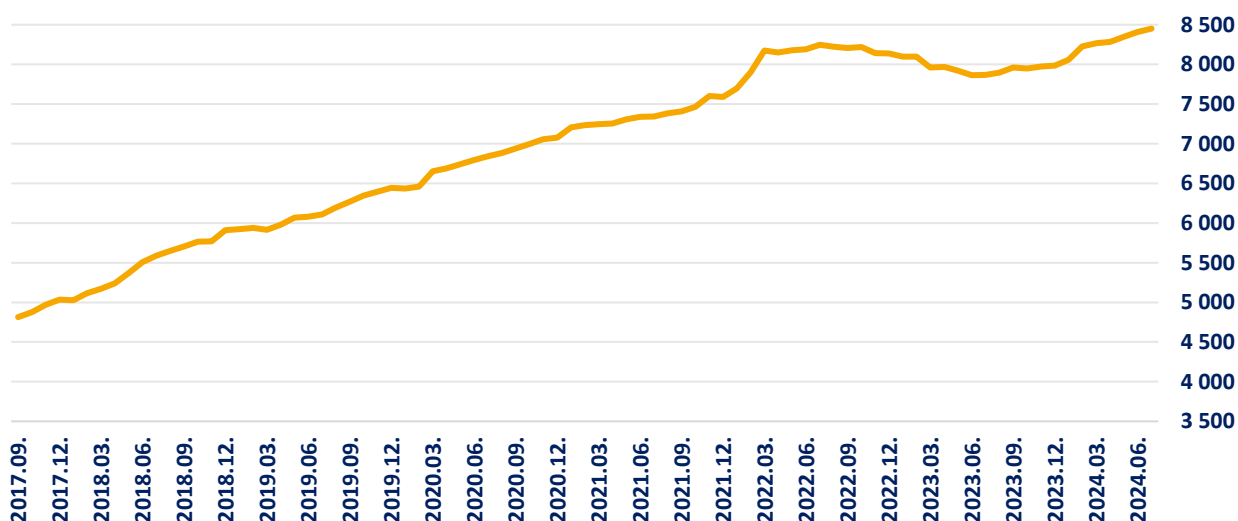


## ANIKÓ BÓDI-SCHUBERT–ILDIKÓ RITZL: WHY ARE HUNGARIAN CASH HOLDINGS NOT DIMINISHING?

Hungarian cash holdings nearly doubled between 2013 and 2020, which most analysts attributed to the very favourable and stable low interest rate environment and inflation, as well as income growth over the period. From the second half of 2021 onwards, interest rates were raised in parallel with rising inflation, the macroeconomic environment became significantly less favourable than in the second half of the previous decade, and electronic payment infrastructure also developed very dynamically. The “response” to all this, following purely rational economic logic, would have been a sustained and drastic fall in the amount of forint cash holdings in circulation, but this has not happened. From September 2022 to July 2023, cash holdings moderated slightly, before resuming their growth from August on a monthly basis. To understand the background of the phenomenon, we conducted macro perspective [econometric research](#) and a population survey<sup>1</sup> to understand individual decision motivations, the main conclusions of which are presented below.

Chart 1: Cash holdings in circulation, data adjusted for seasonal and calendar effects, HUF billion



Source: MNB

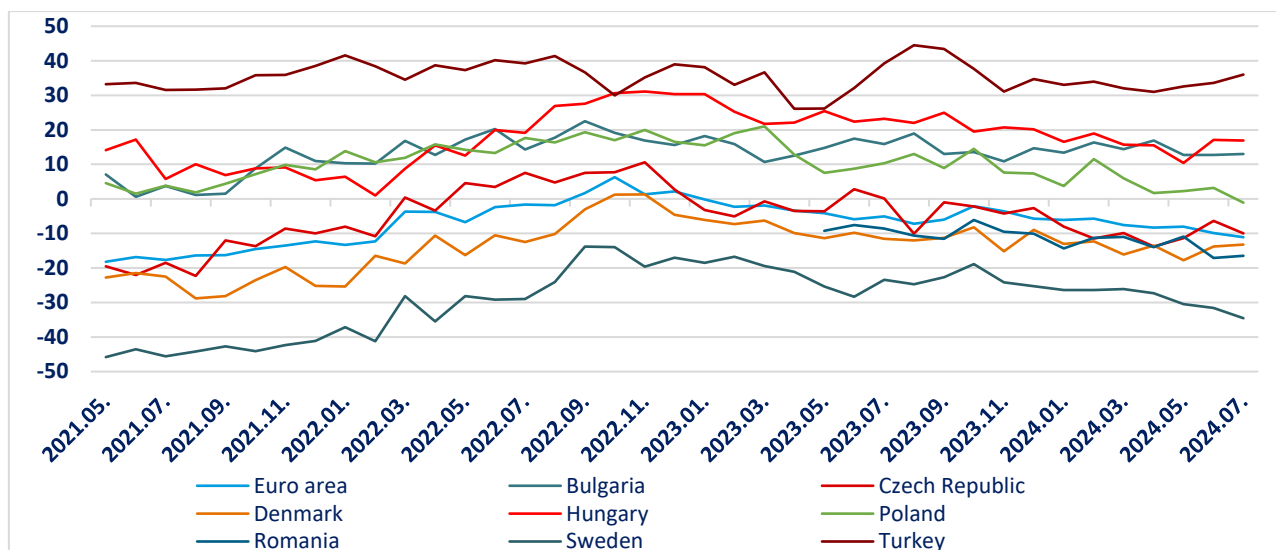
### Uncertainty and the perceived cost of financial services are at the forefront of the drivers of cash demand

