Inflation and Perception: Drivers of Hungarian Households' Expectations*

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This study analyses the evolution of the Hungarian households' inflation expectations in the period between 2015 and 2025 based on household questionnaire data, using an error correction model framework. The waves of inflation experienced in the early 2020s resulted in a change in the formation of inflation expectations. The anchoring of expectations during the period of high inflation increased in importance: households became more forward-looking, and the role of inflation perception in the formation of expectations decreased. As regards instantaneous effects, it is apparent that food price fluctuations, EUR/HUF exchange rate changes, volatility – which reflects economic uncertainty among other factors – and households' decreasing confidence in the economy amplified fears of inflation more than they did during the low-inflation period of 2015–2019. The impact of inflation forecasts on households' inflation expectations increased. Exchange rate stability became a key factor in anchoring households' expectations. The effects and their changes, as identified by our analyses, are robust to the highlighted socio-demographic groups as well.

Journal of Economic Literature (JEL) codes: D12, D84, E1, E31, E71, C83, C32

Keywords: household behaviour, inflation expectations, perceived inflation, questionnaire-based survey

1. Introduction – motivation and links to literature

The early 2020s was a period of overlapping waves of inflation. Most countries worldwide were affected and the European Union and its eastern Member States were particularly hard hit by supply and demand frictions in the wake of the coronavirus pandemic, by the energy crisis and by the Russian–Ukrainian war.

* The papers in this issue contain the views of the authors which are not necessarily the same as the official views of the Magyar Nemzeti Bank.

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The authors would like to thank Gergely Baksay, András Balatoni, Balázs Oberfrank, Péter Quittner, Gábor Dániel Soós, Mihály Szoboszlai, Barnabás Virág and the anonymous reviewers for their highly appreciated comments and recommendations.

The first version of the Hungarian manuscript was received on 15 September 2025.

DOI: https://doi.org/10.33893/FER.24.4.65

In Hungary, inflation crossed the 20-per cent threshold in September 2022, and it took 13 months of concerted effort to bring it back into the single-digit range by October 2023. The country-specific causes of Hungary's inflation trajectory – which was record-setting in the European Union – are analysed by *Balatoni and Quittner* (*2024*). As in Hungary, households' inflation expectations remained high in several European countries even in the wake of the rapid disinflation, showing the persistent effect of high inflation peaks on expectations (*De Fiore et al. 2025*). With the permanently high expectations, inflation in Hungary started to rise again during the last months of the previous year, highlighting how important the anchoring of household inflation expectations is.

The aim of our analyses is to identify what relevant macroeconomic factors affect Hungarian households' inflation expectations in the short and medium term, and to find out whether those expectations are anchored or not. The expression "short term" denotes the instantaneous effects of macroeconomic variables, while "medium term" denotes the effect in the long-term component of error correction equations.

Understanding the factors that influence household inflation expectations is particularly important for macroeconomic stability and monetary policy considerations. Consumer behaviour is profoundly affected by household inflation expectations. On the one hand, they influence households' consumption and savings decisions (*Andrade et al. 2023*; *Burke – Ozdagli 2023*; *D'Acunto et al. 2022*): if households expect prices to rise, they may bring forward their purchases, which will generate stronger demand and thus drive inflation higher. On the other hand, expectations also influence wage bargaining, as demand for higher salaries will raise the costs of businesses and impact their pricing decisions, easily leading to higher inflation again. The effects of household inflation expectations on inflation were empirically proven based on US survey data by *Brandão-Marques et al.* (*2023*) and *Goodspeed* (*2025*) and on Hungarian data by *Gábriel* (*2010*).

The role of household inflation expectations is treated as one of the most important factors by central banks' theoretical models when modelling monetary policy transmission; however, macroeconomic forecasts are, for the most part, in practice, based on expectations derived from surveys conducted by professional forecasters and market participants (*ECB 2021*). In the research on household expectations, the emphasis is mostly on qualitative expectations (*Gábriel et al. 2013; D'Acunto et al. 2024; Menz – Poppitz 2013; Anesti et al. 2025*), but there are also cases which assess quantitative expectations (*Meyler – Reiche 2021*).

The nature of slowly diminishing inflation expectations was already examined after the global financial crisis of 2009 (*Łyziak – Paloviita 2017*; *Berge 2018*), but in the wake of the inflation shocks in the early 2020s, central bankers and researchers have, in recent years, been growing increasingly interested in the evolution of households' inflation expectations. *D'Acunto et al.* (*2024*) argue that households' inflation expectations may deviate from the inflation target both in the medium and long term, while in the short term, they are dominated by news on inflation, in contrast to experts' forecasts.

The role of psychological factors has been highlighted with the spread of behavioural economics. The pioneers of behavioural economics – *Kahneman* (often referred to as the "master of irrationality") *and Tversky* (*1973, 1979, 1982*) – recognised the innate nature of intuitive beliefs and choices, i.e. that people are prone to cognitive distortion, which results in so-called bounded rationality in their decisions. *Sirakovova* (*2024*) gives a comprehensive overview of the role of behavioural economics in understanding inflation expectations. She concludes that the prospect theory of *Kahneman and Tversky* (*1979*) – arguing that individuals evaluate changes around them in a relative way, from their own individual perspectives – applies to inflation expectations as well. Rationality is often sidelined in complex, uncertain and risky situations. Inflation expectations can also be demonstrated to be potentially affected by emotions, experience and fears. People holding less favourable views of the economy as a whole tend to have higher inflation expectations (*Meyler – Reiche 2021*).

People express their opinion on inflation primarily based on their own day-to-day individual shopping habits and experiences, i.e. based on the price levels they are confronted with when it comes to buying food, fuel or paying utility bills. People find these events easy to remember, and therefore they contribute to asymmetric price perception (*Sirakovova 2024*). The correlation between energy prices and inflation expectations is emphasised by *Binder* (*2015*), *Coibion and Gorodnichenko* (*2015*) and *Vatsa et al.* (*2025*). *Jo and Klopack* (*2025*) concluded from US data – taking advantage of the different regulatory environment – that inflation expectations are affected not only by actual gas prices, but also by announcements of prospective gas price cuts. *Berge* (*2018*) emphasised the role of food inflation as well, besides trends in energy prices. *Brassil et al.* (*2024*) found fuel prices to be "salient" prices, while *Anesti et al.* (*2025*) identified food prices as such, i.e. as prices affecting inflation expectations more than justified by their share in the consumer basket. Additionally, *Anesti et al.* (*2025*) also argue that food prices affect households' inflation expectations significantly more than any other factor, even energy, and that disregarding food price inflation results in overestimation of the importance of energy prices.

D'Acunto et al. (*2019, 2021*) found that the composition of the individual consumer basket does not affect inflation expectations as substantially as the frequency of buying specific products and the fact that prices are rising. *Angelico and Di Giacomo* (*2019*) also emphasise the importance of shopping frequency, along with that of extreme price changes, past inflation and food prices. Our analysis of Hungarian data revealed that the impact of food inflation on household inflation expectations has outgrown the 18-per cent weight of foodstuffs in the consumer basket. This trend may have been driven, in part, by the higher-than-average fluctuation in food prices, based on the findings of *D'Acunto et al.* (*2019, 2021*) and *Angelico and Di Giacomo* (*2019*).

In addition to the individual's experiences regarding changes in prices, inflation expectations are also driven by economic news and exchange rate changes as well as confidence in the general economic situation, the economic policy and the central bank, all of which are also taken into account in our analyses. Announced inflation expectations may rise during times of economic uncertainty. A major inflation shock – such as the energy and food price hike in 2022–2023 – may trigger a temporary loss of confidence and thereby de-anchor expectations. *Dräger et al.* (*2025*) and *Afunts et al.* (*2024*) demonstrate the effects of the Russian–Ukrainian war on household inflation expectations.

People's opinion is easily shaped by news generating fears of inflation as well as by strong optimistic or pessimistic messages, which may also be reflected by exchange rate fluctuations. Such news affects the inflation expectations of households in heterogeneous and asymmetric ways, which is partly explained by lower-income households' being less able to adjust their expenditures. As a consequence of this, they can benefit less from information on future inflation, including information communicated by the central bank, and hence, they pay less attention to such information (*Ichiue et al. 2024*). In addition, high-inflation news changes expectations more than low-inflation news (*Chahrour et al. 2025*). *Ehrmann et al.* (*2017*) argue that an increase in media coverage of inflation decreases the distortion of the expectations of households with higher-than-average inflation expectations more than those of the average household. The tone of the news also matters. Negative news has a stronger impact (*Lamla – Lein 2014*; *Dräger 2014*), but different news consumption patterns (newspapers vs. television) may also affect households' inflation expectations (*Menz – Poppitz 2013*; *Conrad et al. 2021*). Although we did not undertake to scrutinise the direct effects of news, in our analysis we did investigate exchange rate movements, which also partially reflect the impacts.

