PriceSecond∙ low$$(effect of price changes – low inflation) | 0.226 | 0.186 |  |
| (0.832) | (0.830) |  |
| $$T\_{ }^{15}∙LastCPI∙high$$(effect of CPI publication – high inflation)  | 1.402 |  | 1.019 |
| (1.279) |  | (1.280) |
| $$T\_{ }^{15}∙LastCPI∙ low$$(effect of CPI publication – low inflation) | 0.022 |  | 0.016 |
| (0.593) |  | (0.594) |
| $$T\_{ }^{c}$$(Rate of available information on prices) | -0.503\* | -0.237 |  |
| (0.269) | (0.163) |  |
| $$T\_{ }^{15}$$(availability of information on previous CPI) | 0.191 |  | -0.022 |
| (0.152) |  | (0.093) |
| $T\_{ }^{c}∙high$ – (rate of accessible information – high inflation) | 0.886 | 0.430 |  |
| (0.752) | (0.491) |  |
| $T\_{ }^{15}∙high$ – (availability of information on previous CPI – high inflation) | -0.424 |  | 0.013 |
| (0.433) |  | (0.285) |
| Obs. | 33,371 | 33,371 | 33,371 |
| Adj. $R^{2}$ | 0.196 | 0.196 | 0.196 |
| Controls & Time FE | + | + | + |
| Robust standard errors \*\*\* p<0.01, \*\* p<0.05, \* p<0.1 |

The results we obtained show that when annual inflation is above 3 percent, an unexpected increase in the CPI for the current month, which we assume reflects an increase in prices in the second half of the month, leads to a positive and statistically significant increase in one-year expectations. A monthly price increase of 0.1 percentage points leads to an increase of about half a percentage point in one-year expectations, meaning that it reflects expectations of further price increases in the coming months (Column 1 in Table 1). In contrast, the effect of publishing the previous month’s CPI is not significant. The results remain similar when the two effects are examined separately (Columns 2 and 3 in Table 1).

In conclusion, the results show that in Israel, individuals are attentive to inflation when it exceeds the upper bound of the target range, similar to the findings in other countries. We find that in the past two years, during which inflation exceeded the upper bound, the development of prices during the month influenced households’ inflation expectations. An increase in prices led to an increase in expectations, and vice-versa. In a situation of low inflation, we did not find such a correlation. The continuation of these processes may lead to actual inflation being taken into account in economic decisions, due to which price changes—even those of a temporary nature—may lead to feedback and to an acceleration of inflationary processes.

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1. With thanks to Nurit Dobrin and Ayelet Mizrahi of the Central Bureau of Statistics for their assistance in preparing the itemized data of the Consumer Confidence Survey. [↑](#footnote-ref-1)
2. For more discussion, see Weber et al (2023), and Blinder et al (2024). [↑](#footnote-ref-2)
3. See the speech by Federal Reserve Chairman Jerome Powell at the 2022 Jackson Hole Conference: [https://www.federalreserve.gov/newsevents/speech/powell20220826a.htm](https://www.federalreserve.gov/newsevents/speech/powell20220826a.html) [↑](#footnote-ref-3)
4. Gorodnichenko, Kutai, and Melnick (2023) find evidence of attention among Israeli firms between 2001 and 2018—prior to the most recent wave of inflation. They find that firms revise their inflation expectations due to surprises in the CPI. [↑](#footnote-ref-4)
5. For more discussion, see Box 1.2 of the Bank of Israel *Annual Report* for 2022. [↑](#footnote-ref-5)
6. They combine a series of experiments using surveys (RCT) over countries and time, in which some of the individuals receive available public information regarding inflation, and identify evidence of higher attention, which is reflected in a large revision of expectations when inflation is higher. Cavallo, Cruces, and Perez-Truglia (2017), Pfauti (2023), and Bracha and Tang (2019) reached similar conclusions. [↑](#footnote-ref-6)
7. We obtained a similar result with regard to attention to monetary policy: a link between Internet searches for the phrase “Bank of Israel interest rate” and the inflation rate when inflation crosses the 3 percent threshold. In contrast, and as expected, no correlation was found with regard to other economic terms such as “unemployment” or “growth”. The same examination for the years 2008–2019 points to similar results—a positive and weak correlation when inflation is low and a strong link when inflation crosses the 3 percent threshold. [↑](#footnote-ref-7)
8. [https://www.cbs.gov.il/he/Surveys/Pages/סקר-אמון-צרכנים.aspx](https://www.cbs.gov.il/he/Surveys/Pages/%D7%A1%D7%A7%D7%A8-%D7%90%D7%9E%D7%95%D7%9F-%D7%A6%D7%A8%D7%9B%D7%A0%D7%99%D7%9D.aspx) (in Hebrew). [↑](#footnote-ref-8)
9. The respondents were asked how prices will change in the coming 12 months (increase, decrease, won’t change, don’t know, or refuse to answer). If a respondent answers that they will increase or decrease, he is asked to give a numerical value to his answer. The rate of those who provided a numerical answer within a “reasonable” range—between 1 and 15 percent—increased from 71 percent at the end of 2021, when annual inflation was near the midpoint of the target range, to 82 percent at the end of 2022, when annual inflation had risen to more than 5 percent. [↑](#footnote-ref-9)
10. The forecasters’ projections of the CPI in that calendar month, as reported to the Bank of Israel shortly after the 15th of that month, the date of publication of the CPI for the previous month. The identification assumption is that the change in the CPI that was not reflected in the forecasters’ midmonth projections reflects information that was not available to those who responded in the first half of the month. [↑](#footnote-ref-10)
11. Basically, the unexpected change also includes a component of CPI surprise that will be revealed to the public only when the CPI is published, on the 15th of the following month, and is therefore not expected to influence either of the groups. [↑](#footnote-ref-11)
12. The use of the difference between forecasts and actual publication as an estimation of information is common in the literature. For example, Gürkaynak et al. (2005). [↑](#footnote-ref-12)
13. Expectations after removing outlier observations (above 70 percent or below -70 percent) and winsorizing observations in the top five and bottom five percentiles each month. The results of the analysis without winsorizing, winsorizing of 10 percent, or winsorizing of 1 percent are similar. [↑](#footnote-ref-13)