According to the classical economic approach, the need for cash by economic agents is influenced by **income (wealth) and the rate of return available**, in opposite directions. The more income grows, the more cash will be needed, and if yields rise, cash holdings will fall because the opportunity cost of holding cash increases. These basic relationships also apply to domestic cash demand, but in recent years the explanatory power of the traditional model has declined, necessitating the addition of new factors to the theoretical framework.

<sup>1</sup> The detailed results of the research were published in Kociszky György (ed.) (2024): A jövő fenntarthatósága – A fenntarthatóság jövője [Sustainable Future – The Future of Sustainability]. [Launch of two new publications prepared in cooperation between the MNB and METU | Budapest Metropolitan University](#)

In our research, we have shown that **the importance of uncertainty stands out among the new drivers**, not only for the forint but also for the euro. **People respond to socio-economic uncertainty and existential fears by, among other things, increasing their cash holdings.** Extreme examples of this were the demand shocks experienced during the outbreak of the Covid-19 epidemic, the start of the Russian-Ukrainian war in late February 2022, and the onset of the economic crisis in October 2008, but households may also react to a perceived deterioration in the economic outlook or in an individual's own income prospects by hoarding cash. If the uncertainty caused by the socio-economic crises is prolonged, it could put cash holdings on a sustained upward path. Considering that according to the so-called Economic Uncertainty Index<sup>2</sup> (EUI), regularly measured by the European Commission, Hungary had one of the highest levels of perceived uncertainty about future prospects in the EU between May 2021 and May 2024, this factor may have played a significant role in the robustness of domestic cash demand.

Chart 2: Evolution of the Consumer Uncertainty Index in international comparison

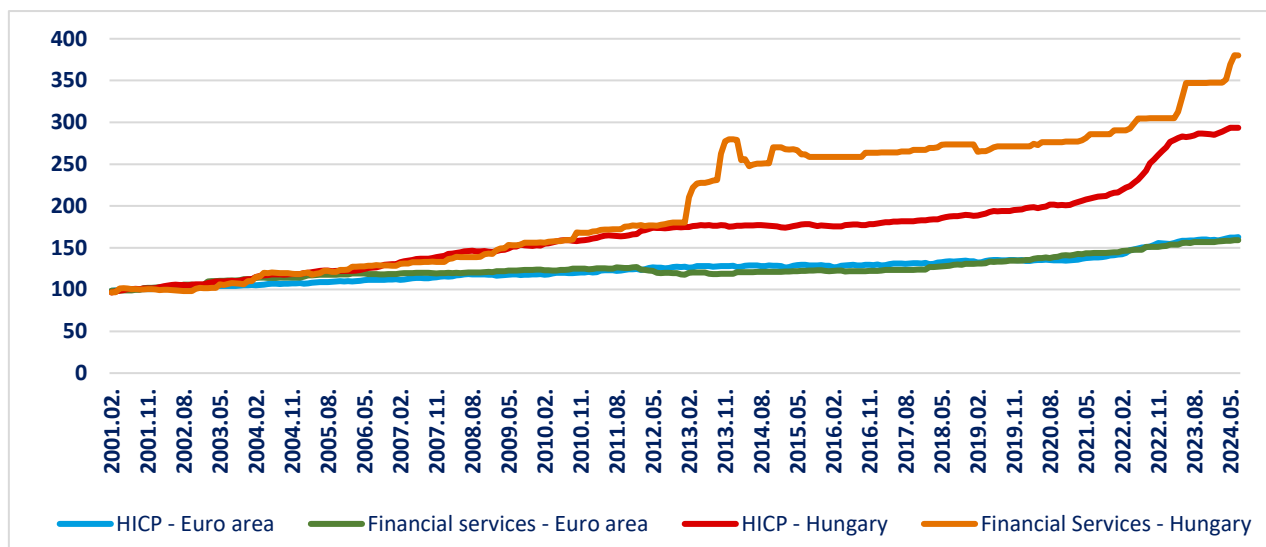


Source: European Commission

In addition to uncertainty, the high cost of financial services, as perceived by the public, has also stimulated cash demand in Hungary. In Hungary, the price of financial services increased significantly by European standards, **rising by 280.2%** between 2001 and April 2024, **while in the euro area the price of financial services increased by only 59.3% over the same period.** The reasons for this growth differential are not part of the focus of our analysis, but looking at the components of cash demand, it can be said that **the growth of cash holdings in Hungary was also driven by the high cost of financial services perceived by the public.**

<sup>2</sup> The Uncertainty Index is part of the EU Programme of Business and Consumer Surveys alongside the Economic Sentiment Indicator and Employment Expectations Indicator. The index is also calculated for consumers, in addition to businesses in industry, construction and services. The consumer uncertainty index is calculated from a single question asked consumers: How difficult is it to predict their future financial situation? The index is the difference between the proportion of positive and negative responses, with higher values indicating higher uncertainty. The data can be found here: [https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/business-and-consumer-surveys/download-business-and-consumer-survey-data/time-series\\_en](https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/business-and-consumer-surveys/download-business-and-consumer-survey-data/time-series_en).