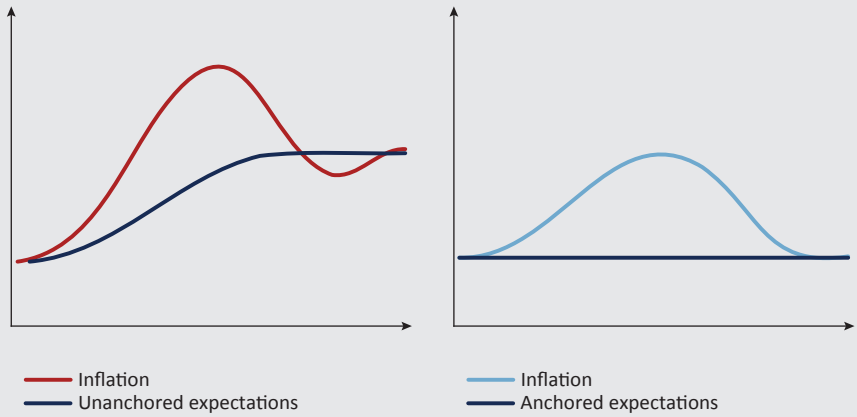
The credibility of monetary policy, the central bank's communication and price-limiting economic policy measures can help elevated expectations return to a level

consistent with the central bank's inflation target. Based on Dutch household data from 2015, *Christelis et al.* (*2020*) found that inflation expectations and uncertainties regarding inflation were significantly lower among households with higher confidence in the central bank; *D'Acunto et al.* (*2022*) reached a similar conclusion based on US data. Monetary policy measures help to anchor inflation expectations (*Kamada et al. 2015*), in particular expectations that are less firmly anchored (*Doh et al. 2025*). Messages on the central bank's inflation target do influence households' inflation expectations (*Binder – Rodrigue 2018*), but they are significantly less effective if they come through the media (*Coibion et al. 2019*). We analyse the role of confidence and demonstrate that consumer confidence measured by GKI Gazdaságkutatóintézet (an economic research institute) influenced household inflation expectations and that this influence increased during the period of higher inflation rates.

Central banks around the world make special efforts to anchor inflation expectations, in order to achieve inflation targets and maintain economic stability (*Easaw et al. 2012*; *ECB 2021*; *Carvalho et al. 2023*, *Kamada et al. 2015*; *Lin – Li 2025*). The most important lesson from the economic policy failure in the stagflationary period of the 1970s, is that central banks are best able to stabilise the medium-term inflation rate by anchoring expectations at the target levels, due to the logic of inflation targeting. Anchoring inflation expectations makes it possible, after an inflationary period, for inflation to return to a level ensuring price stability at the lowest possible cost to the real economy. For this reason, the anchoring of inflation expectations is one of the key aspects of our study.

If expectations are stable or anchored, fluctuations in inflation will remain transient, and a decrease in inflation will come without major social costs. However, if inflation expectations start rising after a one-off shock, there is a risk of the economy getting stuck with higher prices, which may then result in the possibility of persistent failure to meet the inflation target and of monetary policy losing credibility (*Figure 1*). Expectations are not necessarily anchored; the inflation rate does not necessarily returns to the central bank's target; and inflation expectations can only be stabilised through credible measures. International experience shows that only in about one-quarter of cases was it possible to bring inflation back down to the single-digit range within a year after it surged above 20 per cent (*Spéder – Vonnák 2023*). A strong, credible and disciplined monetary policy was the common factor in all cases of successful disinflation.

Figure 1
Duration and level of an inflation shock with unanchored expectations (left-hand panel) and anchored expectations (right-hand panel)



Source: Magyar Nemzeti Bank (Central Bank of Hungary, MNB)

From the aspect of monetary policy, it is important that the economy behaves differently in a high-inflation environment and in a low-inflation environment. *Borio et al.* (*2023*) demonstrated that inflation tends to stabilise itself in a low-inflation regime, but this ability vanishes as inflation rises. Indeed, a variety of self-reinforcing developments emerge during the transition to a high-inflation regime. Therefore, monetary policy must respond decisively and in time when a shift to a high-inflation regime is imminent. As soon as inflation exceeds a certain level, both employees and companies tend to pay increased attention to price changes and that raises the likelihood of a wage-price spiral developing. Likewise, *Gobbi et al.* (*2025*) also argue that during severe and protracted shocks, central banks must be attentive to a more sensitive response in inflation expectations and the degree of wage indexation. The results reported by *Goodspeed* (*2025*) also confirm the different behaviour of households' inflation expectations: during periods of low inflation, consumers do not pay attention to changes in inflation, but in periods of high inflation, they do, predicting its trends more accurately.

Analysing Hungarian data, this study scrutinises how factors determining inflation expectations changed between the low-inflation period before 2020 and the high-inflation period of the 2020s. We contribute to the literature on inflation expectations in that we identify a wide range of factors determining quantitative inflation expectations based on Hungarian data, as well as distinguishing their effects in low- and high-inflation regimes. In view of the work of *Easaw et al.* (*2012, 2013*), in this study we take into account the fact that households' inflation expectations may be either anchored or unanchored, households update their expectations both

in the short term and the long term. The analysis was carried out on the basis of households' quantitative inflation expectation, as did *Meyler and Reiche* (*2021*) as well as *Hayo and Méon* (*2023*). Unlike *Szyszko and Kliber* (*2025*), who analysed the effects of oil prices on inflation expectations in Hungary among other countries, we identify the effects of a wider range of factors on the Hungarian data.

In *Section 2* and *Section 3* of the study, we present the data used and the methodology of our analysis, respectively. *Section 4* shows our estimated results, while finally, *Section 5* is the summary of our conclusions.

2. Data

2.1. Household inflation perceptions and expectations

Households' inflation expectations and current inflation perceptions are measured by monthly representative consumer surveys conducted by GKI Gazdaságkutató Zrt. on samples of 1,000 respondents. The survey is based on answers to qualitative and quantitative questions. The qualitative questions are based on pre-defined categories (such as: prices will *"increase more rapidly", "increase at the same rate", "increase at a slower rate", "stay about the same" and "fall slightly"*), reflecting perceptions regarding the direction and rate of the current and expected inflation. By contrast, quantitative questions ask about consumer price changes in terms of numbers:

- *By how many per cent do you think that consumer prices have gone up/down over the past 12 months?*
- *By how many per cent do you expect consumer prices to go up/down in the next 12 months?*

One advantage of the quantitative answers is that they can be compared directly to the official inflation statistics, and they are also comparable over time, making them suitable for data-based analyses. They can be used for analysing the trends and volatility of inflation expectations, as well as responses in inflation expectations to various economic events. However, the drawbacks of the quantitative method are that the answers depend on the way the questions are asked, that some answers provide extreme (outlier) values and that respondents often provide rounded figures (such as 0 or 10 per cent). Another negative factor is that respondents with lower education may have difficulties in giving numerical answers, which may result in distortions.

Conversely, the understanding of qualitative questions may vary by person or over time; therefore, the aggregation of individual responses is not straightforward. Balance indicators calculated from results derived from surveys are necessarily based on arbitrary weighting. Indeed, qualitative expectations cannot be directly compared with actual data, since qualitative surveys of inflation expectations essentially differ from the evolution of the consumer price index. The techniques

generating quantitative indicators from qualitative responses for comparisons to official indices are highly dependent on the assumptions underlying the methodology used (see, for instance, *Arioli et al. 2017*).