Chart 3: Harmonised Index of Consumer Prices (HICP) and Consumer Price Index for Financial Services, 2001 average = 100%



Source: Eurostat

### Cognitive biases in decision making that promote cash holdings

Why do households choose to hoard cash in the face of uncertain external conditions or rising payment costs? **Our research on public attitudes towards cash holding revealed the following cognitive biases and heuristics among the Hungarian population, which may not be of excessive importance on their own, but the combination of these may have a significant and detectable impact on cash demand at the macro level.**

- *Mental accounting*: obtaining the same findings as in [other international research](#) we have shown that **when using cash, consumers are more able to see and control their spending, whereas when using electronic payment methods, they are more likely to overspend** because they have less perception of the real value of their payment transactions. Thus, especially for low-income households, paying in cash or saving cash for future planned expenditure (setting money aside) can support control over expenditure and promote more disciplined household management.
- *Recall heuristics*: **the return or loss of previous investment decisions and our memories of them can have a major influence on our decisions about our savings**; and the individual's previous experience with financial institutions, as well as their trust, social image and reputation, can be of particular importance in this respect. Recall heuristics can be strongly related to the reputation of financial institutions. Even in the absence of direct personal experience, negative news can undermine trust in financial institutions and thus encourage people to hold on to cash.
- *Status quo bias*: it is about sticking to our well-established practices, the logic of "we have always done it this way". **A strong incentive to hold cash may be the long-term maintenance of our previous habits, the fear of change**, as people perceive any deviation from the status quo as risky, making it difficult for the adult population to abandon the "keep some cash at home, anything can happen" practice.
- *Certainty bias*: **cash is an immediate, tangible saving, while the returns from alternative forms of investment can only be realised in the future, so the failure to realise them is often not perceived by decision-makers as necessarily a big loss**. Also, fear of future losses (I will lose the money I have) may reinforce the decision to hold cash. This may be reinforced by the so-called Allais paradox, whereby cash held risk-free at home is often perceived by individuals as more valuable even if they are aware of the loss they have suffered in this way. **A part of the population may overestimate the benefits of immediate, unlimited access to cash** versus the relative time/space constraints (e.g. bank opening hours, internet connection, availability of smart devices) for other savings.

- *"Animal spirit"*: the highest degree of uncertainty, as scaled by Keynes, when the events surrounding an individual suddenly become completely unpredictable and uncontrollable. **With such a high degree of elementary insecurity, the need for cash can be described as an instinctive desire for possession**, whereby the decision-maker does not act consciously and deliberately, but follows social patterns in an attempt to ride out the drift of the negative event(s) he or she experiences. Thus, they choose to hold cash even if they are aware that they renounce future returns or incur significant one-off costs to access their money. This is the case, for example, with the emergence of bank panics, but also the emergence of Covid-19 or the outbreak of the Russian-Ukrainian war, where there were similar motives behind the mass, irrational cash withdrawals.

The main conclusion of our representative survey of the domestic adult population is that **the cognitive bias-based behavioural patterns described above, which underpin certain cash holding motivations, were detectable across the adult population as a whole**, albeit with different intensities and sociodemographic composition. Our findings show that income and educational level are the strongest influences on the decision to hold cash, with low-income and low-educated groups being the most likely to hold cash. At the same time, **the belief that in Hungary cash holdings are exclusive to the elderly and people living in rural areas with low population density can be clearly refuted, as attitudes towards cash holdings were significant across the whole social strata**. The decisions of the population on holding cash can thus be seen as more dependent on current life situations and individual attitudes than on general socio-demographic criteria. Another telling result is that **the low level of trust of the Hungarian population towards banks and financial institutions was clearly demonstrated** in the case of questions examining the motivations for cash holdings, which on the one hand hinders the choice of savings alternatives to cash, but may also result in social and economic processes that are not beneficial beyond this.

To summarise our findings, **in addition to the traditional drivers, income and returns, uncertainty and the perceived cost of financial services also play a significant role in the evolution of the forint cash holdings**. Among the domestic adult population, it was demonstrated that **the decision to hold cash was not rational but driven by heuristics based on cognitive biases**. These heuristics typically affect consumer decisions in varying combinations and degrees from individual to individual, but because they are deeply rooted and slow to change, they can, in aggregate, divert individual decisions from what is economically rational. Taking all this into account, **we can expect HUF cash holdings to continue to grow in the medium term, but presumably at a lower rate than in the period between 2013 and 2020**.