The qualitative survey used in our analysis took place during the 127-month period between January 2015 and July 2025; therefore, the database holds a total of 127,000 observations. The database is of the *repeated cross-sectional* type; in other words, different households participated in the different monthly surveys. Consequently, it is only possible to examine average trends in the whole population or various socio-demographic groups, not individual dynamics. The data thus gathered were adjusted through further steps, and responses to qualitative questions were used for eliminating inconsistent numerical answers. The criteria used and the treatment applied to numerical answers are presented in *Table 1.*

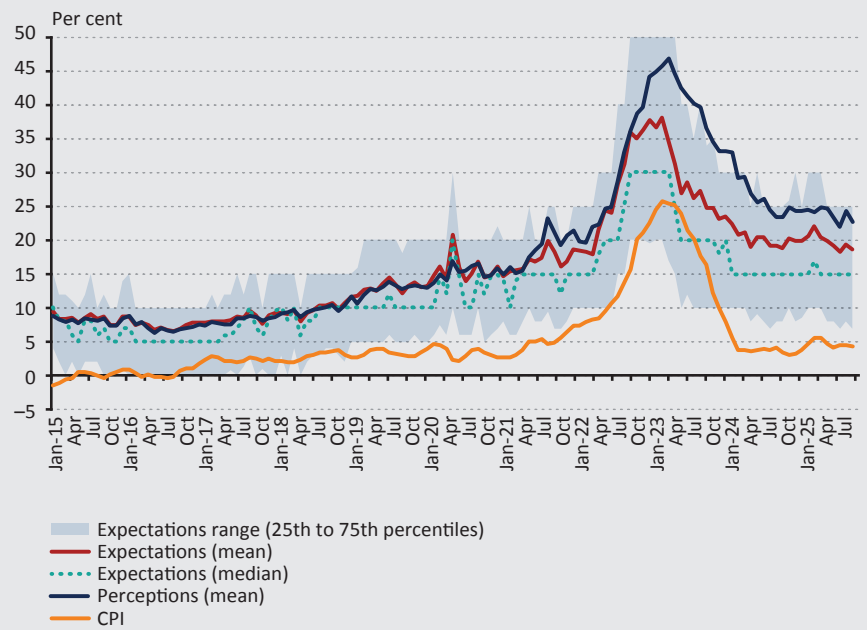
Table 1
Criteria applied to the quantitative inflation expectations recorded in the survey

	Criterion (condition)	Treatment (quantitative response)
i.	Qualitative response (expectation/perception) = "prices will stay about the same/prices have stayed about the same"	To be considered as 0%.
ii.	Qualitative response (perception) ≠ "prices have stayed about the same", but quantitative response = 0%	To be considered as invalid.
iii.	Qualitative response (expectation) = "prices will increase more rapidly", but quantitative response for expectation < quantitative response for perception	To be considered as invalid.
iv.	Qualitative response (expectation) = "prices will increase at a slower rate", but quantitative response for expectation > quantitative response for perception	To be considered as invalid.
v.	Qualitative response (perception) = "prices have fallen", and (expectation) = "prices will increase at the same rate"	To be considered as invalid.
vi.	Qualitative response (perception) = "prices have stayed about the same", and (expectations) = "prices will increase at the same rate"	To be considered as invalid.
vii.	Qualitative response (expectation) = "prices will increase at the same rate", but the absolute difference between expected and perceived inflation is ≥ 15 percentage points	To be considered as invalid.

Up to the early 2020s, Hungarian households' inflation perception was typically higher than actual inflation, but changed in close correlation with actual inflation (*Figure 2*). However, the waves of inflation seen in the new decade following the low-inflation environment of the 2010s increased the distance between the two indicators. Inflation varied within the range of 0 per cent to 3 per cent from 2015 to 2019 (averaging 1.8 per cent), while the average for inflation expectations was as high as 9.5 per cent. Expectations followed not the actual, but rather the perceived inflation (of around 8 per cent) during that time. The close correlation between perceived inflation and expectations lasted until the inflation wave observed in

the first half of the 2020s. From 2021, the trajectory of the two indicators has diverged. With an increase in perceived inflation, no material break was observed in inflation expectations in mid-2021, indicating that expectations were anchored to a certain degree. After the outbreak of the war between Russia and Ukraine, from March 2022 on, both perceptions and expectations began to rise steeply and simultaneously. However, from August 2022, the increase in expectations no longer followed the continued steep rise in perceived inflation. Nevertheless, expectations cannot be regarded as being fully anchored in the household sector since both the expected and the perceived rise of prices have, since mid-2024, stabilised above the level preceding the earlier waves of inflation, and then began to decrease slightly.

Figure 2
Changes in household inflation perceptions, expectations and actual inflation



Note: Data adjusted by the MNB.

Source: Hungarian Central Statistical Office (HCSO), GKI, European Commission (EC), MNB

2.2. Socio-demographic composition of households' inflation expectations

Different socio-demographic groups are characterised by different household inflation expectations (*Table 2*). The total sample's average expectation is 15.6 per cent, while its median is 10 per cent. The raw average rates show that women's inflation expectations are 2.3 percentage points higher than those of men. Higher expected inflation rates have generally been found among women (for instance, *Easaw et al. 2013*; *Meyler – Reiche 2021*; *D'Acunto et al. 2021*). The rate of estimated future price rise increases with age up to the age group of 50–64,

and then it declines again among people over 65 (a similar pattern is described by *Meyler – Reiche 2021*). This heterogeneity by age may be explained by differences in experience relating to inflation during the different lifetimes of the various cohorts (*Malmendier – Nagel 2016*). As regards educational attainment, in the raw average, respondents with primary school education expect lower rates of inflation than those with secondary or tertiary qualifications do. In terms of occupation categories, white-collar employees reported the lowest inflation expectations.

These categories are, of course, not independent of one another: women's higher average inflation expectations are partly related to their group's different composition in terms of age and qualifications. The results presented in the last two columns of *Table 2* are simultaneously controlled for socio-demographic characteristics, thereby separating the effects of the various factors. The estimation equation of the applied linear regression:

$$E_{it}^{h}(\pi_{t+12}) = \alpha + \sum_{k} \beta_k D_{kit} + \gamma_t + u_{it} \qquad (1)$$

where E^h means households' expectation, $E_{it}^{h}(\pi_{t+12})$ denotes a 12-month forward-looking inflation expectation of household i at the date t, D_{kit} are dummy variables describing socio-demographic characteristics (gender, age group, education, employment), β_k is the related coefficient measuring the difference from the reference group. The specification in the last but one column of *Table 2* does not include time fixed effects (γ_t), while the estimates presented in the last column of the same includes the monthly fixed effects as well, eliminating the effects of changes in the macroeconomic environment.

The results of our estimates show that socio-demographic factors have a significant and robust impact on inflation expectations. Women's expectations are statistically significantly higher, by 3.0 percentage points, than men's, even after controlling for age, educational attainment and occupation. The youngest (18–29-year-old) and the oldest (over-64-year-old) age groups have significantly lower inflation expectations than the other – middle age – groups. According to specification (2) people with tertiary qualifications have the lowest inflation expectations. *Easaw et al.* (*2013*), *Ehrmann et al.* (*2017*) and *Meyler and Reiche* (*2021*) also observed that inflation expectations are also lower with higher levels of education. It should be noted that, in the case of the specification without time fixed effects (1), the highest inflation expectations are observed among people with tertiary education. One of the reasons for this is that people in this group expected higher inflation rates typically during high-inflation periods. Another reason – which is more of a technical nature – is that the number of respondents with not more than primary education tended to be smaller in the sample during such periods. In terms of employment, pensioners expect the highest rates of inflation in the future. They are followed by economically inactive people making up the "other" category and blue-collar workers.

Table 2
Socio-demographic composition of households' inflation expectations

	Number of obs.	Share (%)	Mean	Std. Dev.	Median	p25	p75	Percentage point deviation from the reference group	
								(1)	(2)
Gender									
Male	45,793	48.1	14.4	16.1	10	5	20		
Female	49,442	51.9	16.7	18.5	10	5	20	2.741***	3.016***
Age									
18–29	16,094	17.2	14.7	18.6	10	4	20	–1.767***	–1.626***
30–49	33,868	36.2	15.7	18	10	5	20		
50–64	26,402	28.2	16.5	17.3	12	5	20	0.901***	0.239
65+	17,186	18.4	15.3	15.6	10	5	20	–0.475	–1.948***
Education									
Primary education or less	10,130	10.6	13.1	15.2	10	4	20	–3.441***	–0.423*
Upper secondary	59,659	62.6	15.9	17.9	10	5	20		
Tertiary	25,446	26.7	15.9	17.1	10	5	20	0.305*	–1.749***
Employment									
Other	9,571	12.6	20.2	22.7	15	6	30	5.134***	2.242***
Blue collar	12,710	16.7	17	17.9	12	6	20	1.677***	1.828***
Pensioner	19,509	25.7	17.6	17.3	15	7	21	1.892***	2.348***
White collar	25,998	34.2	16.4	17.3	12	5	20		
Self-employed, manager	8,187	10.8	17.4	18.9	14	6	20	1.537***	–0.345
Full sample									
	95,235	100	15.6	17.4	10	5	20		

Note: The aggregated numbers of elements in the various socio-demographic groups may differ from the corresponding numbers of elements as a consequence of the elimination of the "Do not know / Do not answer" values. The "other" category includes unemployed people, those fulfilling domestic task and other inactive earners, dependants, students and other economically inactive people. The average of the reference group (α=15.6) is the inflation expectation of male respondents aged 30–49, with secondary education in white collar jobs.

The equation of the OLS regression marked (1):

$$E_{it}^{h}(\pi_{t+12}) = \alpha + \sum_{k} \beta_k D_{kit} + u_{it}.$$

The equation of the OLS regression marked (2) includes the γ_t month's fixed effects as well:

$$E_{it}^{h}(\pi_{t+12}) = \alpha + \sum_{k} \beta_k D_{kit} + \gamma_t + u_{it}.$$

*The significance levels are: *** p<0.01, ** p<0.05, * p<0.1. Robust (White's) standard errors for the regression estimates.*

Source: MNB based on GKI, EC

The heterogeneity of the formation of inflation expectations may entail important macroeconomic consequences, and monetary policy messages may be perceived by different groups of society in different ways. Therefore, the robustness of the results was tested for certain highlighted socio-demographic characteristics.

2.3. Macroeconomic factors and their effect mechanisms

Household inflation expectations are partly anchored and partly retrospective, i.e. they are affected by recent experience and inflation perception. The extent to which inflation expectations are anchored is important for monetary policy, because an inflation target can only be sustainably achieved if expectations are anchored not necessarily to the inflation target, but at least at a level that is consistent with the inflation expectations. The degree of anchoring can be altered in the short run by major shocks or unexpected events. Such significant impacts may include the substantial exchange rate movements observed in recent years, the energy and food price increase experienced in 2022 and 2023, or even the impact of the coronavirus pandemic on economic confidence. Of the (measurable) factors affecting inflation expectations, in our study we highlighted the perception of inflation, actual inflation, the inflation of prioritised groups in the consumer basket, the inflation forecasts of macroeconomic professionals and consumer confidence, as well as the change and the degree of fluctuation in the EUR/HUF exchange rate.

On the one hand, certain factors may have an immediate effect on inflation expectations, such as when expectations react quickly to certain news or events (e.g. an increase in the volatility of the exchange rate). On the other hand, other factors shape inflation expectations slowly and gradually (e.g. a persistently high-inflation environment). Also factored in are the direct impacts of macroeconomic factors on inflation expectations as well as the fact that macroeconomic factors may also have a major indirect impact on expectations via households' perception of inflation. The role of the factors influencing inflation expectations are discussed below.

We examined how the perception of inflation is affected by prioritised groups in the consumer basket by also analysing the changes in the prices of the main groups in the inflation basket (market services, traded goods, food, market energy, items with administered prices, alcohol and tobacco). Household inflation perceptions are most affected by changes in the prices of goods and services that the households buy frequently and directly, and inflation perceptions have a strong impact on inflation expectations. In 2024, the shares of food and fuels in the consumer basket were 18 per cent and 7 per cent, respectively, but their psychological weight in inflation perceptions may have been much higher, as their prices show higher-than-average volatility, and many households believe that the cost of daily shopping reflects general inflation. Households are particularly sensitive to fuel, energy and food price changes. Owing to the government's measures (fuel price cap, reduction in public utility charges), Hungarian households were significantly less exposed to energy

and food price increases than businesses during the examined period. However, in the European Union, it was Hungary where the rise in food prices exceeded core inflation excluding processed food by the largest degree in the period 2020–2024.

The inflation forecasts of professionals indirectly shape household inflation expectations, primarily through the media and economic news. Changes in market consensus may affect expectations regarding future price changes, even if consumers' experiences relating to current price changes remain unchanged. Monetary policy and the central bank's communication are also reflected by professional forecasts. For inflation forecasting, we collected the median of the Consensus Economics forecasts for the next six and twelve months.

The consumer confidence index measures people's confidence in the economic situation and their financial optimism. In times of uncertainty or pessimism (in conjunction with low consumer confidence levels), people tend to have concerns about higher inflation. There is an interaction between the level of trust in the economy by households and high inflation. On the one hand, high inflation creates uncertainty among households, because of the diminishing purchasing power of their disposable income. On the other hand, if households are less confident about the economic outlook, they are more likely to expect further price increases. This expectation can be self-fulfilling: it drives demand for higher salaries, and consumers bring forward their purchases, to which companies may respond by raising prices. Therefore, weakening confidence may indirectly contribute to more persistent inflationary pressures. However, if confidence starts to grow, this could lower inflation expectations, contributing to stability. The main factors shaping confidence include, primarily, inflation-related factors, along with income and labour market expectations, general uncertainty, economic security and predictability, as well as economic policy. While not examining consumer confidence itself, *Chen et al.* (*2025*) analysed uncertainty, which may be part of confidence, and found no evidence of changes in inflation affecting short-term uncertainty, despite the fact that macroeconomic and financial variables have a profound impact on inflationary uncertainty.

To reduce the endogeneity between confidence and inflation expectations, we approached consumer confidence using the GKI's consumer confidence index, the value of which is determined by four factors that do not include households' inflation perception or expectation.

- the perception of households' financial position in the past twelve months,
- expected changes in households' financial position in the coming twelve months,
- expected changes in Hungary's economic situation in the coming twelve months, and
- prospects for purchases of high-value consumer goods in the next twelve months.

Hungary is a small, open economy, where the EUR/HUF exchange rate changes feed through relatively quickly to domestic prices and hence inflation expectations, as a consequence of the high proportion of imports. Rapid exchange rate changes may reflect an increase in economic uncertainty. The effect of exchange rate changes can shape household inflation expectations not only through the perception of current price changes, but also regarding the future. Households may perceive a major weakening of the exchange rate as an inflation risk and may thus incorporate it directly into their inflation expectations. In times of economic uncertainty, higher volatility in the EUR/HUF exchange rate may amplify the effect of exchange rate changes: with larger and more frequent exchange rate changes, higher costs will be more quickly built into prices by companies.

3. Methodology

We identify short-term and long-term correlations between inflation expectations and macroeconomic factors with the help of the error correction model (ECM), as discussed in the study by *Easaw et al.* (*2013*).

Based on the theory of rational expectations, we assume that households' expectations are, in part, forward-looking (rational) – which we express with the median projection by Consensus Economics – and partly backward-looking (adaptive), i.e. governed by perceived inflation and actual inflation. This dual mechanism can be formalised in the following cointegration equation:

$$E_t^h(\pi_{t+12}) = \alpha_0 + \underbrace{\alpha_R E_t^C(\pi_{t+6})}_{rational\ component} + \underbrace{\alpha_A \pi_t^P}_{adaptive\ component} + e_t \qquad (2)$$

where $E_t^h(\pi_{t+12})$ is the 12-month forward-looking household inflation expectation, $E_t^C(\pi_{t+6})$ is the 6-month forward-looking analyst expectation (due to lack of data, we use the median of professionals' 6-month forward-looking projections as a proxy variable instead of the 12-month figure), π_t^P is inflation as perceived by households, and e_t is the difference from the equilibrium level in the short term. The weights of rational and adaptive expectations are α_R and α_A, respectively, for which, α_R, α_A>0 and α_R+α_A=1. In the case of α_A=1, we refer to as fully backward-looking expectations and, in the case of α_R=1, as fully rational expectations. In our analysis, we allow a bias in inflation expectations, the extent of which is expressed by α_0. However, this bias is presumed to remain unchanged over time. The existence of cointegration between the variables is shown in *Table 5* and was checked with the stationarity of the residual.

In the short run, expectations may be shifted from the equilibrium by macroeconomic factors, which can be described with the following specification:

$$\Delta E_t^h(\pi_{t+12}) = \beta_0 + \beta_1 \Delta \pi_t^P + \beta_2 (E_t^C(\pi_{t+6}) - \pi_t) + \beta_3 \Delta CCI_t + \beta_4 \Delta FX_{t-1} + \varphi e_{t-1} + u_t \quad (3)$$

where π_t is actual inflation, $(E_t^C(\pi_{t+6}) - \pi_t)$ is the shift of inflation expected by analysts in the next six months, ΔCCI_t is the change in consumer confidence, ΔFX_{t-1} is the percentage change in the previous month's EUR/HUF rate (if positive, it shows a weakening of the forint), and e_{t-1} is the error correction term. The latter's coefficient $-1 < \varphi < 0$ measures the speed of adjustment: the extent to which households' expectation drops (increases) in the next period, having risen above (dropped below) the equilibrium. The above two equations can be combined, as follows:

$$\begin{aligned}\Delta E_t^h(\pi_{t+12}) = \beta_0^* + \beta_1 \Delta \pi_t^P + \beta_2 (E_t^C(\pi_{t+6}) - \pi_t) + \beta_3 \Delta CCI_t + \beta_4 \Delta FX_{t-1} \\ + \varphi \left[E_{t-1}^h(\pi_{t+11}) - \alpha_R E_{t-1}^C(\pi_{t+5}) - \alpha_A \pi_{t-1}^P \right] + u_t\end{aligned} \quad (4)$$

where $\beta_0^* = (\beta_0 - \varphi\alpha_0)$ includes the expectations bias.

Because of the role of perceived inflation in shaping expectations, we examine the factors affecting households' perception of the rate of a price increase. An error correction model is used, in which it is assumed that, in the long run, perceived inflation moves together with actual inflation:

$$\pi_t^P = \gamma_0 + \gamma_1 \pi_t + \upsilon_t \quad (5)$$

where the γ_1 coefficient is fixed at 1. Our assumption is that the shocks in the second half of the examined period were so severe that they moved households' perceptions far away from actual movements in prices. Due to the limited availability of data, the examined period does not cover a whole business cycle. By fixing the coefficient, we avoid capturing short-term effects with the long-term relationship. In estimating the equation, we observed that the estimated error correction residuals do not show any substantial autocorrelation (*DW* = 2.05), which confirms our choice. In our analysis, we allow a distortion of inflation perception, the extent of which is expressed by γ_0. However, this distortion is presumed to remain unchanged over time. The short-term dynamics capture rapidly changing factors that affect perception:

$$\Delta \pi_t^P = \delta_0 + \delta_1 \Delta \pi_t^F + \delta_2 \sigma_{t-1}^{FX} + \delta_3 \Delta CCI_t + \rho \upsilon_{t-1} + u_t\,, \quad (6)$$

where $\Delta\pi_t^F$ denotes the change in food inflation, σ_t^{FX} is the relative standard deviation of the EUR/HUF rate, and υ_{t-1} is the error correction term. By substituting equation (5) into equation (6), we obtain:

$$\Delta\pi_t^P = \delta_0^* + \delta_1\Delta\pi_t^F + \delta_2\sigma_{t-1}^{FX} + \delta_3\Delta CCI_t + \rho(\pi_{t-1}^P - \gamma_1\pi_{t-1}) + u_t\,, \tag{7}$$

where δ_0^* includes the degree of bias. Error correction equations (4) and (7) are estimated in one step. The variables determining long-term correlations are integrated of order one (see *Annex*, *Table 4*). The estimated parameters – the anchoring of household inflation expectation and the short-term effect of macroeconomic factors – are presented in the following section.

4. Results

4.1. Estimate results

Our estimates indicate that in the early 2020s a change occurred in the way inflation expectations are formed. The predominantly low, stable inflation environment in the 2010s was followed by a period of higher, more volatile inflation, and households could expect a persistently higher inflation risk for the future. The focus shifted to the role of anchored expectations. In the uncertain, higher inflation environment of the new decade, the role of inflation expectations, consumer confidence and exchange rate developments increased, while that of inflation perceptions diminished. Further analyses will be required to find out how people's confidence in the economy and how their inflation expectations were affected by the Hungarian central bank's communication, the domestic economic policy and Hungarian media. The changes taking place in the formation of inflation expectations as a consequence of the different characteristics in the new decade are in line with the findings of studies that emphasised the regime-dependent nature of expectations formation (*Borio et al. 2023*; *Goodspeed 2025*; *Gobbi et al. 2025*; *Lin – Li 2025*). We describe these effects in more detail below.

The inflation expectations of Hungarian households were almost purely backward-looking during the low-inflation period. Between 2015 and 2019, households' inflation perception was fully integrated into expectations in both the short and the long term. This effect has diminished during the past five years, and since 2020, a 1-percentage point rise in inflation perception has increased household expectations only by 0.68 percentage point simultaneously and by 0.45 percentage point in the medium term (*Table 3*). As the current perceived price increase is becoming less and less indicative of the future expectation, other factors have emerged in the current more uncertain environment.

Table 3
Factors affecting inflation perceptions and expectations

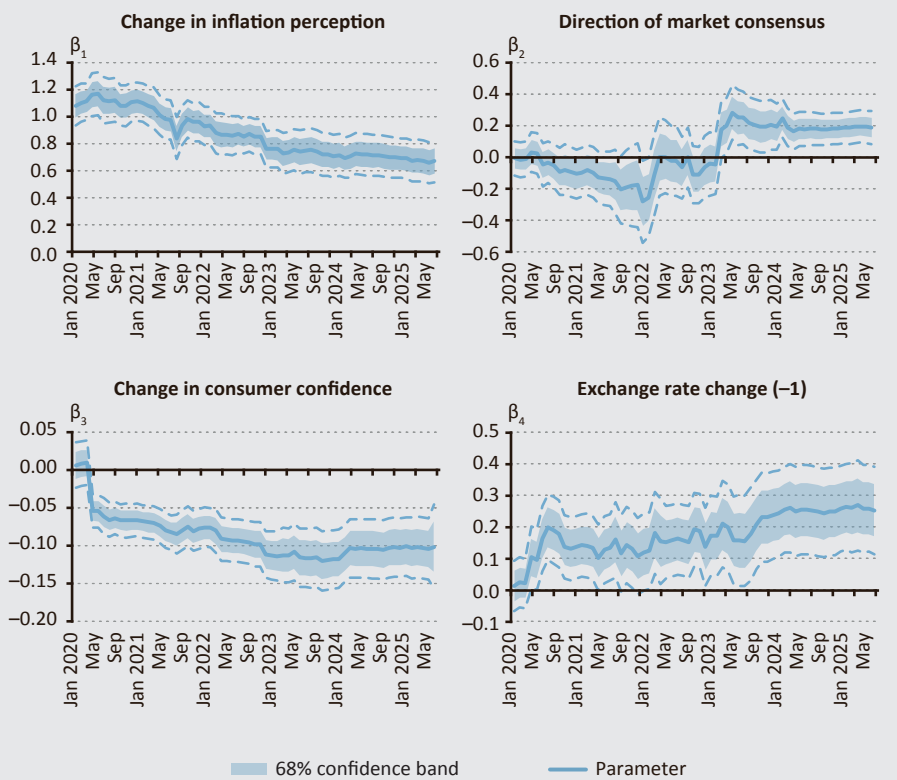
	2015–May 2025		*2015–2019*		*2020–May 2025*	
	Change in inflation perceptions	*Change in inflation expectations*	*Change in inflation perceptions*	*Change in inflation expectations*	*Change in inflation perceptions*	*Change in inflation expectations*
Change in inflation perceptions		**0.719*** **		**1.055*** **		**0.681*** **
		(0.070)		(0.081)		(0.088)
Direction of market consensus		**0.131*** **		**–0.005**		**0.188*** **
		(0.045)		(0.063)		(0.058)
Change in food inflation	**0.286*** **		**0.122**		**0.287*** **	
	(0.051)		(0.136)		(0.068)	
Change in consumer confidence	**–0.057*** **	**–0.107*** **	**–0.063** **	**0.014**	**–0.048**⁺**	**–0.103*** **
	(0.021)	(0.018)	(0.027)	(0.017)	(0.030)	(0.023)
EUR/HUF exchange rate change (–1)		**0.205*** **		**0.027**		**0.249*** **
		(0.059)		(0.046)		(0.080)
Relative std. dev. of exchange rate (–1)	**0.686** **		**–0.046**		**0.625**⁺**	
	(0.278)		(0.403)		(0.428)	
Error correction term (–1)	**–0.037** **	**–0.315*** **	**–0.098***	**–0.822*** **	**–0.077***	**–0.599*** **
	(0.017)	(0.063)	(0.052)	(0.142)	(0.039)	(0.111)
Actual inflation level (–1)	**1.000**		**1.000**		**1.000**	
	(–)		(–)		(–)	
Perceived inflation level (–1)		**0.626*** **		**0.991*** **		**0.451*** **
		(0.046)		(0.038)		(0.050)
Market consensus level (–1)		**0.374**		**0.009**		**0.549**
		(–)		(–)		(–)
Constant	**0.078**	**0.915*** **	**0.816** **	**0.226**	**0.922**	**3.899*** **
	(0.254)	(0.252)	(0.389)	(0.240)	(0.838)	(0.909)
Adjusted R^2	0.367	0.682	0.101	0.787	0.403	0.747
Durbin–Watson-statistics	2.05	2.23	2.35	1.82	2.01	2.08
F-statistics	18.794***	44.613***	2.622**	36.053***	11.822***	32.527***

*Note: The significance levels are: *** p<0.01, ** p<0.05, * p<0.1, ⁺ p<0.15. The standard errors appear in brackets under the estimated parameters. Based on theoretical considerations, the actual inflation coefficient's parameter for long-term inflation perception is fixed at 1. In the long-term inflation expectation, the sum of the market consensus and the perceived inflation parameters is set to 1, based on theoretical considerations.*

Source: MNB calculation based on GKI and EC data

During the high-inflation period, households became more forward-looking, and market expectations had a significant impact on their inflation expectations (*Table 3*). On average since 2020, the 1-percentage point decrease in the inflation forecast of professionals simultaneously reduced household inflation expectations by 0.19 percentage point and by 0.55 percentage point in the medium term. During the preceding low-inflation period, this effect was nearly zero and insignificant. In the low-inflation environment, households probably did not pay much attention to inflation prospects, but in periods of high inflation, people focus more on inflation and respond more sensitively to information in the media regarding developments of relevance to the price index (*Goodspeed 2025*). Our moving window estimate shows that the role of inflation perception has gradually decreased during the past ten years, and we have not seen a break in the effect (*Figure 3*).

Figure 3
Changes in the impacts of different factors on inflation expectations over time

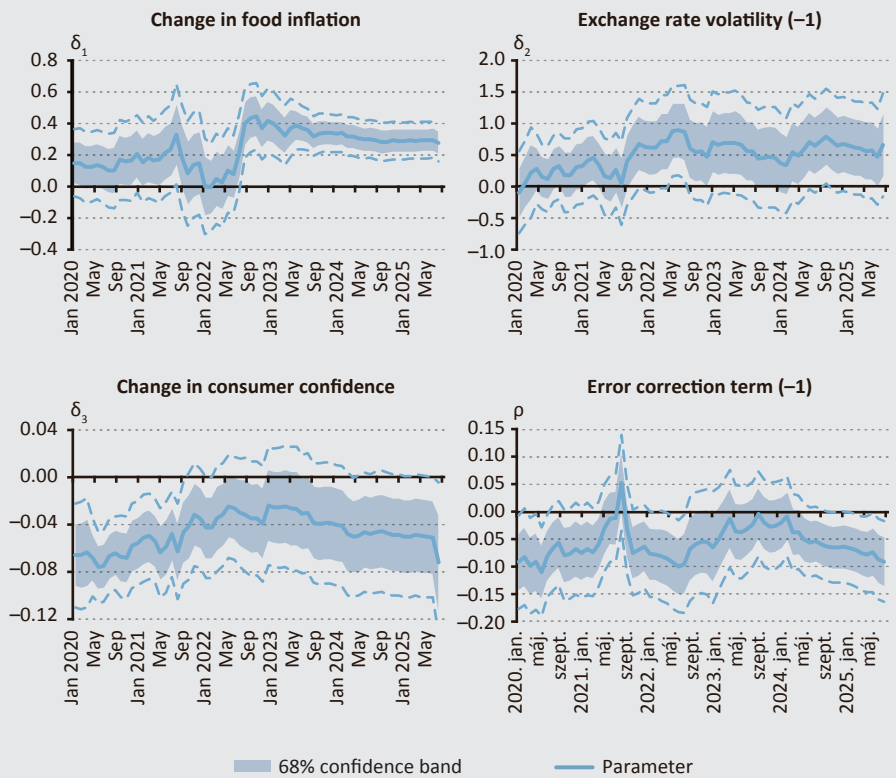


Note: 5-year rolling window estimates of error-correction models. The dates relate to the end of each period. The light blue band shows the 1-standard deviation (68-per cent) confidence interval for the parameter estimate, while the dashed line indicates the 90-per cent confidence interval.

Source: MNB based on GKI data

Since 2020, the structure of inflation has demonstrably dominated inflation perceptions and, indirectly, expectations as well, which may have been caused by larger fluctuations in food prices, in addition to the frequency of purchases. After 2020, a 10-percentage point rise in food inflation was followed by an average 2.9-percentage point increase in households' average inflation perception and thus, indirectly, by a 2.0-percentage point rise in households' average expectation as well (*Table 3*). The rolling-window analysis shows that a remarkable, significant increase in the effect occurred when food prices surged (*Figure 4*). Food inflation has traditionally been a volatile component of inflation in Hungary, but it reached very high levels (even above 40 per cent) in 2022. The larger-than-average fluctuation in the price of this product group may have contributed significantly to the (psychological) impact of food inflation rising significantly above its 18-per cent weight in the consumer basket and to a surge in households' inflation expectations.

Figure 4
Changes in the impact of different factors on inflation perceptions over time



Note: 5-year rolling window estimates of error-correction models. The dates relate to the end of each period. The light blue band shows the 1-standard deviation (68-per cent) confidence interval for the parameter estimate, while the dashed line indicates the 90-per cent confidence interval.

Source: MNB based on GKI data

The increase in food inflation affects nominal developments in the economy through second-round impacts as well: when people are faced with a steady, rapid increase in food prices, they expect all other items to also become more expensive. Our results relating to the dominant role of food inflation are added to the empirical findings highlighting the impact of direct purchasing experiences and the frequency of shopping on the formation of opinions on inflation (*Angelico – Di Giacomo 2019*; *D'Acunto et al. 2019, 2021*; *Anesti et al. 2025*).

No significant correlation was found between energy prices and expectations (as well as perception), which may have resulted from the still regulated public utility charges of households and the fuel price cap introduced for the period of the oil price increase. As a consequence of these measures, households did not perceive the energy price rise, or they perceived only a fraction of the market price increase; therefore, they did not increase their expectation any further (*Annex, Table 6*).

The impact of household confidence on expectations increased overall between the two periods, despite the fact that the indirect impact decreased through perception and became insignificant at a 10-per cent significance level (we note that the Granger causality was tested in order to eliminate the endogeneity problem relating to confidence, and at a 10-per cent significance level neither inflation perception nor inflation expectation was found to be a Granger cause of the confidence variable used in the estimation – with p-values of 0.588 and 0.120 per cent, respectively, including four lags). Household inflation expectations were practically not influenced by confidence between 2015 and 2019, but in the early 2020s, this direct impact had grown to be measurable. The impact of household confidence on perception was quite similar in the two examined periods, while the immediate impact of perceptions on expectations decreased by one-third. Since 2020, a 1-percentage point loss of confidence raised average inflation expectations by 0.10 percentage point directly, on average (*Table 3*) and – by factoring in the indirect impacts through perception as well – by a total of 0.14 percentage point (before 2020, the direct effect was practically 0 percentage point, while the total effect was 0.05 percentage point). The increase in the role played by confidence is consistent with findings from behavioural economics: due to negative experiences and uncertainty, people tend to place more weight on potential negative (high inflation) future outcomes (*Kahneman – Tversky 1973, 1979, 1982*; *Meyler – Reiche 2021*). Rolling window estimates show that the direct impact of confidence on household inflation expectations increased dramatically during the coronavirus

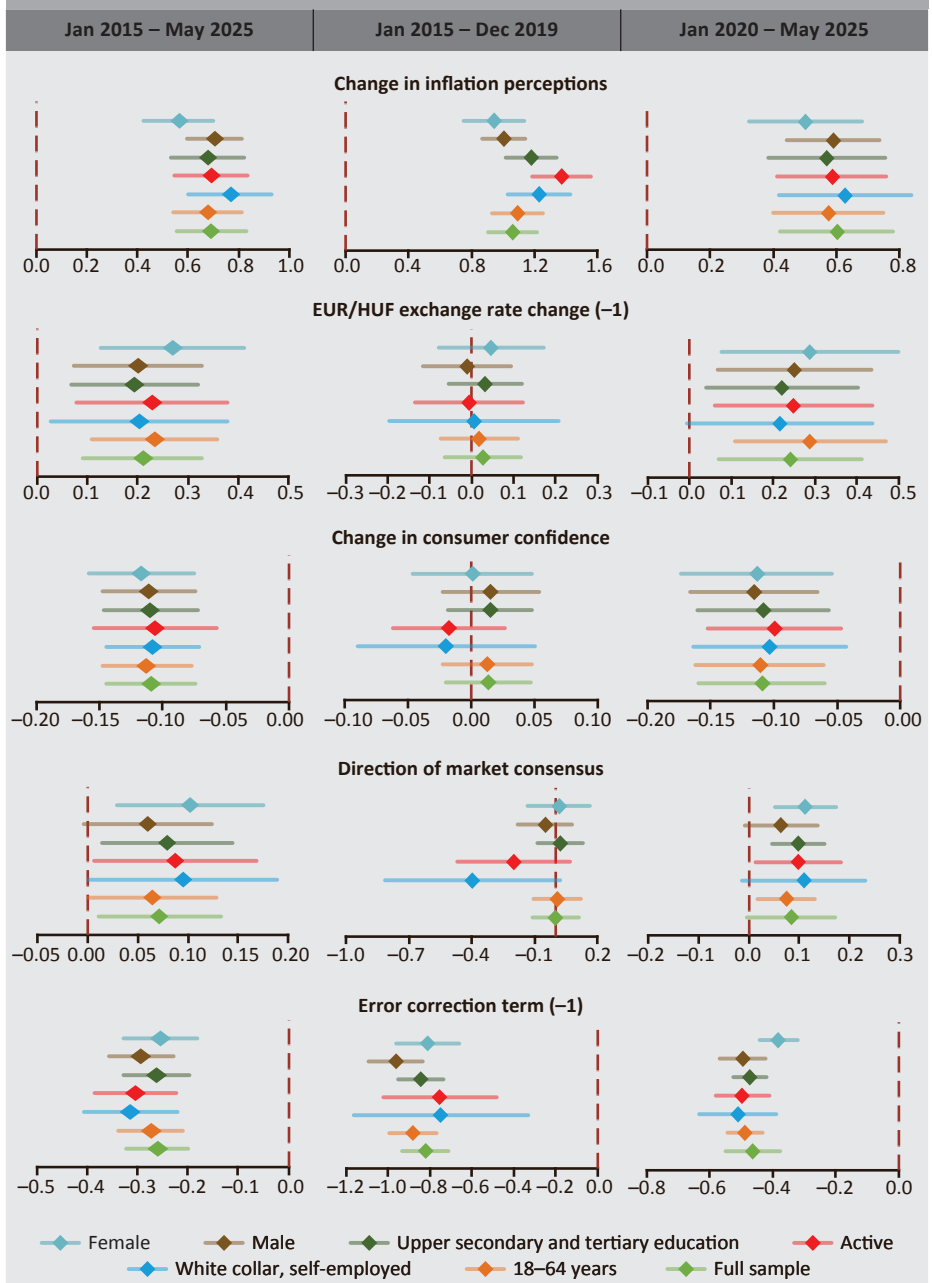
pandemic and continued to increase gradually thereafter in a high-inflation regime (*Figure 3*).

As well as the inflation forecasts of professionals, the EUR/HUF exchange rate can also have a direct impact on people's future price expectations. Households responded to exchange rate changes more sensitively in the period 2020–2024. A 1-per cent weakening of exchange rate experienced one month earlier drove households' expectations by an average of 0.25 percentage point in 2020–2024 – when controlled for changes in inflation perception and food prices – whereas the exchange rate had no significant effect in the 2015–2019 period. Even the effect of the (relative) standard deviation of the EUR/HUF rate was practically zero in 2015–2019, but grew stronger for the period after 2020. During the period of significant depreciations of the forint from 2018 on, the impact on inflation perceptions temporarily increased and became significant, remaining around the 10-per cent significance level for the entire period of the 2020s. The role of the changes in the exchange rate in the evolution of perception was also examined, but it was not found to have had a significant explanatory power, controlling for other variables. This may indicate that not only the weakening of the exchange rate but its uncertain movements may also affect peoples' perception of inflation, which points to the role of exchange rate stability. This phenomenon may also be related to the fact that Hungarian forint witnessed considerably more major depreciations than appreciations (corrections) during the examined period. Additional analyses need to be carried out regarding the role of monetary policy in anchoring inflation expectations by attenuating exchange rate fluctuations (more stable exchange rate).

4.2. Robustness analysis based on demographic characteristics

The robustness of our results was tested in relation to Hungarian households' socio-demographic characteristics. Due to the longitudinal cross-sectional structure of the household survey, the estimation of equations (4) and (7) was carried out and compared over time, using the average of the sub-groups featuring the given demographic characteristics. We highlighted the following groups: 1) women, 2) men, 3) the 18–64-year age group (adults of working age), 4) active population, 5) people with secondary and tertiary qualifications, and 6) white-collar workers and entrepreneurs.

Figure 5
Estimated parameters of factors affecting inflation expectations, in various socio-demographic groups

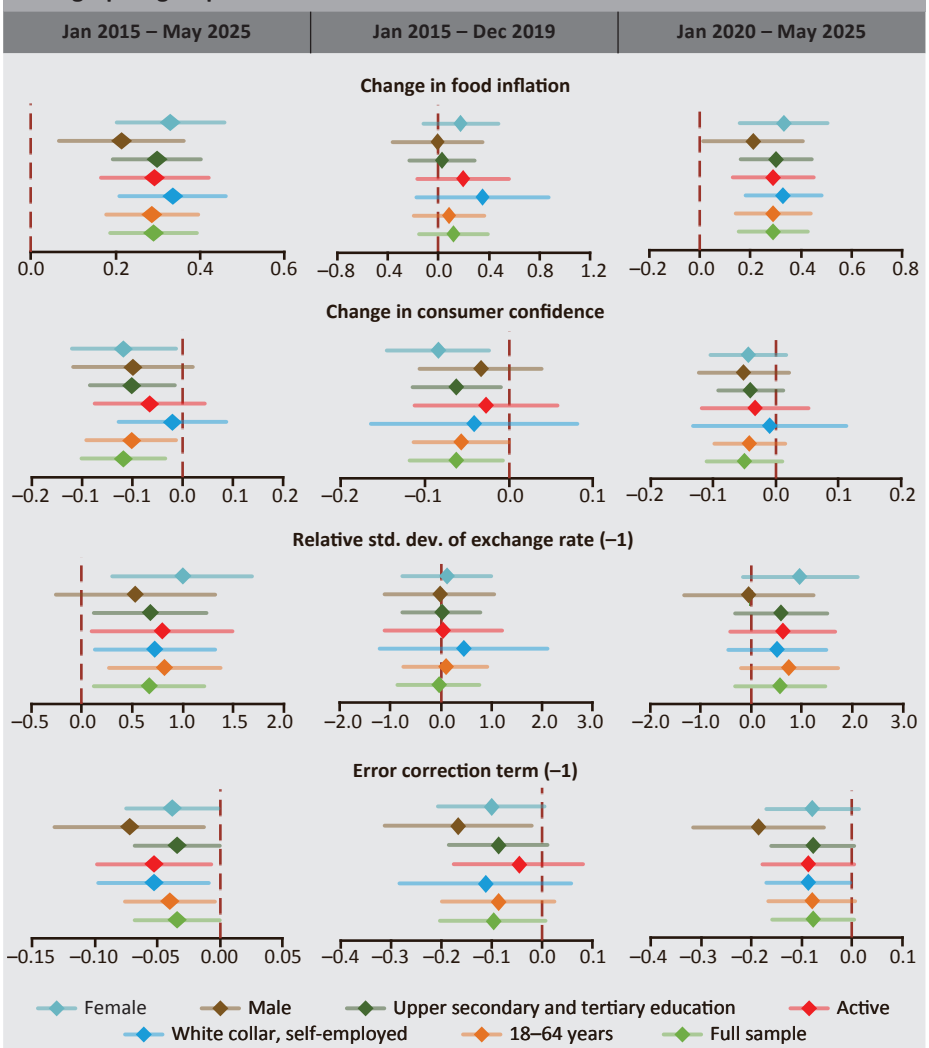


Note: The marking points (diamonds) indicate the parameters' point estimates, while the horizontal lines indicate the 95-per cent confidence interval.

Source: MNB estimate

The effects and their changes between the two periods, as identified by our analyses, applied to the highlighted socio-demographic groups as well. The direction and magnitude of the effects estimated for the above sub-groups are similar to those estimated for the entire population, and the significance of the effects also changes only in a few cases (*Figures 5* and *6*). Of the factors affecting inflation perception, special mention is made of food inflation, the impact of which is particularly robust, significant and consistently positive in a wide range of segments,

Figure 6
Estimated parameters of factors affecting inflation perception, in various socio-demographic groups



Note: The marking points (diamonds) indicate the parameters' point estimates, while the horizontal lines indicate the 95-per cent confidence interval.

Source: MNB estimate

in all periods reviewed (*Figure 6*). In 2015–2019, expectations were only driven by perceived inflation, by approximately 1 percentage point, somewhat more in the group of economically active people. No significant heterogeneity is found in the magnitude of the effects of macroeconomic factors during the years after 2020 (*Figure 5*).

Our robustness analyses show that macroeconomic factors have a relevant impact on household inflation perception and the formation of expectations even in the groups of different socio-demographic characteristics. Therefore, in high-inflation regimes, economic policy measures that are aimed at anchoring expectations and boosting household confidence may be widely effective even without demographic targeting.

5. Summary

We provided an overview of trends in Hungarian households' inflation expectations over the past 10-year period, pointing out changes in the formation of expectations triggered by the shocks and waves of inflation in the early 2020s. Hungarian households' inflation perception and expectations have both been higher than the actual rates of inflation, and the two moved closely together until 2019. However, the waves of inflation increases reduced the comovement in the 2020s. The process of disinflation of 2023 brought about a faster decrease in expectations and a less marked decrease in inflation perception.

The predominantly low, stable inflation environment in the 2010s was followed by a period of higher, more volatile inflation, and households could expect a persistently higher inflation risk for the future. During the low-inflation period in 2015–2019, Hungarian households' inflation expectations were practically purely backward-looking. In the more uncertain period of high inflation in the 2020s, people consider the "currently" perceived price increase less and less indicative of the future expectation. Households became more forward-looking by one-third, highlighting the role of anchored expectations.

Regarding instantaneous effects, the role of food price inflation, macroeconomic forecasts and exchange rate movements, along with exchange rate volatility that also reflects uncertainty, as well as confidence in the general economic situation increased in the short term. We observed signs that, based on findings in the literature, may indicate that the role of psychological factors intensified in the high-inflation environment in Hungary. The larger-than-average fluctuation in food prices may have contributed to the psychological impact of food inflation rising significantly above its 18-per cent weight in the consumer basket, although this requires further analysis. We found no significant impact of energy and fuel prices, perhaps due to the regulated public utility charges applied since 2013 and

the price cap introduced for the period of the fuel price increase. The role played by household confidence rose in the early 2020s, which is consistent with findings from behavioural economics: due to negative experiences and uncertainty, people tend to place more weight on potential negative (high inflation) future outcomes. Households reacted more sensitively not only to changes in the exchange rate but also to its volatility, partly reflecting economic uncertainty. Both the inflation forecasts of professionals and the EUR/HUF exchange rate can have a direct impact on households' price expectations. Uncertain exchange rate movements may also affect inflation perceptions, highlighting the importance of exchange rate stability. Additional analyses need to be carried out regarding the role of monetary policy in anchoring inflation expectations by attenuating exchange rate fluctuations (more stable exchange rate) on the one hand, and also the possible roles of the various communication channels in dampening inflation expectations, on the other.

Our results are robust regarding Hungarian households' socio-demographic characteristics. Macroeconomic factors (and consequently inflation regimes) have a significant impact on households' inflation perception and expectations even considering different socio-demographic characteristics.

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Annex

Table 4
Integration test of the variables covered by our analyses (between January 2015 and May 2025)

	ADF-test (p-value)		Phillips–Perron-test (p-value)		Order of integration (p=0.05)	
	H0: I(1)	H0: I(2)	H0: I(1)	H0: I(2)	ADF	PP
Inflation expectations	0.662	0.000	0.562	0.000	1	1
Inflation perceptions	0.431	0.013	0.640	0.000	1	1
Actual inflation	0.093	0.009	0.295	0.000	1	1
Consensus (6-month ahead)	0.078	0.001	0.252	0.000	1	1

Note: Estimation period: Jan 2015 – May 2025.
Source: MNB calculation based on GKI and EC

Table 5
Cointegration correlations

	Inflation expectations Equation (2)		Inflation perceptions Equation (5)	
	Without parameter restriction	With parameter restriction	Without parameter restriction	With parameter restriction
Inflation expectations	1	1 (norm.)	–	–
Consensus (6-month)	0.301*** (0.091)	(1–0.536***) (–)	–	–
Inflation perceptions	0.609*** (0.037)	0.536*** (0.038)	1	1
Actual inflation	–	–	1.625*** (0.145)	1
Constant	3.437*** (0.445)	4.008*** (0.584)	9.425*** (1.186)	12.660*** (0.537)
Residual stationarity test (p-value)				
ADF	0.005	0.004	0.139	0.319
PP	0.000	0.000	0.098	0.352

*Note: Cointegration equations. The significance levels are: *** p<0.01, ** p<0.05, * p<0.1. The standard errors appear in brackets under the estimated parameters. Estimation period: Jan 2015 – July 2025.*
Source: MNB calculation based on GKI and EC data

Table 6
Factors affecting inflation perceptions (between January 2015 and May 2025)

	2015–May 2025		2015–2019		2020–May 2025	
	Change in inflation perceptions	Change in inflation perceptions	Change in inflation perceptions	Change in inflation perceptions	Change in inflation perceptions	Change in inflation perceptions
Change in food inflation	0.294***	0.294***	0.142	0.130	0.294	0.295***
	(0.052)	(0.051)	(0.154)	(0.145)	(0.069)	(0.067)
Change in consumer confidence	–0.056**	–0.055***	–0.067**	–0.062**	–0.048^{+}	–0.047^{+}
	(0.022)	(0.021)	(0.03)	(0.028)	(0.033)	(0.030)
Exchange rate volatility (–1)	0.733**	0.736***	0.051	–0.012	0.708^{+}	0.707^{+}
	(0.283)	(0.279)	(0.484)	(0.455)	(0.439)	(0.430)
Change in fuel prices	0.000		0.001		0.001	
	(0.016)		(0.021)		(0.023)	
Change in fuel prices (–1)	0.025^{+}	0.025*	0.006	0.004	0.026	0.026
	(0.017)	(0.014)	(0.025)	(0.020)	(0.023)	(0.020)
Change in fuel prices (–2)	0.002		–0.005		0.001	
	(0.016)		(0.024)		(0.024)	
Error correction term (–1)	–0.035**	–0.035**	–0.087	–0.092^{+}	–0.067^{+}	–0.067*
	(0.018)	(0.017)	(0.06)	(0.056)	(0.041)	(0.04)
Actual inflation level (–1)	1	1	1	1	1	1
	(–)	(–)	(–)	(–)	(–)	(–)
Constant	0.035	0.022	0.699^{+}	0.757*	0.665	0.673
	(0.257)	(0.254)	(0.444)	(0.420)	(0.880)	(0.854)
Adjusted R^2	0.373	0.382	0.030	0.067	0.390	0.411
Durbin–Watson-statistics	2.11	2.1	2.38	2.36	2.06	2.06
F-statistics	11.298***	16.059***	1.251	1.818^{+}	6.844***	9.917***

*Note: The significance levels are: *** p<0.01, ** p<0.05, * p<0.1, $^{+}$ p<0.15. The standard errors appear in brackets under the estimated parameters. Based on theoretical considerations, the actual inflation coefficient's parameter for long-term inflation perception is fixed at 1. In long-term inflation expectation, the sum of the market consensus and the perceived inflation parameters is set to 1, based on theoretical considerations. Source: MNB calculation based on GKI and EC data*